

Evaluation of Subslab Hydrogen Sulfide and Methane Concentrations at the Former Hampshire Chemical Corp. Facility, Waterloo, New York

PREPARED FOR: Former Hampshire Chemical Corp.

PREPARED BY: CH2M HILL, Inc.

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1.0 Introduction

This technical memorandum summarizes the methods, analytical results, and findings of a subslab vapor investigation in Area of Concern B (AOC B) (Building 4), AOC D (Building 3), and adjacent spaces at the former Hampshire Chemical Corp. (HCC), Waterloo, New York facility (site) conducted during April and May 2017. The subslab vapor investigation described in this memorandum was conducted to evaluate the extent of subslab soil vapors that were detected during routine groundwater monitoring events at monitoring wells in and around Building 4.

2.0 Background

The site is located at 228 East Main Street in the village of Waterloo, Seneca County, New York (Figure 2-1), and is bordered to the north by East Main Street, to the east by Gorham Street, to the west by East Water Street, and to the south by the Cayuga-Seneca Canal. Evans Chemetics LP currently operates a specialty sulfur compound manufacturing facility at the site. The property contains several interconnected buildings that house chemical manufacturing facilities, offices, a quality control laboratory, maintenance, and shipping/receiving operations, as well as an industrial wastewater treatment plant. The site also includes outside drum storage areas and several tank farms.

The site is regulated under the Resource Conservation and Recovery Act (RCRA) with the New York State Department of Environmental Conservation (NYSDEC) as the lead agency regarding environmental releases. RCRA facility investigation efforts have been performed at the site since 1993 to evaluate the nature and extent of releases. The ongoing manufacturing operations by Evans Chemetics at the site are regulated by U.S. Department of Labor Occupational Safety and Health Administration Region 2, the New York Department of Labor Division of Safety and Health Public Employee Safety and Health Bureau, among others. Air emissions from the site's ongoing operations, including hydrogen sulfide from multiple emissions points, are governed by a permit from NYSDEC. As a safety precaution, Evans Chemetics operates several hydrogen sulfide monitors within its operating facilities.

The potential for vapor intrusion of volatile organic compounds (VOCs) in specific buildings at the site has been previously evaluated in a series of reports. No further sampling was recommended for Building 4 and the adjacent tank storage area (CH2M HILL, Inc. [CH2M] 2013a), Building 1 (CH2M 2011), Buildings 2A, 2B, 2, and 3 (CH2M 2010a), and in Building 13 (the main office) (CH2M 2007).

During a long-term groundwater monitoring sampling event at AOCs B and D in November 2015, field instrument readings detected elevated hydrogen sulfide and methane concentrations in the headspaces of several monitoring wells. Ten vapor samples collected from two existing subslab sampling ports and

eight monitoring well headspaces in April and August 2016 suggested hydrogen sulfide and methane are present in the subsurface (CH2M 2016). Figure 2-2 shows the 2016 sample locations. In August 2016, CH2M completed a historical data review and field infrastructure assessment (building survey) for Buildings 3 and 4 with the objectives to make observations and collect data to support a limited subslab vapor investigation.

NYSDEC and the New York State Department of Health (NYSDOH) were notified of the subslab soil vapor conditions and consulted before conducting further investigations. The scope of work for the subslab soil vapor evaluation summarized in this memorandum was submitted to and approved by NYSDEC in April 2017 (CH2M 2017a; NYSDEC 2017). Subsequent correspondence from NYSDEC stated, "HCC also consider adjusting the heating, ventilation and air conditioning systems by creating positive pressure conditions in the buildings and/or implementing any additional actions to assist with ventilating the air spaces of the affected areas." (Dieter 2017). Therefore, a building survey was undertaken to gather information useful for assessing such interim actions.

3.0 Historical Information

Known historical uses of Buildings 3 and 4 include storage of raw materials used in the woolen mill process to dye wool and later, the manufacturing of divalent organic sulfur intermediates used for the cosmetic, pharmaceutical, and plastics industries. The site was first owned and operated by the Waterloo Woolen Manufacturing Company, which operated a woolen textile mill from before 1839 until approximately 1936, when the mill was closed. Evans Chemetics reopened the facility in 1943 and produced divalent organic sulfur chemical intermediates that are still manufactured at the facility. The facility was acquired by the W.R. Grace Company in 1979 and remained a part of Grace's Organic Chemical Division until 1992, when HCC completed a management buyout of the Organic Chemical Division. Evans Chemetics was part of the management buyout, and the facility became an operating unit of HCC. In 1995, HCC was purchased by and became a wholly owned subsidiary of Sentrachem, Ltd., a South African chemical company. In 1997, Sentrachem was acquired as a wholly owned subsidiary of The Dow Chemical Company. In 2005, the site (as well as other assets of Evans Chemetics) was sold to Bruno Bock. Evans Chemetics LP, now a wholly owned subsidiary of Bruno Bock, currently operates the site.

Small canals leading from the site to the Seneca-Cayuga Canal (raceways) were present at the site during the woolen mill operations to transport goods and materials. These raceways were generally filled in after the cessation of wool mill operations and are partially located under the existing structures.

The primary chemicals manufactured at the facility after the cessation of woolen operations were (and still are) thioglycolic acid, mercaptopropionic acid, and thiodipropionate esters for use in various industrial applications. (manufacturing thioglycolic acid stopped in 2014) Manufacturing still occurs in Building 4, and caustic chemicals are stored in Building 3 (Figure 2-2). Process-related equipment also is present in Buildings 9, 10 and 11A. Buildings 14 and 16 are used for chemical storage. Chemical raw materials used at the site include acids, caustics (sodium hydroxide and sodium hydrosulfide), acrylonitrile, alcohols, alkalis, ammonia, and metals (iron and zinc) (zinc use stopped around 1995, and stopped using iron around 2007).

4.0 Field Methods

During April and May 2017, a field investigation to study the nature and extent of subslab soil vapors in and around AOCs B and D, in particular hydrogen sulfide and methane, was performed. Work associated with this investigation included conducting a geophysical survey, installing 15 subslab vapor sampling probes, collecting soil vapor samples at 13 new vapor probes, and conducting a building

survey. Figure 4-1 shows where the 15 sublsab sampling probes are located. This section discusses the investigative methods used during this effort, and Section 5 discusses the investigation results.

4.1 Geophysics

On April 3-6 and April 12, 2017, a geophysical investigation was performed onsite within an area measuring approximately 210 feet northwesterly-southeasterly and 120 feet northeasterly-southwesterly (Figure 4-2) and included all or portions of the ground levels in Buildings 3, 4, 9, 11, 11A, and 13A. The geophysical investigation was conducted to identify subsurface voids and zones of low-density soils, which could act as soil vapor reservoirs, or potential soil vapor migration pathways. The geophysical methods included a microgravity survey over the entire study area and a limited ground-penetrating radar (GPR) survey over most of Buildings 3 and 4. The microgravity and GPR data were taken into consideration during the final placement of the subslab soil vapor sampling probes. In addition, a reconnaissance-level thermal imaging survey of floors in Buildings 3 and 4 was performed to look for heat signatures characteristic of subsurface biological activity.

4.1.1 Microgravity

Between April 3 and April 6, 2017, gravity measurements were collected at 250 stations on an approximately 10-foot by 10-foot grid across the study area (Figures 4-2 and 4-3). Enviroscan, Inc. of Lancaster, Pennsylvania, conducted the microgravity survey with CH2M providing field assistance and oversight. The horizontal and vertical positions of each station were recorded using a global positioning system and Ziplevel Pro. Gravity readings were collected using a Scintrex CG-5 microgravity meter. The infield gravity, elevations, and time data were processed to produce a residual gravity contour map showing the relative density of materials beneath the survey area (Figure 4-3). Attachment 1 contains further information regarding the geophysical techniques and methods.

4.1.2 Ground Penetrating Radar

On April 12, 2017, GPR profiles were collected in areas of the microgravity grid where space allowed for continuous profile collection, including most of Buildings 3 and 4. GPR profiles were collected using a GSSI SIR-400 controller and 400-megahertz antenna. The GPR data were examined in real time, and anomalies were plotted on the residual gravity contour map (Figure 4-1). Attachment 1 contains additional technical information regarding the GPR survey.

4.1.3 Thermal Imaging

On April 4, 2017, CH2M performed a preliminary thermal survey of the interior floor in Building 4 using a Fluke Ti55 thermal imaging camera. The purpose of the thermal imaging was to identify areas with anomalously high heat signatures, possibly indicative of subslab exothermic biological processes. Digital images containing fused infrared and visible light images were captured and are discussed in Section 5.1.

4.2 Soil Vapor Probe Installation

During April and May 2017, 15 subslab soil vapor sampling probes (SV-01 through SV-15) were installed at the site. The probe locations were chosen primarily to delineate hydrogen sulfide and methane in the subsurface. Information that was taken into consideration during probe placement included geophysical data (mass deficiency and mass excess area identification), proximity to known "hot spots" and former excavations, and spatial distribution. Figure 4-1 shows the newly installed subslab vapor probe locations.

4.2.1 Underground Utility Clearance

Dig Safely New York was notified of the forthcoming intrusive activities associated with subslab sampling port installation at least 2 business days before commencing work. A third-party utility locating service

verified the absence of underground utilities at each proposed boring location, and Evans Chemetics staff reviewed facility plans as well. Technicians from Enviroscan Inc. inspected the intended work area at and near SV-01, SV-03 to SV-11, and SV-13 to SV-14 for surficial evidence of buried facilities followed by a survey with electromagnetic locating equipment and GPR on April 12, 2017. On May 3, 2017, New York Leak Detection of Jamesville, New York performed additional underground utility clearance for SV-02, SV-12, and SV-15. Permanent or semi-permanent means were used to mark an area free of underground obstructions for the soil borings. Attachment 1 contains additional technical information regarding the underground utility clearance methods and techniques.

4.2.2 Drilling and Sampling Port Installation

From April 26 to April 29, and May 1 to May 4, 2017, 15 subslab soil vapor sampling probes (Vapor Pins from Cox-Colvin & Associates, Inc.) were installed using standard Vapor Pin installation procedures adapted to the need for ventilating potentially hazardous gases and suppressing sparks. Vapor Pins were placed with respect to known historical and geophysical features, and at least 5 feet away from exterior walls and penetrations in the slab (e.g., large cracks, sumps, drains, and utilities) to avoid short-circuiting of ambient air. Figure 4-1 shows the locations of the subslab soil vapor sampling probes.

Drilling was conducted using advanced health and safety measures, including multiple layers of engineering and institutional controls, redundant ventilation, and Level B personal protective equipment with supplied-air respiratory protection. A nitrogen-filled glovebox was placed over the borehole to dilute/inert potentially explosive gases at ground level and limit vapors entering the work zone during drilling and installation (Photo 1). The glovebox atmosphere was exhausted through a port fed into the ventilation ducting.

Real-time air monitoring was conducted continuously before, during, and after Vapor Pin installation to ensure a hazardous atmosphere did not exist. Air quality parameters (hydrogen sulfide, methane, sulfur dioxide, carbon dioxide, carbon monoxide, oxygen, total VOCs, and lower explosive limit [LEL]) were measured within and surrounding the work zone and inside the glovebox.

The stepwise Vapor Pin installation procedure was as follows:

1. A 2-inch-diameter hole was advanced approximately 0.2 to 0.5 inch into the slab using a solid drill bit, or a combination of a core and solid bit. The 2-inch-diameter hole allowed the top of the flush-mount cover to be installed flush with the slab surface.



Photo 1. Level B drilling with alovebox

- 2. A 1.5-inch-diameter hole was then drilled to a depth of 1.75 inches using the drilling guide to measure the hole depth and allow room for installing the Vapor Pin. At no time was there a compromise to the integrity of the slab during drilling (e.g., cracking).
- 3. Cuttings were removed from the borehole using a wet/dry vacuum. The hole was filled with water to implement a wet drilling technique and suppress sparking.
- 4. A 0.625-inch (%-inch)-diameter hole was drilled through the concrete slab.
- 5. The Vapor Pin assembly was then set into the drilled hole using a dead-blow hammer. The vapor probe silicon sleeve formed a tight seal between the slab and the Vapor Pin shoulder.
- 6. A stainless-steel cover was secured onto the Vapor Pin.

7. A water dam test was performed to ensure a tight seal exists between the slab and the Vapor Pin shoulder.

Because of field conditions, the following deviations from the work plan (CH2M 2017a) were made during the Vapor Pin installation phase:

- A Vapor Pin was not installed in Building 9 because the location selected during the underground
 utility clearance was drilled to more than 20 inches below grade without penetrating the floor and
 suspected to be within the interior support column spread footing. Furthermore, a suitable
 secondary drilling location was not available due to multiple subslab anomalies (possibly
 representing areas of dense rebar or buried pipes) detected in the remainder of Building 9 during
 the GPR survey.
- A Vapor Pin was not installed in Building 10 because of the poor condition of the concrete floor, making achieving a seal between the floor and glovebox difficult.
- A Vapor Pin was not installed in the outdoor area near the northeastern corner of Building 4
 because the area was paved in asphalt and not suitable for the selected soil vapor sampling probe
 technology.

4.3 Soil Vapor Screening

Following Vapor Pin installation and before soil vapor sampling, the concentrations of subslab soil vapors at Vapor Pins installed between April 26 and May 2, 2017 (SV-01, SV-03 to SV-11, and SV-13 to SV-14) were measured following an equilibration period of 3 to 5 days using a MiniRAE 3000 photoionization detector equipped with a 11.7 electron volt lamp for total VOCs, VRAE multigas meter for sulfur dioxide, and GEM 2000+ soil gas meter for carbon monoxide, carbon dioxide, oxygen, methane, and hydrogen sulfide. This screening was conducted to gauge the magnitude of hydrogen sulfide and methane concentrations before sample collection. The results of the May 2017 soil vapor screening are discussed in Section 5.2.

A complete and/or stabilized set of soil vapor screening parameters were not collected at two locations because of the following reasons:

- Field instrument sampling pump failure at SV-06 (note: a complete set of data at this point was later obtained on May 9, 2017).
- Groundwater was drawn into the sample tubing at SV-05.

4.4 Vapor Sampling

Fourteen vapor samples (including one field duplicate sample) were collected for laboratory analysis on May 8 and May 9, 2017. Vapor sampling procedures are discussed below and analytical results are reviewed in Section 5.3.

Before collecting the subslab vapor samples, differential pressures were measured using a micro manometer, the sampling train was tested for leaks, and a leak check of the sampling port and adjacent concrete slab were performed using the water dam method. The vapor sampling train was constructed of inert stainless steel and Teflon tubing joined with stainless steel compression fittings.

Following connection and testing of the sampling manifold, approximately 1 liter of soil vapor was purged at a rate of 200 milliliters per minute (mL/min) from the subslab sampling port into a Tedlar bag over about a 5-minute period using a portable vacuum pump or lung box. Next, the Tedlar bag was removed and a 1-liter laboratory-supplied Silonite-lined stainless steel sample canister was attached to the sampling valve. Finally, the sampling valve was opened and soil vapor was collected under a

beginning canister gage vacuum of approximately -30 inches of mercury and proceeded until an ending vacuum of approximately -4 inches of mercury was attained.

The contents of the Tedlar bag were analyzed for methane, hydrogen sulfide, carbon monoxide, oxygen, sulfur dioxide, and total VOCs using field instruments. Results of the subslab soil vapor screening are discussed in Section 5.2

Subslab vapor samples were packaged and shipped under chain-of-custody procedures by road freight as flammable and poisonous gases (per U.S. Department of Transportation regulations) to Centek Laboratories LLC in Syracuse, New York for analysis. These vapor samples were analyzed for low-level sulfur compounds and VOCs by U.S. Environmental Protection Agency (USEPA) Method TO-15, and fixed gases by USEPA Method 3C.

Samples were not collected at SV-05 and SV-12 because of high groundwater conditions. Approximately 1 minute into the soil vapor purge cycle at SV-05, groundwater began aspirating from the Vapor Pin in intermittent spurts. Due to the intermittent flow of water, it was suspected that the Vapor Pin inlet may be within the partially saturated capillary fringe, and that collecting soil vapor from the unsaturated portion of the capillary fringe may be possible. Therefore, the sampling equipment was elevated several feet off the floor to avoid water damage and purging was continued. Approximately 2 minutes into the soil vapor purge cycle at SV-05, the flow of water from the Vapor Pin became continuous and purging was discontinued. Water began flowing in a steady, continuous stream immediately after beginning the purge cycle at SV-12, hence a sample could not be collected.

4.5 Building Survey

A building survey was conducted to define the conditions for potential vapor entry into the structures and air exchange through the structures primarily based on visual observations supported by photography. Dimensions were collected with a Bosch GLM 35 laser measuring device. The accuracy of this device was checked against an object of known length. Information was gathered using the NYSDOH "Indoor Air Quality Questionnaire and Building Inventory" to the extent feasible in areas of the building where the survey had not previously been employed. The primary focus of the building survey was to evaluate the conditions of the building envelope and ventilation. These factors are relevant in determining exposure scenarios and perspective interim remedies. Since a chemical inventory had been previously prepared for the facility, that work was not repeated at this time.

5.0 Results

Field investigations conducted at the site during April and May 2017 included conducting a geophysical survey, soil vapor field screening during vapor probe installation and sampling, collecting soil vapor samples for laboratory analysis, and conducting a building survey.

5.1 Geophysics

Between April 3 and April 12, 2017, Enviroscan conducted a microgravity survey of all or portions of the ground levels in Buildings 3, 4, 9, 11, 11A, and 13A (Figure 4-2) and GPR survey of Buildings 3 and 4. A discussion of the geophysical field methods is provided in Section 4.1. Enviroscan's complete report is included in Attachment 1. Notable findings include the following:

The highest amplitude mass deficiencies based on the gravity data are located beneath the western
portion of Building 4 (depicted by the north-south oriented orange and red area on Figure 4-2) and
in the Building 11A basement area (former generator room). In these areas, the magnitude of the
gradients from mass excess to mass deficiency may indicate possible subsurface utilities, voids
caused by human activities, or low-density geologic features.

- Spectral analysis of the microgravity data for Building 4 indicates a majority of the mass deficiency anomalies in Building 4 average between 2 and 5 feet below ground surface (bgs), with the deepest anomalies located at 12 to 15 feet bgs.
- While collecting GPR data was inhibited by the presence of reinforced concrete, two significant anomalies were described in Building 4 (outlined in purple dashes on Figure 4-2). An anomaly in the northwestern quadrant of Building 4 is indicative of a high-density reflector such as a buried metallic plate. SV-05 was installed approximately 2 feet west of the anomaly. The anomaly in the southeastern quadrant of Building 4 is characteristic of a buried reinforced concrete structure. Neither of the GPR anomalies in Building 4 is coincident with areas of mass deficiencies.
- The high-amplitude mass deficiency along the entire northern wall of Building 3 is most likely the result of a terrain effect. This terrain effect is interpreted to be caused by the 12-foot elevation difference in grade between Building 3 and the outdoor area to the north of Building 3. Thus, the horizontal influence of the open space contained within Building 3 may have influenced the gravity measurements at those stations located in the outdoor area north of Building 3.
- No anomalous heat signatures were identified during thermal imaging of the floor in Building 4 for
 indications of subslab exothermic biological activity. However, the upper surface of the concrete
 and acid brick floor inside Building 4 is heated by process waste heat. If heat-generating biological
 activity is occurring, the heat signature may be masked by the building's ambient heat. Therefore,
 this application of thermal imaging is unsuitable for areas of active chemical production at the site.

5.2 Soil Vapor Field Measurements

On May 1 and May 3, 2017, field measurements of soil vapor concentrations were collected from the newly installed Vapor Pins. Post-installation concentrations of methane, hydrogen sulfide, carbon monoxide, carbon dioxide, LEL, oxygen, sulfur dioxide, and total VOCs are presented in Table 5-1. The following significant field measurements were recorded:

- Methane concentrations in excess of 100 percent of the LEL were measured at SV-05 (greater than 26.4 percent methane by volume [Vol%]), SV-06 (greater than 28.4 Vol%), and SV-15 (greater than 55 Vol%).
- Hydrogen sulfide concentrations in excess of 80 parts per million (ppm) were measured at SV-05 (greater than 80 ppm) and SV-15 (greater than 500 ppm).

As part of the vapor sampling procedure, subslab soil vapors were purged into a Tedlar bag for a second round of vapor concentration screening. The pre-sampling soil vapor screening results for methane, hydrogen sulfide, carbon monoxide, oxygen, sulfur dioxide, total VOCs, and differential pressure are presented in Table 5-2. The following significant field measurements were recorded:

- Methane concentrations in excess of 100 percent of the LEL were measured at SV-06 (33.9 Vol%) and SV-15 (greater than 5 Vol%).
- Hydrogen sulfide at a concentration in excess of 500 ppm was measured at SV-15.
- Total VOCs at a concentration of 247 ppm was measured at SV-15.
- Differential pressures ranged from zero inches of water column (inch WC) (SV-01, SV-02, SV-08, and SV-09) to 2.1 inch WC at SV-05. However, the highest differential pressures were measured at SV-05 (2.1 inch WC) and SV-12 (0.790 inch WC) where groundwater entered the sample tubing during soil vapor purging, and may not be representative of stabilized gas phase differential pressure in those areas.

5.3 Soil Vapor Samples

On May 8 and May 9, 2017, 14 subslab soil vapor samples (including one field duplicate sample) were collected from 13 subslab sampling ports (SV-01 to SV-04, SV-06 to SV-11, and SV-13 to SV-15). Samples were not collected at SV-05 and SV-12 because of high groundwater conditions that appear to be associated with wet spring weather in the area. A summary of the soil vapor sampling information is presented in Table 5-3. The soil vapor samples were analyzed for VOCs, low-level sulfur compounds, and fixed gases. Analytical results are presented in Table 5-4. Methane and hydrogen sulfide concentrations are shown spatially on Figure 5-1. Attachment 2 contains a complete analytical data package provided by the laboratory.

The analytical results for the subslab soil vapor samples were compared to the following criteria intended to evaluate potential risks during site investigation activities and operations by onsite facility workers (Table 5-4):

- Subslab screening concentrations of sulfur compounds likely to be present during current facility
 operations (carbon disulfide, ethyl mercaptan, hydrogen sulfide, and methyl mercaptan) were
 calculated from the American Conference of Governmental Industrial Hygienists (2016) threshold
 limit values (TLVs) using an attenuation factor of 0.03 for indoor air.
- A methane screening concentration of 4 percent by volume (80 percent of the LEL).
- VOC screening concentrations for a commercial exposure scenario were calculated using the Vapor Intrusion Screening Level (VISL) Calculator Version 3.5.1 (USEPA 2016) (May 2016 regional screening levels) for subslab concentrations with a 10⁻⁵ target cancer risk, a hazard quotient of 1, and the default 0.03 attenuation factor.

The following subsections summarize the subslab vapor results for those analytes detected at concentrations above the selected criteria.

5.4 Hydrogen Sulfide and other Sulfur Compounds

Hydrogen sulfide was detected in soil vapor samples from 11 of the 13 subslab sampling locations (Table 5-4 and Figure 5-1) at concentrations ranging from 12 micrograms per cubic meter ($\mu g/m^3$) (SV-07) to 150,000,000 $\mu g/m^3$ (SV-15). Hydrogen sulfide concentrations exceeded the screening criteria at one location (SV-15) during the May 2017 sampling event. At SV-15 (where hydrogen sulfide is at the highest concentration), other sulfur-containing compounds were present in substantial concentration, and methyl mercaptan exceeded a screening level for soil gas derived from the TLV with a default 0.03 attenuation factor.

5.5 Methane

Methane was detected in laboratory soil vapor samples from 2 of the 13 subslab sampling locations (Table 5-4 and Figure 5-1) at concentrations of 33.9 Vol% (SV-06) and 38.6 Vol% (SV-15). Methane concentrations exceeded the screening criteria at SV-06 and SV-15 during the May 2017 sampling event. Field methane concentrations in excess of the screening value were also observed at SV-05 and SV-12, locations where laboratory samples could not be obtained because of high groundwater conditions.

5.6 VOCs

One or more of 22 VOCs were detected in soil vapor samples from all of the 13 subslab sampling locations (Table 5-4 and Figure 5-1). Four VOCs (chloroform, ethylbenzene, trichloroethene [TCE], and

meta- and para-xylenes [m,p-xylenes]) were detected at concentrations exceeding the screening criteria as follows:

- Chloroform at SV-02, SV-04, SV-06, SV-14, and SV-15 with a maximum concentration of 7300 μg/m³ at SV-04.
- Ethylbenzene at SV-15 (3,500 µg/m³).
- TCE at SV-11 (located well outside the area of other impacts) (420 μg/m³).
- m,p-Xylenes at SV-15 (47,000 μ g/m³). Note that 14,000 μ g/m³ o-xylene also was observed, slightly below the calculated screening level of 14,600 μ g/m³.

6.0 Building Survey

The building survey was conducted to define the conditions for potential vapor entry into the structures, and opportunities and driving forces for air exchange through the structures. The primary focus was placed on evaluating the conditions of the building envelope and ventilation that would be relevant to a perspective interim remedy.

6.1 HVAC Facilities

The site buildings do not have centralized heating, ventilation, and air conditioning (HVAC) facilities. The main process spaces, including Buildings 3 and 4 are primarily heated with waste heat from the centralized plant steam boiler that is used for various process purposes. A few localized steam radiant unit heaters have been observed in the industrial spaces. Room ventilation is primarily provided by natural air flow through open doorways, windows etc. and cooling is not provided in the process spaces. Chemical process vessels are primarily sealed systems connected to the plants air pollution control system. A few belt-driven exterior vent fans are present in the process spaces but are not extensively used or regularly maintained. One such fan on the second floor of Building 3, east façade was observed to be in service. Small



Photo 2. Exterior view showing high bay additions to Building 4, photo taken from southwest of Building 4 looking northeast.

in-window style air conditioners or heat pumps are present in office portions of the facility. Exhaust ventilation is provided in the welding shop (Building 13A) and in the laboratory spaces (upper stories of Building 13), but these are distant from and not expected to influence the Building 3 and 4 area that is the focus of this study.

6.2 Building Layout

As shown on Figure 4-1, the "buildings" onsite generally share common walls (Figure 6-1). In many cases, they are connected by doorways that are either normally open, or not equipped with doors. Building 4 has process equipment both on the ground floor and on a series of offset mezzanines at various levels constructed of metal grating materials and connected with open stairways. The metal grating materials are generally open but are decked in a few areas with plywood or other materials. Those mezzanines rise highest within a series of modern "high bay" additions to the structure (shown with white siding in Photo 2).

6.3 Building Air Flow

Indoor air is able to freely move vertically and has a substantial volume for dilution in Buildings 3 and 4. The high ceilings would be expected to enhance potential stack effect ventilation. Ceiling heights in Building 4 are highly variable with areas having ceiling heights ranging from approximately 22 to 71 feet. Ceiling height on the ground floor of Building 3 is approximately 12 feet. Another significant potential for vertical flow is provided by the open historical style elevator which is on the eastern wall of Building 14.



Photo 3. West facade of Building 4 showing garage door and some windows



Photo 4. Detail Windows on West Facade of Building 4, Showing Mix of Conditions

Opportunities for horizontal air cross ventilation in Buildings 3 and 4 also are extensive:

- A roll-up door and a series of windows, some broken, some boarded up, and some intact are present on the western facade of Building 4 (Photos 3 and 4).
- On the northern wall of Building 4, a heavily used doorway is generally open and leads to Buildings 10 and 11A.
- On the eastern wall of Building 4, a doorway (without a door) leads to Building 3. A second doorway
 that cannot be closed is approximately 11 feet above grade on the eastern facade of Building 4
 leading to the second floor of Building 3.
- Open wall penetrations showing daylight or very poor sealing are present on the southern, western, and northern walls of Building 4.
- Vents and doorways are observable in the walls of some of the modern high bay additions (Photo 1).
- Clerestory windows (windows above eyelevel) facing north are setback from the northern edge of Building 4 at the height of the lower part of the ceiling. Windows also line the northern facade of Building 3 on both the first floor and second floor.
- On the southern wall of Building 4 is an 8-foot wide and 8-foot 8-inch tall doorway leading into Building 4A that is not capable of being closed (no door present with pipes running through the

doorway would prevent installation of a door). That doorway lines up with an even larger roll-up door on the southern wall of Building 4A, which leads directly to the exterior and is frequently open.

• The second floor of Building 3 is primarily used for the storage of equipment such as valves and piping in an open area with racks. A few small offices have been subdivided within the second floor of Building 3 and a control room is subdivided on the interior ground level of Building 3.

The ability to compartmentalize, or for zoned airflow, within the adjoining buildings is frequently limited by piping runs for process purposes that pass through the doorways or walls (example in Photo 5). In other cases, doorways are equipped with safety handrails running through the doorway in a fashion that would prevent easy installation of a door (example in Photo 6). Significant chemical engineering, safety engineering, and architectural work would be needed, and substantial process disruption would result, from any attempt to isolate and pressurize these spaces. Therefore, it is likely to be more feasible to enhance the ventilation of these spaces than to pressurize or depressurize them.



Photo 5. Example doorway between buildings, showing the difficulty of airsealing



Photo 6. Doorway on west facade of Building 4, showing presence of handrail that would make installation of a door and sealing difficult.

7.0 Discussion of Findings

7.1 Methane, Hydrogen Sulfide and Pressure

The analytical and field data set suggests that a strongly anaerobic zone is present under Building 4, generating high concentrations of methane and hydrogen sulfide. This is indicated by the low subslab oxygen concentrations at SV-05 and SV-06; the substantial methane concentrations observed at SV-05, SV-06, SV-12 and SV-15; and the hydrogen sulfide concentrations observed at SV-05 and SV-15.

Field conditions, including high groundwater and elevated hydrogen sulfide concentrations, limited the ability to observe differential pressures during sampling. However, the available data from this (Table 5-2) and previous soil vapor sampling events (CH2M 2016) suggests positive differential pressures are present beneath Building 4 that could provide a driving force for vapor intrusion. These pressures may be due to a combination of biological generation of gasses, variations in the water table at this site (especially during very wet years such as 2017) and/or the stack effect.

Due to heavy precipitation at the site during the winter of 2016 and spring of 2017, the water table in the northern portion of Building 4 is apparently higher than or immediately below the concrete and acid brick floor. An elevated water table is evidenced by two observations made during May and April 2017:

water was drawn from SV-05 and SV-12 during sampling, and water was seen seeping from the foundation wall north of SV-15 from a height of approximately 1 feet above the floor (Photo 7). The elevation of the floor in Building 4 is approximately 5 feet lower than the floors of adjoining buildings to the north (Buildings 9, 10, 11 [basement], and 11A) (Figure 6-1). During previous depth-to-water gauging events at MW-03, MW-33, and PZ-01, groundwater was measured at 1 to 3 feet bgs. The high levels of methane and hydrogen sulfide present in the riser pipe precluded gauging groundwater elevations at those locations.



Photo 7. Water seeping from the northern wall of Building 4 near SV-12 during spring of 2017.

Building 4 has been used since 1943 as a chemical manufacturing plant producing divalent organic sulfur

intermediates used for the cosmetic and pharmaceutical industries, and production of these compounds continues in Building 4. The RCRA facility investigation report for this facility indicates that at Building 4:

- VOCs and SVOCs above applicable screening criteria had been observed in soil and pit water (Section 3.6.1 [CH2M 2015]).
- Evidence of pulsed concentrations suggests the possibility of releases of methyl isobutyl ketone between 1995 and 2013 (Section 4.4.2 [CH2M 2015]).
- Sulfate concentrations are depleted in groundwater relative to the wells closer to the canal (Section 4.4.2 [CH2M 2015]).

Multiple releases have been documented at the former dye pit and transfer pump housing locations throughout Building 4 (CH2M 2017b). An extensive geochemical evaluation performed for AOCs B and D concludes that groundwater at AOC B exhibits mostly mixed oxic-anoxic chemistry with nitrate, ferric iron and sulfate reduction constituting the primary redox processes (CH2M 2017b). The observations of methane and hydrogen sulfide production are thus broadly consistent with the presence of biodegradable organic compounds, multiple sources of sulfur, and areas of anaerobic conditions.

The transport of that hydrogen sulfide and methane is apparently limited beyond the northern boundary of Building 4 (as indicated by comparison to the measurements at SV-02, SV-03 and SV-04, which are located just beyond Building 4). The limitation in transport could be a function of shallow groundwater, damp soils, an aerobic capillary fringe conditions in which the hydrogen sulfide and methane are being consumed biologically, and/or building foundation features. It should be noted that buildings north of Building 4 are elevated above the grade of Building 4 (Figure 6-1). The leaky condition of the building envelope and the many open doors in this facility likely provide a substantial air exchange rate. The doorways connecting Building 4 to Buildings 3, 4, 4A, 9, 10, and 11A are equipped with fire doors but have generally been observed to be left open during many previous site visits.

7.2 Volatile Organic Compounds

Because of the changed condition evidenced by the methane and hydrogen sulfide concentrations in groundwater monitoring well headspaces and existing subslab sampling ports, additional soil vapor evaluation, including sampling for VOCs in soil vapor, was performed in 2017. No further VOC vapor intrusion sampling was previously recommended for these buildings, as discussed above. However, in this section the multiple-lines-of-evidence evaluation, per vapor intrusion technical guidance (USEPA 2015), presented in previous reports will be updated.

Among the VOCs, chloroform exceeds a screening level derived using the VISL calculator commercial exposure assumptions, 10^{-5} target cancer risk, a hazard quotient of 1, and the default 0.03 attenuation factor. The chloroform concentrations appear to be highest along an axis trending from SV-04 south to SV-15. The potential for TCE and chloroform vapor intrusion has been previously evaluated at this facility in a series of reports (CH2M 2007, 2010a, 2010b, 2011, 2013a). Similar concentrations of chloroform were previously detected in subslab soil gas at Building 4, and concentrations above subslab screening levels have been detected previously in the tank storage area (Table 7-1). The November 2012 investigation report (CH2M 2013a) evaluates those concentrations in light of indoor air data and concluded that exposure was below regional screening levels and only slightly above upwind ambient air concentrations in both Building 4 and the tank storage area.

The reported concentration of chloroform in the subIslab soil vapor sample from SV-04 in Building 11A during 2017 was 7,300 μ g/m³, above the USEPA VISL of 180 μ g/m³ (Table 5-4). Indoor air sampling has not been conducted in Building 11A.

Vapor Pin locations along an axis oriented north-northwest to south-southeast through Buildings 4 and 11A (SV-04, SV-07 and SV-15) also have detections of TCE, although at concentrations below the screening level. The only concentrations of TCE currently above the screening level is at SV-11 in the plumbing shop (Building 12) on the eastern edge of the study area. TCE concentrations of a similar magnitude in subslab soil gas were previously observed in the Tank Storage Area during 2008 (Table 7-1). Indoor TCE concentrations in the Tank Storage Area and Building 4 were well below screening levels in multiple sampling events conducted in 2012 (CH2M 2013a, 2013b).

Ethylbenzene and m,p-xylene exceed the VISL calculator commercial exposure assumptions (based on 10⁻⁵ target cancer risk, a hazard quotient of 1, and the default 0.03 attenuation factor) only at SV-15 and are largely below laboratory detection limits elsewhere. Since these exceedances are less than five times the screening levels, it is likely that hydrogen sulfide poses the greatest risk in the SV-15 area. All other VOCs are below applicable screening levels for subslab soil gas.

8.0 Conclusions and Recommendations

The following is a generalized summary of conclusions based on the results of this investigation:

- Groundwater monitoring well headspace results indicate hydrogen sulfide and methane are present in the subsurface (CH2M, 2016)
- Subslab soil vapor sample results indicate hydrogen sulfide and methane exist underneath the Building 4 floor.
- Shallow groundwater levels beneath Building 4 may at times constrain the ability to sample or mitigate subslab gasses.
- The primary soil gas/vapor intrusion concerns appear to be related to hydrogen sulfide and methane rather than VOCs

Recommendations include:

- Continue using engineering controls during regular site activities such as groundwater monitoring to protect site workers.
- Conduct a feasibility study for long term mitigation/remediation alternatives for hydrogen sulfide and methane
- Engage NYSDEC regarding cessation of sampling at select AOC B source zone monitoring wells until they can be safely monitored.

- Evaluate options for additional building ventilation. The condition of the building envelope and
 design of the interconnections between adjoining buildings likely precludes the pressurization of
 Building 4; however, some form of enhanced ventilation and other mitigation options may be
 possible.
- Further evaluation of the spatial and temporal variability of groundwater levels beneath the facility. This evaluation should also consider the possible role of stormwater drainage and canal stage in controlling the water level beneath the facility.
- Monitor changes in subsurface hydrogen sulfide and methane concentrations in subsurface soil gas at the site coupled with monitoring of differential pressure.
- Further investigation of building air exchange and the flux of soil gas into Building 4. This
 investigation may include radon or other tracer testing to establish whether the potential for
 hydrogen sulfide vapor intrusion is significant as compared to applicable industrial screening levels.
- Evaluate institutional controls that may be appropriate given the concentrations of methane
 observed in soil gas. These could include precautions during subsurface construction activities and
 the avoidance of small enclosed spaces above grade where methane and hydrogen sulfide could
 accumulate.

9.0 References

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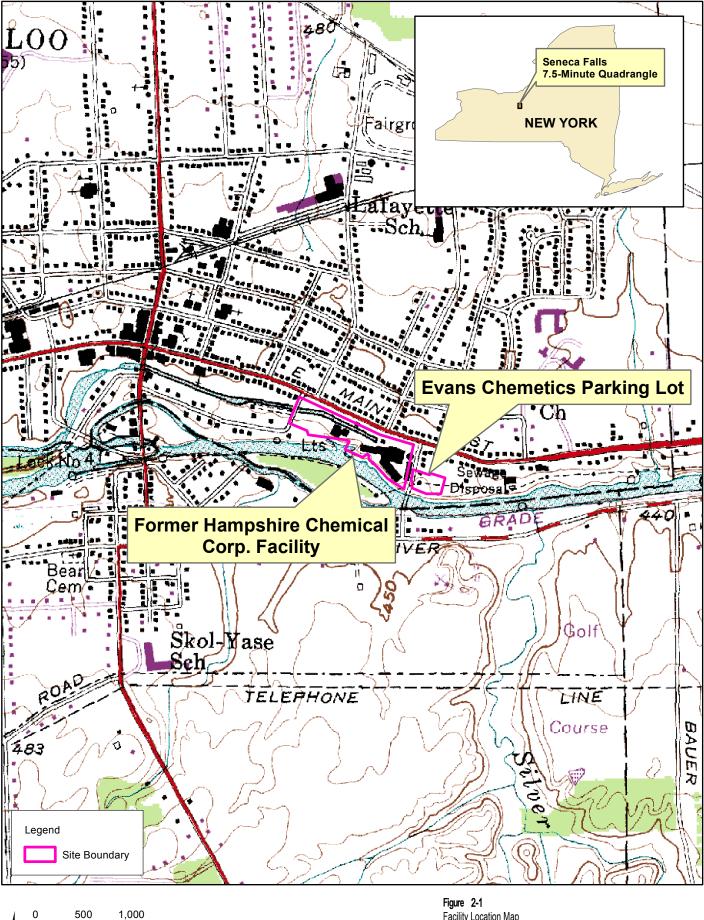
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Figures

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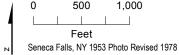
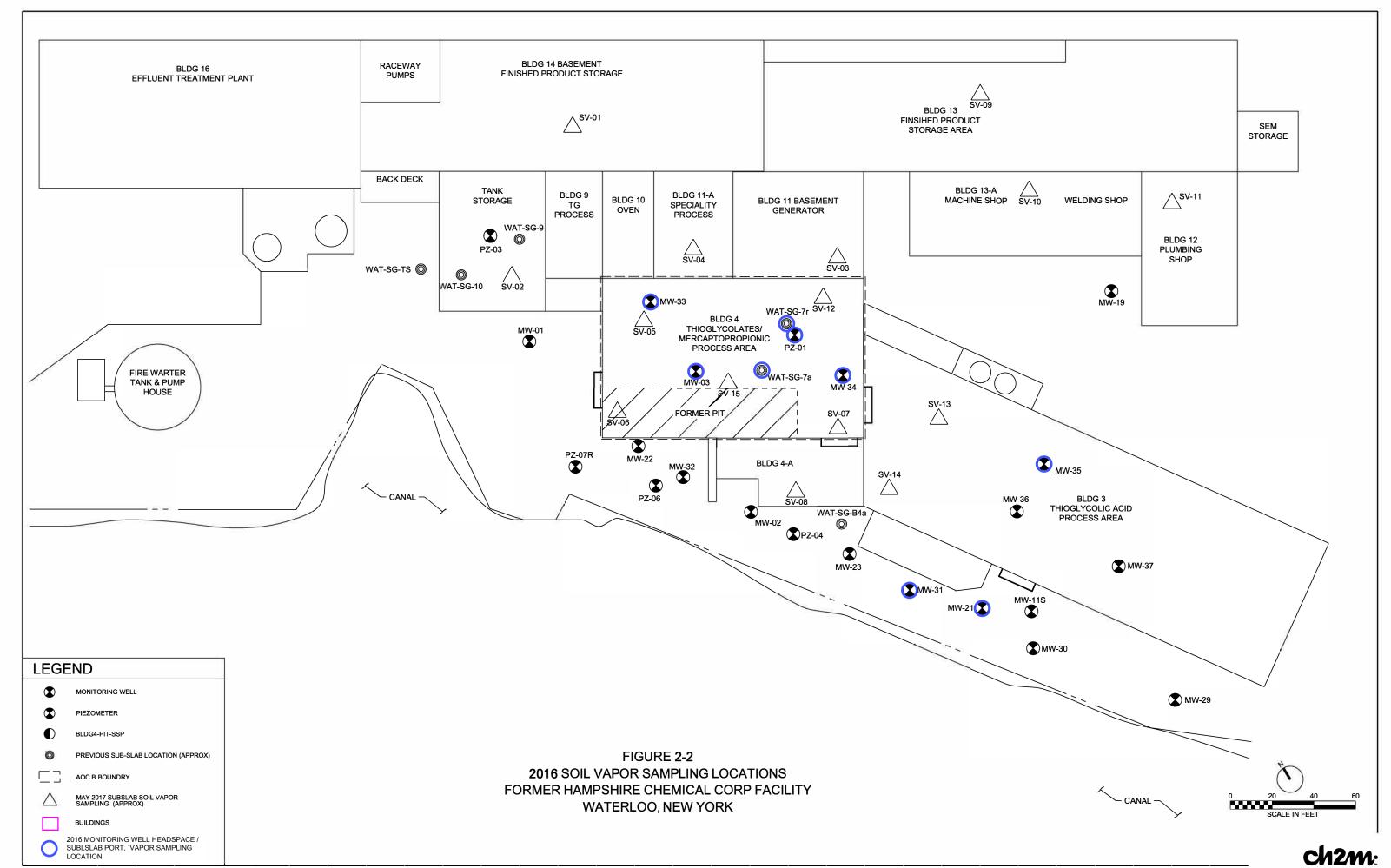
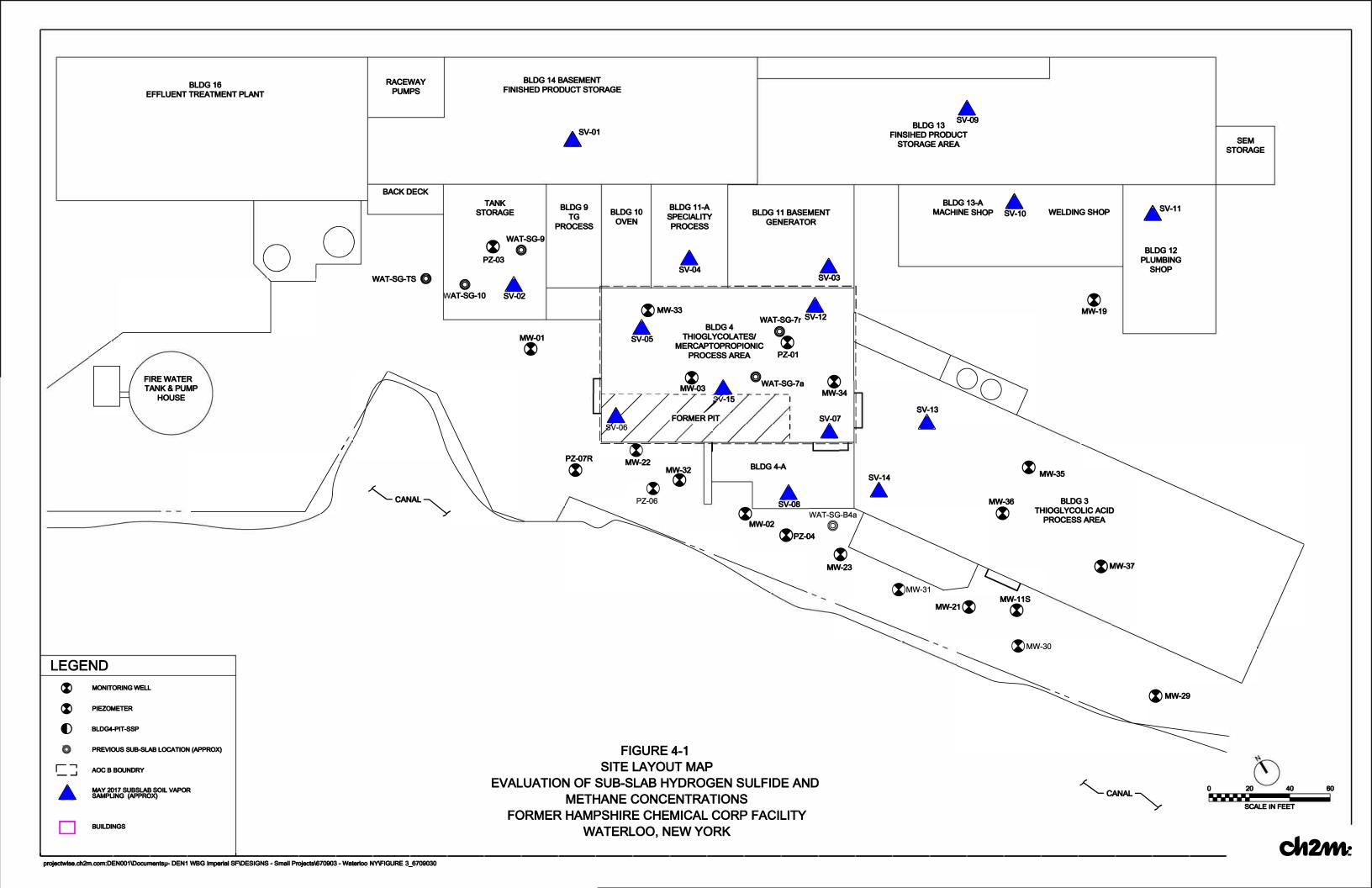
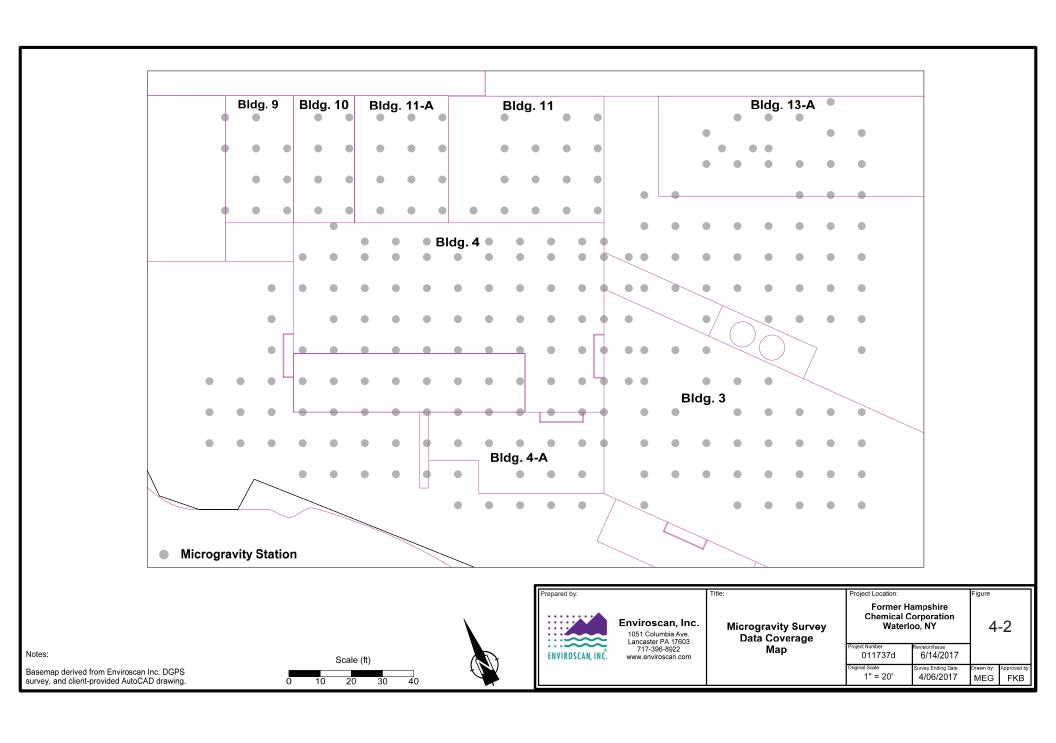
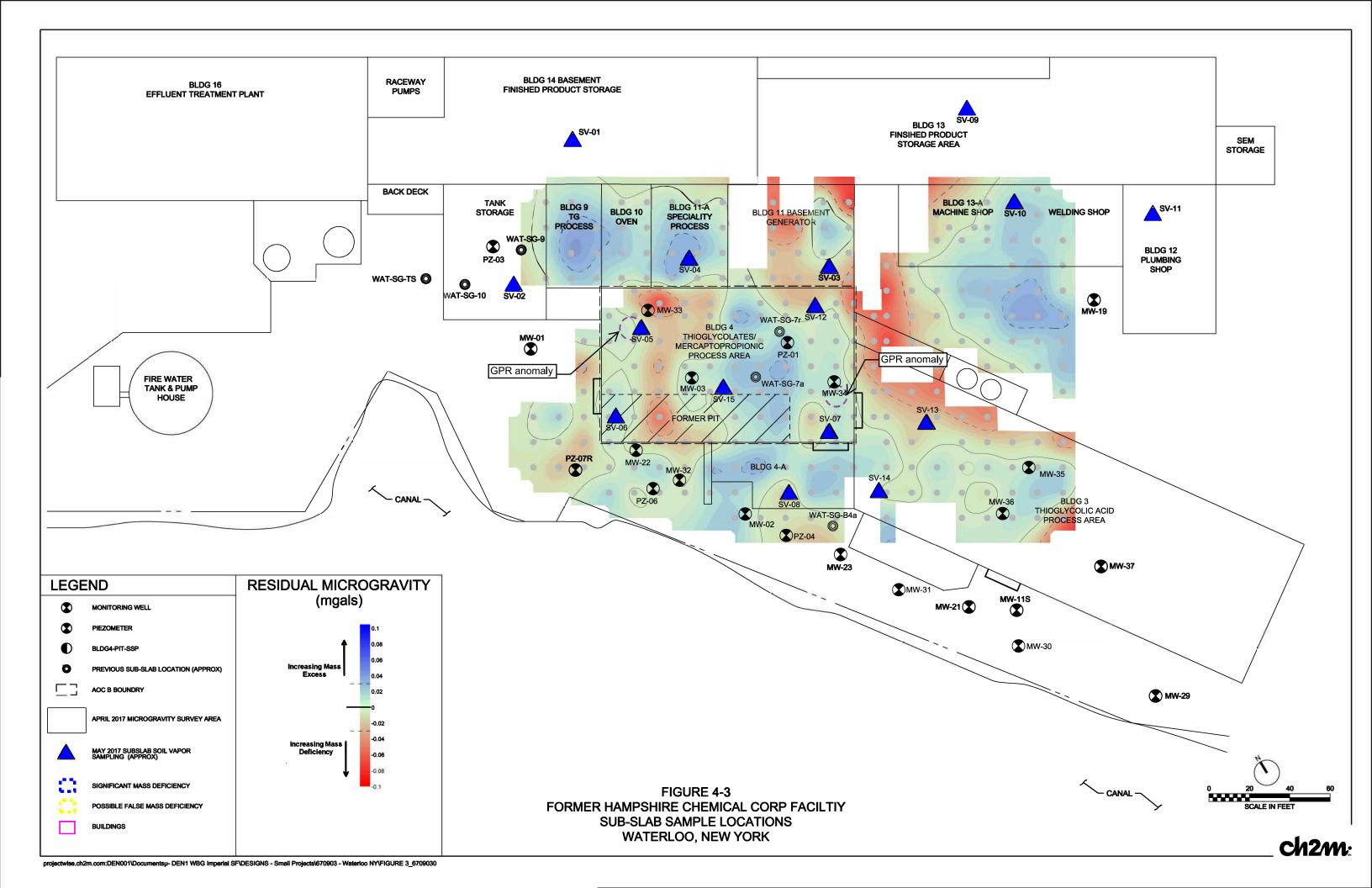


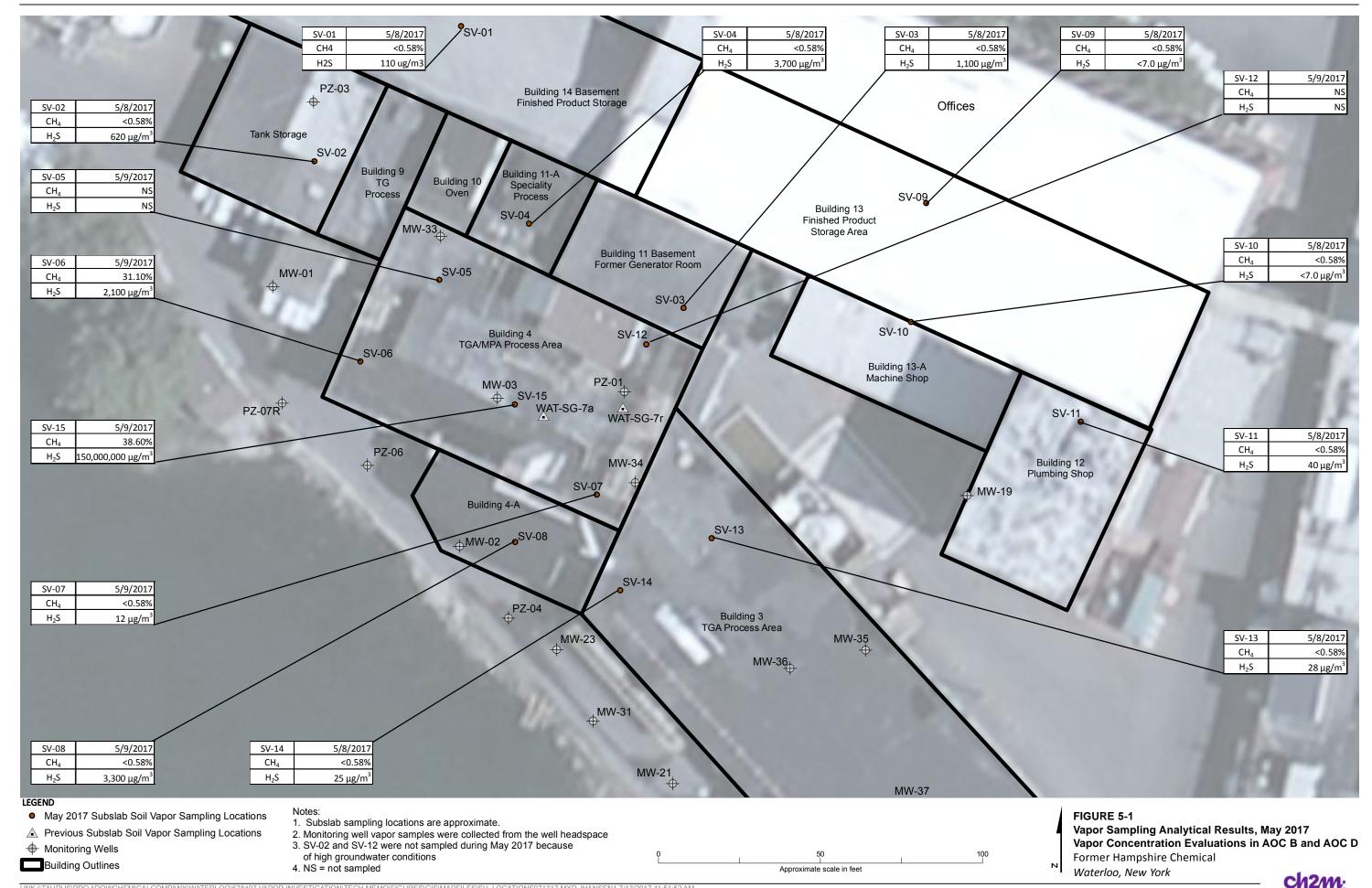
Figure 2-1
Facility Location Map
Evaluation of Subslab Hydrogen Sulfide and Methane Concentrations
Former Hampshire Chemical Corporation
Waterloo, New York



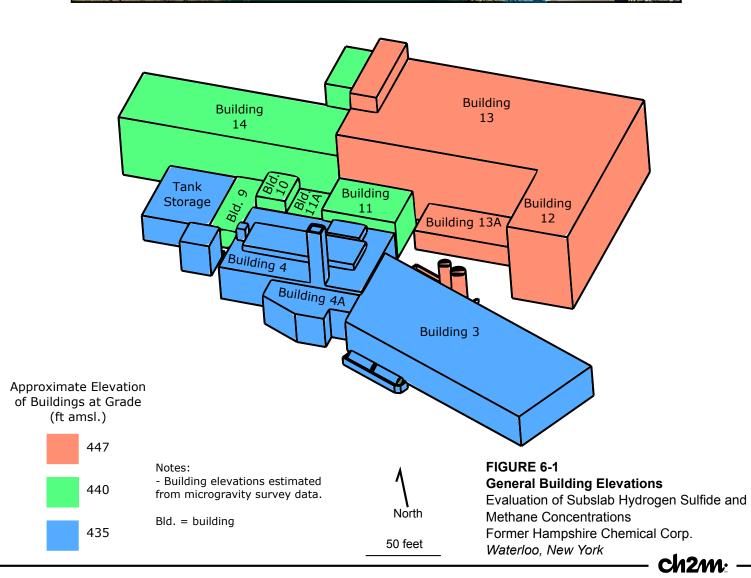












Tables

Table 5-1. Soil Vapor Screening Measurements Following Subslab Sampling Port Installation

Evaluation of Subslab Hydrogen Sulfide and Methane Concentrations Former Hampshire Chemical Corp. Facility, Waterloo, New York

Location	Building	Date	PID (ppm)	Hydrogen Sulfide (ppm)	Methane (% volume)	LEL (%)	Carbon Monoxide (ppm)	Carbon Dioxide (% volume)	Oxygen (% volume)	Sulfur Dioxide (ppm)
SV-01	14 Basement	5/1/2017	0.0	0.0	0.0	0.0	0.0	0.0	20.2	0.0
SV-02 ^d	Tank Storage									
SV-03	11 Basement	5/1/2017	0.0	0.0	0.0	1.0	0.0	0.0	20.9	0.0
SV-04	11-A	5/1/2017	0.0	0.0	0.0	0.0	0.0	0.4	19.6	0.0
SV-05 ^b	4	5/1/2017	>2	>80	>26	>100	5.0	13.2	7.4	0.0
SV-06 ^a	4	5/1/2017	0.6	0	>28	>100	10.0		19	0.0
SV-07	4	5/3/2017	5.0	0.0	0.0	1.0	0.0	0.1	19.7	0.2
SV-08	4-A	5/3/2017	8.0	0.0	0.1	3.0	6.0	0.0	18.9	0.1
SV-09	13	5/1/2017	4.8	0.0	0.0	0.0	0.0	0.9	19.1	0.0
SV-10	13-A	5/1/2017	0.0	0.0	0.0	0.0	0.0	0.3	19.8	0.0
SV-11	12	5/3/2017	2.2	0.0	0.0	0.0	0.0	0.0	19.9	0.0
SV-12 ^d	4									
SV-13	3	5/3/2017	4.0	0.0	0.0	0.0	0.0	3.4	15.7	0.0
SV-14	3	5/3/2017	3.5	0.0	0.0	0.0	0.0	0.0	20.6	0.0
SV-15 ^c	4	5/3/2017		>500	>55	>100				

<u>Notes</u>

PID = photoionization detector

ppm = parts per million

^a = Measurement discontinued due to field instrument pump failure. Methane was still climbing when reading discontinued

^b = Measurement discontinued due to water being drawn into the insturment's intake tubing. PID, methane, and hydrogen sulfide readings were climbing when measurement discontinued.

^c = discontinued screening when hydrogen sulfide concentration exceeded 500ppm.

^d = Vapor screening was not conducted prior to soil vapor sampling.

^{-- =} not measured

Table 5-2. Soil Vapor Sampling Screening Measurements

Evaluation of Subslab Hydrogen Sulfide and Methane Concentrations Former Hampshire Chemical Corp. Facility, Waterloo, New York

				Differential -	Screening Measurements								
Location	Building Number	Date	Time	Pressure Across Slab (in. WC)	PID (ppm)	Hydrogen Sulfide (ppm)	Methane (% vol)	Carbon Monoxide (ppm)	Oxygen (%vol)	Sulfur Dioxide (ppm)			
SV-01	14 Base.	5/8/2017	10:34	0.000	0.8	0.0	0.0	0.0	20.4	0.1			
SV-02	Tank Storage	5/8/2017	13:17	0.000	0.5	0.0	0.0	0.0	20.6	0.0			
SV-03	11 Basement	5/8/2017	11:23	0.010	1.1	0.0	0.0	0.0	20.1	0.0			
SV-04	11-A	5/8/2017	9:57		1.0	0.0	0.0	0.0	19.9	0.0			
SV-05 ^a	4			2.100									
SV-06	4	5/9/2017	15:00	0.020	2.4	1.0	33.9	0.0	2.2				
SV-07	4	5/9/2017	9:42	0.004	0.8	0.0	0.0	0.0	20.3	0.0			
SV-08	4-A	5/9/2017	10:08	0.000	1.5	0.0	0.0	4.0	19.7	0.0			
SV-09	13	5/8/2017	14:50	0.000	0.5	0.0	0.0	0.0	19.7	0.0			
SV-10	13-A	5/8/2017	13:54	0.005	0.5	0.0	0.0	0.0	20.3	0.0			
SV-11	12	5/8/2017	15:30	0.002	1.0	0.0	0.0	0.0	20.2	0.0			
SV-12 ^a	4			0.790		0.0	>5	0.0	20.0	0.2			
SV-13	3	5/8/2017	16:45	0.000	0.0	0.0	0.0	0.0	16.9	0.0			
SV-14	3	5/8/2017	16:09	0.003	0.3	0.0	0.0	0.0	20.7	0.0			
SV-15	4	5/9/2017	11:14		247.0	>500	>5	b	b	b			

Notes:

Positive pressures indicate higher pressure below the slab. Negative pressures indicate lower pressure below the slab.

PID = photoionization detector

ppm = parts per million

[&]quot;--" = not sampled/not measured. See footnotes for explanations.

[&]quot;>" = measurements were in excess of 500ppm hydrogen sulfide or 5% methane by volume.

 $^{^{\}rm a}$ = Samples were not collected at SV-05 and SV-12 due to the high groundwater conditions.

^b = Screening at SV-15 was terminated when hydrogen sulfide in excess of 500ppm was encountered.

in. WC = inches of water column.

Table 5-3. Soil Vapor Sampling Summary *Evaluation of Subslab Hydrogen Sulfide and Methane Concentrations Former Hampshire Chemical Corp. Facility, Waterloo, New York*

					Sample Times						
Location	Building Number	Sample ID	Sample Date	Purge Start Time	Purge End Time	Purge Rate (mL/min)	Sample Start Time	Sample End Time			
SV-01	14 Basement	WAT-SV01-050817	5/8/2017	10:34	10:39	200	10:47	11:10			
SV-02	Tank Storage	WAT-SV02-050817	5/8/2017	13:17	13:20	200	13:21	13:41			
SV-03	11 Basement	WAT-SV03-050817	5/8/2017	11:23	11:28	200	11:29	11:48			
SV-04	11-A	WAT-SV04-050817	5/8/2017	9:57	10:02	200	10:05	10:18			
SV-05 ^a	4										
SV-06	4	WAT-SV06-050917	5/9/2017	15:00	15:15	100	15:23	15:46			
SV-06	4	Dup-SV-050917	5/9/2017	15:00	15:15	100	15:23	15:46			
SV-07	4	WAT-SV07-050917	5/9/2017	9:42	9:47	200	9:50	10:02			
SV-08	4-A	WAT-SV08-050917	5/9/2017	10:08	10:11	200	10:12	10:49			
SV-09	13	WAT-SV09-050817	5/8/2017	14:50	14:56	200	14:59	15:20			
SV-10	13-A	WAT-SV10-050817	5/8/2017	13:54	14:04	200	14:06	14:27			
SV-11	12	WAT-SV11-050817	5/8/2017	15:30	15:36	200	15:37	15:57			
SV-12 ^a	4										
SV-13	3	WAT-SV13-050817	5/8/2017	16:45	16:50	200	17:08	17:28			
SV-14	3	WAT-SV14-050817	5/8/2017	16:09	16:15	200	16:21	16:41			
SV-15	4	WAT-SV15-050917	5/9/2017	11:14	11:20	200	11:33	11:51			

Notes:

[&]quot;--" = not sampled/not measured. See footnotes for explanations.

 $^{^{\}rm a}$ = Samples were not collected at SV-05 and SV-12 due to the high groundwater conditions. mL/min = milliliters per minute

			Location	SV-01	SV-02	SV-03	SV-04	SV-06	SV-06	SV-07	SV-08	SV-09	SV-10	SV-11	SV-13	SV-14	SV-15
			Sample ID \	WAT-SV01-050817	WAT-SV02-05081	7 WAT-SV03-050817	WAT-SV04-050817	WAT-SV06-050917	DUP-SV-050917	WAT-SV07-050917	WAT-SV08-050917	WAT-SV09-050817	WAT-SV10-050817	7 WAT-SV11-050817	WAT-SV13-050817	WAT-SV14-050817	WAT-SV15-050917
			Sample Date	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/09/2017 00:00	#######################################	05/09/2017 00:00	05/09/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/09/2017 00:00
Analyte	CAS#	Screening Level	Source														
Fixed Gases by EPA Method 3C (%vol																	
Carbon Manavida	124-38-9 630-08-0			0.0260 J 0.880 U	0.289 J 0.880 U	0.102 J 0.880 U	0.410 J 0.880 U	0.0520 J 0.880 U	0.0440 J 0.880 U	0.266 J 0.880 U	0.0270 J 0.880 U	0.615 J 0.880 ∪	0.328 J 0.880 U	0.224 J 0.880 U	2.08 0.880 U	0.158 J 0.880 U	32.1 0.880 U
Carbon Monoxide Methane	74-82-8	4	LEL	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U	0.880 U
Nitrogen	7727-37-9			74.2	76.1	73.6	74.9	60.0	64.0	78.9	79.1	71.8	74.9	77.1	77.8	75.1	18.4
Oxygen	7782-44-7			20.3	20.6	20.1	20.2	2.87	2.76	21.0	20.4	18.8	20.2	20.6	17.4	20.5	1.94
Low Level Sulfurs by TO-15 (ug/m3)	_						-	-	-		-		-				
1-Propanethiol	107-03-9			16 U	16 U	16 U	16 U	160 U	160 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	12,000
Carbon Disulfide	75-15-0	103,613	ACGIH TLV	16 U	8.7 J	16 U	16 U	160 U	160 U	16 U	28	4.1 J	16 U	16 U	16 U	16 U	9,300
Carbonyl Sulfide	463-58-1	409,000	ACGIH TLV	12 U	12 U	12 U	12 U	120 U	120 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	120 U
Dimethyl Sulfide	624-92-0			19 U	19 U	19 U	19 U	190 U	190 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	1,100 J
Ethyl Mercaptan Hydrogen Sulfide	75-08-1 7783-06-4	42,263 46,353	ACGIH TLV ACGIH TLV	13 U 110 J	13 U 620 J	13 U 1,100 J	13 U 3,700	130 U 2,100 J	130 U 5,500 J	13 U 12 J	13 U 3,300	13 U 7.0 U	13 U 7.0 U	13 U 40 J	13 U 28 J	13 U 25 J	18,000 150,000,000
Isopropyl Mercaptan	75-33-2	40,333	ACGIH ILV	16 U	16 U	16 U	4.8 J	160 U	160 U	16 U	3,300 11 J	7.0 U	7.0 U	16 U	16 U	16 U	230,000
Methyl Mercaptan	74-93-1	32,720	ACGIH TLV	9.8 U	9.8 U	9.8 U	3.3 J	98 U	98 U	9.8 U	3.0 J	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	110,000
Volatile Organic Compounds by TO-1		32,720	7.00	3.0 0	3.0 0	3.0 0	5.05	30 0	30 0	3.5 0	0.00	3.0 0	3.0 0	3.0 0	3.0 0	3.0 0	220,000
1,1,1-Trichloroethane	71-55-6	730,000	VISL	27 U	27 U	27 U	27 U	270 U	270 U	27 U	27 U	27 U	27 U	27 U	27 U	27 U	270 U
1,1,2,2-Tetrachloroethane	79-34-5	70	VISL	34 U	34 U	34 U	34 U	340 U	340 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U	340 U
1,1,2-Trichloroethane	79-00-5	29	VISL	27 U	27 U	27 U	27 U	270 U	270 U	27 U	27 U	27 U	27 U	27 U	27 U	27 U	270 U
1,1-Dichloroethane	75-34-3	2,555	VISL	20 U	20 U	20 U	20 U	200 U	200 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	160 J
1,1-Dichloroethene	75-35-4	29,200	VISL	20 U	20 U	20 U	25	200 U	200 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	200 U
1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene	120-82-1 95-63-6	292 1,022	VISL	37 U 25 U	37 U 25 U	37 U 25 U	37 U 25 U	370 U 250 U	370 U 250 U	37 U 25 U	37 U 25 U	37 U 25 U	37 U 25 U	37 U 25 U	37 U 25 U	37 U 25 U	370 U 250 U
1,2-Dibromoethane	106-93-4	7	VISL	38 U	38 U	38 U	38 U	380 U	380 U	38 U	38 U	38 U	38 U	38 U	38 U	38 U	380 U
1,2-Dishorhoethane	95-50-1	29,200	VISL	30 U	30 U	30 U	30 U	300 U	300 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	300 U
1,2-Dichloroethane	107-06-2	157	VISL	20 U	20 U	20 U	73	200 U	200 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	200 U
1,2-Dichloropropane	78-87-5	409	VISL	23 U	23 U	23 U	61	230 U	230 U	23 U	23 U	23 U	23 U	23 U	23 U	23 U	230 U
1,3,5-Trimethylbenzene	108-67-8			25 U	25 U	25 U	25 U	250 U	250 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	250 U
1,3-Butadiene	106-99-0	136	VISL	11 U	11 U	11 U	11 U	110 U	110 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	110 U
1,3-Dichlorobenzene	541-73-1			30 U	30 U	30 U	30 U	300 U	300 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	300 U
1,4-Dichlorobenzene 1,4-Dioxane	106-46-7 123-91-1	372 818	VISL	30 U 36 U	30 U 36 U	30 U 36 U	30 U 36 U	300 U 360 U	300 U 360 U	30 U 36 U	30 U 36 U	30 U 36 U	30 U 36 U	30 U 36 U	30 U 36 U	30 U 36 U	300 U 360 U
2,2,4-Trimethylpentane	540-84-1		VI3L	23 U	23 U	23 U	23 U	230 U	230 U	23 U	23 U	23 U	23 U	23 U	23 U	23 U	230 U
4-Ethyltoluene	622-96-8			25 U	25 U	25 U	25 U	250 U	250 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	250 U
Acetone	67-64-1	4,526,000	VISL	15 J	12 J	13 J	20 J	190 J	160 J	140 J	210	25	7.7 J	8.9 J	6.4 J	12 J	15,000
Allyl Chloride	107-05-1	146	VISL	16 U	16 U	16 U	16 U	160 U	160 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	160 U
Benzene	71-43-2	524	VISL	16 U	16 U	16 U	16 U	160 U	160 U	16 U	19	14 J	16 U	16 U	16 U	16 U	170
Benzyl Chloride	100-44-7	83	VISL	29 U	29 U	29 U	29 U	290 U	290 U	29 U	29 U	29 U	29 U	29 U	29 U	29 U	290 U
Bromodichloromethane	75-27-4	110	VISL	33 U	33 U	33 U	33 U	330 U	330 U	33 U	33 U	33 U	33 U	33 U	33 U	33 U	330 U
Bromoform Bromomethane	75-25-2 74-83-9	3,716 730	VISL	52 U 19 U	52 U 19 U	52 U 19 U	52 U 19 U	520 U 190 U	520 U 190 U	52 U 19 U	52 U 19 U	52 U 19 U	52 U 19 U	52 U 19 U	52 U 19 U	52 U 19 U	520 U 190 U
Carbon Tetrachloride	56-23-5	681	VISL	31 U	31 U	31 U	31 U	310 U	310 U	31 U	31 U	31 U	31 U	31 U	31 U	31 U	310 U
Chlorobenzene	108-90-7	7,300	VISL	23 U	23 U	23 U	23 U	230 U	230 U	23 U	23 U	23 U	23 U	23 U	23 U	23 U	130 J
Chloroethane	75-00-3	1,460,000	VISL	13 U	13 U	13 U	13 U	130 U	130 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	130 U
Chloroform	67-66-3	178	VISL	30	250	72	7300	240 U	240 U	330	94	24 U	24 U	24 U	78	300	7,000
Chloromethane	74-87-3	13,140	VISL	10 U	10 U	10 U	10 U	100 U	100 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	100 U
cis-1,2-Dichloroethene	156-59-2			20 U	20 U	20 U	20 U	200 U	200 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	570
cis-1,3-Dichloropropene	10061-01-5	1,022	542-75-6	23 U	23 U	23 U	23 U	230 U	230 U	23 U	23 U	23 U	23 U	23 U	23 U	23 U	230 U
Cyclohexane Dibromochloromethane	110-82-7 124-48-1	876,000	VISL 	17 U 43 U	17 U 43 U	17 U 43 U	19 43 U	170 U 430 U	170 U 430 U	17 U 43 U	27 43 U	17 U 43 U	17 U 43 U	17 U 43 U	17 U 43 U	17 U 43 U	160 J 430 U
Ethyl Acetate	141-78-6	10,220	VISL	36 U	36 U	36 U	36 U	360 U	360 U	36 U	36 U	36 U	36 U	36 U	36 U	36 U	360 U
Ethylbenzene	100-41-4	1,635	VISL	22 U	22 U	22 U	22 U	220 U	220 U	22 U	22 U	22 U	22 U	22 U	22 U	22 U	3,500
Freon 11	75-69-4			28 U	28 U	28 U	28 U	280 U	280 U	28 U	28 U	28 U	28 U	28 U	28 U	28 U	280 U
Freon 113	76-13-1	4,380,000	VISL	38 U	38 U	38 U	38 U	380 U	380 U	38 U	38 U	38 U	38 U	38 U	38 U	38 U	380 U
Freon 114	76-14-2			35 U	35 U	35 U	35 U	350 U	350 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	350 U
Freon 12	75-71-8	14,600	VISL	25 U	25 U	25 U	25 U	250 U	250 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	250 U
Heptane	142-82-5			20 U	20 U	20 U	20 U	200 U	200 U	20 U	40	20 U	20 U	20 U	20 U	20 U	1,200
Hexachloro-1,3-butadiene Hexane	87-68-3 110-54-3	186 102,200	VISL	53 U 18 U	53 U 18 U	53 U 18 U	53 U 18 U	530 U 180 U	530 U 180 U	53 U 18 U	53 U 42	53 U 18 U	53 U 18 U	53 U 18 U	53 U 18 U	53 U 18 U	530 U 3,400
Isopropyl Alcohol	67-63-0	29,200	VISL	18 U	12 U	6.4 J	12 U	180 U	180 U	18 U	12 U	18 U	6.1 J	18 U	12 U	12 U	120 U
Methyl Butyl Ketone	591-78-6	4,380	VISL	41 U	41 U	41 U	41 U	410 U	410 U	41 U	41 U	41 U	41 U	41 U	41 U	41 U	410 U
Methyl Ethyl Ketone	78-93-3	730,000	VISL	29 U	29 U	29 U	29 U	290 U	290 U	29 U	27 J	29 U	29 U	29 U	29 U	29 U	290 U
Methyl Isobutyl Ketone	108-10-1	438,000	VISL	41 U	41 U	5.8 J	7.9 J	410 U	410 U	390 J	230	41 U	41 U	10 J	41 U	13 J	130,000
Methyl Tert-butyl Ether	1634-04-4	15,723	VISL	18 U	18 U	18 U	18 U	180 U	180 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	180 U
Methylene Chloride	75-09-2	87,600	VISL	19	17 U	17 U	16 J	170 U	170 U	24	17 U	17 U	17 U	17 U	17 U	17 U	5,700
Propylene			VIICI	8.6 U	8.6 U	8.6 U	7.5 J	11,000	10,000	8.6 U	89	8.6 U	8.6 U	8.6 U	8.6 U	8.6 U	86 U
<u>.</u> .	115-07-1	438,000	VISL								A					- 2 - 1	
Styrene	115-07-1 100-42-5	146,000	VISL	21 U	21 U	21 U	21 U	210 U	210 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	210 U
Styrene Tetrachloroethylene Tetrahydrofuran	115-07-1								210 U 340 U 150 U	21 U 34 U 15 U	21 U 34 U 15 U	21 U 34 U 15 U	21 U 34 U 15 U	21 U 34 U 15 U	21 U 34 U 15 U	21 U 34 U 15 U	210 U 340 U 150 U

Table 5-4. Analytical Results for Subslab Soil Gas Samples, May 2017

Evaluation of Subslab Hydrogen Sulfide and Methane Concentrations Former Hampshire Chemical Corp. Facility, Waterloo, New York

			Location	SV-01	SV-02	SV-03	SV-04	SV-06	SV-06	SV-07	SV-08	SV-09	SV-10	SV-11	SV-13	SV-14	SV-15
			Sample ID	WAT-SV01-050817	WAT-SV02-050817	WAT-SV03-050817	WAT-SV04-050817	WAT-SV06-050917	DUP-SV-050917	WAT-SV07-050917	WAT-SV08-050917	WAT-SV09-050817	WAT-SV10-050817	WAT-SV11-050817	WAT-SV13-050817	WAT-SV14-050817	WAT-SV15-050917
			Sample Date	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/09/2017 00:00	#######################################	05/09/2017 00:00	05/09/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/08/2017 00:00	05/09/2017 00:00
Analyte	CAS#	Screening Level	Source														
Toluene	108-88-3	730,000	VISL	19 U	19 U	19 U	19 U	190 U	190 U	19 U	43	11 J	19 U	19 U	19 U	19 U	7,800
trans-1,2-Dichloroethene	156-60-5			20 U	20 U	20 U	20 U	200 U	200 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	200 U
trans-1,3-Dichloropropene	10061-02-6	1,022	542-75-6	23 U	23 U	23 U	23 U	230 U	230 U	23 U	23 U	23 U	23 U	23 U	23 U	23 U	230 U
Trichloroethene	79-01-6	292	VISL	27 U	27 U	27 U	130	270 U	270 U	86	27 U	27 U	27 U	420	27 U	27 U	260 J
Vinyl Acetate	108-05-4	29,200	VISL	18 U	18 U	18 U	18 U	180 U	180 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	180 U
Vinyl Bromide	593-60-2	128	VISL	22 U	22 U	22 U	22 U	220 U	220 U	22 U	22 U	22 U	22 U	22 U	22 U	22 U	220 U
Vinyl Chloride	75-01-4	929	VISL	13 U	13 U	13 U	13 U	130 U	130 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	130 U
Xylene, m,p-	179601-23-1	14,600	1330-20-7	43 U	43 U	43 U	43 U	430 U	430 U	43 U	30 J	43 U	47,000				
Xylene, o-	95-47-6	14,600	VISL	22 U	22 U	22 U	22 U	220 U	220 U	22 U	22 U	22 U	22 U	22 U	22 U	22 U	14,000
VOC TICs by TO-15 (ppbV)																	
1,1'-Oxybispentane	693-65-2																4,600 JN
1-Chloro-1,1-difluoroethane	75-68-3	1,776,156	VISL					72 JN	73 JN								
2,3-Dimethylbutane	79-29-8										19 JN						
2-Methyl-1-butene	563-46-2							120 JN									
2-Methylbutane	78-78-4							140 JN	140 JN		24 JN						
2-Methylpentane	107-83-5							440 JN	440 JN								
2-Methylpropene	115-11-7							100 JN	100 JN		15 JN						
2-Propanethiol	75-33-2																16,000 JN
3,5-Dimethylundecane	17312-81-1					5.2 JN											
3-Methoxy-1-butanol	2517-43-3																5,400 JN
3-Methylpentane	96-14-0										10 JN						
3-Penten-2-one	625-33-2																13,000 JN
4-Methyl-1-pentene	691-37-2							240 JN	240 JN								
Butane	106-97-8							180 JN	170 JN		28 JN						
Butanoic acid, 3-methylbutyl ester	93-18-17																3,500 JN
cis-1,2-Dimethylcyclopropane	106-27-4																4,300 JN
Dibutyl acetal	871-22-7																8,300 JN
Ethyl alcohol	64-17-5												19 JN				
Hexamethylcyclotrisiloxane	541-05-9			12 JN	5.9 JN	73 JN	15 JN			28 JN			18 JN	6.6 JN			
Isobutane	75-28-5							110 JN	110 JN		21 JN						
Methylcyclohexane	108-87-2										21 JN						
Methylcyclopentane	96-37-7										19 JN						
n-Heptadecane	629-78-7												5.8 JN				
n-Pentane	109-66-0	49,491	VISL								33 JN						
octahydro-2,2'-Bifuran	1592-33-2																3,800 JN
Octamethylcyclotetrasiloxane	556-67-2			10 JN		140 JN	22 JN			60 JN			38 JN	34 JN			
trans-1,2-Dimethylcyclopropane	20520-64-3								120 JN								
Trimethylsilanol	1066-40-6									6.1 JN							

Notes

ACGIH TLV = American Conference of Governmental Industrial Hygienists
Threshold Limit Value

LEL = Screening level based on the LEL (lower explosive limit) of 5% methane by volume.

VISL = VOC criteria for a commercial exposure scenario were calculated using the Vapor Intrusion Screening Level (VISL) Calculator Version 3.5.1 (EPA, 2016) (May 2016 Regional Screening Levels) for subslab concentrations with a 10-5 target cancer risk, a hazard quotient of 1, and the default 0.03 attenuation factor.

Bold indicates the analyte was detected

Shading indicates the result exceeded screening criteria

= Not available

J = The analyte was positively identified; the associated numerical value is the approximate concentration.

JN = Non-routine analyte. Quantitation estimated.

ppbV = parts per billion by volume

TIC = tentatively identified compound

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

ug/m³ = micrograms per cubic meter

VOC = volatile organic compound

% = percent

Table 7-1. Results for Subslab Soil Vapor Samples Exceeding Screening Criteria in May 2017 Compared to Selected Previous Results

Evaluation of Subslab Hydrogen Sulfide and Methane Concentrations

Former Hampshire Chemical Corp. Facility, Waterloo, New York

Analyte	Year ^a	Maximum Reported Concentration(s) (μg/m³) ^b	Sampling Location	Building
	2017	7,300	SV-04	Building 11A
	2017	7,000	SV-15	Building 4
Chloroform —	2016	54,000	WAT-SG-7R	Building 4
Chioroform —	2012	18,000	WAT-SG-7R	Building 4
_	2012	380	WAT-SG-9	Tank Storage Area
	2008	24,000	WAT-SG-7	Building 4
[thulbonzono	2017	3,500	SV-15	Building 4
Ethylbenzene —	2012	630	WAT-SG-7R	Building 4
	2017	420	SV-11	Building 12
	2017	260 J	SV-15	Building 4
Trichlaraethulana	2016	60	WAT-SG-7R	Building 4
Trichloroethylene —	2012	65	WAT-SG-9	Tank Storage Are
_	2008	54	WAT-SG-7	Building 4
_	2008	520	WAT-SG-9	Tank Storage Are
	2017	47,000	SV-15	Building 4
Xylene, m,p-	2012	2,600	WAT-SG-7R	Building 4
_	2008	4,600	WAT-SG-7	Building 4

Notes:

^a 2008, 2012, and 2016 soil vapor sampling results are presented in CH2M (2010), CH2M (2013b), and CH2M (2016), respectively.

^b Reported concentrations of volatile organic compounds analyzed by Method TO-15.

 $[\]mu g/m^3 = milligrams per cubic meter$

Attachment 1

Centek Laboratories, LLC

Centek Laboratories TO-15 Package Review CheckList

Courter Characterists	Client:	CH2M-St Louis	Project:	Former Hampshire SDG:	C1705036
				YES NO	<u>NA</u>
Analytical Results		Present and Complete			
TIC's Present		Present and Complete		<u> </u>	_
		Holdin Times Met		<u> </u>	
Comments:					
Chain of Custody		Present and Complete			
Surrogate		Present and Complete		<u> </u>	
		Recoveries within Limits		_, <	
		Sample(s) reanalyzed		<u> </u>	
Internal Standards		Present and Complete			
Recovery		Recoveries within Limits			- mrawims
,,,,		Sample(s) reanalyzed			***************************************
	_		10	1 1 0 11	Γν) / —
comments: Sample	_	refreed for Inte	inal The	adrid Recover the	There led.
2 analys	<u> </u>	ssed,			
				/	
Lab Control Sample		Present and Complete			
(LCS)		Recoveries within Limits		- manner manner	<u> </u>
Lab Control Sample De	upe	Present and Complete		✓	
(LCSD)	•	Recoveries within Limits			
					_
MS/MSD		Present and Complete		<u></u>	/ /
		Recoveries within Limits			△ ✓
Comments:					
Sample Raw Data		Present and Complete		/	
		Spectra present		<u> </u>	
Camananta					
Comments:					

Centek Laboratories TO-15 Package Review CheckList

Contak Caboristories	Client:	CH2M-St Louis	Project:	Former Hampshire SDG:	C1705036
_					
				VEC. NO	
Standards Data				YES NO	NA
Intial Calibration		Present and Complete		Ĵ	
		Calibration meets criteria		· –	
Continuing Calibration		Present and Complete		\mathcal{Z}_{ℓ}	
		Calibration meets criteria			711 T WATER TO THE STATE OF THE
Standards Raw Data		Present and Complete			MT-TTO-MAN-A-
Comments:					
	, , , , , , , , , , , , , , , , , , ,				
Raw Quality Control D	ata			,	
Tune Criteria Report	an hamana ha	Present and Complete			
Method Blank Data		MB Results <pql< td=""><td></td><td></td><td>***************************************</td></pql<>			***************************************
		Associated results flagged "B"			
LCS Sample Data		Present and Complete		\overline{J}	"
LCSD Sample Data		Present and Complete			### ## - 1 A
MS/MSD Sample Data		Present and Complete			$\overline{\checkmark}$
Comments:					
			MINISTER 1.2-11-11-11-11-11-11-11-11-11-11-11-11-11		
Logbooks					
Injection Log				\checkmark	
Standards Log					_
Can Cleaning Log					
Calculation Sheet				\/	
IDL's				` , —	
Canister Order Form					
Sample Tracking Form					************
Additional Comments:					
Section Supervisor:	with	1 Doll	Date:	6/22/17	
QC Supervisor:			Date:		

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ASP CAT B DELIVERABLE PACKAGE Table of Contents

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Analytical Report

Order No.: C1705036

Monday, May 22, 2017

Shane Lowe CH2M - St Louis 300 Hunter Ave, Suite 305 St. Louis, MO 63124

TEL: (314) 335-3024

FAX

RE: Former Hampshire

Dear Shane Lowe:

Centek Laboratories, LLC received 14 sample(s) on 5/12/2017 for the analyses presented in the following report.

I certify that this data package is in compliance with the terms and conditions of the Contract, both technically and for completeness. Release of the data contained in this hardcopy data package and/or in the computer readable data submitted has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Centek Laboratories performs all analyses according to EPA, NIOSH or OSHA-approved analytical methods. Centek Laboratories is dedicated to providing quality analyses and exceptional customer service. All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objective except as indicated in the case narrative. All samples were received and analyzed within the EPA recommended holding times. Test results are not Method Blank (MB) corrected for contamination.

We do our best to make our reporting format clear and understandable and hope you are thoroughly satisfied with our services. Please contact your client service representative at (315) 431-9730 or myself, if you would like any additional information regarding this report.

Thank you for using Centek Laboratories. This report can not be reproduced except in its entirety, without prior written authorization.

Sincerely,

William Dobbin

Lead Technical Director

Self Doll.

Disclaimer: The test results and procedures utilized, and laboratory interpretations of the data obtained by Centek as contained in this report are believed by Centek to be accurate and reliable

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Centek Laboratories, LLC

for sample(s) tested. In accepting this report, the customer agrees that the full extent of any and all liability for actual and consequential damages of Centek for the services performed shall be equal to the fee charged to the customer for the services as liquidated damages. ELAP does not offer certification for the following parameters by this method at present time, they are: 4-ethyltoluene, ethyl acetate, propylene, tetrahydrofuran, 4-PCH, sulfur derived and silcon series compounds.

Centek Laboratories, LLC Terms and Conditions

Sample Submission

All samples sent to Centek Laboratories should be accompanied by our Request for Analysis Form or Chain of Custody Form. A Chain of Custody will be provided with each order shipped for all sampling events, or if needed, one is available at our website www.CentekLabs.com. Samples received after 3:00pm are considered to be a part of the next day's business.

Sample Media

Samples can be collected in an canister or a Tedlar bag. Depending on your analytical needs, Centek Laboratories may receive a bulk, liquid, soil or other matrix sample for headspace analysis.

Blanks

Every sample is run with a surrogate or tracer compound at a pre-established concentration. The surrogate compound run with each sample is used as a standard to measure the performance of each run of the instrument. If required, a Minican can be provided containing nitrogen to be run as a trip blank with your samples.

Sampling Equipment

Centek Laboratories will be happy to provide the canisters to carry-out your sampling event at no charge. The necessary accessories, such as regulators, tubing or personal sampling belts, are also provided to meet your sampling needs. The customer is responsible for all shipping charges to the client's destination and return shipping to the laboratory. Client assumes all responsibility for lost, stolen and any damages of equipment.

Turn Around time (TAT)

Centek Laboratories will provide results to its clients in one business-week by 6:00pm EST after receipt of samples. For example, if samples are received on a Monday they are due on the following Monday by 6:00pm EST. Results are faxed or emailed to the requested location indicated on the Chain of Custody. Non-routine analysis may require more than the one business-week turnaround time. Please confirm non-routine sample turnaround times.

Reporting

Results are emailed or faxed at no additional charge. A hard copy of the result report is mailed within 24 hours of the faxing or emailing of your results. Cat "B" like packages are within 3-4 weeks from time of analysis. Standard Electronic Disk Deliverables (EDD) is also available at no additional charge.

Payment Terms

Payment for all purchases shall be due within 30 days from date of invoice. The client agrees to pay a finance charge of 1.5% per month on the overdue balance and cost of collection, including attorney fees, if collection proceedings are necessary. You must have a completed credit

application on file to extend credit. Purchase orders or checks information must be submitted for us to release results

Rush Turnaround Samples

Expedited turn around times is available. Please confirm rush turnaround times with Client Services before submitting samples.

Applicable Surcharges for Rush Turnaround Samples: Same day TAT = 200%

Next business day TAT by Noon = 150%

Next business day TAT by 6:00pm = 100%

Second business day TAT by 6:00pm = 75%

Third business day TAT by 6:00pm = 50%

Fourth business day TAT by 6:00pm = 35%

Fifth business day = Standard

Statement of Confidentiality

Centek Laboratories, LLC is aware of the importance of the confidentiality of results to many of our clients. Your name and data will be held in the strictest of confidence. We will not accept business that may constitute a conflict of interest. We commonly sign Confidential Nondisclosure Agreements with clients prior to beginning work. All research, results and reports will be kept strictly confidential. Secrecy Agreements and Disclosure Statements will be signed for the client if so specified. Results will be provided only to the addressee specified on the Chain of Custody Form submitted with the samples unless law requires release. Written permission is required from the addressee to release results to any other party.

Limitation on Liability

Centek Laboratories, LLC warrants the test results to be accurate to the methodology and sample type for each sample submitted to Centek Laboratories, LLC. In no event shall Centek Laboratories, LLC be liable for direct, indirect, special, punitive, incidental, exemplary or consequential damages, or any damages whatsoever, even if Centek Laboratories, LLC has been previously advised of the possibility of such damages whether in an action under contract, negligence, or any other theory, arising out of or in connection with the use, inability to use or performance of the information, services, products and materials available from the laboratory or this site. These limitations shall apply notwithstanding any failure of essential purpose of any limited remedy. Because some jurisdictions do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of liability for consequential or incidental damages, the above limitations may not apply to you. This is a comprehensive limitation of liability that applies to all damages of any kind, including (without limitation) compensatory, direct, indirect or consequential damages, loss of data, income or profit and or loss of or damage to property and claims of third parties.



Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Project:

Former Hampshire

Lab Order:

C1705036

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Centek Laboratories, LLC SOP TS-80

Compendium of Methods for the Determination of Toxic Organic Compounds, Compendium Method TO-15, January 1999

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objective except as indicated in the corrective action report(s). All samples were received and analyzed within the EPA recommended holding times. Test results are not Method Blank (MB) corrected for contamination.

NYSDEC ASP samples:

Canisters should be evacuated to a reading of less than or equal to 50 millitorr prior to shipment to sampling personnel. The vacuum in the canister will be field checked prior to sampling, and must read 28" of Hg (±2", vacuum, absolute) before a sample can be collected. After the sample has been collected, the pressure of the canister will be read and recorded again, and must be 5" of Hg (±1", vacuum, absolute) for the sample to be valid. Once received at the laboratory, the canister vacuum should be confirmed to be 5" of Hg,±1". Please record and report the pressure/vacuum of received canisters on the sample receipt paperwork. A pressure/vacuum reading should also be taken just prior to the withdrawal of sample from the canister, and recorded on the sample preparation log sheet. All regulators are calibrated to meet these requirements before they leave the laboratory. However, due to environmental conditions and use of the equipment Centek can not guarantee that this criteria can always be achieved.

See Corrective Action: [3521] IS did not meet criteria.

See Corrective Action: [3534] Surrogates did not meet criteria.

Corrective Action Report

Date Initiated:	02-Jun-17	Corrective Action Report ID:	3521
Initiated By:	William Dobbin	Department:	MSVOA
		Corrective Action Description	
CAR Summary:	IS did not mee	t criteria.	
Description of Nonconformand Root/Cause(s):	IS was low and 010A,-011A,-0	did not meet criteria for samples C1705036-006A,-007A,-0 13A and -014A.	008A,-009A,-
Description of Corrective Action w/Proposed C.A.	on difficult to see a	reanalyzed with criteria being met. Due to matrix being in a any signs of problems.	canister it is
Performed By:	William Dobbin	Completion Date: 02-Jun-17	
		Client Notification	
Client Notification	on Required: No	Notified By:	
	19 19 19 19 19 19 19 19 19 19 19 19 19 1	Quality Assurance Review	
Nonconformanc	e Type: Deficienc		
Further Action required by QA:	Monitor all quali action taken.	ty control for sample matrix interference. At this time no fur	ther corrective
		Approval and Closure	METABORIS BURNING IN 18 11 11 10 10 10 10 10 10 10 10 10 10 10
Technical Direct Deputy Tech.		Close Date:	02-Jun-17
QA Officer Appro	nval:	William Dobbin	DD 4 - 49
WY Ourder White	/ v a) .	QA Date: (02-Jun-17
and the date of BV . 1.11			

Last Updated BY biff

Updated:

22-Jun-2017 1:28 PM

Reported: 22-Jun-2017 1:28 PM

Corrective Action Report

Date initiated:	20-Jun-17		Correct	tive Action Report ID:	3534
Initiated By:	William Dobbin			Department:	MSVOA
	(Corrective	Action Description	on	
CAR Summary:	Surrogates dic	l not meet cr	iteria.		
Description of Nonconformand Root/Cause(s):		06Ā,~007A,~	008A,-009A, -010A, -01	amples C1705036-001A 11A, -012A 10X,128X,1	
Description of Corrective Action w/Proposed C.A	on being met. Due			alyzed further as a dilut ifficult to see any signs o	
Performed By:	William Dobbir	1	Completi	on Date: 20-Jun-17	
		Clie	ent Notification		
Client Notification	on Required: No	No	tified By:		
Comment:			- ,		
	** **	Quality	Assurance Revie	w	
Nonconformanc	e Type: Deficien	су			
Further Action required by QA;		lity control fo	r sample matrix interfer	rence. At this time no fu	rther corrective
		nggA	oval and Closure		
Technical Direction Deputy Tech.				Close Date:	20-Jun-17
	***************************************	William D	obbin		
QA Officer Appro	oval:	Nick Sc	cala	QA Date:	20-Jun-17
Last Updated BY bi	11	Updated:	22-Jun-2017 10:53 AM	Reported: 2	2-Jun-2017 10:53 A

143 Midler Park Drive Syracuse, NY 13206 315-431-9730 www.Centekt.abs.com www.Centekt.abs.com ck Rush TAT Due: Company: C. H. Z. M. 155% 100% 150% 160%	Project: CH2/1 - WARKLO PO#.	C.£ Detection Limit Report Level
Syracuse, NY 13206 Syracus	Project: CHZr1 - WARRLO PO#.	
Syracuse, NY 13206 Syracuse, NY 13206 Syracuse, NY 13206 Wayor Intrusion & IAQ Wayor Entertains and wayor and the surchest and soon Surcharge & Date: Company: CH2M Cash	PO#:	No vigos
Check Rush 147 Due Company: CH2M Check Rush 147 Due Check Rush 147 Check Rush 147 Check Rush 140 Check Rush 1	Circle# C. C.	
Check Rush TAT Due Company: CH2M - ST. One Sucharge, Date: Report to: ESS, Report to: Solve Sucharge, Date: Report to: 100% Email: SHANE. LOWE CH3M. 100% Email: SHANE. LOWE CH3M. 200% Phone: 314-335-3624 AND PAT Please Notify Lab CASIT SIGNT 11:10 STS HR Equiator Analysis Related CH3M. CSOSIT SIGNT 11:10 STS HR SOLF CH3M. CSOSIT SIGNT 11:12 STR TREST SOLF CH3M. CSOSIT SIGNT 11:15 1 10:14 HD SOLF CH3M. CSOSIT SIGNT 11:15 1 10:14 HD SOLF CH3M. CSOSIT SIGNT SIGNT SOLF CH3M. FIRM Name FIRM Name SIGNT SIGNT STR SOLF CH3M. FIRM Name FIRM Name SIGNT STR SOLF CH3M. CSOSIT SIGNT SOLF CH3M. CSOSIT SOLF CH3M. CSOSIT SOLF CH3M. CSOSIT SIGNT SOLF CH3M. CSOSIT SOL		4 6 4 8 1 Tughis +TCE .25 S Cat "B" Like
Color Surcharge Date Chr. C	Constant of the control of the contr	
150% Report to: 150% 1	CHCM - 51. LOUIS	Check Here If Same:
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Scaling Signature Signature State St		124 700-480-480-480-480-480-480-480-480-480-4
Second S	-335-3024	973-
50817 5/8/17 10:18 646 80 50817 5/8/17 11:10 573 48 -0508/17 5/8/17 17:20 10:17 12:1 50817 5/8/17 17:20 10:17 12:1 50817 5/8/17 15:57 494 58 50817 5/8/17 10:14 600 63 50817 5/8/17 10:14 40:7 50817 5/8/17 10:14 40:7 50818 5/8/	Regulator Analysis Request	Field Vacuum Labs Vacuum** Comments
950817 5/8/17 10:18 (046 80 TO-050817 5/8/17 11:10 573 48 50LFV -050817 5/8/17 11:18 431 65 FKED -050817 5/8/17 11:18 549 54 54 -050817 5/8/17 11:17 549 58 2125 -050817 5/8/17 11:17 10:07 478 306 -050817 5/8/17 10:07 478 4778 -050817 5/8/17 10:07 4788 -050817 5/8/17 10:07 4788 -050817 5/8/17 10:07 4788 -050817 5/8/17 10:07 4788 -050817	Number	Start / Stop RecV/Analysis
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-050817 5/8/17 11:48 431 65 FIRED -050817 5/8/17 13:41 544 144 Report -050817 5/8/17 14:27 545 54 -050817 5/8/17 15:20 10:17 12:15 -050817 5/8/17 10:02 478 306 -050817 5/8/17 10:02 478 306 -050817 5/8/17 10:02 478 306 -050917 5/9/17 10:44 427 74 -050917 5/9/17 10:44 427	SULFURS @ SOOD	1.6.0 1.0
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050817 5/8/17/ 14:27 595 54 56 050817 5/8/17/ 15:57 494 58 212 050817 5/8/17/ 15:57 494 506 050817 5/8/17/ 10:01 478 306 050917 5/9/17/ 10:01 478 306 050917 5/9/17/ 10:01 478 306 050917 5/9/17/ 10:01 403 050917 5/9/17/ 15:46 1019 56 050917 5/9/17/ 16:346 1019 56	Good By Broots	
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050817 5/8/17 15:57 494 58 212 050817 5/8/17 15:57 494 58 050817 5/8/17 10:02 478 300 050917 5/9/17 10:02 478 300 050917 5/9/17 10:04 40.7 050917 5/9/17 15:40 1019 40.3 050917 5/9/17 15:40 1019 50		51-3,5 -1 1-2
050817 5/8/17 15:57 494 58 212 050817 5/8/17 16:41 600 63 050817 5/8/17 10:02 478 306 050917 5/9/17 10:04 427 79 050917 5/9/17 1:51 1019 403 050917 5/9/17 5:46 1018 56 050917 5/9/17 5:46 1019 56		8-1 K-1 514-10
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50917 5/4/17 15.46 1019 40 50917 5/4/17 15.46 1018 5/60 50917 5/4/17 8.00 614	5/6-	1-5.5 - (, -5.
50917 5/9/17 15:46 1018 50917 5/9/17 8:00 614 Print Name Sign	2	~~
50917 5/9117 8:00 614 Print Name TAYLOR SACSBUIL	56	1200 8-1 2- 01-1
Print Name Thy Lope SACSQUEC	-80	2-1 7-07-1
Print Name Thy Lope Stacks		1
Print Name Thy Lore Shespurich		
Print Name TAYLOR SACSQUEG		
THYLOR SALSBURG		
THYLOR STLSBURG	Signature , Date/Time	ime Courier: CIRCLE ONE
1 /1	My le forz	1700
Ivalishdisted by. If the State State Co.	1/a/12	OGCO MEDI ABLISE ON V
Received at Lab by: NIC. F. My N Dertel, NO		_
*** By signing Centek Labs Chain of Custody, you are accepting Centek Labs Terms and Conditions li	tek Labs Terms and Conditions listed on the musers olds	



Sample Receipt Checklist

CHOIN ST. CHO				Onto 7:-	o Doorius		e	49/9047
Client Name CH2M - ST LOUIS				Date and Tim			5/	12/2017
Work Order Numbe C1705036				Received by	ИМ		•	1
Checklist completed by Signature	- 5-17	2 <i>-</i> -	()	Reviewed by	[nitials	<u>> </u>	5/17 Date	17
Matrix:	Carrier name:	<u>R an</u>	d L Carriers					
Shipping container/cooler in good condition?		Yes	2	No 🗀	Not Presen			
Custody seats intact on shippping container/coo	oler?	Yes		No 🗀	Not Presen	Y		
Custody seals intact on sample bottles?		Yes	\Box	No 🗀	Not Presen	V		
Chain of custody present?		Yes	\mathbf{Z}	No 🗔				
Chain of custody signed when relinquished and	received?	Yes	\square	No 🗀				
Chain of custody agrees with sample labels?		Yes		No 🗀				
Samples in proper container/bottle?		Yes	$\mathbf{\nabla}$	No 🗀				
Sample containers intact?		Yes	\mathbf{Z}	No 🗀				
Sufficient sample volume for indicated test?		Yes	\mathbf{S}	No 🗀				
All samples received within holding time?		Yes	$\mathbf{\Xi}$	No 🗀				
Container/Temp Blank temperature in complian	ce?	Yes	\mathbf{Z}	No 🗔				
Water - VOA vials have zero headspace?	No VOA vials subm	nitted	Ø	Yes 🗌	No 🗀			
Water - pH acceptable upon receipt?		Yes		No 🗹				
	Adjusted?		Che	cked by		••••		
Any No and/or NA (not applicable) response mu	ust be detailed in the c	omme	nts section 1	be				
Client contacted	Date contacted:			Pers	on contacted			
Contacted by:	Regarding:						our hand and a " h. " of a substantial of Martines I a Million	· · · · · · · · · · · · · · · · · · ·
Comments:								
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Corrective Action								
COFFECUVE ACTION	·					nd dedde men e en Sakri	a deliver to the restriction and restriction to the second second to the second second to the second	of the September of September 19 and September 19
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Date: 22-Jun-17

CLIENT: Project: Lab Order:	CH2M - St Louis Former Hampshire C1705036		Work Order	Sample Summary
Lab Sample ID C1705036-001A	Client Sample ID WAT-SV04-050817	Tag Number 646.80	Collection Date 5/8/2017	Date Received 5/12/2017
C1705036-002A	WAT-SV01-050817	573.48	5/8/2017	5/12/2017
C1705036-003A	WAT-SV03-050817	431.65	5/8/2017	5/12/2017
C1705036-004A	WAT-SV02-050817	549.144	5/8/2017	5/12/2017
C1705036-005A	WAT-SV10-050817	595.54	5/8/2017	5/12/2017
C1705036-006A	WAT-SV09-050817	1017.121	5/8/2017	5/12/2017
C1705036-007A	WAT-SVII-050817	494.58	5/8/2017	5/12/2017

CLIENT: Project: Lab Order:	CH2M - St Louis Former Hampshire C1705036		Work Order Sa	imple Summary
Lab Sample ID C1705036-008A	Client Sample ID WAT-SV14-050817	Tag Number 600.63	Collection Date 5/8/2017	Date Received 5/12/2017
C1705036-009A	WAT-SV13-050817	474.309	5/8/2017	5/12/2017
C1705036-010A	WAT-SV07-050917	478.306	5/9/2017	5/12/2017
C1705036-011A	WAT-SV08-050917	427.79	5/9/2017	5/12/2017
C1705036-012A	WAT-SV15-050917	1019.403	5/9/2017	5/12/2017
C1705036-013A	WAT-SV06-050917	1018.56	5/9/2017	5/12/2017
C1705036-014A	DUP-SV-050917	614	5/9/2017	5/12/2017

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22-Jun-17

Lab Order:	C1705036					
Client:	CH2M - St Louis				DATES REPORT	₹.
Project:	Former Hampshire					
Sample ID	Client Sample 10	Collection Date	Matrix	Test Name	TCLP Date Prep Date	Analysis Date
C1705036-001A	WAT-SV04-050817	5/8/2017	Air	5ppb by Method FO15		T102/T1/2
				Sppb by Method FO15		5/17/2017
				Fixed Gas Series		5/15/2017
				Low Level Suffurs by TO-15		5/16/2017
				Low Level Sulfurs by TO-15		5/16/2017
C1705036-002A	WAT-SV01-050817			Sppb by Method TO15		5/17/2017
				Fixed Gas Series		5/15/2017
				Low Level Sulfars by TO-15		50162017
C1705036-003A	WAT-SV03-050817			Sppb by Method TO15		5/15/2017
				Fixed Gas Series		5/15/2017
				Low Level Sulfurs by TO-15		5/16/2017
C1705036-004A	WAT-SV02-050817			Sppb by Method TOIS		5/15/2017
				Fixed Gas Series		5/15/2017
				Low Level Sathurs by TO-15		5/16/2017
CI705036-005A	WAT-SV10-050817			Sppb by Method TO15		5/15/2017
				Fixed Gas Series		5/15/2017
				Low Level Suffins by TO-15		5/16/2017
C1705036-006A	WAT-SV09-050817			Sppb by Method TO15		5/17/2017
				Fixed Gas Series		5/15/2017
				Low Level Sulfars by TO-15		5/16/2017
C1705036-007A	WAT-SVII-050817			Sppb by Method TO15		5/15/2017
				Sppb by Method TO15		5/15/2017
				Fixed Gas Series		5/15/2017
				Low Level Sullurs by TO-15		5/16/2017
C1705036-008A	WAT-SV14-050817			Spph by Method TOI5		5/17/2017
				Fixed Gas Scries		5/15/2017
				Low Level Sulfars by TO-15		5/16/2017
C1705036-009A	WAT-SV13-050817			Sppb by Method TOIS		5/17/2017

Lab Order:	C1705036				nogau sawyu	E
Client: Project:	CH2M - St Louis Former Hampshire				DATES REPORT	
Sample 1D	Cleut Sample 1D	Collection Date	Matrix	Test Name	TCL! Date Prep Date	Analysis Date
C1705036-009A	WAT-SV13-050817	5/8/2017	Air	Fixed Gas Series		5/15/2017
				Low Level Sulfars by TO-15		5/16/2017
C1705036-010A	WAT-SV07-050917	5.9/2017		5ppb by Method TO15		5/17/2017
				Sppb by Method TO15		5/17/2017
				Fixed Gas Series		5/15/2017
				Law Level Sulfars by TO-15		5/16/2017
C1705036-011A	WAT-SV08-050917			5ppb by Method TO15		5/17/2017
				Sppb by Method TOIS		5/17/2017
				Fixed Gas Series		5/15/2017
				Low Level Sulfurs by TO-15		5/16/2017
				Low Level Sulturs by TO-15		\$/16/2017
C1705035-012A	WAT-SV15-050917			5ppb by Method TO15		2/15/201/5
				Sppb by Method TO15		5/17/2017
				Sppb by Method TO15		5/17/2017
				Fixed Gas Series		5/15/2017
				Low Level Sulfues by TO-15		5/19/2017
				Low Level Sulfars by TO-15		5/16/2017
				Low Level Sulfurs by TO-15		5/18/2017
				Low Level Sulfurs by TO-15		5/18/2017
CI705036-013A	WAT-SV06-050917			Sppb by Method FO15		5/18/2017
				Sppb by Method TO15		5/17/2017
				Fixed Gas Series		5/15/2017
				Low Level Sulfars by TO-15		5/16/2017
C1705036-014A	DUP-SV-050917			Spph by Method TO15		5/17/2017
				Sppb by Method TO15		5/18/2017
				Fixed Gas Stries		5/15/2017
				Low Level Sulfurs by TO-15		5/16/2017



CANISTER ORDER

Air Quality Tosing. It's a ties

143 Midler Park Drive * Syracuse, NY 13206 TEL: 315-431-9730 * FAX: 315-431-9731

6481

01-Jun-17

SHIPPED TO:

Company: CH2M - St Louis

Contact: Shane Lowe Address:

300 Hunter Ave, Suite 305

St. Louis, MO 63124

Description

Phone: (314) 335-3024

Quote ID: 2125

Project:

PO:

Can / Reg ID

Submitted By:

MadeBy: NM

Ship Date: 4/28/2017

VIA: FedEx Ground

Due Date: 5/1/2017

Bottle Code	Bottle Type	TEST(s)	QTY
MC1000CC	1L Mini-Can	5ppb by Method TO15	20

48	Time-Set Reg - 545 VI
54	Time-Set Reg - 535 VI
56	Time-Set Reg - 537 VI
58	Time-Set Reg - 539 VI
62	Time-Set Reg - 543 VI
63	Time-Set Reg - 839R VI
551	1L Mini-Can - 119 IAQ
309	Time-Set Reg - 732 VI
403	Time-Set Reg - 782 VI
125	Time-Set Reg - 629 VI
143	Time-Set Reg - 638 VI
144	Time-Set Reg - 639 VI
146	Time-Set Reg - 641 VI
235	1L Mini-Can - 1166 IAQ
306	Time-Set Reg - 729 VI
65	Time-Set Reg - 530 VI
68	Time-Set Reg - 547 VI
78	Time-Set Reg VI
79	Time-Set Reg VI
80	Time-Set Reg VI
121	Time-Set Reg - 669 VI
1026	1L Mini-Can - 8258 IAQ
1027	1L Mini-Can - 8259 IAQ
1018	1L Mini-Can - 8250 IAQ
431	1L Mini-Can - 1358 IAQ
474	1L Mini-Can - 1376 IAQ
478	1L Mini-Can - 1380 IAQ
494	1L Mini-Can - 1386 IAQ
595	1L Mini-Can - 1226 IAQ
600	1L Mini-Can - 1231 (AQ
646	1L Mini-Can - 277 IAQ
1017	1L Mini-Can - 8249 IAQ
549	1L Mini-Can - 117 IAQ

I of 2

SHIPPED TO:

Company: CH2M - St Louis

Contact:

Shane Lowe

Address:

300 Hunter Ave, Suite 305

St. Louis, MO 63124

Phone:

(314) 335-3024

Quote ID:

2125

Project: PO:

Submitted By:

MadeBy:

NM

Ship Date: 4/28/2017

VIA: FedEx Ground

Due Date: 5/1/2017

Bottle Code

Bottle Type

TEST(s)

QTY

Comments: (20) IL W/ 20min Reg's With "T" for dupe SHIP TO: Evans Chemetics, Attn: Taylor Salsburg/CH2M, 228 E Main

St, Waterloo, NY 13165 585-880-5157 WAC 042817 A-W 100%

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15 ANALYTICAL RESULTS

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-001A

Date: 22-Jun-17

Client Sample ID: WAT-SV04-050817

Tag Number: 646.80

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qua	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHOD	3C		Analyst: WD
Carbon dioxide	0.410	1,90 J	%	1	5/15/2017
Carbon Monoxide	ND	0.88.0	%	1	5/15/2017
Methane	ФИ	0.580	%	1	5/15/2017
Nitrogen	74.9	8.30	%	1	5/15/2017
Охудеп	20.2	0.880	%	1	5/15/2017
5PPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	Vdqq	t	5/17/2017 11:58:00 AM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
1,1,2-Trichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
1,1-Dichloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 11:58:00 AM
1,1-Dichloroethene	6.3	5.0	∨dqq	1	5/17/2017 11:58:00 AM
1,2,4-Trichtorobenzene	< 5.0	5.0	∨dqq	1	5/17/2017 11:58:00 AM
1,2,4-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
1,2-Dibromoethane	< 5.0	5.0	Vdqq	1	5/17/2017 11:58:00 AM
1,2-Dichlorobenzene	< 5.0	5.0	₽₽b∨	1	5/17/2017 11:68:00 AM
1.2-Dichloroethane	18	5.0	ppbV	1	5/17/2017 11:58:00 AM
1,2-Dichloropropane	13	5.0	ppb∨	1	5/17/2017 11:58:00 AM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
1,3-butadiene	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
1,3-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
1.4-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
1,4-Dioxane	< 10	10	ppb∨	1	5/17/2017 11:58:00 AM
2,2,4-trimethylpentane	< 5.0	5.0	Vdqq	1	5/17/2017 11:58:00 AM
4-ethyltoluene	< 5.0	6.0	₽₽bV	1	5/17/2017 11:58:00 AM
Acetone	8.6	10 J	Vdqq	1	5/17/2017 11:58:00 AM
Allyi chioride	< 5.0	5.0	₽₽bV	1	5/17/2017 11:58:00 AM
Benzene	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Benzyl chloride	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Bromodichloromethane	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
Bromoform	< 5.0	5.0	ppb∨	7	5/17/2017 11:58:00 AM
Bromomethane	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Carbon tetrachloride	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Chioropenzene	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Chloroethane	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Chloroform	1500	200	ppbV	40	5/17/2017 6:11:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- 3 Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-001A

Date: 22-Jun-17

Client Sample ID: WAT-SV04-050817

Tag Number: 646.80

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15	***************************************	то	-15		W	Analyst: WD
Chloromethane	< 5.0	5.0		ppb∨	1	5/17/2017 11:58:00 AM
cis-1,2-Dichloroethene	< 5.0	5.0		Vđqq	1	5/17/2017 11:58:00 AM
cis-1,3-Dichioropropene	< 5.0	5.0		∨dqq	1	5/17/2017 11:58:00 AM
Cyclohexane	5.6	5.0		Vđạq	1	5/17/2017 11:58:00 AM
Dibromochloromethane	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Ethyl acetate	< 10	10		ppb∨	1	5/17/2017 11:58:00 AM
Ethylbenzene	< 5.0	5.0		₽₽bV	1	5/17/2017 11:58:00 AM
Freon 11	< 5.0	5.0		₽pbV	1	5/17/2017 11:58:00 AM
Freon 113	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Freon 114	< 5.0	5.0		ppbV	7	5/17/2017 11:58:00 AM
Freon 12	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Heptane	< 5.0	5.0		Vđạq	1	5/17/2017 11:58:00 AM
Hexachtoro-1,3-butadiene	< 5.0	5.0		ppbV	7	5/17/2017 11:58:00 AM
Hexane	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Isopropyi alcohol	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
m&p-Xyiene	< 10	10		ppbV	1	5/17/2017 11:58:00 AM
Methyl Butyl Ketone	< 10	10		ppbV	1	5/17/2017 11:58:00 AM
Methyl Ethyl Ketone	< 10	10		ppbV	1	5/17/2017 11:58:00 AM
Methyl Isobutyl Ketone	1.9	10	J	ppb∨	1	5/17/2017 11:58:00 AM
Methyl tert-butyl ether	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Methylene chloride	4.6	5.0	j	Vdqq	1	5/17/2017 11:58:00 AM
o-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Propylene	4.3	5.0	J	∇dqq	1	5/17/2017 11:58:00 AM
Styrene	< 5.0	5.0		Vđqq	1	5/17/2017 11:58:00 AM
Tetrachioroethylene	9.3	5.0		ppb∨	1	5/17/2017 11:58:00 AM
Tetrahydrofuran	< 5.0	5.0		∨dqq	1	5/17/2017 11:58:00 AM
Toluene	< 5.0	5.0		ppb∨	1	5/17/2017 11:58:00 AM
trans-1,2-Dichloroethene	< 5.0	5.0		Vđạq	1	5/17/2017 11:58:00 AM
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Trichloroethene	24	5.0		ppbV	1	5/17/2017 11:58:00 AM
Vinyi acetate	< 5.0	5.0		Vdqq	1	5/17/2017 11:58:00 AM
Vinył Bromide	< 5.0	5.0		Vdqq	1	5/17/2017 11:58:00 AM
Vinyl chloride	< 5.0	5.0		Vdqq	1	5/17/2017 11:58:00 AM
Surr: Bromofluorobenzene	89.4	73.7-124		%REC	1	5/17/2017 11:58:00 AM
TtC: Cyclotetrasiloxane. octamethyl-	22	0	ИĻ	ppbV	1	5/17/2017 11:58:00 AM
TtC: Cyclotrisiloxane, hexamethyl	15	¢	JN	Vdqq	1	5/17/2017 11:58:00 AM
TIC: Hydrogen sulfide	680	0	JN	Vdqq	1	5/17/2017 11:58:00 AM
LOW LEVEL SULFURS BY TO-15			-15			Analyst: WD
1-Propanethiol	< 5.0	5.0		Vdqq	1	5/16/2017 12:19:00 ₽M

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-001A

Date: 22-Jun-17

Client Sample ID: WAT-SV04-050817

Tag Number: 646.80

Collection Date: 5/8/2017

Matrix: AlR

Analyses	Result	**Limit Qu:	al Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15	" " '	TO-15			Analyst: WD
Carbon disulfide	< 5.0	5.0	ppb∨	1	5/16/2017 12:19:00 PM
Carbonyl sulfide	< 5.0	5.0	Vđạq	1	5/16/2017 12:19:00 PM
Dimethyl sulfide	< 5.0	5.0	ppbV	1	5/16/2017 12:19:00 PM
Ethyl mercaptan	< 5.0	5.0	ppb∨	1	5/16/2017 12:19:00 PM
Hydrogen Sulfide	2700	50	Vdqq	10	5/16/2017 9:38:00 PM
Isopropyl mercaptan	1.5	5.0 J	ppb∨	1	5/16/2017 12:19:00 PM
Methyl mercaptan	1.7	5.0 J	Vdqq	1	5/16/2017 12:19:00 PM
Surr: Bromofluorobenzene	155	70-130 S	%REC	1	5/16/2017 12:19:00 PM
Surr: Bromofluorobenzene	111	70-130	%REC	10	5/16/2017 9:38:00 PM

Qualifiers:

* Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Page 3 of 42

Date: 22-Jun-17

CH2M - St Louis Client Sample ID: WAT-SV04-050817 CLIENT:

Tag Number: 646.80 Lab Order: C1705036

Collection Date: 5/8/2017 Project: Former Hampshire Matrix: AIR C1705036-001A Lab ID:

Analyses	Result	**Limit Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15	The second secon	TO-15			Analyst: W D
1.1.1-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 11:58:00 AM
1,1,2,2-Tetrachloroethane	< 34	34	ug/m3	1	5/17/2017 11:58:00 AM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 11:58:00 AN
1,1-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 11:58:00 AN
1,1-Dichtoroethene	25	20	ug/m3	1	5/17/2017 11:58:00 AN
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/17/2017 11:58:00 AM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 11:58:00 AN
1,2-Dibromoethane	< 38	38	ug/m3	1	5/17/2017 11:58:00 AN
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 11:58:00 AN
1,2-Dichloroethane	73	20	ug/m3	1	5/17/2017 11:58:00 AN
1,2-Dichloropropane	61	23	ug/m3	1	5/17/2017 11:58:00 AM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 11:58:00 AN
1,3-butadiene	< 11	11	ug/m3	1	5/17/2017 11:58:00 AN
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 11:58:00 AN
1.4-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 11:58:00 AM
1,4-Dioxane	< 36	36	ug/m3	1	5/17/2017 11:58:00 AM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/17/2017 11:58:00 AM
4-ethyltoluene	< 25	25	ug/m3	1	5/17/2017 11:58:00 AF
Acetone	20	24 J	սց/m3	1	5/17/2017 11:58:00 AM
Allyl chloride	< 16	16	ug/m3	1	5/17/2017 11:58:00 AM
Benzene	< 16	16	ug/m3	1	5/17/2017 11:58:00 AM
Benzyl chloride	< 29	29	ug/m3	1	5/17/2017 11:58:00 AM
Bromodichloromethane	< 33	33	ug/m3	1	5/17/2017 11:58:00 Af
Bromoform	< 52	52	ug/m3	1	5/17/2017 11:58:00 AM
Bromomethane	< 19	19	ug/m3	1	5/17/2017 11:58:00 At
Carbon disulfide	< 16	16	ug/m3	1	5/17/2017 11:58:00 AM
Carbon tetrachloride	< 31	31	ug/m3	1	5/17/2017 11:58:00 AM
Chlorobenzene	< 23	23	սց/m3	1	5/17/2017 11:58:00 Af
Chloroethane	< 13	13	ug/m3	1	5/17/2017 11:58:00 Af
Chloroform	7300	980	ug/m3	40	5/17/2017 6:11:00 PM
Chloromethane	< 10	10	មg/m3	1	5/17/2017 11:58:00 At
cis-1.2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 11:58:00 Al
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/17/2017 11:58:00 Al
Cyclohexane	19	17	ug/m3	1	5/17/2017 11:58:00 AI
Dibromochloromethane	< 43	43	ug/m3	1	5/17/2017 11:58:00 Ai
Ethyl acetate	< 36	36	ug/m3	1	5/17/2017 11:58:00 A
Ethylbenzene	< 22	22	ug/m3	1	5/17/2017 11:58:00 A
Freon 11	< 28	28	ug/m3	1	5/17/2017 11:58:00 A
Freon 113	< 38	38	սց/m3	1	5/17/2017 11:58:00 A
Freon 114	< 35	35	ug/m3	1	5/17/2017 11:58:00 A

Qualifiers:

- Quantitation Limit
- Analyte detected in the associated Method Blank 1.3
- Holding times for preparation or analysis exceeded
- Non-routine analyte. Quantitation estimated. JN
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Estimated Value above quantitation range Ε
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CH2M - St Louis

Lab Order: C1705036

CLIENT:

Project: Former Hampshire Lab ID: C1705036-001A

Date: 22-Jun-17

Client Sample ID: WAT-SV04-050817

Tag Number: 646.80 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO	-15			Analyst: WD
Freon 12	< 25	25		ug/m3	1	5/17/2017 11:58:00 AM
Heptane	< 20	20		ug/m3	1	5/17/2017 11:58:00 AM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/17/2017 11:58:00 AM
Hexane	< 18	18		ug/m3	1	5/17/2017 11:58:00 AM
Isopropyl alcohol	< 12	12		ug/m3	1	5/17/2017 11:58:00 AM
m&p-Xylene	< 43	43		ug/m3	1	5/17/2017 11:58:00 AM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/17/2017 11:58:00 AM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/17/2017 11:58:00 AM
Methyl Isobutyl Ketone	7.9	41	J	ug/m3	1	5/17/2017 11:58:00 AM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/17/2017 11:58:00 AM
Methylene chloride	16	17	J	ug/m3	1	5/17/2017 11:58:00 AM
o-Xylene	< 22	22		ug/m3	1	5/17/2017 11:58:00 AM
Propylene	7.5	8.6	J	ug/m3	1	5/17/2017 11:58:00 AM
Styrene	< 21	21		ug/m3	1	5/17/2017 11:58:00 AM
Tetrachloroethylene	63	34		ug/m3	1	5/17/2017 11:58:00 AM
Tetrahydrofuran	< 15	15		ug/m3	1	5/17/2017 11:58:00 AM
Toluene	< 19	19		սց/m3	1	5/17/2017 11:58:00 AM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 11:58:00 AM
trans-1,3-Dichloropropene	< 23	23		µg/m3	1	5/17/2017 11:58:00 AM
Trichioroethene	130	27		ug/m3	1	5/17/2017 11:58:00 AM
Vinyl acetate	< 18	18		ug/m3	1	5/17/2017 11:58:00 AM
Vinyl Bromide	< 22	22		ug/m3	1	5/17/2017 11:58:00 AM
Vinyl chloride	< 13	13		ug/m3	1	5/17/2017 11:58:00 AM
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: WD
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 12:19:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/16/2017 12:19:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 12:19:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 12:19:00 PM
Ethy! mercaptan	< 13	13		ug/m3	1	5/16/2017 12:19:00 PM
Hydrogen Sulfide	3700	70		ug/m3	10	5/16/2017 9:38:00 PM
Isopropyl mercaptan	4.8	16	j	ug/m3	1	5/16/2017 12:19:00 PM
Methyl mercaptan	3.3	9.8	J	ម ្ន /m3	1	5/16/2017 12:19:00 PM

Qualifiers:

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Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated,

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

[#] Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis Client Sample 1D: WAT-SV01-050817

Lab Order: C1705036 Tag Number: 573.48

Project: Former Hampshire Collection Date: 5/8/2017

Lab ID: C1705036-002A Matrix: AIR

Analyses	Result	**Limit Qu	at Units	ÐF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum In	-5		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHO	D 3C		Analyst: WD
Carbon dioxide	0.0260	1.90 J	%	1	5/15/2017
Carbon Monoxide	NO	088.0	%	1	5/15/2017
Methan e	ND	0.580	%	't	5/15/2017
Nitrogen	74.2	8.30	%	1	5/15/2017
Oxygen	20.3	0.880	%	1	5/15/2017
5PPB BY METHOD TO15		TO-15			Analyst: WD
1.1.1-Trichtoroethane	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,1,2,2-Tetrachtoroethane	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,1,2-Trichioroethane	< 5.0	5.0	Vđqq	1	5/17/2017 12:34:00 PM
1,1-Dichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,1-Dichloroethene	< 5.0	5.0	∨dqq	1	5/17/2017 12:34:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	∨dqq	1	5/17/2017 12:34:00 PM
1,2-Dibromoethane	< 5.0	5.0	Vđạq	1	5/17/2017 12:34:00 PM
1,2-Dichtorobenzene	< 5.0	5.0	Vdqq	*	5/17/2017 12:34:00 PM
1,2-Dichloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
1.2-Dichloropropane	< 5.0	5.0	∨dqq	1	5/17/2017 12:34:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
1,3-butadiene	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	Vaqq	1	5/17/2017 12:34:00 PM
1,4-Dioxane	< 10	10	ppbV	1	5/17/2017 12:34:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
4-ethyltoluene	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
Acetone	6.4	10 J	Vdqq	1	5/17/2017 12:34:00 PM
Atlyl chloride	< 5.0	5.0	Vđqq	1	5/17/2017 12:34:00 PM
Benzene	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
Benzyl chloride	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
Bromodichloromethane	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Bromoform	< 5.0	5.0	Vdąq	1	5/17/2017 12:34:00 PM
Bromomethane	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Carbon disulfide	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
Carbon tetrachloride	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
Chlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Chloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
Chloroform	6.1	5.0	ppbV	1	5/17/2017 12:34:00 PM

Qualifiers:

Date: 22-Jun-17

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-002A

Date: 22-Jun-17

M - St Louis Client Sample ID: WAT-SV01-050817

Tag Number: 573.48

Collection Date: 5/8/2017

Matrix: AlR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO	-15			Analyst: WD
Chloromethane	< 5.0	5.0		₽pbV	1	5/17/2017 12:34:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		Vdqq	1	5/17/2017 12:34:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		∨dqq	1	5/17/2017 12:34:00 PM
Cyclohexane	< 5.0	5.0		ppb∨	1	5/17/2017 12:34:00 PM
Dibromochloromethane	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Ethyl acetate	< 10	10		Vđạq	1	5/17/2017 12:34:00 PM
Ethylbenzene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Freon 11	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Frean 113	< 5.0	5.0		ppb∨	1	5/17/2017 12:34:00 PM
Freon 114	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Freon 12	< 5.0	5.0		∨dgq	1	5/17/2017 12:34:00 PM
Heptane	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Hexane	< 5.0	5.0		Vdqq	1	5/17/2017 12:34:00 PM
Isopropyl alcohol	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
m&p-Xylene	< 10	10		ppbV	1	5/17/2017 12:34:00 PM
Methyl Butyl Ketone	< 10	10		ppb∨	1	5/17/2017 12:34:00 PM
Methyl Ethyl Ketone	< 10	10		ppb∨	1	5/17/2017 12:34:00 PM
Methyl Isobutyl Ketone	< 10	10		Vdqq	1	5/17/2017 12:34:00 PM
Methyl tert-butyl ether	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Methylene chloride	5.4	5.0		Vdqq	1	5/17/2017 12:34:00 PM
o-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Propylene	< 5.0	5.0		Vdgq	1	5/17/2017 12:34:00 PM
Styrene	< 5.0	5.0		ppb∨	1	5/17/2017 12:34:00 PM
Tetrachloroethylene	< 5.0	5.Q		ppb∨	1	5/17/2017 12:34:00 PM
Tetrahydrofuran	< 5.0	5.0		Vđqq	1	5/17/2017 12:34:00 PM
Toluene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		Vđạg	1	5/17/2017 12:34:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Trichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Vinyl acetate	< 5.0	5.0		Váqq	1	5/17/2017 12:34:00 PM
Vinyl Bromide	< 5.0	5.0		Vdqq	1	5/17/2017 12:34:00 PM
Vinyl chloride	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Surr: Bromofluoropenzene	80.7	73.7-124		%REC	1	5/17/2017 12:34:00 PM
TIC: Cyclotetrasiloxane, octamethyl- \$\$ Octam	10	0	ИГ	ppbV	1	5/17/2017 12:34:00 PM
TIC: Cyclotrisiloxane, hexamethyl	12	0	JN	Vđạq	1	5/17/2017 12:34:00 PM
TIC: Hydrogen sulfide \$\$ Dihydrogen monosulfi	26	0	JN	Vdqq	1	5/17/2017 12:34:00 PN
						A I 4. 144

TO-15

Qualifiers:

** Quantitation Limit

LOW LEVEL SULFURS BY TO-15

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- 5N Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Analyst: WD

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab 1D:

C1705036-002A

Date: 22-Jun-17

Client Sample 1D: WAT-SV01-050817

Tag Number: 573.48

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qua	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-15			Analyst: WD
1-Propanethiol	< 5.0	5.0	ppb∨	1	5/16/2017 12:54:00 PM
Carbon disulfide	< 5.0	5.0	Váqq	1	5/16/2017 12:54:00 PM
Carbonyl sulfide	< 5.0	5.0	∨dqq	1	5/16/2017 12:54:00 PM
Dimethyl sulfide	< 5.0	5.0	Vdqq	1	5/16/2017 12:54:00 PM
Ethyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 12:54:00 PM
Hydrogen Sulfide	76	5.0	ppb∨	1	5/16/2017 12:54:00 PM
Isopropyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 12:54:00 PM
Methyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 12:54:00 PM
Surr: Bromofluorobenzene	147	70-130 S	%REC	1	5/16/2017 12:54:00 PM

Qualifiers:

Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

3 Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

C1705036-002A

Date: 22-Jun-17

Client Sample ID: WAT-SV01-050817

Tag Number: 573.48

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC	-15			Analyst: W D
1,1,1-Trichloroethane	< 27	27		ug/m3	1	5/17/2017 12:34:00 PM
1,1,2,2-Tetrachloroethane	< 34	34		ug/m3	1	5/17/2017 12:34:00 PM
1,1,2-Trichloroethane	< 27	27		սց/m3	1	5/17/2017 12:34:00 PM
1,1-Dichloroethane	< 20	20		ug/m3	1	5/17/2017 12:34:00 PM
1,1-Dichforoethene	< 20	20		սց/m3	1	5/17/2017 12:34:00 PM
1,2,4-Trichlorobenzene	< 37	37		ug/m3	1	5/17/2017 12:34:00 PM
1,2,4-Trimethylbenzene	< 25	25		ug/m3	1	5/17/2017 12:34:00 PM
1,2-Dibromoethane	< 38	38		ug/m3	1	5/17/2017 12:34:00 PM
1,2-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 12:34:00 PM
1,2-Dichloroethane	< 20	20		ug/m3	1	5/17/2017 12:34:00 PM
1,2-Dichloropropane	< 23	23		ug/m3	1	5/17/2017 12:34:00 PM
1,3,5-Trimethylbenzene	< 25	25		սց/m3	1	5/17/2017 12:34:00 PM
1,3-butadiene	< 11	11		ug/m3	1	5/17/2017 12:34:00 PM
1,3-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 12:34:00 PM
1,4-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 12:34:00 PM
1,4-Dioxane	< 36	36		ug/m3	1	5/17/2017 12:34:00 PM
2,2,4-trimethy/pentane	< 23	23		ug/m3	7	5/17/2017 12:34:00 PM
4-ethyltoluene	< 25	25		ug/m3	1	5/17/2017 12:34:00 PM
Acetone	15	24	J	ug/m3	1	5/17/2017 12:34:00 PM
Allyl chloride	< 16	16		ug/m3	1	5/17/2017 12:34:00 PM
Benzene	< 16	16		ug/m3	1	5/17/2017 12:34:00 PM
Benzyl chloride	< 29	29		ug/m3	1	5/17/2017 12:34:00 PM
Bromodichloromethane	< 33	33		ug/m3	1	5/17/2017 12:34:00 PM
Bromoform	< 52	52		ug/m3	1	5/17/2017 12:34:00 PN
Bromomethane	< 19	19		սց/m3	1	5/17/2017 12:34:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/17/2017 12:34:00 PM
Carbon tetrachloride	< 31	31		ug/m3	1	5/17/2017 12:34:00 PM
Chlorobenzene	< 23	23		ug/m3	1	5/17/2017 12:34:00 PM
Chloroethane	< 13	13		սց/m3	1	5/17/2017 12:34:00 PN
Chloroform	30	24		ug/m3	1	5/17/2017 12:34:00 PM
Chloromethane	< 10	10		ug/m3	7	5/17/2017 12:34:00 PN
cis-1,2-Dichtoroethene	< 20	20		ug/m3	ŧ	5/17/2017 12:34:00 PM
cis-1,3-Dichloropropene	< 23	23		ug/m3	7	5/17/2017 12:34:00 PN
Cyclohexane	< 17	17		սց/m3	1	5/17/2017 12:34:00 PN
Dibromochloromethane	< 43	43		ug/m3	1	5/17/2017 12:34:00 PN
Ethyl acetate	< 36	36		ug/m3	1	5/17/2017 12:34:00 PM
Ethylbenzene	< 22	22		ug/m3	1	5/17/2017 12:34:00 PM
Freen 11	< 28	28		ug/m3	1	5/17/2017 12:34:00 PM
Freon 113	< 38	38		ug/m3	1	5/17/2017 12:34:00 PM
Freon 114	< 35	35		ug/m3	1	5/17/2017 12:34:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantilation estimated.
- S Spike Recovery outside accepted recovery limits
- . Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

CLIENT:

C1705036-002A

Date: 22-.hun-17

Client Sample ID: WAT-SV01-050817

Tag Number: 573.48

Collection Date: 5/8/2017

Matrix: AIR

Anatyses	Result	**Limit Qu	al Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Analyst: WD
Freon 12	< 25	25	ug/m3	1	5/17/2017 12:34:00 PM
Heptane	< 20	20	ug/m3	1	5/17/2017 12:34:00 PM
Hexachloro-1,3-butadiene	< 53	53	ug/m3	1	5/17/2017 12:34:00 PM
Hexane	< 18	18	ug/m3	1	5/17/2017 12:34:00 PM
Isopropyi alcohol	< 12	12	ug/m3	1	5/17/2017 12:34:00 PM
m&p-Xylene	< 43	43	ug/m3	1	5/17/2017 12:34:00 PM
Methyl Butyl Ketone	< 41	41	ug/m3	1	5/17/2017 12:34:00 PM
Methyl Ethyl Ketone	< 29	29	ug/m3	1	5/17/2017 12:34:00 PM
Methyl Isobutyl Ketono	< 41	41	ug/m3	1	5/17/2017 12:34:00 PM
Methyl tert-butyl ether	< 18	18	ug/m3	1	5/17/2017 12:34:00 PM
Methylene chloride	19	17	ug/m3	1	5/17/2017 12:34:00 PM
o-Xylene	< 22	22	ug/m3	1	5/17/2017 12:34:00 PM
Propylene	< 8.6	8.6	ug/m3	1	5/17/2017 12:34:00 PM
Styrene	< 21	21	ug/m3	1	5/17/2017 12:34:00 PM
Tetrachloroethylene	< 34	34	ug/m3	1	5/17/2017 12:34:00 PM
Tetrahydrofuran	< 15	15	ug/m3	1	5/17/2017 12:34:00 PM
Toluene	< 19	19	ug/m3	1	5/17/2017 12:34:00 PM
trans-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 12:34:00 PM
trans-1,3-Dichloropropene	< 23	23	ug/m3	1	5/17/2017 12:34:00 PM
Trichloroethene	< 27	27	ug/m3	1	5/17/2017 12:34:00 PM
Vinyi acetate	< 18	18	ug/m3	1	5/17/2017 12:34:00 PM
Vinyi Bromide	< 22	22	ug/m3	1	5/17/2017 12:34:00 PM
Vinyl chloride	< 13	13	ug/m3	1	5/17/2017 12:34:00 PM
OW LEVEL SULFURS BY TO-15		TO-15			Analyst: WD
1-Propanethiol	< 16	16	ug/m3	1	5/16/2017 12:54:00 PM
Carbon disulfide	< 16	16	ug/m3	1	5/16/2017 12:54:00 PM
Carbonyl sulfide	< 12	12	ug/m3	1	5/16/2017 12:54:00 PM
Dimethyl sulfide	< 19	19	ug/m3	1	5/16/2017 12:54:00 PM
Ethyl mercaptan	< 13	13	ug/m3	1	5/16/2017 12:54:00 PM
Hydrogen Sulfide	110	7.0	ug/m3	1	5/16/2017 12:54:00 PM
Isopropyl mercapten	< 16	16	սց/m3	1	5/16/2017 12:54:00 PM
Methyi mercaptan	< 9.8	9,8	ug/m3	1	5/16/2017 12:54:00 PM

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Quantitation Limit

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-003A

Date: 22-Jun-17

St Louis Client Sample ID: WAT-SV03-050817

Tag Number: 431.65

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qual	Units	ÐF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHOD	3C		Analyst: W D
Carbon dioxide	0.102	1.90 J	%	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	ND	0.580	%	1	5/15/2017
Nitrogen	73.6	8.30	%	1	5/15/2017
Oxygen	20.1	0.880	%	1	5/15/2017
SPPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	₽₽b∨	1	5/15/2017 2:59:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
1,1-Dichtoroethane	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
1.1-Dichloroethene	< 5.0	5.0	Vdqq	1	5/15/2017 2:59:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	ppbV	1	5/15/2017 2:59:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/15/2017 2:59:00 PM
1.2-Dibromoethane	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
1,2-Dichtorobenzene	< 5.0	5.0	∨dgq	1	5/15/2017 2:59:00 PM
1,2-Dichloroethane	< 5.0	5.0	ppbV	†	5/15/2017 2:59:00 PM
1,2-Dichloropropane	< 5.0	5.0	ppbV	1	5/15/2017 2:59:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/15/2017 2:59:00 PM
1,3-butadiene	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
1.4-Dichloropenzens	< 5.0	5.0	ppbV	1	5/15/2017 2:59:00 PM
1,4-Dioxane	< 10	10	ppbV	1	5/15/2017 2:59:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	Vdqq	1	5/15/2017 2:59:00 PM
4-ethyltoluene	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
Acetone	5.6	10 J	Vđạq	1	5/15/2017 2:59:00 PM
Allyl chloride	< 5.0	5.0	ppbV	1	5/15/2017 2:59:00 PM
Benzene	< 5.0	5.0	∨dqq	1	5/15/2017 2:59:00 PM
Benzyi chloride	< 5.0	5.0	ppbV	1	5/15/2017 2:59:00 PM
Bromodichloromethane	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
Bromoform	< 5.0	5.0	Vđqq	1	5/15/2017 2:59:00 PM
Bromomethane	< 5.0	5.0	ppbV	1	5/15/2017 2:59:00 PM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/15/2017 2:59:00 PM
Carbon tetrachloride	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
Chlorobenzene	< 5.0	5.0	ppb∨	1	5/15/2017 2:59:00 PM
Chloroethane	< 5.0	5.0	₽₽bV	1	5/15/2017 2:59:00 PM
Chloroform	15	5.0	ppb∨	1	5/15/2017 2:59:00 PM

Qualifiers:

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C

C1705036-003A

Date: 22-Jun-17

- St Louis Client Sample ID: WAT-SV03-050817

Tag Number: 431.65

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	ÐF	Date Analyzed
SPPB BY METHOD TO15	***************************************	TO-	15			Analyst: WD
Chloromethane	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
cis-1,2-Dichtoroethene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Cyclohexang	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Dibromochloromethane	< 5.0	5.0		₽₽bV	1	5/16/2017 2:59:00 PM
Ethyl acetate	< 10	10		ppb∨	1	5/15/2017 2:59:00 PM
Ethylbenzene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Freon 11	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Freon 113	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Freon 114	< 5.0	5.0		ppb∀	1	5/15/2017 2:59:00 PM
Freon 12	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Heptane	< 5.0	5.0		Vdqq	1	5/15/2017 2:59:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Hexane	< 5.0	5.0		Vdqq	1	5/15/2017 2:59:00 PM
Isoprepyl alcohol	2.6	5.0	J	ppbV	1	5/15/2017 2:59:00 PM
m&p-Xylene	< 10	10		Vđqq	1	5/15/2017 2:59:00 PM
Methyl Butyl Ketone	< 10	10		Vđạq	1	5/15/2017 2:59:00 PM
Methyl Ethyl Ketone	< 10	10		Vdqq	1	5/15/2017 2:59:00 PM
Methyl Isobutyl Ketone	1.4	10	J	ppbV	1	5/15/2017 2:59:00 PM
Methyl tert-butyl ether	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Methylene chloride	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
o-Xylene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Propylene	< 5.0	5.0		Vđqq	1	5/15/2017 2:59:00 PM
Styrene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Tetrachloroethylene	< 5.0	5.0		ррЬ∨	1	5/15/2017 2:59:00 PM
Tetrahydrofuran	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Toluene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Trichloraethene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Vinyl acetate	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Vinyl Bromide	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Vinyl chloride	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Surr: Bromofluorobenzene	85.8	73.7-124		%REC	1	5/15/2017 2:59:00 PM
TIC: Cyclotetrasiloxane, octamethyl- \$\$ Octam	140	0	JN	Vđqq	1	5/15/2017 2:59:00 PM
TIC: Cyclotrisiloxane, hexamethyl \$\$ Dimethy	73	0	ИL	₽₽bV	1	5/15/2017 2:59:00 PM
TIC: Undecane, 3,5-dimethyl-	5.2	¢	ИL	Vágq	1	5/15/2017 2:59:00 PM Analyst: W E

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- 3N Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

C1705036-003A

Date: 22-Jun-17

Client Sample ID: WAT-SV03-050817

Tag Number: 431.65

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Resuit	**Limit Q	ual Units	ÐF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-13	5		Analyst: WD
1-Propanethiol	< 5.0	5.0	Vdqq	1	5/16/2017 1:30:00 PM
Carbon disulfide	< 5.0	5.0	Vđạq	1	5/16/2017 1:30:00 PM
Carbonyl sulfide	< 5.0	5.0	Vdqq	1	5/16/2017 1:30:00 PM
Dimethyl sulfide	< 5.0	5.0	ppb∨	1	5/16/2017 1:30:00 PM
Ethyl mercaptan	< 5.0	5.0	Vdqq	1	5/16/2017 1:30:00 PM
Hydrogen Sulfide	770	5.0	ppb∨	1	5/16/2017 1:30:00 PM
Isopropyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 1:30:00 PM
Methyl mercaptan	< 5.0	5.0	Vdqq	1	5/16/2017 1:30:00 PM
Surr: Bromofluorobenzene	153	70-130	S %REC	1	5/16/2017 1:30:00 PM

Qualifiers:

Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CH2M - St Louis

C1705036 Lab Order:

CLIENT:

Project: Former Hampshire

Lab ID: C1705036-003A Date: 22-Jun-17

Client Sample ID: WAT-SV03-050817

Tag Number: 431.65

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qual	Units	ÐF	Date Analyzed	
SPPB BY METHOD TO15		TO-15			Analyst: WD	
1,1,1-Trichioroethane	< 27	27	սց/m3	1	5/15/2017 2:59:00 PM	
1,1,2,2-Tetrachioroethane	< 34	34	ug/m3	1	5/15/2017 2:59:00 PM	
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 2:59:00 PM	
1,1-Dichtoroethane	< 20	20	ug/m3	1	5/15/2017 2:59:00 PM	
1,1-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 2:59:00 PM	
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/15/2017 2:59:00 PM	
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 2:59:00 PM	
1,2-Dibromoethane	< 38	38	ug/m3	1	5/15/2017 2:59:00 PM	
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 2:59:00 PM	
1,2-Dichloroethane	< 20	20	ug/m3	1	5/15/2017 2:59:00 PM	
1,2-Dichloropropane	< 23	23	ug/m3	1	5/15/2017 2:59:00 PM	
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 2:59:00 PM	
1,3-butadiene	< 11	11	ug/m3	1	5/15/2017 2:59:00 PM	
1.3-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 2:59:00 PM	
1,4-Dichlorobenzene	< 30	30	ug/m3	٦	5/15/2017 2:59:00 PM	
1,4-Dioxane	< 36	36	ug/m3	1	5/15/2017 2:59:00 PM	
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/15/2017 2:59:00 PM	
4-ethyltoluene	< 25	25	ug/m3	1	5/15/2017 2:59:00 PM	
Acetone	13	24 J	ug/m3	1	5/15/2017 2:59:00 PM	
Allyl chłoride	< 16	1 6	ug/m3	1	5/15/2017 2:59:00 PM	
Benzene	< 16	16	ug/m3	1	5/15/2017 2:59:00 PM	
Benzyl chioride	< 29	29	ug/m3	1	5/15/2017 2:59:00 PM	
Bromodichloromethane	< 33	33	ц g/m 3	1	5/15/2017 2:59:00 PM	
Bromoform	< 52	52	ug/m3	1	5/15/2017 2:59:00 PM	
Bromomethane	< 19	19	ug/m3	1	5/15/2017 2:59:00 PM	
Carbon disulfide	< 16	16	ug/m3	1	5/15/2017 2:59:00 PM	
Carbon tetrachloride	< 31	31	սց/m3	1	5/15/2017 2:59:00 PM	
Chlorobenzene	< 23	23	ug/m3	1	5/15/2017 2:59:00 PM	
Chloroethane	< 13	13	ug/m3	1	5/15/2017 2:59:00 PM	
Chloroform	72	24	ug/m3	1	5/15/2017 2:59:00 PM	
Chloromethane	< 10	10	ug/m3	1	5/15/2017 2:59:00 PM	
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 2:59:00 PM	
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/15/2017 2:59:00 PN	
Cyclohexane	< 17	17	ug/m3	3	5/15/2017 2:59:00 PM	
Dibromochloromethane	< 43	43	ս g/m 3	1	5/15/2017 2:59:00 PN	
Ethyl acetate	< 36	36	ug/m3	1	5/15/2017 2:59:00 PM	
Ethylbenzene	< 22	22	ug/m3	1	5/15/2017 2:59:00 PA	
Freon 11	< 28	28	ug/m3	1	5/15/2017 2:59:00 PN	
Freen 113	< 38	38	ug/m3	1	5/15/2017 2:59:00 PN	
Freon 114	< 35	35	ug/m3	1	5/15/2017 2:59:00 PN	

Qualifiers:

- Quantitation Limit
- Analyte detected in the associated Method Blank ľ3
- Holding times for preparation or analysis exceeded H
- Non-routine analyte. Quantitation estimated. JN
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- Analyte detected below quantitation limit J

ND Not Detected at the Limit of Detection

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CH2M - St Louis

CLIENT: Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-003A

Date: 22-Jun-17

Client Sample ID: WAT-SV03-050817

Tag Number: 431.65

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	ÐF	Date Analyzed
5PPB BY METHOD TO15		TC)-15		Analyst: WD	
Freon 12	< 25	25		սց/m3	1	5/15/2017 2:59:00 PM
Heptane	< 20	20		ug/m3	1	5/15/2017 2:59:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/15/2017 2:59:00 PM
Hexane	< 18	18		ug/m3	1	5/15/2017 2:59:00 PM
Isopropyl alcohol	6.4	12	J	ug/m3	1	5/15/2017 2:59:00 PM
m&p-Xylene	< 43	43		ug/m3	1	5/15/2017 2:59:00 PM
Methyl Butyl Ketone	< 41	41		սց/m3	1	5/15/2017 2:59:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/15/2017 2:59:00 PM
Methyl Isobutyi Ketone	5.8	41	J	ug/m3	1	5/15/2017 2:59:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/15/2017 2:59:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/15/2017 2:59:00 PM
o-Xylene	< 22	22		ug/m3	1	5/15/2017 2:59:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/15/2017 2:59:00 PM
Styrene	< 21	21		ug/m3	1	5/15/2017 2:59:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/15/2017 2:59:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/15/2017 2:59:00 PM
Toluene	< 19	19		ug/m3	1	5/15/2017 2:59:00 PM
trans-1,2-Dichloroethene	< 20	20		սց/m3	1	5/15/2017 2:59:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/15/2017 2:59:00 PM
Trichloroethene	< 27	27		ug/m3	1	5/15/2017 2:59:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/15/2017 2:59:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/15/2017 2:59:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/15/2017 2:59:00 PM
OW LEVEL SULFURS BY TO-15		тс)-1 5			Analyst: W C
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 1:30:00 PM
Carbon disulfide	< 16	16		սց/m3	1	5/16/2017 1:30:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 1:30:00 PM
Dimethyl sulfide	< 19	19		սց/m3	1	5/16/2017 1:30:00 PM
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 1:30:00 PM
Hydrogen Sulfide	1100	7.0		ug/m3	1	5/16/2017 1:30:00 PM
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 1:30:00 PM
Methyl mercaptan	< 9.8	9.8		ug/m3	1	5/16/2017 1:30:00 PM

^{**} Quantitation Limit

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

2M - St Louis Client Sample ID: WAT-SV02-050817

Lab Order: C1705036 Tag Number: 549.144

Project: Former Hampshire Collection Date: 5/8/2017

Lab ID: C1705036-004A Matrix: AJR

Analyses	Result	**Limit (Qual U	Inits	DF	Date Analyzed
FIELD PARAMETERS	FLD			Analyst:		
Lab Vacuum In	-4		"H	l g		5/12/2017
Lab Vacuum Out	-30		"}	łg		5/12/2017
FIXED GAS SERIES		EPA MET	HOD 30	;		Analyst: W D
Carbon dioxide	0.289	1.90	J %	, 0	1	5/15/2017
Carbon Monoxide	ΝD	0.880	%	, D	1	5/15/2017
Methane	ND	0.580	%	's	1	5/15/2017
Nitrogen	76.1	8.30	%		1	5/15/2017
Oxygen	20.6	0.880	%	6	1	5/15/2017
SPPB BY METHOD TO15		TO-	15			Analyst: WD
1,1,1-Trichtoroethane	< 5.0	5.0	q	pþV	1	5/15/2017 3:34:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	g	pb∨	1	5/15/2017 3:34:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	þ	pbV	1	5/15/2017 3:34:00 PM
1,1-Dichloroethane	< 5.0	5.0	р	γbV	1	5/15/2017 3:34:00 PM
1,1-Dichloroethene	< 5.0	5.0	p	Vđq	1	5/15/2017 3:34:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	р	Vđq	1	5/15/2017 3:34:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	p	pb∨	1	5/15/2017 3:34:00 PM
1,2-Dibromoethane	< 5.0	5.0	þ	Vdq	1	5/15/2017 3:34:00 PM
1,2-Dichiorobenzene	< 5.0	5.0	р	pb∨	1	5/15/2017 3:34:00 PM
1,2-Dichloroethane	< 5.0	5.0	p	Vdq	1	5/15/2017 3:34:00 PM
1,2-Dichloropropane	< 5.0	5.0	р	pbV	1	5/15/2017 3:34:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	р	Vdq	7	5/15/2017 3:34:00 PM
1,3-butadiene	< 5.0	5.0	р	Vđq	1	5/15/2017 3:34:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	þ	ρbV	1	5/15/2017 3:34:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	þ	Vđq	1	5/15/2017 3:34:00 PM
1.4-Dioxane	< 10	10	p	pbV	1	5/15/2017 3:34:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	р	pb∨	1	5/15/2017 3:34:00 PM
4-ethyltoluene	< 5.0	5.0	р	∨dq	1	5/15/2017 3:34:00 PM
Acetone	5.0	10) b	γdq	1	5/15/2017 3:34:00 PM
Allyl chloride	< 5.0	5.0	þ	pbV	1	5/15/2017 3:34:00 PM
Benzene	< 5.0	5.0	p	Vđạ	1	5/15/2017 3:34:00 PM
Benzyl chloride	< 5.0	5.0	P	Vđq	1	5/15/2017 3:34:00 PM
Bromodichloromethane	< 5.0	5.0	þ	Vdq	1	5/15/2017 3:34:00 PM
Bromoform	< 5.0	5.0	þ	Vaq	1	5/15/2017 3:34:00 PM
Bromomethane	< 5.0	5.0	p	Vđq	1	5/15/2017 3:34:00 PM
Carbon disulfide	< 5.0	5.0	P	Vđq	1	5/15/2017 3:34:00 PM
Carbon tetrachloride	< 5.0	5.0	þ	Vdq	\$	5/15/2017 3:34:00 PM
Chlorobenzene	< 5.0	5.0	ŗ	∨dq	1	5/15/2017 3:34:00 PM
Chloroethane	< 5.0	5.0	Ę.	opb∨	1	5/15/2017 3:34:00 PM
Chloroform	51	5.0	ŗ	pbV	1	5/15/2017 3:34:00 PM

Qualifiers:

Results reported are not blank corrected

Date: 22-Jun-17

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV02-050817

Lab Order: C1705036 Tag Number: 549.144

Project: Former Hampshire Collection Date: 5/8/2017

Project: Former Hampshire Collection Date: 5/8/2
Lab 1D: C1705036-004A Matrix: AIR

Anaiyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15	TQ-15					Analyst: WD
Chloromethane	< 5.0	5.0		PpbV	1	5/15/2017 3:34:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		Vdqq	1	5/15/2017 3:34:00 PM
Cyclohexane	< 5.0	5.0		Vđqq	1	5/15/2017 3:34:00 PM
Dibromochloromethane	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Ethyl acetate	< 10	10		ppbV	1	5/15/2017 3:34:00 PM
Ethylbenzene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Freon 11	< 5.0	5.0		Vdqq	1	5/15/2017 3:34:00 PM
Freon 113	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Freon 114	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Freon 12	< 5.0	5.0		Vđqq	1	5/15/2017 3:34:00 PM
Heptane	< 5.0	5.0		₽₽bV	1	5/15/2017 3:34:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Hexane	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Isopropyl alcohol	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
m&p-Xylene	< 10	10		₽₽bV	1	5/15/2017 3:34:00 PM
Methyl Butyl Ketone	< 10	10		ppb∨	1	5/15/2017 3:34:00 PM
Methyl Ethyl Ketone	< 10	10		ppbV	1	5/15/2017 3:34:00 PM
Methyl Isobutyl Ketone	< 10	10		∨dqq	1	5/15/2017 3:34:00 PM
Methyl tert-butyl ether	< 5.0	5.0		Vdqq	1	5/15/2017 3:34:00 PM
Methylene chloride	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
o-Xylene	< 5.0	5.0		Vđạq	1	5/15/2017 3:34:00 PM
Propylene	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
Styrene	< 5.0	5.0		Vdqq	1	5/15/2017 3:34:00 PM
Tetrachloroethylene	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
Tetrahydrofuran	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
Toluene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PN
trans-1,3-Dichloropropene	< 5.0	5.0		ppb∀	1	5/15/2017 3:34:00 PM
Trichloroethene	< 5.0	5.0		Vdqq	1	5/15/2017 3:34:00 PM
Vinyl acetate	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
Vinyl Bromide	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Vinyl chloride	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PN
Surr: Bromofluorobenzene	81.1	73.7-124		%REC	1	5/15/2017 3:34:00 PM
TIC: Cyclotrisiloxane, hexamethyl	5.9	0	JN	ppbV	1	5/15/2017 3:34:00 PM
OW LEVEL SULFURS BY TO-15		TO-	15			Analyst: W [
1-Propanethiol	< 5.0	5.0		ppb∨	1	5/16/2017 2:05:00 PM
Carbon disulfide	2.8	5.0	J	₽pbV	1	5/16/2017 2:05:00 PM
Carbonyl sulfide	< 5.0	5.0		Vdqq	1	5/16/2017 2:05:00 PM

Qualifiers:

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

³N Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

tories, LLC

CLIENT: CH2M - St Louis Client Sample 1D: WAT-SV02-050817

Lab Order: C1705036 Tag Number: 549.144
Project: Former Hampshire Collection Date: 5/8/2017

Lab ID: C1705036-004A Matrix: AIR

Analyses	Result	**Limit Q	•	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-1				Analyst: WD
Dimethyl suifide	< 5.0	5.0		ppbV	1	5/16/2017 2:05:00 PM
Ethyl mercaptan	< 5.0	5.0		ppb∨	1	5/16/2017 2:05:00 PM
Hydrogen Sulfide	440	5.0		ppb∨	1	5/16/2017 2:05:00 PM
Isopropy! mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 2:05:00 PM
Methyl mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 2:05:00 PM
Surr: Bromofluorobenzene	149	70-130	\$	%REC	1	5/16/2017 2:05:00 PM

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- 3N Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected

Date: 22-Jun-17

- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CH2M - St Louis

Lab Order: C1705036

CLUENT:

Project: Former Hampshire Lab ID: C1705036-004A

Date: 22-Jun-17

Client Sample 1D: WAT-SV02-050817

Tag Number: 549.144 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qua	Units	DF	Date Analyzed	
SPPB BY METHOD TO15		TO-15			Analyst: W D	
1,1,1-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 3:34:00 PM	
1,1,2,2-Tetrachioroethane	< 34	34	ug/m3	1	5/15/2017 3:34:00 PM	
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 3:34:00 PM	
1,1-Dichtoroethane	< 20	20	ug/m3	1	5/15/2017 3:34:00 PM	
1,1-Dichtoroethene	< 20	20	ug/m3	1	5/15/2017 3:34:00 PM	
1,2,4-Trichlorobenzese	< 37	37	ug/m3	1	5/15/2017 3:34:00 PM	
1,2,4-Trimethylbenzene	< 25	25	սց/m3	1	5/15/2017 3:34:00 PM	
1,2-Dibromoethane	< 38	38	ug/m3	1	5/15/2017 3:34:00 PM	
1,2-Dichlorobenzene	< 30	30	Cm\gu	1	5/15/2017 3:34:00 PM	
1,2-Dichloroethane	< 20	20	սց/m3	1	5/15/2017 3:34:00 PM	
1,2-Dichloropropane	< 23	23	ug/m3	1	5/15/2017 3:34:00 PM	
1,3,5-Trimethylbenzene	< 25	25	սց/m3	1	5/15/2017 3:34:00 PM	
1,3-butadiene	< 11	11	ug/m3	1	5/15/2017 3:34:00 PM	
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 3:34:00 PM	
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 3:34:00 PM	
1,4-Dioxane	< 36	36	ug/m3	1	5/15/2017 3:34:00 PM	
2,2,4-trimethy/pentane	< 23	23	ug/m3	1	5/15/2017 3:34:00 PM	
4-ethyltoluene	< 25	25	ug/m3	1	5/15/2017 3:34:00 PM	
Acetone	12	24 J	ug/m3	1	5/15/2017 3:34:00 PM	
Atlyt chloride	< 16	16	ug/m3	1	5/15/2017 3:34:00 PM	
Senzene	< 16	16	ug/m3	1	5/15/2017 3:34:00 PN	
Benzyl chloride	< 29	29	ug/m3	1	5/15/2017 3:34:00 PM	
Bromodichloromethane	< 33	33	ug/m3	1	5/15/2017 3:34:00 PM	
Bromoform	< 52	52	ug/m3	1	5/15/2017 3:34:00 PM	
Bromomethane	< 19	19	ug/m3	1	5/15/2017 3:34:00 PM	
Carbon disulfide	< 16	16	ug/m3	1	5/15/2017 3:34:00 PM	
Carbon tetrachloride	< 31	31	ug/m3	1	5/15/2017 3:34:00 PN	
Chlorobenzene	< 23	23	µg/m3	1	5/15/2017 3:34:00 PM	
Chloroethane	< 13	13	ug/m3	1	5/15/2017 3:34:00 PN	
Chloroform	250	24	ug/m3	1	5/15/2017 3:34:00 PM	
Chloromethane	< 10	10	ug/m3	1	5/15/2017 3:34:00 PN	
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 3:34:00 PN	
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/15/2017 3:34:00 PN	
Cyclohexane	< 17	17	ug/m3	1	5/15/2017 3:34:00 PN	
Dibromochloromethane	< 43	43	ug/m3	1	5/15/2017 3:34:00 PM	
Ethyl acetate	< 36	36	ug/m3	1	5/15/2017 3:34:00 PN	
Ethylbenzene	< 22	22	ug/m3	1	5/15/2017 3:34:00 PN	
Freon 11	< 28	28	ug/m3	1	5/15/2017 3:34:00 PA	
Freon 113	< 38	38	ug/m3	1	5/15/2017 3:34:00 PN	
Freon 114	< 35	35	ug/m3	1	5/15/2017 3:34:00 PN	

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded.
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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enter Laboratories, LLC

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV02-050817

Lab Order:C1705036Tag Number:549.144Project:Former HampshireCollection Date:5/8/2017

Lab ID: C1705036-004A Matrix: AIR

Analyses	Result	**Limit Q	ual Units	OF	Date Analyzed	
SPPB BY METHOD TO15		TO-1	5		Analyst: WD	
Freon 12	< 25	25	ug/m3	1	5/15/2017 3:34:00 PM	
Heptane	< 20	20	ug/m3	1	5/15/2017 3:34:00 PM	
Hexachloro-1,3-butadiene	< 53	53	ug/m3	1	5/15/2017 3:34:00 PM	
Hexane	< 18	18	ug/m3	1	5/15/2017 3:34:00 PM	
Isopropyl alcohol	< 12	12	ug/m3	1	5/15/2017 3:34:00 PM	
m&p-Xylene	< 43	43	սց/m3	1	5/15/2017 3:34:00 PM	
Methyl Butyl Ketone	< 41	41	ug/m3	1	5/15/2017 3:34:00 PM	
Methyl Ethyl Ketone	< 29	29	ug/m3	1	5/15/2017 3:34:00 PM	
Methyl Isobutyl Ketone	< 41	41	սց/m3	1	6/15/2017 3:34:00 PM	
Methyl tert-butyl ether	< 18	18	ug/m3	1	5/15/2017 3:34:00 PM	
Methylene chloride	< 17	17	ս ց/m3	1	5/15/2017 3:34:00 PM	
o-Xylene	< 22	22	ug/m3	1	5/15/2017 3:34:00 PM	
Propylene	< 8.6	8.6	ug/m3	1	5/15/2017 3:34:00 PM	
Styrene	< 21	21	ug/m3	1	5/15/2017 3:34:00 PM	
Tetrachloroethylene	< 34	34	ug/m3	1	5/15/2017 3:34:00 PM	
Tetrahydrofuran	< 15	15	ug/m3	1	5/15/2017 3:34:00 PM	
Toluene	< 19	19	ug/m3	1	5/15/2017 3:34:00 PM	
trans-1,2-Dichloroethene	< 20	20	սց/m3	1	5/15/2017 3:34:00 PM	
trans-1,3-Dichtoropropene	< 23	23	ug/m3	1	5/15/2017 3:34:00 PM	
Trichloroethene	< 27	27	ug/m3	1	5/15/2017 3:34:00 PM	
Vinyl acetate	< 18	18	ug/m3	1	5/15/2017 3:34:00 PM	
Vinyl Bromide	< 22	22	ug/m3	1	5/15/2017 3:34:00 PM	
Vinyl chloride	< 13	13	ug/m3	1	5/15/2017 3:34:00 PM	
OW LEVEL SULFURS BY TO-15		TO-1	5		Analyst: WD	
1-Propanethiol	< 16	16	ug/m3	1	5/16/2017 2:05:00 PM	
Carbon disulfide	8.7	16	J ug/m3	1	5/16/2017 2:05:00 PM	
Carbonyl sulfide	< 12	12	ug/m3	1	5/16/2017 2:05:00 PM	
Dimethyl sulfide	< 19	19	ug/m3	1	5/16/2017 2:05:00 PM	
Ethyl mercaptan	< 13	13	ug/m3	1	5/16/2017 2:05:00 PM	
Hydrogen Sulfide	620	7.0	ug/m3	1	5/16/2017 2:05:00 PM	
Isopropyl mercaptan	< 16	16	ug/m3	1	5/16/2017 2:05:00 PM	
Methyl mercaptan	< 9.8	9.8	ug/m3	1	5/16/2017 2:05:00 PM	

0	111	ıli	fi	61	75

^{*} Quantitation Limit

Date: 22-Jun-17

ND Not Detected at the Limit of Detection

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E - Estimated Vulue above quantitation range

J Analyte detected below quantitation limit

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab 1D:

C1705036-005A

Date: 22-Jun-17

Client Sample ID: WAT-SV10-050817

Tag Number: 595.54

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qu	al Units	DF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		ЕРА МЕТНО	D 3C		Analyst: WD
Carbon dioxide	0.328	1.90 J	%	1	5/15/2017
Carbon Monoxide	NO	0.880	%	1	5/15/2017
Methane	ND	0.580	%	1	5/15/2017
Nitrogen	74.9	8.30	%	1	5/15/2017
Oxygen	20.2	0.880	%	1	5/15/2017
SPPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,1,2,2-Tetrachioroethane	< 5.0	5.0	∨dqq	1	5/15/2017 4:09:00 PM
1,1,2-Trichtoroethane	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,1-Dichloroethane	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,1-Dichloroethene	< 5.0	5.0	Vđag	1	5/15/2017 4:09:00 PM
1,2,4-Trichtorobenzene	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	√dgq	1	5/15/2017 4:09:00 PM
1,2-Dibromoethane	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,2-Dichloroethane	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,2~Dichloropropane	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	₽₽₽V	1	5/15/2017 4:09:00 PM
1,3-butadiene	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	Vđạq	1	5/15/2017 4:09:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	∨dqq	1	5/15/2017 4:09:00 PM
1,4-Dioxane	< 10	10	√dqq	1	5/15/2017 4:09:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	∨dqq	1	5/15/2017 4:09:00 PM
4-ethyltoluene	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PM
Acetone	3.3	10 J	ppb∨	1	5/15/2017 4:09:00 PM
Allyl chloride	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
Benzene	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
Benzyl chloride	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
Bromodichloromethane	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
Bromoform	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
Bromomethane	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
Carbon disulfide	< 5.0	5.0	Vaqq	1	5/15/2017 4:09:00 PM
Carbon letrachloride	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
Chlorobenzene	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PM
Chloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
Chloroform	< 5.0	5.0	ppoV	1	5/15/2017 4:09:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- 3 Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Fonner Hampshire Lab ID: C1705036-005A

Date: 22-Jun-17

Client Sample ID: WAT-SV10-050817

Tag Number: 595.54 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed	
SPPB BY METHOD TO15	TO-15					Analyst: W D	
Chloromethane	< 5.0	5.0		Vdqq	1	5/15/2017 4:09:00 PM	
cis-1,2-Oichloroethene	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM	
cis-1,3-Dichloropropene	< 5.0	5.0		Vđqq	1	5/15/2017 4:09:00 PM	
Cyclohexane	< 5.0	5.0		₽₽₽V	1	5/15/2017 4:09:00 PM	
Dibromochtoromethane	< 5.0	5.0		Vøqq	1	5/15/2017 4:09:00 PM	
Ethyl acetate	< 10	10		Vdqq	1	5/15/2017 4:09:00 PM	
Ethylbenzene	< 5.0	5.0		Vdqq	1	5/15/2017 4:09:00 PM	
Freon 11	< 5.0	5.0		Vdqq	3	5/15/2017 4:09:00 PM	
Freon 113	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM	
Freon 114	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM	
Freon 12	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM	
Heptane	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM	
Hexachloro-1,3-butadiene	< 5.0	5.0		Vđqq	1	5/15/2017 4:09:00 PM	
Hexane	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM	
isopropyl alcohol	2.5	5.0	J	₽₽₽V	1	5/15/2017 4:09:00 PM	
m&p-Xylene	< 10	10		ppbV	1	5/15/2017 4:09:00 PM	
Methyl Butyl Ketone	< 10	10		ppb∨	1	5/15/2017 4:09:00 PM	
Methyl Ethyl Ketone	< 10	10		Vdqq	1	5/15/2017 4:09:00 PM	
Methyl Isobutyl Ketone	< 10	10		₽₽b∨	1	5/15/2017 4:09:00 PM	
Methyl tert-butyl ether	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM	
Methylene chloride	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM	
g-Xylene	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM	
Propylene	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM	
Styrene	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM	
Tetrachloroethylene	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM	
Tetrahydrofuran	< 5.0	5.0		Vaqq	1	5/15/2017 4:09:00 PM	
Tolupne	< 5.0	5.0		Vdqq	1	5/15/2017 4:09:00 PM	
trans-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM	
trans-1,3-Dichloropropene	< 5.0	5.0		Vđag	1	5/15/2017 4:09:00 PM	
Trichloroethene	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM	
Vinyl acetate	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM	
Vinyl Bromide	< 5.0	5.0		Vdqq	1	5/15/2017 4:09:00 PM	
Vinyl chloride	< 5.0	6.0		Vdqq	1	5/15/2017 4:09:00 PM	
Surr: Bromofluorobenzene	82.6	73.7-124		%REC	1	5/15/2017 4:09:00 PM	
TIC: Cyclotetrasiloxane, octamethyl-	38	0	JN	ppbV	1	5/15/2017 4:09:00 PM	
TIC: Cyclotrisiloxane, hexamethyl \$\$ Dimethy	18	0	ИĻ	ppbV	1	5/15/2017 4:09:00 PM	
TIC: Ethanol \$\$ Ethyl alcohol \$\$ Alcohol \$\$ A	19	0	JN	Vdqq	1	5/15/2017 4:09:00 PM	

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Date: 22-Jun-17

C1705036

Client Sample ID: WAT-SV10-050817

Lab Order:

Former Hampshire

Tag Number: 595.54 Collection Date: 5/8/2017

Project: Lab ID:

C1705036-005A

Matrix: AIR

Analyses	Result	**Limit Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Analyst: WD
TIC: Heptadecane \$\$ n- Heptadecane \$\$ Normal-h	5.8	NL O	ppbV	1	5/15/2017 4:09:00 PM
LOW LEVEL SULFURS BY TO-15		TO-15			Analyst: WD
1-Propanethiol	< 5.0	5.0	ppb∨	1	5/16/2017 2:40:00 PM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/16/2017 2:40:00 PM
Carbonyl sulfide	< 5.0	5.0	Vdqq	1	5/16/2017 2:40:00 PM
Dimethyl sulfide	< 5.0	5.0	ppbV	1	5/16/2017 2:40:00 PM
Ethyl mercaptan	< 5.0	5.0	ppb∨	1	5/16/2017 2:40:00 PM
Hydrogen Sulfide	< 5.0	5.0	ppbV	1	5/16/2017 2:40:00 PM
Isopropyi mercaptan	< 5.0	5.0	Vdqq	1	5/16/2017 2:40:00 PM
Methyl mercaptan	< 5.0	5.0	Vdqq	1	5/16/2017 2:40:00 PM
Surr: Bromofluorobenzene	151	70-130 S	%REC	1	5/16/2017 2:40:00 PM

Qualifiers:

* Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

3 Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order:

C1705036

Client Sample ID: WAT-SV10-050817

Date: 22-Jun-17

Tag Number: 595.54

Project: Lab ID: Former Hampshire C1705036-005A

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qua	l Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 4:09:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	ug/m3	1	5/15/2017 4:09:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 4:09:00 PM
1,1-Dichtoroethane	< 20	20	ug/m3	1	5/15/2017 4:09:00 PM
1,1-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 4:09:00 PM
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/15/2017 4:09:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 4:09:00 PM
1,2-Dibromoethane	< 38	38	ug/m3	1	5/15/2017 4:09:00 PM
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 4:09:00 PM
1,2-Dichloroethane	< 20	20	սց/m3	1	5/15/2017 4:09:00 PM
1,2-Dichloropropane	< 23	23	ug/m3	1	5/15/2017 4:09:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 4:09:00 PM
1,3-butadiene	< 11	11	ug/m3	1	5/15/2017 4:09:00 PM
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 4:09:00 PM
1,4-Dichtorobenzene	< 30	30	ug/m3	7	5/15/2017 4:09:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/15/2017 4:09:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/15/2017 4:09:00 PM
4-ethyltoluene	< 25	25	ug/m3	1	5/15/2017 4:09:00 PM
Acetone	7.7	24 J	սց/m3	1	5/15/2017 4:09:00 PM
Allyl chloride	< 1 6	16	ug/m3	1	5/15/2017 4:09:00 PM
Benzene	< 16	16	ug/m3	1	5/15/2017 4:09:00 PM
Benzyl chloride	< 29	29	ug/m3	1	5/15/2017 4:09:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/15/2017 4:09:00 PM
Bromoform	< 52	52	ug/m3	1	5/15/2017 4:09:00 PM
Bromomethane	< 19	19	ug/m3	1	5/15/2017 4:09:00 PM
Carbon disulfide	< 16	16	ug/m3	1	5/15/2017 4:09:00 PM
Carbon tetrachloride	< 31	31	υg/m3	1	5/15/2017 4:09:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/15/2017 4:09:00 PM
Chloroethane	< 13	13	ug/m3	1	5/15/2017 4:09:00 PM
Chloroform	< 24	24	ug/m3	1	5/15/2017 4:09:00 PM
Chloromethane	< 10	10	ug/m3	1	5/15/2017 4:09:00 PM
cis-1,2-Dichloraethene	< 20	20	ug/m3	1	5/15/2017 4:09:00 PM
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/15/2017 4:09:00 PM
Cyclohexane	< 17	17	ug/m3	1	5/15/2017 4:09:00 PM
Dibromochloromethane	< 43	43	ug/m3	1	5/15/2017 4:09:00 PM
Ethyl acetate	< 36	36	ug/m3	1	5/15/2017 4:09:00 PM
Ethylbenzene	< 22	22	ug/m3	1	5/15/2017 4:09:00 PM
Freon 11	< 28	28	ug/m3	1	5/15/2017 4:09:00 PM
Freon 113	< 38	38	ug/m3	1	5/15/2017 4:09:00 PM
Freon 114	< 35	35	ug/m3	1	5/15/2017 4:09:00 PM

Qualifiers:

- Quantitation Limit
- Analyte detected in the associated Method Blank В
- Н Holding times for preparation or analysis exceeded
- JМ Non-routine analyte. Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Estimated Value above quantitation range E
- Analyte detected below quantitation limit j
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-005A

Date: 22-Jun-17

Client Sample ID: WAT-SV10-050817

Tag Number: 595.54 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-	15			Analyst: WD
Freon 12	< 25	25		ug/m3	1	5/15/2017 4:09:00 PM
Heptane	< 20	20		ug/m3	1	5/15/2017 4:09:00 PM
Hexachioro-1,3-butadiene	< 53	53		ug/m3	1	5/15/2017 4:09:00 PM
Hexane	< 18	18		ug/m3	1	5/15/2017 4:09:00 PM
Isopropyl alcohol	6.1	12	J	ug/m3	1	5/15/2017 4:09:00 PM
m&p-Xylene	< 43	43		սց/m3	1	5/15/2017 4:09:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/15/2017 4:09:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/15/2017 4:09:00 PM
Methyl Isobutyl Ketone	< 41	41		ug/m3	1	5/15/2017 4:09:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/15/2017 4:09:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/15/2017 4:09:00 PM
o-Xylene	< 22	22		ug/m3	1	5/15/2017 4:09:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/15/2017 4:09:00 PM
Styrene	< 21	21		ug/m3	1	5/15/2017 4:09:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/15/2017 4:09:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/15/2017 4:09:00 PM
Toluene	< 19	19		ug/m3	1	5/15/2017 4:09:00 PM
trans-1,2-Dichloroethene	< 20	20		սց/m3	1	5/15/2017 4:09:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/15/2017 4:09:00 PM
Trichloroethene	< 27	27		սց/m3	1	5/15/2017 4:09:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/15/2017 4:09:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/15/2017 4:09:00 PM
Vinyl chloride	< 13	13		սց/m3	1	5/15/2017 4:09:00 PM
OW LEVEL SULFURS BY TO-15		TO-	15			Analyst: WD
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 2:40:00 PM
Carbon disulfide	< 16	16		սց/m3	1	5/16/2017 2:40:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 2:40:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 2:40:00 PM
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 2:40:00 PM
Hydrogen Sulfide	< 7.0	7.0		ug/m3	1	5/16/2017 2:40:00 PM
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 2:40:00 PM
Methyl mercaptan	< 9.8	9.8		ug/m3	1	5/16/2017 2:40:00 PM

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^{*} Quantitation Limit

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order:

C1705036

Former Hampshire

Project: Lab ID:

C1705036-006A

Date: 22-Jun-17

Client Sample ID: WAT-SV09-050817

Tag Number: 1017.121

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Q	ual Units	DF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum in	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
IXED GAS SERIES		EPA METH	OD 3C		Analyst: WD
Carbon dioxide	0.615	1.90	J %	1	5/15/2017
Carbon Monoxide	ND	088.0	%	1	5/15/2017
Methane	ON	0.580	%	7	5/15/2017
Nitrogen	71.8	8.30	%	1	5/15/2017
Oxygen	18.8	0.880	%	1	5/15/2017
PPB BY METHOD TO15		TO-15	5		Analyst: WD
1,1,1-Trichtoroethane	< 5.0	5.0	γσαq	1	5/17/2017 1:11:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
1,1-Dichloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
1,1-Dichtoroethene	< 5.0	5.0	Vdgq	1	5/17/2017 1:11:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
1,2,4-Trimethy/benzene	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
1,2-Dibromoethane	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
1,2-Dichtorobenzene	< 5.0	5.0	₽₽bV	1	5/17/2017 1:11:00 PM
1,2-Dichloroethane	< 5.0	5.0	Vơqq	1	5/17/2017 1:11:00 PM
1,2-Dichloropropane	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	₽₽bV	1	5/17/2017 1:11:00 PM
1,3-butadiene	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
1,4-Dichiorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
1,4-Dioxane	< 10	10	ppb∨	1	5/17/2017 1:11:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	Váqq	1	5/17/2017 1:11:00 PM
4-ethyltoluene	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Acetone	10	10	Vđqq	1	5/17/2017 1:11:00 PM
Allyl chloride	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Benzene	4.5	5.0	J ppbV	1	5/17/2017 1:11:00 PM
Benzyl chloride	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Bromodichloromethane	< 5.0	5.0	ppb∨	1	5/17/2017 1:11:00 PM
Bromoform	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Bromomethane	< 5.0	5.0	∨dqq	1	5/17/2017 1:11:00 PM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
Carbon tetrachloride	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Chlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Chloroethane	< 5.0	5.0	∨dqq	1	5/17/2017 1:11:00 PM
Chloroform	< 5.0	5.0	ppbV	3	5/17/2017 1:11:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-006A

Date: 22-Jun-17

Client Sample ID: WAT-SV09-050817

Tag Number: 1017,121

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qual	Units	ÐF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Analyst: VV D
Chloromethane	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 ₽M
cis-1,2-Dichtoroethene	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
Cyclohexane	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Dibromochloromethane	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
Ethyl acetale	< 10	10	ppb∨	1	5/17/2017 1:11:00 PM
Ethylbenzene	< 5.0	5.0	ppb∨	1	5/17/2017 1:11:00 PM
Freon 11	< 5.0	5.0	Vđqq	1	5/17/2017 1:11:00 PM
Freon 113	< 5.0	5.0	Vđạq	1	5/17/2017 1:11:00 PM
Freon 114	< 5.0	5.0	₽₽₽V	1	5/17/2017 1:11:00 PM
Freon 12	< 5.0	5.0	∨dqq	1	5/17/2017 1:11:00 PM
Heptane	< 5.0	5.0	ppb∨	1	5/17/2017 1:11:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0	ppb∨	1	5/17/2017 1:11:00 PM
Hexane	< 6.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Isopropyl alcohol	< 5.0	5.0	ppb∨	1	5/17/2017 1:11:00 ₽M
m&p-Xylene	< 10	10	ppb∨	1	5/17/2017 1:11:00 PM
Methyl Butyl Ketone	< 10	10	ppbV	1	5/17/2017 1:11:00 PM
Methyl Ethyl Ketone	< 10	10	ppb∨	1	5/17/2017 1:11:00 PM
Methyl Isobutyl Ketone	< 10	10	ppb∨	1	5/17/2017 1:11:00 PM
Methyl tert-butyl ether	< 5. 0	5.0	ppbV	1	5/17/2017 1:11:00 PM
Methylene chloride	< 5.0	5.0	ppb∨	1	5/17/2017 1:11:00 PM
o-Xylene	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
Propylene	< 5.0	5.0	ρρb∨	1	5/17/2017 1:11:00 PM
Styrene	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Tetrachloroethylene	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
Tetrahydrofuran	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Toluene	3.0	5.0 J	ppb∨	1	5/17/2017 1:11:00 PM
trans-1.2-Dichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
Trichlorgethene	< 5.0	5.0	ppbV	1	5/17/2017 1/11:00 PM
Vinyl acetate	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
Vinyl Bromide	< 5.0	5.0	ppbV	1	5/17/2017 1:11:00 PM
Vinyl chloride	< 5.0	5.0	Vdqq	1	5/17/2017 1:11:00 PM
Surr: Bromofluorobenzene	83.8	73.7-124	%REC	1	5/17/2017 1:11:00 PM
NOTES:	_		•		
No Tic's found.					
OW LEVEL SULFURS BY TO-15		TO-15			Analyst: W [
1-Propanethiol	< 5.0	5.0	ppb∨	1	5/16/2017 3:15:00 PM
Carbon disulfide	1.3	5.0 J	Vdqq	1	5/16/2017 3:15:00 PM

Qualiflers:

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^{*} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

CLIENT:

C1705036-006A

Date: 22-Jun-17

Client Sample ID: WAT-SV09-050817

Tag Number: 1017.121

Collection Date: 5/8/2017

Matrix: AJR

Analyses	Resuit	**Limit Qual	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-15			Analyst: W D
Carbonyl sulfide	< 5.0	5.0	Váqq	1	5/16/2017 3:15:00 PM
Dimethyl sulfide	< 5.0	5.0	ppbV	1	5/16/2017 3:15:00 PM
Ethyl mercaptan	< 5.0	5.0	Vđạq	1	5/16/2017 3:15:00 PM
Hydrogen Sulfide	< 5.0	5.0	ρρbV	1	5/16/2017 3:15:00 PM
tsopropyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 3:15:00 PM
Methyl mercaptan	< 5.0	5.0	ppb∨	1	5/16/2017 3:15:00 PM
Surr: Bromolluorobenzene	153	70-130 S	%REC	1	5/16/2017 3:15:00 PM

Qualifiers:

Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-006A

Date: 22-Jun-17

Client Sample ID: WAT-SV09-050817

Tag Number: 1017.121

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15	11 - 11 - 11 - 11 - 11 - 11 - 11 - 11	TO	-15			Analyst: WD
1,1,1-Trichloroethane	< 27	27		ug/m3	1	5/17/2017 1:11:00 PM
1,1,2,2-Tetrachloroethane	< 34	34		ug/m3	1	5/17/2017 1:11:00 PM
1,1,2-Trichtoroethane	< 27	27		ug/m3	1	5/17/2017 1:11:00 PM
1,1-Dichloroethane	< 50	20		ug/m3	1	5/17/2017 1:11:00 PM
1,1-Dichloroethene	< 20	20		սց/m3	1	5/17/2017 1:11:00 PM
1,2,4-Trichlorobenzene	< 37	37		ug/m3	1	5/17/2017 1:11:00 PM
1,2,4-Trimethylbenzene	< 25	25		ug/m3	1	5/17/2017 1:11:00 PM
1,2-Dibromoethane	< 38	38		ug/m3	1	5/17/2017 1:11:00 PM
1,2-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 1:11:00 PM
1,2-Dichloroethane	< 20	20		սց/m3	1	5/17/2017 1:11:00 PM
1,2-Dichloropropane	< 23	23		ug/m3	1	5/17/2017 1:11:00 PM
1,3,5-Trimethylbenzene	< 25	25		ug/m3	1	5/17/2017 1:11:00 PM
1,3-butadiene	< 11	11		ug/m3	1	5/17/2017 1:11:00 PM
1,3-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 1:11:00 PM
1,4-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 1:11:00 PM
1,4-Dioxane	< 38	36		ug/m3	1	5/17/2017 1:11:00 PM
2,2,4-trimethylpentane	< 23	23		ug/m3	1	5/17/2017 1:11:00 PM
4-ethyitoluene	< 25	25		ug/m3	1	5/17/2017 1:11:00 PM
Acetone	25	24		ug/m3	1	5/17/2017 1:11:00 PM
Allyt chloride	< 16	16		ug/m3	1	5/17/2017 1:11:00 PM
Benzene	14	16	J	ug/m3	1	5/17/2017 1:11:00 PM
Benzyl chloride	< 29	29		ug/m3	1	5/17/2017 1:11:00 PM
Bromodichloromethane	< 33	33		ug/m3	1	5/17/2017 1:11:00 PM
Bromoform	< 52	52		ug/m3	1	5/17/2017 1:11:00 PM
Bromomethane	< 1 9	19		ug/m3	1	5/17/2017 1:11:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/17/2017 1:11:00 PM
Carbon tetrachloride	< 31	31		սց/m3	1	5/17/2017 1:11:00 PM
Chlorobenzene	< 23	23		ug/m3	1	5/17/2017 1:11:00 PM
Chioroethane	< 13	13		ug/m3	1	5/17/2017 1:11:00 PM
Chloroform	< 24	24		ug/m3	1	5/17/2017 1:11:00 PM
Chloromethane	< 10	10		ug/m3	1	5/17/2017 1:11:00 PM
cis-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 1:11:00 PM
cis-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 1:11:00 PM
Cyclohexane	< 17	17		ug/m3	7	5/17/2017 1:11:00 PM
Dibromochloromethane	< 43	43		ug/m3	1	5/17/2017 1:11:00 PM
Ethyl ecetate	< 36	36		ug/m3	1	5/17/2017 1:11:00 PM
Ethylbenzene	< 22	22		ug/m3	1	5/17/2017 1:11:00 PM
Freon 11	< 28	28		ug/m3	1	5/17/2017 1:11:00 PM
Freon 113	< 38	38		ug/m3	1	5/17/2017 1:11:00 PM
Freon 114	< 35	35		ug/m3	1	5/17/2017 1:11:00 PM

Quatifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CH2M - St Louis

Lab Order:

C1705036

Client Sample ID: WAT-SV09-050817

CLIENT:

Tag Number: 1017.121

Date: 22-Jun-17

Project:

Former Hampshire

Collection Date: 5/8/2017

Lab ID: C1705036-006A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: W D
Freon 12	< 25	25		ug/m3	1	5/17/2017 1:11:00 PM
Heptane	< 20	20		ug/m3	1	5/17/2017 1:11:00 PM
Hexachloro-1,3-butadiene	< 53	53		աց/m3	1	5/17/2017 1:11:00 PM
Hexane	< 18	18		ug/m3	1	5/17/2017 1:11:00 PM
Isopropyl alcohol	< 12	12		սց/m3	1	5/17/2017 1:11:00 PM
m&p-Xylene	< 43	43		ug/m3	1	5/17/2017 1:11:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/17/2017 1:11:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	†	5/17/2017 1:11:00 PM
Methyl Isobutyl Ketone	< 41	41		ug/m3	1	5/17/2017 1:11:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/17/2017 1:11:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/17/2017 1:11:00 PM
o-Xylene	< 22	22		սց/m3	1	5/17/2017 1:11:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/17/2017 1:11:00 PM
Styrene	< 21	21		սց/m3	1	5/17/2017 1:11:00 PM
Tetrachloroethylene	< 34	34		սց/m3	1	5/17/2017 1:11:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/17/2017 1:11:00 PM
Toluene	11	19	J	ug/m3	1	5/17/2017 1:11:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 1:11:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 1:11:00 PM
Trichloroethene	< 27	27		ug/m3	1	5/17/2017 1:11:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/17/2017 1:11:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/17/2017 1:11:00 PM
Vinyl chloride	< 13	13		£m\gu	1	5/17/2017 1:11:00 PM
NOTES: No Tic's found.						
LOW LEVEL SULFURS BY TO-15		то	-15			Analyst: W0
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 3:15:00 PM
Carbon disulfide	4.1	16	J	սց/m3	1	5/16/2017 3:15:00 PM
Carbonyl sulfide	< 12	12		ug/m3	7	5/16/2017 3:15:00 PN
Dimethyl sulfide	< 19	19		սց/m3	1	5/16/2017 3:15:00 PM
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 3:15:00 PN
Hydrogen Sulfide	< 7.0	7.0		սց/m3	1	5/16/2017 3:15:00 PN
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 3:15:00 PM
Methyl mercaptan	< 9.8	9.8		սց/m3	1	5/16/2017 3:15:00 PN

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Quantitation Limit

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Analyte detected in the associated Method Blank 13

Holding times for preparation or analysis exceeded Н

Non-routine analyte. Quantitation estimated. IN

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

Ε Estimated Value above quantitation range

Analyte detected below quantitation limit J

Not Detected at the Limit of Detection ND

CLIENT: CH2M - St Louis

Lab Order:

Project:

Lab ID:

C1705036

Client Sample ID: WAT-SVII-050817

Date: 22-Jun-17

Tag Number: 494.58

Former Hampshire Collection Date: 5/8/2017

C1705036-007A Matrix: AIR

Analyses	Result	**Limit Qu	al Units	DF	Date Analyzed
FIELD PARAMETERS		FLD		•	Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHO	D 3C		Analyst: W D
Carbon dioxide	0.224	1.90 J	%	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	ND	0.580	%	1	5/15/2017
Nitrogen	77.1	8.30	%	1	5/15/2017
Oxygen	20.6	0.880	%	1	5/15/2017
SPPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,1-Dichloroethane	< 5.0	5.0	Vďqq	1	5/15/2017 10:39:00 PM
1,1-Dichloroethene	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 戸M
1,2,4-Trichlorobenzene	< 5.0	5.0	₽₽₽V	1	5/15/2017 10:39:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM
1,2-Dibromoethane	< 5.0	5.0	ρρbV	1	5/15/2017 10:39:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PN
1,2-Dichloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,2-Dichloropropane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,3-butadiene	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PN
1,4-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM
1,4-Dioxane	< 10	10	Vdq q	1	5/15/2017 10:39:00 PN
2,2,4-trimethylpentane	< 5.0	5.0	Vđqq	1	5/15/2017 10:39:00 PM
4-ethyltoluene	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PA
Acetone	3.8	10 J	Vđqq	1	5/15/2017 10:39:00 PN
Allyl chloride	< 5.0	5.0	Vđạq	1	5/15/2017 10:39:00 PN
Benzene	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PN
Senzyl chloride	< 5.0	5.0	Vđạq	1	5/15/2017 10:39:00 PN
Bromodichloromethane	< 5.0	5.0	Vđqq	1	5/15/2017 10:39:00 PN
Bromoform	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PN
Bromomethane	< 5.0	5.0	∨dqq	1	5/15/2017 10:39:00 PA
Carbon disulfide	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PN
Carbon tetrachloride	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PN
Chlorobenzene	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PN
Chloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
Chloroform	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM

Qualifiers:

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

³N Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J. Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Date: 22-Jun-17

Client Sample ID: WAT-SV11-050817

Tag Number: 494.58

Collection Date: 5/8/2017

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-007A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15	· ·	то	-15			Analyst: WD
Chloromethane	< 5.0	5.0		Vdqq	1	5/15/2017 10:39:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		Vdqq	1	5/15/2017 10:39:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		Vdqq	1	5/15/2017 10:39:00 PM
Cyclohexane	< 5.0	5.0		Vđq q	1	5/15/2017 10:39:00 PM
Dibromochloromethane	< 5.0	5.0		₽pbV	1	5/15/2017 10:39:00 PM
Ethyl acetate	< 10	10		Vøqq	1	5/15/2017 10:39:00 PM
Ethylbenzene	< 5.0	5.0		Vdqq	7	5/15/2017 10:39:00 PM
Freon 11	< 5.0	5.0		ppb∨	1	5/15/2017 10:39:00 PM
Freon 113	< 5.0	5.0		Vdqq	1	5/15/2017 10:39:00 PM
Freon 114	< 5.0	5.0		PpbV	1	5/15/2017 10:39:00 PM
Freon 12	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Heptane	< 5.0	5.0		ppb√	1	5/15/2017 10:39:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Hexane	< 5.0	5.0		ppbV	7	5/15/2017 10:39:00 PM
Isopropyi alcohol	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
m&p-Xylene	< 10	10		ppbV	1	5/15/2017 10:39:00 PM
Methyl Butyl Ketone	< 10	10		ppb∨	1	5/15/2017 10:39:00 PM
Methyl Ethyl Kelone	< 10	10		ppbV	1	5/15/2017 10:39:00 PM
Methyl Isobutyl Ketone	2.5	10	Ļ	Vdqq	1	5/15/2017 10:39:00 PM
Methyl tert-butyl ether	< 5.0	5.0		Vaqq	1	5/15/2017 10:39:00 PM
Methylene chloride	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
o-Xylene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Propylene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Styrene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Tetrachloroethylene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Tetrahydrofuran	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Toluene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
trans-1,2-Dichtoroethene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Trichloroethene	77	50		ppb∨	10	5/15/2017 11:14:00 PM
Vinyl acetate	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Vinyl Bromide	< 5.0	5.0		Vdqq	1	5/15/2017 10:39:00 PM
Vinyl chloride	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Surr: Bromofluorobenzene	77.0	73.7-124		%REC	1	5/15/2017 10:39:00 PM
TIC: Cyclotetrasiloxane, octamethyl- \$\$ Octam	34	0	JN	Vdqq	1	5/15/2017 10:39:00 PM
TIC: Cyclotrisiloxane, hexamethyl S\$ Dimethy	6.6	0	JN	Vdqq	1	5/15/2017 10:39:00 PM
TIC: Hydrogen sulfide \$\$ Dihydrogen monosulfi	160	0	JN	ppbV	1	5/15/2017 10:39:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

C1705036-007A

Date: 22-Jun-17

Client Sample ID: WAT-SV11-050817

Tag Number: 494.58

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qua	d Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-15			Analyst: WD
1-Propanethiol	< 5.0	5.0	ppb∨	1	5/16/2017 3:50:00 PM
Carbon disulfide	< 5.0	5.0	ppb∨	1	5/16/2017 3:50:00 PM
Carbonyl sulfide	< 5.0	5.0	ppb∨	1	5/16/2017 3:50:00 PM
Dimethyl sulfide	< 5.0	5.0	ppbV	1	5/16/2017 3:50:00 PM
Ethyl mercaptan	< 5.0	5.0	∨dqq	1	5/16/2017 3:50:00 PM
Hydrogen Sulfide	29	5.0	ppbV	1	5/16/2017 3:50:00 PM
Isopropyl mercaptan	< 5.0	5.0	Vđqq	1	5/16/2017 3:50:00 PM
Methyl mercaptan	< 5.0	5.0	Vdqq	1	5/16/2017 3:50:00 PM
Surr: Bromofluorobenzene	154	70-130 S	%REC	1	5/16/2017 3:50:00 PM

Qualifiers:

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Page 21 of 42

Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

IN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

CH2M - St Louis

CLIENT: Lab Order:

C1705036

C1703036

Project:

Former Hampshire

Lab ID:

C1705036-007A

Date: 22-Jun-17

Client Sample ID: WAT-SV11-050817

Tag Number: 494.58

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Q	ual Units	DF	Date Analyzed	
5PPB BY METHOD TO15		TO-1	5		Analyst: WD	
1,1,1-Trichloroethane	< 27	27	Em\gu	1	5/15/2017 10:39:00 PM	
1,1,2,2-Tetrachioroethane	< 34	34	ug/m3	1	5/15/2017 10:39:00 PM	
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 10:39:00 PM	
1,1-Dichloroethane	< 20	20	բց/m3	1	5/15/2017 10:39:00 PM	
1,1-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 10:39:00 PM	
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/15/2017 10:39:00 PM	
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 10:39:00 PM	
1,2-Dibromoethane	< 38	38	ug/m3	7	5/15/2017 10:39:00 PM	
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 10:39:00 PM	
1,2-Dichloroethane	< 20	20	ug/m3	1	5/15/2017 10:39:00 PM	
1,2-Dichloropropane	< 23	23	ug/m3	1	5/15/2017 10:39:00 PM	
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 10:39:00 PM	
1,3-butadiene	< 11	11	ug/m3	1	5/15/2017 10:39:00 PM	
1,3-Dichlorobenzene	< 30	30	սց/m3	1	5/15/2017 10:39:00 PM	
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 10:39:00 PM	
1.4-Dioxane	< 36	36	ug/m3	1	5/15/2017 10:39:00 PN	
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/15/2017 10:39:00 PM	
4-ethyltoluene	< 25	25	ug/m3	1	5/15/2017 10:39:00 PM	
Acetone	8.9	24	J ug/m3	1	5/15/2017 10:39:00 PM	
Allyl chloride	< 16	16	ug/m3	1	5/15/2017 10:39:00 PM	
Benzene	< 16	16	ug/m3	1	5/15/2017 10:39:00 PM	
Benzyl chloride	< 29	29	ug/m3	1	5/15/2017 10:39:00 PN	
Bromodichloromethane	< 33	33	ug/m3	1	5/15/2017 10:39:00 PM	
Bromoform	< 52	52	ug/m3	1	5/15/2017 10:39:00 PA	
Bromomethane	< 19	19	ug/m3	1	5/15/2017 10:39:00 PN	
Carbon disulfide	< 16	16	ug/m3	1	5/15/2017 10:39:00 PM	
Carbon tetrachloride	< 31	31	ug/m3	1	5/15/2017 10:39:00 PN	
Chlorobenzene	< 23	23	սց/m3	1	5/15/2017 10:39:00 PM	
Chloroethane	< 13	13	ug/m3	1	5/15/2017 10:39:00 PM	
Chloroform	< 24	24	ug/m3	. 1	5/15/2017 10:39:00 PN	
Chloromethane	< 10	10	ug/m3	1	5/15/2017 10:39:00 PN	
cis-1,2-Dichtoroethene	< 20	20	ug/m3	1	5/15/2017 10:39:00 PN	
cls-1,3-Dichloropropene	< 23	23	ug/m3	1	5/15/2017 10:39:00 PM	
Cyclohexane	< 17	17	ug/m3	1	5/15/2017 10:39:00 PM	
Dibromochloromethane	< 43	43	ug/m3	1	5/15/2017 10:39:00 PM	
Ethyl acetate	< 36	36	ug/m3	1	5/15/2017 10:39:00 PM	
Ethylbenzene	< 22	22	ug/m3	1	5/15/2017 10:39:00 P#	
Freon 11	< 28	28	ug/m3	1	5/15/2017 10:39:00 PM	
Freon 113	< 38	38	ug/m3	1	5/15/2017 10:39:00 PM	
Freon 114	< 35	35	ug/m3	1	5/15/2017 10:39:00 PM	

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J. Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

Page 13 of 28

Date: 22-Jun-17

CH2M - St Louis CLIENT:

Client Sample ID: WAT-SV11-050817 Lab Order: C1705036 Tag Number: 494.58

Collection Date: 5/8/2017 Project: Former Hampshire Matrix: AIR C1705036-007A Lab ID:

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
SPPB BY METHOD TO15		TC		Analyst: WD		
Freon 12	< 25	25		ug/m3	1	5/15/2017 10:39:00 PM
Heptane	< 20	20		ug/m3	1	5/15/2017 10:39:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/15/2017 10:39:00 PM
Hexane	< 18	18		սց/m3	1	5/15/2017 10:39:00 PN
Isopropyi alcohol	< 12	12		սց/m3	1	5/15/2017 10:39:00 PN
m&p-Xylene	< 43	43		սց/m3	1	5/15/2017 10:39:00 PN
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/15/2017 10:39:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/15/2017 10:39:00 ₽N
Methyl Isobutyl Ketone	10	41	J	ug/m3	1	5/15/2017 10:39:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/15/2017 10:39:00 PN
Methylene chloride	< 17	17		ug/m3	1	5/15/2017 10:39:00 PN
o-Xylene	< 22	22		ug/m3	1	5/15/2017 10:39:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/15/2017 10:39:00 PM
Styrene	< 21	21		ug/m3	1	5/15/2017 10:39:00 PA
Tetrachloroethylene	< 34	34		ug/m3	1	5/15/2017 10:39:00 Pf
Tetrahydrofuran	< 15	15		ug/m3	1	5/15/2017 10:39:00 Pf
Toluene	< 19	19		ug/m3	1	5/15/2017 10:39:00 PR
trans-1,2-Dichloroethene	< 20	20		սց/m3	1	5/15/2017 10:39:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/15/2017 10:39:00 PM
Trichloroethene	420	270		սց/m3	10	5/15/2017 11:14:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/15/2017 10:39:00 PM
Vinyi Bromide	< 22	22		ug/m3	1	5/15/2017 10:39:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/15/2017 10:39:00 PM
OW LEVEL SULFURS BY TO-15		TC)-15			Analyst: WD
t-Propanethiol	< 16	16		ug/m3	1	5/16/2017 3:50:00 PM
Carbon disulfide	< 15	16		ug/m3	។	5/16/2017 3:50:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 3:50:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 3:50:00 PM
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 3:50:00 PM
Hydrogen Sulfide	40	7.0		ug/m3	1	5/16/2017 3:50:00 PM
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 3:50:00 PM
Methyl mercaptan	< 9.8	8.9		ug/m3	1	5/16/2017 3:50:00 PM

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Quantitation Limit

Page 14 of 28

Analyte detected in the associated Method Blank I3

¹ Holding times for preparation or analysis exceeded

Non-routine analyte, Quantitation estimated. JN

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

³ Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order: C

C1705036

Former Hampshire

Project: Lab ID:

C1705036-008A

Date: 22-Jun-17

Client Sample ID: WAT-SV14-050817

Tag Number: 600.63

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qua	l Units	DF	Date Analyzed
FIELD PARAMETERS		FLD		Anaiyst:	
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHO	3C		Analyst: WD
Carbon dioxide	0.158	1,90 J	%	1	5/15/2017
Carbon Monoxide	ND	0.88.0	%	1	5/15/2017
Methane	ND	0.580	%	1	5/15/2017
Nitrogen	75.1	8.30	%	1	5/15/2017
Oxygen	20.5	0.880	%	1	5/15/2017
SPPB BY METHOD TO15		TO-15			Analyst: WD
1.1.1-Trichloroethane	< 5.0	5.0	₽₽b∨	1	5/17/2017 2:23:00 PM
1.1.2.2-Tetrachloroethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 2:23:00 PM
1,1-Dichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,1-Dichtoroethene	< 5.0	5.0	ppb∨	1	5/17/2017 2:23:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	∨dqq	1	5/17/2017 2:23:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	ppb∨	1	5/17/2017 2:23:00 PM
1,2-Dibromoethane	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
1,2-Dichtorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 2:23:00 PM
1,2-Dichloroethane	< 5.0	5.0	∨dqq	1	5/17/2017 2:23:00 PM
1,2-Dichloropropane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,3-butadiene	< 5.0	5.0	∨dqq	1	5/17/2017 2:23:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,4-Dioxane	< 10	10	ppb∨	1	5/17/2017 2:23:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
4-ethyltoluene	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Acetone	5.0	10 J	ppbV	1	5/17/2017 2:23:00 PM
Altyl chloride	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Benzene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Benzyl chłoride	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Bromodichloromethane	< 5.0	5.0	Vđqq	1	5/17/2017 2:23:00 PM
Bromoform	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Bromomethane	< 5.0	5.0	Vdqq	1	6/17/2017 2:23:00 PM
Carbon disulfide	< 5.0	5.0	Vđqq	1	5/17/2017 2:23:00 PM
Carbon tetrachioride	< 5.0	5.0	Vđạq	1	5/17/2017 2:23:00 PM
Chlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Chloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Chloroform	62	5.0	ppbV	1	5/17/2017 2:23:00 PM

Qualifiers:

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

ories, EEC

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-008A

Client Sample ID: WAT-SV14-050817

Date: 22-Jun-17

Tag Number: 600.63

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15	***************************************	TC)-15			Analyst: WD
Chloromethane	< 5.0	5.0		Vđạg	1	5/17/2017 2:23:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		∨dqq	1	5/17/2017 2:23:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		ppb∨	1	5/17/2017 2:23:00 PM
Cyclohexane	< 5.0	5.0		∨dqq	†	5/17/2017 2:23:00 PM
Dibromochloromethane	< 5.0	5.0		∨dqq	7	5/17/2017 2:23:00 PM
Ethyl acetate	< 10	10		Vdqq	1	5/17/2017 2:23:00 PM
Ethylbenzene	< 5.0	5.0		ppb∨	1	5/17/2017 2:23:00 PM
Freon 11	< 5.0	5.0		ρρb∨	1	5/17/2017 2:23:00 PM
Freon 113	< 5.0	5.0		∨dqq	1	5/17/2017 2:23:00 PM
Freon 114	< 5.0	5.0		₽₽₽V	1	5/17/2017 2:23:00 PM
Freon 12	< 5.0	5.0		ppb∨	7	5/17/2017 2:23:00 PM
rioptane	< 5.0	5.0		₽₽₽V	1	5/17/2017 2:23:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		Vdqq	1	5/17/2017 2:23:00 PM
Hexane	< 5.0	5.0		Vdgq	1	5/17/2017 2:23:00 PM
tsopropyl alcohol	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
m&p-Xylene	< 10	10		ppbV	1	5/17/2017 2:23:00 PM
Methyl Butyl Ketone	< 10	10		ppbV	1	5/17/2017 2:23:00 PM
Methyl Ethyl Ketone	< 10	10		ppb∨	1	5/17/2017 2:23:00 PM
Methyl Isobutyl Ketone	3.1	10	J	ppb∨	1	5/17/2017 2:23:00 PM
Methyl tert-butyl ether	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
Methylene chloride	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
o-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
Propylene	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
Styrene	< 5.0	5.0		ppb∨	1	5/17/2017 2:23:00 PM
Tetrachloroethylene	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
Tetrahydrofuran	< 5.0	5.0		Vaqq	1	5/17/2017 2:23:00 PM
Toluene	< 5.0	5.0		Vdqq	1	5/17/2017 2:23:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		Vdqq	1	5/17/2017 2:23:00 PM
Trichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
Vinyl acetate	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
Vinyl Bromide	< 5.0	5.0		ppbV	1	5/17/2017 2:23:00 PM
Vinyl chloride	< 5.0	5.0		ppb∨	1	5/17/2017 2:23:00 PM
Surr: Bromofluorobenzene	84.3	73.7-124		%REC	1	5/17/2017 2:23:00 PM
NOTES:	- ···•					
No Tio's found.						
LOW LEVEL SULFURS BY TO-15		т	D-15			Analyst: WD
1-Propanethiol	< 5.0	5.0		opb∨	1	5/16/2017 4:25:00 PM
Carbon disulfide	< 5.0	5,0		∨dqq	1	5/16/2017 4:25:00 PM

Qualifiers:

Page 23 of 42

^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

C1705036-008A

Date: 22-Jun-17

Client Sample ID: WAT-SV14-050817

Tag Number: 600.63

Collection Date: 5/8/2017

Matrix: AlR

Analyses	Result	**Limit(Qual	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-1	15			Analyst: WD
Carbonyl sulfide	< 5.0	5.0		∨dqq	t	5/16/2017 4:25:00 PM
Dimethyl sulfide	< 5.0	5.0		Vdqq	3	5/16/2017 4:25:00 PM
Ethyl mercapten	< 5.0	5.0		ppb∨	1	5/16/2017 4:25:00 PM
Hydrogen Suifide	18	5.0		Vdqq	1	5/16/2017 4:25:00 PM
Isopropyl mercaptan	< 5.0	5.0		∨dqq	1	5/16/2017 4:25:00 PM
Methyl mercaptan	< 5.0	5.0		Vdqq	1	5/16/2017 4:25:00 PM
Surr: Bromofluarobenzene	148	70-130	s	%REC	1	5/16/2017 4:25:00 PM

Qualifiers:

Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

3 Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Page 24 of 42

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

C1705036-008A

Date: 22-Jun-17

Client Sample ID: WAT-SV14-050817

Tag Number: 600.63

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual L	Jnits	DF	Date Analyzed
5PPB BY METHOD TO15		TO-	15			Analyst: WD
1,1,1-Trichloroethane	< 27	27	u	ıg/m3	1	5/17/2017 2:23:00 PM
1,1,2,2-Tetrachtoroethane	< 34	34	U	g/m3	1	5/17/2017 2:23:00 PM
1,1,2-Trichloroethane	< 27	27	u	ig/m3	1	5/17/2017 2:23:00 PM
1,1-Dichtoroethane	< 20	20	u	ıg/m3	1	5/17/2017 2:23:00 PM
1,1-Dichloroethene	< 20	20	U	ıg/m3	1	5/17/2017 2:23:00 PM
1,2,4-Trichlorobenzene	< 37	37	H	ıg/m3	1	5/17/2017 2:23:00 PM
1,2,4-Trimethy/benzene	< 25	25	u	ig/m3	1	5/17/2017 2:23:00 PM
1,2-Dibromoethane	< 38	38	u	ıg/m3	1	5/17/2017 2:23:00 PM
1,2-Dichlorobenzene	< 30	30	נו	ıg/m3	1	5/17/2017 2:23:00 PM
1,2-Dichloroethane	< 20	20	u	ıg/m3	1	5/17/2017 2:23:00 PM
1,2-Dichloropropane	< 23	23	u	ıg/m3	1	5/17/2017 2:23:00 PM
1,3,5-Trimethylbenzene	< 25	25	ti	ıg/m3	1	5/17/2017 2:23:00 PM
1,3-butadiene	< 11	11	u	sg/m3	1	5/17/2017 2:23:00 PM
1,3-Dichlorobenzene	< 30	30	L	ıg/m3	†	5/17/2017 2:23:00 PM
1,4-Dichlorobenzene	< 30	30	u	ıg/m3	1	5/17/2017 2:23:00 PM
1,4-Dioxane	< 36	36	Ų	ıg/m3	1	5/17/2017 2:23:00 PM
2,2,4-trimethylpentane	< 23	23	u	ւց/m3	1	5/17/2017 2:23:00 PM
4-ethy/toluene	< 25	25	ŧ,	.g/m3	1	5/17/2017 2:23:00 PM
Acetone	12	24	j r	.g/m3	1	5/17/2017 2:23:00 PM
Allyl chloride	< 16	16	ŧ.	±g/m3	1	5/17/2017 2:23:00 PM
Benzene	< 16	16	U	ıg/m3	1	5/17/2017 2:23:00 PM
Benzyl chloride	< 29	29	U	ug/m3	1	5/17/2017 2:23:00 PM
Bromodichioromethane	< 33	33	L	ug/m3	1	5/17/2017 2:23:00 PM
Bromoform	< 52	52	L	ıg/m3	1	5/17/2017 2:23:00 PM
Bromomethane	< 19	19	L	1 g/m 3	1	5/17/2017 2:23:00 PM
Carbon disulfide	< 16	16	ι	.g/m3	1	5/17/2017 2:23:00 PM
Carbon tetrachloride	< 31	31		ug/m3	1	5/17/2017 2:23:00 PM
Chlorobenzene	< 23	23	(.g/m3	1	5/17/2017 2:23:00 PM
Chloroethane	< 13	13	ŧ	ug/m3	1	5/17/2017 2:23:00 PM
Chloreform	300	24	i,	ug/m3	1	5/17/2017 2:23:00 PM
Chloromethane	< 10	10	ι	ug/m3	1	5/17/2017 2:23:00 PM
cis-1,2-Dichloroethene	< 20	20	L	ug/m3	1	5/17/2017 2:23:00 PM
cis-1,3-Olchloropropene	< 23	23	į.	ug/m3	1	5/17/2017 2:23:00 PM
Сусіонехале	< 17	17	ι	ug/m3	1	5/17/2017 2:23:00 PN
Dibromochloromethane	< 43	43	٤	ug/m3	1	5/17/2017 2:23:00 PM
Ethyl acetate	< 36	36		ug/m3	1	5/17/2017 2:23:00 PM
Ethylbenzene	< 22	22		ug/m3	1	5/17/2017 2:23:00 PN
Freon 11	< 28	28		ug/m3	1	5/17/2017 2:23:00 PM
Freon 113	< 38	38		ug/m3	1	5/17/2017 2:23:00 PN
Freon 114	< 35	35		ug/m3	1	5/17/2017 2:23:00 PN

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV14-050817

Lab Order: C1705036 Tag Number: 600.63 Collection Date: 5/8/2017 Project: Former Hampshire

Matrix: AIR Lab ID: C1705036-008A

Analyses	Resuit	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15		Analyst: WD	
Freon 12	< 25	25		ug/m3	1	5/17/2017 2:23:00 PM
Heptane	< 20	20		ug/m3	1	5/17/2017 2:23:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/17/2017 2:23:00 PM
Hexane	< 18	18		ug/m3	1	5/17/2017 2:23:00 PM
Isopropyl alcohol	< 12	12		ug/m3	1	5/17/2017 2:23:00 PM
m&p-Xylene	< 43	43		սց/m3	1	5/17/2017 2:23:00 PM
Methyl Butyl Ketone	< 41	41		սց/m3	1	5/17/2017 2:23:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/17/2017 2:23:00 PM
Methyl Isobutyl Ketone	13	41	j	ug/m3	1	5/17/2017 2:23:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/17/2017 2:23:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/17/2017 2:23:00 PM
o-Xylene	< 22	22		ug/m3	1	5/17/2017 2:23:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/17/2017 2:23:00 PM
Styrene	< 21	21		ug/m3	1	5/17/2017 2:23:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/17/2017 2:23:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/17/2017 2:23:00 PM
Toluene	< 19	19		սց/m3	1	5/17/2017 2:23:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 2:23:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 2:23:00 PM
Trichloroethene	< 27	27		ug/m3	1	5/17/2017 2:23:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/17/2017 2:23:00 PM
Vinył Bromide	< 22	22		ug/m3	1	5/17/2017 2:23:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/17/2017 2:23:00 PM
NOTES:						
No Tic's found.						
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: WD
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 4:25:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/16/2017 4:25:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 4:25:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 4:25:00 PM
Ethyl mercaptan	< 13	13		սց/m3	1	5/16/2017 4:25:00 PM
Hydrogen Sulfide	25	7.0		ug/m3	1	5/16/2017 4:25:00 PM
Isopropyi mercaptan	< 16	16		ug/m3	1	5/16/2017 4:25:00 PM
Methyl mercaptan	< 9.8	9.8		ug/m3	1	5/16/2017 4:25:00 PM

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•	54	44	3						

Quantitation Limit

ND Not Detected at the Limit of Detection

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Analyte detected in the associated Method Blank В

¹⁴ Holding times for preparation or analysis exceeded

Non-routine analyte. Quantitation estimated. JN

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E, Estimated Value above quantitation range

¹ Analyte detected below quantitation limit

tories, www

Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV13-050817

Lab Order: C1705036 Tag Number: 474.309
Project: Former Hampshire Collection Date: 5/8/2017

Lab ID: C1705036-009A Matrix: AIR

Lab 1D: C1705036-009A								
Analyses	Result	**Limit Qua	l Units	DF	Date Analyzed			
FIELD PARAMETERS		FLD			Analyst:			
Lab Vacuum In	-4		"Hg		5/12/2017			
Lab Vacuum Out	-30		"Hg		5/12/2017			
FIXED GAS SERIES		EPA METHOD		Analyst: W D				
Carbon dioxide	2.08	1.90	%	1	5/15/2017			
Carbon Monoxide	ND	0.880	%	1	5/15/2017			
Methane	ND	0.580	%	1	5/15/2017			
Nitrogen	77.8	8.30	%	1	5/15/2017			
Oxygen	17.4	0.880	%	1	5/15/2017			
SPPB BY METHOD TO15		TO-15			Analyst: WD			
1,1,1-Trichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
1,1,2-Trichloroethane	< 5.0	5.0	Vøgg	1	5/17/2017 3:00:00 PM			
1,1-Dichloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM			
1,1-Dichloroethene	< 5.0	5.0	∨ogq	1	5/17/2017 3:00:00 PM			
1,2,4-Trichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM			
1,2,4-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM			
1,2-Dibromoethane	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM			
1,2-Dichtorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM			
1,2-Dichioroethane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
1,2-Dichloropropane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
1,3,5-Trimethylbenzene	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM			
1,3-butadiene	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
1,3-Dichlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
1,4-Dichiorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM			
1,4-Dioxane	< 10	10	ppb∨	1	5/17/2017 3:00:00 PM			
2,2,4-trimethylpentane	< 5.0	5.0	∨dqq	1	5/17/2017 3:00:00 PM			
4-ethyltoluene	< 5.0	5.0	∨dqq	1	5/17/2017 3:00:00 PM			
Acetone	2.7	10 J	ppb∨	1	5/17/2017 3:00:00 PM			
Atlyl chloride	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM			
Benzene	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
Benzyl chłoride	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM			
Bromodichloromethane	< 5.0	5.0	ppb∨	7	5/17/2017 3:00:00 PM			
Bromoform	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
Bromomethane	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PfV			
Carbon disulfide	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
Carbon tetrachioride	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM			
Chlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
Chloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM			
Chloroform	16	5.0	ppb∨	7	5/17/2017 3:00:00 PM			

Qualifiers:

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis Client Sample ID: WAT-SV13-050817

Lab Order: C1705036 Tag Number: 474.309
Project: Former Hampshire Collection Date: 5/8/2017

Lab ID: C1705036-009A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	ÐF	Date Analyzed	
5PPB BY METHOD TO15	TO-15					Analyst: WD	
Chloromethane	< 5.0	5.0		ρρbV	1	5/17/2017 3:00:00 PM	
cis-1,2-Dichtoroethene	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
cis-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Cyclohexane	< 5.0	5.0		Vdqq	1	5/17/2017 3:00:00 PM	
Dibromochloromethane	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Ethyl acetate	< 10	10		ppbV	1	5/17/2017 3:00:00 PM	
Ethylbenzene	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Freon 11	< 5.0	5.0		Vdqq	1	5/17/2017 3:00:00 PM	
Freor 113	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Freon 114	< 5.0	5.0		Vdqq	1	5/17/2017 3:00:00 PM	
Freon 12	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Heptane	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Нехале	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Isopropyi alcohol	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
m&p-Xylene	< 10	10		ppbV	1	5/17/2017 3:00:00 PM	
Methyl Butyl Ketone	≺ 10	10		ppbV	1	5/17/2017 3:00:00 PM	
Methyl Ethyl Ketone	< 10	10		ppbV	1	5/17/2017 3:00:00 PM	
Methyl isobutyl Ketone	< 10	10		ppbV	1	5/17/2017 3:00:00 PM	
Methyl tert-butyl ether	< 5.0	5.0		Vdqq	1	5/17/2017 3:00:00 PM	
Methylene chloride	< 5.Q	5.0		ppbV	1	5/17/2017 3:00:00 PM	
o-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Propylene	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Styrene	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Tetrachloroethylene	< 5.0	5.0		ppb∨	1	5/17/2017 3:00:00 PM	
Tetrahydrofuran	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Toluene	< 5.0	5.0		Vdqq	1	5/17/2017 3:00:00 PM	
trans-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
trans-1,3-Dichloropropene	< 5.0	5.0		ppb∨	1	5/17/2017 3:00:00 PM	
Trichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Vinyl acetate	< 5.0	5.0		ppb∨	1	5/17/2017 3:00:00 PM	
Vinyl Bromide	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Vinyl chloride	< 5.0	5.0		ppbV	1	5/17/2017 3:00:00 PM	
Surr: Bromofluorobenzene	80.9	73.7-124		%REC	1	5/17/2017 3:00:00 PM	
NOTES:							
No Tic's found.							
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: WD	
1-Propanethiol	< 5.0	5.0		₽₽bV	1	5/16/2017 5:00:00 PM	
Carbon disulfide	< 5.0	5.0		ppbV	1	5/16/2017 5:00:00 PM	

Qualifiers:

Date: 22-Jun-17

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CH2M - St Louis CLIENT:

Lab Order: C1705036

Project: Former Hampshire

C1705036-009A Lab ID:

Date: 22-Jun-17

ANTER CONTROL OF THE RESIDENCE OF THE CONTROL OF TH Client Sample ID: WAT-SV13-050817

Tag Number: 474,309

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-	15			Analyst: WD
Carbonyl sulfide	< 5.0	5 .0		₽₽b∨	1	5/16/2017 5:00:00 PM
Dimethyl sulfide	< 5.0	5.0		Vdqq	1	5/16/2017 5:00:00 PM
Ethyl mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 5:00:00 PM
Hydrogen Sulfide	20	5.0		₽pb∨	1	5/16/2017 5:00:00 PM
Isopropyl mercaptan	< 5.0	5.0		ppb∨	1	5/16/2017 5:00:00 PM
Methyl mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 5:00:00 PM
Surr: Bromofluorobenzene	148	70-130	S	%REC	1	5/16/2017 5:00:00 PM

Qualifiers:

Quantitation Limit

Analyte detected in the associated Method Blank В

H Holding times for preparation or analysis exceeded

Non-routine analyte, Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

Estimated Value above quantitation range 12

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis Client Sample ID: WAT-SV13-050817

Lab Order: C1705036 Tag Number: 474.309
Project: Former Hampshire Collection Date: 5/8/2017

Project: Former Hampshire Collection Date: 5/8/2
Lab ID: C1705036-009A Matrix: AIR

Analyses	Result	**Limit Qual	Units	ÐF	Date Analyzed
SPPB BY METHOD TO15	The state of the s	TO-15			Analyst: W C
1,1,1-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 3:00:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	ug/m3	1	5/17/2017 3:00:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 3:00:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
1,1-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
1,2,4-Trichiorobenzene	< 37	37	ug/m3	1	5/17/2017 3:00:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 3:00:00 PN
1,2-Dibromoethane	< 38	38	ug/m3	1	5/17/2017 3:00:00 PM
1,2-Dichtorobenzene	< 30	30	ug/m3	1	5/17/2017 3:00:00 PM
1,2-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
1,2-Dichloropropane	< 23	23	սց/m3	1	5/17/2017 3:00:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	6/17/2017 3:00:00 PM
1,3-butadiene	< 11	11	ug/m3	1	5/17/2017 3:00:00 PM
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 3:00:00 PN
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 3:00:00 PN
1,4-Dioxane	< 36	36	ug/m3	1	5/17/2017 3:00:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/17/2017 3:00:00 PN
4-ethyltoluene	< 25	25	ug/m3	1	5/17/2017 3:00:00 PM
Acetone	6.4	24 J	ug/m3	1	5/17/2017 3:00:00 PN
Allyl chloride	< 16	16	ug/m3	1	5/17/2017 3:00:00 PN
Benzene	< 16	16	ug/m3	1	6/17/2017 3:00:00 PM
Benzyl chloride	< 29	29	ug/m3	1	5/17/2017 3:00:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/17/2017 3:00:00 PN
Bromoform	< 52	52	ug/m3	1	5/17/2017 3:00:00 PM
Bromomethane	< 19	19	ug/m3	1	5/17/2017 3:00:00 PN
Carbon disulfide	< 16	16	ug/m3	1	5/17/2017 3:00:00 PN
Carbon tetrachloride	< 31	31	ug/m3	1	5/17/2017 3:00:00 PN
Chlorobenzene	< 23	23	ug/m3	1	5/17/2017 3:00:00 PM
Chloroethane	< 13	13	ug/m3	1	5/17/2017 3:00:00 PN
Chloroform	78	24	ug/m3	1	5/17/2017 3:00:00 PN
Chloromethane	< 10	10	ug/m3	1	5/17/2017 3:00:00 PN
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 3:00:00 PN
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/17/2017 3:00:00 PM
Cyclohexane	< 17	17	ug/m3	1	5/17/2017 3:00:00 PN
Dibromochloromethane	< 43	43	ug/m3	1	5/17/2017 3:00:00 PN
Ethyl acetate	< 36	36	ug/m3	1	5/17/2017 3:00:00 PN
Ethylbenzene	< 22	22	ug/m3	1	5/17/2017 3:00:00 PN
Freon 11	< 28	28	ug/m3	1	5/17/2017 3:00:00 PN
Freon 113	< 38	38	սց/m3	1	5/17/2017 3:00:00 PN
Freon 114	< 35	35	ug/m3	1	5/17/2017 3:00:00 PN

Qualifiers:

Date: 22-Jun-17

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Or ready water

Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV13-050817

Lab Order: C1705036 Tag Number: 474.309
Project: Former Hampshire Collection Date: 5/8/2017

Lab ID: C1705036-009A Matrix: AIR

Analyses	Result	**Limit Qua	Units	ÐF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Analyst: W D
Freon 12	< 25	25	ug/m3	1	5/17/2017 3:00:00 PM
Heptane	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
Hexachforo-1,3-butadiene	< 53	53	ug/m3	1	5/17/2017 3:00:00 PM
Hexane	< 18	18	ug/m3	1	5/17/2017 3:00:00 PM
Isopropy! alcohol	< 12	12	ug/m3	1	5/17/2017 3:00:00 PM
ni&p-Xylene	< 43	43	ug/m3	1	5/17/2017 3:00:00 PM
Methyl Butyl Ketone	< 41	41	ug/m3	1	5/17/2017 3:00:00 PM
Methyl Ethyl Ketone	< 29	29	սց/m3	1	5/17/2017 3:00:00 PM
Methyl Isobutyl Ketone	< 41	41	ug/m3	1	5/17/2017 3:00:00 PM
Methyl tert-butyl ether	< 18	18	ug/m3	1	5/17/2017 3:00:00 PM
Methylene chloride	< 17	17	ug/m3	1	5/17/2017 3:00:00 PM
o-Xylene	< 22	22	ug/m3	1	5/17/2017 3:00:00 PM
Propylene	< 8.6	8.6	ug/m3	1	5/17/2017 3:00:00 PM
Styrene	< 21	21	ug/m3	1	5/17/2017 3:00:00 PM
Tetrachloroethylene	< 34	34	ug/m3	1	5/17/2017 3:00:00 PM
Tetrahydrofuran	< 15	15	ug/m3	1	5/17/2017 3:00:00 PM
Toluene	< 19	19	ug/m3	1	5/17/2017 3:00:00 PM
trans-1,2-Dichloroethene	< 20	20	սց/m3	1	5/17/2017 3:00:00 PM
trans-1,3-Dichloropropene	< 23	23	ug/m3	1	5/17/2017 3:00:00 PM
Trichloroethene	< 27	27	սց/m3	1	5/17/2017 3:00:00 PM
Vinyl acetate	< 18	18	ug/m3	1	5/17/2017 3:00:00 PM
Vinyl Bromide	< 22	22	ug/m3	1	5/17/2017 3:00:00 PM
Vinyl chloride	< 13	13	ug/m3	1	5/17/2017 3:00:00 PM
NOTES:					
No Tic's found.		TO 45			Analyst: WD
LOW LEVEL SULFURS BY TO-15	< 16	TO-15 16	ug/m3	1	5/16/2017 5:00:00 PM
1-Propanethiol	< 16	16	ug/m3	1	5/16/2017 5:00:00 PM
Carbon disulfide	< 12	12	ug/m3	1	5/16/2017 5:00:00 PM
Carbonyl sulfide	< 19	19	ug/m3	'n	5/16/2017 5:00:00 PM
Dimethyl sulfide	< 13	13	ug/ma ug/m3	1	5/16/2017 5:00:00 PM
Ethyl mercaptan	28	7.0	ug/m3	1	5/16/2017 5:00:00 PN
Hydrogen Sulfide	46 < 16	7.0 16	_	1	5/16/2017 5:00:00 PN
Isopropyl mercaptan			ug/m3	1	5/16/2017 5:00:00 PN
Methyl mercaptan	< 9.8	9.8	ug/m3	1	3/10/2017 3:00:00 FW

O	11 21	21	HC	1.3

^{**} Quantitation Limit

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B Analyte detected in the associated Method Blank

¹⁴ Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV07-050917

CHERCAIN CHIZM - St Louis Chercain Cher

Lab Order:C1705036Tag Number:478.306Project:Former HampshireCollection Date:5/9/2017

Lab ID: C1705036-010A Matrix: AIR

Analyses	Result	**Limit Qua	al Units	DF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum In	-4		"idg		5/12/2017
Lab Vacuum Ouf	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHO	D 3C		Analyst: WD
Carbon dioxide	0.266	1.90 J	%	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	ND	0.580	%	1	5/15/2017
Nitrogen	78.9	8.30	%	1	5/15/2017
Oxygen	21,0	0.880	%	1	5/15/2017
SPPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5,0	ppbV	1	5/17/2017 3:49:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
1,1-Dichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
1,1-Dichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
1,2-Dibromoethane	< 5.0	5.0	₽₽bV	1	5/17/2017 3:49:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 3:49:00 PM
1,2-Dichloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
1,2-Dichloropropane	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
1,3-butadiene	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
1,4-Dioxane	< 10	10	ppbV	1	5/17/2017 3:49:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
4-ethyltoluene	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
Acetone	58	100 J	ppbV	10	5/17/2017 4:24:00 PM
Allyl chloride	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
Benzene	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
Benzył chłoride	< 5.0	5.0	PpbV	1	5/17/2017 3:49:00 PM
Bromodichloromethane	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
Bromoform	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
Bromomethane	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/17/2017 3:49:00 PM
Carbon tetrachloride	< 5.0	5.0	γρφV	1	5/17/2017 3:49:00 PM
Chlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
Chloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 3:49:00 PM
Chioroform	67	50	ppbV	10	5/17/2017 4:24:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- 3N Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- . Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis Client Sample ID: WAT-SV07-050917

Lab Order:C1705036Tag Number:478.306Project:Former HampshireCollection Date:5/9/2017

Lab ID: C1705036-010A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	ÐF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: W E
Chloromethane	< 5.0	5.0		Vdqq	1	5/17/2017 3:49:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		ρρb∨	1	5/17/2017 3:49:00 PM
cis-1,3-Dichlorapropene	< 5.0	5.0		₽₽b∨	1	5/17/2017 3:49:00 PM
Cyclohexane	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Dibromochloromethane	< 5.0	5.0		Vđqq	1	5/17/2017 3:49:00 PM
Ethyl acetate	< 10	10		Vdqq	1	5/17/2017 3:49:00 PM
Ethylbenzene	< 5.0	5.0		Vdqq	1	5/17/2017 3:49:00 PM
Freon 11	< 5.0	5.0		Vdąq	1	5/17/2017 3:49:00 PM
Freon 113	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Frean 114	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Freon 12	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Heptane	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppb∨	1	5/17/2017 3:49:00 PM
Hexane	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
isopropyl alcohol	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
m&p-Xylene	< 10	10		ppb∨	1	5/17/2017 3:49:00 PM
Methyl Butyl Ketone	< 10	10		ppbV	1	5/17/2017 3:49:00 PM
Methyl Ethyl Ketone	< 10	10		ppbV	1	5/17/2017 3:49:00 PM
Methyl Isobutyl Ketone	95	100	J	Vdqq	10	5/17/2017 4:24:00 PM
Methyl tert-butyl ether	< 5.0	5.0		Vdqq	1	5/17/2017 3:49:00 PM
Methylene chloride	7.0	5.0		Vđạq	1	5/17/2017 3:49:00 PM
o-Xylene	< 5.0	5.0		ppb∨	1	5/17/2017 3:49:00 PM
Propylene	< 5.0	5.0		Vdqq	1	5/17/2017 3:49:00 PM
Styrene	< 5.0	5.0		ppb∨	1	5/17/2017 3:49:00 PM
Tetrachloroethylene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Tetrahydrofuran	< 5.0	5.0		Vdqq	1	5/17/2017 3:49:00 PM
Toluene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		∨dqq	1	5/17/2017 3:49:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Trichloroethene	16	5.0		ppb∨	1	5/17/2017 3:49:00 PM
Vinyl acetate	< 5.0	5.0		Vdqq	1	5/17/2017 3:49:00 PM
Vinyl Bromide	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Vinyl chloride	< 5.0	5.0		Vdqq	1	5/17/2017 3:49:00 PM
Surr: Bromofluorobenzene	86.8	73.7-124		%REC	1	5/17/2017 3:49:00 PN
TIC: Cyclotetrasiloxane, octamethyl- \$\$ Octam	60	0	JN	ppb∨	1	5/17/2017 3:49:00 PM
TIC: Cyclotrisiloxane, hexamethyl	28	0	JN	ppb∨	1	5/17/2017 3:49:00 PM
TIC: Silanol, trimethyl- \$\$ Hydroxytrimethyls	6.1	O	JN	Vdqq	1	5/17/2017 3:49:00 PM
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: WE

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- 3N Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range

Date: 22-Jun-17

- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis Client Sample ID: WAT-SV07-050917

Lab Order: C1705036 Tag Number: 478.306
Project: Former Hampshire Collection Date: 5/9/2017

Lab ID: C1705036-010A Matrix: AIR

Analyses	Result	**Limit C	Qual	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-1	5			Analyst: WD
1-Propanethiol	< 5.0	5.0	}	opbV	1	5/16/2017 5:35:00 PM
Carbon disulfide	< 5.0	5.0	ļ	opbV	1	5/16/2017 5:35:00 PM
Carbonyl sulfide	< 5.0	5.0	ļ	Vđạc	1	5/16/2017 5:35:00 PM
Dimethyl sulfide	< 5.0	5.0	ļ	Vđạc	1	5/16/2017 5:35:00 PM
Ethyl mercaptan	< 5.0	5.0	í	Vđạc	1	5/16/2017 5:35:00 PM
Hydrogen Sulfide	8.7	5.0	1	Vdqa	1	5/16/2017 5:35:00 PM
Isopropyl mercaptan	< 5.0	5.0	3	Vdqq	1	5/16/2017 5:35:00 PM
Methyl mercaptan	< 5.0	5.0	,	Vdqq	1	5/16/2017 5:35:00 PM
Surr: Bromofisorobenzene	145	70-130	S	%REC	1	5/16/2017 5:35:00 PM

Qualifiers:

Results reported are not blank corrected

Date: 22-Jun-17

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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^{**} Ougntitation Limit

⁸ Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

³N Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

CLIENT: CH2M - St Louis Client Sample 1D: WAT-SV07-050917

Lab Order:C1705036Tag Number:478.306Project:Former HampshireCollection Date:5/9/2017

Lab ID: C1705036-010A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
SPPB BY METHOD TO15	1 11 11 18 1800 1 1111	TO			Analyst: WD	
1,1,1-Trichloroethane	< 27	27		ug/m3	1	5/17/2017 3:49:00 PM
1,1,2,2-Tetrachloroethane	< 34	34		ug/m3	1	6/17/2017 3:49:00 PM
1,1,2-Trichloroethane	< 27	27		ug/m3	1	5/17/2017 3:49:00 PM
1,1-Dichloroethane	< 20	20		ug/m3	1	5/17/2017 3:49:00 PM
1,1-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 3:49:00 PM
1,2,4-Trichlorobenzene	< 37	37		ug/m3	1	5/17/2017 3:49:00 PM
1,2,4-Trimethylbenzene	< 25	25		ug/m3	1	5/17/2017 3:49:00 PM
1,2-Dibromoethane	< 38	38		ug/m3	1	5/17/2017 3:49:00 PM
1,2-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 3:49:00 PM
1,2-Dichloroethane	< 20	20		ug/m3	1	5/17/2017 3:49:00 PM
1,2-Dichloropropane	< 23	23		ug/m3	1	5/17/2017 3:49:00 PM
1,3,5-Trimethylbenzene	< 25	25		ug/m3	1	5/17/2017 3:49:00 PM
1,3-butadiene	< 11	11		ug/m3	1	5/17/2017 3:49:00 PM
1,3-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 3:49:00 PM
1,4-Dichlorobenzene	< 30	30		սց/m3	1	5/17/2017 3:49:00 PM
1,4-Dioxane	< 36	36		ug/m3	1	5/17/2017 3:49:00 PM
2,2,4-trimethylpentane	< 23	23		ug/m3	1	5/17/2017 3:49:00 PM
4-ethyltoluene	< 25	25		ս ց/m3	1	5/17/2017 3:49:00 PM
Acetone	140	240	J	ug/m3	10	5/17/2017 4:24:00 PM
Allyl chloride	< 16	18		սց/m3	1	5/17/2017 3:49:00 PM
Benzene	< 16	16		ug/m3	1	5/17/2017 3:49:00 PM
Benzyl chloride	< 29	29		ug/m3	1	5/17/2017 3:49:00 PM
Bromodichloromethane	< 33	33		սց/m3	1	6/17/2017 3:49:00 PM
Bromoform	< 52	52		ug/m3	1	5/17/2017 3:49:00 PM
Bromomethane	< 19	19		սց/m3	1	5/17/2017 3:49:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/17/2017 3:49:00 PM
Carbon tetrachloride	< 31	31		ug/m3	1	5/17/2017 3:49:00 PM
Chlorobenzene	< 23	23		ug/m3	1	5/17/2017 3:49:00 PM
Chloroethane	< 13	13		ug/m3	1	5/17/2017 3:49:00 PM
Chloroform	330	240		ug/m3	10	5/17/2017 4:24:00 PM
Chloromethane	< 10	10		ug/m3	1	5/17/2017 3:49:00 PM
cis-1,2-Dichtoroethene	< 20	20		սց/m3	1	5/17/2017 3:49:00 PM
cis-1,3-Dichtoropropene	< 23	23		ug/m3	1	5/17/2017 3:49:00 PM
Cyclohexane	< 17	17		ug/m3	1	5/17/2017 3:49:00 PM
Dibromochloromethane	< 43	43		ug/m3	1	5/17/2017 3:49:00 PM
Ethyl acetate	< 36	36		ug/m3	1	5/17/2017 3:49:00 PM
Ethylbenzene	< 22	22		ug/m3	1	5/17/2017 3:49:00 PM
Freon 11	< 28	28		ug/m3	1	5/17/2017 3:49:00 PM
Freon 113	< 38	38		ug/m3	1	5/17/2017 3:49:00 PM
Freon 114	< 35	35		ug/m3	1	5/17/2017 3:49:00 PM

Qualifiers:

Date: 22-Jun-17

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^{*} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV07-050917 Lab Order: C1705036 Tag Number: 478.306

Project: Former Hampshire Collection Date: 5/9/2017
Lab ID: C1705036-010A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO)-15			Analyst: WD
Freon 12	< 25	25		ug/m3	1	5/17/2017 3:49:00 PM
Hieptane	< 20	20		ug/m3	1	5/17/2017 3:49:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/17/2017 3:49:00 PM
Hexane	< 18	18		ug/m3	1	5/17/2017 3:49:00 PM
Isopropyl alcohol	< 12	12		ug/m3	1	5/17/2017 3:49:00 PM
m&p-Xylene	< 43	43		ug/m3	1	5/17/2017 3:49:00 PM
Methyl Butyl Ketone	< 41	41		սց/m3	7	5/17/2017 3:49:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	3	5/17/2017 3:49:00 PM
Methyl Isobutyl Ketone	390	410	J	սց/m3	10	5/17/2017 4:24:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/17/2017 3:49:00 PM
Methylene chloride	24	17		ug/m3	1	5/17/2017 3:49:00 PM
o-Xylene	< 22	22		ug/m3	1	5/17/2017 3:49:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/17/2017 3:49:00 PM
Styrene	< 21	21		ug/m3	1	5/17/2017 3:49:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/17/2017 3:49:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/17/2017 3:49:00 PM
Toluene	< 19	19		ug/m3	1	5/17/2017 3:49:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 3:49:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 3:49:00 PM
Trichioroethene	86	27		ug/m3	1	5/17/2017 3:49:00 PM
Vinyt acetate	< 18	18		սց/m3	1	5/17/2017 3:49:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/17/2017 3:49:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/17/2017 3:49:00 PM
LOW LEVEL SULFURS BY TO-15		TC)-15			Analyst: WD
1-Propanethiol	< 16	16		цg/m3	1	5/16/2017 5:35:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/16/2017 5:35:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 5:35:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 5:35:00 PM
Ethyl mercaptan	< 13	13		սց/m3	1	5/16/2017 5:35:00 PM
Hydrogen Sulfide	12	7.0		ug/m3	1	5/16/2017 5:35:00 PM
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 5:35:00 PM
Methyl mercaptan	< 9.8	9.8		ug/m3	1	5/16/2017 5:35:00 PM

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Quantitation Limit

Date: 22-Jun-17

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order:

C1705036

Client Sample ID: WAT-SV08-050917

Date: 22-Jun-17

Tag Number: 427.79

Collection Date: 5/9/2017

Matrix: AIR

Project: Former Hampshire
Lab 1D: C1705036-011A

Analyses	Result	**Limit (ual Units	DF	Date Analyzed
FIELD PARAMETERS		FLD)		Analyst:
Lab Vacuum In	-6		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METH	IOD 3C		Analyst: WD
Carbon dioxide	0.0270	1.90	J %	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	ND	0.580	%	1	5/15/2017
Nitrogen	79,1	8,30	%	1	5/15/2017
Oxygen	20.4	0.880	%	1	5/15/2017
PPB BY METHOD TO15		TO-1	5		Analyst: WD
1,1,1-Trichtoroethane	< 5,0	5.0	ppbV	1	5/17/2017 5:01:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
1,1-Dichloroethane	< 5.0	5.0	₽₽ÞV	1	5/17/2017 5:01:00 PM
1,1-Dichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
1,2,4-Trimethy/benzene	< 5.0	5.0	Vdqq	1	5/17/2017 5:01:00 PM
1,2-Dibromoethane	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 5:01:00 PM
1.2-Dichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM
1,2-Dichloropropane	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM
1,3-butadiene	< 5.0	5.0	Vdqq	1	5/17/2017 5:01:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
1.4-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
1,4-Dioxane	< 10	10	ppbV	1	5/17/2017 5:01:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM
4-ethyltoluene	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM
Acetone	88	50	Vdqq	5	5/17/2017 5:36:00 PM
Allyl chloride	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
Benzene	6.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
Benzyl chloride	< 5.0	5,0	ppbV	1	5/17/2017 5:01:00 PM
Bromodichloromethane	< 5.0	5.0	Vdgq	1	5/17/2017 5:01:00 PN
Bromoform	< 5.0	5.0	∨dgq	1	5/17/2017 5:01:00 PM
Bromomethane	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM
Carbon disulfide	8.9	5.0	ppb∨	1	5/17/2017 5:01:00 PM
Carbon tetrachloride	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM
Chlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM
Chloroethane	< 5.0	5,0	ppbV	1	5/17/2017 5:01:00 PM
Chloroform	19	5.0	ppbV	1	5/17/2017 5:01:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- 8 Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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C1705036-011A

Lab 1D:

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV08-050917

Lab Order:C1705036Tag Number:427.79Project:Former HampshireCollection Date:5/9/2017

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
SPPB BY METHOD TO15	***************************************	то	-15			Analyst: W£
Chloromethane	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		Vdqq	1	5/17/2017 5:01:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		Vđqq	1	5/17/2017 5:01:00 PM
Cyclohexane	8.0	5.0		Vđqq	1	5/17/2017 5:01:00 PM
Dibromochioromethane	< 5.0	5.0		Vđqq	1	5/17/2017 5:01:00 PN
Ethyl acetate	< 10	10		∨dqq	1	5/17/2017 5:01:00 PN
Ethylbenzene	< 5.0	5.0		Vdqq	1	5/17/2017 5:01:00 PM
Freon 11	< 5.0	5.0		PpbV	1	5/17/2017 5:01:00 PM
Freon 113	< 5.0	5.0		Vdqq	1	5/17/2017 5:01:00 PN
Freon 114	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Freon 12	< 5.0	5.0		Vdqq	1	5/17/2017 5:01:00 PN
Heptane	9.8	5.0		ppbV	1	5/17/2017 5:01:00 PN
Hexachloro-1,3-butadiene	< 5.0	5.0		Vđqq	1	5/17/2017 5:01:00 PN
Hexane	12	5.0		Vdqq	1	5/17/2017 5:01:00 PN
Isopropyl alcohol	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PN
m&p-Xylene	6.9	10	Ĵ	Vđạq	1	5/17/2017 5:01:00 PN
Methyl Butyl Ketone	< 10	10		ppb∨	1	5/17/2017 5:01:00 PA
Methyl Ethyl Ketone	9.0	10	J	ppbV	1	5/17/2017 5:01:00 PN
Methyl isobutyl Ketone	56	10		Vđạq	1	5/17/2017 5:01:00 PM
Methyl tert-butyl ether	< 5.0	5.0		ρρb∨	1	5/17/2017 5:01:00 PM
Methylene chloride	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
o-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Propylene	52	5.0		ppbV	1	5/17/2017 5:01:00 PM
Styrene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Tetrachloroethylene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Tetrahydrofuran	< 5.0	5.0		ppb∨	1	5/17/2017 5:01:00 PM
Toluene	11	5.0		ppbV	1	5/17/2017 5:01:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ppb∨	1	5/17/2017 5:01:00 PM
Trichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 Ph
Vinyl acetate	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Vinyl Bramide	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Vinyl chloride	< 5.0	5.0		ppb∨	1	5/17/2017 5:01:00 Pf
Surr: Bromofluorobenzene	91.8	73,7-124		%REC	1	5/17/2017 5:01:00 PM
TIC: 1-Propeлe, 2-methyl-	15	0	JN	Vđqq	1	5/17/2017 5:01:00 Pt
TIC: Butane	28	O	ЛĻ	ppbV	1	5/17/2017 5:01:00 Pf
TIC: Butane, 2,3-dimethyl- \$\$ Biisopropy! \$\$	19	0	JN	Vdqq	1	5/17/2017 5:01:00 PM
TIC: Butane, 2-methyl-	24	0	ИL	ppb∨	1	5/17/2017 5:01:00 Pr
TIC: Cyclohexane, methyl-	21	0	JN	ppbV	1	5/17/2017 5:01:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected

Date: 22-Jun-17

Matrix: AIR

- ## Estimated Value above quantitation range
- 3 Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CH2M - St Louis

C1705036

Former Hampshire

Project: Lab ID:

CLIENT:

Lab Order:

C1705036-011A

Date: 22-Jun-17

Client Sample ID: WAT-SV08-050917

Tag Number: 427.79

Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO)-15			Analyst: WD
TIC: Cyclopentane, methyl-	19	0	JN	ppbV	7	5/17/2017 5:01:00 PM
TIC: Hydrogen sulfide \$\$ Dinydrogen monosulfi	980	0	ИL	ppb∨	1	5/17/2017 5:01:00 PM
TIC: Isobutane	21	O	JN	ррбV	1	5/17/2017 5:01:00 PM
TIC: Pentane \$\$ n-Pentane \$\$ Skellysoive A \$\$	33	0	JN	ppb∨	1	5/17/2017 5:01:00 PM
TIC: Pentane, 3-methyl-	10	0	ИL	PpbV	1	5/17/2017 5:01:00 PM
LOW LEVEL SULFURS BY TO-15		то	15			Analyst: W D
1-Propanethiol	< 5.0	5.0		∨dqq	1	5/16/2017 6:10:00 PM
Carbon disulfide	13	5.0		ppbV	1	5/16/2017 6:10:00 PM
Carbonyl sulfide	< 5.0	5.0		ppbV	1	5/16/2017 6:10:00 PM
Dimethyl sulfide	< 5.0	5.0		₽₽bV	1	5/16/2017 6:10:00 PM
Ethyl mercaptan	< 5.0	5.0		ppb∨	1	5/16/2017 6:10:00 PM
Hydrogen Sulfide	2300	50		ppbV	10	5/16/2017 9:03:00 PM
isopropyl mercaptan	3.5	5.0	J	ppbV	1	5/16/2017 6:10:00 PM
Methyl mercaptan	1.5	5.0	J	ppbV	1	5/16/2017 6:10:00 PM
Surr: Bromofluorobenzene	153	70-130	S	%REC	1	5/16/2017 6:10:00 PM
Surr: Bromofluorobenzene	102	70-130		%REC	10	5/16/2017 9:03:00 PM

Qualifiers:

ND Not Detected at the Limit of Detection

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Quantitation Limit

¹³ Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded 1-{

IN Non-routine analyte. Quantitation estimated.

Spike Recovery outside accepted recovery limits S

Results reported are not blank corrected

Estimated Value above quantitation range E

J Analyte detected below quantitation limit

CH2M - St Louis

Lab Order: C1705036

CLIENT:

Project: Former Hampshire

Lab ID: C1705036-011A

Date: 22-Jun-17

Client Sample ID: WAT-SV08-050917

Tag Number: 427.79 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit Qua	l Units	DF	Date Analyzed
SPPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 27	27	սց/ու3	1	5/17/2017 5:01:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	ug/m3	1	5/17/2017 5:01:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 5:01:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 5:01:00 PM
1,1-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 5:01:00 PM
1,2,4-Trichlorobenzene	< 37	37	աց/m3	1	5/17/2017 5:01:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 5:01:00 PM
1,2-Dibromoethane	< 38	38	ug/m3	1	5/17/2017 5:01:00 PM
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 5:01:00 PM
1,2-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 5:01:00 PM
1,2-Dichloropropane	< 23	23	ug/m3	1	5/17/2017 5:01:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 5:01:00 PM
1,3-butadiene	< 11	11	ug/m3	1	5/17/2017 5:01:00 PM
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 5:01:00 PM
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 5:01:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/17/2017 5:01:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/17/2017 5:01:00 PM
4-ethyltoluene	< 25	25	ug/m3	1	5/17/2017 5:01:00 PM
Acetone	210	120	սց/m3	5	5/17/2017 5:36:00 PM
Allyl chloride	< 16	16	ug/m3	1	5/17/2017 5:01:00 PM
Benzene	19	16	ug/m3	1	5/17/2017 5:01:00 PM
Benzyl chloride	< 29	29	ug/m3	1	5/17/2017 5:01:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/17/2017 5:01:00 PM
Bromoform	< 52	52	ug/m3	1	5/17/2017 5:01:00 PM
Bromomethane	< 19	19	ug/m3	1	5/17/2017 5:01:00 PM
Carbon disulfide	28	16	ug/m3	1	5/17/2017 5:01:00 PM
Carbon tetrachloride	< 31	31	ug/m3	1	5/17/2017 5:01:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/17/2017 5:01:00 PM
Chloroethane	< 13	13	ug/m3	1	5/17/2017 5:01:00 PM
Chloroform	94	24	ug/m3	1	5/17/2017 5:01:00 PM
Chloromethane	< 10	10	սց/m 3	1	5/17/2017 5:01:00 PM
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 5:01:00 PM
cls-1,3-Dichtoropropene	< 23	23	ug/m3	1	5/17/2017 5:01:00 PM
Cyclohexane	27	17	ug/m3	1	5/17/2017 5:01:00 PM
Dibromochloromethane	< 43	43	ug/m3	1	5/17/2017 5:01:00 PM
Ethyl acetate	< 36	36	ug/m3	1	5/17/2017 5:01:00 PM
Ethylbenzene	< 22	22	ug/m3	1	5/17/2017 5:01:00 PM
Freon 11	< 28	28	ug/m3	1	5/17/2017 5:01:00 PN
Freon 113	< 38	38	ug/m3	1	5/17/2017 5:01:00 PM
Freon 114	< 35	35	ug/m3	1	5/17/2017 5:01:00 PM

Qualifiers:

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^{*} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis Client Sample 1D: WAT-SV08-050917

Lab Order: C1705036 Cheft Sample 1D: WA1-5 V08-03051.

Lab Order:C1705036Tag Number: 427.79Project:Former HampshireCollection Date: 5/9/2017Lab ID:C1705036-011AMatrix: AIR

Analyses	Result	**Limit	Qua	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC	-15			Analyst: W [
Freen 12	< 25	25		ug/m3	1	5/17/2017 5:01:00 PM
Heptane	40	20		ug/m3	1	5/17/2017 5:01:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/17/2017 5:01:00 PM
Hexane	42	18		ug/m3	1	5/17/2017 5:01:00 PM
Isopropyl alcohol	< 12	12		ug/m3	1	5/17/2017 5:01:00 PM
m&p-Xylene	30	43	j	ug/m3	1	5/17/2017 5:01:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/17/2017 5:01:00 PM
Methyl Ethyl Ketone	27	29	j	ug/m3	1	5/17/2017 5:01:00 PM
Methyl Isobutyl Ketone	230	41		սց/m3	1	5/17/2017 5:01:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/17/2017 5:01:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/17/2017 5:01:00 PM
o-Xylene	< 22	22		ug/m3	1	5/17/2017 5:01:00 PM
Propylene	89	8.6		ug/m3	1	5/17/2017 5:01:00 PM
Styrene	< 21	21		ug/m3	1	5/17/2017 5:01:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/17/2017 5:01:00 PM
Tetrahydrofuran	< 15	15		սց/m3	1	5/17/2017 5:01:00 PM
Toluene	43	19		ug/m3	1	5/17/2017 5:01:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 5:01:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 5:01:00 PM
Trichloroethene	< 27	27		ug/m3	1	5/17/2017 5:01:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/17/2017 5:01:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/17/2017 5:01:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/17/2017 5:01:00 PM
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: WC
t-Propanethiol	< 16	16		ug/m3	1	5/16/2017 6:10:00 PM
Carbon disuffide	39	16		ug/m3	1	5/16/2017 6:10:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 6:10:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 6:10:00 PM
Ethyl mercaptan	< 13	13		սց/m3	1	5/16/2017 6:10:00 PM
Hydrogen Sulfide	3300	70		ug/m3	10	5/16/2017 9:03:00 PM
Isopropyl mercaptan	11	16	J	ug/m3	1	5/16/2017 6:10:00 PM
Methyl mercaptan	3.0	9.8	J	ug/m3	1	5/16/2017 6:10:00 PM

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^{**} Quantitation Limit

Date: 22-Jun-17

ND Not Detected at the Limit of Detection

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV15-050917

Lab Order: C1705036 Tag Number: 1019,403 Collection Date: 5/9/2017 Project: Former Hampshire

Lab ID: Matrix: AIR C1705036-012A

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS	111-111-1111-11-11-11-11-11-11-11-11-11	FL	.D	****		Analyst:
Lab Vacuum In	-4			"Hg		5/12/2017
Łab Vacuum Out	-30			"Hg		5/12/2017
FIXED GAS SERIES		EPA MET	HOD	3C		Analyst: WD
Carbon dioxide	32.1	1.90		%	1	5/15/2017
Carbon Monoxide	ВN	0.880		%	1	5/15/2017
Methane	38.6	0.580		%	1	5/15/2017
Nitrogen	18.4	8.30		%	1	5/15/2017
Oxygen	1.94	0.880		%	1	5/15/2017
SPPB BY METHOD TO15		TO-	15			Analyst: W D
1,1,1-Trichloroathane	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
1,1,2,2-Tetrachioroethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,1,2-Trichloroethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,1-Dichloroethane	39	50	J	Vdqq	10	5/15/2017 9:29:00 PM
1,1-Dichloroethene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,2,4-Trichtorobenzene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,2,4-Trimethylbenzene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,2-Dibromoethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,2-Dichlorobenzene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,2-Dichloroethane	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
1,2-Dichloropropane	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
1,3,5-Trimethylbenzene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,3-butadiene	< 50	50		рро∨	10	5/15/2017 9:29:00 PM
1,3-Dichtorobenzene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,4-Dichlorobenzene	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
1,4-Dioxane	< 100	100		ppb∨	10	5/15/2017 9:29:00 PM
2,2,4-trimethy/pentane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
4-ethyltoluene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Acetone	6200	1300		Vdqq	128	5/17/2017 1:46:00 PM
Allyl chloride	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Benzene	54	50		ppbV	10	5/15/2017 9:29:00 PM
Benzyl chloride	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Bromodichloromethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Bromoform	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
Bromomethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Carbon disulfide	3000	640		ppbV	128	5/17/2017 1:46:00 PM
Carbon tetrachioride	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
Chlorobenzene	28	50	J	ppbV	10	5/15/2017 9:29:00 PM
Chloroethane	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
Chloroform	1400	640		Vdqq	128	5/17/2017 1:46:00 PM

Qualifiers:

Date: 22-Jun-17

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Quantitation Limit

¹³ Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-012A

Date: 22-Jun-17

Client Sample ID: WAT-SV15-050917

Tag Number: 1019.403 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	ÐF	Date Analyzed
SPPB BY METHOD TO15		то	-15			Analyst: W E
Chloromethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
cis-1,2-Dichloroethene	140	50		ppbV	10	5/15/2017 9:29:00 PM
cis-1,3-Dichtoropropene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Cyclohexane	45	50	j	ppb∨	10	5/15/2017 9:29:00 PM
Dibromochloromethane	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
Ethyl acetate	< 100	100		ppbV	10	5/15/2017 9:29:00 PM
Ethylbenzene	800	50		∨dqq	10	5/15/2017 9:29:00 PM
Freon 11	< 50	50		ppbV	10	5/15/2017 9:29:00 PN
Freom 113	< 50	50		₽₽₽V	10	5/15/2017 9:29:00 PM
Freon 114	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
Freon 12	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
Heptane	300	50		ρρbV	10	5/15/2017 9:29:00 PM
Hexachloro-1,3-butadiene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Hexane	970	50		ppbV	10	5/15/2017 9:29:00 PN
Isopropyi alcohol	< 50	50		ppbV	10	5/15/2017 9:29:00 PN
m&p-Xylene	11000	1300		ppb∨	128	5/17/2017 1:46:00 PN
Methyl Butyl Ketone	< 100	100		₽₽bV	10	5/15/2017 9:29:00 PN
Methyl Ethyl Ketone	< 100	100		∨dqq	10	5/15/2017 9:29:00 PN
Methyl Isobutyl Ketone	32000	6400		ppbV	640	5/17/2017 6:46:00 PM
Methyl tert-butyl ether	< 50	50		ppbV	10	5/15/2017 9:29:00 PN
Methylene chloride	1700	640		₽₽₽V	128	5/17/2017 1:46:00 PN
o-Xyiene	3200	640		ppbV	128	5/17/2017 1:46:00 PM
Propylene	< 50	50		ppb∨	10	5/15/2017 9:29:00 PN
Styrene	< 50	50		ppbV	10	5/15/2017 9:29:00 PN
Tetrachloroethylene	< 50	50		ppb∨	10	5/15/2017 9:29:00 PN
Tetrahydrofuran	< 50	50		ρρφV	10	5/15/2017 9:29:00 PN
Toluene	2100	640		ppbV	128	5/17/2017 1:46:00 PA
trans-1,2-Dichloroethene	< 50	50		ppbV	10	5/15/2017 9:29:00 PN
trans-1,3-Dichloropropene	< 50	50		ppbV	10	5/15/2017 9:29:00 PN
Trichtoroethene	48	50	j	∨dqq	10	5/15/2017 9:29:00 PN
Vinyi acetate	< 50	50		ppbV	10	5/15/2017 9:29:00 PN
Vinyl Bromide	< 50	50		ppbV	10	5/15/2017 9:29:00 PN
Vinyl chloride	< 50	50		Vdqq	10	5/15/2017 9:29:00 PN
Surr: Bromofluorobenzene	120	73.7-124		%REC	10	5/15/2017 9:29:00 PN
TIC: 1-Butanol, 3-methoxy-	5400	0	JN	ppbV	10	5/15/2017 9:29:00 PN
TIC: 2,2'-Bifuran, octahydro-	3800	Q	JN	ppbV	10	5/15/2017 9:29:00 PN
TIC: 2-Propanethiol \$\$ isopropanethiol \$\$ iso	16000	0	EJN	Vdqq	10	5/15/2017 9:29:00 PM
TIC: 3-Penten-2-one	13000	0	EJN	₽₽bV	10	5/15/2017 9:29:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- 3 Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV15-050917

Lab Order:C1705036Tag Number:1019.403Project:Former HampshireCollection Date:5/9/2017

Lab ID: C1705036-012A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: WD
TIC: Butane, 1,1'- {ethylidenebis(oxy)}bis{2-m	8300	0	ИL	ppbV	10	5/15/2017 9:29:00 PM
TIC: Butanoic acid, 3-methylbutyl ester	4300	0	ИĻ	ppbV	10	5/15/2017 9:29:00 PM
TIC: Cyclopropane, 1,2-dimethyl-, cis-	3500	o	ИL	ppbV	10	5/15/2017 9:29:00 PM
TIC: Pentane, 1,1'-oxybis- (19.16)	4600	O	JN	∨dqq	10	5/15/2017 9:29:00 PM
TIC: Pentane, 1,1'-oxybis- (19.63) NOTES:	4000	0	JN	Vdqq	10	5/15/2017 9:29:00 PM
* The reporting limits were raised due to th	e high concentra	ation of metha	ne in t	ne sample.		
LOW LEVEL SULFURS BY TO-15		TO	-15			Analyst: WD
1∝Propanethiol	4000	640		Vdqq	128	5/18/2017 4:25:00 PM
Constitution of the colorest	2000	640		mark) /	420	E/49/2017 4:25:00 DN4

LOW LEVEL SULFURS BY TO-15		TO-	15			Analyst: WD
1-Propanethiol	4000	640		ppbV	128	5/18/2017 4:25:00 PM
Carbon disulfide	2900	640		₽pb∨	128	5/18/2017 4:25:00 PM
Carbonyl sulfide	< 50	50		ррЬ∨	10	5/16/2017 7:54:00 PM
Dimethyl sulfide	270	50		ppb∨	10	5/16/2017 7:54:00 PM
Ethyl mercaptan	7100	640		₽₽bV	128	5/18/2017 4:25:00 PM
Hydrogen Sulfide	110000000	410000		ppbV	81920	5/19/2017 7:44:00 AM
Isopropyl mercaptan	73000	6400		ppbV	1280	5/18/2017 5:01:00 PM
Methyl mercaptan	54000	6400		ρρbV	1280	5/18/2017 5:01:00 PM
Surr: Bromofluorobenzene	155	70-130	\$	%REC	10	5/16/2017 7:54:00 PM
Surr: Bromofluorobenzene	145	70-130	S	%REC	1280	5/18/2017 5:01:00 PM
Surr: Bromofluorobenzene	130	70-130		%REC	81920	5/19/2017 7:44:00 AM
Surr: Bromofluorobenzene	158	70-130	Ş	%REC	128	5/18/2017 4:25:00 PM

Qualifiers:

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV15-050917

Lab Order:C1705036Tag Number:1019.403Project:Former HampshireCollection Date:5/9/2017

Lab ID: C1705036-012A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
SPPB BY METHOD TO15		тс)-15			Analyst: W C
1,1,1-Trichloroethane	< 270	270		ug/m3	10	5/15/2017 9:29:00 PM
1,1,2,2-Tetrachloroethane	< 340	340		ug/m3	10	5/15/2017 9:29:00 PM
1,1,2-Trichloroethane	< 270	270		ug/m3	10	5/15/2017 9:29:00 PM
1.1-Dichloroethane	160	200	J	ug/m3	10	5/15/2017 9:29:00 PM
1,1-Dichloroethene	< 200	200		ug/m3	10	5/15/2017 9:29:00 PM
1,2,4-Trichlorobenzene	< 370	370		ug/m3	10	5/15/2017 9:29:00 PM
1,2,4-Trimethylbenzene	< 250	250		ug/m3	30	5/15/2017 9:29:00 PM
1,2-Dibromoethane	< 380	380		ug/m3	10	5/15/2017 9:29:00 PM
1,2-Dichlorobenzene	< 300	300		ug/m3	10	5/15/2017 9:29:00 PM
1,2-Dichloroethane	< 200	200		ug/m3	10	5/15/2017 9:29:00 PM
1,2-Dichloropropane	< 230	230		ug/m3	10	5/15/2017 9:29:00 PM
1,3,5-Trimethylbenzene	< 250	250		ug/m3	10	5/15/2017 9:29:00 PM
1,3-butadiene	< 110	110		ug/m3	10	5/15/2017 9:29:00 PM
1,3-Dichlorobenzene	< 300	300		บg/m3	10	5/15/2017 9:29:00 PM
1,4-Dichlorobenzene	< 300	300		ug/m3	10	5/15/2017 9:29:00 PM
1,4-Dioxane	< 360	360		ug/m3	10	5/15/2017 9:29:00 PM
2,2,4-trimethylpentane	< 230	230		ug/m3	10	5/15/2017 9:29:00 PM
4-ethyltoluene	< 250	250		ug/m3	10	5/15/2017 9:29:00 PM
Acetone	15000	3100		ug/m3	128	5/17/2017 1:46:00 PM
Allyl chłoride	< 160	160		սց/m3	10	5/15/2017 9:29:00 PM
Benzene	170	160		ug/m3	10	5/15/2017 9:29:00 PM
Benzyl chloride	< 290	290		սց/m3	10	5/15/2017 9:29:00 PM
Bromodichloromethane	< 330	330		ug/m3	10	5/15/2017 9:29:00 PM
Bromoform	< 520	520		ug/m3	10	5/15/2017 9:29:00 PM
Bromomethane	< 190	190		ug/m3	10	5/15/2017 9:29:00 PM
Carbon disulfide	9300	2000		ug/m3	128	5/17/2017 1:46:00 PM
Carbon tetrachloride	< 310	310		ug/m3	10	5/15/2017 9:29:00 PM
Chlorobenzene	130	230	J	ug/m3	10	5/15/2017 9:29:00 PM
Chloroethane	< 130	130		ug/m3	10	5/15/2017 9:29:00 PM
Chloroform	7000	3100		սց/m3	128	5/17/2017 1:46:00 PM
Chloromethane	< 100	100		ug/m3	10	5/15/2017 9:29:00 PM
cis-1,2-Dichloroethene	570	200		ug/m3	10	5/15/2017 9:29:00 PM
cis-1,3-Dichloropropene	< 230	230		սց/m3	10	5/15/2017 9:29:00 PM
Cyclohexane	160	170	J	ug/m3	10	5/15/2017 9:29:00 PM
Oibromochtoromethane	< 430	430		ug/m3	10	5/15/2017 9:29:00 PM
Ethyl acetate	< 360	360		ug/m3	10	5/15/2017 9:29:00 PM
Ethylbenzene	3500	220		ug/m3	10	5/15/2017 9:29:00 PM
Freon 11	< 280	280		ug/m3	10	5/15/2017 9:29:00 PM
Freon 113	< 380	380		ug/m3	10	5/15/2017 9:29:00 PM
Freon 114	< 350	350		ug/m3	10	5/15/2017 9:29:00 PM

Qualifiers:

Date: 22-Jun-17

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^{*} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order:

C1705036

Project: Lab ID:

C1705036-012A

Former Hampshire

Date: 22-Jun-17

Client Sample ID: WAT-SV15-050917

Tag Number: 1019.403

Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	ÐF	Date Analyzed
SPPB BY METHOD TO15		TO.	-15	***************************************		Analyst: WD
Freon 12	< 250	250		ug/m3	10	5/15/2017 9:29:00 PM
Heptane	1200	200		ug/m3	10	5/15/2017 9:29:00 PM
Hexachloro-1,3-butadiene	< 530	530		ug/m3	10	5/15/2017 9:29:00 PM
Hexane	3400	180		ug/m3	10	5/15/2017 9:29:00 PM
isopropyl alcohol	< 120	120		ug/m3	10	5/15/2017 9:29:00 PM
m&p-Xylene	47000	5600		ug/m3	128	5/17/2017 1:46:00 PM
Methyl Butyl Ketone	< 410	410		ug/m3	10	5/15/2017 9:29:00 PM
Methyl Ethyl Ketone	< 290	290		ug/m3	10	5/15/2017 9:29:00 PM
Methyl Isobutyl Ketone	130000	26000		ug/m3	640	5/17/2017 6:46:00 PM
Methyl tert-butyl ether	< 180	180	;	սց/m3	10	5/15/2017 9:29:00 PM
Methylene chloride	5700	2200	1	ug/m3	128	5/17/2017 1:46:00 PM
o-Xylene	14000	2800	1	ug/m3	128	5/17/2017 1:46:00 PM
Propylene	< 86	86	1	ug/m3	10	5/15/2017 9:29:00 PM
Styrene	< 210	210	,	ug/m3	10	5/15/2017 9:29:00 PM
Tetrachloroethylene	< 340	340		ug/m3	10	5/15/2017 9:29:00 PM
Tetrahydrofuran	< 150	150	(ug/m3	10	5/15/2017 9:29:00 PM
Toluene	7800	2400	ı	ug/m3	128	5/17/2017 1:46:00 PM
trans-1,2-Dichloroethene	< 200	200	1	ug/m3	10	5/15/2017 9:29:00 PM
trans-1,3-Dichloropropene	< 230	230	ŧ	ug/m3	10	5/15/2017 9:29:00 PM
Trichloroethene	260	270	J (ug/m3	10	5/15/2017 9:29:00 PM
Vinyl acetate	< 180	180	i,	.g/m3	10	5/15/2017 9:29:00 PM
Vinyl Bromide	< 220	220	ŧ	_ ug/m3	10	5/15/2017 9:29:00 PM
Vinyl chloride	≺ 130	130	į,	.g/m3	10	5/15/2017 9:29:00 PM
NOTES:						

* The reporting limits were raised due to the high concentration of methane in the sample,

LOW LEVEL SULFURS BY TO-15		TO-15	i		Analyst: WD
1-Propanethiol	12000	2000	ug/m3	128	5/18/2017 4:25:00 PM
Carbon disulfide	9000	2000	ug/m3	128	5/18/2017 4:25:00 PM
Carbonyl sulfide	< 120	120	ug/m3	10	5/16/2017 7:54:00 PM
Dimethyl sulfide	1100	190	ug/m3	10	5/16/2017 7:54:00 PM
Ethyl mercaptan	18000	1600	ug/m3	128	5/18/2017 4:25:00 PM
Hydrogen Sulfide	150000000	570000	ug/m3	81920	5/19/2017 7:44:00 AM
isopropyl mercaptan	230000	20000	սց/m3	1280	5/18/2017 5:01:00 PM
Methyl mercaptan	110000	13000	ug/m3	1280	5/18/2017 5:01:00 PM

Qualifiers:

ND Not Detected at the Limit of Detection

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^{**} Quantitation Limit

 $[\]mathbf{B}$ Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

Non-routine analyte. Quantitation estimated. JN

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

¹³ Estimated Value above quantitation range

Analyte detected below quantitation limit

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV06-050917

Lab Order:C1705036Tag Number:1018.56Project:Former HampshireCollection Date:5/9/2017

Lab ID: C1705036-013A Matrix: AIR

Analyses	Result	**Limit Q		DF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METH	OD 3C		Analyst: WD
Carbon dioxide	0.0520	1.90	J %	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	31.1	0.580	%	1	5/15/2017
Nitrogen	60.0	8.30	%	1	5/15/2017
Oxygen	2.87	0.880	%	1	5/15/2017
SPPB BY METHOD TO15		TO-1:	5		Analyst: WD
1,1,1-Trichtoroethane	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,1,2,2-Tetrachloroethane	< 50	50	₽₽bV	10	5/17/2017 7:21:00 PM
1,1,2-Trichloroethane	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
1,1-Dichtoroethane	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
1,1-Dichloroethene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
1,2,4-Trichlorobenzene	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
1,2,4-Trimethylbenzene	< 50	50	∨dgq	10	5/17/2017 7:21:00 PM
1,2-Dibromoethane	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
1,2-Dichtorobenzene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
1,2-Dichloroethane	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
1,2-Dichloropropane	< 50	50	₽₽bV	10	5/17/2017 7:21:00 PM
1,3,5-Trimethylbenzene	< 50	50	₽₽bV	10	5/17/2017 7:21:00 PM
1,3-butadiene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
1,3-Dichlorobenzene	< 50	50	₽₽bV	10	5/17/2017 7:21:00 PM
1,4-Dichlorobenzene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
1,4-Dioxane	< 100	100	∨dgq	10	5/17/2017 7:21:00 PM
2,2,4-trimethylpentane	< 50	50	∨dqq	10	5/17/2017 7:21:00 PM
4-ethyltoluene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Acetone	80	100	J ppbV	10	5/17/2017 7:21:00 PM
Allyl chloride	< 50	50	∨dqq	10	5/17/2017 7:21:00 PM
Benzene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Benzyl chloride	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
Bromodichloromethane	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Bromoform	< 50	50	∨dqq	10	5/17/2017 7:21:00 PM
Bromomethane	< 50	50	₽pb∨	10	5/17/2017 7:21:00 PM
Carbon disulfide	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Carbon tetrachioride	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
Chlorobenzene	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
Chloroethane	< 50	50	Vđạq	10	5/17/2017 7:21:00 PM
Chloroform	< 50	50	∨dqq	10	5/17/2017 7:21:00 PM

Qualifiers:

Date: 22-Jun-17

ND Not Detected at the Limit of Detection

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Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected.

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV06-050917

Lab Order: C1705036 Tag Number: 1018.56

Project: Former Hampshire Collection Date: 5/9/2017
Lab ID: C1705036-013A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: WD
Chloromethane	< 50	50		∨dqq	10	5/17/2017 7:21:00 PM
cis-1,2-Dichloroethene	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
cis-1,3-Dichloropropene	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
Cyclohexane	< 50	50		Vđqq	10	5/17/2017 7:21:00 PM
Dibromochloromethane	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Ethyl acetate	< 100	100		Vdqq	10	5/17/2017 7:21:00 PM
Ethylbenzene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Freon 11	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
Freon 113	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Freon 114	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Freon 12	< 50	50		Vdqq	10	5/17/2017 7:21:00 PM
Heptane	< 50	50		Vdqq	10	5/17/2017 7:21:00 PM
Hexachloro-1,3-butadiene	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
Hexane	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Isopropy! alcohol	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
m&p-Xylene	≺ 100	100		Vđạq	10	5/17/2017 7:21:00 PM
Methyl Butyl Ketone	< 100	100		ppbV	10	5/17/2017 7:21:00 PM
Methyl Ethyl Ketone	< 100	100		₽₽b∨	10	5/17/2017 7:21:00 PM
Methyl Isobutyl Ketone	< 100	100		ppbV	10	5/17/2017 7:21:00 PM
Methyl tert-butyl ether	< 50	50		Vđạq	10	5/17/2017 7:21:00 PM
Methylene chloride	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
o-Xylene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Propylene	6300	400		Vdqq	80	5/18/2017 3:15:00 PM
Styrene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Tetrachloroethylene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Tetrahydrofuran	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
Toluene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
trans-1,2-Dichtoroethene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
trans-1,3-Dichloropropene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Trichloroethene	< 50	50		Vdqq	10	5/17/2017 7:21:00 PM
Vinyl acetate	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
Vinyl Bromide	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Vinyl chloride	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Surr: Bromofluorobenzene	76.0	73.7-124		%REC	10	5/17/2017 7:21:00 PM
TIC: 1-Butene, 2-methyl-	120	0	JN	ppbV	10	5/17/2017 7:21:00 PM
TIC: 1-Pentene, 4-methyl-	240	0	JN	ppb∨	10	5/17/2017 7:21:00 PM
TIC: 1-Propene, 2-methyl-	100	0	JN	ppb∨	10	5/17/2017 7:21:00 PM
TIC: Butane	180	0	JN	ppb∨	10	5/17/2017 7:21:00 PM
TIC: Butane, 2-methyl-	140	0	JN	ppb∨	10	5/17/2017 7:21:00 PM
TIC: Ethane, 1-chloro-1,1-difluoro	72	0	JN	ppbV	10	5/17/2017 7:21:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- 3 Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order:

Project:

C1705036

Client Sample ID: WAT-SV06-050917

Date: 22-Jun-17

Tag Number: 1018.56

Former Hampshire

Collection Date: 5/9/2017

Lab ID: C1705036-013A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
SPPB BY METHOD TO15		то	-15			Analyst: WD
TIC: Hydrogen sulfide \$\$ Dihydrogen monosulfi	270	O	JN	Vdqq	10	5/17/2017 7:21:00 PM
TIC: Isobutane	110	0	JN	ppbV	10	5/17/2017 7:21:00 PM
TIC: Pentane, 2-methyl- \$\$ Isohexane \$\$ 2-Met	440	¢	JN	ppbV	10	5/17/2017 7:21:00 PM
NOTES:						
* The reporting limits were raised due to th	e high concentra	ition of methe	ne in ti	ne sample.		
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: WD
1-Propanethiol	< 50	50		₽pb∨	10	5/16/2017 6:45:00 PM
Carbon disulfide	< 50	50		ppbV	10	5/16/2017 6:45:00 PM
Carbonyl sulfide	< 50	50		ppb∨	10	5/16/2017 6:45:00 PM
Dimethyl sulfide	< 50	50		ppbV	10	5/16/2017 6:45:00 PM
Ethyl mercaptan	< 50	50		Vdqq	10	5/16/2017 6:45:00 PM
Hydrogen Sulfide	1500	50		ppb∨	10	5/16/2017 6:45:00 PM
Isopropyl mercaptan	< 50	50		Vdqq	10	5/16/2017 6:45:00 PM
Methyl mercaptan	< 50	50		ppb∨	10	5/16/2017 6:45:00 PM
Surr: Bromofluorobenzene	133	70-130	S	%REC	10	5/16/2017 6:45:00 PM

Qualifiers:

Quantitation Limit

3 Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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since Laboratories, LLC

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV06-050917

Lab Order:C1705036Tag Number:1018.56Project:Former HampshireCollection Date:5/9/2017

Lab ID: C1705036-013A Matrix: AIR

Analyses	Result	**Limit Qu	al Units	ÐF	Date Analyzed
SPPB BY METHOD TO15		TQ-15			Analyst: WI
1,1,1-Trichloroethane	< 270	270	ug/m3	10	5/17/2017 7:21:00 PM
1,1,2,2-Tetrachloroethane	< 340	340	ug/m3	10	5/17/2017 7:21:00 PM
1,1,2-Trichloroethane	< 270	270	սց/m3	10	5/17/2017 7:21:00 PN
1,1-Dichloroethane	< 200	200	ս ց/m3	10	5/17/2017 7:21:00 PN
1,1-Dichloroethene	< 200	200	ug/m3	10	5/17/2017 7:21:00 PM
1,2,4-Trichlorobenzene	< 370	370	ug/m3	10	5/17/2017 7:21:00 PN
1,2,4-Trimethylbenzene	< 250	250	ug/m3	10	5/17/2017 7:21:00 PN
1,2-Dibromoethane	< 380	380	ug/m3	10	5/17/2017 7:21:00 PM
1,2-Dichlorobenzene	< 300	300	ug/m3	10	5/17/2017 7:21:00 PN
1,2-Dichloroethane	< 200	200	նm∖քս	10	5/17/2017 7:21:00 PN
1,2-Dichloropropane	< 230	230	ug/m3	10	5/17/2017 7:21:00 PN
1,3,5-Trimethylbenzene	< 250	250	ug/m3	10	5/17/2017 7:21:00 PN
1,3-butadiene	< 110	110	ug/m3	10	5/17/2017 7:21:00 PN
1,3-Dichlorobenzene	< 300	300	ug/m3	10	5/17/2017 7:21:00 PN
1,4-Dichlorobenzene	< 300	300	սց/m3	10	5/17/2017 7:21:00 PM
1,4-Dioxane	< 360	360	ug/m3	10	5/17/2017 7:21:00 PM
2,2,4-trimethylpentane	< 230	230	Մա\ლ3	10	5/17/2017 7:21:00 PM
4-ethyltoluene	< 250	250	ug/m3	10	5/17/2017 7:21:00 PM
Acetone	190	240 J	ug/m3	10	5/17/2017 7;21:00 Pi
Allyl chloride	< 160	160	ug/m3	1 Ö	5/17/2017 7:21:00 PM
Benzene	< 160	160	ug/m3	10	5/17/2017 7:21:00 PM
Benzyl chloride	< 290	290	ug/m3	10	5/17/2017 7:21:00 PM
Bromodichloromethane	< 330	330	սց/m3	10	5/17/2017 7:21:00 PM
Bromoform	< 520	520	ug/m3	10	5/17/2017 7:21:00 PM
Bromomethane	< 190	190	ug/m3	10	5/17/2017 7:21:00 PM
Carbon disulfide	< 160	160	ug/m3	10	5/17/2017 7:21:00 Pi
Carbon tetrachloride	< 310	310	ug/m3	10	5/17/2017 7:21:00 PM
Chlorobenzene	< 230	230	មg/m3	10	5/17/2017 7:21:00 PM
Chloroethane	< 130	130	ug/m3	10	5/17/2017 7:21:00 Pt
Chloroform	< 240	240	ug/m3	10	5/17/2017 7:21:00 PM
Chloromethane	< 100	100	ug/m3	10	5/17/2017 7:21:00 Pt
cis-1,2-Dichloroethene	< 200	200	ug/m3	10	5/17/2017 7:21:00 Pf
cis-1,3-Dichloropropene	< 230	230	ug/m3	10	5/17/2017 7:21:00 Pf
Cyclohexane	< 170	170	ug/m3	10	5/17/2017 7:21:00 Pt
Dibromochioromethane	< 430	430	ug/m3	10	5/17/2017 7:21:00 Pf
Ethyl acetate	< 360	360	ug/m3	10	5/17/2017 7:21:00 Pt
Ethylbenzene	< 220	220	ug/m3	10	5/17/2017 7:21:00 P/
Freon 11	< 280	280	ug/m3	10	5/17/2017 7:21:00 PI
Freon 113	< 380	380	ug/m3	10	5/17/2017 7:21:00 PM
Freon 114	< 350	350	ug/m3	10	5/17/2017 7:21:00 Pt

Qualifiers:

Date: 22-Jun-17

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis Client Sample 1D: WAT-SV06-050917

Lab Order:C1705036Tag Number:1018.56Project:Former HampshireCollection Date:5/9/2017

Lab ID: C1705036-013A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: WE
Freon 12	< 250	250		սց/m3	10	5/17/2017 7:21:00 PM
Heptane	< 200	200		ug/m3	10	5/17/2017 7:21:00 PM
Hexachloro-1,3-butadiene	< 530	530		սց/m3	10	5/17/2017 7:21:00 PM
Hexane	< 180	180		ug/m3	10	5/17/2017 7:21:00 PM
Isopropyl alcohol	< 120	120		ug/m3	10	5/17/2017 7:21:00 PM
m&p-Xylene	< 430	430		ug/m3	10	5/17/2017 7:21:00 PM
Methyl Butyl Ketone	< 410	410		ug/m3	10	5/17/2017 7:21:00 PM
Methyl Ethyl Ketone	< 290	290		ug/m3	10	5/17/2017 7:21:00 PM
Methyl Isobutyl Ketone	< 410	410		ug/m3	10	5/17/2017 7:21:00 PM
Methyl tert-butyl ether	< 180	180		սց/ու3	10	5/17/2017 7:21:00 PM
Methylene chloride	< 170	170		ug/m3	10	5/17/2017 7:21:00 PM
o-Xylene	< 220	220		ug/m3	10	5/17/2017 7:21:00 PM
Propylene	11000	690		ug/m3	80	5/18/2017 3:15:00 PM
Styrene	< 210	210		ug/m3	10	5/17/2017 7:21:00 PM
Tetrachloroethylene	< 340	340		ug/m3	10	5/17/2017 7:21:00 PM
Tetrahydrofuran	< 150	150		ug/m3	10	5/17/2017 7:21:00 PN
Toluene	< 190	190		ug/m3	10	5/17/2017 7:21:00 PM
trans-1,2-Dichloroethene	< 200	200		ug/m3	10	5/17/2017 7:21:00 PM
trans-1,3-Dichtoropropene	< 230	230		ug/m3	10	5/17/2017 7:21:00 PM
Trichloroethene	< 270	270		ug/m3	10	5/17/2017 7:21:00 PM
Vinyl acetate	< 180	180		ug/m3	10	5/17/2017 7:21:00 PN
Vinyl Bromide	< 220	220		սց/m3	10	5/17/2017 7:21:00 PM
Vinyl chloride	< 130	130		ug/m3	10	5/17/2017 7:21:00 PN
NOTES:						
* The reporting limits were raised due to th	e high concentra	ation of metha	ne in th	e sample.		
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: WI
1-Propanethiol	< 160	160		ug/m3	10	5/16/2017 6:45:00 PM
Carbon disulfide	< 160	160		սց/m3	10	5/16/2017 6:45:00 PM
Carbonyl sulfide	< 120	120		ug/m3	10	5/16/2017 6:45:00 PN
Dimethyl sulfide	< 190	190		ug/m3	10	5/16/2017 6:45:00 PM
Ethyl mercaptan	< 130	130		ug/m3	10	5/16/2017 6:45:00 PM
Hydrogen Sulfide	2100	70		ug/m3	10	5/16/2017 6:45:00 PN
Isopropyl mercaptan	< 160	160		ម g/m 3	10	5/16/2017 6:45:00 PM
Methyl mercaptan	< 98	98		ug/m3	10	5/16/2017 6:45:00 PM

^{**} Quantitation Limit

Date: 22-Jun-17

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

³N Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

³ Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order:

C1705036

Project: Former Hampshire

Lab ID:

C1705036-014A

Date: 22-Jun-17

Client Sample ID: DUP-SV-050917

Tag Number: 614

Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit (Qual U	Units	DF	Date Analyzed
FIELD PARAMETERS		FLI	D			Analyst:
Lab Vacuum In	-4			Hg		5/12/2017
Lab Vacuum Out	-30		**	Hg		5/12/2017
FIXED GAS SERIES	EPA METHOD 3C					Analyst: WD
Carbon dioxide	0.0440	1.90	ب ل	%	1	5/15/2017
Carbon Monoxide	ND	0.880	9	%	1	5/15/2017
Methane	33.9	0.580	ė,	/ ₆	1	5/15/2017
Nitrogen	64.0	8.30	9	6	1	5/15/2017
Oxygen	2.76	0.880	9	/a	1	5/15/2017
PPB BY METHOD TO15		TO-1	15			Analyst: WD
1,1,1-Trichloroethane	< 50	50	þ	Vdqq	10	5/17/2017 7:56:00 PM
1,1,2,2-Tetrachloroethane	< 50	50	p	∨dqo	10	5/17/2017 7:56:00 PM
1,1,2-Trichloroethane	< 50	50	ţĊ	∨dqq	10	5/17/2017 7:56:00 PM
1,1-Dichtoroethane	< 50	50	p	pb∨	10	5/17/2017 7:56:00 PM
1,1-Dichloroethene	< 50	50	p	∨dq	10	5/17/2017 7:56:00 PM
1,2,4-Trichlorobenzene	< 50	50	þ	γ¢q	10	5/17/2017 7:56:00 PM
1,2,4-Trimethylbenzene	< 50	50	þ	∨dq	10	5/17/2017 7:56:00 PM
1,2-Dibromoethane	< 50	50	þ	Vdq	10	5/17/2017 7:56:00 PM
1,2-Dichlorobenzene	< 50	50	p	Vdq	10	5/17/2017 7:56:00 PM
1,2-Dichloroethane	< 50	50	p	yb∨	10	5/17/2017 7:56:00 PM
1,2-Dichtoropropane	< 50	50	р	γ¢ο	10	5/17/2017 7:56:00 PM
1,3,5-Trimethylbenzene	< 50	50	р	pbV	10	5/17/2017 7:56:00 PM
1,3-butadiene	< 50	50	р	Vdq	10	5/17/2017 7:56:00 PM
1,3-Dichlorobenzene	< 50	50	p	pbV	10	5/17/2017 7:56:00 PM
1,4-Dichlorobenzene	< 50	50	þ	pb∨	10	5/17/2017 7:56:00 PM
1,4-Dioxane	< 100	100	р	pb∨	10	5/17/2017 7:56:00 PM
2,2,4-trimethylpentane	< 50	50	р	pb∨	10	5/17/2017 7:56:00 PM
4-ethyltoluene	< 50	50	p	pbV	10	5/17/2017 7:56:00 PM
Acetone	68	100	Ј р	pbV	10	5/17/2017 7:58:00 PM
Allyl chloride	< 50	50	Þ	pb∨	10	5/17/2017 7:56:00 PM
Benzene	< 50	50	р	pb∨	10	5/17/2017 7:56:00 PM
Benzyl chloride	< 50	50	p	pbV	10	5/17/2017 7:56:00 PM
Bromodichloromethane	< 50	50	p	₽bV	10	5/17/2017 7:56:00 PM
Bromoform	< 50	50		pbV	10	5/17/2017 7:56:00 PM
Bromomethane	< 50	50	þ	pbV	10	5/17/2017 7:56:00 PM
Carbon disulfide	< 50	50		pb∨	10	5/17/2017 7:56:00 PM
Carbon tetrachloride	< 60	50		pbV	10	5/17/2017 7:56:00 PM
Chlorobenzene	< 50	50		pb∨	10	5/17/2017 7:56:00 PM
Chloroethane	< 50	50		pbV	10	5/17/2017 7:56:00 PM
Chloraform	< 50	50		pb∨	10	5/17/2017 7:56:00 PM

Qualifiers:

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^{*} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis Client Sample ID: DUP-SV-050917

Lab Order: C1705036 Tag Number: 614

Project: Former Hampshire Collection Date: 5/9/2017
Lab ID: C1705036-014A Matrix: AIR

Analyses	Result	**Limit	Qua	Units	ÐF	Date Analyzed
5PPB BY METHOD TO15	· · ·	ТО	-15			Analyst: W [
Chloromethane	< 50	50		Vđạq	10	5/17/2017 7:56:00 PM
cis-1,2-Dichtoroethene	< 50	50		ppb∨	10	6/17/2017 7:66:00 PM
cis-1,3-Dichtoropropene	< 50	50		ppb∨	10	5/17/2017 7:56:00 PN
Cyclohexane	< 50	50		Vđqq	10	5/17/2017 7:56:00 PN
Dibromochloromethane	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
Ethyl acetate	< 100	100		ppb∨	10	5/17/2017 7:56:00 PM
Ethylbenzene	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
Freon 11	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Freon 113	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Freon 114	< 50	50		γρbV	10	5/17/2017 7:56:00 PM
Freon 12	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
Heptane	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
Hexachtoro-1,3-butadiene	< 50	50		₽₽ħV	10	5/17/2017 7:56:00 PM
Hexane	< 50	50		ppb∨	10	5/17/2017 7:56:00 PN
Isopropyl alcohol	< 50	50		∨dqq	10	5/17/2017 7:56:00 PM
m&p-Xylene	< 100	100		ppb∨	10	5/17/2017 7:56:00 PM
Methyl Butyl Ketone	< 100	100		ppb∨	10	5/17/2017 7:56:00 PM
Methyl Ethyl Ketone	< 100	100		ppbV	10	5/17/2017 7:56:00 PM
Methyl Isobutyl Ketone	< 100	100		opb∨	10	5/17/2017 7:56:00 PM
Methyl tert-butyl ether	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
Methylene chloride	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
o-Xylene	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
Propylene	6100	400		Vdqq	80	5/18/2017 3:50:00 PM
Styrene	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
Tetrachloroethylens	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Tetrahydrofuran	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Toluene	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
trans-1,2-Dichloroethene	< 50	50		Vdqq	10	5/17/2017 7:56:00 PM
trans-1,3-Dichloropropene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Trichloroethene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Vinyl acetate	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Vinyl Bromide	< 50	50		Vdqq	10	5/17/2017 7:56:00 PM
Vinyi chloride	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Surr: Bromofluorobenzene	76.9	73.7-124		%REC	10	5/17/2017 7:56:00 PM
TIC: 1-Pentene, 4-methyl-	240	O	JN	Vđạq	10	5/17/2017 7:56:00 PM
TIC: 1-Propene, 2-methyl-	100	0	JN	ppbV	10	5/17/2017 7:56:00 PM
TIC: Butane	170	0	JN	ppb∨	10	5/17/2017 7:56:00 PM
TIC: Butane, 2-methyl-	140	Q	JN	ppb∨	10	5/17/2017 7:56:00 PM
TIC: Cyclopropane, 1,2-dimethyl-,	120	0	JN	Vdqa	10	5/17/2017 7:56:00 PN

Qualifiers:

Date: 22-Jun-17

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Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

fil Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order:

Project:

Lab ID:

C1705036

Former Hampshire

C1705036-014A

Client Sample fD: DUP-SV-050917

Date: 22-Jun-17

Tag Number: 614

Collection Date: 5/9/2017

Matrix: AlR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: W D
TIC: Ethane, 1-chloro-1,1-difluoro \$\$.alpha	73	o	ИL	ppbV	10	5/17/2017 7:56:00 PM
TIC: Hydrogen sulfide \$\$ Dihydrogen monosulfi	940	0	JN	ppbV	10	5/17/2017 7:56:00 PM
TIC: Isobutane	110	0	JN	ppbV	10	5/17/2017 7:56:00 PM
TIC: Pentane, 2-methyl-	440	0	JN	ppbV	10	5/17/2017 7:56:00 PM
LOW LEVEL SULFURS BY TO-15		то	-15			Analyst: WD
* The reporting limits were raised due to th	•			·		
1-Propanethiol	< 50	50		Vdqq	10	5/16/2017 7:19:00 PM
Carbon disulfide	< 50	50		ppbV	10	5/16/2017 7:19:00 PM
Carbonyi sulfide	< 50	50		Vdqq	10	5/16/2017 7:19:00 PM
Dimethyl sulfide	< 50	50		ppb∨	10	5/16/2017 7:19:00 PM
Ethyl mercaptan	< 50	50		ppbV	10	5/16/2017 7:19:00 PM
Hydrogen Sulfide	3900	50		ppbV	10	5/16/2017 7:19:00 PM
Isopropyl mercaptan	< 50	50		Vdgq	10	5/16/2017 7:19:00 PM
Methyi mercaptan	< 50	50		ppbV	10	5/16/2017 7:19:00 PM
Surr: Bromofiuorobenzene	140	70-130	s	%REC	10	5/16/2017 7:19:00 PM

Qualifiers:

ND Not Detected at the Limit of Detection

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Quantitation Limit

¹³ Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ML Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

Estimated Value above quantitation range \mathbf{E}

Į, Analyte detected below quantitation limit

CLIENT: CH2M - St Louis Client Sample ID: DUP-SV-050917

Lab Order: C1705036 Tag Number: 614
Project: Former Hampshire Collection Date: 5/9/2017

Lab ID: C1705036-014A Matrix: AIR

Analyses	Result	**Limit Qu	ual Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Anaiyst: W E
1,1,1-Trichloroethane	< 270	270	ug/m3	10	5/17/2017 7:56:00 PM
1,1,2,2-Tetrachloroethane	< 340	340	ug/m3	10	5/17/2017 7:56:00 PM
1,1,2-Trichloroethane	< 270	270	ug/m3	10	5/17/2017 7:56:00 PM
1,1-Dichloroethane	< 200	200	ug/m3	10	5/17/2017 7:56:00 PM
1,1-Dichloroethene	< 200	200	սց/m3	10	5/17/2017 7:56:00 PM
1,2,4-Trichlorobenzene	< 370	370	ug/m3	10	5/17/2017 7:56:00 PM
1,2,4-Trimethy/benzene	< 250	250	ug/m3	10	5/17/2017 7:56:00 PM
1,2-Dibromoethane	< 380	380	ug/m3	10	5/17/2017 7:56:00 PM
1,2-Dichlorobenzene	< 300	300	ug/m3	10	5/17/2017 7:56:00 PM
1,2-Dichloroethane	< 200	200	ug/m3	10	5/17/2017 7:56:00 PM
1,2-Dichloropropane	< 230	230	ug/m3	10	5/17/2017 7:56:00 PM
1,3.5-Trimethylbenzene	< 250	250	ს g/m3	10	5/17/2017 7:56:00 PM
1,3-butadiene	< 110	110	ug/m3	10	5/17/2017 7:56:00 PM
1,3-Dichlorobenzene	< 300	300	ug/m3	10	5/17/2017 7:56:00 PM
1.4-Dichlorobenzene	< 300	300	µg/m3	10	5/17/2017 7:56:00 PM
1,4-Dioxane	< 360	360	ug/m3	10	5/17/2017 7:56:00 PM
2,2,4-trimethylpentane	< 230	230	ug/m3	10	5/17/2017 7:56:00 PM
4-ethyltoluene	< 250	250	ug/m3	10	5/17/2017 7:56:00 PM
Acetone	160	240 J	ug/m3	10	5/17/2017 7:56:00 PM
Altyl chloride	< 160	160	ug/m3	10	5/17/2017 7:56:00 PM
Benzene	< 160	160	ug/m3	10	5/17/2017 7:56:00 PM
Benzyl chloride	< 290	290	ყ g/m3	10	5/17/2017 7:56:00 PM
Bromodichloromethane	< 330	330	սց/m3	10	5/17/2017 7:56:00 PM
Bromoform	< 520	520	ug/m3	10	5/17/2017 7:56:00 PM
Bromomethane	< 190	190	ug/m3	10	5/17/2017 7:56:00 PM
Carbon disulfide	< 160	160	ug/m3	10	5/17/2017 7:56:00 PM
Carbon tetrachloride	< 310	310	սց/m3	10	5/17/2017 7:56:00 PM
Chlorobenzene	< 230	230	ug/m3	10	5/17/2017 7:56:00 PM
Chloroethane	< 130	130	ug/m3	10	5/17/2017 7:56:00 PM
Chloroform	< 240	240	ug/m3	10	5/17/2017 7:56:00 PM
Chloromethane	< 100	100	ug/m3	10	5/17/2017 7:56:00 PM
cis-1,2-Dichloroethene	< 200	200	ug/m3	10	5/17/2017 7:56:00 PM
cis-1,3-Dichloropropene	< 230	230	ug/m3	10	5/17/2017 7:56:00 PM
Cyclohexane	< 170	170	ug/m3	10	5/17/2017 7:56:00 PM
Dibromochloromethane	< 430	430	ug/m3	10	5/17/2017 7:56:00 PM
Ethyl acetate	< 360	360	ug/m3	10	5/17/2017 7:56:00 PM
Ethylbenzene	< 220	220	ug/m3	10	5/17/2017 7:56:00 PM
Freon 11	< 280	280	ug/m3	10	5/17/2017 7:56:00 PM
Freon 113	< 380	380	ug/m3	10	5/17/2017 7:56:00 PM
Freon 114	< 350	350	ug/m3	10	5/17/2017 7:56:00 PM

Qualifiers:

Date: 22-Jun-17

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Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CH2M - St Louis CLIENT:

Lab Order; C1705036

Project: Former Hampshire

Lab ID: C1705036-014A Date: 22-Jun-17

Client Sample ID: DUP-SV-050917

Tag Number: 614

Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit Q	ual Units	DF	Date Analyzed
5PPB BY METHOD TO15	· · · · · · · · · · · · · · · · · · ·	TO-15			Analyst: WD
Freon 12	< 250	250	ug/m3	10	5/17/2017 7:56:00 PM
Heptane	< 200	200	ug/m3	10	5/17/2017 7:56:00 PM
Hexachtoro-1,3-butadiene	< 530	530	ug/m3	10	5/17/2017 7:56:00 PM
Hexane	< 180	180	ug/m3	10	5/17/2017 7:56:00 PM
Isopropyi atcohol	< 120	120	սց/m3	10	5/17/2017 7:56:00 PM
m&p-Xylene	< 430	430	ug/m3	10	5/17/2017 7:56:00 PM
Methyl Butyl Ketone	< 410	410	ug/m3	10	5/17/2017 7:56:00 PM
Methyl Ethyl Ketone	< 290	290	ug/m3	10	5/17/2017 7:56:00 PM
Methyl Isobutyl Ketone	< 410	410	ug/m3	10	5/17/2017 7:56:00 PM
Methyl tert-butyl ether	< 180	180	ug/m3	10	5/17/2017 7:56:00 PM
Methylene chloride	< 170	170	ug/m3	10	5/17/2017 7:56:00 PM
o-Xylene	≺ 220	220	ug/m3	10	5/17/2017 7:56:00 PM
Propylene	10000	690	ug/m3	80	5/18/2017 3:50:00 PM
Styrene	< 210	210	ug/m3	10	5/17/2017 7:56:00 PM
Tetrachloroethylene	< 340	340	սց/m3	10	5/17/2017 7:56:00 PM
Tetrahydrofuran	< 150	150	ug/m3	10	5/17/2017 7:56:00 PM
Toluene	< 190	190	ug/m3	10	5/17/2017 7:56:00 PM
trans-1,2-Dichloroethene	< 200	200	ug/m3	10	5/17/2017 7:56:00 PM
trans-1,3-Dichtoropropene	< 230	230	ug/m3	10	5/17/2017 7:56:00 PM
Trichloroethene	< 270	270	ug/m3	10	5/17/2017 7:56:00 PM
Vinyl acetate	< 180	180	ug/m3	10	5/17/2017 7:56:00 PM
Vinyl Bromide	< 220	220	ug/m3	10	5/17/2017 7:56:00 PM
Vinyl chloride	< 130	130	ug/m3	10	5/17/2017 7:56:00 PM
NOTES:					
* The reporting limits were raised due to the	ne high concentra	ition of methane	in the sample.		
OW LEVEL SULFURS BY TO-15		TO-15			Analyst: WD
1-Propanethiol	< 160	160	ug/m3	10	5/16/2017 7:19:00 PM
Carbon disulfide	≺ 160	160	ug/m3	10	5/16/2017 7:19:00 PM
Carbonyl sulfide	< 120	120	ug/m3	10	5/16/2017 7:19:00 PM
Dimethyl sulfide	< 190	190	ug/m3	10	5/16/2017 7:19:00 PM

130

70

160

98

ug/m3

ug/m3

սց/m3

ug/m3

< 130

5500

< 160

< 98

Qual	ifier
------	-------

Ethyl mercaptan

Hydrogen Sulfide

Methyl mercaptan

Isopropyi mercaptan

10

10

10

10

Page 28 of 28

5/16/2017 7:19:00 PM

5/16/2017 7:19:00 PM

5/16/2017 7:19:00 PM

5/16/2017 7:19:00 PM

Quantitation Limit

В Analyte detected in the associated Method Blank

I-f Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

Е Estimated Value above quantitation range

J Analyte detected below quantitation limit

Not Detected at the Limit of Detection

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15 QUALITY CONTROL SUMMARY



Date: 02-Jun-17

QC SUMMARY REPORT SURROGATE RECOVERIES

CLIENT:

CH2M - St Louis

Work Order:

C1705036

Project:

Former Hampshire

Test No:

TO-15

Matrix: A

Sample ID	BR4FBZ	
C1705036-001A	89,4	
C1705036-002A	80.7	
C1705036-003A	85.8	1 mm or 1 mm o
C1705036-004A	81.1	
C1705036-005A	82,6	
C1705036-006A	83.8	
C1705036-007A	77.0	
C1705036-008A	84.3	
C1705036-009A	80.9	*
C1705036-010A	86.8	
C1705036-011A	91.8	
C1705036-012A	120	· · · · · · · · · · · · · · · · · · ·
C1705036-013A	76.0	
C1705036-014A	76.9	
DLCS_H2S-051617	95.7	
DLCS_H2S-051817	103	
DLCS_SLXSF-051617	84.0	**************************************
DLCS_SLXSF-051817	97,0	**************************************
DLCS_TO15-051517	99.4	
DLCS_TO15-051717	107	
DLCS_TO15-051817	115	
DLCSD_TO15-051517	103	
DLCSD_TO15-051717	110	

3R4FBZ	= Surrogate = Sromofluorobenzer	QC Limits
3R4F8Z	= Bromofluorobenzer	

Surrogate recovery outside acceptance limits

CLIENT:

CH2M - St Louis

Work Order:

C1705036

Project:

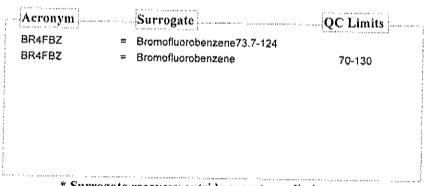
Former Hampshire

Test No:

TO-15

Matrix: A

BR4FBZ	
110	
20.3	
109	
1 /2.1	**************************************
74.0	
70,5	
	110 96.3 109 72.1 74.0 70.5



* Surrogate recovery outside acceptance limits

Centek Laboratories, LLC GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA\DH051501.D
Tune Time : 15 May 2017 8:24 am

Daily Calibration File : C:\MPCHEM\1\DATA\DH051504.D

				132275	5	80065	9 70864	8
	Sample	Surrogate	Recovery S	lnte:	cnal .	Standa	rd Response	s
	D DLCS TO		99	THE STATE OF THE STATE OF STATE STATE OF THE		===== 9458	867691	727533
DH051506	DLCSD_T	015-051517	103	** No. 100 CAN ANN SIGN SIGN SIGN SIGN SIGN SIGN SIGN SI	3.	47271	799073	69969 ฤ
рн051508	.D DMB_TOl	5-051517	.5 		129	471	783626	601561
оно51511	.D C170503	6-003A 86			949:	90	573748	462025
оно51512	.D C170503	5-004A 83			923	08	550342	439260
DH051513	.D C170503	5-005A 83			882	39	532758	426765
DH051514	.D C170503	5-006A 7≝			810	71	492123	421449*
DH051515	.D C170503	5-007A 76			8663	33	481778	397661*
DH051516	.D C170503	5-008A 78	— — — — — — — — — — — — — — — — — — —	· · · · · · · · · · · · · · · · · · ·	6965	54*	436461*	342380*
DH051517	.D C170503				6779	39*	425150*	334542*
DH051518	.D C170503			- — — — — — — mm mm sm mu	6860)9*	425364*	351813*
DH051519	.D C170503	5-011A 91			6849	 ∋2*	415560*	355844*
DH051520	D C170503	5-013A 10X	74			59559*	405732*	 32611 8 x
DH051521	.D C170503	5-014A 10X	0.1		· +	54515*	389448*	
DH051522	.D C1705036	5-012A 10X	119		·	97735	546927	596752
DH051524	.D C1705036	5-007A 77	WA MAY MIN LE SEE LE LE LE LE	. — — — — — — — —	10885		644816	509696
DH051525	.D C1705036	5-007A 10X	78	· — — — — — — — « «» «» «» «»	· = == == == == == == == = = = = = = =	33477	565358	435066
рно51526	.D C1705036	5-008A 70			80266	5 ,	484822	399644*
DH051527	.D C1705036	-009A 74		730 100 311 111 111 111 111 111 111 111	73034	* .	443506*	 340779*
DH051528	.D C1705036	5-010A 85			67787	7 *	416890*	348444*
DH051529	.D C1705036	-010A 10X	") 4	— — — — — MARE YOU VAN		 50651*	377167*	29952 Z .)
DH051530	.D C1705036	-011A 91		THE STY STEE WAS TAKE 180 MAN AND ALL AND ALL	6095	 58*	387929*	333888*
рн051531	.D C1705036	-011A 10X	77	VAT 1512 1512 1512 1512 1512 1512 1512 151	6	55971.*	368359*	 28448կ <i>չ</i>
DH051532	.D C1705036	-013A lox	72				350757*	
оно51533	.D C1705036		76			55698*	359752*	:'^ ∡287963
	faile 24be	time check						

t - fails 24hr time check * - fails criteria

Created: Thu Jun 01 11:01:14 2017 GCMS3

Centek Laboratories, LLC GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA\DH051701.D Tune Time : 17 May 2017 8:17 am

Daily Calibration File : C:\HPCHEM\1\DATA\DH051703.D

				88790		492391	45720) 6
file	Sample S	Surrogat	e Recovery %	Interr	nal	Standar	d Response	2.5
DH051704.E	DLCS_TO15-0	51717	107					
DH051705,E	DLCSD_TO15-	-051717	110		1	12827		56546 C
DH051706.C	DMB_TO15-05	51717					645962	515205
DH051707.E	C1705036-00			9	9707	1 5	 75312 	434670
DH051708.D	C1705036-00)2A 81		٥	3591	5 45	 57645	359412
DH051709.D	C1705036-00	6A 84	TO 100 100 100 100 100 100 100 100 100 10	8	3208	5 4:	1.6832	325907
DH051710.D	C1705036-01					101650	603882	500734
DH051711.D	C1705036-00	98A 84		8	3488	4 4	33003	356447
DH051712.D	C1705036-00	9A 81		8	3035	4 4	13454	314936
DH051713.D	C1705036-01		74 184 24 24 24 24 24 24 24 24 24 24 24 24 24	8	3231	4 43	37234	357549
DH051714.D	C1705036-01	0A 10X				 75812	383303	301386
DH051715.D	C1705036-01	1A 92	<u> </u>				361915	
DH051716.D	C1705036-01		82	· · · · · · · · · · · ·	7	0443	352890	273927*
DH051717.D	C1705036-00							307268
DH051718.D	C1705036-01	2A 640X						337962
DH051719.D	C1705036-01	3A 10X	76					324267
DH051720.D	C1705036-01		77		•	74464		

t - fails 24hr time check * - fails criteria

Created: Thu Jun 01 11:56:27 2017 GCMS3

Centek Laboratories, LLC GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA\DM051801.D

Tune Time : 18 May 2017 8:21 am

Daily Calibration File : C:\HPCHEM\1\DATA\DH051807.D

70916 408744 384998 Fi.l.aSample Surrogate Recovery % Internal Standard Responses DH051808.D DLCS_T015-051817 115 74179 463540 400893 DH051809.D DLCSD_T015-051817 110 83236 499565 427123 DH051811.D DMB_T015-051817 71 77664 476928 367493 70538 432921 337250 DH051812.D C1705036-013A 80X 84 DH051813.D C1705036-014A 80X 77 65439 396415 31364**8**

t - fails 24hr time check * - fails criteria

Created: Thu Jun 01 09:56:15 2017 GCMS3

Centek Laboratories, LLC GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\l\DATA2\DH051602.D
Tune Time : 16 May 2017 8:40 am

Daily Calibration File : C:\HPCHEM\1\DATA2\DH051605.D

	80731 4624	194 3674	90
File Sample Surrogate Recovery % DH051606.D DLCS H28-081612	Internal Stand	lard Respons	es
	75063	439218	352624
DHOS1607.D DMB_SLXSF-051617 96	73305	441.067	
DHOS1608.D C1705036-001A 125	79536	447017	365116
DH051609.D C1705036-002A 118	73386	403377	343055
DH051610.D C1705036-003A 124	77597	409190	
DH051611.D C1705036-004A 121	74317	404127	347871
DH051612.D C1705036-00SA 122	78157	409445	359151
DH051613.D C1705036-006A 122	76733	408942	348095
DH051614.D C1705036-007A 124	75624	405832	339426
DH051615.D C1705036-008A 120	69485	 382753	323639
DH051616.D C1705036-009A 120	73182	393733	327594
DH051617.D C1705036-010A 117	74024	397678	353306
DH051618.D C1705036-011A 124	72694	 390009	356590
PHO51619.D C1705036-013A 10X 108	71456	 384685	329547
PHO51620.D C1705036-014A 10X 113	 69893	383821	333829
0H051621.D C1705036-012A 10X 124	93219	478324	
HO51623.D C1705036-011A lOX 102	103887	<u></u>	56026 §
H051624.D C1705036-001A 10X 111		433199	443628
(t (5 A S) (C A S			36532 g

t - fails 24hr time check - + - fails criteria

Created: Mon Jun 19 11:50:03 2017 GCMS3

Centek Laboratories LLC Check Report

Tune File : C:\HPCHEM\1\DATA2\DH051801.D Tune Time : 18 May 2017 8:21 am

Daily Calibration File : C:\HPCHEM\1\DATA2\DH051805.D

68151	406304	330401

50 a 51	406304	220401	
ery % Interna	ıl Standard	Responses	
			309388
	81407	470410	387223
	109879	* 63673	7* 54 6 %
•	erv % Interna	ery % Internal Standard 64233 81407	ery % Internal Standard Responses 64233 382591

t - fails 24hr time check * - fails criteria

Created: Mon Jun 19 13:26:09 2017 GCMS3

Centek Laboratories, LLC Check Report

Tune File : C:\HPCHEM\1\DATA2\DH051602.D Tune Time : 16 May 2017 8:40 am

Daily Calibration File : C:\HPCHEM\1\DATA2\DH051603.D

	88975 52359	90 68590	06
File Sample Surrogate Recovery &	Internal Standa	ard Response) S
DH051604.D DLCS_SLXSF-051617 84	84833	518263	67882 \
DH051607.D DMB_SLXSF-051617 119	71464		360474%
DH051608.D C1705036-001A 155*	78775	447017	365116*
DH051609.D C1705036-002A 147*	73386	404469	343055*
DH051610.D C1705036-003A 153*	75827	409190	357062*
DH051611.D C1705036-004A 149*	74317	406403	347871*
DH051612.D C1705036-005A 151*	75481	409445	359151*
DH051613.D C1705036~006A 153*	74296	409824	343975*
DH051614.D C1705036-007A 154*	72018	406711	339426*
DH051615.D C1705036-008A 148*	64474	383756	323639*
DH051616.D C1705036-009A 148*	73026	394464	327594*
DH051617.D C1705036-010A 145*	75179	399121	353306*
DH051618.D C1705036-011A 153*	71431	390773	356590*
DH051619.D C1705036-013A 10X 133*	74119	384685	32954 2 ¥
DH051620.D C1705036-014A 10X 140*	68076	383821	333829*
DH051621.D C1705036-012A 10X 155*	90703	478324	55587

t - fails 24hr time check * - fails criteria

Created: Mon Jun 19 11:56:03 2017 GCMS3

Centek Laboratories, LLC Check Report

Tune File : C:\HPCHEM\1\DATA2\DH051801.D Tune Time : 18 May 2017 8:21 am

Daily Calibration File : C:\HPCHEM\1\DATA2\DH051803.D

					87900	558867	607767	
		Surrogate	Recovery	% 	Internal	Standard	Responses	
	DLCS_SLXS		97			77727	488618	55892 7
DH051810.E	DMB_SLXSF-	-051817 12	8			80805	471570	: 382822
DH051814.D	0 C1705036-0	012A 128X	158*		· · · · · · · · · · · · · · · · · · ·	80475	486077	41094)
DH051815.D	C1705036-0	012A 1280X	145*			71302	420141	3435%
b - fo	3 3 - 2 4 4 - + 3							

t - fails 24hr time check * - fails criteria

Created: Mon Jun 19 13:24:07 2017 GCMS3

CENTEK LABORATORIES, LLC

ANALYTICAL QC SUMMARY REPORT

Date: 01-Jun-17

CH2M - St Louis C1705036 Work Order: CLIENT:

Forner Hampshire Project;

TestCode: TO15

Complete D. Carrette										
	Samplype: MBLK	TestCo	TestCode: T015	Units: ppbV	Pre	Prep Date:		PurMe 4005		
Client ID: ZZZZZ	Batch ID: R12257	Test	TestNo: TO-15		Analys	Analysis Date: 5/15/2017	2017	SedNo: 143176	5. 176	
Analyte	Resuff	Po	SPK value	SPK Ref Vai	%REC LowLind	init Hishi mi	RED Ref Val	00%	, ,	
1,1,1-f-Trichloroethane	< 5.0	5.0			1	- 1		พหาย	N-D-IIIII	Qual
1,1,2,2-Tetrachloroethane	< 5.0	5.0								
f,1,2-Trichloroethane	< 5.0	5.0								
1,1-Dichloroethane	< 5.0	5.0								
1,1-Dichloroethene	< 5.0	5.0								
1,2,4-Trichlorobenzene	< 5.0	5.0								
1,2,4-Trimethylbenzene	< 5.0	5.0								
f,2-Dibromoethane	< 5.0	5.0								
1,2-Dichloropenzene	< 5.0	5.0								
1,2-Dichloroethane	< 5.0	5.0								
1,2-Dichloropropane	< 5.0	5.0								
1,3,5-Trimethylbenzene	< 5.0	5.0								
1,3-butadiene	< 5.0	5.0								
1,3-Dichlorobenzene	< 5.0	5.0								
1,4-Dichlorobenzene	< 5.0	5.0								
1,4-Dioxane	< 10	\$								
2,2,4-trimethylpentane	< 5.0	5.0								
4-ethyltotuene	< 5.0	5.0								
Acetone	< 10	4								
Aliyl chloride	< 5.0	5.0								
Вепzеле	< 5.0	5.0								
Benzyl chloride	< 5.0	5.0								
Bromodichloromethane	< 5.0	5.0								
Вголобоят	< 5.0	5.0								
Bromomethane	< 5.0	5.0								
Qualifters: Results reported	Results reported are not blank corrected		E Estima	Estimated Value above quantitation range	авоп гамое		Jolding times 6]
	Analyte detected below quantitation limit		ND Not Do	Not Detected at the Limit of Particular	Haction		reduing titles for preparation or analysis exceeded	eparation or area	lysis execeded	
S Spike Recovery	Spike Recovery outside accepted recovery limits	nis					MTD Buistick accepted recovery timits	d recovery timits	•	

Committee in State House					
-	517 SampType: MBLK	TestCode: TO15	5 Units: ppbV	Prep Date:	RunNo. 42052
Client ID: ZZZZZ	Batch ID: R12257	TestNo: TO-45	វេវា	Analysis Date: 5/15/2017	SeqNo: 143176
Analyte	Result	POL SPK value	SPK Ref Val	%REC LOWLIMIT HighLimit RPD Ref Val	Part Noo Gas
Carbon disuffide	< 5.0	5.0		- 1	* CA
Carbon letracitloride	< 5.0	0.0			
СһІогођенzеле	۸ 5.5	5.0			
Chloroethane	< 5.0	5.0			
Chloroform	.50	5.5			
Chloromethane	< 5.0	5 6			
cis-1,2-Dichloroethene	6.6×	50			
cis-1,3-Dichloropropene	< 5.0	5.0			
Cyclofiexane	< 5.0 5.0	5.0			
Dibromochloromethane	< 5.0	5.0			
Eithyl acetate	< 10	0			
Ethylbenzene	< 5.0	5.0			
Freon 11	< 5.0	5.0			
Freon 113	< 5.0	5.0			
Freon 114	< 5.0	5.0			
Freon 12	< 5.0	5.0			
Heptane	< 5.0	5.0			
Hexachloro-f,3-butadiene	< 5.0	5.0			
Hexane	< 5.0	5.0			
fsopropył aktohol	< 5.0	5.0			
m&p-Xylene	< 10	10			
Methyl Butyl Ketone	< 10	10			
Methyl Ethyl Ketone	< 10	10			
Methyl Isobulyl Ketone	< 10	10			
Methyl tert-butyl ether	< 5.0	5.0			
Methylene chloride	< 5.0	5.0			
о-Ху⁄епе	φ. v	20			
Propylene	> 5 5	200			
Slyrene	0.5.	50			
Tetrachioroethylene	0.5.	5.0			
Tetrahydrofuran	< 5.0	5.0			
Qualifiers: Results req	Results reported are not blank corrected Analyte detected below manning in insi-	E E	Estimated Value above quantitation range	H ası	Holding times for preparation or analysis exceeded

CH2M - St Louis C1705036

CLIENT: Work Order: Project:

Former Hampshire

Sample ID: DMB_T015-051517	SampType: MBLK	TestCode: TO15	Units: ppbV	Prep	Prep Date:	Rintle: 12257	
Client ID: ZZZZZ	Batch ID: R12257	TestNo: TO-15		Analysis Date:	Date: 5/15/2017	SeqNo: 143176	
Analyte	Result	PQL SPK value	lue SPK Ref Val	%REC LowLimit	it HighLimit RPD Ref Val	: E	
agesto					₹	3 11 CT 11 11 11 11 11 11 1	Yang.
	2.6	5.0					
frans-1,Z-Dichloroethene	< 5.0	5.0					
trans-1,3-Dichloropropene	< 5.0	5.0					
Trichloroethene	< 5.0	5.0					
Vinyl acetale	< 5.0	50					
Vinyl Bromide	< 5.0	50					
Vinyl chloride	< 5.0	5.0					
Surr. Вготюflиогоbеnzепе	36.06		50 0	72.1 55.8	8 141		
Sample ID: DIMB_T015-051717	SampType: MBLK	TestCode: TO15	Units: pobV	Pren Date:	Date:	Danker 4 2926	
Clent ID: ZZZZZ	Batch ID: R12258	TestNo: TO-15	:	Analysis Date:	Date: 5/17/2017	SedNo: 143185	
Analyte	Result	POL SPK value	ue SPK Ref Val	%REC LowLimit	it Hightimit RPD Ref Val	: :	Č
1,1,1-Trichloroethane	< 5.0	5.0			- 1		la la
1,1,2,2-Fetrachloroeshane	< 5.0	5.0					
1,1,2-Trichloroethane	< 5.0	5.0					
1,1-Dichloroethane	< 5.0	5.0					
1,1-Dichloroethene	< 5.0	5.0					
1,2,4-Frichlorobenzene	< 5.0	5.0					
1,2,4-Trimethylbenzene	< 5.0	5.0					
1,2-Dibromoethane	< 5.0	5.0					
1,2-Dichlorobenzene	< 5.0	5.0					
1,2-Dichloroethane	< 5.0	5.0					
1,2-Dichloropropane	<5.0	5.0					
1,3,5-Trimethylbenzene	< 5.0	5.0					
1,3-butadiene	< 5.0	5.0					
1,3-Dichkrobenzene	< 5.0	5.0					
1,4-Dichlorobenzene	< 5.0	5.0					
1,4-Dioxane	< 10	10					
2,2,4-trimethytpentane	< 5.0	5.0					
Qualifiers: Results reporte	Results reported are not blank corrected	}	Estimated Value above quantitation range	ation range	,	Holding times for preparation or analysis exceeded	ļ
	Chief Recovery outside assented seconds limits	ND	Not Detected at the Limit of Detection	tection	R RPD outside accepted recovery limits	ted recovery limits	
	in in mandaga agrama i	CIRC				Page	Page 3 of 7
						,	,

Former Hampshire

CH2M - St Louis C1705036

Work Order: CLIENT:

Clear LD. Clear LD. Figure LD	Sample ID: UMB_1015-051717	Samplype: MBLK	lestCod	TestCode: T015	Units: ppbV	Prep Date:	ini	Bunkler 423co	
Analysis Result PQL SPK Value SPK Red Val WRRED LowLmit HgMLmit RPD Red Val WRRED LowLmit HgMLmit RPD Red Val RPD Line Acchone < 50 50	Client ID: ZZZZZ	Batch ID: R12258	TestN	o: TO-15		Analysis Dat		SeqNo: 143185	
4.50 Cabinate < 5.0	Analyte	Result	PQI.	SPK value					Olda G
Acetone < +10 10 Acetone < 5.0 5.0 Ally of choicide < 5.0 5.0 Senzacie < 5.0 5.0 Benzyl chloride < 5.0 5.0 Senrodichromethane < 5.0 5.0 Bomondichromethane < 5.0 5.0 Salvon distriction of the contraction	4-ethyttoluene	< 5.0	5.0						
Ally chloride	Acetone	< 10	10						
Separate	Allyl chloride	< 5.0	5.0						
Sumoidification	Benzene	< 5.0	5.0						
Standordichloromethane	Benzyl chloride	< 5.0	5.0						
Stannoform	Bromodichloromethane	< 5.0	5.0						
Signature of the part of the	Bromoform	< 5.0	5.0						
Carbon disulfide < 5.0 5.0 Carbon tetrachloride < 5.0	Влототейале	< 5.0	5.0						
Carbon letrachloride < 5.0 5.0 Carbon letrachloride < 5.0	Carbon disulfide	< 5.0	5.0						
Chlorobenzene < 5.0 5.0 Chlorobenzene < 5.0 5.0 Chlorocetrane < 5.0 5.0 Chloromethane < 5.0 5.0 sie-1,3-Dichloroethene < 5.0 5.0 Syclohexane < 5.0 5.0 Lithyl acetate < 1.0 1.0 Ethyl acetate < 5.0 5.0 report 11 < 5.0 5.0 report 12 < 5.0 5.0 report 13 < 5.0 5.0 report 14 < 5.0 5.0 report 12 < 5.0 5.0 report 12 < 5.0 5.0 report 13 < 5.0 5.0 report 14 < 5.0 5.0 report 14 <	Carbon tetrachloride	< 5.0	5.0						
Chloroettane < 5.0 5.0 Chloroform < 5.0 5.0 Chloroform < 5.0 5.0 Chloromethane < 5.0 5.0 Siz-1,2-Dichloroethene < 5.0 5.0 Siz-1,2-Dichloroethene < 5.0 5.0 Siz-1,3-Dichloroethene < 5.0 5.0 Siz-1,3-Dichloroethene < 5.0 5.0 Siz-1,3-Dichloroethene < 5.0 5.0 Siz-1,3-Dichloroethene < 5.0 5.0 Sizh Jacketele < 5.0 5.0 Sizh Jacketele < 5.0 5.0 Freen 11 < 5.0 5.0 Freen 13 < 5.0 5.0 Freen 11 < 5.0 5.0 Freen 12 < 5.0 5.0 Freen 13 < 5.0 5.0 Februar < 5.0 5.0 Februar < 5.0 5.0 Februar < 5.0 5.0 Februar < 5.0 5.0 Results reported are not blank connected	Chlorobenzene	< 5.0	5.0						
Chiloroform < 5.0 5.0 Chiloromethane < 5.0 5.0 sis-1,2-Dichloroethene < 5.0 5.0 >50 5.0 5.0 3ch 1,2-Dichloroethene < 5.0 5.0 dichylacetate < 10 10 sthylacetate < 10 5.0 chorn 11 < 5.0 5.0 recon 12 < 5.0 5.0 recon 13 < 5.0 5.0 recon 14 < 5.0 5.0	Chloroethane	< 5.0	5.0						
Chloromethane < 5,0 5,0 Sis 1,2-Dichloroethene < 5,0	Съ	< 5.0	5.0						
sis-1,2-Dichloroethene < 5.0 5.0 sis-1,3-Dichloroethene < 5.0 5.0 Syclohexane < 5.0 5.0 Syclohexane < 5.0 5.0 Syclohexane < 5.0 5.0 Sibyl acestate < 10 10 Eithyl acestate < 10 10 Eithyl acestate < 5.0 5.0 Eithyl acestate < 5.0 5.0 Eithyl acestate < 5.0 5.0 Febon 1.1 < 5.0 5.0 Febon 1.2 < 5.0 5.0 Febon 1.3 < 5.0 5.0 Febon 1.4 < 5.0 5.0 Febon 1.2 < 5.0 5.0 Febon 1.3 < 5.0 5.0 Febon 1.4 < 5.0 5.0 Febon 1.2 < 5.0 5.0 Febon 1.2 < 5.0 5.0 Febon 2.2 < 5.0 5.0 Febon 2.2 < 5.0 5.0 Febon 2.2 < 5.0 5.0 <tr< td=""><td>Chioromethane</td><td>< 5.0</td><td>5.0</td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>	Chioromethane	< 5.0	5.0						
2je-1,3-Dichloroptopene < 5.0 5.0 2yclothexane < 5.0 5.0 2yclothexane < 5.0 5.0 2jbromochloromethane < 5.0 5.0 2thyl acetate < 10 10 2thyl acetate < 10 5.0 2thyl acetate < 5.0 5.0 2reon 11 < 5.0 5.0 2reon 113 < 5.0 5.0 2reon 114 < 5.0 5.0 2reon 12 < 5.0 5.0 Pleptane < 5.0 5.0 Fear achloro-1,3-butadiene < 5.0 5.0 4 exachloro-1,3-butadiene < 5.0 5.0 6 by-Xylene < 5.0 5.0 6 by-Xylene < 10 10 Acetyl Ketone < 10 10 Acetyl Ketone < 10 10 Amalyte Getored below quantifation familie Estimated Value above quantifation range H Pushlifers: Results reported at the Limit of Detection R	cis-1,2-Dichloroethene	< 5.0	5.0						
Cyclohexane < 5.0 5.0 Dibromochloromethane < 5.0	cis-1,3-Dichloropropene	< 5.0	5.0						
Dibromochloromethane < 5.0 5.0 Ethyl acetate < 10 10 Ethyl benzene < 5.0 5.0 Teon 113 < 5.0 5.0 Teon 113 < 5.0 5.0 Teon 114 < 5.0 5.0 Teon 115 < 5.0 5.0 Teon 114 < 5.0 5.0 Teon 12 < 5.0 5.0 Example accordance < 5.0 5.0 Analytic concerced < 5.0 5.0 Authyl Ketone < 10 Authyl Ketone	Syclohexane	< 5.0	5.0						
Ethyl acetate < 10 10 Ethylbenzene < 5.0 5.0 Teon 11 < 5.0 5.0 Teon 113 < 5.0 5.0 Teon 114 < 5.0 5.0 Teon 115 < 5.0 5.0 Teon 114 < 5.0 5.0 Teon 12 < 5.0 5.0 Teon 12 < 5.0 5.0 Explain < 5.0 Lexachloro-1,3-butaciene < 5.0 5.0 Lexachloro-1,3-butaciene < 5.0 5.0 Aethyl alcohol < 5.0 5.0 Ababyl alcohol < 5.0 5.0 Ababyl Ketone < 5.0 5.0 Aethyl Ketone < 10 10	Dibromochloromethane	< 5.0	5.0						
Ethylbenzene < 5.0 5.0 Teon 113 < 5.0 5.0 Teon 114 < 5.0 5.0 Teon 124 < 5.0 5.0 Teon 125 < 5.0 Teon 126 < 5.0 < 5.0 Teorachloror 1,3-butadiene < 5.0 < 5.0 Teorachloror 1,3-butadiene < 5.0 < 5.0 Rescribing Ethyl Ischool < 5.0 < 5.0 Angly Ketone < 10 10 Resultifiers: < Results reported are not blank corrected E stimated Value above quantitation range H Paglifiers: Paglifiers: Paglifiers: Paglifiers:	cthyl acetate	< 10	10						
Febor 11	Ethylbenzene	< 5.0	5.0						
Freon 113 < 5.0	Freon 11	< 5.0	5.0						
Freon 114 < 5.0	Freon 113	< 5.0	5.0						
reon 12 < 5.0	Freon 114	< 5.0	5.0						
Fexachloro-1,3-butadiene	Freon 12	< 5.0	5.0						
lexachloro-1,3-butadiene < 5.0 5.0 sopropyl alcohol < 5.0	Heptane	< 5.0	5.0						
Sopropy alcoho	Hexachloro-1,3-butadiene	< 5.0	5.0						
Sopropyl alcohol < 5.0 5.0 n&p-Xylene < 10	Hexane	< 5.0	5.0						
Aethyl Eukyl Ketone < 10 10 Aethyl Ethyl Ketone < 10	Isopropyl alcohol	< 5.0	5.0						
dethyl Ethyl Ketone < 10	m&p-Xylene	< 10	10						
dethyl Ethyl Ketone < 16 t0 Pualifiers: Results reported are not blank corrected E Estimated Value above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	Wethyl Butyl Ketone	< 10	Ç						
Results reported are not blank corrected E Estimated Value above quantitation range J Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	Methyl Ethyl Ketone	< 10	0;						
Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R		are not blank corrected		ĺ	ed Value above quantitation	វា នេវាខ្លួខ	1	reparation or analysis exceeds	-
		i below quantitation Jimit			anions of the S project of Project				,

Former Hampshire

CH2M - St Louis C1705036

CLJENT; Work Order:

Parajett: Printer Hampshire President:	Work Order: C1705036	CH2M - St Louis C1705036										
CD DMB_TOTISED65777 Samplifype MBLK TestRCOde: TOTIS Units: pptW Pmp Date: FRunhic: T2288 FRunhic: T2288 C2ZZZ Batch ID: R17238 TestRO-TO-15 Units: pptW MARBEZ LowLmit HighLinit RPD Ref Val SeptPo: 143186 Cubuliv Katore < 10 10 50 So So SeptPo: 143186 RPD Ref Val SeptPo: 143186 Chable Total And State Sta		npshire						(mm)		.015		
Patrol P	Sample ID: DMB_T015-051717	SampType: MBLK	TestCo	de: TO15	Units: ppbV		Prep Date			RunNo: 12258		
POL. SPK value POL. SPK Ref Val SARE LowLinit HighLinit RDD Ref Val SAPD RDDLinit RDD Ref Val RDDLinit RDD Ref Val RDDLinit RDD Ref Val SAPD RDDLinit RDDLinit RDD Ref Val SAPD RDDLinit RDDLinit RDD Ref Val SAPD RDDLinit RDD Ref Val SAPD RDDLinit RDD Ref Val RD		Batch ID: R12258	Test	No: TO-15			Analysis Date		717	SeqNo: 143185		
Cobbly Kelone < 10 10 Chould Kelone < 5.0 5.0 5.0 Chould Selected < 5.0 5.0 5.0 Chould Selected < 5.0 5.0 5.0 Cool Selected < 5.0 5.0 5.0 Choin credible < 5.0 5.0 5.0 5.0 Choin credible < 5.0 5.0 5.0 5.0 5.0 Choin credible < 5.0 5.0<	Analyte	Result	Pol	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val			Qual
Californe Cali	Methyl Isobutyl Ketone	0\$ >	10									
e chloride	Methyl tert-butyf ether	< 5.0	5.0									
Controller Con	Methylene chloride	< 5.0	5.0									
C	o-Xylene	< 5.0	5.0									
Concluyione C S G G G G G G G G G G G G G G G G G G	Propylene	< 5.0	5.0									
Color Colo	Styrene	< 5.0	5.0									
Signation Sign	Tetrachloroethylene	< 5.0	5.0									
Cabbilionophopen Cabb Sign Si	Tetrahydrofuran	< 5.0	5.0									
Second Part	Toluene	< 5.0	5.0									
Componence Com	trans-1,2-Dichloroethene	< 5.0	5.0									
Second S	trans-1,3-Dichloropropene	< 5.0	5.0									
Signature Sign	Trichloroethene	< 5.0	5.0									
Componentation Comp	Vinyl acelate	< 5.0	5.0									
Componentation Signature	Vinyl Bromide	< 5.0	5.0									
27.00 20.00 24.0 25.8 141 2.00	vinyl chloride	< 5.0	5.0									
DMB_TO16-051817 SampType: MBLK TestCode: TO15 Units: ppbV Prep Date: Analysis Date: \$18201 SeqNo: 12259 22222 Batch ID: R12369 TestNo: TO-15 Analysis Date: \$18201 SeqNo: 143202 Incochlane < 5.0	Surr. Bromofluorobenzene	37.00	0	20	0	74.0	55.8	141				
ZZZZZ Batch ID: R12259 TestNo: TO-15 Analysis Date: 5/18/2017 SeqNo: 143202 loroethane carbolocethane carbolocethane carbolocethane coethane < 5.0	Sample ID: DMB_T015-051817	SampType: MBLK	TestCo	de: TO15	Units: ppbV		Prep Date			RunNo: 12259		
Result PQL SPK Ref Value SPK S			Test	No: TO-15		4	unalysis Date		17	SeqNo: 143202		
Inducethane	Analyte	Result	PQL	SPK value	SPK Ref Val	%REC		HighLimit	RPD Ref Val			Zual
Paralytic detected below quantitation limit of Detection Paralytic detected below quantitation limit Paralytic dete	1,1,1-Trichloroethane	< 5.0	5.0									
Oction Continue	1,1,2,2-Tetrachloroethane	< 5.0	5.0									
cethene < 5.0 5.0 oethene < 5.0	1,1,2-Trichloroethane	< 5.0	5.0									
oethene < 5.0 5.0 lorobenzene < 5.0	1,1-Dichloroethane	< 5.0	5.0									
	1, t-Dichloroethene	< 5.0	5.0									
rethylbenzene < 5.0 5.0 5.0 roethane < 5.0 5.0 5.0 robenzene < 5.0 5.0 5.0 Falmuted Value above quantitation range H Analyte detected below quantitation limit R No Not Detected at the Limit of Detection R R	1,2,4-Frichlorobenzene	< 5.0	5.0									
obenzene < 5.0 5.0 5.0 cirta Decorated below quantitation limit of Control Decorated at the Limit of Detection R	1,2,4-Trimethylbenzene	< 5.0	5.0									
Obenzene < 5.0 5.0 Results reported are not blank corrected E Estimated Vatue above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	1,2-Dibromoethane	< 5.0	5.0									
. Results reported are not blank corrected E Estimated Value above quantitation range H J Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R C Coil a December of the Limit of Detection	1,2-Dichlorobenzene	< 5.0	5.0									
College December of the College Assessment of the College of the C	. –	ed are not blank corrected ted below anantiaton limit		į.	ted Value above quanti	tation range		!	Tolding times for	reparation or aralysi	s exceeded	
		tilli tigatatatata			ACCREA OF DISCUSSION OF E	KICHINII			ATO massine accep	ICO ICCIMON BIBLE		

Sample ID: DMB_1015-051817	SampType: MBLK	TestCo	TestCode: TO15	Units: ppbV	Prep Date:	late:	Bloke 12259
Client ID: ZZZZZ	Batch ID: R12259	Test	TestNo: TO-15		Analysis Date.	late: 5/18/2017	SeqNo: 143202
Analyte	Result	PO	SPK value	SPK Ref Val	%REC LowLimit	HighLimit RPD Ref Val	%RPD RPDI imit Oual
1,2-Dichloroethane	< 5.0	5.0					
1,2-Dichloropropane	< 5.0	5.0					
1,3,5-Trimethylbenzene	< 5.0	5.0					
1,3-butadiene	< 5.0	5.0					
1,3-Dichlorobenzene	< 5.0	5.0					
1,4-Dichlorobenzene	< 5.0	5.0					
1,4-Dioxane	< 10	0					
2,2,4-trimethylpentane	< 5.0	5.0					
4-ethyloluene	< 5.0	5.0					
Acetone	< 10	40					
Allyl chloride	< 5.0	5.0					
Benzene	< 5.0	5.0					
Benzył chloride	< 5.0	5.0					
Bromodichloromethane	< 5.0	5.0					
Bromoform	< 5.0	5.0					
Bromonethane	< 5.0	5.0					
Carbon disulfate	< 5.0	5.0					
Carbon tetrachloride	< 5.0	5.0					
Chlarobenzene	< 5.0	5.0					
Chloroethane	< 5.0	5.0					
Chioroform	< 5.0	5.0					
Chioromethane	< 5.0	5.0					
cis-1,2-Dichloroethene	< 5.0	5.0					
cis-1,3-Dichloropropene	< 5.0	5.0					
Сусюнехале	< 5.0	5.0					
Dibromochforomethane	< 5.0	5.0					
Ethyl acetate	< 10	Ç					
Ethylbenzene	< 5.0	5.0					
Freon 11	< 5.0	5.0					
Freon 113	< 5.0	5.0					
Freon 114	< 5.0	5.0					
Qualifiers: Results reported	Results reported are not blank corrected		E Estimate	Estimated Valve alarge agantization canor	An sange	If Malding times for	
J Analyte detected	Analyte detected below quantitation limit			Not Detected at the Limit of Detection	on range ction		reduing times for preparation of analysis exceeded RPD outside account toward limits
S Spike Recovery	Spike Recovery outside accepted recovery limits	5					the second y manico

Former Hampshire

CH2M - St Louis C1705036

CLIENT: Work Order:

H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits RPD ostside accepted recovery limits

Estimated Value above quantitation range E Estimated Value above quantitation rans

ND Not Detected at the Limit of Detection

Spike Recovery outside accepted recovery limits Analyte detected below quantitation final Results reported are not blank corrected

S

Qualifiers:

roject: romer Hampshire	mpshire						TestCode: TO15	TO15	
Sample ID: DMB_T015-051817	SampType: MBLK	TestCode: TO15	TO15	Units: poby		Dren Nate:			
Olient ID: ZZZZZ	Batch ID: R12259	TestNo: TO-15	TO-15				5/18/2017	Funko: 12259 SeqNo: 143202	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	%REC LowLimit Hig	HighLimit RPD Ref Val	ARPH RODE	Š
Freon 12	< 5.0	5.0							E CENT
Heptane	< 5.0	5.0							
Hexachloro-t,3-butadiene	< 5.0	5.0							
Hexane	< 5.0	5.0							
Isopropył ałcohol	< 5.0	5.0							
ო&p-Xylene	< 10	#							
Methyl Butyl Ketone	< 10	: 0							
Methyl Ethyl Ketone	< 10	10							
Methyl Isobutyl Ketone	< 10	2							
Methyl tert-bulyl ether	< 5.0	5.0							
Methylene chloride	< 5.0	5.0							
o-Xylene	< 5.0	5.0							
Propylene	< 5.0	5.0							
Styrene	< 5.0	5.0							
Tetrachloroethyene	< 5.0	5.0							
Tetrahydrofuran	< 5.0	5.0							
Toluene	< 5.0	5.0							
trans-1,2-Dichloroethene	< 5.0	5.0							
frans-1,3-Dichloropropene	< 5.0	5.0							
Trichloroethene	< 5.0	5.0							
Vinyl acetate	< 5.0	0.5							
Vinyl Bromide	< 5.0	5.0							
Vinyl chlande	< 5.0	5.0							
Surr. Bromofluorobenzene	35.27	0	20	ø	70.5	55.8	141		
						!			

Former Hampshire

CH2M - St Louis C1705036

Work Order: CLIENT:

CENTEK LABORATORIES, LLC

ANALYTICAL QC SUMMARY REPORT

Date: 19-Jun-17

CH2M - St Louis C1705036 Work Order: CLIENT:

Former Hampshire Project:

TestCode: TO15 STILE

December December								ı	
Statistical Color Stat	Sample ID: DMB_SLXSF-05161		TestCode: TO15			-3-0			
Result POL SPK value SPK Ref Val %REC LowLint HighLint RPD Ref Val %REC Seque SPK Ref Val %REC LowLint HighLint RPD Ref Val %RPD RPDLint RPDLint		Balch IO: 042240	, ,			riep vate	.,	RunNo: 12249	
Result POL SPK value SPK Rei Vai %REC Lowd.imit Hight.limit RPD Rei Vai %RPD RPDLinit Sufficie 5.0		56771 V 17743	lestino; TO-15			Analysis Date	5/16/2017	SeqNo: 143127	
Sufficie C S D S D S D	Analyte	Result			%REC	Lowd imit	lish imit ODD CAN		ı
sufficie < 50 5.0 sufficie < 50 5.0 sufficie < 5.0 5.0 mercapian < 5.0 5.0 mercapian < 5.0 5.0 sufficie 5.0 5.0 sufficie Fest/Code: TO15_SULF Units: ppbV Plega Date: S1812017 Runko: 12289 sufficie < 5.0 5.0 Analysis Date: S1812017 Sack No. 143207 Analysis Date: S1812017 Sack No. 143207 sufficie < 5.0 5.0 S.0 <	1-Propanethio!	750		1			INGINERALING OVER THE VALL		Qual
suffice	- 	n'c ×	5.0						
Sufficie	calibral distande	< 5.0	0.5						
sufficie	Carbonyl sulfide	< 5.0	C						
Suffice	Dimethyl suffide	<50	· ·						
Sufficient	Ethyl mercantan	, ,	J.U.						
Sufficient \$50 \$0 \$0 \$0 \$0 \$0 \$0 \$		9°C >	5.0						
Composition	nydrogen Sulfide	< 5.0	5.0						
Composition of the problem of the	isopropyl mercaptan	< 5.0	5.0						
DMB_SLXSF-05181 SampType: MBLK TestCode: TO15_SULF Units: ppbV Prep Date: Sfr8izo17 SeqNo: 12259 SeqNo: 143207	Methyl mercaptan	< 5.0	0.60						
DMB_SLXSF-06181 SampType: MBLK TestCode: TO15_SULF Units: ppbV Prep Date: RunNo: 12259 RunNo: 12259 RunNo: 12250 RunNo: 12259 RunNo: 122	Suff: Bromofluorobenzene	48 17							
DMB_SLXSF-06181 Sampf yper. MBLK TestCode: TO15_SULF Units: ppbV Prep Date: Freq Date: Freq Date: Freq Name <		41.04			96.3	5	130		
ZZZZZ Batch ID: R12269 TestINo: TO-15 Analysis Date: 5/18/2017 SeqNo: 12259 Ithiot SSSuff Control SSG SS	Sample ID: DMB_SLXSF-05181	SampType: MBLK	TestCode: TO15 (1		Pren Date			
Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit RPD Ref Val R		Outot ID.	1			. कि एवार		KunNo: 12259	
Result PQL SPK value SPK Ref Val %REC Lowt.imit HighLimit RPD Ref Val %RPD RPDLimit withde 5.0<		Datch ID: K12259	FestNo: TO-15		•	Analysis Date:		SeqNo: 143207	
thiot	Analyte	Poc II							
thiof < 5.0 5.0 suffide 1.120 5.0 suffide < 5.0 < 5.0 suffide < 5.0 < 5.0 suffide < 5.0 < 7.0 < 130		Treas.			%REC				Ç
suffide 1.120 5.0 suffide <5.0 5.0 ulfide <5.0 5.0 saptan <5.0 5.0 Sulfide <5.0 5.0 nercaptan <5.0 5.0 ccaptan <5.0 5.0 ccaptan <5.0 5.0 ccaptan <5.0 5.0	I-Propanethiof	< 5.0	5.0					3	
suffide < 5.0 5.0 upfide < 5.0	Carbon disuffide	1.120	5.0						
uffide < 5.0 5.0 saptan < 5.0	Carbonyl suffide	< 5.0	5.0						7
Sulfide < 5.0 5.0 Sulfide < 5.0	Dimethyl sulfide	< 5.0	50						
Sulfide < 5.0 5.0 nercaptan < 5.0 5.0 ccaptan < 5.0 5.0 omofluorobenzene 64.10 0 50 0 128 70	Ethyl mercaptan	< 5.0	5.0						
nercaptan < 5.0 5.0 ceptan < 5.0 5.0 ornofluorobenzene 64.10 0 50 0 128 70	Hydrogen Sulfide	< 5.0	5.0						
rcaptan < 5.0 5.0 omofluorobenzene 64.10 0 50 0 128 70	soproру телсарtал	< 5.0	5.0						
omofluorobenzene 64.10 0 50 0 128 70	Wethyl mercaptan	< 5.0	. 05						
	Surr. Bromofluorabenzene	64.10			128	70	130		
							}		
	Orrelifiers:								

Page 1 of 2

Holding times for preparation or analysis exceeded

= ~

Estimated Value above quantitation range E. Estimated Value above quantitation rang ND Not Detected at the Limit of Detection

Spike Recovery outside accepted recovery limits Analyte detected below quantitation limit Results reported are not blank corrected

RPD outside accepted recovery limits

Estimated Value above quantitation range

E Estimated Value above quantitation rang ND Not Detected at the Limit of Detection

Spike Recovery outside accepted recovery limits Analyse detected helow quantitativo limit Results reported are not blank corrected

≖ ∝

Folding times for preparation or analysis exceeded

RPD outside accepted recovery limits

Qualifiers:

Former Hampshire

CH2M - St Louis C1705036

Work Order: CLIENT

CENTEK LABORATORIES, LLC

ANALYTICAL QC SUMMARY REPORT

Date: 19-Jun-17

CH2M - St Louis C1705036 Work Order: CLIENT: Project:

Former Hampshire

TestCode: LFG FG

Sample ID: MB-R12246	SampType: MBLK	TestCode: LFG FG	Units: %		Prep Date:		RunNo: 12246	246	
Client ID: ZZZZZ	Batch ID: R12246	TestNo: EPA Method	ťĐ	₹	Analysis Date: 5/1:	5/15/2017	SeqNo: 143099	3099	
Analyte	Result	POL SPK value SPK Ref Val	3PK Ref Vai	%REC	LowLimit HighLir	%REC LowLimit HighLimit RPD Ref Val	%RPD	%RPD RPDLimit Oual	Oliza
Carbon dioxide	ON	1.90							
Carbon Monoxide	<u>QN</u>	0.880							
Methane	QN	0.580							
Ntrogen	AD.	8,30							
Охудел	0.04300	0.880							-

Qualifiers:

Analyte detected below quantitation limit Results reported are not blank corrected

Spike Recovery outside accepted recovesy limits

Estimated Value above quantitation range E Estimated Value above quantisation rany
ND Not Detected at the Linis of Detection

Holding times for preparation or analysis exceeded RPD eutside accepted recovery limits **=** =

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CENTEK LABORATORIES, LLC

ANALYTICAL QC SUMMARY REPORT

Date: 01-Jun-17

CH2M - St Louis CLIENT:

C1705036 Work Order: Project:

Former Hampshire

TestCode: TO15

Sample ID: DLCS TO15-064517 SamaType: 1.08	SamaTune: F.C.	-							
4	cutify type. Eva	estCq	estcode: 1015	Units: ppbV		Prep Date:	ài	RunNo: 12257	
. URBIT IU: 2222	Batch ID: R12257	Test	TestNo: TO-15			Analysis Date:	e: 5/15/2017	SeqNo: 143177	
Analyte	Result	PQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDI imit	Č
1,1,1-Trichloroethane	41.20	5.0	95	0	82.4	75.6	194	ı	
t, 1,2,2-Tetrachloroethane	44.93	5.0	50	Ф	89.9	47.3	139		
1, 1, 2-Trichloroethane	44.81	5.0	8	0	89.6	59.9	149		
1,1-Dichloroethane	45.84	5.0	55	0	91.7	56.9	146		
1,1-Dichloroethene	51.97	5.0	50	0	25	50.2	131		
1,2,4-1 rediorobenzene	43.64	5.0	50	0	87.3	23	127		
1,2,4-1 imrethylbenzene	45.18	5.0	\$ \$	0	90.4	49	130		
T,Z-Dibromoethane	45.37	5.0	20	0	30.7	53	145		
1,2-Dichlorobenzene	44.38	9.0	8	0	89.8	36.5	138		
1,2-Dichloroethane	43.02	5.0	50	0	36.0	71.6	126		
1,2-Dichloropropane	44.01	5.0	50	0	88.0	62.9	156		
1,3,5-Trimethylbenzene	44.44	5.0	50	¢	88.9	48.2	136		
1,3-butadiene	36.36	5.0	50	O	73.9	17.2	190		
1,3-Dichkorobenzene	47.47	5.0	8	0	94.9	3.59	145		
1,4-Dichlorobenzene	43.31	5.0	50	0	86.6	41.5	136		
1,4-Dioхапе	47.08	9	50	Ф	94.2	52.4	150		
2,2,4-trimethylpentane	43.77	5.0	50		87.5	60.6	159		
4-ethyltoluene	43.42	5.0	20	0	86.8	52.2	179		
Acetone	48.04	10	ক্ষ	0	96.1	55.4	142		
Allyl chforide	42.66	5.0	55	0	85.3	6	£ 1		
Benzene	46.15	5.0	20	0	92.3	58.5	£ 5		
Benzyl chloride	49.24	5.0	50	· •	5 50	38.5	£ 4		
Bromodichloromethane	42.24	5.0	90	- 0	84.5	22 22	620		
Bromoform	41.95	5.0	8	. 0	83.9	, 4 <u>1</u>	180		
Bromomethane	40.30	5.0	90	٥	80.6	51.5	126		
Qualifiers: Results reported	Results reported are not blank corrected		{	Estimated Value above quantitation range	tation range		H Holding times for pr	Holding times for preparation or analysis exceeded	eded
J Analyte detected S Smite Decemen	Analyte detected below quantitation limit		ND Not D	Not Detected at the Limit of Detection	etection.		R RPD outside accepted recovery limits	ed recovery limits	
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Qualifiers: Results reported are not blank concered E Estimated Value above quantitation range H	H Holding times for preparation or analysis exceeded
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Former Hampshire

CH2M - St Louis CI 705036

Work Order: CLIENT:

Seatch ID: R12257 Tessiblo: 1O-15 Analysis Date: S142D017 Seatch: 151177 Seatch:		Samplype: LCS	TestCode: TO15	E. 1015	Outs: ppbv		Prep Date:	ġ.		RimMn: 12257	
Politicate Pol	Client ID: ZZZZZ	Batch ID: R12257	Testh	lo: TO-15			Analysis Da			Section 442477	
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1	nchloroethere	45.22	5.0	50	0	90.4	57.4	144			
100 billiobility 4615 5 0 5 0 6 0 6 0 13 134 134	fnyl acetate	48,11	5.0	90	c	86.0	72	<u> </u>			
Controlled by Part Control	inyl Bromide	46.15	5.0	20	· c	1 69	C. F. C.	137			
Public P	inyl chloride	35.82	5.0	3 53	> c	71.6	- 000	5 5 5			
Publiciary Sampitype: LCS Test/Code: TO16 Units: ppbV Prep Date: RunNic 12268 Sequive: 12268 Run Nic 12268 R	Surr. Bromofluorobenzene	49.69	0	90	0	99.4	70.6	129			
ZZZZZ Balch ID: R12288 TestNo. TO-15 Analysis Date: SIT/12017 Sequential Sequen	ample ID: DLCS_T015-051717	SampType: LCS	TestCode	e: T015	Units: ppbV		Prep Dat			PunNo: 42250	
Poct SPK value SPK Ref Val %REC Lowlinit HighLinit RPD Ref Val %RPD RPDLinit RPD Ref Val RPD Ref V		Batch ID: R12258	TestM	0: TO-15			Anatysis Dat			SenNo. 143186	
tractbioroethane 49 01 5.0 5.0 98.0 76.6 124 Annual value teached below quantistation in mile tractbioroethane 46.52 5.0 5.0 6.0 98.0 76.6 124 Annual value tractbioroethane 46.58 5.0 5.0 6.0 98.3 47.3	nalyte	Result	PG	SPK value	SPK Ref Val		LowLimit	กร์ป imá	Ref Val	2000 000%	
trachloroethane 46.52 5.0 5.0 98.0 76.0 173 toothane 46.58 5.0 50 0 93.0 76.0 173 173 toothane 50.08 5.0 50 0 98.3 56.9 145 toothane 50.08 5.0 50 0 98.3 56.9 144 toothane 49.46 5.0 50 0 98.3 56.9 145 toothane 49.46 5.0 50 0 98.9 49 138 toothane 49.46 5.0 50 0 98.9 49 138 toothane 52.42 5.0 50 0 97.3 59 146 opportzene 45.88 5.0 50 0 91.8 62.9 156 opportzene 52.06 50 0 91.8 62.9 141 obertzene 46.72 10 50 0 <	1,1-Trichloreethane	49.03	5.0	50	¢	8		- 1		-	E CERSI
139 139	1.2.2-Tetrachlomethane	A B E S	? ¢	3 (> 1	38	/6.5	124			
49.24 5.0 50 0 93.2 59.9 149	1 2. Trichlomothono	20.04	D. C.	20	Ċ	93.0	47.3	139			
rockframe 49.13 5.0 50 98.3 56.9 146 coekhene 50.08 5.0 50 0 100 50.2 131 diorobenzene 46.60 5.0 5.0 60 98.3 27 127 ethylbenzene 48.64 5.0 50 0 98.3 49 138 rockhane 48.64 5.0 50 0 98.3 36.9 145 robenzene 49.15 5.0 50 0 98.3 36.9 145 robenzene 49.10 5.0 50 0 98.3 36.5 146 robenzene 49.00 5.0 50 0 91.8 48.2 146 robenzene 57.77 50 50 0 98.0 147 172 190 robenzene 52.06 50 0 98.4 60.6 147 147 147 147 147 147 147		46.58	5.0	25	Đ	93.2	59.9	149			
footherie 50.08 5.0 50.0 100 50.2 131 divorbenzene 46.60 5.0 5.0 0 93.2 27 127 ethylbenzene 49.46 5.0 50 0 98.9 49 138 roethane 48.64 5.0 50 0 98.3 59 145 robenzene 49.15 5.0 50 0 98.3 36.5 138 roptopane 45.88 5.0 50 0 91.8 62.9 156 ethylbenzene 49.00 5.0 50 0 91.8 62.9 156 robenzene 57.77 5.0 50 0 98.0 17.2 190 robenzene 57.77 5.0 50 0 93.4 62.9 141 robenzene 52.06 5.0 50 0 93.4 60.5 141.5 136 robenzene 46.72 10 50 <td></td> <td>49.13</td> <td>5.0</td> <td>99</td> <td>0</td> <td>98.3</td> <td>56.9</td> <td>146</td> <td></td> <td></td> <td></td>		49.13	5.0	99	0	98.3	56.9	146			
tion oberuseme 46.60 5.0 5.0 9.3.2 27 127 ethylbenzene 49.46 5.0 5.0 98.9 49 138 roethane 48.64 5.0 5.0 97.3 59 145 robenzene 49.15 5.0 50 0 97.3 59 145 robenzene 45.88 5.0 50 50 0 97.3 36.5 138 ethylbenzene 45.88 5.0 50 0 91.8 62.9 156 ethylbenzene 57.77 5.0 50 0 91.8 62.9 156 robenzene 57.77 5.0 50 0 95.1 41.5 136 obenzene 52.06 5.0 50 0 95.1 41.5 136 definitioniane 45.72 5.0 50 0 94.4 60.6 159 robenzene 47.20 5.0 50 94.4	I-Uichlofoethene	50.08	5.0	50	0	100	50.2	131			
ethylbenzene 49.46 5.0 50 98.9 49 145 roethane 48.64 5.0 5.0 6 97.3 59 145 roethane 48.64 5.0 50 0 97.3 59 145 robenzene 49.15 5.0 50 0 91.8 62.9 156 ethylbenzene 49.00 5.0 50 0 91.8 62.9 156 ethylbenzene 57.77 5.0 50 0 116 17.2 190 obenzene 52.06 5.0 50 0 104 35.9 141 obenzene 46.72 10 50 0 93.4 52.4 156 dil 46.72 10 50 94.4 60.6 159 159 r Results reported are not blank corrected Estimated Value above quantitation range E 60.6 94.4 60.6 150 r Analyse detected below qu	2,4-1 nchiorobenzene	46.60	5.0	55	¢	93.2	27	127			
roethane 48.64 5.0 50 97.3 59 145 robenzene 49.15 5.0 50 0 98.3 36.5 138 roethane 52.42 5.0 50 0 96.3 77.6 177 190 sthybenzene 52.06 5.0 50 0 104 35.9 141 141 142 156 <td>2,4-Trimethylbenzene</td> <td>49.46</td> <td>5.0</td> <td>50</td> <td>0</td> <td>98.9</td> <td>49</td> <td>38</td> <td></td> <td></td> <td></td>	2,4-Trimethylbenzene	49.46	5.0	50	0	98.9	49	38			
robenzene 49.15 5.0 50 98.3 36.5 138 roethane 52.42 5.0 50 0 105 71.6 126 ropropare 45.88 5.0 50 0 91.8 62.9 156 ethylbenzene 50 50 0 91.8 62.9 156 she 57.77 5.0 50 0 116 17.2 190 obenzene 52.06 5.0 50 0 104 35.9 141 obenzene 47.53 5.0 50 0 93.4 41.5 136 del 46.72 10 50 0 93.4 60.6 159 del 7.20 5.0 50 0 94.4 60.6 159 del 7.20 5.0 50 0 94.4 60.6 159 del Analys detected below quantitation limit Not Detected at the Limit of Detections R 6	2-Dibromoethane	48.64	5.0	20	0	97.3	47	145			
roethane 52.42 5.0 50 105 71.6 72.6 ropropare 45.88 5.0 50 0 91.8 62.9 156 ethylbenzene 49.00 5.0 60 91.8 62.9 156 sne 57.77 5.0 50 0 116 17.2 190 obenzene 57.77 5.0 50 0 104 35.9 141 obenzene 47.53 5.0 50 0 95.1 41.5 136 ethylpentane 46.72 10 50 93.4 69.6 159 thylpentane 47.20 5.0 50 94.4 69.6 159 results reported are not blank corrected Estimated Value above quantitation range Estimated Value above quantitation range H Analyse detected below quantitation limit ND Not Detected at the Limit of Detections R Analyse of the corrections R	2-Dichlorobenzene	49.15	5.0	90	0	98.3	36.5	138			
Opproparie 45.88 5.0 50 91.8 62.9 156 ethylbenzene 49.00 5.0 5.0 98.0 48.2 136 sne 57.77 5.0 50 0 116 17.2 190 obenzene 52.06 5.0 50 0 104 35.9 141 obenzene 47.53 5.0 50 0 95.1 41.5 136 e 46.72 10 50 0 93.4 52.4 150 thylpentane 47.20 5.0 5.0 94.4 69.6 159 . Results reported are not blank corrected Estimated Value above quantitation range H R J Analyse detected below quantitation limit ND Not Detected at the Limit of Detections R R	2-Dichloroethare	52.42	5.0	55	O	105	716	126			
ethylbenzene 49.00 5.0 50 6 98.0 48.2 73.5 ene 57.77 5.0 50 0 116 17.2 190 obenzene 52.06 5.0 50 0 104 35.9 141 obenzene 47.53 5.0 50 0 95.1 41.5 136 e 46.72 10 50 0 93.4 52.4 150 thyspentane 47.20 5.0 5.0 94.4 60.6 159 . Results reported are not blank corrected Estimated Value above quantitation range H R J Analyze detected below quantitation limit ND Not Detected at the Limit of Detections R R	2-Dichloropropane	45.88	5.0	50	٥	6	620	3,7			
sine 57.77 5.0 50 0 116 17.2 190 oberazene 52.06 5.0 50 0 104 35.9 141 oberazene 47.53 5.0 50 0 95.1 41.5 136 de divisionitation 46.72 10 50 0 93.4 52.4 150 dryppentane 47.20 5.0 5.0 0 94.4 60.6 159 results reported are not blank corrected E Estimated Value above quantitation range H R J Analyse detected below quantitation limit ND Not Detected at the Limit of Detections R R	3,5-Trimethylbenzene	49.00	5.0	50	· «	0 80	0.00	2 2			
oberizene 52.06 5.0 50 104 35.9 141 oberizene 47.53 5.0 50 0 96.1 41.5 136 thyspeniane 46.72 10 50 0 93.4 52.4 150 thyspeniane 47.20 5.0 50 0 94.4 60.6 159 Results reported are not blank corrected E Estimated Value above quantitation range H R J Analyze detected below quantitation limit ND Not Detected at the Limit of Detections R R	3-buladiene	57.77	5.0	209	· c	145	7.04	0 00+			
Obenzene 47.53 5.0 50 95.1 41.5 136 Rhylpentane 46.72 10 50 0 93.4 52.4 150 Rhylpentane 47.20 5.0 5.0 94.4 60.6 159 Results reported are not blank corrected Eastimated Value above quantitation range H H J Analyte detected below quantitation limit ND Not Detected at the Limit of Detections R	3-Dichtorobenzene	52.06	5.0	£	, c	5 5	37.7	145			
thyspentane	4-Dichlorobenzene	47.53	5.0		, c	į v	D 4	# C			
thysperitane 47.20 5.0 50 0 94.4 60.6 150 Results reported are not blank corrected E Estimated Value above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detections R	4-Dioхапе	46.72	# #	3 6	>	30.1	0 5	9 (
Results reported are not blank corrected E Estimated Value above quantitation range H J Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	2,4-trimethylpentane	47.20	5.0	20	0	94.4	92.4 60.6	159			
Results reported are not blank corrected E Estimated Value above quantitation range H J Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R						Í					
Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R		are not blank corrected			ted Value above quant	ifation range			e times for pre	paration or grafts saced	ksd
•		i below quantitation limit			1 2 minutes at the 1 minutes of 1						

Former Hampshire

C1705036

CLIENT: Work Order:

Project:

CH2M - St Louis

Qua

%RPD RPDLimit

SeqNo: 143186 RunNo: 12258

H Holding times for preparation or analysis exceeded R RPD outside excepted recovery limits

Estimated Value above quantitation range Not Detected at the Linuit of Detection

E Q

Spike Recovery outside accepted recovery limits Analyte detected below quantitation limit Results reported are not blank conceted

S

Qualifiers:

RPO outside accepted recovery limits

Project: Former l	Former Hampshire						TestCode: TO15	TOL
Sample ID: DLCS_T015-051717	717 SampType: LCS	TestCoc	TestCode: TO15	Units: poby		Oto Coto		
Client ID: ZZZZZ	Batch ID: R12258	Testh	TestNo: TO-15	2		Analysis Date:	te: 5/17/2017	KuniNo SeoNo
Analyte	Result	ğ	SPK value	SPK Ref Val	%REC		.⊆)
4-ethyltoluene	47.89	5.0	50	c	9 190		1	
Acetone	57.83	=======================================	8 6	> <	20.0	7.75	129	
Allyl chloride	48.96	5.0	3 5	> C	116 070	65.4	142	
Benzene	45.60	5.0	2 G	o c	ų č	76	97.	
Benzyl chloride	48.89	5.0	\$) C	4 60	2000 2000 2000 2000 2000 2000 2000 200	101	
Bromodichloromethane	48.70	5.0	20	0	97.4	73.9	25 55	
Bromotom	50.28	5.0	50	o	101	40	, t	
Gromethane	40.53	5.0	50	0	<u>8</u>	51.5	136	
Carbon disultide	47.46	5.0	50	0	94.9	Ю	4	
Carbon tetrachlonde	50.36	9.0	20	0	101	22	122	
Chlorobenzene	44.76	5.0	25	0	89.5	49.7	142	
Chloroethane	43.14	5.0	S	0	86.3	25	3 5	
Chloroform	48.87	5.0	50	0	57.5	8.48	130	
Chloromethane	58.64	5.0	20	0	117	i ic	£	
cis-1,2-Dichloroethene	47.26	5.0	S	Ö	94.5	53.7		
cis-1,3-Dichloropropene	48.18	5.0	50	0	96.4	70.4	52	
Cyclohexane	45.86	5.0	50	Ō	91.7	57.4	157	
Obromochloromethane	49.98	5.0	93	0	<u>‡</u>	52.5	145	
Ethyl acetate	50.13	10	50	0	100	61.5	\$47	
Ethylbenzene	44.53	5.0	S.	0	89.1	54.8	138	
Freon 11	46.68	5.0	90	0	93.4	69.2	125	
Freon 113	51,57	5.0	90	0	103	55.5	122	
Freon 314	56.84	5.0	50	0	114	62.5	166	
Freon 12	47.52	5.0	50	Ö	95.0	79.1	523	
Heptane	48.56	5.0	50	0	97.1	652	158	
Hexachioro-1,3-butadiene	52.17	5.0	20	0	104	35.9	124	
Hexane	49.68	5.0	S	o	99.4	61.6	<u> </u>	
Isopropyl alcohol	. 52.28	5.0	90	¢	105	53.4	147	
m&p-Xylene	91.63	ů	100	0	91.6	64.6	141	
Methyl Butyl Kelone	54.20	10	50	0	\$OB	745	· • •	
Methyl Fibyl Ketrane								

CH2M - St Louis	C1705036
CLIENT:	Work Order:

Former Hampshire
Project:

Sample ID: DLCS_TO15-051717 SampType: LCS	SampType: LCS	TestCo	TestCode: TO15	Units: ppbV		Prep Date:		_	RunNo: 12258	258	
Client ID: ZZZZZ	Batch ID: R12258	Test	TestNo: TO-15			Analysis Date:	5/17/2017	•	SeqNo: 143186	3186	
Analyte	Result	PQE	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit RPD Ref Val	fVal	%RPD	RPDLimit	Qual
Methyl Isobutyl Ketone	51.53	10	99	Q	103	73	122				
Methyl tert-butyl ether	47.12	5.0	50	¢	94.2	67.4	1 2				
Methylene chloride	48,34	5.0	50	0	96.7	48.6	142				
o-Xylene	46.75	5.0	20	Đ	93,5	62.4	140				
Propylene	45.57	5.0	8	0	91.1	51.7	165				
Styrene	47.30	5.0	82	0	94.6	49.4	147				
Tetrachloroethyiene	47.28	5.0	50	0	94.6	45.5	149				
Tetrahydrofuran	49.24	5.0	50	0	98.5	58.5	149				
Toluene	45.07	5.0	50	Φ	\$0°.	60.3	147				
trans-1,2-Dichloroethene	51.14	5.0	8	٥	102	699	152				
trans-1,3-Dichloropropene	50.41	5.0	93	Ф	101	79.5	38				
Trichloroethene	46.45	5.0	50	0	6.26	, tc	2 42				
Vinyl acetate	55.07	5.0	R	Ö	110	64.9	75				
Vinyi Bromide	45.22	5.0	S	0	90.4	69.1	134				
Viny! chloride	59.07	5.0	8	0	4	59.9	147				
Surr. Bromoffuorobenzene	53,61	0	99	0	107	70.6	129				
Sample ID: DLCS_TO15-051817 SampType: LCS	SampType: LCS	TestCo	TestCode: TO15	Units: ppbV		Prep Date:			RunNo: 12259	259	
Client ID: ZZZZZ	Batch ID; R12259	Test	TesiNo: TO-15		•	Analysis Date:	5/18/2017	0,	SeqNo: 143203	1203	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimil RPD Ref Val	. Val	%RPD	RPDLimit	Qual

Analyte	Result	POLS	PK value	SPK value SPK Ref Val	%REC	LowLimit	Hightianii	%REC LowLingit HighLimit RPD Ref Val	%RPD	%RPD RPDLimit Qual	Qual
1,1,1-Trichloroethane	54.99	5.0	8	0	110	76.6	124				
1,1,2,2-Tetrachioroethane	57.51	5.0	50	Ō	315	47.3	139				
1, f.,2-Trichloroethane	51.58	5.0	8	0	103	59.9	149				
1,1-Dichloroethane	65.91	5.0	ß	0	132	56.9	146				
1,1-Dichloroethene	62.22	5.0	35	0	124	50.2	5				
1,2,4-Trichlorobenzene	40.73	5.0	99	O,	81.5	23	127				
1,2,4-Trimethylbenzene	54.93	5.0	50	0	110	49	138				
1,2-Dibromoethane	51,76	5.0	90	0	\$	59	145				
1,2-Dichlorobenzene	49.62	5.0	80	Ö	99.2	36.5	138				
Qualifiers: Results reported a J Analyte detected I S Soike Recovery o	Results reported are not blank corrected Analyte detected below quantitation limit Spike Recovery outside accepted recovery innite		E Estima ND Not Do	Estimated Value above quantitation range Not Detected at the Limit of Detection	ntitution range f Detection	9	≖ ≪	Holding times for preparation or analysis exceeded RPD outside accepted recovery limits	ерагаціол ог а d гесоусту lin	ralysis exceed	73

Page Deck	4.									
	jin.	SampType: LCS	TestCo	ide: T015	Units: ppbV		Prep Dat	ia	RunNo: 12259	
Polity Polity Polity Polity SPPK Neal Value SPPK Neal		Batch ID: R12259	Tes	No: TO-15			Analysis Dal		SeqNo: 143203	
Concionational control	Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit			Ċ
Part	1,2-Dichloroethane	67.35	5.0	99	0	13.6	71.5	£,1		,
Part	,2-Dichloropropane	56.98	5.0	50	~	114	63.0	150		S
rene 60.48	,3,5-Trimethytbenzene	52.87	5.0	· 55	· c	<u> </u>	C 65	300		
Contention	3-butadiene	60.49	5.0	50	, ,	3 5	7.04	5. 5.		
Component Section Se	3-Dichlorobenzene	54.67	5.0	50	· c	100	7.1.	130		
the part of the pa	4-Dichlorobenzene	52.68	5.0	20	0	3 5	5.15 5.15	136		
they pendane 55.57 5.0 5.0 119 5.0 159	4-Dioxane	54.85	0	20	- C	113	5.0 4	150		
terne 65.37 5.0 5.0 111 52.2 129 de 69.28 5.0 10 119 52.2 129 do 69.28 5.0 5.0 0 119 5.6 6.1 142 doinge	2,4-trimethypentane	59.65	5.0	95	0	2,0	60.6	5 G		
de 692 6 10 50 158 654 142 and be 6028 6028 50 50 0 158 654 142 and bornethane 6429 50 50 0 121 365 156 and bornethane 6153 50 50 0 121 365 156 and bornethane 6153 50 50 0 121 365 156 and bornethane 6153 50 50 0 124 35 128 and bornethane 6207 50 50 0 124 35 144 and bornethane 64573 50 50 0 124 38 and bornethane 64573 50 50 0 129 57 145 and bornethane 64573 50 50 0 129 57 145 and bornethane 64573 50 50 0 129 57 145 and bornethane 64573 50 50 0 129 57 145 and bornethane 64573 50 50 0 129 57 145 and bornethane 64573 50 50 0 129 57 145 and bornethane 64573 50 50 0 129 57 145 and bornethane 64573 50 50 0 129 57 145 and bornethane 64573 50 50 0 129 57 145 and bornethane 64573 50 50 0 129 57 145 and bornethane 6648 50 50 50 0 120 57 145 and bornethane 6648 50 50 50 0 120 57 145 and bornethane 6649 50 50 50 0 120 57 145 and bornethane 6649 50 50 50 0 120 57 145 and bornethane 6649 50 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 50 0 120 57 145 and bornethane 6649 50 0 120 57 145	ethytoluene	55.37	5.0	50	0	#	52.2	138		
Second	cetone	79.25	0	50	Q.	153	65.4	147		(
Secondary Seco	lyf chloride	69.04	5.0	50	0	138	25	. E		n
Manuerthane 60,28 5.0 5.0 121 36.5 106 114 106 114 115	snzene	59.71	5.0	50	O	119	58.6	151		
1000 methane 54.15 5.0 5.0 108 73.9 129	enzyl chlorate	60.28	5.0	50	0	121	36.5	105		
thane 4429 5.0 50 0 88.6 15.5 180 hane 57.08 5.0 50 0 114 51.5 126 sulfide 51.08 5.0 50 0 114 51.5 126 rachloride 50.72 5.0 50 0 123 54 144 zene 48.25 5.0 50 0 124 58 144 sne 62.07 5.0 50 0 124 58 138 hane 62.07 5.0 50 0 124 58 138 hane 64.54 5.0 50 0 124 58 145 hane 64.54 5.0 50 0 122 57 145 hane 66.33 5.0 50 0 122 57 145 ne 445.73 5.0 50 0 123 45 145	omodicitoromethane	54.16	5.0	50	0	108	73.9	129		n
hane 57.08 5.0 50 114 51.5 128 sulfide 61.63 5.0 50 123 55 144 rachlonide 50.72 5.0 50 0 101 70 122 zene 48.25 5.0 50 0 101 70 122 zene 48.25 5.0 50 0 124 58 144 zene 62.07 5.0 50 0 124 58 138 rene 62.07 5.0 50 0 124 58 139 horoproperte 56.33 5.0 50 0 129 57 145 horoproperte 64.53 5.0 50 0 129 57 145 ne 45.73 5.0 50 0 129 57 145 stel 44.70 5.0 50 0 124 52 125	omoform	44.29	5.0	50	0	88.6	15.5	180		
12 12 12 12 12 12 12 12	omornethane	57.08	5.0	50	Φ	114	51.5	126		
Second	arbon disulfide	61.63	5.0	20	0	123	55	144		
Zene 48.25 5.0 56 0 96.5 49.7 14.8 Anne 62.07 5.0 50 0 124 58 138 hane 62.07 5.0 5.0 60 124 58 139 hane 64.54 5.0 50 0 129 57 153 horomethene 64.54 5.0 50 0 113 53.2 145 hkoropropene 56.33 5.0 50 0 113 57.4 129 hkoropropene 64.63 5.0 50 0 115 70.4 129 ne 64.63 5.0 50 0 113 61.5 147 and 45.73 5.0 50 0 91.5 52.5 145 and 49.70 5.0 50 0 10.4 62.4 158 57.11 50 50 0 0 11.2 5	irbon tetrachloride	50.72	5.0	<u>9</u>	0	101	70	122		
1.5 1.5	llorobenzene	48.25	5.0	50	0	96.5	49.7	142		
hane 66.13 5.0 50 0 120 64.8 130 hane 64.54 5.0 50 0 129 57 153 130 follotoethene 56.33 5.0 5.0 5.0 0 119 57 145 145 146 follotoethene 56.33 5.0 5.0 5.0 0 113 53.2 146 location fails are not blank corrected a A.5.73 5.0 50 0 133 61.5 145 location in the last detected below quantiation limit and value detected below quantiation limit and value above quantitation range is a single of the corrected at the Limit of Detection in the last detected below quantiation limit and value above quantitation range is a single page of the corrected at the Limit of Detection in the last corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at the Limit of Detection is a single page of the corrected at th	iloroethane	62.07	5.0	50	Ф	124	ξς 22	138		
hane 64.54 5.0 50 0 129 57 153 150 filteroethene 56.33 5.0 5.0 50 0 113 53.2 146 filteroethene 56.33 5.0 5.0 50 0 113 53.2 146 filteropropene 64.63 5.0 5.0 50 0 129 57.4 129 filteropropene 45.73 5.0 50 0 91.5 52.5 145 interested are not blank corrected 5.0 50 0 114 62.0 55.0 122 55.5 123 57.1 5.0 50 0 114 62.0 55.0 124 55.0 50 114 62.0 55.0 50 114 62.0 55.0 50 114 62.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 5	iloroform	60.13	5.0	50	0	120	64.8	130		
filotroethene 56.33 5.0 50 113 53.2 146 filotroprogene 57.74 5.0 50 0 115 70.4 129 ne 64.63 5.0 50 0 129 57.4 162 ne 45.73 5.0 50 0 91.5 52.5 145 ste 66.41 10 50 0 91.5 52.5 145 ste 49.70 5.0 50 0 133 61.5 147 ste 51.89 5.0 50 0 104 69.2 125 60.77 5.0 50 0 114 62.6 166 structed at root blank concoted Estimated Value above quantitation range H 1 1 d Analyte detected below quantitation limit NOt Detected at the Limit of Detection 1 1	sloromethane	64.54	5.0	50	O	129	<u> </u>	153		
hitoropropene	-1,2-Dichloroethene	56.33	5.0	50	0	£	53.3	146		
Second Residue Seco	-1,3-Dichtoropropene	57.74	5.0	90	0	T.	70.4	130		
Second than e	rclofiexane	64.63	5.0	\$0	0	129	57.4	163		
Security	bromochloromethane	45.73	5.0	50	0	5.	52.5	4.55		
49.70 5.0 50 0 99.4 54.8 138 51.89 5.0 50 0 99.4 54.8 138 51.89 5.0 50 0 104 69.2 125 50.7 5.0 50 0 114 62.6 166 50 50 114 62.6 166 50 50 50 50 50 50 50	hyl acetate	66.41	9	20	· c	133	81.5 7.15	- FF:		
51.89 5.0 50 104 69.2 125 60.77 5.0 50 0 122 55.5 122 57.11 5.0 50 0 114 62.6 166 68.2 125 122 1	туЮепzепе	49.70	5.0	20	0	99.4	54.8	23		
60.77 5.0 50 0 122 55.5 122 55.5 122 55.5 122 57.11 5.0 50 D 114 62.6 166 Results reported are not blank corrected E Estimated Value above quantitation range H ND Not Detected at the Limit of Detection R	eon 11	51.89	5.0	8	0	404	692	521		
Results reported are not blank concered E Estimated Value above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	20n 113	60.77	5.0	50	0	122	55.5	122		
Results reported are not blank conceded Estimated Value above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	eon 114	57.11	5.0	20	0	114	62.6	166		
Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R		are not blank conected			ed Value above quantit	ation range		į	premium or mail six and a standard	
		I below quantitation limit)			pre-paration of detalysts execoted	

Former Hampshire

CH2M - St Louis C1705036

Work Order:

Project:

CLJENT;

H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits RPD outside accepted recovery limits

Estimated Value above quantitation range E Estimated Value above quantitation rany ND Not Detected at the Limit of Detection

Spike Recovery outside accepted recovery limits Analyte detected below quantitation limit Results reported are not blank corrected

Qualifiers:

The state of the s					-					
÷.	SampType: LCS	TestCode	FestCode: TO15	Units: ppbV		Prep Date:	äi	R	RimMo: 12259	
Client ID: ZZZZZ	Batch ID: R12259	TestNo	5: TO-15			Analysis Date:	e: 5/18/2017	Se	SeqNo: 143203	
Analyte	Result	Pal	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	fVal	%RPD RPDLimit	Ous
Freon 12	56.15	5.0	95	c	112	30.4	90.			
Heptane	62.63	5.0	. G.	, ,	3 5	- in C	£2.			
Hexachloro-1,3-butadiene	39.72	5.0	3 4	o c	3 5	7.00	200			
Hexane	69.14	5.0	3 2	o c	4 6 7	5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5	124			
Isopropył akcehol	73,00	20		> c	9 4	9 5	<u>[6</u>]			
m&p-Xylene	101.2	10	2 2	> <	5 5	9.50				
Methyl Butyl Ketone	67.28	10	, Ç		125	04.0	141			
Methyl Ethyl Ketone	64.98	5	3 55) <u>C</u>	2 6	0.47	/ I. f			S
Methyl Isobutyl Ketone	64.57	Ç	3 5	· c	3 5	7: F	142			
Methyl tert-butyl ether	60.80	. L	3 &) c	52	· ·	375			Ś
Methylene chloride	62.51	, t	3 4	5 C	7 :	P.70	134			
o-Xylene	7. C.) () v	.	9	48.b	142			
Programa	000	Þ 1	ñ	⇒	103	62.4	140			
71015	62.69	5.0	8	O	125	51.7	165			
Styrene	53.53	5.0	50	O	167	49.4	147			
l etrachloroethylene	43.93	5.0	9	Ď	87.9	45.5	149			
i etrahydroturan	69.17	5.0	50	0	138	58.6	140			
Toitene	51.93	5.0	50	Ç	104	603	- F			
frans-1,2-Dichloroethene	65.25	5.0	. C.	, 0	5 5	2 0	14.			
trans-1,3-Dichloropropene	60.05	5.0	8 &	> c	2 5	5 C	70.0			
Trichloroethene	46.10) :	5 (120	ć,5,0	136			
Vinus contain	51.07 1	D.C	र्दे	0	92.4	57.4	144			
p alcelate	76.13	5.0	50	P	152	64.9	157			
Vinyi Bromkte	55.42	5.0	30	Q	11:	69.1	134			
Vinyl chibride	62.19	5.0	20	0	124	\$ 85	147			
Surr: Bromofluorobenzene	£7.73	•	;				:			

Former Hampshire

CH2M - St Louis C1705036

Work Order: CLIENT:

Project:

CENTEK LABORATORIES, LLC

ANALYTICAL QC SUMMARY REPORT

Date: 19./un-17

CH2M - St Louis C1705036 Work Order: CLIENT:

Project:

Former Hampshire

TestCode: TO15 SIILF

Occupation of the property of	- 11						TTO CTO TO T	
Sample ID: DLCS_H2S-051617 Client ID: 22222	¢/j	TestCode: TO15_SULF	Units: ppbV		Prep Date:		RunNo: 12249	
i	Batch ID: K12249	FestNo: TO-15		44	Analysis Date: 5/16/2017	5/16/2017	SeqNo: 143128	
Analyte	Result	POL SPK value SPK Ref Val	PK Ref Val	%REC	LowLimit Hi	HighLimit RPD Ref Val	%RPD RPDI imit	Ç
Hydrogen Suifide Surr: Bromoffuorobenzene	466.2	5.0 500 0 50	0	93.2	70 70	130 130		3
Sample ID: DLCS_SLXSF-05161 SampType: LCS	1 SampType: LCS	TestCode: TO15_SULF	Units: ppbV		Prep Date:		RunNo: 12249	
Olleit (D.: 2222	Batch ID: R12249	TestNo: TO-15		⋖(Analysis Date: 5/16/2017	5/16/2017	SeqNo: 143129	
Analyte	Result	PQL SPK value S	SPK Ref Val	%REC	LowLimit Hi	HighLimit RPD Ref Val	%RPD RPDLinit	Quai
1-Propanethiol	46.99	5.0 5.9	0	94.0	70	130		
Carbon distince	46.05	5.0 50	0	92.1	70	130		
Carouily subsite	43.13	5.0 50	Ō	86.3	70	130		
	45.48	5.0 5.0	0	91.0	70	130		
Laryt Hele Capital	44,31	5.0 5.0	٥	82.6	70	130		
lackholdy intercaptan	36.23	5.0 50	0	72.5	70	130		
Sur Bonnell	39.57	5.0 50	0	79.1	70	130		
odii. Diutiioiluuluusenzene	41.99	0 50	0	84.0	20	130		
Sample ID: DLCS_H2S-051817	SampType: LCS	TestCode: TO15_SULF	Units: ppbV		Prep Date:		Buckler 42260	
Client ID: ZZZZZ	Batch ID: R12259	TestNo: TO-15		₹		5/18/2017	SeqNo: 143208	
Analyte	Result	PQL SPK value SF	SPK Ref Val	%REC	LowLimit Hio	%REC LowLimit HighLimit RP0 Ref Val	Ten UCC	Ţ
Usudence - Code as					?			ien.

Analyte detected below quantitation limit Resuits reported are not blank corrected · - v Qualifiers;

Spike Recovery outside accepted recovery limits

Estimated Value above quantitation range Not Detected at the Limit of Detection B E

Holding times for preparation or analysis exceeded RPD outside accepted recovery limits <u>~</u>

130

2 2

97.2 103

0 0

90

5.0

485.9 51.41

Surr. Bromofluorobenzene

Hydrogen Sulfide

Former Hampshire	pshire							TestCode: TO15_SULF	O15_SUL	L ±	
Sample ID: DLCS_SLXSF-05181 Client ID: ZZZZZ	Sample ID: DLCS_SLXSF-05181 SampType: LCS Client ID: ZZZZZ Batch ID: R12259	TestCode: TO15. TestNo: TO-15	TO15_SU TO-15	TestCode: TO15_SULF Units: ppbV TestNo: TO-15		Prep Date: Analysis Date:	Prep Date: Analysis Date: 5/18/2017	17	RunMo: 12259 SeqNo: 143209	259	
	Resutt	POLS	PK value	SPK value SPK Ref Val	%REC	Lowtimit	ĦighLimiť	*REC LOWLIMIT HIGHLIMIT RPD Ref Val	%RPD	%RPD RPDLimit Qual	Qual
	49.35	5.0	20	0	98.7	70	130				
	67'95	5.0	S S	0	92.6	70	130				
	45.44	5.0	20	0	90.9	70	130				
	48.07	5.0	S	0	96.1	55	130				
Scattard mercanian	45.54	5.0	33	0	93.1	20	130				
	38.74	5.0	20	0	77.5	70	130				
Sign Browdingshors	44.65	5.0	යි	0	89.3	7.0	130				
overkalke	46.48	0	8	0	97.0	70	130				

CH2M - St Louis

C1705036

Work Order: CLIENT:

CENTEK LABORATORIES, LLC

ANALYTICAL QC SUMMARY REPORT

Date: 19-Jun-17

CH2M - St Louis C1705036 Work Order: CLIENT: Project:

Former Hampshire

TestCode: I.FG FG

Sample ID: LCS-R12246	SampType: LCS	TestCo	TestCode: LFG FG	Units: %		Prep Date:	je		RunNo: 12246	246	
Client ID: 2222	Batch ID: R12245	Test	TestNo: EPA Method	7	7	Analysis Date: 5/15/2017	te: 5/15/20	117	SeqNo: 143100	3100	
Analyte	Result	PQL	SPK value	SPK value SPK Ref Val	%REC	LowLimit	HighLimit	%REC LowLimit HighLimit RPD Ref Val	%RPD	%RPD RPDLIMÍT Qual	Quai
Carbon dioxide	11.07	1.90	15	0	73.8	70	130				
Carbon Monoxide	7 414	ስ ጳጳስ	1	•		? ;	3				
	000:	0.000	•	5	105	7.0	130				
wethane	4.205	0.580	4.5	Đ	93.4	70	130				
Nitrogen	58.38	8.30	68.5	0	99.8	20	130				
Охудел	4.919	0.880	ĸ)	0.043	97.4	70	126				

Qualifiers;

Analyte detected below quantitation limit Results reported are not blank corrected ~ v

Spike Recovery outside accepted recovery limits

Estimated Value above quantitation range Not Detected at the Limit of Detection ¤ ₽

H Holding times for preparation or aralysis exceeded
R RPD outside accepted recover limits RPD outside accepted recovery limits Page I of I

TestCode: TO15

Spike Recovery outside accepted recovery limits Analyte detected below quantitation limit

CENTEK LABORATORIES, LLC

ANALYTICAL QC SUMMARY REPORT

Date: 01-Jun-17

CH2M - St Louis CLIENT:

Former Hampshire C1705036 Work Order: Project:

Sample ID: DLCSD_TO15-05151 SampType: LCSD	SampType: LCSD	TestCo	TestCode: T015	Units: ppbV		Prep Date:			RunNo: 42367	7.30	
Client ID: ZZZZZ	Batch ID: R12257	Test	TestNo: TO-15			Analysis Date:	5/15/2017	7	SeqNo: 143178	1178	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit	RPD Ref Val	%RPD	EPP imit	Č
1,1,1-Trichloroethane	44.06	5.0	50		28.4	3 7 3	1				5
1,1,2,2-Tetrachloroethane	49.56	5.0	202) C	. g	0.4.0	4 6	2.19	6.71	0	
1,1,2-Trichforoethane	50.76	5.0	8	· c	£ 61	63.4	3 5	44.93	08.50	0 (
1,1-Dichloroethane	48.63	5.0	20	· c	97.7	3 2	<u> </u>	44.81	12.5	٥	
1,1-Dichloroethene	55.75	5.0	8 8		113	4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4	ş. £	45.84	5.91	0 (
1,2,4-Trichlorobenzene	47,54	5.0	28	0	95.1	25.1	129	43.64	20.7 25.8	-	
1,2,4-Trimethylbenzene	49.74	5.0	50	0	99.5	60.4	139	45 18	0.00	>	
1,2-Dibremoethane	52.04	5.0	90	0	104	63.6	140	45 37) to	> <	
1,2-Dichlorobenzene	48.96	5.0	20	0	97.9	52.7	128	£4.88	. ec	5 c	
1,2-Dichloroethane	45.95	5.0	55	0	91.9	63.7	139	43.02	9.50	5 C	
1,2-Uichloropropane	50.32	5.0	22	0	101	67.3	144	44 01	13.4	o c	
1,3,5-1 nmethylbenzere	48.69	5.0	50	0	97.4	56	138	केंद्र वेद	0.13	, 6	
1,3-butadiene	39.16	5.0	50	¢	78.3	21.8	166	36.96	5.78	> c	
f,3-Dichlorobenzene	51.38	5.0	20	Û	103	52.6	134	47.47	7 07	o c	
1,4-Dichlorobenzene	47.54	9.0	20	Û	95.1	54.6	<u> </u>	43.31		> <	
1,4-Dioxane	52.64	10	89	0	55	56.8	141	47.08	1 1 2	,	
2,2,4-trimethylpentane	50.14	5.0	50	0	100	718	138	42.77	4.5	,	
4-ethytotuene	48.83	5.0	90	Ф	7.76	60.6	300	43.47	11.7	P @	
Acetone	53.19	10	ន	¢	1 36	49.5	149	48.04	\$1.7	, c	
Allyi chloride	45.21	5.0	90	Đ	90.4	55.5	156	42.66	580	· -	
denzene	49.06	5.0	S	0	98.1	62	140	46.15	¥-) C	
Benzyl chłoride	52.61	5.0	22	0	105	42.5	106	49.24	663	3 6	
Bromodichloromethane	48.16	5.0	50	Ф	96.3	63.6	744	42.24	13.1	o c	
Bromoform	46.50	5.0	20	o	93.0	43.9	148	41.95	£ 03	· c	
Bromometriane	42.39	5.0	20	O	84.8	42.6	139	40.3	5.06	0 0	
Qualifiers: Results reported	Results reported are not blank corrected		E Estima	Estimated Value above quantitation range	Salion range		7	Hollding Piene for necession are an incident	en en mailteanne	in the second second	
J Analyte detected	Analyte detected below quantitation finnit		ND Not De	Not Detected at the Limit of Detection	z Setections			RPD outlide accorded recognition of the	representations of date	aryons extended	
S Spike Recovery	Spike Recovery outside accepted recovery limits	nèts						ספוסימר מרכיףא	e iccordy imm	á	

CH2M - St Louis	
CLIENT:	10.7

Work Order: C1705036

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roject:

TestCode: TOIS

Tool State of the state of the Food	control ype. ECSD	lestCode: 1015	2						֡		
Client ID: ZZZZZ	Batch ID: R12257	TestNo: TO-15	TO-15	•		Analysis Date:	511519817	44	Society 44247	£3;	
Analyte	Result	POLS	SPK value	SPK Ref Val	"REC	Low fmi H	.⊆	7. RPD Def 1/21	SeqNo: 143178	3178	
Carbon disulfide	E9 AA	9	1			- 1			מייני	RPUALITIE	Cara Cara
Carbon letrachbooks	44.45		7	O.	53	59.9	133	47.58	9.72	0	
Chloropagaga	96.14	0.0	22	o	84.0	63.2	139	39.23	6.77	0	
Cilionopeiikeile	49.29	5.0	S	0	38.6	58.9	136	44.83	9.48	· C	
	45.91	5.0	20	0	91.8	56.1	134	43.35	5.74	· ©	
Chickordin	47.56	5.0	8	0	95.1	62.4	135	44.5	6.65	, ,	
Chloromethane	34.03	5.0	35	0	68.1	58.5	150	35 12	5. C.	5 C	
cis-1,2-Dichloroethene	95.36	5.0	50	0	106	61.7	135	49.77		5 C	
cts-1,3-Dichloropropene	52.90	5.0	20	٥	166	63.1	34	45.84	14.5	3 ¢	
Cyclothexane	47.24	5.0	20	0	94.5	65.5	142	44 47	. 1 .4	> c	
Dibromochloromethane	46.47	5.0	29	0	92.9	51.5	137	39.87	, 4 , 4 , 4	כ כ	
Ethyl acetate	47.00	10	50	Ф	94.0	46.6	140	43.60	, d	0 0	
Ethylbenzene	49.60	5.0	92	0	99.2	62.4	140	45.37	9.79	> c	
Freon 11	39,65	5.0	20	٥	79.3	44.7	165	37.46	, r.	> c	
Freon 113	52.62	5.0	20	Ó	105	\$	124	49 17	5 C	> C	
Freon 114	35.65	5.0	8	0	71.3	62	176	35.22	1.75	o c	
Freon 12	41.33	5.0	20	0	82.7	52.5	35	38.24	77.7	· -	
Heptane	46.74	5.0	20	0	93.5	65.5	144	41.11	12.8	· c	
riexachloro-1, 3-butadiene	42.39	5.0	90	0	84.8	32.9	129	38.64	9.26		
rexare	43.00	5.0	20	0	86.0	59.1	148	40.87	5.08	· C	
Isopropyi akconol	45.38	5.0	S	0	90.8	50.5	142	44,42	2.14		
m&p-Xyene	98.35	10	103	0	98.4	59.7	137	89.68	9.71	· c	
Methyl Butyl Ketone	49.46	10	50	0	98.9	59.1	125	44.05	11.6	• @	
Methyl Ethyl Ketone	54,31	10	20	0	109	51.3	137	49.89	8.48	. =	
Methyl Isobutyl Ketone	47.37	10	20	0	94.7	58.3	127	41.48	133	, c	
Methy tert-butyl ether	47.09	5.0	20	0	94.2	62.9	134	44.01	6.76	, c	
Meinylene chlonde	53.67	5.0	82	0	107	57.4	131	50.04	7.00	· -	
o-Xylene	47.30	5.0	S	0	94.6	68	142	43.36	99	- 43	
Propytene	39.09	5.0	20	0	78.2	45.4	150	36.37	7.21	. =	
Styrene	50.77	5.0	S	Ф	102	60.4	135	45.45	8 89	, c	
Fetrachloroethylene	49.24	5.0	20	0	98.5	59.1	138	42.68	14.3	· c	
Tetrahydrofuran	45.10	5.0	20	0	92.2	57.3	136	43.24	6.40	0	
	Results reported are not blank corrected	;T.1		Estimated Value above quantitation range	tion range		H 146	Holding tinks for preparation or analysis execeded	reparation or an	alysis extreede	723
J Analyte detecte	Analyte detected below quantitation limit	ON		Not Detected at the Limit of Detection	tection		선생 김	D. cutrido acomo			
	The state of the s							KFU vecsige accepted recovery imits	ca recovery ama	51	

TestCode: TO15

Client ID: ZZZZZ Batch ID: R12257 TestNo: TO-15 Analysis Date: Analyte Result POL SPK vatue SPK Ref Vai %REC LowLinid H Toluene 51.40 5.0 50 0 103 63.9 Toluene 51.54 5.0 50 0 104 71.5 Toluene 52.11 5.0 50 0 103 70.2 Itans-1,-Dichloroptropene 52.14 5.0 50 0 104 71.5 Itans-1,-Dichloroptropene 52.14 5.0 50 0 104 71.5 Vinyl actate 49.45 5.0 50 0 103 59.9 59.9 Vinyl Bromide 51.70 5.0 50 0 103 59.9 59.9 Vinyl Bromide 51.70 5.0 50 0 70.9 59.9 59.9 Surri 51.70 50 50 0 70.9 50.4 50.9 50.9	5715/201 ight.imit 142 142 145 145 150 150 151 142 142 142 151 142 142 142 151 143 143 143 143 143 143 143 143 143 14	RPD Ref Val 44.33 48.28 45.83 45.22 46.15 35.82 0 0	SeqNo: 143178 %RPD RPDLimit 14.8 0 6.53 0 12.8 0 6.90 0 1.07 0 0 RunNo: 12258 SeqNo: 143187 %RPD RPDLimit 2.86 0 0.664 0	it Qual
Fesult POL SPK value SPK Ref Val %REC 51.54 5.0 5.0 0 103 51.54 5.0 50 0 103 52.11 5.0 50 0 104 52.14 5.0 50 0 104 51.56 5.0 50 0 103 49.45 5.0 50 0 103 35.44 5.0 50 0 70.9 51.70 0 50 0 70.9 51.70 0 50 0 70.9 51.70 0 50 0 70.9 51.70 0 50 0 70.9 51.70 0 50 0 70.9 51.70 0 50 0 95.1 51.70 50 50 0 93.7 51.70 50 50 0 93.7 50 50	ighLimit 142 142 145 135 150 150 151 142 5/17/201	80 R	PD P	
51.40 5.0 5.0 0 103 51.54 5.0 5.0 0 103 52.11 5.0 5.0 0 104 52.14 5.0 5.0 0 104 51.56 5.0 5.0 0 104 51.56 5.0 5.0 0 103 35.44 5.0 5.0 0 103 51.70 0 50 0 103 SampType: LCSD TestCode: TO15 Units: ppbV Result POL SPK value SPK Ref Val %REC 47.63 5.0 50 0 95.1 46.83 5.0 50 0 93.7 46.49 5.0 50 0 98.6 51.28 5.0 50 0 98.6 51.28 5.0 50 0 98.7 48.77 5.0 50 0 98.7	142 145 145 135 150 151 142 5/17/201	D 08	5.53 5.53 5.53 5.53 5.53 5.53 5.53 5.53	
51.54 5.0 50 0 103 52.11 5.0 5.0 50 0 104 52.14 5.0 5.0 0 104 51.56 5.0 50 0 103 49.45 5.0 50 0 70.9 35.44 5.0 50 0 70.9 51.70 0 50 0 103 SampType: LCSD TestCode: TO15 Units: ppbv 47.63 5.0 50 0 95.1 46.83 5.0 50 0 93.7 46.49 5.0 50 0 98.6 51.28 5.0 50 0 98.6 51.28 5.0 50 0 98.7 48.77 5.0 50 0 98.7	142 145 150 150 151 142 5/17/201 ighLimit	O N	1222 142 1223 143 143 143 143 143 143 143 143 143 14	
52.14 5.0 50 0 104 52.14 5.0 5.0 50 0 104 51.56 5.0 50 0 103 49.45 5.0 50 0 70.9 35.44 5.0 50 0 70.9 51.70 0 50 0 103 SampType: LCSD TestCode: TO15 Units: ppbv Retch ID: R1228 TestNo: TO-15 Result PQL SPK value SPK Ref Val %REC 47.63 5.0 50 0 95.3 46.83 5.0 50 0 95.3 46.83 5.0 50 0 95.1 49.29 5.0 50 0 98.6 51.28 5.0 50 0 98.2 48.77 5.0 50 0 97.5	145 135 150 150 151 142 5/17/201 ighLimit	PO R	2.8 1,2 1,2 1,2 1,2 1,3 1,4 1,3 1,3 1,3 1,3 1,3 1,3 1,3 1,3 1,3 1,3	
52.14 5.0 50 0 103 51.56 5.0 50 0 103 49.45 5.0 50 0 103 35.44 5.0 50 0 70.9 51.70 0 50 0 70.9 51.70 1 50 0 103 51.70 1 50 0 103 51.70 1 50 0 103 51.70 1 50 50 0 103 51.70 5.0 50 0 103 51.70 5.0 50 0 103 51.70 5.0 50 0 103 51.70 5.0 50 0 103 51.70 5.0 50 0 103 51.70 5.0 50 0 103 51.70 5.0 50 0 103 51.70 5.0 50 0 103	135 150 151 142 5/17/201	PO R	1,2 90 007 1,2 1,2 1,2 1,2 1,2 1,2 1,2 1,3 1,4 1,3 1,3 1,4 1,4 1,4 1,4 1,4 1,4 1,4 1,4 1,4 1,4	
51.56 5.0 50 0 103 49.45 5.0 50 0 98.9 35.44 5.0 50 0 70.9 35.44 5.0 50 0 70.9 51.70 0 50 103 SampType: LCSD TestCode: TO15 Units: ppbV Ratch IO: R12258 TestNo: TO-15 Result PQL SPK value SPK Ref Val %REC 47.63 5.0 50 0 93.7 46.83 5.0 50 0 93.7 46.89 5.0 50 0 93.7 47.56 5.0 50 0 98.6 51.28 5.0 50 0 98.6 51.28 5.0 50 0 98.7 48.77 5.0 50 0 98.2	150 151 151 142 5/17/201	PO R	92 90 90 90 143 143 64	
49.45 5.0 50 0 98.9 35.44 5.0 50 0 70.9 35.44 5.0 50 0 70.9 51.70 0 50 0 103 SampType: LCSD TestCode: TO15 Units: ppby Ratch ID: R12258 TestNo: TO-15 Result PQL SPK value SPK Ref Val 98.7 46.49 5.0 50 0 93.7 46.49 5.0 50 0 93.7 47.56 5.0 50 0 98.6 51.28 5.0 50 0 98.6 51.28 5.0 50 0 98.7 48.77 5.0 50 0 98.2	150 151 142 5/17/201	PO R.	90 07 1228 1431 64	
35.44 5.0 50 0 70.9 51.70 0 50 0 70.9 SampType: LCSD TestCode: TO15 Units: ppbv Result POL SPK value SPK Ref Val %REC 47.63 5.0 50 0 93.7 46.49 5.0 50 0 93.7 46.49 5.0 50 0 93.7 47.56 5.0 50 0 93.7 49.29 5.0 50 0 98.6 51.28 5.0 50 0 98.6 51.28 5.0 50 0 98.7 48.77 5.0 50 0 98.2	151 142 5/17/201 ghLimit	PO R	07 1222 1431 30 86 64	
51.70 0 50 0 103 SampType: LCSD TestCode: TO15 Units: ppbV 103 Batch ID: R12258 TestNo: TO-16 Units: ppbV %REC Result PQL SPK value SPK Ref Val %REC 47.63 5.0 50 95.3 46.49 5.0 50 93.7 46.49 5.0 50 93.7 49.29 5.0 50 98.6 51.28 5.0 50 98.2 48.77 5.0 50 97.5 48.77 5.0 50 97.5	142 5/17/201 69Limit	PD Ref V	0 122 1 43 122 0 88 88 88	
SampType: LCSD TestCode: TO15 Units: ppbV Batch ID: R12258 TestNo: TO-15 Units: ppbV Result PQL SPK value SPK Ref Val %REC 47.63 5.0 50 95.3 46.49 5.0 50 93.7 46.49 5.0 50 93.7 47.56 5.0 50 95.1 49.29 5.0 50 98.6 51.28 5.0 50 98.6 48.77 5.0 50 97.5	5/17/201	7 RPD Ref Val	1431 1431 86 86	
D: ZZZZZ Batch ID: R12258 TestNo: TO-15 Result POL SPK Ref Val %REC ichloroethane 47.63 5.0 5.0 95.3 ichloroethane 46.49 5.0 50 93.7 ichloroethane 47.56 5.0 6 93.0 ikoroethane 47.56 5.0 6 95.1 ikoroethane 49.29 5.0 6 95.1 imethylbenzene 51.28 5.0 6 98.2 omoethane 51.28 5.0 6 98.2 omoethane 50 50 6 98.2	5/17/201 ighLimit	7 RPD Ref Val	SeqNo: 143187 %RPD RPDLin 2.86 0.664	
Result PQL SPK value SPK Ref Val %REC Low ichloroethane 47.63 5.0 50 0 95.3 Tetrachforoethane 46.49 5.0 50 0 93.7 ichloroethane 47.56 5.0 50 0 93.0 ikoroethane 47.56 5.0 50 98.6 ichlorobenzene 51.28 5.0 0 98.6 imethylbenzene 49.10 5.0 50 0 98.2 omoethane 48.77 5.0 50 0 97.5	HighLimit	RPD Ref Val	i	
47.63 5.0 50 0 95.3 46.49 5.0 50 0 93.7 47.56 5.0 50 0 93.0 49.29 5.0 50 0 98.6 51.28 5.0 50 0 103 49.10 5.0 50 0 98.7 48.77 5.0 50 0 97.5		40.04	2.86	000
ne 46.83 5.0 50 0 93.7 46.49 5.0 5.0 0 93.0 47.56 5.0 50 0 95.1 49.29 5.0 50 0 98.6 51.28 5.0 50 0 98.2 49.10 5.0 50 0 97.5 48.77 5.0 50 0 97.5	64.6 141		0.664	
46.49 5.0 50 0 93.0 47.56 5.0 50 0 95.1 49.29 5.0 50 0 98.6 51.28 5.0 50 0 103 49.10 5.0 50 0 98.2 48.77 5.0 50 0 97.5	62.1 130	46.52		c
47.56 5.0 50 0 95.1 49.29 5.0 50 0 98.6 51.28 5.0 50 0 103 49.10 5.0 50 0 98.2 48.77 5.0 50 0 97.5	63.1 147	46.58	0.193	,
49.29 5.0 50 0 98.6 51.28 5.0 50 0 103 49.10 5.0 50 0 98.2 48.77 5.0 50 0 97.5	62.4 134	49.13	3.25	Đ
5.0 5.0 5.0 103 49.10 5.0 50 0 98.2 48.77 5.0 50 0 97.5	54.5 125	50.08	1.59	0
49.10 5.0 50 0 98.2 48.77 5.0 50 0 97.5	25.1 129	46.6	9.56	o
48.77 5.0 50 0 97.5	60.4 139	49.46	0.731	0
	63.6 140	48.64	0.267	0
e 49.88 5.0 50 0 99.8	52.7 128	49,15	1.47	0
50.73 5.0 50 0 101	63.7 139	52.42	3.28	0
1,2-Dichloropropane 45.23 5.0 50 0 90.5 67.	67.3 144	45.88	1.43	0
1,3,5-Trimethylbenzene 48.60 5.0 5.0 50 0 97.2 5	56 136	49	0.820	c
1,3-butadiene 53.90 5.0 5.0 0 108 21.	21.8 166	57.77	6.93	¢
51.51 5.0 50 0 (03	52.6 134	52.06	1.06	0
Denzene 47.82 5.0 50 0 95.6	54.6 131	47,53	0.608	0
1,4-Dioxane 45.16 10 50 0 92.3 56.	56.8 141	46.72	1.21	ç
2,2,4-trimethylpentane 46.89 5.0 50 0 93.8 71.	71.8 138	47.2	0.659	0
Qualifiers: Results reported are not blank corrected Estimated Value above quantitation range		lding times for p	Holding times for preparation or analysis exceeded	æded
J Analyte detected below quantitation limit ND Not Detected at the Limit of Detection	R RP	D outside accept	RPD outside accepted recovery limits	

CH2M - St Louis C1705036 Former Hampshire

Work Order: Praject:

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TestCode: TO15

H Holding times for preparation or analysis exceeded R RPD outside accepted recovery timits

> Estimated Value above quantitation range Not Detected at the Limit of Detection

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Spike Recovery outside accepted recovery limits Analyte detected below quantitation limit Results reported are not blank corrected

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Qualifiers:

RPD outside accepted recovery limits

		550 Eee 1013		*000		Pren Date	ā		Dankley Co.	
Clear 77777	0.000	;		and i		1100	Ď,		KunNo: 12258	258
	D4(CI)	Lest	TestNo: TO-15		•	Analysis Date:	le: 5/17/2017	117	SeqNo: 143187	3187
Analyte	Result	POL	SPK value	SPK Ref Vai	%REC	LowLinit	HighLímit	RPD Ref Val	%RPD	RPDL imit
4-ethyltoluene	47.63	5.0	8	Û	95.3	808	130	00 44		
Acetone	59.46	10	5.05	, ,	3 5	5 0		47.89	0.544	
Allyl chloride	47.36		3 4	o 4	<u> </u>	4 10 10 10 10 10 10 10 10 10 10 10 10 10	149	57.83	2.78	
Велгеле	20 FB	, 4	3 8	5 (בי ל ה	55.5 5	136	48.96	3.32	
Benzyl chloride	00.44 00.44	de de	2 3	-	89.9	29	140	45.6	1.48	
Bromodichloromethane	40.03	0.0	ੜ :	~	97.2	42.5	36	48.89	0.616	
Bronoform	+0.0.4 40.03	O .	7	0	97.2	63.6	144	48.7	0.185	
Krontotani Romomethere	49.92	2.0	25	0	99.8	43.9	148	50.28	0.719	
	40.76	5.0	50	O	81.5	42.6	139	40.53	0.566	
Carbon disclinde	47.51	5.0	90	0	95.0	59.9	133	47.46	0.105	
Carbon (etrachionge	49.05	5.0	20	0	98.1	63.2	139	50.36	2.64	-
Criotopenzene	44.46	5.0	S	Ð	88.9	58.9	136	44 75	0.672	
Chloroethane	42.02	5.0	50	0	84.0	56.1	\$	43.14	2.63	
Chlorotorm	47.66	5.0	50	0	95.3	62.4	135	48.87	7.54	
Chloromethane	53.94	5.0	90	0	108	58.5	150	58.64	8.35	_
cis-1,2-Dichloroethene	47.06	5.0	50	Q	54.1	61.7	135	47.26	0.424	- 4
cis-1,3-Dichloropropene	48.58	5.0	50	O	97.2	63.1	134	48.18	0.827	
Cyclohexane	44.69	5.0	8	0	89.4	65.5	142	45.85	2.58	
Ulbromochloromethane	50.14	5.0	50	0	305	61.5	137	49.98	0.320	
Elhyi acetate	48.26	10	50	0	96.5	46.6	140	50.13	3.80	
Ethylbenzene	44.90	5.0	50	0	86.8	62.4	140	44.53	0.827	
	44.78	5.0	20	¢	89.6	44.7	165	46.68	4.15	
reon 113	50.74	5.0	20	Φ	101	88	124	51.67	1.82	-
Freon 114	52.87	5.0	50	0	106	63	176	56.84	7.24	
Freen 12	46.71	5.0	50	0	93.4	52.5	163	47.52	1.72	, _
Heptane	47.77	5.0	50	o	95.5	65.5	144	48.56	164	, _
Hexachioro-1,3-butadiene	55.72	5.0	50	Ф	113	32.9	129	52.17	6.58	
Hexane	48.56	5.0	50	0	97.1	59.1	148	49.68	2.28	
Isopropyl alcohol	50.51	5.0	20	0	101	50.5	142	52.28	3 44	
m&p-Xylene	90.15	10	100	0	90.2	69.7	137	91.63	1.63	, ,
Methyl Butyl Ketone	52.53	10	50	0	£05	59.1	125	54.2	6. 1.5 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5	, .
Methyl Ethyl Kelone	48.59	10	2	ć	,	;		!)	•

Former Hampshire

CH2M - St Louis C1705036

Work Order: CLIENT:

Project:

TestCode: TO15

Persult Pol. SPK value SPK Ref Val VaRED LowLinit High Linit				•			ייסיים עסור	زي		KUNNO: 12258	222	
Pouch vielner SPK value SPK Ref Val %REC LowLinit Hight init Pouchy Kelone 50.06 10 50 0 10 56.3 123 Pouchy ether 45.96 5.0 50 0 91.9 62.9 13 Pouchy ether 46.96 5.0 50 0 91.9 62.9 13 Pouchy ether 46.96 5.0 50 0 94.6 52.9 144 Pouchylene 46.99 5.0 50 94.6 50.4 152 Pochloroethene 50.93 5.0 50 94.6 50.1 144 Dichloroethene 50.93 5.0 50 94.6 50.3 144 Dichloroethene 50.93 5.0 50 0 94.6 50.3 144 Dichloroethene 50.93 5.0 5.0 5.0 5.0 111 55.9 144 See S. 5.1 5.0 5.0 5.0 5.0	Client ID: ZZZZZ	Batch ID: R12258	Test	to: TO-15			Analysis Dal		т.	SeqNo: 14	3187	
Poulty Kelone 50.06 10 50.06 10 56.3 15.3	Analyte	Result	PQL	SPK value	SPK Ref Vai	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Ö
tolloide	wethyf Isobutyf Ketone	50.06	10	90	0	100	583	197	51 53	ç	4	
the children by the children b	dethyl tert-butyl ether	45.96	5.0	20	(9 5	6.55	7 6	50.15 64 F4	2.09	o .	
13 13 13 13 13 13 13 13	flethylene chloside	48,45	5.0	5) (C	2 2	Ť.	21.12	2.49	Ф	
oethylene 4382 50 50 92.3 98.14 148 oethylene 47.29 50 50 94.8 60.4 138 oethylene 46.39 50 50 94.0 94.8 59.1 138 ofuran 46.39 50 50 90 94.0 59.1 138 olchloroethene 50.83 50 50 90 94.0 59.1 138 olchloroptropene 50.83 50 50 91.0 102 70.2 142 bichloroptropene 50.83 50 50 0 101 71.5 142 stee 50.33 50 50 0 101 71.5 142 dide 56.03 50 50 0 111 55.9 150 dide 56.03 50 50 0 111 55.9 150 dide 56.03 50 50 0 111 55	-Xylene	46.17	5.0	\$ \$		n c	J. 7.		48.34	0.227	Ō	
Oethylene 47.29 5.0 5.0 9.4 (6.04 135 Outcan 46.99 5.0 5.0 9.4 (6.04 135 Outcan 46.35 5.0 5.0 9.4 (6.04 135 Outcan 46.38 5.0 5.0 9.4 (6.04) 135 135 Olchloroethene 50.3 5.0 5.0 9.0 101 71.5 142 Sich and an	ropylene	43.02) (3 2	.	92.5	SP .	142	46.75	1.25	o	
Octifylerie 46.25 5.0 50 94.6 60.4 132 Okturan 48.35 5.0 50 0 94.0 59.1 132 Okturan 48.35 5.0 50 0 94.0 59.1 133 Okturan 46.48 5.0 50 0 94.0 57.3 134 Oktural 46.48 5.0 50 0 91.0 57.2 142 Oktural 46.48 5.0 50 0 101 77.5 142 Oktural 46.6 5.0 50 0 111 56.3 150 Oktural 44.36 5.0 50 0 112 54.3 150 Oktural 56.03 5.0 50 0 112 54.3 150 Oktural 44.36 5.0 50 0 112 54.3 151 Oktural 56.33 50 50 0 112	Lyrens	20:01) (ते :	<u>a</u>	60 70	45.4	150	45.57	3.69	0	
138 50 50 50 50 50 138	Agreement and a second	67:74	5.0	20	C	94.6	60.4	135	47.3	0.0211	Ф	
132 5.0 5.0 96.7 57.3 132 13	ettachoroemylene	46.99	5.0	50	0	94.0	59.1	138	47.28	0.615	· c	
145.48 5.0 5.0 91.0 63.9 145	etrahydrofuran	48.35	5.0	22	0	96.7	57.3	136	49.24	182	, ,	
Scientific Scientifi	olitene	45.48	5.0	20	0	91.0	63.9	142	45 07	9U6 6		
Otch Incorpropene 50.49 5.0 50 101 71.5 145 Otch Incorpropene 46.72 5.0 50 60 111 55.9 150 ate 55.51 5.0 50 0 111 55.9 150 nide 56.03 5.0 50 0 111 55.9 150 nide 56.03 5.0 50 0 112 55.9 151 ondefluencebrace 54.78 5.0 50 112 59.9 151 CDLCSD_TO15-05181 SampType: LCSD TestCode: TO15 Units: ppbV 71.1 112 ZZZZZ Batch ID: R12259 TestMort TestCode: TO15 Units: ppbV Analysis Date: 5/18/2 ZZZZZ Batch ID: R12259 TestMort 50 50 0 107 64.5 141 ZZZZZ Batch ID: R12259 TestMort 50 50 0 107 62.5 142 Gethane 65.34 50 <td>ans~1,2-Dichloroethene</td> <td>50.93</td> <td>5,0</td> <td>50</td> <td>0</td> <td>102</td> <td>70.2</td> <td>142</td> <td>54.14</td> <td>0.041</td> <td>, c</td> <td></td>	ans~1,2-Dichloroethene	50.93	5,0	50	0	102	70.2	142	54.14	0.041	, c	
132 132 132 132 133 133 133 134 135	ans-1,3-Dichloropropene	50.49	5.0	50	0	101	71.5	455	5041	0.150	> C	
11 55.9 150	richloroethere	46.72	5.0	20	٠	93.4	64.5	135	46.45	0.580	÷ <	
150 150	myl acetate	55.51	5.0	50	0	111	55.9	150	55.07	0.000	Ċ	
Concolluorobenzene	ny Bromide	44.36	5.0	50	0	88.7	547	2 5	15.33	1 00	•	
CDLCSD_TO15-05181 SampType: LCSD TestCode: TO15 Units: ppbV Prep Date: Prep Date: ST18/2 Prep Date: ST18/2 ZZZZZ Batch ID: R12259 TestNo: TO-15 Analysis Date: ST18/2 Analysis Date: ST18/2 ZZZZZ Batch ID: R12259 TestNo: TO-15 Analysis Date: ST18/2 ST18/2 ZZZZZ Batch ID: R12259 TestNo: TO-15 Analysis Date: ST18/2 ST18/2 ZZZZZ Batch ID: R12259 TestNo: TO-15 Analysis Date: ST18/2 ST18/2 Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit doroethane 56.34 5.0 50 0 113 62.1 144 oethane 62.98 5.0 50 0 126 62.4 129 dorthene 61.61 5.0 50 0 126 62.4 129 dorthene 61.61 5.0 50 0 123 64.5 129 dorthane 52.13 5.0 50 0 104 63.6 </td <td>iny! chloride</td> <td>56.03</td> <td>5.0</td> <td>59</td> <td>0</td> <td>112</td> <td>59.0</td> <td>15.</td> <td>50.07</td> <td>26. A</td> <td>-</td> <td></td>	iny! chloride	56.03	5.0	59	0	112	59.0	15.	50.07	26. A	-	
CDLCSD_TO15-05181 SampType: LCSD TestCode: TO15 Frequency	Surr. Bromofluorobenzene	54.78	c	20	c					3.50	>	
CZZZZZ Batch ID: R12359 TestCode: TO-15 Units: ppbV Analysis Date: Sr18/2 ZZZZZZ Batch ID: R12359 TestNo: TO-15 Analysis Date: Sr18/2 Analysis Date: Sr18/2 ZZZZZZ Batch ID: R12359 TestNo: TO-15 Analysis Date: Sr18/2 Sr18/2 drocethane 53.60 5.0 0 107 64.6 141 drocethane 56.34 5.0 50 0 105 62.1 130 rocethane 62.98 5.0 50 0 126 62.4 134 rocethane 62.98 5.0 50 0 126 62.4 134 rocethane 62.98 5.0 50 0 126 62.4 134 obethane 61.61 5.0 50 0 126 62.4 139 obernzene 52.13 5.0 50 0 104 63.6 140 dobernzene 47.80 5.0 50 0 0 95.6 52.7			,	3		2	17.	747	0	0	0	
ZZZZZ Batch ID: R12259 TestNo: TO-15 Analysis Date: 5/18/12 Analysis Date: 5/18/12 5/18/12 Februaria	ample ID: DLCSD_T015-051	31 SampType: LCSD	TestCod	e: T015	Units: ppbV		Prep Date	hi		RunNo: 122	559	
Result POL SPK value SPK Ref Val %REC LowLimit HighLimit HighL		Batch ID: R12259	TestN	o: TO-15		Ì	Analysis Dat		17	SeqNo: 143	1204	
fracthloroethane 53.60 5.9 50 0 107 64.6 141 fracthloroethane 56.34 5.0 50 0 113 62.1 130 forcethane 62.96 5.0 50 0 126 62.4 134 roethane 61.61 5.0 50 0 126 62.4 135 alorobenzene 43.35 5.0 50 0 86.7 25.1 129 athytbenzene 54.12 5.0 50 0 108 60.4 139 obenzene 52.13 5.0 50 0 108 60.4 139 obenzene 52.13 5.0 50 0 104 63.6 140 obenzene 47.80 5.0 50 0 95.6 52.7 128 A halvte detected below quantitation firmit 60 60 60 60 60 60 60 60 60 60 60 <td>зајује</td> <td>Result</td> <td>Pol</td> <td>SPK value</td> <td>SPK Ref Val</td> <td>%REC</td> <td></td> <td>HighLimit</td> <td>RPD Ref Val</td> <td>%RPD</td> <td>RPDLimiŧ</td> <td>O Es</td>	зајује	Result	Pol	SPK value	SPK Ref Val	%REC		HighLimit	RPD Ref Val	%RPD	RPDLimiŧ	O Es
tracthloroethane 56.34 5.0 50 113 62.1 130 floroethane 52.56 5.0 50 0 105 63.1 147 cethane 62.98 5.0 50 0 126 62.4 134 roethane 61.61 5.0 50 0 123 54.5 125 athytbenzene 54.12 5.0 50 0 86.7 25.1 129 athytbenzene 52.13 5.0 50 0 104 63.6 140 obenzene 47.80 5.0 50 0 95.6 52.7 128 f Analyte detected below quantitiation firmit MI) Not Purend at the above quantitation range H 1 1	1, t-Trichloroethane	53.60	5.0	90	0	107	64.6	141	54.99	2.56	0	
flor cethane 52.56 5.0 50 0 105 63.1 147 cethane 62.98 5.0 50 0 126 62.4 134 rethane 61.61 5.0 50 0 123 54.5 125 all or obenzene 54.12 5.0 50 0 86.7 25.1 129 athylbenzene 52.13 5.0 50 0 108 60.4 139 obenzene 47.80 5.0 50 0 95.6 52.7 128 f Analyte detected are not blank conected E Estimated Value above quantitation range H Analyte detected below quantitation firmit NI) Not Purerol of the blank conected H Analyte detected below quantitation firmit NI) Not Purerol of the blank cone of t	1,2,2-Tetrachloroethane	56.34	5.0	50	0	113	62.1	130	57.51	2.06		
roethane 62.98 5.0 50 0 126 62.4 134 roethene 61.61 5.0 50 0 123 54.5 125 lorobenzene 43.35 5.0 50 0 86.7 25.1 129 eithylbenzene 54.12 5.0 50 0 108 60.4 139 roethane 52.13 5.0 50 0 104 63.6 140 obenzene 47.80 5.0 50 0 95.6 52.7 128 roethane Fasults reported are not blank conected Estimated Value above quantitation range H 140 140 140 roethane Fasults reported are not blank conected Estimated Value above quantitation range H 140 140 140	1,2-Trichloroethane	52.56	5.0	20	O	105	63.1	147	51.58	+ 1, 2, 2, 3, 4, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5,	· c	
oethene 61-61 5.0 50 0 123 54.5 125 dorobenzene 43.35 5.0 50 0 86.7 25.1 129 ethylbenzene 54.12 5.0 50 0 108 60.4 139 obenzene 52.13 5.0 50 0 104 63.6 140 obenzene 47.80 5.0 50 0 95.6 52.7 128 f Analyte detected are not blank conected E Estimated Value above quantitation range H H Incommentation final Incomme	1-Dichloroethane	62.98	5.0	50	0	126	fi? 4	134	65.97	20.7	0 0	
Second Proper 43.35 5.0 50 0 86.7 25.1 129 25.1 129 25.1 129 25.1 129 25.1 129 25.1 2	1-Dichloroethene	61.61	5.0	8	0	123	27	, <u>, , , , , , , , , , , , , , , , , , </u>	52.23	CC.4	> 6	
ethylbenzene 54.12 5.0 50 0 108 60.4 139 noethane 52.13 5.0 50 0 104 63.6 140 obenzene 47.80 5.0 50 0 95.6 52.7 128 Results reported are not blank corrected E. Estimated Value above quantitation range B. Analyte detected below quantitation firmit B. Nith Purenal are that it is in the corrected below quantitation firmit B. Nith Purenal are that it is in the corrected below quantitation firmit B. Nith Purenal are that it is in the corrected below quantitation firmit B. Nith Purenal are the corrected below quantitation firmit B. Nith Purenal are the corrected performance B. Nith Purenal are the corr	2,4-Trichlorobenzene	43.35	5.0	99	0	36.7	25.1	5 5	40.73	E. 303	> <	
Oberazene 52.13 5.0 50 0 104 63.6 140 Oberazene 47.80 5.0 50 0 95.6 52.7 128 Results reported are not blank conected E. Estimated Value above quantitation range H H H J. Analyte detected below quantitation limit MI) Not Percend on the above quantitation limit H H	2,4-Trimethylbenzene	54.12	5.0	50	0	108	60.4	139	54 93	140	9 6	
Obertzene 47.89 5.0 50 0 95.6 52.7 128 Results reported are not blank corrected E Estimated Value above quantitation range H Analyte detected below quantitation limit NI) Not Personal at the 3 and of December 1	2-Dibromoethane	52.13	5.0	20	0	104	63.6	140	51.76	0.312	9 6	
Results reported are not blank corrected E Estimated Value above quantitation range H Analyte detected below quantitation firmt NI) Not Personal at the above quantitation firmt	2-Dichlorobenzene	47.86	2.0	90	0	95.6	52.7	128	49.62	3.74	. 0	
Mil Not Personnal at the Jamia of Determine		rted are not blank corrected			led Value above quanti	Tation rang	¢.	1	oldine times for r	nreporation or at	Approximation	-
TAIL THOU EXCIPENT ALL THE CHILLS OF DESCRIPTION	f Sundado dos	and the state of the state of the state of							3			

Former Hampshire

CH2M - St Louis C1705036

CLIENT: Work Order:

Project:

	CH2M - St Louis
Work Order:	C1705036
Project:	Former Hampshire

TestCode: TO15

Possult Poss	Sample ID: DLCSD_	Sample ID: DLCSD_TO15-05181 SampType: LCSD	TestCo	TestCode: TO15	Units: ppbV		Prep Date			RupMor 40050	250	
Post value Pos		Batch ID: R12259	Test	Vo: TO-15	•		Analysis Date		17	Sealvo 14	3204	
roceptane 64.30 5.0 5.0 1.29 6.37 144 cuth/benzene 57.74 5.0 5.0 5.0 1.29 6.37 144 cuth/benzene 50.98 5.0 5.0 5.0 1.02 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03	Analyte	Result	PQ	SPK value	SPK Ref Val	%REC	LowLimit	.⊡	RPD Ref Val	%RPD	RPD imit	Ğ
ropropane 57.74 5.0 5.0 17.1 1.30 1.30 1.30 1.30 1.30 1.30 1.30 1.	1,2-Dischloroethane	64.30	5.0	5.0	6	çţ	1	, ;	1		- 1	
ethylpenzone 51.30 50. 50. 173 50. 130 60. 130 130 60. 130 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60. 130 60.	1.2-Dichloropropane	57.73	, r	8 9		57	93.7	2 :	65.70	4.63	0	
13.0 51.0	1 3 S. Trimathulboore) (3 1	-	2	57.3	144	56.98	1.32	0	
100 102 218 318	azuantikuahili o'o'i		5.0	20	0	±03	999	136	52.87	3.01	0	
134 134	l, 3-butaqiene	50.98	5.0	99	0	102	21.8	166	60.49	17.1	0	
otoberizene 47.30 5.0 5.0 94.6 54.6 113 and 55.84 10 50 11 56.8 114 attrylportiane 55.44 5.0 50 10 119 77.8 138 erne 55.45 5.0 50 0 113 55.5 149 erne 76.31 10 50 0 113 55.5 149 de 55.4 5.0 50 0 117 62 149 de 57.30 5.0 50 0 117 62 149 de 57.30 5.0 50 0 117 62 149 norrownethane 57.31 5.0 50 0 118 42.5 149 norrownethane 43.74 5.0 50 0 118 42.5 149 norrownethane 43.74 5.0 50 0 118 62.1 13<	1,5-Dichlorobenzene	50.65	5.0	20	0	101	52.6	134	54.67	7.63	O	
141 142 141	1,4-Dichlorobenzene	47.30	5.0	90	0	94.6	54.6	131	52.08	9.62	0	
138	1,4-Dioxane		10	50	0	112	56.8	141	54.85	1.79	Ö	
100 100	2,2,4-trimethylpentan		5.0	œ	0	119	71.8	138	59.62	0.302	0	
149 149	4-ethytoluene	54.52	5.0	22	0	109	60.6	130	55.37	1.55		
Second Research	Acetone	76.31	5	50	0	153	49.5	149	79.25	3.78	· c	Ø,
140 141 140 141 140 141 140 141 140 141 140 141 140 141 140 141 140 141 140 141 140	Ally! chloride	65.54	5.0	50	O	131	55.5	156	\$9.04	5.20	• •)
forcide 57.90 5.0 5.0 116 42.5 106 nolloromethane 53.91 5.0 5.0 108 63.6 144 n 44.00 5.0 5.0 0 108 63.6 144 n 44.00 5.0 5.0 0 88.0 43.9 148 thane 62.74 5.0 5.0 0 125 59.9 138 sulfide 62.74 5.0 5.0 0 125 59.9 138 sulfide 49.29 5.0 5.0 0 125 59.9 138 starchloride 49.47 5.0 5.0 0 144 56.1 138 sne 57.74 5.0 5.0 5.0 144 56.1 142 sne 57.42 5.0 5.0 5.0 145 56.1 142 sno 58.88 5.0 5.0 5.0 5.0 142 <	Benzene	58.59	5.0	90	0	117	62	140	59.71	68,	•	
44.00 5.0 5.0 108 63.6 144 144 144.00 5.0 5.0 5.0 0 88.0 43.9 144.04 144.00 5.0 5.0 5.0 0 88.0 43.9 144.04 144.00 5.0 5.0 0 88.0 143.9 143.94 144.04 144.	Benzyl chloride		5.0	50	O	116	42.5	106	60.28	4.03	0	4
hane	Bromodichlorometha		5.0	20	0	108	63.6	144	54.16	0.463)
thane 49.16 5.0 50 98.3 42.6 135 sulfide 62.74 5.0 50 0 125 59.9 133 trachloride 49.29 5.0 50 0 125 59.9 135 zene 49.47 5.0 5.0 0 114 56.1 136 ane 57.10 5.0 5.0 0 114 56.1 136 ane 57.74 5.0 5.0 0 114 56.1 134 ane 57.74 5.0 5.0 0 114 56.1 134 Ane 57.74 5.0 5.0 0 114 56.1 134 Annocethene 58.8 5.0 5.0 5.0 115 67.7 134 Antomochhene 56.2 50 50 0 118 65.1 134 ate 56.2 50 50 60 131 44.7	Bromoform	44.00	5.0	50	o	88.0	43.9	148	44.29	0.657	• •	
suffide 62.74 5.0 50 125 59.9 138 standhoride 49.29 5.0 50 0 98.6 63.2 139 zene 49.47 5.0 50 0 98.9 58.9 136 ane 57.10 5.0 50 0 114 56.1 134 ane 57.74 5.0 50 0 114 56.1 134 hloroperhene 51.89 5.0 50 0 115 62.4 135 hloroperhene 57.42 5.0 50 0 115 62.4 135 hloroperhene 58.86 5.0 50 0 115 61.7 134 ne 410 50 50 50 0 0 125 65.3 140 ste 48.35 5.0 50 0 0 14.7 14.0 ste 48.38 5.0 50 <th< td=""><td>Bromomethane</td><td>49.16</td><td>5.0</td><td>20</td><td>0</td><td>98.3</td><td>42.6</td><td>139</td><td>57.08</td><td>14.9</td><td></td><td></td></th<>	Bromomethane	49.16	5.0	20	0	98.3	42.6	139	57.08	14.9		
200 200	Carbon disuffide	62.74	5.0	\$	0	125	59.9	133	61.63	1.78	. 0	
zene 49.47 5.0 50 98.9 58.9 136 ane 57.10 5.0 50 0 114 56.1 134 n 57.74 5.0 50 0 115 62.4 135 shloroethene 51.89 5.0 50 0 115 62.4 135 shloropropene 58.88 5.0 50 0 115 61.7 135 shloropropene 58.88 5.0 50 0 118 63.1 134 shoromethane 62.30 5.0 50 0 125 65.5 142 shoromethane 65.40 10 50 0 125 65.5 142 shoromethane 65.40 10 50 0 125 65.5 142 shoromethane 50.20 50 0 0 131 46.6 147 ene 50.20 50 0 0 96.7	Carbon tetrachloride	49.29	5.0	99	0	98.6	63.2	139	50.72	2.86	0	
ane 57.10 5.0 50 114 56.1 135 Alane 57.74 5.0 50 10 115 62.4 135 Alane 57.74 5.0 50 0 115 62.4 135 Alloropropene 57.42 5.0 50 0 115 61.7 135 Alloropropene 52.88 5.0 50 0 115 61.7 135 Informediane 52.30 5.0 50 0 118 63.1 134 Alloropropene 62.30 5.0 50 0 125 65.5 142 Alloromethane 62.30 5.0 50 0 125 65.5 142 Alloromethane 65.40 10 65 0 125 65.5 142 Alloromethane 65.00 50 0 131 46.5 14.7 14.7 Alloromethane 65.00 50 0 98	Chlorobenzene	49.47	5.0	50	0	98.9	58.9	136	48.25	2.50	0	
And the proportion of the proportion of the properties of the	Chloroethane	57.10	5.0	50	0	4	56.1	\$	62.07	8.34	0	
shane 51.89 5.0 50 104 58.5 15 shloroethene 57.42 5.0 50 0 115 61.7 135 shloroethene 58.88 5.0 50 0 118 63.1 134 informed 62.36 5.0 50 0 125 65.5 142 informed and thank 47.25 5.0 50 0 137 46.6 140 ate 65.40 10 50 0 131 46.6 140 ene 50.20 5.0 50 0 96.7 44.7 165 58.84 5.0 50 0 96.7 44.7 165 58.84 5.0 50 0 98.0 62.4 176 48.98 5.0 50 0 98.0 62.4 176 A shatyte detected below quantitation limit Not Detected at the Limit of Detection R 17 17	Chloroform	57.74	5.0	50	0	115	62.4	55	60,13	4.06	0	
hilotroethene 57.42 5.0 50 0 115 61.7 135 fill hilotroethene 58.88 5.0 5.0 5.0 0 118 63.1 134 fill hilotropene 58.88 5.0 5.0 5.0 0 125 65.5 142 fill hilotropene 62.30 5.0 5.0 5.0 0 125 65.5 142 fill hilotropene 65.40 10 5.0 5.0 0 131 46.5 140 fill hilotropene 65.40 10 5.0 5.0 5.0 0 96.7 44.7 165 58.84 5.0 5.0 0 96.7 44.7 165 58.84 5.0 5.0 0 96.7 44.7 165 58.84 5.0 5.0 0 96.7 44.7 165 58.84 5.0 5.0 0 96.7 44.7 165 58.84 5.0 5.0 0 96.7 44.7 165 58.84 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 5.0 0 96.7 6.0 178 58.84 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Chioromethane		5.0	50	Ф	104	58.5	150	64.54	21.7	0	
shdroppropene 58.88 5.0 50 118 63.1 134 nne 62.30 5.0 5.0 0 125 65.5 142 doronnethane 47.25 5.0 5.0 60 125 65.5 142 ate 47.25 5.0 50 0 94.5 61.5 140 ate 50.20 5.0 50 0 131 46.6 140 ate 48.35 5.0 50 0 96.7 44.7 165 58.64 5.0 50 0 96.7 44.7 165 58.84 5.0 50 0 98.0 62 174 48.98 5.0 50 0 98.0 62 176 A subtyre detected below quantitation limit Not Detected at the Limit of Detection R F	cis-1,2-Dichloroefhen		5.0	50	Đ	115	61.7	135	56.33	1.92	0	
47.25 5.0 5.0 125 65.5 142 Horomethane 47.25 5.0 50 0 94.5 61.5 137 ate 65.40 10 50 0 131 46.6 140 ene 50.20 5.0 50 0 131 46.6 140 48.35 5.0 50 0 96.7 44.7 165 58.84 5.0 50 0 96.7 44.7 165 58.84 5.0 50 0 98.0 62 176 48.98 5.0 50 98.0 62 176 A stative reported are not blank corrected Estimated Value above quantitation range H Janapure detected below quantitation limit Not Detected at the Limit of Detection R	cis-1,3-Dichloroprope		5.0	20	Ð	118	63.1	134	57.74	1,96	0	
doromethane 47.25 5.0 50 94.5 61.5 137 46.5 140 ene 65.40 10 50 0 131 46.6 140 ene 50.20 5.0 50 0 131 46.5 140 48.35 5.0 50 0 96.7 44.7 165 58.84 5.0 50 0 96.7 44.7 165 48.98 5.0 50 0 98.0 62 176 Results reported are not blank corrected Estimated Value above quantitation range H H Janatype detected below quantitation limit NO Dotected at the Limit of Detection R H	Cyclohexane		5.0	90	Ó	125	65.5	142	64.63	3.67	0	
ate 65.40 10 50 0 131 46.6 140 ene 50.20 5.0 50 0 100 62.4 140 48.35 5.0 50 0 96.7 44.7 165 58.84 5.0 50 0 96.7 44.7 165 48.98 5.0 50 0 98.0 62 176 Results reported are not blank corrected E Estimated Value above quantitation range H Janatyte detected below quantitation limit ND Dotected at the Limit of Detection R	Dibromochloromethar		5.0	50	0	94.5	61.5	137	45.73	3.27	0	
100 100 62.4 140 148.35 5.0	Ethyl acetate	65.40	₽	20	0	131	46.6	140	66.41	1.53	0	
48.35 5.0 50 96.7 44.7 165 58.84 5.0 50 0 118 58 124 48.98 5.0 50 0 98.0 62 176 Results reported are not blank corrected Eximated Value above quantitation range H Janatyte detected below quantitation limit Not Detected at the Limit of Detection R	Ethylbenzene	50.20	5.0	50	0	100	62.4	140	49.7	1.00	0	
58.84 5.0 50 f18 58 124 48.98 5.0 50 0 98.0 62 176 Results reported are not blank corrected E Estimated Value above quantitation range # Janatyte detected below quantitation limit ND Not Detected at the Limit of Detection #	Freon 11	48.35	5.0	50	o	96.7	44.7	165	51.89	7.06	0	
Results reported are not blank corrected Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	Freon 113	58.64	5.0	50	0	\$	88	124	60.77	3.23	0	
Results reported are not blank corrected E Estimated Vatue above quantitation range J Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	Freon 114	48.98	5.0	905	¢	98.0	62	176	57.11	15.3	0	
Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R		Results reported are not blank corrected			ted Value above quant	itation rang			olding times for	oreparation or a	ralysis exceeds	-
	-	Analyte detected below quantitation limit			receed at the Limit of I	Artection			PD outside acces	ted recovery in	pite	!
	vi	Snike Recovery outsite accorded recovery limits	mite								<u>.</u>	

CH2M - St Louis	C1705036
CLIENT:	Work Order:

Former Hampshire Project:

TestCode: TOIS

Completion of Oct Total											
Saniple ID: ULCSD_1015-05181 SampType: LCSD	SampType: LCSD	TestCo	TestCode: T015	Units: ppbV		Preo Date			Damble, 450	¢,	
Client ID: ZZZZZ	Batch ID: R12259	Test	TestNo: TO-15	•	*	Analysis Date	5148720147	*	Cookles 12239	Ž,	
					•	The state of the s			Seding: 143204	504	
Analyte	Resuit	POL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDI imil	Ç.
Freon 12	52.85	5.0	55	-	355	£0 c	1				
Heptane	6143	r.	3 8		3 9	C'7C	3	56.15	6.06	6	
Hexachlon-1 3-butations	2 5) (हे	o	123	65.5	144	62.63	1.93	0	
Haven	41.00	5.0	50	Ф	82.1	32.9	129	39.72	3.32	O	
Evalid	64.34	5.0	20	Đ	129	59.1	148	69.14	7 10	· c	
Isophopy arconol	67.01	5.0	50	0	<u>\$</u>	50.5	142	22	50.00	· c	
Hop-Ayere	102.5	무	100	0	163	69.7	137	101.2	96	, (
Methyl Butyl Ketone	65.88	2	50	Q	53	50.	125	27.73	0.50	5 (,
Methyl Ethyl Ketone	64.50	10	90	· c	170	. t	7 4	07.70	Z.IU	o	'n
Methyl Isobutyl Ketone	63.73	Ç		• =	} -	, c	· •	86.40	U.741	٥	
Methyl tert-butyl ether	59 43	, r	3 2	, c	7 .	50.0	171	54.57	1,31	0	S
Wethylene chlorida	2 4	3 0	PG 1	Þ	5	62.9	8	60.8	2.28	0	
O-Xubono	10.10	J.C	90	O.	123	57.4	131	62.51	1.52	O.	
Described	33.30	5.0	50	¢	107	68	142	53.85	1.03	¢	
	57.06	5.0	90	0	114	45.4	150	65.69	940	- 6	
Signer	53.66	5.0	50	0	107	60.4	135	53.53	0.243	· c	
Tetrachloroethylene	43.62	5.0	8	0	678	. 00	130	00.00	0.645	יכ	
Tetrahydrofuran	65.37	5.0	1	· c	1 5		2 5	45.33	0.708	0	
Toluene	52.50	5.5	3 4	> <	2 4	0.10	£ ;	59.17	5.65	0	
trans-1,2-Dichloroethere	68.85	46	3 6	> <	0 6	6.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55	751	51.93	.	¢	
trans-1.3-Dirhlomoropeo	0000	2 6	DC	>	35	70.2	142	65.25	5.37	0	
Tropionophone	79'SC	D.2	20	Ö	139	71.5	145	60.05	0.719	0	
Ment of periods	48.23	5.0	50	0	96.5	64.5	135	46.19	4.32	0	
VHY ZOELZIE	75.60	5.0	50	0	151	55.9	150	76 13	0.800		o
Vinyl Bromide	53.04	5.0	50	0	106	5.47	150	55.42	200) (,
Vinyl chloride	52.90	5.0	20	c	30.	50.0	2 4	25.42	p. 4.	5	
Surr: Bromofluoroberzene	54 95	Ċ	5	, () (7	2	02.19	φ	5	
	99°E	5	ńe.	= >	110	# · · · · · · · · · · · · · · · · · · ·	142	Ф	0	0	

Qualifiers:

Spike Recovery outside accepted recovery limits Analyte detected below quantitaton limit Results reported are not blank corrected

Estimated Value above quantitation range E Estimated Value ahove quantitation rang ND Not Detected at the Limit of Detection

Holding times for preparation or aralysis exceeded RPD outside accepted recovery limits 7 ×

Method TO-15A Units=ppb 5973MS

10 9,69
9.65 9.59
9,12 9,92
10.16 9.91
'
9.72 9.78
•
_
9.62 10,76
_
•
8.61 9.3
1
10.29 10.3

0-15A	Units≃ppb		2.583	2.590	2.690	2.601	3,124	2.848	2.821	3.191	2.928	2.050	1.966	2.098	1.901	2.513	2.121	2.354	2.118	2.051	4,444	2.484	2.358	2,131	2.141	2.856	2.175	2.352	1.954	2.511	1,565	2.650	3.940	3.929	2.702	4.339	4.019	1.905	2.089	3,981
Method TO-15A	בונה ביי	%Rec	98.5	0.66	98.6	98.8	99.3	99.4	97.9	101.0	100.4	100.0	98.1	99.0	98.2	97.7	100.5	99.7	96.9	97.0	97.6	96.4	97.6	97.8	101.0	101.4	100.4	0.66	96.9	98.8	96.6	101.0	101.9	97.1	99.6	105.2	100.2	110.6	99.1	106.4
	!	StdDev	0.822	0.824	0.856	0.828	0.994	0.906	0.897	1.015	0.932	0.652	0.626	0.667	0.605	0.800	0.675	0.749	0.674	0.653	1,414	0.790	0.750	0.678	0.681	0.909	0.692	0.748	0.622	0.799	0.498	0.843	1.254	1.250	0.860	1.380	1.279	0.606	0.665	1.267
		Average	9,85	9.90	9.86	9.88	9.93	9.94	9.79	10.10	10.04	10.00	9.81	9.90	9.82	9.77	10.05	9.97	9.69	9.70	19.52	9.64	9.76	9.78	10.10	50.70	10.04	9.90	69.6	9.88	9.66	10.10	10.19	9.71	9.96	10.52	10.02	11.06	9.91	10.64
	<u>!</u>	DI#1	11.21		10.86	10.97	11.65	11.41	11.16	11.82	11.14	11.01	10.71	10.8	10.8	11.12	11.09	11.11	10.66	10.95	21.43	10.79	10.81	10.8	11,16	51.3	11.27	11.06	10.73	11,17	10.64	11.69	12.68	12.03	11.56	13.04	12.7	12.16	11.14	13.14
	į	5 5	9.42	9,6	9.41	9.62	9.35	9.54	9.42	9.46	9.49	10.04	9.46	9.61	9.73	9.69	9.99	9.54	9.54	9.28	19.07	တ် ဦး	9.24	9.46	10.05	51.7	9.79	9.82	9.7	9.64	9.74	හ. භ	9.6	9.27	9.85	9.77	9.6	11,07	9.78	11.32
on Limit	(1)	512	9.19	9.12	9.1	9.03	9.08	8.84	9.08	9.05	8.94	9.2	8.92	9.11	9.02	8.97	9,11	9,23	8.94	9.16	17.84	8.95	9.11	9,25	9.28	50.28	9.35	8.94	8.99	8.84	9.05	9.32	8.8	8.15	8.87	9.16	9.23	10.33	9.02	9.17
Sppb Detection Limit	January 2017	10L#4	9.18	9 9	9.39	9.17	9.33	9.34	8.83	9.39	9.71	9.6	9.78	9.6	9,59	9.12	9.68	9,63	9.28	9.57	18.93	9.42	9.39	9.51	9.67	50,25	9.63	9.63	9.48	9.63	9.31	9.98	9.82	9.36	10.03	10.08	9.69	10.86	9.81	10,19
ָּזְלָ בְּיִלְ	ĝ	247	9.35	0. 10 0. 10	8.87		9.02	9.37	9.12	9.48	9.14	9.4	9,36	9.24	9.28	9.08	9.57	9.25	9.05	9.07	18.02	8.69	9.03	8.94	9,51	50.49	9.44	9.15	8.97	9.19	9.51	9.18	9.44	9,25	9.19	9.84	8.79	11.52	9.54	10.22
	Č.	DL#2	10.46	10.68	10.71	10,37	10,55	10.56	10.53	10.83	10.92	10.59	10.43	10.49	10.23	10.4	10.65	10.72	10.45	9.94	20.84	10.48	10,66	10.49	10.75	51.66	10.54	10.52	10.09	10.49	9.72	10,28	10.68	10.63	10.23	11.82	10.39	10,79	10.31	10.1
	ğ	L# 10 5	10.37	10.43	70.7	10.82	10.51	10.51	10.42	10.64	10.93	10.15	10	10.43	10.09	10.04	10.24	10.34	6.6	9.93	20.51	9.94	10.08	10.01	10.27	49.2	10.25	10.16	9.85	10.22	9.66	10.48	10.28	9.28	10.02	9.95	9.76	10.69	9.76	10.35
	Amazint	A STORING	⊇ (20 \$	2 €	2 ;	10	10	10	9	Ç	9	10	9	10	10	10	40	40	1 0	50	10	9	9	10	යි	9	9	9	10	10	10	10	10	10	10	10	10	10	9
Centek Laboratories	IDE Study	Corbon Tobracharida	Carbon regachloride	z,z,4-trimetnyipentane	Heplane	i richioroemene	1,2-Uichloropropane	Bromodichloromethane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	1,1,2-Trichloroethane	Toluene	Methyl Isobutyl Ketone	Dibromochloromethane	Methyl Butyl Ketone	1,2-dibromoethane	Tetrachioroethylene	Chlorobenzene	Ethylbenzene	Nonane	m&p-Xylene	Styrene	Bromoform	o-xylene	Cumene	Bromofluorobenzene	1,1,2,2-Tetrachloroethane	Propylbenzene	2-Chlorotoluene	4-ethyltoluene	1,3,5-frimethylbenzene	1,2,4-trimethylbenzene	1,3-dichlorobenzene	benzyl chloride	1,2,3-Trimethylbenzene	1,4-dichlorobenzene	1,2-dichlorobenzene	1,2,4-trichlorobenzene	Hexachloro-1,3-butadiene	Naphthalene

Method TO-15 Sulfur/Siloxane Units≒ppb

5ppb Detection Limit February 2017 MSD#4-5973

Centek Laboratories IDL Study

Сотроина	Amt	₩ 10	IDL#2	10L #3	IDI, #4	IDL #5	1DL #6	DL #7	AVG	StdDev	%Rec	ă
Carbonyl Sulfide	8	18.64	19.98	21.97	18.76	20.46	20,19	19.43	19.97	114	99.00	2 527
Methyl Mercaptan	20	17.98	19.86	20.9	18.9	19.34	18.96	18.08	19.12	13	05 7%	2002
Ethyl Mercaptan	20	17.93	19.49	19.91	18.19	18.68	18.45	17.10	. x	20:- 0.00	00 797	7 7 7 6
Dimethyl Sulfide	20	18,13	20.16	21.57	20.02	20.54	19.98	18 36	19.83	, c.	00 10,	207.5
Carbon Disulfide	20	19.04	20.71	22.08	20,4	20.95	20.35	19.56	20.44	. 3:1 0.98	102.2%	2.733
isopropyl Mercaptan	20	17.12	18.5	19.05	18.28	18,58	17.48	18.11	18 16	0.66	Q0 8%	2007
Trimethyl silanol	20	21,43	22.81	22.12	22,91	22.75	22.04	20.92	22.14	0.75	110.7%	2 377
1-Propanethiol	23	16.12	17.33	18.92	16.46	17,64	16.1	16,38	16.99	1.04	85.0%	3.263
Hexamethyldisiloxane-L2	20	20.3	21.62	19.64	20.29	21.79	20.16	18.92	20.39	1.02	101.9%	3,242
Hexamethylcyclotrisiloxane-D3	8	22.32	22.26	20.51	21.7	22.8	20.96	20.81	21.62	0.88	108.1%	2.759
Octamethyltrisiloxane-L3	20	20.33	21.64	20.03	20.18	22.23	20.4	19.33	20.60	5	103.0%	3.186
Octamethylcycfotetrasiloxane-D4	20	20.34	20.47	18.68	19.6	21.88	18.95	19.13	19.86	7.12	99.3%	3515
Decamethy/tetrasiloxane-L4	20	19.39	20.86	19.02	19.16	21.67	19.15	18.31	19.65	5.18	98.3%	3.695
Decamethylcyclopentasiloxane-D5	20	20.1	21.41	20.03	20.49	22,53	19.95	19.86	20.62	0.99	103.1%	3.126
Dodecamethy/pentasiloxane-L5	20	20.77	19.59	19.2	20.16	19.92	18.78	18.89	19.62	0.72	98.1%	2.266
Dodecamethylcyclohexasitoxane-D6	20	18,33	20.89	18.29	20.65	22.81	18.16	19.43	19.79	1.74	99.0%	5.480

GC/MS-Whole Air Calculations

Relative Response Factor (RRF)

$$RRF = Ax * Cis$$

Ais * Cx

where: Ax = area of the characteristic ion for the compound being measured

Ais = area of the characteristic ion for the specific internal standard of the

compound being measured

Cx = concentration of the compound being measured (ppbv)

Cis = concentration of the internal standard (ppbv)

Percent Relative Standard Deviation (%RSD)

Percent Difference (%D)

where: RRFc = relative response factor from the continuing calibration mean RRFi = mean relative response factor from the initial calibration

Sample Calculations

$$ppbv = \underbrace{Ax * Is * Df}_{Ais * RRF}$$

where: Ax = area of the characteristic ion for the compound being measured

Ais = area of the characteristic ion for the specific internal standard of the compound being measured

Is = Concentration of the internal standard injected (ppbv)

RRF= relative response factor for the compound being measured

Df = Dilution factor

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15 SAMPLE DATA

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-001A

Date: 22-Jun-17

Client Sample ID: WAT-SV04-050817

Tag Number: 646.80

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit C	ual Units	DF	Date Analyzed
FIELD PARAMETERS		FLO	' '		Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METH	OD 3C		Analyst: WD
Carbon dloxide	0.410	1.90	J %	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	ИD	0.580	%	1	5/15/2017
Nitrogen	74.9	8.30	%	1	5/15/2017
Oxygen	20.2	0.880	%	1	5/15/2017
PPB BY METHOD TO15		TO-1	5		Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
1.1,2,2-Tetrachloroethane	< 5.0	5.0	₽₽bV	1	5/17/2017 11:58:00 AM
1,1,2-Trichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
1,1-Dichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
1,1-Dichloroethene	6.3	5.0	Vdqq	1	5/17/2017 11:58:00 AM
1,2,4-Trichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 11:58:00 AM
1,2,4-Trimethylbenzene	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
1,2-Dibromoethane	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
1,2-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 11:58:00 AM
1,2-Dichtoroethane	18	5.0	ppbV	1	5/17/2017 11:58:00 AM
1,2-Dichloropropane	13	5.0	Vdgq	1	5/17/2017 11:58:00 AM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
1,3-butadiene	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
1,3-Dichtorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
1,4-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
1,4-Dioxane	< 10	10	ppb∨	1	5/17/2017 11:58:00 AM
2,2,4-trimethylpentane	< 5.0	5.0	opb∨	1	5/17/2017 11:58:00 AM
4-ethyltoluene	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
Acetone	8,6	10	J ppbV	1	5/17/2017 11:58:00 AM
Allyl chloride	< 5.0	5.0	Vdqq	1	5/17/2017 11:58:00 AM
Benzene	< 5.0	5.0	Vdqq	1	5/17/2017 11:58:00 AM
Benzyl chloride	< 5.0	5.0	ppb∨	1	5/17/2017 11:58:00 AM
Bromodichloromethane	< 5.0	5.0	Vdqq	1	5/17/2017 11:58:00 AM
Bromoform	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Bromomethane	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Carbon tetrachloride	< 5.0	5.0	Vdqq	1	5/17/2017 11:58:00 AM
Chlorobenzene	< 5.0	5.0	₽₽₽V	1	5/17/2017 11:58:00 AM
Chloroethane	< 5.0	5.0	ppbV	1	5/17/2017 11:58:00 AM
Chloroform	1500	200	ppb∨	40	5/17/2017 6:11:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-001A

Date: 22-Jun-17

Client Sample ID: WAT-SV04-050817

Tag Number: 646.80 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC)-15			Analyst: WD
Chloromethane	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
cis-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
cis-1,3-Dichloropropene	< 5.0	5.0		ρρb∨	1	5/17/2017 11:58:00 Af
Cyclohexane	5.6	5,0		₽₽bV	1	5/17/2017 11:58:00 AM
Dibromochloromethane	< 5.0	5.0		ppb∨	1	5/17/2017 11:58:00 AM
Ethyl acetate	< 10	10		ppbV	1	5/17/2017 11:58:00 AM
Ethylbenzene	< 5.0	5.0		₽₽b∨	1	5/17/2017 11:58:00 AM
Freon 11	< 5.0	5.0		ppb∨	1	5/17/2017 11:58:00 AM
Freon 113	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AN
Freon 114	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AN
Freon 12	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AN
Heptane	. < 5.0	5.0		Vdqq	1	5/17/2017 11:58:00 AM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Hexane	< 5.0	5.0		Vdqq	1	5/17/2017 11:58:00 AM
isopropyi alcohol	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
m&p-Xylene	< 10	10		ppbV	1	5/17/2017 11:58:00 AM
Methyl Butyl Ketone	< 10	10		ppb∨	1	5/17/2017 11:58:00 At
Methyl Ethyl Ketone	< 10	10		ppbV	1	5/17/2017 11:58:00 Af
Methyl Isobutyl Ketone	1.9	10	J	ppbV	1	5/17/2017 11:58:00 AM
Methyl tert-butyl ether	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AN
Methylene chloride	4.6	5.0	J	ppbV	1	5/17/2017 11:58:00 AM
o-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AN
Propylene	4,3	5.0	j	ppbV	1	5/17/2017 11:58:00 AN
Styrene	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AN
Tetrachloroethylene	9.3	5.0		ppbV	1	5/17/2017 11:58:00 AN
Tetrahydrofuran	< 5.0	5.0		ррьV	1	5/17/2017 11:58:00 AN
Toluene	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AN
trans-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AN
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Trichloroethene	24	5.0		ppbV	1	5/17/2017 11:58:00 AM
Vinyl acetate	< 5.0	5.0.		Vđqq	1	5/17/2017 11:58:00 AM
Vinyl Bromide	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AN
Vinyl chloride	< 5.0	5.0		ppbV	1	5/17/2017 11:58:00 AM
Surr: Bromofluorobenzene	89.4	73.7-124		%REC	1	5/17/2017 11:58:00 AM
TIC: Cyclotetrasiloxane, octamethyl-	22	0	ИĻ	ррь∨	1	5/17/2017 11:58:00 AM
TIC: Cyclotrisiloxane, hexamethyl	15	0	ИĻ	ppbV	1	5/17/2017 11:58:00 AM
TIC: Hydrogen sulfide	680	0	JN	Vdqq	1	5/17/2017 11:58:00 AM
OW LEVEL SULFURS BY TO-15 1-Propanethiol	< 5.0	TO- 5.0		ppbV	1	Analyst: WD 5/16/2017 12:19:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-001A

Date: 22-Jun-17

Client Sample ID: WAT-SV04-050817

Tag Number: 646.80 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Q	ual Unit	s DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-15	5		Analyst: WD
Carbon disulfide	< 5.0	5.0	ppbV	1	5/16/2017 12:19:00 PM
Carbonyl sulfide	< 5.0	5.0	ppbV	1	5/16/2017 12:19:00 PM
Dimethyl sulfide	< 5.0	5.0	∨dgq	1	5/16/2017 12:19:00 PM
Ethyl mercaptan	< 5.0	5.0	₽₽bV	1	5/16/2017 12:19:00 PM
Hydrogen Sulfide	2700	50	ppbV	10	5/16/2017 9:38:00 PM
Isopropyl mercaptan	1.5	5.0	J ppbV	1	5/16/2017 12:19:00 PM
Methyl mercaptan	1.7	5.0	J ppbV	1	5/16/2017 12:19:00 PM
Surr: Bromofluorobenzene	155	70-130	S %RE	C 1	5/16/2017 12:19:00 PM
Surr: Bromofluorobenzene	111	70-130	%RE	C 10	5/16/2017 9:38:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-001A

Date: 22-Jun-17

Client Sample ID: WAT-SV04-050817

Tag Number: 646.80 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual		DF	Date Analyzed
5PPB BY METHOD TO15	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TO	-15			Analyst: WD
1,1,1-Trichloroethane	< 27	27		ug/m3	1	5/17/2017 11:58:00 AM
1,1,2,2-Tetrachloroethane	< 34	34		ug/m3	1	5/17/2017 11:58:00 AM
1.1.2-Trichloroethane	< 27	27		ug/m3	1	5/17/2017 11:58:00 AM
1,1-Dichloroethane	< 20	20		ug/m3	1	5/17/2017 11:58:00 AM
1,1-Dichloroethene	25	20		ug/m3	1	5/17/2017 11:58:00 AM
1,2,4-Trichlorobenzene	< 37	37		սց/m3	1	5/17/2017 11:58:00 AM
1,2,4-Trimethylbenzene	< 25	25		ug/m3	1	5/17/2017 11:58:00 AM
1,2-Dibromoethane	< 38	38		ug/m3	1	5/17/2017 11:58:00 AM
1,2-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 11:58:00 AM
1,2-Dichloroethane	73	20		ug/m3	1	5/17/2017 11:58:00 AM
1,2-Dichloropropane	61	23		ug/m3	1	5/17/2017 11:58:00 AM
1,3,5-Trimethylbenzene	< 25	25		ug/m3	1	5/17/2017 11:58:00 AM
1,3-butadiene	< 11	11		ug/m3	1	5/17/2017 11:58:00 AM
1,3-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 11:58:00 AM
1,4-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 11:58:00 AM
1,4-Dioxane	< 36	36		ug/m3	1	5/17/2017 11:58:00 AM
2,2,4-trimethylpentane	< 23	23		ug/m3	1	5/17/2017 11:58:00 AM
4-ethyltoluene	< 25	25		ug/m3	1	5/17/2017 11:58:00 AM
Acetone	20	24	J	ug/m3	1	5/17/2017 11:58:00 AM
Allyl chloride	< 16	16		ug/m3	1	5/17/2017 11:58:00 AM
Benzene	< 16	16		ug/m3	1	5/17/2017 11:58:00 AM
Benzyl chloride	< 29	29		ug/m3	1	5/17/2017 11:58:00 AM
Bromodichloromethane	< 33	33		ug/m3	1	5/17/2017 11:58:00 AM
Bromoform	< 52	52		ug/m3	1	5/17/2017 11:58:00 AM
Bromomethane	< 19	19		ug/m3	1	5/17/2017 11:58:00 AM
Carbon disulfide	< 16	16		ug/m3	1	5/17/2017 11:58:00 AM
Carbon tetrachloride	< 31	31		ug/m3	1	5/17/2017 11:58:00 AM
Chlorobenzene	< 23	23		ug/m3	1	5/17/2017 11:58:00 AM
Chloroethane	< 13	13		ug/m3	1	5/17/2017 11:58:00 AM
Chloroform	7300	980		ug/m3	40	5/17/2017 6:11:00 PM
Chloromethane	< 10	10		ug/m3	1	5/17/2017 11:58:00 AM
cis-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 11:58:00 AM
cis-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 11:58:00 AM
Cyclohexane	19	17		ug/m3	1	5/17/2017 11:58:00 AM
Dibromochloromethane	< 43	43		ug/m3	1	5/17/2017 11:58:00 AM
Ethyl acetate	< 36	36		ug/m3	1	5/17/2017 11:58:00 AM
Ethylbenzene	< 22	22		ug/m3	1	5/17/2017 11:58:00 AM
Freon 11	< 28	28		սց/m3	1	5/17/2017 11:58:00 AM
Freon 113	< 38	38		ug/m3	1	5/17/2017 11:58:00 AM
Freon 114	< 35	35		ug/m3	1	5/17/2017 11:58:00 AM

Qualifiers:

Page 1 of 28

^{*} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-001A Date: 22-Jun-17

Client Sample ID: WAT-SV04-050817

Tag Number: 646.80 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		тс	-15			Analyst: WD
Freon 12	< 25	25		ug/m3	1	5/17/2017 11:58:00 AM
Heptane	< 20	20		ug/m3	1	5/17/2017 11:58:00 AM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/17/2017 11:58:00 AM
Hexane	< 18	18		ug/m3	1	5/17/2017 11:58:00 AM
Isopropyl alcohol	< 12	12		ug/m3	1	5/17/2017 11:58:00 AM
m&p-Xylene	< 43	43		ug/m3	1	5/17/2017 11:58:00 AM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/17/2017 11:58:00 AM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/17/2017 11:58:00 AM
Methyl Isobutyl Ketone	7.9	41	J	ug/m3	1	5/17/2017 11:58:00 AM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/17/2017 11:58:00 AM
Methylene chloride	16	17	J	ug/m3	1	5/17/2017 11:58:00 AM
o-Xylene	< 22	22		ug/m3	1	5/17/2017 11:58:00 AM
Propylene	7.5	8.6	J	ug/m3	1	5/17/2017 11:58:00 AM
Styrene	< 21	21		ug/m3	1	5/17/2017 11:58:00 AM
Tetrachloroethylene	63	34		աց/m3	1	5/17/2017 11:58:00 AM
Tetrahydrofuran	< 15	15		ug/m3	1	5/17/2017 11:58:00 AM
Toluene	< 19	19		ug/m3	1	5/17/2017 11:58:00 AM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 11:58:00 AM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 11:58:00 AM
Trichloroethene	130	27		ug/m3	1	5/17/2017 11:58:00 AM
Vinyl acetate	< 18	18		ug/m3	1	5/17/2017 11:58:00 AM
Vinyl Bromide	< 22	22		ug/m3	1	5/17/2017 11:58:00 AM
Vinyl chloride	< 13	13		սց/m3	1	5/17/2017 11:58:00 AM
OW LEVEL SULFURS BY TO-15		TO-	15			Analyst: WD
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 12:19:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/16/2017 12:19:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 12:19:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 12:19:00 PM
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 12:19:00 PM
Hydrogen Sulfide	3700	70		ug/m3	10	5/16/2017 9:38:00 PM
Isopropyl mercaptan	4.8	15	j	ug/m3	1	5/16/2017 12:19:00 PM
Methyl mercaptan	3.3	9.8	j	ug/m3	1	5/16/2017 12:19:00 PM

O	11	a	li	fi	ĊŦ	57.2

Quantitation Limit

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¹³ Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated,

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

Ë Estimated Value above quantitation range

J Analyte detected below quantitation limit

Not Detected at the Limit of Detection

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051707.D
Acq On : 17 May 2017 11:58 am
Sample : C1705036-001A
Misc : T015

MS Integration Params: rteint.p

Vial: 3 Operator: WD Inst : GCMS3 Multiplr: 1.00

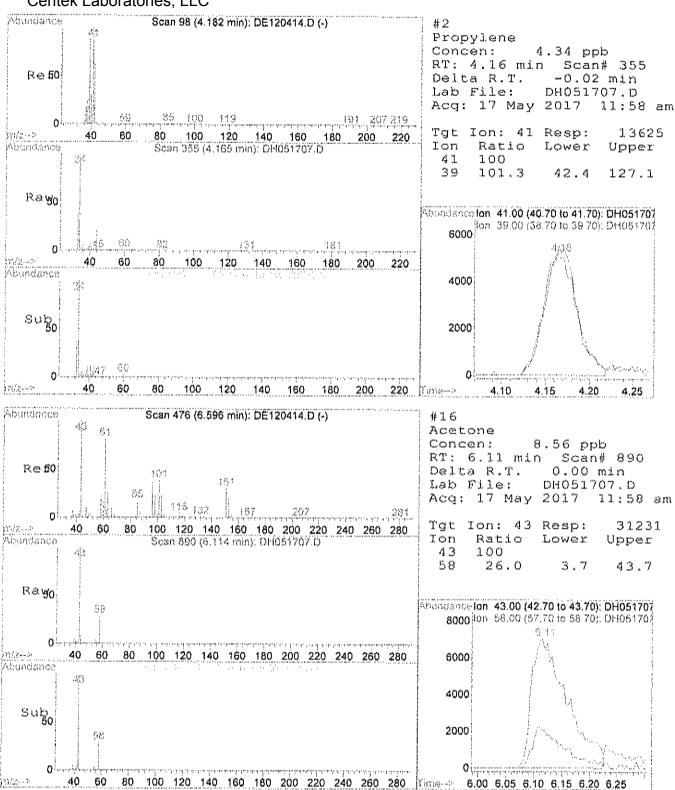
Quant Time: Jun 1 11:08 2017 Quant Results File: IO511T15.RES

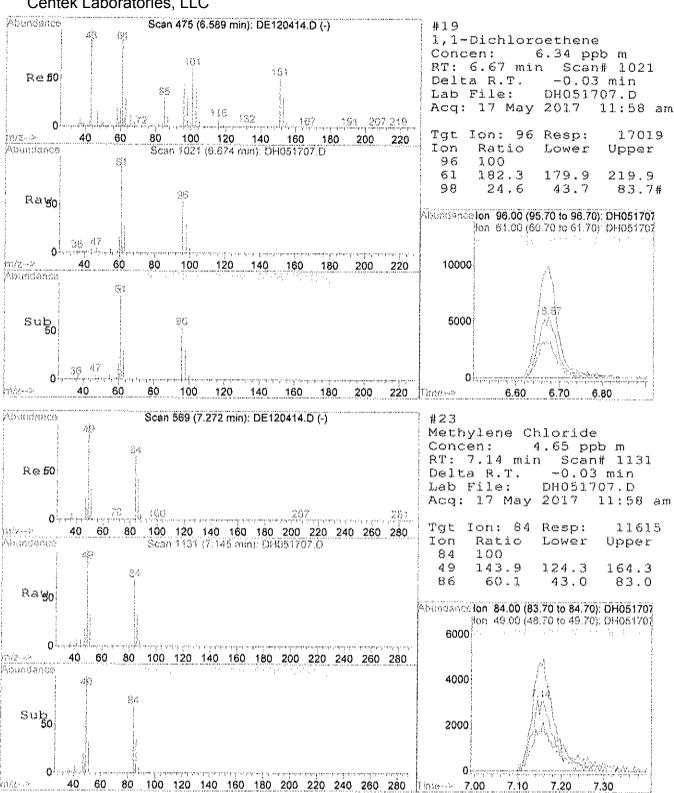
Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc U	nits	Dev(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.94 12.17 16.48	128 114 117		50.00 50.00 50.00	dqq	
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.94 Range 70				dqq 89	
Target Compounds 2) Propylene 16) Acetone 19) 1,1-Dichloroethene 23) Methylene Chloride 24) Carbon disulfide 33) Chloroform 36) 1,2-Dichloroethene 38) Carbon Tetrachloride 39) Cyclohexane 43) Trichloroethene 44) 1,2-Dichloropropane	4.16 6.11 6.67 7.14 7.34 10.09 11.22 11.54 11.58 12.78 12.89	62 117 56 130 63	31231 17019m 11615m 8111m 17878895 78829 14712 34741 108967 62210	8.56 4.65 1.11 2572.84 17.95 1.93 5.65 24.17 13.22	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Qvalue 82 95 98 99 99 97 99
48) Methyl Isobutyl Ketone 55) Tetrachloroethylene 60) m&p-Xylene	13.88 15.63 16.92	43 164	18645 48600 9341m	1.92 9.29	dqq dqq	93 99

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Quantitation Report





Centek Laboratories, LLC Abundance Scan 529 (6.981 min); DE120414,D (-) #24 Carbon disulfide 1.11 ppb m Concen: RT: 7.34 min Scan# 1177 Re 50 Delta R.T. -0.00 min Lab File: DH051707.D Acq: 17 May 2017 11:58 am 36 Tgt Ion: 76 Resp: 8111 100 120 140 160 180 200 220 40 60 80 Ion Ratio Lower Scan 1177 (7.341 min): DH051707 D Upper **И**Оридистия поста 76 100 78 4.5 0.0 29.3 Rayo 40 Abundancolon 76,00 (75,70 to 76,70); DH051707 for 78.00 (77.70 to 78.70) DH051707 104 2.34 40 60 80 100 120 140 160 180 200 220 Appadance 1000 Sub 50 500 AC. 104 100 120 140 160 180 200 220 7.20 7,50 T (636----7.30 Abundance Scan 871 (9.467 min): DE120414.D (-) #33 Chloroform Concen: 2572.84 ppb RT: 10.09 min Scan# 1820 $R \oplus 50$: Delta R.T. -0.02 min Lab File: DH051707.D 47 Acq: 17 May 2017 11:58 am 13.6 Tgt Ion: 83 Resp:17878895 80 100 120 140 160 180 200 220 240 260 280 Ratio Nixishidehnök Ion Lower Upper Scan 1820 (10 091 min): DH051707 D 83 100 85 64.9 43.5 83.5 Rayo Abendancelon 83.00 (82.70 to 83.70); DH051707 5000000 fon 85.00 (84.70 to 85.70); DH05170 10.09 80 4000000 100 120 140 160 180 200 220 240 260 280 40 60 Abundance 3000000 2000000 Subo

1000000

80 100 120 140 160 180 200 220 240 260 280 Fine 9 9.90 10.00 10.10 10.20 10.30

0 ----

Centek Laboratories, LLC Woundance Scan 981 (10.267 min): DE120414.D (-) #36 1,2-Dichloroethane 17.95 ppb Concen: RT: 11.22 min Scan# 2085 Re 50 Delta R.T. -0.01 min Lab File: DH051707.D Acq: 17 May 2017 11:58 am 0,0 40 Tgt Ion: 62 Resp: 60 80 100 78829 120 140 160 180 200 Philosophiamase Scan 2085 (11.224 min): DH051707,D Ion Ratio Lower Upper 62 100 33.1 64 12.8 52.8 Rayo. 49 Abundancelon 62,00 (61,70 to 62,70): DH051707 ton 64.00 (63.70 to 64.70); DH051702 98 25000 83 11,22 m/z:...> 40 60 80 100 200 20000 Abundanca 15000 Sub 50 10000 40 5000 98 80 100 60 120 140 160 180 200 11.10 220 Throc---11.20 11.30 11.40 /Usariosanoa Scan 941 (9.976 min): DE120414.D (-) #38 Carbon Tetrachloride Concen: 1.93 ppb RT: 11.54 min Scan# 2160 Re 50 ~0.00 min Delta R.T. DH051707.D Lab File: Acq: 17 May 2017 11:58 am 219 100 120 140 160 180 200 220 240 260 280 Tgt Ion:117 Resp: 40 60 14712 Abunganco Ion Ratio Scan 2160 (11.544 min): DH051707.D Lower Upper 117 100 119 94.8 74.2 114.2 Rayo 34 Abundancelor 117.00 (116.70 to 117.70); DH051 6000 (lon 119.00 (118.70 to 119.70): DH051 100 120 140 160 180 200 220 240 260 280 80 Abundance 4000 Տս<u>ե</u> 50 2000 2578

43

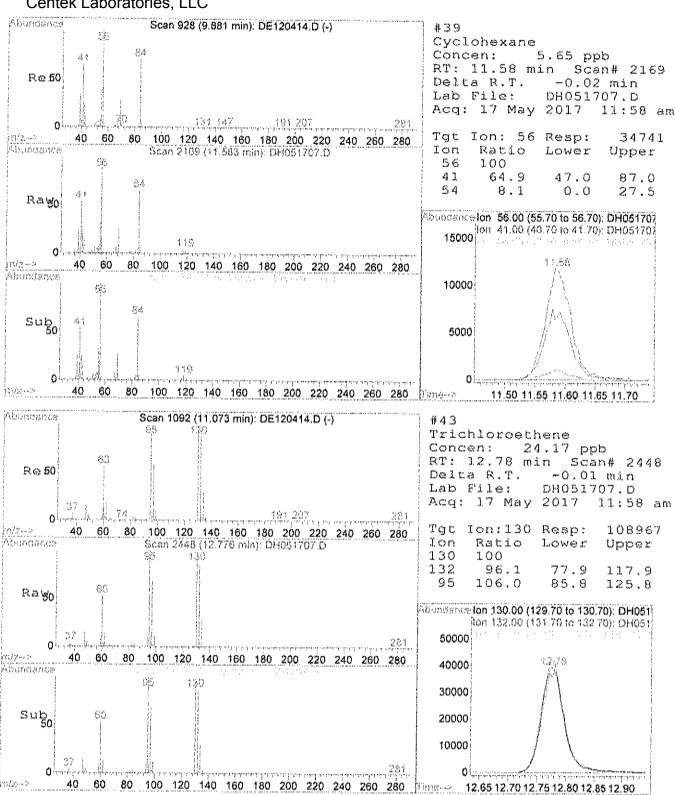
60

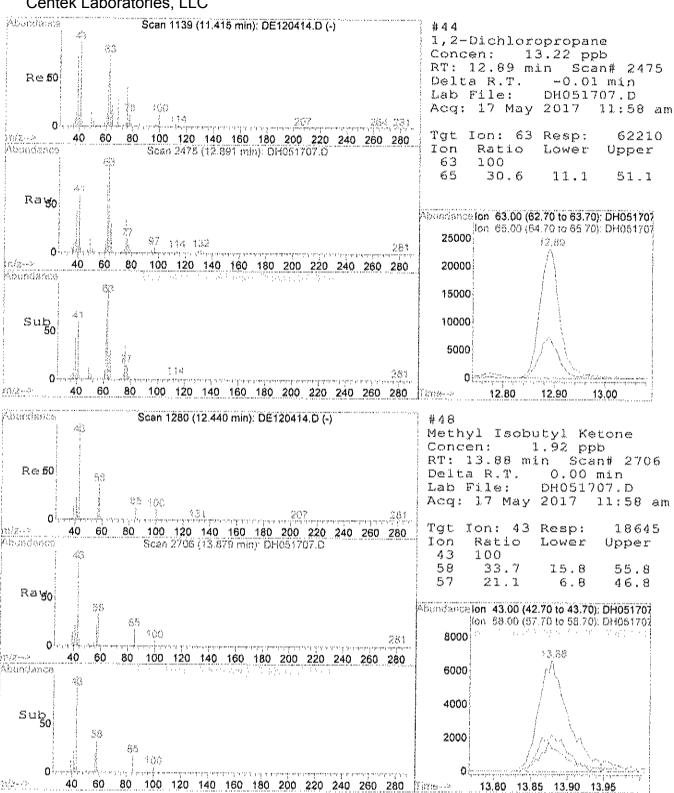
80 100 120 140 160 180 200 220 240 260 280

281

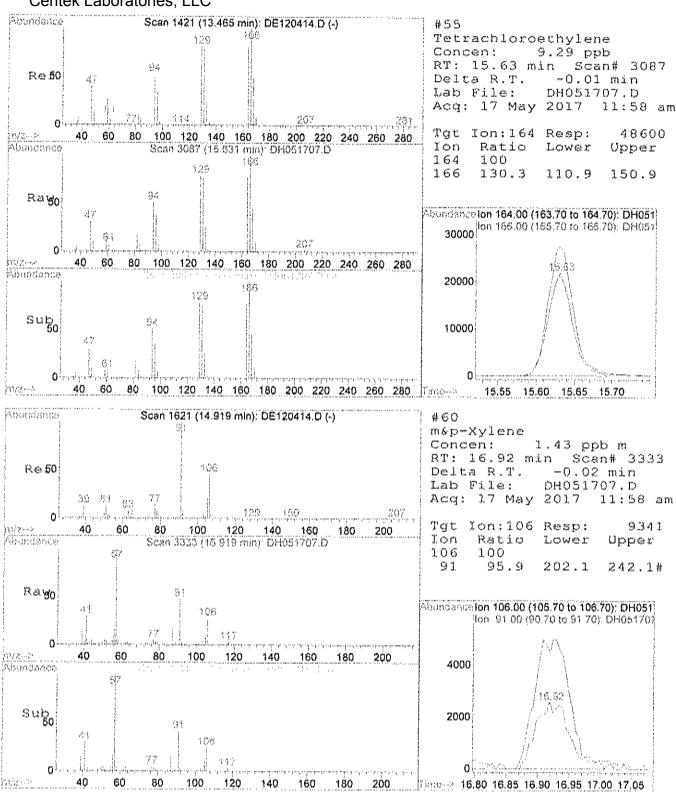
Firms---

11.45 11.50 11.55 11.60 11.65





13.80 13.85 13.90 13.95



Centek Laboratories, LLC_{LSC} Area Percent Report

Data File : C:\HPCHEM\1\DATA2\DH051707.D

Acq On : 17 May 2017 11:58 am Sample : C1705036-001A Misc : TO15

MS Integration Params: LSCINT.P

Vial: 3 Operator: WD Inst : GCMS3

Multiple: 1.00

Method : C:\HPCHEM\1\METHODS\T0511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Smoothing : ON Filtering: 5

Filtering: 5

Sampling : 1 Min Area: 3 % of largest Peak
Max Peaks: 100
Peak Location: TOP

Start Thrs: 0.2 Stop Thrs : 0

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
	w					w -			
1,	4.080	314	327	397	rVB	2911056	9839000	22,94%	16.590%
2	9.945	1767	1786	1801	rBV2	202878	725394	1.69%	1.223%
3	10.091	1802	1820	1864	rVV2	10916487	42885063	100.00%	72.309%
4	12.173	2292	2307	2334	rBV	511006	1405990	3.26%	2.371%
5	12.776	2434	2448	2462	rBV2	231235	621133	1.45%	1.0478
6	15.421	3038	3047	3066	πBV	168559	448401	1.05%	0.756%
7	16.479	3239	3249	3267	rBV	615663	1463014	3.41%	2.467%
8	17.945	3522	3529	3543	rVВ	632763	1276669	2.98%	2.153%
9	18.154	3560	3569	3593	rBV	239541	643764	1.50%	1.085%

Sum of corrected areas: 59308428

DH051707.D I0511T15.M Mon Jun 19 13:51:36 2017

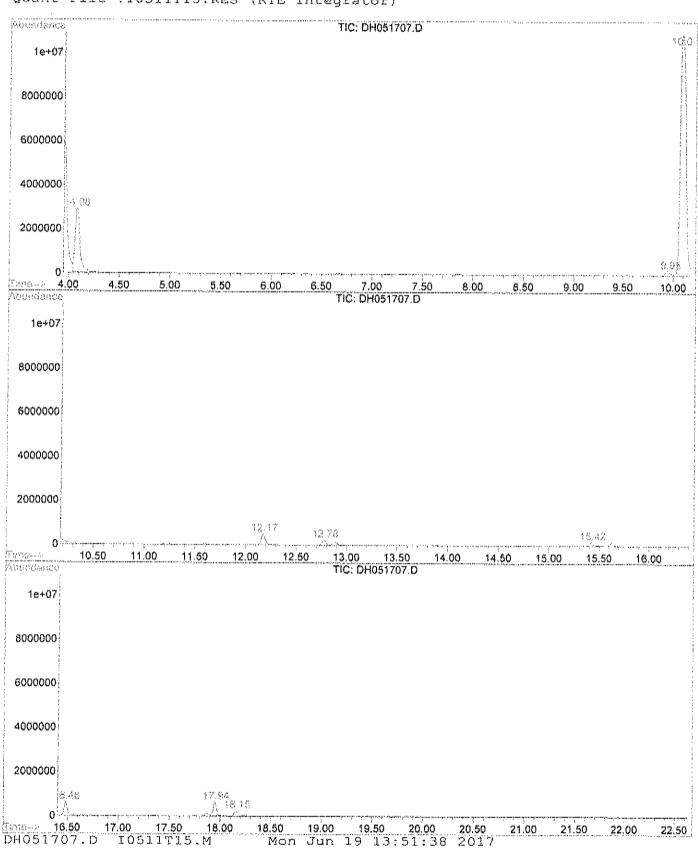
LSC Report - Integrated Chromatogram

File: C:\HPCHEM\1\DATA2\DH051707.D

Operator : WD
Acquired : 17 May 2017 11:58 am using AcqMethod NEW1
Instrument : GCMS3

Misc Info : TO15 Vial Number: 3

Quant File : IO511T15.RES (RTE Integrator)



Centek Laboratories, LLC Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051707.D Vial: 3 Acq On : 17 May 2017 11:58 am Operator: WD Sample : C1705036-001A Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L ************************ Peak Number 1 Hydrogen sulfide Concentration Rank R.T. EstConc Area Relative to ISTD 4.08 678.18 ppb 9839000 Bromochloromethane Hit# of 5 Tentative ID MW MolForm CAS# Qual 1 Hydrogen sulfide \$\$ Dihydrogen mono 34 H28 007783-06-4 78

 2 Phosphine \$\$ Hydrogen phosphide \$\$ 34 H3P
 007803-51-2 7

 3 Methane, fluoro- \$\$ Fluoromethane \$ 34 CH3F
 000593-53-3 3

 4 2-Amino-5-chloropyrimidine \$\$ 2-Pyr 130 C4H5C1N3
 005428-89-7 1

 | | m/z 33.95 100.00% Scan 327 (4.080 min): DH051707.D (-) 8000 6000 4000 2000 3.80 4.00 4.20 4.40 m/z 32.95 40.9 40.93% 20 40 60 80 100 120 140 160 180 200 220 #20. Hydrogen sutfice \$\$ Dihydrogen monosulfide \$\$ Dihyd Acusticacion 8000 6000 4000 3,60 4.00 4.20 4.40 m/z 35.90 5.3 2000 20 40 60 80 100 120 140 160 180 200 220 Abondance 8000 3.80 4.00 2 34.90 4.20 4.40 6000 m/z3.018 4000 2000 40 60 80 100 120 140 160 180 200 220 #19: Methane, fluoro- \$5 Fluoromethane \$5 Freon 41 \$\$ Me 3.80 4.00 4.20 4.40 8000 m/z 63.80 0.10% 6000 4000 2000 20 40 60 80 100 120 140 160 180 200 220 3.80 4.00 4.20

Data File : C:\HPCHEM\1\DATA2\DH051707.D Vial: 3 : 17 May 2017 11:58 am : C1705036-001A : T015 Acq On Operator: WD Sample Inst : GCMS3 Misc Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 2 Cyclotrisiloxane, hexamethyl- Concentration Rank R.T. EstConc Area Relative to ISTD 15.42 15.32 ppb 448401 Chlorobenzene-d5 Hit# of 5 Tentative ID MW MolForm CAS# Oual 1 Cyclotrisiloxane, hexamethyl- 222 C6H18O3Si3 000541-05-9 80 Scan 3047 (15.421 min): DH051707.D (-) m/z 206.90 100.00% 8000 6000 4000 2000 96 133 35 75 115 133 48163 15.00 15.20 15.40 15.60 15.80 m/z 207.85 21.34% 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 #122687. Cyclotrisiloxane, hexamethy! 8000 6000 4000 15.00 15.20 15.40 15.60 15.80 m/z 95.90 12.778 2000 96 3 | 115 | 3 163 191 | 222 3 | 115 | 3 163 | 222 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 8000 6000 15.00 15.20 15.40 15.60 15.80 m/z 208.90 12.66% 4000 2000 73 105 130 73 105 153 109 1233230 33 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 Abundance #122088: Cyclotrisiloxane, hexamethyl-15.00 15.20 15.40 15.60 15.80 8000 m/z 190.90 9.99% 6000 4000 2000 133 163 197 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 15.00 15.20 15.40 15.60 15.80

Data File : C:\HPCHEM\1\DATA2\DH051707.D Vial: 3 Acq On : 17 May 2017 11:58 am Sample : C1705036-001A Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT, P Quant Method : C:\HPCHEM\1\METHODS\T0511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L *********************** Peak Number 3 Cyclotetrasiloxane, octamethyl Concentration Rank R.T. EstConc Area Relative to ISTD 18.15 22.00 ppb 643764 Chlorobenzene-d5 16 48 Hit# of 5 Tentative ID MW MolForm CAS# Oual 1 Cyclotetrasiloxane, octamethyl- \$\$ 296 C8H24O4Si4 000556-67-2 86 2 7H-Dibenzo[b,g]carbazole, 7-methyl- 281 C21H15N 003557-49-1 59 3 5H-Naphtho[2,3-c]carbazole, 5-methy 281 C21H15N 100025-44-3 45 4 Cyclotetrasiloxane, octamethyl- 296 C8H24O4S14 000556-67-2 43 500036866 Scan 3568 (18.149 mln): DH051707.D(-) m/z 281.00 100.00% 8000 6000 4000 2000 193 1 207 221 235 249 265 1 260 280 45 59 71 87 103 119 133 147 163 177 17.80 18.00 18.20 18.40 m/z 282,00 40 60 80 100 120 140 160 180 200 220 240 260 280 Abundanco #70157: Cyclotetrasiloxane, octamethyl- \$3 Octamethylcyclol 8000 6000 4000 17.80 18.00 18.20 18.40 m/z 282.90 2000 hooles-----60 80 100 120 140 160 180 200 220 240 260 280 Amagianga 28: 8000 6000 17.80 18.00 18.20 18.40 m/z 192.90 14.048 4000 2000 266 133 40 60 80 100 100 40 60 80 100 120 140 160 180 200 220 240 260 280 Abandance #65619: 5H-Naphtho[2,3-c]carbazole, 5-methyl-284 17.80 18.00 18.20 18.40 8000 m/z72.95 8.47% 6000 4000 2000 206 where $t_{\rm constant}$ is the property of the

Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 17 May 2017 11:58 am Data File: C:\HPCHEM\1\DATA2\DHOS1707.D

Name: C1705036-001A Misc: TO15

Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstConc Un	its Area	IntStd	ISRT	ISArea	ISConc
Hydrogen sulfide Cyclotrisiloxane, he Cyclotetrasiloxane,	4.08 15.42 18.15	678.2 pp 15.3 pp 22.0 pp	b 448401	ISTD01 ISTD03 ISTD03	16.48	725394 1463010 1463010	50.0
DH051707.D 10511T1	5.M	Mon Jun	19 13:51:44	2017			

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051717.D
Acq On : 17 May 2017 6:11 pm
Sample : C1705036-001A 40X
Misc : T015

Operator: WD Inst : GCMS3

Vial: 3

Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: Jun 1 11:42 2017

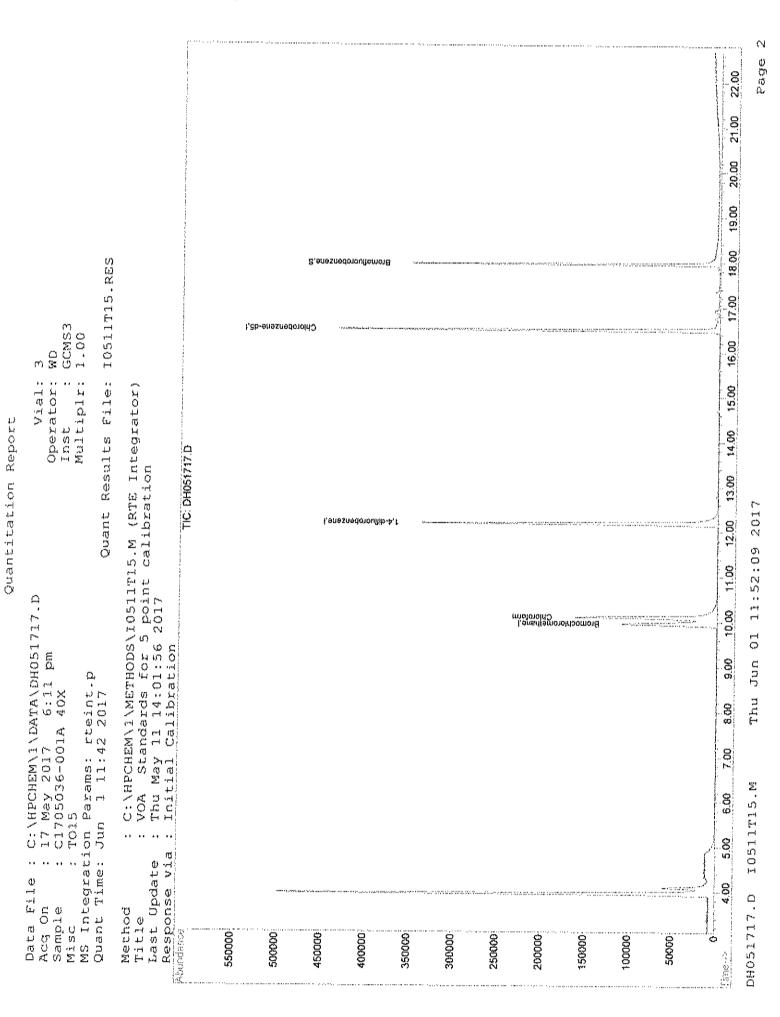
Quant Results File: IO511T15.RES

Quant Method : C:\MPCHEM\1\METHODS\10511T15.M (RTE Integrator)

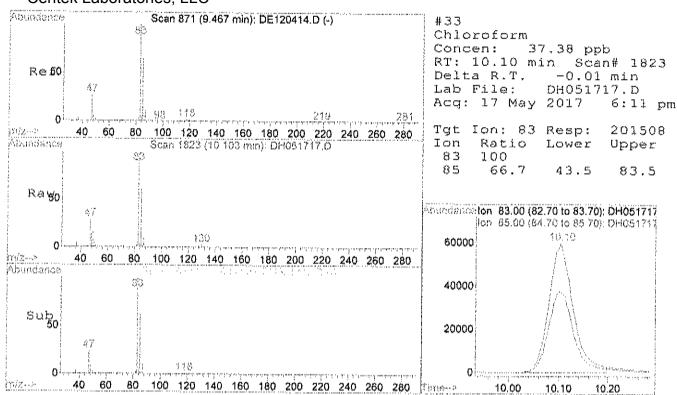
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc U	nits	Dev(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.95 12.19 16.49	128 114 117	75310m () 393431 307268	50.00 50.00 50.00	dqq	0.00 0.00 0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70	95 - 130	146241 Recover	33.55 y =		
Target Compounds 33) Chloroform	10.10	83	201508	37.38	dqq	Qvalue 96

^{(#) =} qualifier out of range (m) = manual integration DH051717.D I0511T15.M Thu Jun 01 11:52:07 2017



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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

C1705036-002A

Date: 22-Jun-17

Client Sample ID: WAT-SV01-050817

Tag Number: 573.48

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Ç	ual Units	ÐF	Date Analyzed
FIELD PARAMETERS		FLO			Analyst:
Lab Vacuum in	-5		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METH	OD 3C		Analyst: WD
Carbon dioxide	0.0260	1.90	J %	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	NO	0.580	%	1	5/15/2017
Nitrogen	74.2	8.30	%	1	5/15/2017
Oxygen	20.3	0.880	%	1	5/15/2017
5PPB BY METHOD TO15		TO-1	5		Analyst: WD
1.1,1-Trichloroethane	< 5.0	5.0	₽₽₽V	1	5/17/2017 12:34:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
1,1-Dichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,1-Dichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,2-Dibromoethane	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,2-Dichloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
1,2-Dichloropropane	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
1,3-butadiene	< 5.0	5.0	ppb∨	1	5/17/2017 12:34:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
1,4-Dioxane	< 10	10	ppbV	1	5/17/2017 12:34:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	ppb∨	1	5/17/2017 12:34;00 PM
4-ethyltoluene	< 5.0	5.0	Vdqq	1	5/17/2017 12:34:00 PM
Acetone	5.4	10	J ppbV	1	5/17/2017 12:34:00 PM
Allyl chloride	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Benzene	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Benzyl chloride	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Bromodichloromethane	< 5.0	5.0	ррь∨	1	5/17/2017 12:34:00 PM
Bromoform	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Bromomethane	< 5.0	5.0	Vđạq	1	5/17/2017 12:34:00 PM
Carbon disuffide	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Carbon tetrachloride	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Chlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 12:34:00 PM
Chloroethane	< 5.0	5.0	₽₽bV	1	5/17/2017 12:34:00 PM
Chloroform	6.1	5.0	ppbV	1	5/17/2017 12:34:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project: Former Hampshire

Lab ID:

C1705036-002A

Date: 22-Jun-17

Client Sample ID: WAT-SV01-050817

Tag Number: 573.48 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limi	Qı	al Units	DF	Date Analyzed
5PPB BY METHOD TO15		Ţ¢	D-15			Analyst: WD
Chloromethane	< 5.0	5.0		Vdqq	1	5/17/2017 12:34:00 PN
cis-1,2-Dichloroethene	< 5.0	5.0		∨dqq	1	5/17/2017 12:34:00 PN
cis-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PN
Cyclohexane	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PN
Dibromochloromethane	< 5,0	5.0		ppbV	1	5/17/2017 12:34:00 PA
Ethyl acetate	< 10	10		Vdqq	1	5/17/2017 12:34:00 PM
Ethylbenzene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PN
Freon 11	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Freon 113	< 5.0	5.0		ppbV	1	,
Freon 114	< 5.0	5.0		Vđạq	1	5/17/2017 12:34:00 PM
Freon 12	< 5.0	5.0		ρρόν	1	5/17/2017 12:34:00 PM
Heptane	< 5.0	5.0		ppbV	·	5/17/2017 12:34:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Hexane	< 5.0	5.0			1	5/17/2017 12:34:00 PM
Isopropyl alcohol	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
m&p-Xylene	< 10	10		PpbV	1	5/17/2017 12:34:00 PM
Methyl Butyl Ketone	< 10	10		Vdqq	1	5/17/2017 12:34:00 PM
Methyl Ethyl Ketone	< 10	10		ppbV	1	5/17/2017 12:34:00 PM
Methyl Isobutyl Ketone	< 10	10		Vdqq	1	5/17/2017 12:34:00 PM
Methyl tert-butyl ether	< 5.0	5.0		Vdqq	1	5/17/2017 12:34:00 PM
Methylene chloride	5.4	5.0 5.0		ppbV	1	5/17/2017 12:34:00 PM
o-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Propylene	< 5.0			ppbV	1	5/17/2017 12:34:00 PM
Styrene	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Tetrachloroethylene	< 5.0	5.0		ppb∨	1	5/17/2017 12:34:00 PM
Tetrahydrofuran	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Toluene	< 5.0	5.0		Vdqq	1	5/17/2017 12:34:00 PM
trans-1,2-Dichloroethene	< 5.0	5,0		ppbV	1	5/17/2017 12:34:00 PM
trans-1,3-Dichloropropene		5.0		ppb∨	1	5/17/2017 12:34:00 PM
Trichloroethene	< 5.0	5.0		Vdqq	1	5/17/2017 12:34:00 PM
Vinyl acetate	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
√inyl Bromide	< 5.0	5.0		ppbV	1	5/17/2017 12:34:00 PM
Vinyl chloride	< 5.0	5.0		Vdqq	1	5/17/2017 12:34:00 PM
Surr: Bromofluorobenzene	< 5.0	5.0		Vdqq	1	5/17/2017 12:34:00 PM
TIC: Cyclotetrasiloxane,	80.7	73.7-124		%REC	1	5/17/2017 12:34:00 PM
octamethyl- \$\$ Octam	10	0	ИL	ppb∨	1	5/17/2017 12:34:00 PM
TIC: Cyclotrisiloxane, hexamethyl	12	0	JN	ppbV		E/47/0045 40 04 64 ===
TIC: Hydrogen sulfide \$\$)ihydrogen monosulfi	26	o	JN	ppbV	1	5/17/2017 12:34:00 PM 5/17/2017 12:34:00 PM
W LEVEL SULFURS BY TO-15		TO-	5			Analyst: WD

Qualifiers:

- Quantitation Limit
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ML Non-routine analyte, Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- Analyte detected below quantitation limit j
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-002A

Date: 22-Jun-17

Client Sample ID: WAT-SV01-050817

Tag Number: 573.48 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15	1 110	TO-	15			Analyst: WD
1-Propanethiol	< 5.0	5.0		ppbV	1	5/16/2017 12:54:00 PM
Carbon disulfide	< 5,0	5.0		ppb∨	1	5/16/2017 12:54:00 PM
Carbonyl sulfide	< 5.0	5.0		₽₽bV	1	5/16/2017 12:54:00 PM
Dimethyl sulfide	< 5.0	5.0		₽₽bV	1	5/16/2017 12:54:00 PM
Ethyl mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 12:54:00 PM
Hydrogen Sulfide	76	5.0		₽₽₽V	1	5/16/2017 12:54:00 PM
Isopropyl mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 12:54:00 PM
Methyl mercaptan	< 5.0	5.0		ppb∨	1	5/16/2017 12:54:00 PM
Surr: Bromofluorobenzene	147	70-130	S	%REC	1	5/16/2017 12:54:00 PM

Qualifiers:

Quantitation Limit

B Analyte detected in the associated Method Blank

14 Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

C1705036-002A

Date: 22-Jun-17

Client Sample ID: WAT-SV01-050817

Tag Number: 573.48

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qua	l Units	ÐF	Date Analyzed
5PPB BY METHOD TO15		TO-15		•	Analyst: WD
1,1,1-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 12:34:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	ug/m3	1	5/17/2017 12:34:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 12:34:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 12:34:00 PM
1,1-Dichloroethene	< 20	20	սց/m3	1	5/17/2017 12:34:00 PM
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/17/2017 12:34:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 12:34:00 PM
1,2-Dibromoethane	< 38	38	սց/m3	1	5/17/2017 12:34:00 PM
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 12:34:00 PM
1,2-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 12:34:00 PM
1,2-Dichloropropane	< 23	23	ug/m3	1	5/17/2017 12:34:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 12:34:00 PM
1,3-butadiene	< 11	11	սց/m3	1	5/17/2017 12:34:00 PM
1,3-Dichlorobenzene	< 30	30	սց/m3	1	5/17/2017 12:34:00 PM
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 12:34:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/17/2017 12:34:00 PM
2,2,4-trimethylpentane	< 23	23	սց/m3	1	5/17/2017 12:34:00 PM
4-ethyltoluene	< 25	2 5	ug/m3	1	5/17/2017 12:34:00 PM
Acetone	15	24 J	ug/m3	1	5/17/2017 12:34:00 PM
Allyl chloride	< 16	16	ug/m3	1	5/17/2017 12:34:00 PM
Benzene	< 16	16	ug/m3	1	5/17/2017 12:34:00 PM
Benzyl chloride	< 29	29	սց/m3	1	5/17/2017 12:34:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/17/2017 12:34:00 PM
Bromoform	< 52	52	սց/m3	1	5/17/2017 12:34:00 PM
Bromomethane	< 19	19	ug/m3	1	5/17/2017 12:34:00 PM
Carbon disulfide	< 16	16	ug/m3	1	5/17/2017 12:34:00 PM
Carbon tetrachloride	< 31	31	ug/m3	1	5/17/2017 12:34:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/17/2017 12:34:00 PM
Chloroethane	< 13	13	սց/m3	1	5/17/2017 12:34:00 PM
Chloraform	30	24	ug/m3	1	5/17/2017 12:34:00 PM
Chloromethane	< 10	10	ug/m3	1	5/17/2017 12:34:00 PM
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 12:34:00 PM
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/17/2017 12:34:00 PM
Cyclohexane	< 17	17	ug/m3	1	5/17/2017 12:34:00 PM
Dibromochloromethane	< 43	43	ug/m3	1	5/17/2017 12:34:00 PM
Ethyl acetate	< 36	36	սց/m3	1	5/17/2017 12:34:00 PM
Ethylbenzene	< 22	22	ug/m3	1	5/17/2017 12:34:00 PM
Freon 11	< 28	28	ug/m3	1	5/17/2017 12:34:00 PM
Freon 113	< 38	38	ug/m3	1	5/17/2017 12:34:00 PM
Freon 114	< 35	35	ug/m3	1	5/17/2017 12:34:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-002A

Date: 22-Jun-17

Client Sample ID: WAT-SV01-050817

Tag Number: 573.48

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual Units	DF	Date Analyzed
5PPB BY METHOD TO15		ТО	-15		Analyst: WD
Freon 12	< 25	25	ug/m3	1	5/17/2017 12:34:00 PM
Heptane	< 20	20	ug/m3	1	5/17/2017 12:34:00 PA
Hexachloro-1,3-butadiene	< 53	53	ug/m3	1	5/17/2017 12:34:00 PA
Hexane	< 18	18	ug/m3	1	5/17/2017 12:34:00 PN
Isopropyl alcohol	< 12	12	ug/m3	1	5/17/2017 12:34:00 PN
m&p-Xylene	< 43	43	ug/m3	1	5/17/2017 12:34:00 PN
Methyl Butyl Ketone	< 41	41	ug/m3	1	5/17/2017 12:34:00 PN
Methyl Ethyl Ketone	< 29	29	ug/m3	1	5/17/2017 12:34:00 PM
Methyl Isobutyl Ketone	< 41	41	ug/m3	1	5/17/2017 12:34:00 PM
Methyl tert-butyl ether	< 18	18	ug/m3	1	5/17/2017 12:34:00 PA
Methylene chloride	19	17	ug/m3	1	5/17/2017 12:34:00 PM
o-Xylene	< 22	22	ug/m3	1	5/17/2017 12:34:00 PN
Propylene	< 8.6	8.6	սց/m3	1	5/17/2017 12:34:00 PM
Styrene	< 21	21	ug/m3	1	5/17/2017 12:34:00 PN
Tetrachioroethylene	< 34	34	ug/m3	1	5/17/2017 12:34:00 PA
Tetrahydrofuran	< 15	15	ug/m3	1	5/17/2017 12:34:00 FA
Toluene	< 19	19	ug/m3	1	5/17/2017 12:34:00 PM
trans-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 12:34:00 PN
trans-1,3-Dichloropropene	< 23	23	ug/m3	1	5/17/2017 12:34:00 PM
Trichloroethene	< 27	27	ug/m3	1	5/17/2017 12:34:00 PN
Vinyl acetate	< 18	18	ug/m3	1	5/17/2017 12:34:00 PA
Vinyl Bromide	< 22	22	ug/m3	1	5/17/2017 12:34:00 PN
Vinyl chloride	< 13	13	ug/m3	1	5/17/2017 12:34:00 PN
OW LEVEL SULFURS BY TO-15		TO-	15		Analyst: WD
1-Propanethiol	< 16	16	ug/m3	1	5/16/2017 12:54:00 PN
Carbon disulfide	< 16	16	ug/m3	1	5/16/2017 12:54:00 PN
Carbonyi sulfide	< 12	12	ug/m3	1	5/16/2017 12:54:00 PM
Dimethyl sulfide	< 19	19	ug/m3	1	5/16/2017 12:54:00 PA
Ethyl mercaptan	< 13	13	ug/m3	1	5/16/2017 12:54:00 PN
Hydrogen Sulfide	110	7.0	ug/m3	1	5/16/2017 12:54:00 PM
Isopropyl mercapian	< 16	16	ug/m3	1	5/16/2017 12:54:00 PN
Methyl mercaptan	< 9.8	9.8	ug/m3	1	5/16/2017 12:54:00 PM

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- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Quantitation Report (QT Revlewed)

Data File : C:\HPCHEM\1\DATA\DH051708.D Acq On : 17 May 2017 12:34 pm Sample : C1705036-002A Misc : T015 Vial: 4 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: Jun 1 11:11 2017

Quant Results File: 10511T15,RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

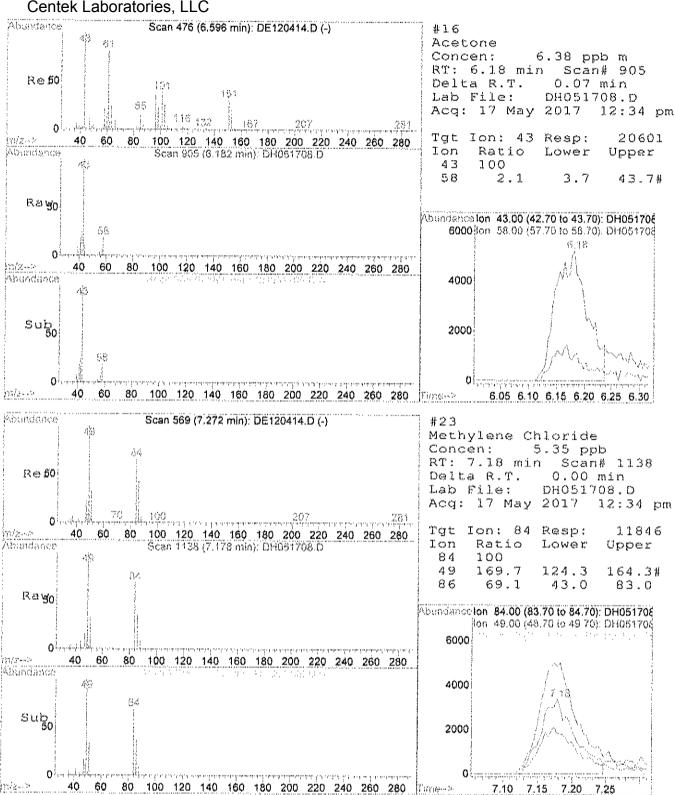
Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017 Response via : Initial Calibration DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc U	nits	Dev(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.96 12.18 16.48	128 114 117	85915m 4 <u>ي</u> ك 457645 359412	50.00 50.00 50.00	ppb	0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70		205757 Recover	40.36 Y **		0.00 72%
Target Compounds 16) Acetone 23) Methylene Chloride 33) Chloroform 55) Tetrachloroethylene 60) m&p-Xylene	6.18 7.18 10.11 15.63 16.93	43 84 83 164 106	20601m လျှော် 11846 37758 6928 6924m လု <u>ှ</u>	5.35 6.14 1.67	dqq	Qvalue # 83 97 96

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Report

Quantitation



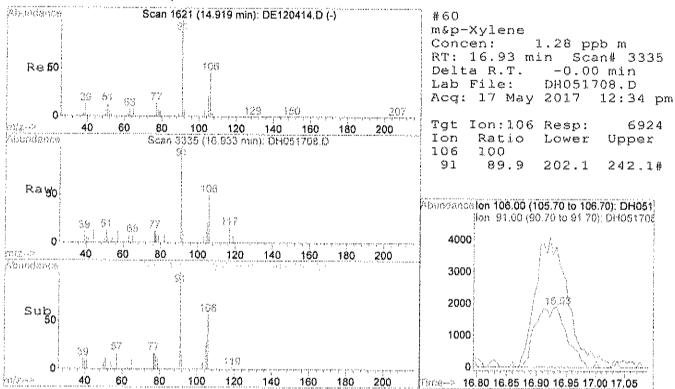
Centek Laboratories, LLC Авиновись Scan 871 (9.467 min): DE120414.D (-) #33 Chloroform 6.14 ppb Concen: RT: 10.11 min Scan# 1823 R ⊕ 50 Delta R.T. -0.01 min 4.7 Lab File: DH051708.D Acq: 17 May 2017 12:34 pm Tqt Ion: 83 Resp: 37758 971/z-> 80 100 120 140 160 180 200 220 240 260 280 Alamaiance Ion Ratio Lower Scan 1823 (10.106 min): DH051708.D Upper 8.3 100 85 61.5 43.5 83.5 Ray60 39 Abundance Ion 83.00 (82.70 to 83.70): DH051708 130 lon 85.00 (84.70 to 85.70); DH051708 10.11 10000 100 120 140 160 180 200 220 240 260 280 40 60 Abandance 5000 Subo 119 80 100 120 140 160 180 200 220 240 260 280 10.00 10.10 Thanesee 10.20 \$965414347643456 Scan 1421 (13,465 min): DE120414.D (-) #55 Tetrachloroethylene 129 Concen: 1.67 ppb RT: 15.63 min Scan# 3087 $R \approx 50$ Delta R.T. -0.00 min Lab File: DH051708.D Acq: 17 May 2017 12:34 pm Tgt Ion: 164 Resp: 6928 40 60 100 120 140 160 180 200 220 240 260 280 80 Asimust value mateix Scan 3087 (15 635 min): DM051708.D Ion Ratio Lower Upper 164 100 (建位 166 126.7 110.9 150.9 Rayo Abundance Ion 164,00 (163,70 to 164,70); DH051 Ion 166.00 (165.70 to 166.70): DH051 4000 40 60 80 100 120 140 160 180 200 220 240 260 280 Abundance 3000 233 2000 Sub 50 a^{α} 1000

40 60

100 120 140 160 180 200 220 240 260 280 figure 15.55

15.70

15.60



Centek Laboratories, LLC_{LSC} Area Percent Report

Data File : C:\HPCHEM\1\DATA2\DH051708.D Acq On : 17 May 2017 12:34 pm Sample : C1705036-002A Misc : T015 Vial: 4 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration

Smoothing : ON

Filtering: 5
Min Area: 3 % of largest Peak
Max Peaks: 100 Sampling : 1

Start Thrs: 0.2 Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

pea # 	R.T.	first scan	max scan	last scan	TY	peak height	corr. area	corr. % max.	% of total
1	4.093	321	331	351	rVB2	107948	282407	23.30%	5.411%
2	6.169	887	902	903	rBV2	8583	16769	1.38%	0.321%
3	6.182	903	905	920	rVB2	8074	15174	1.25%	0.291%
4	7.182	1123	1139	1151	rBV3	14550	51317	4.23%	0.983%
5	9.961	1772	1789	1808	rBV5	126374	536990	44.30%	10.290%
6	10.106	1818	1823	1842	rVB4	32104	89287	7.37%	1.711%
7	12.184	2291	2309	2331	rBV	375556	1107357	91.35%	21.219%
8	14.707	2884	2899	2908	rBV3	7680	19381	1.60%	0.371%
9	15.425	3036	3047	3063	rBV	106055	288630	23.81%	5.531%
10	15.635	3079	3087	3102	rVB3	24329	59473	4.91%	1.140%
11	16.488	3239	3250	3270	rBV	501755	1212272	100.00%	23.230%
12	16.755	3296	3301	3308	rV84	10008	20133	1.66%	0.386%
13	16.912	3320	3331	3334	rBV5	11229	24528	2.02%	0.470%
14	17.352	3408	3415	3424	rBV4	9820	21033	1.74%	0.403%
15	17.949	3520	3529	3542	rBV	511416	1048345	86.48%	20.088%
16	18.153	3561	3568	3582	rBV2	105402	250789	20.69%	4.806%
17	18.719	3669	3676	3685	rBV3	10538	24047	1.98%	0.461%
18	19.268	3768	3781	3785	rBV7	8947	23451	1.93%	0.449%
19	19.404	3801	3807	3815	rBV3	33533	66018	5.45%	1.265%
20	19.472	3816	3820	3827	rVV5	13433	27134	2.24%	0.520%
	19.530	3827	3831	3840	ะVB7	7724	19885	1.64%	0.381%
	19.897	3897	3901	3904	ะVV5	7968	14252	1.18%	0.273%

Sum of corrected areas: 5218672

DH051708.D I0511T15.M Mon Jun 19 13:54:37 2017

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA2\DH051708.D

Operator WD

17 May 2017 12:34 pm using AcqMethod NEWl GCMS3 Acquired

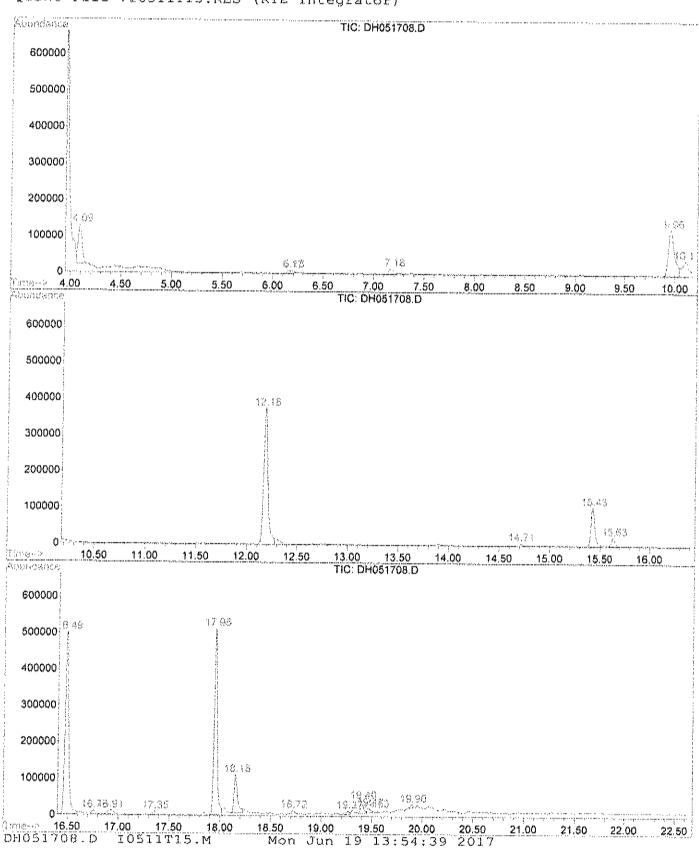
Instrument :

Sample Name: C1705036-002A

Misc Info : TO15

Vial Number: 4

Quant File : IO511T15.RES (RTE Integrator)



Data File : C:\HPCHEM\1\DATA2\DH051708.D Vial: 4 : 17 May 2017 12:34 pm : C1705036-002A : T015 Operator: WD Sample Inst : GCMS3 Misc Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L ********************** Peak Number l Hydrogen sulfide \$\$ Dihydrogen Concentration Rank R.T. EstConc Area Relative to ISTD 4.09 26.30 ppb 282407 Bromochloromethane Hit# of 5 Tentative ID MW MolForm CAS# Quai 1 Hydrogen sulfide \$\$ Dihydrogen mono 34 H2S
2 Phosphine \$\$ Hydrogen phosphide \$\$ 34 H3P
3 Methane, fluoro- \$\$ Fluoromethane \$ 34 CH3F
4 Difluoramine \$\$ Difluoroamine \$\$ HN 53 F2HN

Scan 330 (4.090 min): DH051708.D (-) m/2 007783-06-4 83 007803-51-2 7 000593-53-3 3 010405-27-3 2 m/z 33.90 100.00% 8000 6000 4000 2000 3.80 4.00 4.20 4.40 m/z 32.90 39.67% 5 10 15 20 25 30 35 40 45 50 55 60 65 70 Amendance #20: Hydrogen sulfide \$\$ Dihydrogen monosulfide \$\$ Dihyd 8000 6000 4000 3.80 4.00 4.20 4.40 m/z 35.85 5. 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 Abundados 8000 3.80 4.00 4.20 4.40 Z 34.95 2. 6000 m/z 4000 31 2000 0 5 10 15 20 25 30 35 40 46 50 55 60 65 70 Abundance L. Moldon, elected #19: Methane, fluoro- \$\$ Fluoromethane \$\$ Freen 41 \$\$ Me 3.80 4.00 4.20 4.40 8000 m/z 39,90 6000 11. 1 24. 1 4000 2000 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 3.80 4.00 4.20 4.40

Data File : C:\HPCHEM\1\DATA2\DH051708.D Acq On : 17 May 2017 12:34 pm Sample : C1705036-002A Misc : TO15 Vial: 4 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L *********************** Peak Number 2 Cyclotrisiloxane, hexamethyl- Concentration Rank 2 R.T. EstConc Area Relative to ISTD 15.43 11.90 ppb 288630 Chlorobenzene-d5 Hit# of 5 Tentative ID MW MolForm CAS# Qual), 207 8000 6000 4000 2000 133 147 161 177 15.00 15.20 15.40 15.60 15.80 46 61 73 87 105 116 ar hangaran dan dan kara sanaggan karana 3 43 J m/z 207.90 21.31% 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 #122088: Cyclotrisitoxane, hexamethyl-Abundance 8000 6000 4000 15.00 15.20 15.40 15.60 15.80 m/z 208.90 12.62 12.62% 2000 شمين فأيس شراري وبالمستشارة ويتراري و 12 من المراسية المسترانية والمراسية والمراسية والمراسية والمراسية والمرا 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 8000 and the second material of the first of the first of the second s 15.00 15.20 15.40 15.60 15.80 m/z 95.90 11.17 6000 11.178 4000 2000 110 1 747 163 177 191 87 119 33 347 102 477 193 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 Aliundanne #122086: Cyclotrisiloxane, hexamethyl-15.00 15.20 15.40 15.60 15.80 8000 m/z 190.90 6000 4000 2000 119 133 147 163 177 75 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 15.00 15.20 15.40 15.60 15.80

Data File : C:\HPCHEM\1\DATA2\DHO51708.D Vial: 4 : 17 May 2017 12:34 pm : C1705036-002A : TO15 Acq On Operator: WD Sample Inst : GCMS3 Misc Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L ****************** Peak Number 3 Cyclotetrasiloxane, octamethyl Concentration Rank R.T. EstConc Area Relative to ISTD 18.15 10.34 ppb 250789 Chlorobenzene-d5 Hit# of 5 Tentative ID MW MolForm CAS# Qual 1 Cyclotetrasiloxane, octamethyl- \$\$ 296 C8H24O4S14 000556-67-2 86 2 Benzoic acid, 3-methyl-2-trimethyls 296 C14H24O35i2 000000-00~0 50 3 Cyclotetrasiloxane, octamethyl- 296 C8H24O4Si4 000556-67-2 43 4 5H-Naphtho(2,3-c)carbazole, 5-methy 281 C21H15N 100025-44-3 42 bacadance Scan 3567 (18.148 min): DH051708.D (-) m/z 280.95 100.00% 281 8000 6000 4000 2000 17.80 18.00 18.20 18.40 m/z 281.90 80 100 120 140 160 180 200 220 240 260 280 300 #70157. Cycloietresiloxane, octomethyl- \$\$ Octamethyloyclot Abendance 8000 6000 4000 17.80 18.00 18.20 18.40 m/z 283.00 2000 333 40 60 80 100 120 140 160 180 200 220 240 260 Macmakana 73 8000 and the state of t 17.80 18.00 18.20 18.40 6000 m/z 192.90 13.71% 4000 2000 133 149 207 723 247 263 ه المرابعة المرابعة المرابعة المنابعة 40 60 80 100 120 140 160 180 200 220 240 260 280 300 Shundance #125682: Cyclotetrasiloxane, octamethyl-17.80 18.00 18.20 18.40 8000 m/z 73.00 6000 4000 2000 170 193 207 235 249 205 40 60 80 100 120 140 160 180 200 220 240 260 280 300 17.80 18.00 18.20 18.40

Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 17 May 2017 12:34 pm Data File: C:\HPCHEM\1\DATA2\DH051708.D Operator ID: WD

Name: C1705036-002A Misc: T015

Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstConc Uni	its Area	IntStd	ISRT	ISArea	ISConc
Hydrogen sulfide \$\$ Cyclotrisiloxane, he Cyclotetrasiloxane,	4.09 15.43 18.15	26.3 ppb 11.9 ppb 10.3 ppb	288630	ISTD01 ISTD03 ISTD03	16.48	536990 1212270 1212270	50.0
DH051708.D 10511T1	5.M	Mon Jun 1	19 13:54:46	2017			

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID:

C1705036-003A

Date: 22-Jun-17

Client Sample ID: WAT-SV03-050817

Tag Number: 431.65

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	ÐF	Date Analyzed
FIELD PARAMETERS		FI	.D			Analyst:
Lab Vacuum in	-4			"Hg		5/12/2017
Lab Vacuum Out	-30			"Hg		5/12/2017
FIXED GAS SERIES		EPA MET	THOD	3C		Analyst: WD
Carbon dloxide	0.102	1.90	j	%	1	5/15/2017
Carbon Monoxide	ND	0.880		%	1	5/15/2017
Methane	ND	0.580		%	1	5/15/2017
Nitrogen	73.6	8.30		%	1	5/15/2017
Oxygen	20.1	0.880		%	1	5/15/2017
PPB BY METHOD TO15		TO	-15			Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
1,1,2-Trichloroethane	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
1,1-Dichloroethane	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
1,1-Dichloroethene	< 5.0	5.0		∨dqq	1	5/15/2017 2:59:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
1,2-Dibromoethane	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
1,2-Dichlorobenzene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
1,2-Dichloroethane	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
1,2-Dichloropropane	< 5.0	5.0		₽₽₽V	1	5/15/2017 2:59:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
1,3-butadiene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
1,3-Dichlorobenzene	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
1,4-Dichlorobenzene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
1,4-Dioxane	< 10	10		ppbV	1	5/15/2017 2:59:00 PM
2,2,4-trimethylpentane	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
4-ethyltoluene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Acetone	5.6	10	J	Vdqq	1	5/15/2017 2:59:00 PM
Allyl chloride	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Вепzеле	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Benzyl chloride	< 5.0	5.0		₽₽₽V	1	5/15/2017 2:59:00 PM
Bromodichloromethane	< 5.0	5.0		pobV	1	5/15/2017 2:59:00 PM
Bromoform	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Bromomethane	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Carbon disulfide	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Carbon tetrachloride	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Chlorobenzene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Chloroethane	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Chloroform	15	5.0		Vdqq	1	5/15/2017 2:59:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated,
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-003A

Date: 22-Jun-17

Client Sample ID: WAT-SV03-050817

Tag Number: 431.65

Collection Date: 5/8/2017

Matrix: AIR

cis-1,2-Dichloropene < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P cis-1,3-Dichloropropene < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Cyclohexane < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Dibromochloromethane < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Ethyl acetate < 1.0 10 ppbV 1 5/15/2017 2:59:00 P Ethylacetae < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Freon 11 < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Freon 12 < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Freon 12 < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Heyachloro-1,3-butadiene < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Hexachloro-1,3-butadiene < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Hexachloro-1,3-butadiene < 5.0 5.0 ppbV <	Analyses	Result	**Limit	Qua	l Units	DF	Date Analyzed
Chloromethane	SPPB BY METHOD TO15		TC)-15			Analyst: WE
cis-1,2-Dichloroerhene < 5.0	Chloromethane	< 5.0			ppbV	1	5/15/2017 2:59:00 PM
cis-13-Dichloropropene < 5.0	cis-1,2-Dichloroethene	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Cyclohexane	cis-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Dibromochloromethane	Cyclohexane	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Ethylbenzene	Dibromochloromethane	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Ethylbenzene	Ethyl acetate	< 10	10			1	5/15/2017 2:59:00 PM
Freon 113 Freon 113 Freon 113 Freon 113 Freon 114 Freon 114 Freon 115 Freon 115 Freon 116 Freon 117 Freon 117 Freon 117 Freon 118 Freon 118 Freon 119 Freon 12	Ethylbenzene	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Freon 113	Freon 11	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Freon 114	Freon 113	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Heptane	Freon 114	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Hexachloro-1,3-butadiene < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Plexane leopropyl alcohol 2.6 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P 1 5/15/2017 2:59:00 P 1 5/15/2017 2:59:00 P 1 5/15/2017 2:59:00 P 0 0 ppbV 1 5/15/2017 2:59:00 P 0 <td>Freon 12</td> <td>< 5.0</td> <td>5.0</td> <td></td> <td>ppbV</td> <td>1</td> <td>5/15/2017 2:59:00 PM</td>	Freon 12	< 5.0	5.0		ppbV	1	5/15/2017 2:59:00 PM
Hexachloro-1,3-butadiene	Heptane	< 5.0	5.0		ppb∨	1	5/15/2017 2:59:00 PM
Hexane	Hexachloro-1,3-butadiene	< 5.0	5,0			1	5/15/2017 2:59:00 PM
Isopropy alcohol 2.6 5.0 J PpbV 1 5/15/2017 2:59:00 Pm&p-Xylene <10 10 PpbV 1 5/15/2017 2:59:00 Pm&p-Xylene <10 10 PpbV 1 5/15/2017 2:59:00 Pm&phV 1 5/15	Hexane	< 5.0	5.0			1	5/15/2017 2:59:00 PM
m&p-Xylene < 10 10 ppbV 1 5/15/2017 2:59:00 PMethyl Butyl Ketone < 10 10 ppbV 1 5/15/2017 2:59:00 PMethyl Ethyl Ketone < 10 10 ppbV 1 5/15/2017 2:59:00 PMethyl Ethyl Ketone < 10 10 ppbV 1 5/15/2017 2:59:00 PMethyl Ethyl Ketone < 1.4 10 J ppbV 1 5/15/2017 2:59:00 PMethyl Ethyl E	Isopropyl alcohol	2.6	5.0	j		1	5/15/2017 2:59:00 PM
Methyl Butyl Ketone < 10 10 ppbV 1 5/15/2017 2:59:00 P Methyl Ethyl Ketone < 10 10 ppbV 1 5/15/2017 2:59:00 P Methyl Ethyl Ketone 1.4 10 J ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 P Methyl terrbutyl ether < 5.0 5.0 ppbV	m&p-Xylene	< 10	10			1	5/15/2017 2:59:00 PM
Methyl Ethyl Ketone < 10 10 ppbV 1 5/15/2017 2:59:00 Pr Methyl Isobutyl Ketone 1.4 10 J ppbV 1 5/15/2017 2:59:00 Pr Methyl tert-butyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pr Methylene chloride < 5.0 5.0 ppbV 1	Methyl Butyl Ketone	< 10	10			1	5/15/2017 2:59:00 PM
Methyl Isobutyl Ketone 1.4 10 J ppbV 1 5/15/2017 2:59:00 PM PM Methyl tert-butyl ether < 5.0	Methyl Ethyl Ketone	< 10	10			1	5/15/2017 2:59:00 PM
Methyl tert-butyl ether < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PM PMethylene chloride < 5.0 5.0 ppbV	Methyl Isobutyl Ketone	1.4	10	J		1	5/15/2017 2:59:00 PM
0-Xylene < 5.0	Methyl tert-butyl ether	< 5.0	5.0		Vdqq	1	5/15/2017 2:59:00 PM
o-Xylene < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pt Propylene < 5.0	Methylene chloride	< 5.0	5.0			†	5/15/2017 2:59:00 PM
Propylene < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pt Styrene < 5.0	o-Xylene	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Styrene < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pf Tetrachloroethylene < 5.0	Propylene	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Tetrachloroethylene	Styren e	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Tetrahydrofuren < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 PI Toluene < 5.0	Tetrachloroethylene	< 5.0	5.0			1	
Toluene	Tetrahydrofuran	< 5.0	5.0			1	5/15/2017 2:59:00 PM
trans-1,2-Dichloroethene < 5.0	Toluene	< 5.0	5.0			1	5/15/2017 2:59:00 PM
trans-1,3-Dichloropropene < 5.0	trans-1,2-Dichloroethene	< 5.0	5.0			1	
Trichloroethene < 5.0	trans-1,3-Dichloropropene	< 5.0	5.0			1	
Vinyl acetate < 5.0	Trichloroethene	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Vinyl Bromide < 5.0	Vinyl acetate	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Vinyl chloride < 5.0 5.0 ppbV 1 5/15/2017 2:59:00 Pt Surr: Bromofluorobenzene 85.8 73.7-124 %REC 1 5/15/2017 2:59:00 Pt TIC: Cyclotetrasiloxane, octamethyl- \$\$ Octam 140 0 JN ppbV 1 5/15/2017 2:59:00 Pt TIC: Cyclotrisiloxane, hexamethyl 73 0 JN ppbV 1 5/15/2017 2:59:00 Pt \$\$ Dimethy 50 Jimethy 1 5/15/2017 2:59:00 Pt	Vinyl Bromide	< 5.0	5.0			1	5/15/2017 2:59:00 PM
Surr. Bromofluorobenzene 85.8 73.7-124 %REC 1 5/15/2017 2:59:00 Pt TIC: Cyclotetrasiloxane, octamethyl- \$\$ Octam 140 0 JN ppbV 1 5/15/2017 2:59:00 Pt TIC: Cyclotrisiloxane, hexamethyl 73 0 JN ppbV 1 5/15/2017 2:59:00 Pt \$\$ Dimethy 73 0 JN ppbV 1 5/15/2017 2:59:00 Pt	Vinyl chloride	< 5.0	5.0			1	5/15/2017 2:59:00 PM
TIC: Cyclotetrasiloxane, 140 0 JN ppbV 1 5/15/2017 2:59:00 Pt octamethyl- \$\$ Octam TIC: Cyclotrisiloxane, hexamethyl 73 0 JN ppbV 1 5/15/2017 2:59:00 Pt \$\$ Dimethy \$\$ Dimethy 1 5/15/2017 2:59:00 Pt	Surr: Bromofluorobenzene	85.8					5/15/2017 2:59:00 PM
5\$ Dimethy			0	JN		1	5/15/2017 2:59:00 PM
TIC: Undecane, 3,5-dimethyl- 5.2 0 JN ppbV 1 5/15/2017 2:59:00 Pf	5\$ Dimethy	73	0	JN	₽₽bV	1	5/15/2017 2:59:00 PM
OW LEVEL SULFURS BY TO-15 TO-15 Analyst: W	•	5.2			Vdqq	1	5/15/2017 2:59:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated,
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-003A Date: 22-Jun-17

Client Sample ID: WAT-SV03-050817

Tag Number: 431.65

Collection Date: 5/8/2017 Matrix: AIR

 			TO STREET THE STREET HAVE TO THE A TRANSPORT		
Result	**Limit	Qual	Units	DF	Date Analyzed
	то	-15			Analyst: WD
< 5.0	5.0		ppbV	1	5/16/2017 1:30:00 PM
< 5.0	5.0		ppbV	1	5/16/2017 1:30:00 PM
~ 6.0	6.0			4	E16 C12 D4 7 4 2 2 0 0 D D4 4

Analyses	Result	**Limit Qua	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-15			Analyst: WD
1-Propanethiol	< 5.0	5.0	ppbV	1	5/16/2017 1:30:00 PM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/16/2017 1:30:00 PM
Carbonyl sulfide	< 5.0	5.0	Vđqq	1	5/16/2017 1:30:00 PM
Dimethyl sulfide	< 5.0	5.0	Vđqq	1	5/16/2017 1:30:00 PM
Ethyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 1:30:00 PM
Hydrogen Sulfide	770	5,0	ppbV	1	5/16/2017 1:30:00 PM
Isopropyi mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 1:30:00 PM
Methyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 1:30:00 PM
Surr: Bromofluorobenzene	153	70-130 S	%REC	1	5/16/2017 1:30:00 PM

Qualifiers:

Quantitation Limit

В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

Ε Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Page 9 of 42

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-003A

Date: 22-Jun-17

Client Sample ID: WAT-SV03-050817

Tag Number: 431.65 Collection Date: 5/8/2017

	M	4	ŧ.	İΧ	;	Α.	R
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Analyses	Result	**Limit Qu	ial Units	ÐF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 27	27	<i>Տու</i> \ըս	1	5/15/2017 2:59:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	ยg/m3	1	5/15/2017 2:59:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 2:59:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/15/2017 2:59:00 PM
1,1-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 2:59:00 PM
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/15/2017 2:59:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	t	5/15/2017 2:59:00 PM
1,2-Dibromoethane	< 38	38	ug/m3	1	5/15/2017 2:59:00 PM
1,2-Dichlorobenzene	< 30	30	աց/ու3	1	5/15/2017 2:59:00 PM
1,2-Dichloroethane	< 20	20	ug/m3	1	5/15/2017 2:59:00 PM
1,2-Dichloropropane	< 23	23	ug/m3	1	5/15/2017 2:59:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 2:59:00 PM
1,3-butadiene	< 11	11	ug/m3	1	5/15/2017 2:59:00 PM
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 2:59:00 PM
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 2:59:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/15/2017 2:59:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/15/2017 2:59:00 PM
4-ethyltoluene	< 25	25	ug/m3	1	5/15/2017 2:59:00 PM
Acetone	13	24 J	ug/m3	1	5/15/2017 2:59:00 PM
Allyl chloride	< 16	16	ug/m3	1	5/15/2017 2:59:00 PM
Benzene	< 16	16	ug/m3	1	5/15/2017 2:59:00 PM
Benzyl chloride	< 29	29	ug/m3	1	5/15/2017 2:59:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/15/2017 2:59:00 PM
Bromoform	< 52	52	ug/m3	1	5/15/2017 2:59:00 PM
Bromomethane	< 19	19	ug/m3	1	5/15/2017 2:59:00 PM
Carbon disulfide	< 16	16	ug/m3	1	5/15/2017 2:59:00 PM
Carbon tetrachloride	< 31	31	ug/m3	1	5/15/2017 2:59:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/15/2017 2:59:00 PM
Chloroethane	< 13	13	ug/m3	1	5/15/2017 2:59:00 PM
Chloroform	72	24	ug/m3	1	5/15/2017 2:59:00 PM
Chloromethane	< 10	10	ug/m3	1	5/15/2017 2:59:00 PM
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 2:59:00 PM
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/15/2017 2:59:00 PM
Cyclohexane	< 17	17	ug/m3	1	5/15/2017 2:59:00 PM
Dibromochloromethane	< 43	43	ug/m3	1	5/15/2017 2:59:00 PM
Ethyl acetate	< 36	36	ug/m3	1	5/15/2017 2:59:00 PM
Ethylbenzene	< 22	22	ug/m3	1	5/15/2017 2:59:00 PM
Freon 11	< 28	28	ug/m3	1	5/15/2017 2:59:00 PM
Freon 113	< 38	38	ug/m3	1	5/15/2017 2:59:00 PM
Freon 114	< 35	35	ug/m3	1	5/15/2017 2:59:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C170

C1705036-003A

Date: 22-Jun-17

Client Sample ID: WAT-SV03-050817

Tag Number: 431.65

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то		Analyst: WC		
Freon 12	< 25	25		ug/m3	1	5/15/2017 2:59:00 PM
Heptane	< 20	20		ug/m3	1	5/15/2017 2:59:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/15/2017 2:59:00 PM
Hexane	< 18	18		ug/m3	1	5/15/2017 2:59:00 PM
Isopropyl alcohol	6.4	12	J	ug/m3	1	5/15/2017 2:59:00 PM
m&p-Xylene	< 43	43		ug/m3	1	5/15/2017 2:59:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/15/2017 2:59:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/15/2017 2:59:00 PM
Methyl Isobutyl Ketone	5.8	41	J	ug/m3	1	5/15/2017 2:59:00 PM
Methyl tert-butyl elher	< 18	18		ug/m3	1	5/15/2017 2:59:00 PM
Methylene chloride	< 17	17		սց/m3	1	5/15/2017 2:59:00 PM
o-Xylene	< 22	22		ug/m3	1	5/15/2017 2:59:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/15/2017 2:59:00 PM
Styrene	< 21	21		ug/m3	1	5/15/2017 2:59:00 PM
Tetrachloroethylene	< 34	34		սց/m3	1	5/15/2017 2:59:00 PM
Tetrahydrofuran	< 15	15		սց/m3	1	5/15/2017 2:59:00 PM
Toluene	< 19	19		<i>ա</i> ց/m3	1	5/15/2017 2:59:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/15/2017 2:59:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/15/2017 2:59:00 PM
Trichloroethene	< 27	27		ug/m3	1	5/15/2017 2:59:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/15/2017 2:59:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/15/2017 2:59:00 PM
Vinyl chloride	< 13	13		սց/m3	1	5/15/2017 2:59:00 PM
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: WD
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 1:30:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/16/2017 1:30:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 1:30:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 1:30:00 PM
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 1:30:00 PM
Hydrogen Sulfide	1100	7.0		ug/m3	1	5/16/2017 1:30:00 PM
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 1:30:00 PM
Methyl mercaptan	< 9,8	9.8		սց/m3	1	5/16/2017 1:30:00 PM

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^{*} Quantitation Limit

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

[£] Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051511.D
Acq On : 16 May 2017 2:59 pm
Sample : C1705036-003A
Misc : T015

Vial: 5 Operator: WD

Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: Jun 1 10:28 2017

Quant Results File: IO511T15.RES

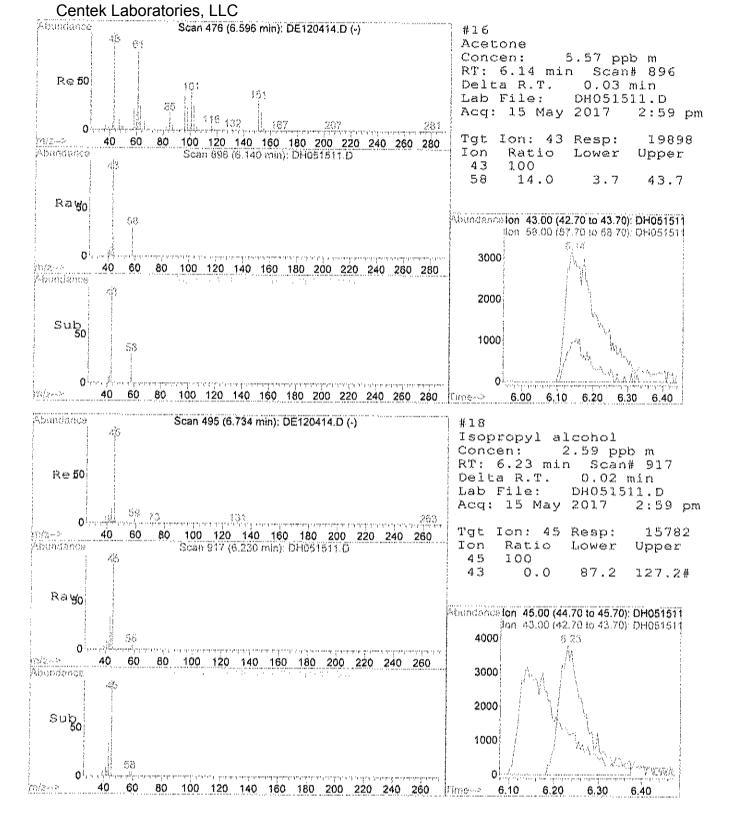
Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

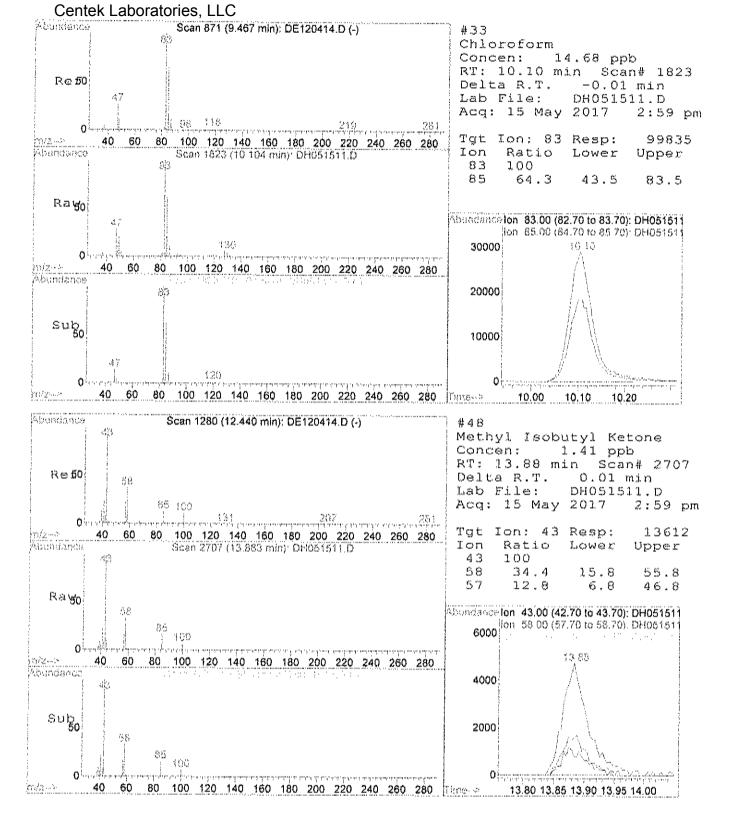
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

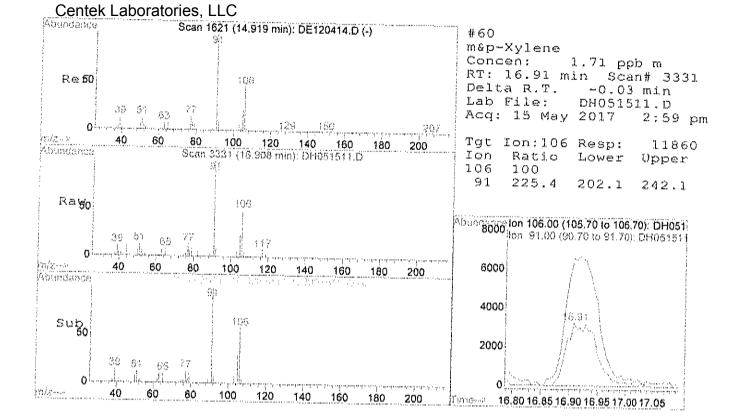
Internal Standards	R.T.	QIon	Response	Conc U	nits	Dev (Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.96 12.18 16.48	128 114 117	94990 573748 462025	50.00 50.00 50.00	dqq	0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000		95 - 130	281045 Recover	42.88 y =		0.00 76%
Target Compounds 16) Acetone 18) Isopropyl alcohol 33) Chloroform 48) Methyl Isobutyl Ketone 60) m&p-Xylene	6.14 6.23 10.10 13.88 16.91	43 45 83 43 106	19898mഗ] 15782m 99835 13612 11860m ഗൂ	2.59 14.68 1.41	dqq dqq dqq	Qvalue 99 87

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Quantitation Report







LSC Area Percent Report

Data File : C:\HPCHEM\1\DATA2\DH051511.D

Vial: 5 Acq On : 15 May 2017 2:59 pm Operator: WD

Sample : C1705036-003A Misc : T015 Inst : GCM53 Multiplr: 1.00

MS Integration Params: LSCINT.P

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration

Smoothing : ON

Min Area: 3 % of largest Peak

Sampling : 1 Start Thrs: 0.2 Max Peaks: 100 Peak Location: TOP Stop Thrs: 0

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

peak		first	max	last	РK	peak	corr.	corr.	% of total
##:	mi.n	scan	scan	scan	$\mathbf{T}\mathbf{Y}$	height	area	8 ma×.	COLEIL
		~~ ~~ — — —	-				-	MIL OTE MAI TO	
1	9.954	1770	1788	1811	rBV3	164740	707483	16.66%	5.849%
2	10.104	1813	1823	1842	rVB2	75610	256876	6.05%	2.124%
3	12.182	2293	2309	2335	rBV2	467956	1382840	32.56%	11.432%
4	15.415	3033	3046	3075	rBV	920485	2201853	51.85%	18.203%
5	16.483	3240	3250	3270	rBV	649209	1518484	35.75%	12.553%
6	17.353	3406	3416	3426	rVB5	18832	44854	1.06%	0.371%
7	17.949	3520	3530	3542	rBV	613062	1266274	29.82%	10.468%
8	18.044	3543	3548	3558	rVB4	27480	61613	1.45%	0.509%
9	18.148	3559	3568	3582	rBV	2504890	4246984	100.00%	35.110%
10	18.719	3670	3677	3690	rVB2	32192	78675	1.85%	0.650%
11	19.400	3801 3815	3807 3820 3900	3815 3827 3906	rBV2 rVV3 rBV2	87504 28775 45701	156769 52053 121596	3.69% 1.23% 2.86%	1,296% 0,430% 1,005%
1 3	19.887	3888	2200	2200	T D V Z	-30701	121090	70 - C) C) D	1.0000

Sum of corrected areas: 12096354

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA2\DH051511.D

Operator : WD

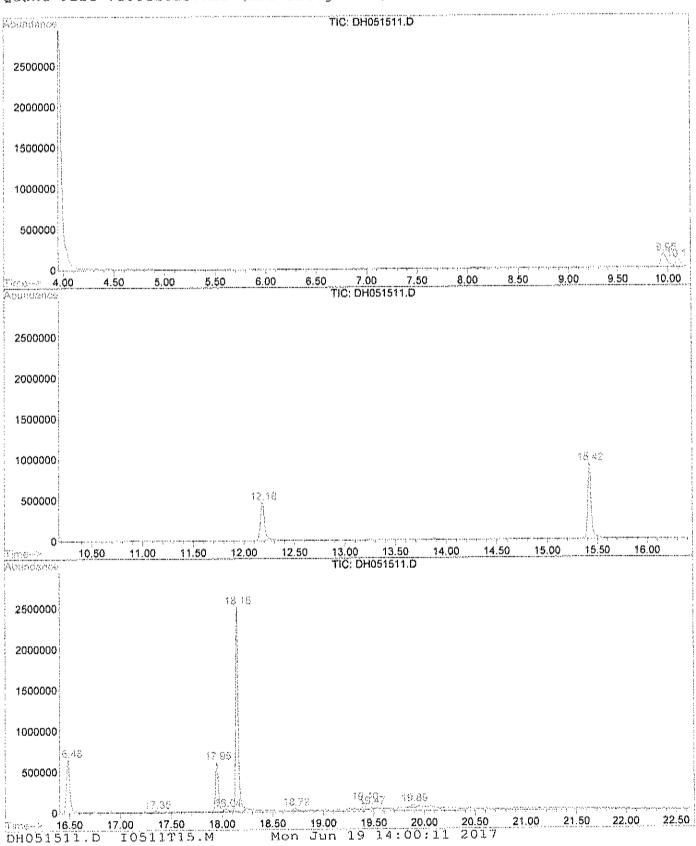
Acquired : 15 May 2017 2:59 pm using AcqMethod NEW1

Instrument : GCMS3

Sample Name: C1705036-003A

Misc Info : TO15 Vial Number: 5

Quant File : 10511T15.RES (RTE Integrator)



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051511.D Acq On : 15 May 2017 2:59 pm Sample : C1705036-003A Misc : TO15 Víal: 5 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\l\METHODS\IOS11T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L ************************ Peak Number 1 Cyclotrisiloxane, hexamethyl- Concentration Rank Area Relative to ISTD R.T. EstConc 16.48 15.42 72.50 ppb 2201850 Chlorobenzene-d5 QualCAS# Hit# of 5 Tentative ID MW MolForm 1 Cyclotrisiloxane, hexamethyl- \$\$ Di 222 C6H18O3Si3 000541-05-9 91 2 Cyclotrisiloxane, hexamethyl- 222 C6H18O3Si3 000541-05-9 91 3 Cyclotrisiloxane, hexamethyl- 222 C6H18O3Si3 000541-05-9 80 4 Arsenous acid, tris(trimethylsilyl) 342 C9H27AsO3Si3 055429-29-3 56 m/z 206.90 100.00% Scan 3047 (15.421 min): DH051511.D (-) 8000 6000 4000 15.00 15.20 15.40 15.60 15.60 m/z 207.90 20.60 20 40 60 80 100 120 140 160 180 200 220 2000 #43616: Cyclotrisiloxane, hexamethyl- SS Dimethylsiloxane c Abundance 8000 6000 15.00 15.20 15.40 15.60 15.80 4000 m/z 95.90 2000 119 132 147 163 177 191 40 60 80 100 120 140 160 180 200 220 Atameliance 经数据 8000 15.00 15.20 15.40 15.60 15.80 6000 m/z 208.90 12.05% 4000 2000 96 119 133 147 103 177 20 40 60 80 100 120 140 160 180 200 220 #122087; Cyclotrisiloxane, hexamethyl-Afrunctance 15.00 15.20 15.40 15.60 15.80 9.16% m/z 190.90 8000 6000 4000 2000 20 40 60 80 100 120 140 160 180 200 220 15.00 15.20 15.40 15.60 15.80

Library Search Compound Report

Vial: 5 Data File : C:\HPCHEM\1\DATA2\DH051511.D Acq On : 15 May 2017 2:59 pm Sample : C1705036-003A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\RPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L ********* Peak Number 2 Cyclotetrasiloxane, octamethyl Concentration Rank Area Relative to ISTD R.T. EstConc -----18.15 139.84 ppb 4246980 Chlorobenzene-d5 CAS# Qual Hit# of 5 Tentative ID MW MolForm 1 Cyclotetrasiloxane, octamethyl- \$\$ 296 C8H24O4Si4 000556-67-2 78 27H-Dibenzo(b,g)carbazole, 7-methyl- 281 C21H15N 003557-49-1 59 3 Cyclotetrasiloxane, octamethyl- 296 C8H24O4Si4 000556-67-2 47 4 Cyclotetrasiloxane, octamethyl- 296 C8H24O4Si4 000556-67-2 43 3 Scan 3568 (18.148 min): DH051511.D(-) m/z 280.95 100.00% Pibundance 5000 17.80 18.00 18.20 18.40 45 59 73 89 103 119 1 147 163 177 193 207 221 235 249 266 295 295 40 60 80 100 120 140 160 180 200 220 240 260 280 300 #70157 Cyclotetraelloxane, octamethyl- \$\$ Octamethylcyclot m/z 282.00 ak isanyadaa saraa 8000 6000 17.80 18.00 18.20 18.40 4000 m/z 283.00 17.67% 2000 **#**\$35 235 249 265 163 177 191 40 60 80 100 120 140 160 180 200 220 240 260 280 300 Apundarica 261 8000 17.80 18.00 18.20 18.40 6000 m/z 132.90 4000 260 2000 237 252 jl.,, وستنبع سيناه والمراورة والمراورة والماري والماري والماري والمارية والمناه والمارية والماري والماري والمناورة 40 60 80 100 120 140 160 180 200 220 240 260 #125682; Cyclotetrasiloxane, octamethyl-Anundanoo 17.80 18.00 18.20 18.40 m/z 264.90 6. 6.91% 8000 6000 4000 73 193 179 193 207 236 249 265 \\ \\ 2000 40 60 80 100 120 140 160 180 200 220 240 260 280 300 17.80 18.00 18.20 18.40

Data File : C:\HPCHEM\1\DATA2\DH051511.D Vial: 5 Acq On : 15 May 2017 2:59 pm Operator: WD Sample : C1705036-003A Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\l\METHODS\IO51lT15.M (RTE Integrator) Title : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L Peak Number 3 Undecane, 3,5-dimethyl-Concentration Rank 3 Area Relative to ISTD R.T. EstConc 19.40 5.16 ppb 156769 Chlorobenzene-d5 Hit# of 5 Tentative ID CAS# MW MolForm Qual 184 Cl3H28 1 Undecane, 3,5-dimethyl-017312-81-1 90 2 Elcosane 282 C20H42 000112-95-8 86 212 C15H32 000629-62-9 83 184 C13H28 017301-32-5 80 3 Pentadecane 4 Undecane, 4,7-dimethyl-184 C13H28 Scan 3807 (19.400 min): DH051511.D (-) m/z 43.00 100.00% Amendance 8000 6000 4000 2000 19.00 19.20 19.40 19.60 19.80 m/z 57.00 40 60 80 100 120 140 160 180 200 220 240 260 280 Armandahada #27976: Undecane, 3,5-dimethyl-8000 6000 4000 19.00 19.20 19.40 19.60 19.80 71.00 m/z65 89 112 127 155 2000 184 20 40 60 80 100 120 140 160 180 200 220 240 260 280 Abundance 43 8000 19.00 19.20 19.40 19.60 19.80 6000 43.97% 85.00 m/z 4000 35 2000 173 127 141 150 169 40 60 80 100 120 140 160 180 200 220 240 260 280 Abundance #121501; Pentadecane 19.00 19.20 19.40 19.60 19.80 8000 m/z 41.00 6000 4000 2000 99 113 127 141 20 40 60 80 100 120 140 160 180 200 220 240 260 280 19.00 19.20 19.40 19.60 19.80

Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 15 May 2017 2:59 pm Data File: C:\HPCHEM\1\DATA2\DH051511.D

Name: C1705036-003A

Misc: TO15

Method: C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstConc U	Units	Area	IntStd	ISRT	ISArea	ISConc
Cyclotrisiloxane, he Cyclotetrasiloxane, Undecane, 3,5-dimeth		72.5 p 139.8 p 5.2 p	daa	4246980	ISTDO3 ISTDO3 ISTDO3	16.48	1518480	50.0
DH051511.D 10511T1	5.M	Mon Jui	n 19	14:00:17	2017			

Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Client Sample ID: WAT-SV02-050817

Lab Order:

C1705036

Tag Number: 549.144 Collection Date: 5/8/2017

Project: Lab ID: Former Hampshire C1705036-004A

Matrix: AIR

Analyses	Result	**Limit Qua	l Units	DF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum in	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHO	3C		Analyst: WD
Carbon dioxide	0.289	1.90 J	%	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	NO	0.580	%	1	5/15/2017
Nitrogen	76,1	8.30	%	1	5/15/2017
Oxygen	20.6	0.880	%	1	5/15/2017
SPPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichioroethane	< 5.0	5.0	∨dqq	1	5/15/2017 3:34:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	₽₽bV	1	5/15/2017 3:34:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 3:34:00 PM
1,1-Dichloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 3:34:00 PM
1,1-Dichloroethene	< 5.0	5.0	₽₽₽V	1	5/15/2017 3:34:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	ρρbV	1	5/15/2017 3:34:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	Vdqq	1	5/15/2017 3:34:00 PM
1,2-Dibromoethane	< 5.0	5.0	PpbV	1	5/15/2017 3:34:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
1,2-Dichloroethane	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
1,2-Dichloropropane	< 5.0	5.0	Vdqq	1	5/15/2017 3:34:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppb∨	1	5/15/2017 3:34:00 PM
1,3-butadiene	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
1,4-Dioxane	< 10	10	Vdqq	1	5/15/2017 3:34:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	opb∨	1	5/15/2017 3:34:00 PM
4-ethyltoluene	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
Acetone	5.0	10 J	ppbV	1	5/15/2017 3:34:00 PM
Allyl chloride	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
Benzene	< 5.0	5.0	Vdqq	1	5/15/2017 3:34:00 PM
Benzyl chlorida	< 5.0	5.0	Vdqq	1	5/15/2017 3:34:00 PN
Bromodichloromethane	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
Bromoform	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
Bromomethane	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PN
Carbon tetrachloride	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
Chlorobenzene	< 5.0	5.0	Vdqq	1	5/15/2017 3:34:00 PN
Chloroethane	< 5.0	5.0	ppbV	1	5/15/2017 3:34:00 PM
Chloroform	51	5.0	ppb∨	1	5/15/2017 3:34:00 PM

Qualifiers:

- Quantitation Limit
- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded н
- JN Non-routine analyte, Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Estimated Value above quantitation range Ε
- Analyte detected below quantitation limit
- Not Detected at the Limit of Detection ND

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Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV02-050817

Lab Order: C1705036 Tag Number: 549.144

Project: Former Hampshire Collection Date: 5/8/2017
Lab ID: C1705036-004A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	ÐF	Date Analyzed
5PPB BY METHOD TO15		TO-	15			Analyst: WD
Chloromethane	< 5.0	5.0		PPbV	1	5/15/2017 3:34:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		Vđạq	1	5/15/2017 3:34:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Cyclohexane	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Dibromochloromethane	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
Ethyl acetate	< 10	10		ppbV	1	5/15/2017 3:34:00 PM
Ethylbenzene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Freon 11	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Freon 113	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Freon 114	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
Freon 12	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Heptane	< 5.0	5.0		ppb∀	1	5/15/2017 3:34:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Hexane	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
isopropyl alcohol	< 5,0	5.0		ppbV	1	5/15/2017 3:34:00 PM
m&p-Xylene	< 10	10		ppbV	1	5/15/2017 3:34:00 PM
Methyl Butyl Ketone	< 10	10		ppbV	1	5/15/2017 3:34:00 PM
Methyl Ethyl Ketone	< 10	10		ppb∨	1	5/15/2017 3:34:00 PM
Methyl Isobutyl Ketone	< 10	10		ppb∨	1	5/15/2017 3:34:00 PM
Methyl tert-butyl ether	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Methylene chloride	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
o-Xylene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Propylene	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
Styrene	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
Tetrachloroethylene	< 5.0	5.0		ppb∨	1	5/15/2017 3:34:00 PM
Tetrahydrofuran	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Toluene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ррьV	1	5/15/2017 3:34:00 PM
Trichloroethene	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PN
Vinyl acetate	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Vinyl Bromide	< 5.0	5.0		ppbV	1	5/15/2017 3:34:00 PM
Vinyl chloride	< 5.0	5.0		₽₽₽V	1	5/15/2017 3:34:00 PM
Surr: Bromofluorobenzene	81.1	73.7-124		%REC	1	5/15/2017 3:34:00 PM
TIC: Cyclotrisiloxane, hexamethyl	5.9	0	JN	Vdqq	1	5/15/2017 3:34:00 PM
OW LEVEL SULFURS BY TO-15		TO-	15			Analyst; WI
1-Propanethiol	< 5.0	5.0		ppbV	1	5/16/2017 2:05:00 PM
Carbon disulfide	2.8	5.0	J	ppbV	1	5/16/2017 2:05:00 PM
Carbonyl sulfide	< 5.0	5.0		Vdqq	1	5/16/2017 2:05:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-004A

Client Sample ID: WAT-SV02-050817

Tag Number: 549.144 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Quai	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-	15			Analyst: WD
Dimethyl sulfide	< 5.0	5.0		ppbV	1	5/16/2017 2:05:00 PM
Ethyl mercaptan	< 5.0	5.0		PpbV	1	5/16/2017 2:05:00 PM
Hydrogen Sulfide	440	5.0		ppbV	1	5/16/2017 2:05:00 PM
Isopropyl mercaptan	< 5.0	5.0		ppb∨	1	5/16/2017 2:05:00 PM
Methyl mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 2:05:00 PM
Surr: Bromofluorobenzene	149	70-130	s	%REC	1	5/16/2017 2:05:00 PM

Qualifiers:

Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Page 12 of 42

Date: 22-Jun-17

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-004A

Client Sample ID: WAT-SV02-050817

Tag Number: 549.144 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC	-15			Analyst: WD
1,1,1-Trichloroethane	< 27	27		սց/m3	1	5/15/2017 3:34:00 PM
1,1,2,2-Tetrachloroethane	< 34	34		ug/m3	1	5/15/2017 3:34:00 PM
1,1,2-Trichloroethane	< 27	27		ug/m3	1	5/15/2017 3:34:00 PM
1,1-Dichloroethane	< 20	20		ug/m3	1	5/15/2017 3:34:00 PM
1,1-Dichloroethene	< 20	20		ug/m3	1	5/15/2017 3:34:00 PM
1,2,4-Trichlorobenzene	< 37	37		ug/m3	1	5/15/2017 3:34:00 PM
1,2,4-Trimethylbenzene	< 25	25		ug/m3	1	5/15/2017 3:34:00 PM
1,2-Dibromoethane	< 38	38		ug/m3	1	5/15/2017 3:34:00 PM
1,2-Dichtorobenzene	< 30	30		ug/m3	1	5/15/2017 3:34:00 PM
1,2-Dichloroethane	< 20	20		ug/m3	1	5/15/2017 3:34:00 PM
1,2-Dichloropropane	< 23	23		ug/m3	1	5/15/2017 3:34:00 PM
1,3,5-Trimethylbenzene	< 25	25		ug/m3	1	5/15/2017 3:34:00 PM
1,3-butadiene	< 11	11		ug/m3	1	5/15/2017 3:34:00 PM
1,3-Dichlorobenzene	< 30	30		ug/m3	1	5/15/2017 3:34:00 PM
1,4-Dichlorobenzene	< 30	30		ug/m3	1	5/15/2017 3:34:00 PM
1,4-Dioxane	< 36	36		ug/m3	1	5/15/2017 3:34:00 PM
2,2,4-trimethylpentane	< 23	23		ug/m3	1	5/15/2017 3:34:00 PM
4-ethyltoluene	< 25	25		ug/m3	1	5/15/2017 3:34:00 PM
Acetone	12	24	J	ug/m3	1	5/15/2017 3:34:00 PM
Allyl chloride	< 16	16		ug/m3	1	5/15/2017 3:34:00 PM
Benzene	< 16	16		ug/m3	1	5/15/2017 3:34:00 PM
Benzyl chloride	< 29	29		ug/m3	1	5/15/2017 3:34:00 PM
Bromodichloromethane	< 33	33		ug/m3	1	5/15/2017 3:34:00 PM
Bromoform	< 52	52		սց/m3	1	5/15/2017 3:34:00 PM
Bromomethane	< 19	19		ug/m3	1	5/15/2017 3:34:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/15/2017 3:34:00 PM
Carbon tetrachloride	< 31	31		ug/m3	1	5/15/2017 3:34:00 PM
Chlorobenzene	< 23	23		ug/m3	1	5/15/2017 3:34:00 PM
Chloroethane	< 13	13		ug/m3	1	5/15/2017 3:34:00 PM
Chloroform	250	24		ug/m3	1	5/15/2017 3:34:00 PM
Chloromethane	< 10	10		ug/m3	1	5/15/2017 3:34:00 PM
cis-1,2-Dichloroethene	< 20	20		ug/m3	1	5/15/2017 3:34:00 PM
cis-1,3-Dichloropropene	< 23	23		ug/m3	1	5/15/2017 3:34:00 PM
Cyclohexane	< 17	17		սց/m3	1	5/15/2017 3:34:00 PM
Dibromochloromathane	< 43	43		ug/m3	1	5/15/2017 3:34:00 PM
Ethyl acetate	< 36	36		ug/m3	1	5/15/2017 3:34;00 PM
Ethylbenzene	< 22	22		ug/m3	1	5/15/2017 3:34:00 PM
Freon 11	< 28	28		ug/m3	1	5/15/2017 3:34:00 PM
Freon 113	< 38	38		ug/m3	1	5/15/2017 3:34:00 PM
Freon 114	< 35	35		ug/m3	1	5/15/2017 3:34:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-004A

Client Sample ID: WAT-SV02-050817

Tag Number: 549,144 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: WC
Freon 12	< 25	25		ug/m3	1	5/15/2017 3:34:00 PM
Heptane	< 20	20		ug/m3	1	5/15/2017 3:34:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/15/2017 3:34:00 PM
Hexane	< 18	18		ug/m3	1	5/15/2017 3:34:00 PM
Isopropyl alcohol	< 12	12		ug/m3	1	5/15/2017 3:34:00 PM
m&p-Xylene	< 43	43		ug/m3	1	5/15/2017 3:34:00 PM
Methyl Butyl Ketone	< 41	41		սց/m3	1	5/15/2017 3:34:00 PM
Methyl Ethyl Ketone	< 2 9	29		ug/m3	1	5/15/2017 3:34:00 PM
Methyl Isobutyl Ketone	< 41	41		ug/m3	1	5/15/2017 3:34:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/15/2017 3:34:00 PM
Methylene chloride	< 17	17		นตู/กา3	1	5/15/2017 3:34:00 PM
o-Xylene	< 22	22		ug/m3	1	5/15/2017 3:34:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/15/2017 3:34:00 PM
Styrene	< 21	21		ug/m3	1	5/15/2017 3:34:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/15/2017 3:34:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/15/2017 3:34:00 PN
Toluene	< 19	19		սց/m3	1	5/15/2017 3:34:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/15/2017 3:34:00 PN
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/15/2017 3:34:00 PN
Trichloroethene	< 27	27		ug/m3	1	5/15/2017 3:34:00 PN
Vinyl acetate	< 18	18		ug/m3	1	5/15/2017 3:34:00 PN
Vinyl Bromide	< 22	22		ug/m3	1	5/15/2017 3:34:00 PN
Vinyl chloride	< 13	13		ug/m3	1	5/15/2017 3:34:00 PN
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: Wt
1-Propanethiol	< 1 6	16		µg/m3	1	5/16/2017 2:05:00 PN
Carbon disulfide	8.7	16	£	ug/m3 -	1	5/16/2017 2:05:00 PN
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 2:05:00 PA
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 2:05:00 PN
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 2:05:00 PN
Hydrogen Sulfide	620	7.0		ug/m3	1	5/16/2017 2:05:00 PN
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 2:05:00 PN
Methyl mercaptan	< 9.8	9.8		ug/m3	1	5/16/2017 2:05:00 PN

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- Quantitation Limit
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051512.D Vial: 6 Acq On : 15 May 2017 3:34 pm Sample : C1705036-004A Misc : TO15 Operator: WD Inst : GCMS3 Multiple: 1.00

MS Integration Params: rteint.p Quant Time: Jun 1 10:29 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

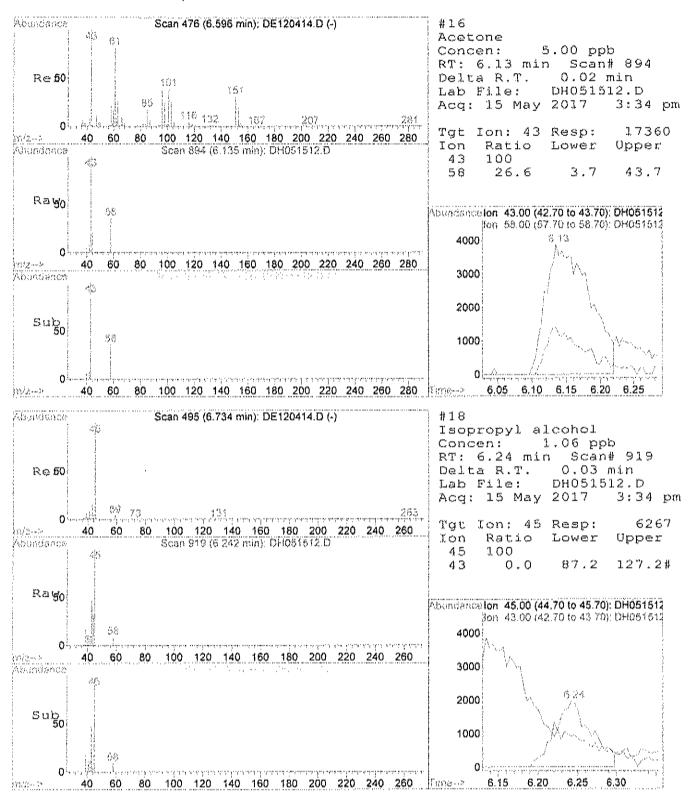
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

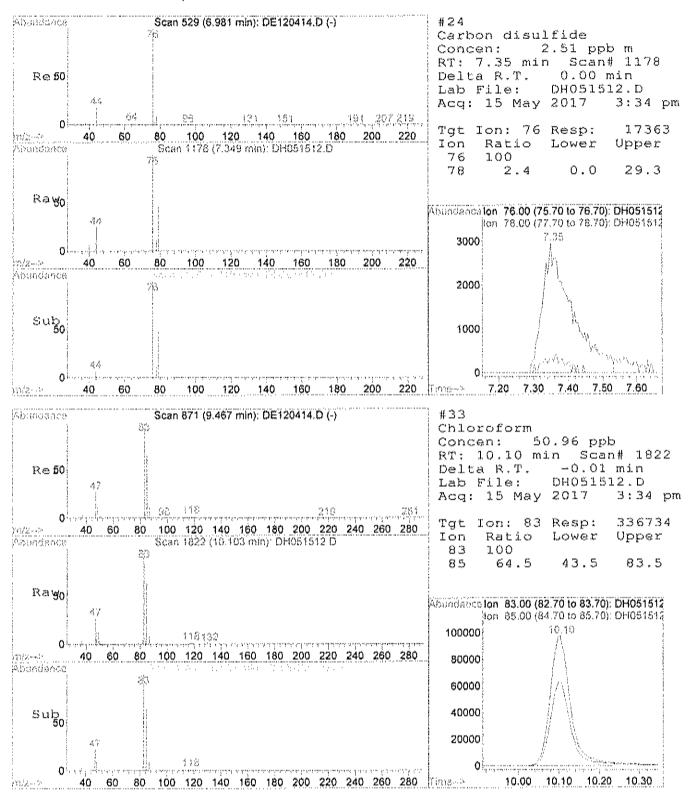
Internal Standards	R.T.	QIon	Response	Conc (Jnits	Dev(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.95 12.18 16.48		92308 550342 439260	50.00) bbp qdd ()	0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70		252652 Recover			
Target Compounds						Qvalue
16) Acetone	6.13	4.3	17360	5.00	dag (94
18) Isopropyl alcohol	6.24	45	6267		ववुवु ह	# 1
24) Carbon disulfide	7.35	76	17363m4D	2.51	dag J	
33) Chloroform	10.10	83	336734		dqq ō	
48) Methyl Isobutyl Ketone	13.89	43	10677		dqq c	
60) m&p-Xylene	16.92	106	7726m 🖘	1.17	dag 7	

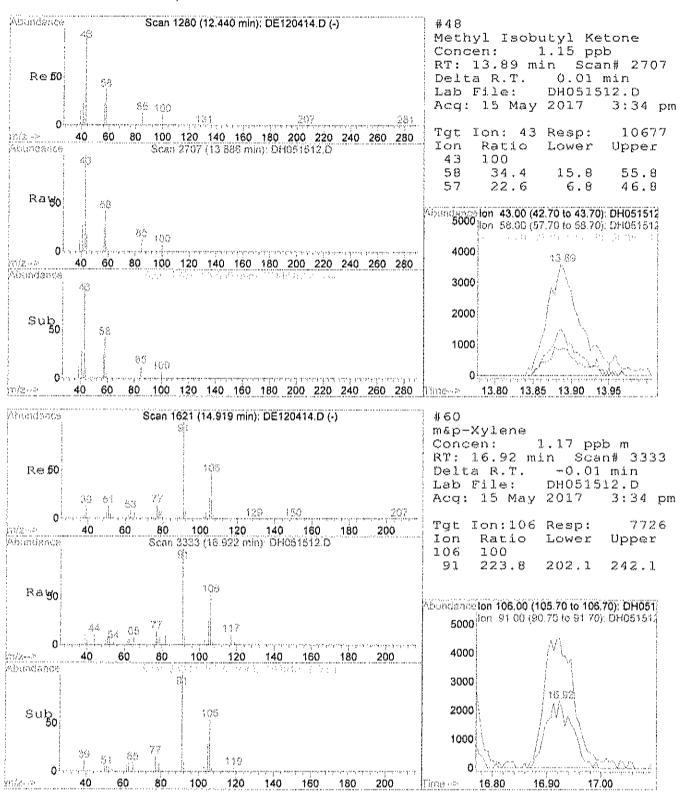
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Report

Quantitation







LSC Area Percent Report

Data File : C:\HPCHEM\1\DATA2\DH051512.D Vial: 6 Acq On : 15 May 2017 3:34 pm Operator: WD Sample : C1705036-004A Misc : T015 Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Min Area: 3 % of largest Peak
Max Peaks: 100
Peak Location: TOP

Method: C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator)
Title: VOA Standards for 5 point calibration
Smoothing: ON Filtering: 5
Sampling: 1 Min Area: 3 % or
Start Thrs: 0.2 Max Peaks: 100 Stop Thrs : 0

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

peak	R.T.	first	max	last	PK	peak	corr.	corr.	% ⇔£
##	m i, ri	scan	scan	scan	TY	height	area	% max.	total
				NOTE THAT THE PLAN	ATRY 1001 1014			MIN WAY BEE ONE BILL CO.	AND SERVICE WAS AND OUR BAS
3.	9.953	1769	1787	1808	rBV2	164259	689120	47.42%	11.611%
2	10.103	1808	1822	1852	rVB	247941	872208	60.02%	14.696%
3	12.185	2292	2309	2336	rBV	455741	1,351407	92.99%	22,770%
4	15.425	3034	3047	3064	r BV	61155	170847	11.76%	2.879%
55	16.483	3239	3249	3273	rBV	619215	1453280	100.00%	24.487%
_		5.5.7.6	0500	0540					40 0450
-10-	17.949	3519	3529	3542	rВV	544105	1148230	79.01%	19.347%
7	18.148	3561	3567	3579	rBV	50681	111483	7.67%	1.878%
8	19.399	3800	3806	3814	rВV	73861	138434	9.53%	2.332%

Sum of corrected areas: 5935009

DHOS1S12.D IO511T15.M Mon Jun 19 14:02:43 2017

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA2\DH051512.D

Operator : WD

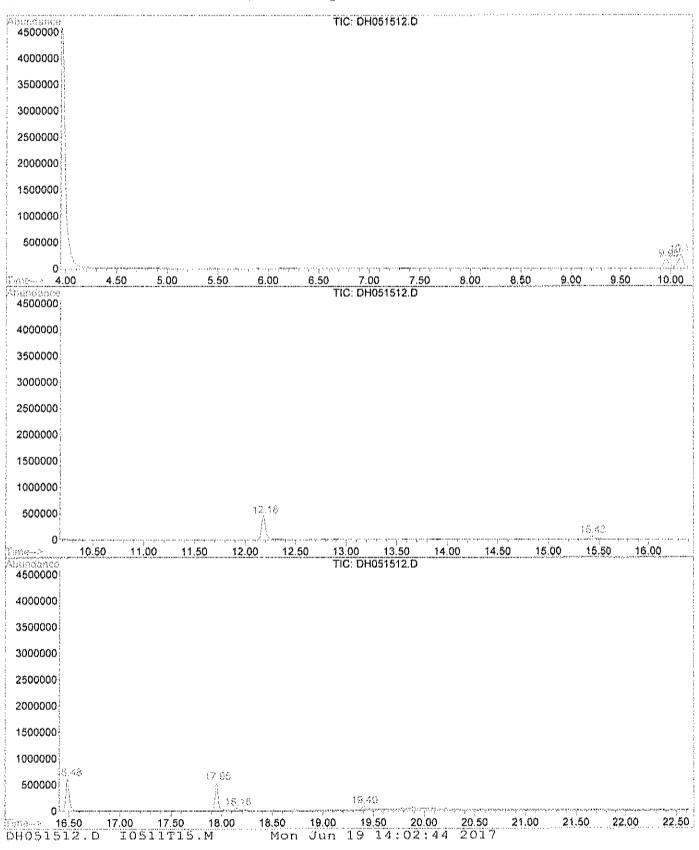
Acquired : 15 May 2017 3:34 pm using AcqMethod NEW1

Instrument : GCMS3

Sample Name: C1705036-004A

Misc Info : TO15 Vial Number: 6

Quant File : 10511T15.RES (RTE Integrator)



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Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051512.D Vial: 6 Acq On : 15 May 2017 3:34 pm Sample : C1705036-004A Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IOS11T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 1 Cyclotrisiloxane, hexamethyl- Concentration Rank 1 R.T. EstConc Area Relative to ISTD _____ 15.43 5.88 ppb 170847 Chlorobenzene-d5 Hit# of 5 Tentative ID MW Molform CAS# Qual 1 Cyclotrisiloxane, hexamethyl- 222 C6H18O3Si3 000541-05-9 59 2 Arsenous acid, tris(trimethylsilyl) 342 C9H27AsO3Si3 055429-29-3 50 3 Cyclotrisiloxane, hexamethyl- 222 C6H18O3Si3 000541-05-9 46 4 2,4,6-Cycloheptatrien-1-one, 3,5-bi 250 C13H22OSi2 000000-00-0 39 Scan 3048 (15.430 mln): DH051512.D(-) m/z 206.90 100.00% 267 8000 6000 4600 2000 15.00 15.20 15.40 15.60 15.80 46 75 | 115 | 148163 | 191 | 281 m/z 207.90 21.55% 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 #122037: Cyclotrisitoxane, hexamethy!-Kaurdiaaqe 8000 6000 4000 15.00 15.20 15.40 15.60 15.80 m/z 95.90 15.25% 2000 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 377/2000 Askinsa nyazan madad 8000 15.00 15.20 15.40 15.60 15.80 6000 m/z 208.90 4000 2000 73 105 133 197 223239 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 Abundance #122088; Cyclotrisiloxane, hexamethyl-15.00 15.20 15.40 15.60 15.80 8000 m/z 190.90 6000 4000 2000 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 15.00 15.20 15.40 15.60 15.80

Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 15 May 2017 3:34 pm

Data File: C:\HPCHEM\1\DATA2\DH051512.D

Name: C1705036-004A

Misc: TO15

Method: C:\HPCHEM\1\METHODS\T0511T15.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name RT EstConc Units Area IntStd ISRT ISArea ISConc Cyclotrisiloxane, he 15.43 5.9 ppb 170847 ISTD03 16.48 1453280 50.0

DH051512.D I0511T15.M Mon Jun 19 14:02:46 2017

Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-005A

Client Sample ID: WAT-SV10-050817

Tag Number: 595.54 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Q	ual Units	DF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHO	DD 3C		Analyst: WD
Carbon dioxide	0.328	1.90	J %	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	ND	0.580	%	1	5/15/2017
Nitrogen	74.9	8.30	%	1	5/15/2017
Oxygen	20.2	0.880	%	1	5/15/2017
SPPB BY METHOD TO15		TO-15	<u> </u>		Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5,0	Vdqq	1	5/15/2017 4:09:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	ρρb∨	1	5/15/2017 4:09:00 PM
1,1-Dichloroethane	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,1-Dichloroethene	< 5.0	5.0	Vđqq	1	5/15/2017 4:09:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
1,2-Dibromoethane	< 5.0	5.0	ppb∨	1	5/15/2017 4:09:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PM
1,2-Dichloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
1,2-Dichloropropane	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PM
1,3-butadiene	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PM
1,3-Dichtorobenzene	< 5.0	5.0	∨dqq	1	5/15/2017 4:09:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	∨dqq	1	5/15/2017 4:09:00 PM
1,4-Dioxane	< 10	10	ppb∨	1	5/15/2017 4:09:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
4-ethyltoluene	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
Acetone	3.3	10 .	J ppbV	1	5/15/2017 4:09:00 PM
Allyl chloride	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
Benzene	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PM
Benzyl chloride	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PM
Bromodichloromethane	< 5.0	5.0	PpbV	1	5/15/2017 4:09:00 PM
Bromoform	< 5.0	5.0	Vđqq	1	5/15/2017 4:09:00 PM
Bromomethane	< 5.0	5.0	ррьУ	1	5/15/2017 4:09:00 PM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PN
Carbon tetrachloride	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PN
Chlorobenzene	< 5.0	5.0	Vdqq	1	5/15/2017 4:09:00 PM
Chloroethane	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PN
Chloroform	< 5.0	5.0	ppbV	1	5/15/2017 4:09:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT: CH2M - St Louis

Client Sample ID: WAT-SV10-050817

Tag Number: 595.54 C1705036 Lab Order: Collection Date: 5/8/2017 Project: Former Hampshire

Matrix: AIR C1705036-005A Lab ID:

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		ТО	-15			Analyst: WD
Chloromethane	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		₽pbV	1	5/15/2017 4:09:00 PM
Cyclohexane	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM
Dibromochloromethane	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM
Ethyl acetate	< 10	10		₽pb∨	1	5/15/2017 4:09:00 PM
Ethylbenzene	< 5.0	5.0		Vdqq	1	5/15/2017 4:09:00 PM
Freon 11	< 5.0	5.0		Vdqq	1	5/15/2017 4:09:00 PM
Freon 113	< 5.0	5.0		γβαρ	1	5/15/2017 4:09:00 PM
Freon 114	< 5.0	5.0		∨dqq	1	5/15/2017 4:09:00 PM
Freon 12	< 5.0	5.0		∨dqq	1	5/15/2017 4:09:00 PM
Heptane	< 5.0	5.0		Vđqq	1	5/15/2017 4:09:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		Vđqq	1	5/15/2017 4:09:00 PM
Hexane	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM
Isopropyl alcohol	2.5	5.0	j	ppb∨	1	5/15/2017 4:09:00 PM
m&p-Xylene	< 10	10		ppb∨ ·	1	5/15/2017 4:09:00 PM
Methyl Butyl Ketone	< 10	10		ppb∨	1	5/15/2017 4:09:00 PM
Methyl Ethyl Ketone	< 10	10		₽₽bV	1	5/15/2017 4:09:00 PM
Methyl Isobutyl Ketone	< 10	10		ppbV	1	5/15/2017 4:09:00 PM
Methyl tert-butyl ether	< 5.0	5.0		ρρbV	1	5/15/2017 4:09:00 PM
Methylene chloride	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM
o-Xylene	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM
Propylene	< 5.0	5.0		Vdqq	1	5/15/2017 4:09:00 PM
Styrene	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM
Tetrachioroethylene	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM
Tetrahydrofuran	< 5.0	5.0		ρρb∨	1	5/15/2017 4:09:00 PM
Toluene	< 5.0	5.0		ppt√	1	5/15/2017 4:09:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM
Trichloroethene	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM
Vinyl acetate	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM
Vinyl Bromide	< 5.0	5.0		ppbV	1	5/15/2017 4:09:00 PM
Vinyl chloride	< 5.0	5.0		ppb∨	1	5/15/2017 4:09:00 PM
Surr: Bromofluorobenzene	82.6	73.7-124		%REC	1	5/15/2017 4:09:00 PM
TIC: Cyclotetrasiloxane, octamethyl-	38	0	JN	ppbV	1	5/15/2017 4:09:00 PM
TIC: Cyclotrisiloxane, hexamethyl s\$ Dimethy	18	Ö	ИL	ppbV	1	5/15/2017 4:09:00 PM
TiC: Ethanol \$\$ Ethyl alcohol \$\$ Alcohol \$\$ A	19	0	JN	Vdqq	1	5/15/2017 4:09:00 PM

Qualifiers:

- Quantitation Limit
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded н
- Non-routine analyte. Quantitation estimated. ΙN
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Estimated Value above quantitation range Е
- Analyte detected below quantitation limit
- Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Client Sample ID: WAT-SV10-050817

Lab Order:

C1705036

Tag Number: 595.54

Project:

Former Hampshire

Collection Date: 5/8/2017

Lab ID:

C1705036-005A

Matrix: AIR

Analyses	Result	**Limit Qua	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Analyst: WD
TIC: Heptadecane \$\$ n- Heptadecane \$\$ Normal-h	5.8	NL 0	ppbV	1	5/15/2017 4:09:00 PM
LOW LEVEL SULFURS BY TO-15		TO-15			Analyst: WD
1-Propanethiol	< 5.0	5.0	Vđqq	1	5/16/2017 2:40:00 PM
Carbon disulfide	< 5.0	5.0	Vágq	1	5/16/2017 2:40:00 PM
Carbonyl sulfide	< 5.0	5.0	ppbV	1	5/16/2017 2:40:00 PM
Dimethyl sulfide	< 5.0	5.0	ppbV	1	5/16/2017 2:40:00 PM
Ethyl mercaptan	< 5.0	5.0	Vđạq	1	5/16/2017 2:40:00 PM
Hydrogen Sulfide	< 5.0	5.0	ppbV	7	5/16/2017 2:40:00 PM
Isopropyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 2:40:00 PM
Methyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 2:40:00 PM
Surr: Bromofluorobenzene	151	70-130 S	%REC	1	5/16/2017 2:40:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT: Lab Order: CH2M - St Louis

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-005A

Client Sample ID: WAT-SV10-050817

Tag Number: 595.54 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Q	ral Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 4:09:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	սց/m3	1	5/15/2017 4:09:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 4:09:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/15/2017 4:09:00 PM
1,1-Dichloroethene	< 20	20	սց/m3	1	5/15/2017 4:09:00 PM
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/15/2017 4:09:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 4:09:00 PM
1,2-Dibromoethane	< 38	38	ug/m3	1	5/15/2017 4:09:00 PM
1,2-Dichlorobenzene	< 30	30	սց/m3	1	5/15/2017 4:09:00 PM
1,2-Dichloroethane	< 20	20	սց/m3	1	5/15/2017 4:09:00 PM
1,2-Dichloropropane	< 23	23	ug/m3	1	5/15/2017 4:09:00 PM
1,3,5-Trimethylbenzene	< 25	25	սց/m3	1	5/15/2017 4:09:00 PM
1,3-butadiene	< 11	11	ug/m3	1	5/15/2017 4:09:00 PM
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 4:09:00 PM
1,4-Dichlorobenzene	< 30	30	սց/m3	1	5/15/2017 4:09:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/15/2017 4:09:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/15/2017 4:09:00 PM
4-ethyltoluene	< 25	25	ug/m3	1	5/15/2017 4:09:00 PM
Acetone	7.7	24	մ սց/ու3	1	5/15/2017 4:09:00 PM
Allyl chloride	< 16	16	ug/m3	1	5/15/2017 4:09:00 PM
Benzene	< 16	16	ug/m3	i	5/15/2017 4:09:00 PM
Benzyl chloride	< 29	29	ug/m3	1	5/15/2017 4:09:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/15/2017 4:09:00 PM
Bromoform	< 52	52	ug/m3	1	5/15/2017 4:09:00 PM
Bromomethane	< 19	19	ug/m3	1	5/15/2017 4:09:00 PM
Carbon disulfide	< 16	16	սց/m3	1	5/15/2017 4:09:00 PM
Carbon tetrachloride	< 31	31	ug/m3	1	5/15/2017 4:09:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/15/2017 4:09:00 PM
Chloroethane	< 13	13	ug/m3	1	5/15/2017 4:09:00 PM
Chloroform	< 24	24	ug/m3	1	5/15/2017 4:09:00 PM
Chloromethane	< 10	10	น g/m 3	1	5/15/2017 4:09:00 PM
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 4:09:00 PM
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/15/2017 4:09:00 PM
Cyclohexane	< 17	17	ug/m3	1	5/15/2017 4:09:00 PM
Dibromochloromethane	< 43	43	ug/m3	1	5/15/2017 4:09:00 PM
Ethyl acetate	< 36	36	ug/m3	1	5/15/2017 4:09:00 PM
Ethylbenzene	< 22	22	ug/m3	1	5/15/2017 4:09:00 PM
Freon 11	< 28	28	ug/m3	1	5/15/2017 4:09:00 PM
Freen 113	< 38	38	ug/m3	1	5/15/2017 4:09:00 PM
Frean 114	< 35	35	ug/m3	1	5/15/2017 4:09:00 PM

Qualifiers:

- Quantitation Limit
- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded н
- JN Non-routine analyte, Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Ε Estimated Value above quantitation range
- Analyte detected below quantitation limit
- Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-005A

Client Sample ID: WAT-SV10-050817

Tag Number: 595.54 Collection Date: 5/8/2017

Matrix: AlR.

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		ΤC)-15	· ·		Analyst: WD
Freon 12	< 25	25		ug/m3	1	5/15/2017 4:09:00 PM
Heptane	< 20	20		սց/m3	1	5/15/2017 4:09:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/15/2017 4:09:00 PM
Hexane	< 18	18		ug/m3	1	5/15/2017 4:09:00 PM
Isopropyl alcohol	6.1	12	ţ	սց/m3	1	5/15/2017 4:09:00 PM
m&p-Xylene	< 43	43		ug/m3	1	5/15/2017 4:09:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/15/2017 4:09:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/15/2017 4:09:00 PM
Methyl Isobutyl Ketone	< 41	41		ug/m3	1	5/15/2017 4:09:00 PM
Methyl tert-bulyl ether	< 18	18		ug/m3	1	5/15/2017 4:09:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/15/2017 4:09:00 PM
o-Xylene	< 22	22		ug/m3	1	5/15/2017 4:09:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/15/2017 4:09:00 PM
Styrene	< 21	21		սց/m3	1	5/15/2017 4:09:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/15/2017 4:09:00 PM
Tetrahydrofuran	< 15	15		սց/m3	1	5/15/2017 4:09:00 PM
Toluene	< 19	19		սց/m3	1	5/15/2017 4:09:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/15/2017 4:09:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/15/2017 4:09:00 PM
Trichloroethene	< 27	27		ug/m3	1	5/15/2017 4:09:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/15/2017 4:09:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/15/2017 4:09:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/15/2017 4:09:00 PM
OW LEVEL SULFURS BY TO-15		TC)-15			Analyst: W
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 2:40:00 PtV
Carbon disulfide	< 16	16		ug/m3	1	5/16/2017 2:40:00 PN
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 2:40:00 PN
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 2:40:00 PM
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 2:40:00 PN
Hydrogen Sulfide	< 7.0	7.0		ug/m3	1	5/16/2017 2:40:00 PN
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 2:40:00 PM
Methyl mercaptan	< 9.8	9.8		սց/m3	1	5/16/2017 2:40:00 PN

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Quantitation Limit

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Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded Н

JN Non-routine analyte, Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

Estimated Value above quantitation range E

Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051513.D

Acq On : 15 May 2017 4:09 pm

Sample : C1705036-005A Misc : T015

MS Integration Params: rteint.p Quant Time: Jun 1 10:31 2017

Vial: 7 Operator: WD Inst : GCMS3 Multiplr: 1.00

Quant Results File: 10511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

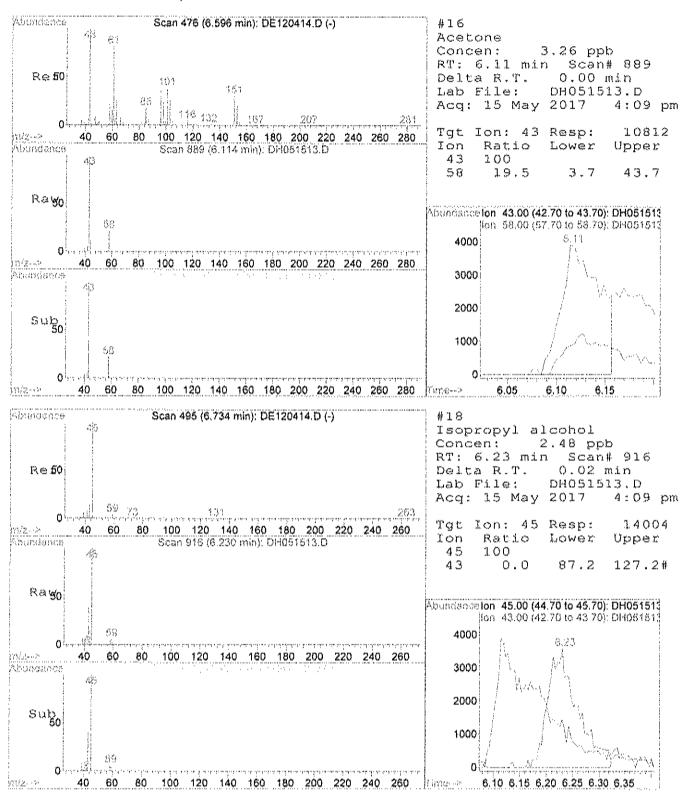
Internal Standards	R.T.	QIon	Response	Conc (units	Dev(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.95 12.18 16.48	128 114 117	88239 532758 426765	50.00	dqq (dqq (0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 80.000	17.95 Range 70	95 - 130				
Target Compounds						Qvalue
16) Acetone	6.11	43	10812	3.26	वंद्रद्र ह	91
18) Isopropyl alcohol	6.23	4.5	14004	2.48	dag 8	# 1.
43) Trichloroethene	12.79	1.30	14343	3.44	dag (96
48) Methyl Isobutyl Ketone	13.88	4.3	9925	1.11	dqq	8.3
52) Toluene	14.70	92	12461		dqq .	92
60) m&p-Xylene	16.92	106	7819m (այի		တ်ရှိရှိ 🤄	

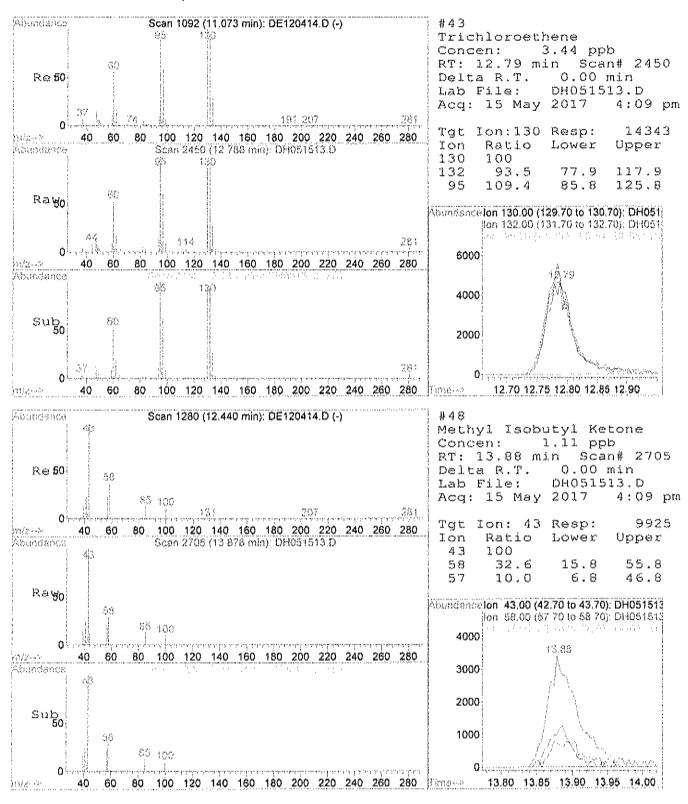
91 TO SERVE OF AN ALC AND ALC

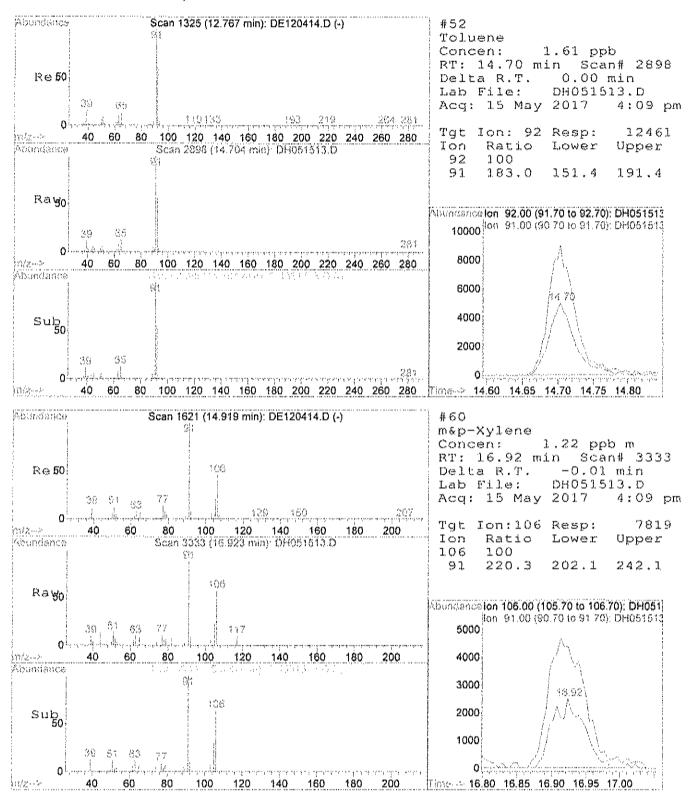
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Report

Quantitation







LSC Area Percent Report

Data File : C:\HPCHEM\1\DATA2\DH051513.D Vial: 7 Acq On : 15 May 2017 4:09 pm Operator: WD

Sample : C1705036-005A Misc : T015 Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration

Smoothing : ON

Filtering: 5
Min Area: 3 % of largest Peak
Max Peaks: 100
Peak Location: TOP

Sampling : 1 Start Thrs: 0.2 Stop Thrs : 0

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

pea) #	c R.T. mi,n	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	5.392	708	720	750	rBV2	67228	272630	19.24%	3.932%
2	9.954	1768	1787	1816	rBV2	168626	710083	50.11%	10.240%
3	12.181	2292	2308	2334	rBV	449455	1304413	92.06%	18.811%
4	12.784	2436	2449	2466	rBV2	27057	78078	5.51%	1.126%
5	14.704	2886	2898	2913	rBV2	21899	53287	3.76%	0.768%
6	15.421	3033	3046	3069	rBV	201387	507833	35.84%	7.323%
7	16.483	3239	3249	3273	rBV	605357	1416993	100.00%	20.434%
8	17.949	3517	3529	3541	rBV	547221	1129989	79.75%	16.295%
9	18.148	3559	3567	3579	a:BV	572258	1075481	75.90%	15.509%
10	18.719	3669	3676	3687	rBV2	31755	68542	4.84%	0.988%
1.1	19.258	3765	3779	3784	rBV5	20369	56165	3.96%	0.810%
1.2	19.400	3800	3806	3814	YBV	86909	165460	11.68%	2.386%
13	19.886	3888	3899	3906	rBV4	35998	95509	6.74%	1.377%

Sum of corrected areas: 6934463

DH051513.D 10511T15.M Mon Jun 19 14:03:45 2017

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA2\DH051513.D

Operator : WD

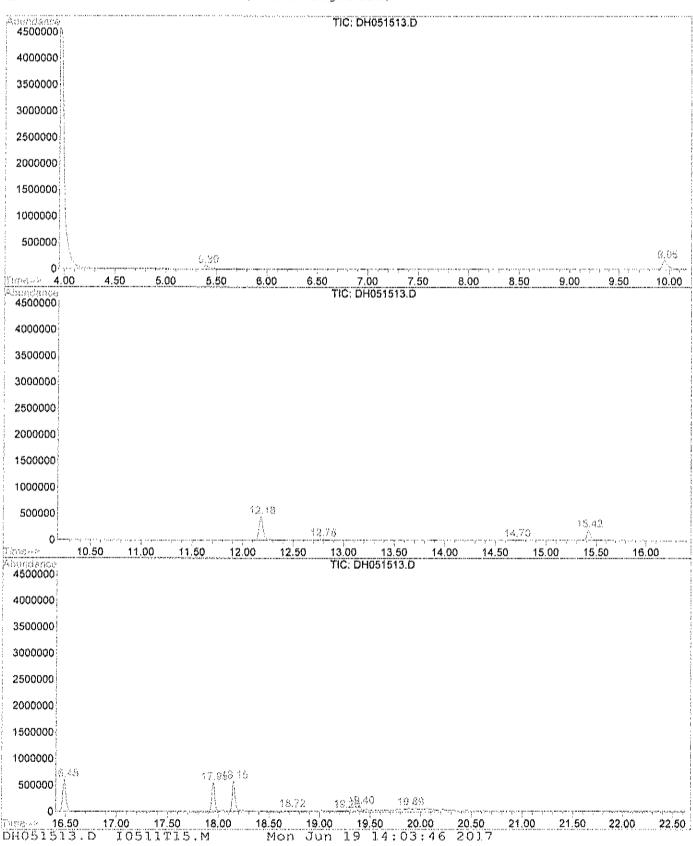
Acquired : 15 May 2017 4:09 pm using AcqMethod NEW1

Instrument: GCMS3

Sample Name: C1705036-005A

Misc Info : TO15 Vial Number: 7

Quant File : 10511T15.RES (RTE Integrator)



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Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DHO51513.D Vial: 7 Acq On : 15 May 2017 4:09 pm Operator: WD Sample : C1705036-005A Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point celibration Library : C:\DATABASE\NIST129.L ****** Peak Number 1 Ethanol \$\$ Ethyl alcohol \$\$ Al Concentration Rank 2 R.T. EstConc Area Relative to ISTD 272630 Bromochloromethane 5.39 19.20 ppb Hit# of 5 Tentative ID

1 Ethanol \$\$ Ethyl alcohol \$\$ Alcohol 46 C2H6O 000064-17-5 90
2 Ethanol 46 C2H6O 000064-17-5 83
46 C2H6O 000064-17-5 64
46 C2H6O 000115-10-6 9 Hit# of 5 Tentative ID 3 Ethenor 4 Dimethyl ether Scan 720 (5,392 mln): DH051513.D (-) 46 C2H60 000115 10 m/z 45.00 100.00% 8000 6000 4000 2000 5.00 5.20 5.40 5.60 5.80 944 | 187 3003 - 1804 - 1904 - 1905 - 1905 - 1905 - 1905 - 1905 - 1905 - 1905 - 1905 - 1905 - 1905 - 1905 - 19 m/z 46.00 36.10% 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 25.2n cs 53.65 pe 757 pe. #51" Ethanol 55 Ethyl alcohol \$\$ Alcohol \$\$ Alcohol anhy 8000 6000 and the state of the first fir 5.00 5.20 5.40 5.60 5.80 m/z 43.00 19.05% 4000 2000 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 Paga nastwares 8000 5.00 5.20 5.40 5.60 5.80 6000 45 m/z41.90 4000 2000 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 Abundance #107946. Ethanol 5.00 5.20 5.40 5.60 5.80 8000 m/2 43.90 2.56% 6000 4000 2000 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 5.00 5.20 5.40 5.60 5.80

Library Search Compound Report

Data File : C:\MPCHEM\1\DATA2\DH051513.D Vial: 7 Acq On : 15 May 2017 4:09 pm Sample : C1705036-005A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\I\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 2 Cyclotrisiloxane, hexamethyl- Concentration Rank 3 R.T. EstConc Area Relative to ISTD 15.42 17.92 ppb 507833 Chlorobenzene-d5 Hit# of 5 Tentative ID MW MolForm CAS# Qual National arraces 8000 6000 4000 2000 45 59 75 87 105 118 347 103 177 191 15.00 15.20 15.40 15.60 15.80 m/z 207.90 21.898 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 #43616: Cyclotrisiioxane, hexamethyl- \$\$ Dimethylsiloxane c 8000 6000 عرابت والها بالمتراث ويعججك أعابية والمتعاسة والوساسية فالماوا الا 15.00 15.20 15.40 15.60 15.80 m/z 95.90 15.86% 4000 2000 See 1927) 144 (Q2) 15 (Q2) 16 (Q2) 16 (Q2) 16 (Q2) 16 (Q2) 16 (Q2) 16 (Q2) 16 (Q2) 16 (Q2) 16 (Q2) 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 8000 15.00 15.20 15.40 15.60 15.80 6000 m/z 208.90 4000 2000 119 133 147 163 177 161 1837 — 1477 — 1736 — 1739 — 1747 — 1742 — 1742 — 1743 — 1743 — 1743 — 1743 — 1743 — 1744 — 1745 — 17 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 #122085; Cyclotrisiloxane, hexamethyl-Phundance 15.00 15.20 15.40 15.60 15.80 8000 m/z 190.90 9.148 6000 4000 2000 2000 | 56 | 133 | 147 | 163 | 177 | 191 | 15.00 | 15.20 | 15.40 | 15.60 | 15.80 |

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051513.D Vial: 7 Acq On : 15 May 2017 4:09 pm Operator: WD Sample : C1705036-005A Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\T0511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L *********** Peak Number 3 Cyclotetrasiloxane, octamethyl Concentration Rank 1 R.T. EstConc Area Relative to ISTD 18.15 37.95 ppb 1075480 Chlorobenzene-d5 16.48 Hit# of 5 Tentative ID MW MolForm CAS# Qual 8000 6000 4000 2000 45 59 73 89 103 119 1 147 153 177 1 207 224 235 249 255 40 60 80 100 120 140 160 180 200 220 240 260 280 17.80 18.00 18.20 18.40 m/z 281.90 27.978 Simumoters over #125682: Cyclotetrasiloxane, octamethyl-281 8000 6000 and the second and the first of the second s 4000 17.80 18.00 18.20 18.40 m/z 282.90 18.11% 2000 179 193 207 <u>235 249 285</u> والرواق والكرامة ويترمنه وتسار بويشيت شاينيا والمسارية بالإسارية بالأسار والأربق والشارة بالأسانيات المعامات 40 60 80 100 120 140 160 180 200 220 240 260 280 in the secretary co 281 8000 17.80 18.00 18.20 18.40 - /- 192 90 9.38% 6000 4000 2000 45 55 1 133 177 193 207 235 40 60 80 100 120 140 160 180 200 220 240 260 280 #70157: Cyclotetrasiloxane, octamethyl- \$\$ Octamethylcyclot 17.80 18.00 18.20 18.40 m/z 132.90 9. 8000 6000 4000 2000

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051513.D Vial: 7 Acq On : 15 May 2017 4:09 pm Sample : C1705036-005A Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 4 Heptadecane \$\$ n-Heptadecane \$ Concentration Rank 4 R.T. EstConc Area Relative to ISTD 19.40 5.84 ppb 165460 Chlorobenzene-d5 16.48 Mit# of 5 Tentative ID MW Molform CAS# Qual l Heptadecane \$\$ n-Heptadecane \$\$ Nor 240 C17H36 000629-78-7 83 2 Undecane, 4,7-dimethyl-017301-32-5 80 184 C13H28 3 Elcosane 000112-95-8 78 282 C20H-1 296 C12H251 00--| m/z 43.00 4 Dodecane, 1-iodo-004292-19-7 72 Scan 3806 (19.400 min): DH051513.D (-) Pagundance 100.00% 8000 6000 15.50 4000 2000 19.00 19.20 19.40 19.60 19.80 gg 113 127 60 80 100 120 140 160 180 200 220 240 260 280 57.00 m/z #81347 Heptadecane SS n-Heptadecane SS Normal-heptadecane Abuddanse 8000 6000 4000 19.00 19.20 19.40 19.60 19.80 ın/z 71.00 69.88% 2000 110 127 141 60 80 100 120 140 160 180 200 220 240 260 280 Abundance 8000 19.00 19.20 19.40 19.60 19.80 6000 m/z 84.95 44.978 4000 2000 99 113 727 144 60 80 100 120 140 160 180 200 220 240 260 280 Adundance #125170: Eicosane 19.00 19.20 19.40 19.60 19.80 43 8000 m/z 41.00 6000 4000 2000 09 113 127 141 <u>(55)69</u> 01/2--> 20 40 60 80 100 120 140 160 180 200 220 240 260 280 19.00 19.20 19.40 19.60 19.80

Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 15 May 2017 4:09 pm Data File: C:\HPCHEM\1\DATA2\DHOS1513.D

Name: C1705036-005A

Misc: TOIS

Method: C:\APCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Ethanol \$\$ Ethyl alc Cyclotrisiloxane, he Cyclotetrasiloxane, Heptadecane \$\$ n-Hep	5.39 15.42 18.15 19.40	19.2 17.9 37.9 5.8	ppb dqq	507833 1075480	ISTD01 ISTD03 ISTD03 ISTD03	16.48 16.48	710083 1416990 1416990 1416990	50.0 50.0
DH051513.D T0511T19	5 - M	Моп Ји	n 19	14:03:55	2017			

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV09-050817

Lab Order: C1705036 Tag Number: 1017.121

Project: Former Hampshire Collection Date: 5/8/2017
Lab ID: C1705036-006A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS	FLD				Analyst:	
Lab Vacuum In	-4		•	"Hg		5/12/2017
Lab Vacuum Out	-30		•	"Hg		5/12/2017
FIXED GAS SERIES		EPA MET	HOD 3	С		Analyst: WD
Carbon dioxide	0.615	1.90	j	%	1	5/15/2017
Carbon Monoxide	NO	0.880	,	%	1	5/15/2017
Methane	ND	0.580	4	%	1	5/15/2017
Nitrogen	71.8	8.30	9	%	1	5/15/2017
Oxygen	18.8	0.880	,	%	1	5/15/2017
SPPB BY METHOD TO15		TO-	15			Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	ŗ	pbV	1	5/17/2017 1:11:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ŧ	Vdqc	1	5/17/2017 1:11:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	Ş	opb∨	1	5/17/2017 1:11:00 PM
1,1-Dichloroethane	< 5.0	5.0	Ē	Váqc	1	5/17/2017 1:11:00 PM
1,1-Dichloroethene	< 5.0	5.0	ŗ	Vdqc	1	5/17/2017 1:11:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	į	Vdqc	1	5/17/2017 1:11:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	ŗ	Vđạc	1	5/17/2017 1:11:00 PM
1,2-Dibromoethane	< 5.0	5.0	F	Vdqc	1	5/17/2017 1:11:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	ţ.	opbV	1	5/17/2017 1:11:00 PM
1,2-Dichloroethane	< 5.0	5.0	ŗ	opbV	1	5/17/2017 1:11:00 PM
1,2-Dichloropropane	< 5.0	5.0	\$	Vđạc	1	5/17/2017 1:11:00 PM
1,3,5-Trimethy/benzene	< 5.0	5.0	Į	opbV	1	5/17/2017 1:11:00 PM
1,3-butadiene	< 5.0	5.0	ŗ.	opb∨	1	5/17/2017 1:11:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	F	∨dqc	1	5/17/2017 1:11:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	ŗ	Vdqc	1	5/17/2017 1:11:00 PM
1,4-Dioxane	< 10	10	F.	opb∨	1	5/17/2017 1:11:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	F	pbV	1	5/17/2017 1:11:00 PM
4-ethyltoluene	< 5.0	5.0	Ę	эрьV	1	5/17/2017 1:11:00 PM
Acetone	10	10	p	Vđạc	1	5/17/2017 1:11:00 PM
Allyl chloride	< 5.0	5.0	ŗ	∨dqc	1	5/17/2017 1:11:00 PM
Benzene	4.5	5.0	J p	γρbV	1	5/17/2017 1:11:00 PM
Benzyl chloride	< 5.0	5.0	Ş.	pb∨	1	5/17/2017 1:11:00 PM
Bromodichloromethane	< 5.0	5.0	p	∨¢q¢	1	5/17/2017 1:11:00 PM
Bromoform	< 5.0	5.0	p	pbV	1	5/17/2017 1:11:00 PM
Bromomethane	< 5.0	5.0		pb∨	1	5/17/2017 1:11:00 PM
Carbon disulfide	< 5.0	5.0		vpbV	1	5/17/2017 1:11:00 PM
Carbon tetrachloride	< 5.0	5.0		γρbV	1	5/17/2017 1:11:00 PM
Chlorobenzene	< 5.0	5.0		pb∨	1	5/17/2017 1:11:00 PM
Chloroethane	< 5.0	5.0		∨dqu	1	5/17/2017 1:11:00 PM
Chloroform	< 5.0	5.0		pbV	1	5/17/2017 1:11:00 PM

Qualifiers:

Date: 22-Jun-17

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order: 0

C1705036

Project: Former Hampshire

Lab ID:

C1705036-006A

Date: 22-Jun-17

Client Sample ID: WAT-SV09-050817

Tag Number: 1017.121 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qua	Units	DF	Date Analyzed
5PPB BY METHOD TO15 TO-15						Analyst: WD
Chloromethane	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		∨dqq	1	5/17/2017 1:11:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Cyclohexane	< 5.0	5.0		ppb∨	1	5/17/2017 1:11:00 PM
Dibromochloromethane	< 5.0	5.0		ppb∨	1	5/17/2017 1:11:00 PM
Ethyl acetate	< 10	10		ppbV	1	5/17/2017 1:11:00 PM
Ethylbenzene	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Freon 11	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Freon 113	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Freon 114	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Freon 12	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Heptane	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Hexane	< 5.0	5.0		ppb∨	1	5/17/2017 1:11:00 PM
Isopropyi alcohol	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
m&p-Xylene	< 10	10		Vdqq	1	5/17/2017 1:11:00 PM
Methyl Butyl Ketone	< 10	10		ppbV	1	5/17/2017 1:11:00 PM
Methyl Ethyl Ketone	< 10	10		ppb∨	1	5/17/2017 1:11:00 PM
Methyl Isobutyl Ketone	< 10	10		ppbV	1	5/17/2017 1:11:00 PM
Methyl tert-butyl ether	< 5.0	5.0		Vdqq	1	5/17/2017 1:11:00 PM
Methylene chloride	< 5.0	5.0		ppb∨	1	5/17/2017 1:11:00 PM
o-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Propylene	< 5.0	5.0		ppb∀	1	5/17/2017 1:11:00 PM
Styrene	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Tetrachloroethylene	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Tetrahydrofuran	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Toluene	3.0	5.0	J	ppbV	1	5/17/2017 1:11:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Trichloroethene	< 5.0	5.0		ppb∨	1	5/17/2017 1:11:00 PM
Vinyl acetate	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Vinyl Bromide	< 5.0	5.0		ppb∨	1	5/17/2017 1:11:00 PM
Vinyl chloride	< 5.0	5.0		ppbV	1	5/17/2017 1:11:00 PM
Surr: Bromofluorobenzene	83.8	73.7-124		%REC	1	5/17/2017 1:11:00 PM
NOTES:						
No Tic's found.						
OW LEVEL SULFURS BY TO-15		TO-	15			Analyst: WD
1-Propanethiol	< 5.0	5.0		ppb∨	1	5/16/2017 3:15:00 PM
Carbon disulfide	1.3	5.0	J	ppb∨	1	5/16/2017 3:15:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CH2M - St Louis CLIENT:

Lab Order:

Former Hampshire Project:

C1705036

C1705036-006A Lab ID:

Client Sample ID: WAT-SV09-050817

Tag Number: 1017.121 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Qua	I Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15	e e e e e e e e e e e e e e e e e e e	TO-15			Analyst: WD
Carbonyl sulfide	< 5.0	5.0	ppb∨	1	5/16/2017 3:15:00 PM
Dimethyl sulfide	< 5.0	5.0	ppbV	1	5/16/2017 3:15:00 PM
Ethyl mercaptan	< 5.0	5.0	∨dqq	1	5/16/2017 3:15:00 PM
Hydrogen Sulfide	< 5.0	5.0	ppbV	1	5/16/2017 3:15:00 PM
Isopropyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 3:15:00 PM
Methyl mercaptan	< 5.0	5.0	Vdqq	1	5/16/2017 3:15:00 PM
Surr: Bromofluorobenzene	153	70-130 S	%REC	1	5/16/2017 3:15:00 PM

Qualifiers:

Quantitation Limit

Analyte detected in the associated Method Blank В

Н Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

Estimated Value above quantitation range E

Analyte detected below quantitation limit

Not Detected at the Limit of Detection

Page 18 of 42

CLIENT: CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-006A

Date: 22-Jun-17

Client Sample ID: WAT-SV09-050817

Tag Number: 1017.121 Collection Date: 5/8/2017

Matrix: AIR.

Analyses	Resuit	**Limit Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 1:11:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	ug/m3	1	5/17/2017 1:11:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 1:11:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 1:11:00 PM
1,1-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 1:11:00 PM
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/17/2017 1:11:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 1:11:00 PM
1,2-Dibromoethane	< 38	38	սց/m3	1	5/17/2017 1:11:00 PM
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 1:11:00 PM
1,2-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 1:11:00 PM
1,2-Dichloropropane	< 23	23	ug/m3	1	5/17/2017 1:11:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 1:11:00 PM
1,3-butadiene	< 11	11	ug/m3	1	5/17/2017 1:11:00 PM
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 1:11:00 PM
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 1:11:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/17/2017 1:11:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/17/2017 1:11:00 PM
4-ethyltoluene	< 25	25	ug/m3	1	5/17/2017 1:11:00 PM
Acelone	25	24	ug/m3	1	5/17/2017 1:11:00 PM
Allyl chloride	< 16	15	ug/m3	1	5/17/2017 1:11:00 PM
Benzene	14	16 J	ug/m3	1	5/17/2017 1:11:00 PM
Benzyl chloride	< 29	29	ug/m3	t	5/17/2017 1;11:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/17/2017 1:11:00 PM
Bromoform	< 52	52	ug/m3	1	5/17/2017 1:11:00 PM
Bromomethane	< 19	19	ug/m3	1	5/17/2017 1:11:00 PM
Carbon disulfide	< 16	16	ug/m3	1	5/17/2017 1:11:00 PM
Carbon tetrachloride	< 31	31	ug/m3	1	5/17/2017 1:11:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/17/2017 1:11:00 PM
Chloroethane	< 13	13	սց/m3	1	5/17/2017 1:11:00 PM
Chloroform	< 24	24	ug/m3	1	5/17/2017 1:11:00 PM
Chloromethane	< 10	10	սց/m3	1	5/17/2017 1:11:00 PM
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 1:11:00 PM
cis-1,3-Dichtoropropene	< 23	23	ug/m3	1	5/17/2017 1:11:00 PM
Cyclohexane	< 17	17	ug/m3	1	5/17/2017 1:11:00 PM
Dibromochloromethane	< 43	43	ug/m3	1	5/17/2017 1:11:00 PM
Ethyl acetale	< 36	36	ug/m3	1	5/17/2017 1:11:00 PM
Ethylbenzene	< 22	22	ug/m3	1	5/17/2017 1:11:00 PM
Freon 11	< 28	28	ug/m3	1	5/17/2017 1:11:00 PM
Freon 113	< 38	38	ug/m3	1	5/17/2017 1:11:00 PM
Freon 114	< 35	35	ug/m3	1	5/17/2017 1:11:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- . Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Client Sample ID: WAT-SV09-050817

Lab Order:

C1705036

Tag Number: 1017.121

Project: Lab ID:

Former Hampshire C1705036-006A

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: WD
Freon 12	< 25	25		ug/m3	1	5/17/2017 1:11:00 PM
Heptane	< 20	20		ug/m3	1	5/17/2017 1:11:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/17/2017 1:11:00 PM
Hexane	< 18	18		ug/m3	1	5/17/2017 1:11:00 PM
tsopropyl atcohol	< 12	12		սց/m3	1	5/17/2017 1:11:00 PM
m&p-Xylene	< 43	43		ug/m3	1	5/17/2017 1:11:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/17/2017 1:11:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/17/2017 1:11:00 PM
Methyl (sobuty) Ketone	< 41	41		ug/m3	1	5/17/2017 1:11:00 PM
Methyl tert-butyl ether	< 18	18		սց/m3	1	5/17/2017 1:11:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/17/2017 1:11:00 PM
o-Xylene	< 22	22		ug/m3	1	5/17/2017 1:11:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/17/2017 1:11:00 PM
Styrene	< 21	21		ug/m3	1	5/17/2017 1:11:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/17/2017 1:11:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/17/2017 1:11:00 PM
Toluene	11	19	J	ug/m3	1	5/17/2017 1:11:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 1:11:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 1:11:00 PM
Trichloroethene	< 27	27		ug/m3	1	5/17/2017 1:11:00 PN
Vinyl acetate	< 18	18		ug/m3	1	5/17/2017 1:11:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/17/2017 1:11:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/17/2017 1:11:00 PM
NOTES:				•		
No Tic's found.						
OW LEVEL SULFURS BY TO-15		то	-15			Analyst: Wt
1-Propanethiol	< 16	16		սց/m3	1	5/16/2017 3:15:00 PN
Carbon disulfide	4.1	16	j	ug/m3	1	5/16/2017 3:15:00 PN
Carbonyl sulfide	< 12	12		սց/m3	1	5/16/2017 3:15:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 3:15:00 PN
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 3:15:00 PN
Hydrogen Sulfide	< 7.0	7.0		ug/m3	1	5/16/2017 3:15:00 PM
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 3:15:00 PN
Methyl mercaptan	< 9.8	9.8		ug/m3	1	5/16/2017 3:15:00 PM

and to	٠.		4		
Oua	1	п	I	C	L2

- Quantitation Limit
- Analyte detected in the associated Method Blank
- И Holding times for preparation or analysis exceeded
- IN Non-routine analyte, Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Estimated Value above quantitation range Ε
- Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051709.D Vial: 8

Acq On : 17 May 2017 1:11 pm Sample : C1705036-006A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: rteint.p

Quant Time: Jun 1 11:14 2017 Quant Results File: IO511T15.RES

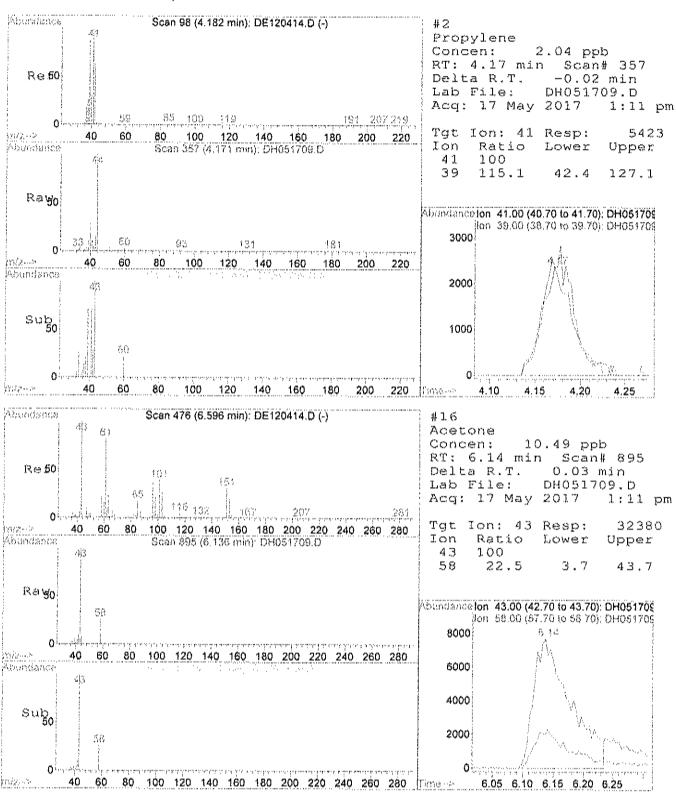
Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

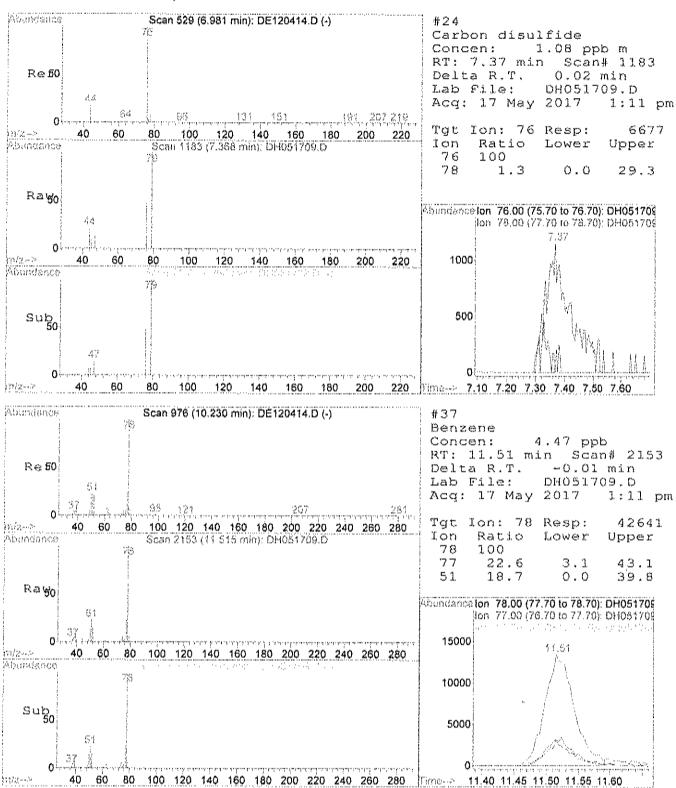
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

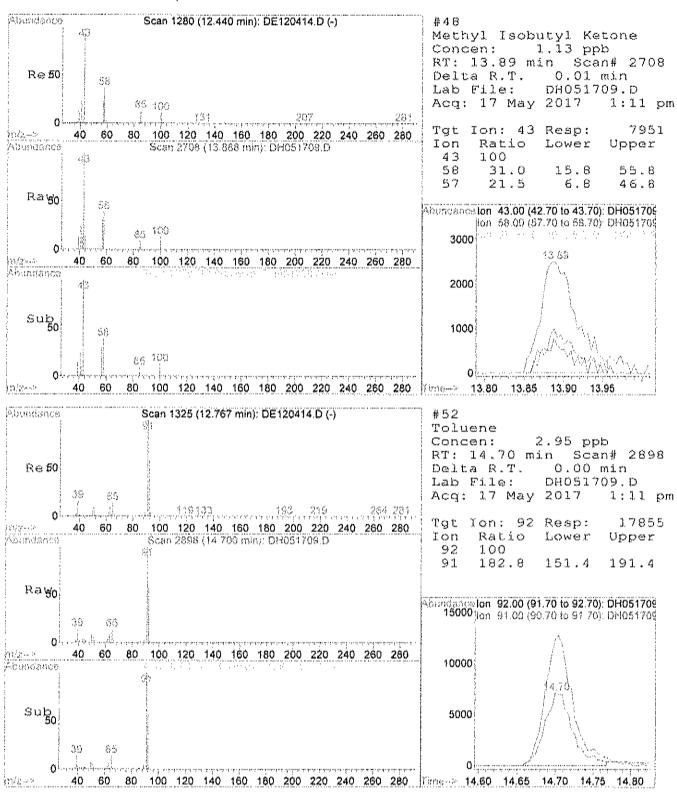
Internal Standards	R.T.	QIon	Response	Conc U	nits	Dev(Min)
	9.96 12.18 16.48			50.00 50.00 50.00	dqq	0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000			193680 Recover			
Target Compounds 2) Propylene 16) Acetone 24) Carbon disulfide 37) Benzene 48) Methyl Isobutyl Ketone 52) Toluene 59) Ethylbenzene 60) m&p-Xylene 63) o-xylene	4.17 6.14 7.37 11.51 13.89 14.70 16.75 16.91	43 76 78 43 92 106	5423 32380 6677ma 42641 7951 17855 4894 16935	10.49 1.08 4.47 1.13 2.95 1.23	dqq dqq dqq dqq dqq dqq dqq dqq dqq dqq	98 91 92

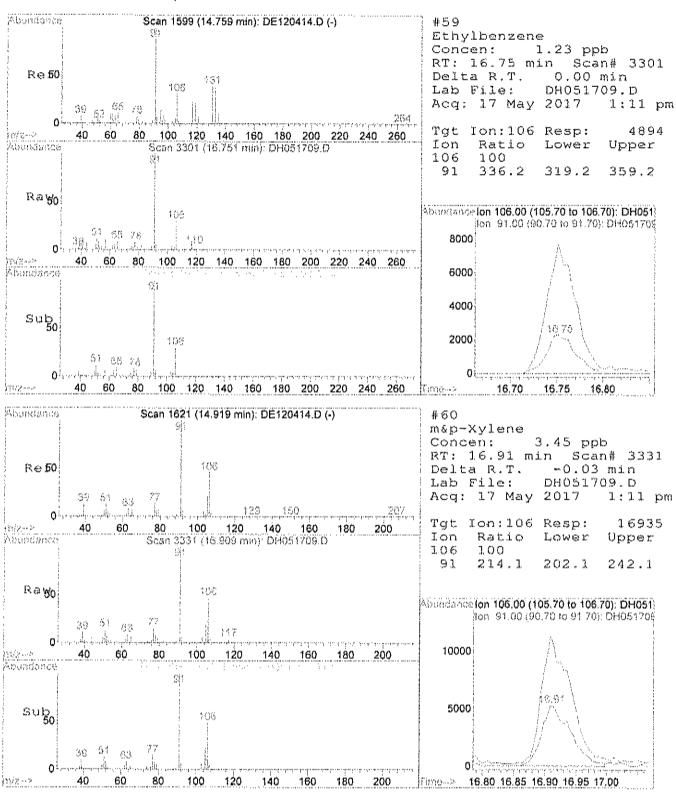
Page 224 of 572

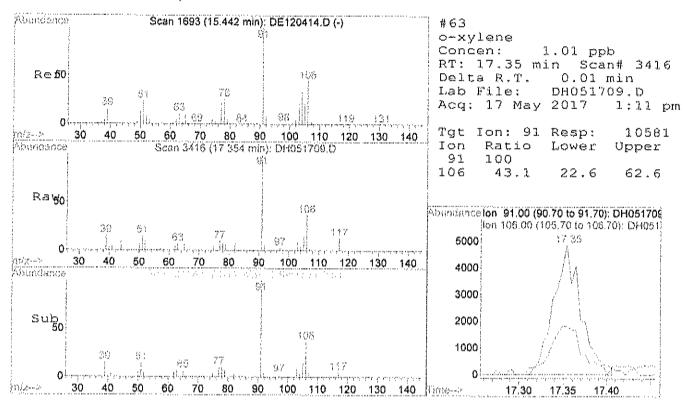
Quantitation Report











LSC Area Percent Report

Data File : C:\HPCHEM\1\DATA2\DH051709.D Acq On : 17 May 2017 1:11 pm Sample : C1705036-006A Misc : T015 Vial: 8 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Method : C:\HPCHEM\1\METHODS\IOS11T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration

Smoothing : ON

Filtering: 5
Min Area: 3 % of largest Peak
Max Peaks: 100
Peak Location: TOP Sampling : 1

Start Thrs: 0.2 Stop Thrs : 0

If leading or trailing edge < 100 prefer < Baseline drop else tangent > Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan		last scan	PK	peak height	corr. area	corr. % max.	% of total
	—			·	— ··· ···				
1	9.954	1770		1815		125960	562732	51.54%	13.988%
2	11.519	2140	2154	2168	rBV2	30725	98884	9.06%	2.458%
3	12.178	2293	2308	2335	rBV2	350019	1046674	95.87%	26.017%
_	14.704	2887		2911		31236	76664	7.028	1.906%
5	15.427	3034	3048	3060	rBV2	32769	93415	8.568	2.322%
	16.484	3237	3250		rBV	469464	1091812	100.00%	27.139%
7	16.909	3323	3331	3345	rBV2	32290	104208		2.590%
8	17.950	3520	3530	3545	rBV	437824	948712	86.89%	23.5828

Sum of corrected areas: 4023101

DH051709.D I0511T15.M Mon Jun 19 14:07:54 2017

LSC Report - Integrated Chromatogram

Fil⊖ : C:\HPCHEM\1\DATA2\DH051709.D

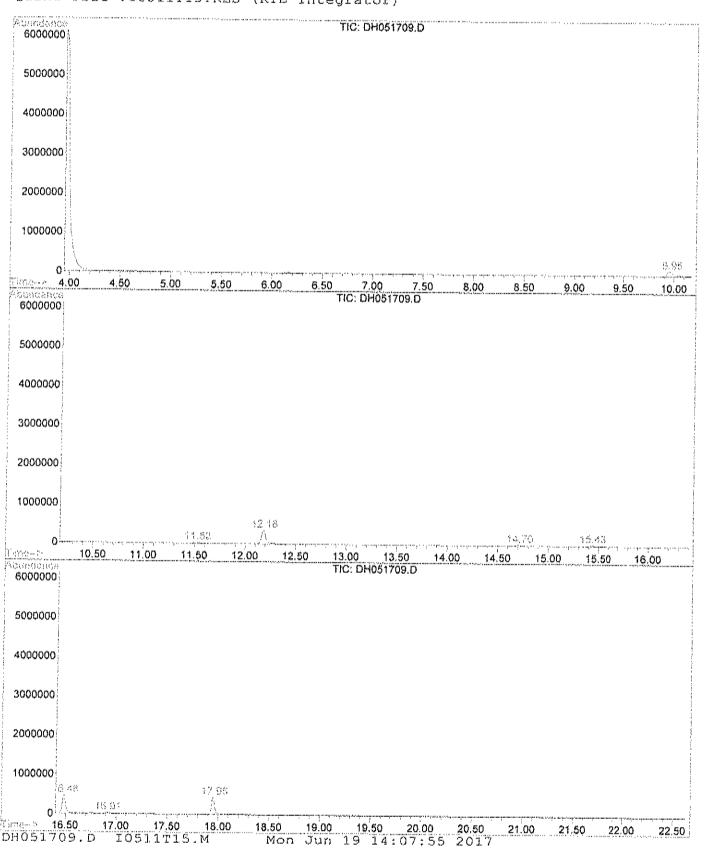
Operator : WD

Acquired : 17 May 2017 Instrument : GCMS3 1:11 pm using AcqMethod NEW1

Sample Name: C1705036-006A

Misc Info : TO15 Vial Number: 8

Quant File : IO511T15.RES (RTE Integrator)



Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 17 May 2017 1:11 pm Data File: C:\HPCHEM\1\DATA2\DHO51709.D

Name: C1705036-006A

Misc: TO15

Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name RT EstConc Units Area IntStd ISRT ISArea ISConc

DH051709.D IOS11T15.M Mon Jun 19 14:07:55 2017

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV11-050817

Lab Order: C1705036 Tag Number: 494.58
Project: Pormer Hampshire Collection Date: 5/8/2017

Lab ID: C1705036-007A Matrix: AiR

Analyses	Result	**Limit Qu	ual Units	DF	Date Analyzed
FIELD PARAMETERS		FLD		'	Analyst:
Lab Vacuum In	.4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHO	DD 3C		Analyst: WD
Carbon dioxide	0.224	1.90	J %	1	5/15/2017
Carbon Monoxide	NO	0.880	%	1	5/15/2017
Methane	ND	0.580	%	1	5/15/2017
Nitrogen	77.1	8.30	%	1	5/15/2017
Öxygen	20.6	0.880	%	1	5/15/2017
SPPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	₽₽₽V	1	5/15/2017 10:39:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM
1,1-Dichloroethane	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM
1,1-Dichloroethene	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,2-Dibromoethane	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,2-Dichloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
1,2-Dichloropropane	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
1,3-butadiene	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
1,4-Dioxane	< 10	10	Vdqq	1	5/15/2017 10:39:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
4-ethyltoluene	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
Acetone	3.8	10 J		1	5/15/2017 10:39:00 PM
Allyl chloride	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
Benzene	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
Benzyl chloride	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
Bromodichloromethane	< 5.0	5.0	∨dqq	1	5/15/2017 10:39:00 PM
Bromoform	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM
Bromomethane	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
Carbon disulfide	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
Carbon tetrachloride	< 5.0	5.0	ppbV	1	5/15/2017 10:39:00 PM
Chlorobenzene	< 5.0	5.0	ppb∨	1	5/15/2017 10:39:00 PM
Chloroethane	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM
Chloroform	< 5.0	5.0	Vdqq	1	5/15/2017 10:39:00 PM

Qualifiers:

Date: 22-Jun-17

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-007A

Date: 22-Jun-17

Client Sample ID: WAT-SV11-050817

Tag Number: 494.58 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qua	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC)-15			Analyst: WD
Chloromethane	< 5.0	5.0		ρρb∨	1	5/15/2017 10:39:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		Vdqq	1	5/15/2017 10:39:00 PM
cis-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Cyclohexane	< 5,0	5.0		ppb∨	1	5/15/2017 10:39:00 PM
Dibromochloromethane	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Ethyl acetate	< 10	10		ppbV	1	5/15/2017 10:39:00 PM
Ethylbenzene	< 5.0	5,0		ppb∨	1	5/15/2017 10:39:00 PM
Freon 11	< 5.0	5.0		∨dqq	1	5/15/2017 10:39:00 PM
Freon 113	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Freon 114	< 5.0	5.0		ppb∨	1	5/15/2017 10:39:00 PM
Freon 12	< 5.0	5.0		ppb∨	1	5/15/2017 10:39:00 PM
Heptane	< 5.0	5.0		₽₽bV	1	5/15/2017 10:39:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppb∨	1	5/15/2017 10:39:00 PM
Hexane	< 5.0	5.0		Vdqq	1	5/15/2017 10:39:00 PM
Isopropyl alcohol	< 5.0	5.0		₽pb∨	1	5/15/2017 10:39:00 PM
m&p-Xylene	< 10	10		₽₽bV	1	5/15/2017 10:39:00 PM
Methyl Butyl Ketone	< 10	10		ppbV	1	5/15/2017 10:39:00 PM
Methyl Ethyl Ketone	< 10	10		Vdqq	1	5/15/2017 10:39:00 PM
Methyl Isobutyl Ketone	2.5	10	J	ppbV	1	5/15/2017 10:39:00 PM
Methyl tert-butyl ether	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Methylene chloride	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
o-Xylene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Propylene	< 5.0	5.0		Vdqq	1	5/15/2017 10:39:00 PM
Styrene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Tetrachloroethylene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Tetrahydrofuran	< 5.0	5.0		ppb∨	1	5/15/2017 10:39:00 PM
Toluena	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		ppb∨	1	5/15/2017 10:39:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/15/2017 10:39:00 PM
Trichforoethene	77	50		Vdqq	10	5/15/2017 11:14:00 PM
Vinyl acetate	< 5.0	5.0		ppb∨	1	5/15/2017 10:39:00 PM
Vinyl Bromide	< 5.0	5.0		ppb∨	1	5/15/2017 10:39:00 PM
Vinyl chloride	< 5.0	5.0		Vdqq	1	5/15/2017 10:39:00 PM
Surr: Bromofluorobenzene	77.0	73.7-124		%REC	1	5/15/2017 10:39:00 PM
TIC: Cyclotetrasiloxane, octamethyl- \$\$ Octam	34	0	ИL	Vdqq	1	5/15/2017 10:39:00 PM
TIC: Cyclotrisiloxane, hexamethyl \$\$ Dimethy	6.6	0	NL	ppbV	1	5/15/2017 10:39:00 PM
TIC: Hydrogen sulfide \$\$ Dihydrogen monosulfi	160	0	JN	ρpbV	1	5/15/2017 10:39:00 PM

Qualifiers:

- Quantitation Limit
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Ε Estimated Value above quantitation range
- Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order:

C1705036

Former Hampshire

Project: Lab ID:

C1705036-007A

Date: 22-Jun-17

Client Sample ID: WAT-SV11-050817

Tag Number: 494,58 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-	-15			Analyst: WD
1-Propanethiol	< 5.0	5.0		ppb∨	1	5/16/2017 3:50:00 PM
Carbon disulfide	< 5.0	5.0		ppbV	1	5/16/2017 3:50:00 PM
Carbonyi sulfide	< 5.0	5.0		ppbV	1	5/16/2017 3:50:00 PM
Dimethyl sulfide	< 5.0	5.0		Vđạq	1	5/16/2017 3:50:00 PM
Ethyl mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 3:50:00 PM
Hydrogen Sulfide	29	5.0		ppbV	1	5/16/2017 3:50:00 PM
isopropyl mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 3:50:00 PM
Methyl mercaptan	< 5.0	5.0		Vđạq	1	5/16/2017 3:50:00 PM
Surr: Bromofluorobenzene	154	70-130	s	%REC	1	5/16/2017 3:50:00 PM

Qualifiers:

Not Detected at the Limit of Detection

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Quantitation Limit

Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ЛĻ Non-routine analyte. Quantitation estimated,

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

Analyte detected below quantitation limit

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-007A

Date: 22-Jun-17

Client Sample ID: WAT-SV11-050817

Tag Number: 494.58

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15		Analyst: WD
1.1,1-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 10:39:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	ug/m3	1	5/15/2017 10:39:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/15/2017 10:39:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/15/2017 10:39:00 PM
1,1-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 10:39:00 PM
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/15/2017 10:39:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 10:39:00 PM
1,2-Dibromoethane	< 38	38	ug/m3	1	5/15/2017 10:39:00 PM
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 10:39:00 PM
1,2-Dichloroethane	< 20	20	ug/m3	1	5/15/2017 10:39:00 PM
1,2-Dichloropropane	< 23	23	ug/m3	1	5/15/2017 10:39:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/15/2017 10:39:00 PM
1,3-butadiene	< 11	11	ug/m3	1	5/15/2017 10:39:00 ₽M
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 10:39:00 PM
1.4-Dichlorobenzene	< 30	30	ug/m3	1	5/15/2017 10:39:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/15/2017 10:39:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/15/2017 10:39:00 PM
4-ethyltoluene	< 25	25	ug/m3	1	5/15/2017 10:39:00 PM
Acetone	8.9	24	J ug/m3	1	5/15/2017 10:39:00 PM
Allyl chloride	< 16	16	ug/m3	1	5/15/2017 10:39:00 PM
Benzene	< 16	16	ug/m3	1	5/15/2017 10:39:00 PM
Benzyl chloride	< 29	29	ug/m3	1	5/15/2017 10:39:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/15/2017 10:39:00 PM
Bromoform	< 52	52	ug/m3	1	5/15/2017 10:39:00 ₽M
Bromomethane	< 19	19	ug/m3	1	5/15/2017 10:39:00 PM
Carbon disulfide	< 16	16	ug/m3	1	5/15/2017 10:39:00 PM
Carbon tetrachloride	< 31	31	ug/m3	1	5/15/2017 10:39:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/15/2017 10:39:00 PM
Chloroethane	< 13	13	ug/m3	1	5/15/2017 10:39:00 PM
Chloroform	< 24	24	ug/m3	. 1	5/15/2017 10:39:00 PM
Chloromethane	< 10	10	ug/m3	1	5/15/2017 10:39:00 PM
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/15/2017 10:39:00 PM
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/15/2017 10:39:00 PM
Cyclohexane	< 17	17	ug/m3	1	5/15/2017 10:39:00 PM
Dibromochioromethane	< 43	43	ug/m3	1	5/15/2017 10:39:00 PM
Ethyl acetate	< 36	36	սց/m3	1	5/15/2017 10:39:00 PM
Ethylbenzene	< 22	22	ug/m3	1	5/15/2017 10:39:00 PM
Freon 11	< 28	28	ug/m3	1	5/15/2017 10:39:00 PM
Freon 113	< 38	38	ug/m3	1	5/15/2017 10:39:00 PM
Freon 114	< 35	35	ug/m3	1	5/15/2017 10:39:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- . Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- NO Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-007A

Date: 22-Jun-17

Client Sample ID: WAT-SV11-050817

Tag Number: 494.58 Collection Date: 5/8/2017

Matrix: AlR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15		Who also a managed a second	Analyst: WD
Freon 12	< 25	25		ug/m3	1	5/15/2017 10:39:00 PA
Heptane	< 20	20		ug/m3	1	5/15/2017 10:39:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/15/2017 10:39:00 PM
Hexane	< 18	18		ug/m3	1	5/15/2017 10:39:00 PN
isopropyi alcohol	< 12	12		ug/m3	1	5/15/2017 10:39:00 PM
m&p-Xylene	< 43	43		ug/m3	1	5/15/2017 10:39:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/15/2017 10:39:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/15/2017 10:39:00 PM
Methyl Isobutyl Ketone	10	41	J	ug/m3	1	5/15/2017 10:39:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/15/2017 10:39:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/15/2017 10:39:00 PM
o-Xylene	< 22	22		ug/m3	1	5/15/2017 10:39:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/15/2017 10:39:00 PM
Styrene	< 21	21		ug/m3	1	5/15/2017 10:39:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/15/2017 10:39:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/15/2017 10:39:00 PM
Toluene	< 19	19		ug/m3	1	5/15/2017 10:39:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/15/2017 10:39:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/15/2017 10:39:00 PM
Trichloroethene	420	270		ug/m3	10	5/15/2017 11:14:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/15/2017 10:39:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/15/2017 10:39:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/15/2017 10:39:00 PM
OW LEVEL SULFURS BY TO-15		TO-	15			Analyst: WD
1-Propanethiol	< 16	16		սց/m3	1	5/16/2017 3:50:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/16/2017 3:50:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 3:50:00 PM
Dimethyl sulfide	< 19	19		սց/m3	1	5/16/2017 3:50:00 PM
Ethyl mercaptan	< 13	13		นg/m3	1	5/16/2017 3:50;00 PM
Hydrogen Sulfide	40	7.0		មច្ឆ/៣३	1	5/16/2017 3:50:00 PM
isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 3:50:00 PM
Methyl mercaptan	< 9.8	9.8		ug/m3	1	5/16/2017 3:50:00 PM

α			13	c				
О	u	n	H	ŧı	c	r	S	

Quantitation Limit

ND Not Detected at the Limit of Detection

Page 14 of 28

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051524.D Acq On : 15 May 2017 10:39 pm Sample : C1705036-007A Misc : T015 Vial: 9 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 1 10:37 2017 Quant Results File: IO511T15.RES

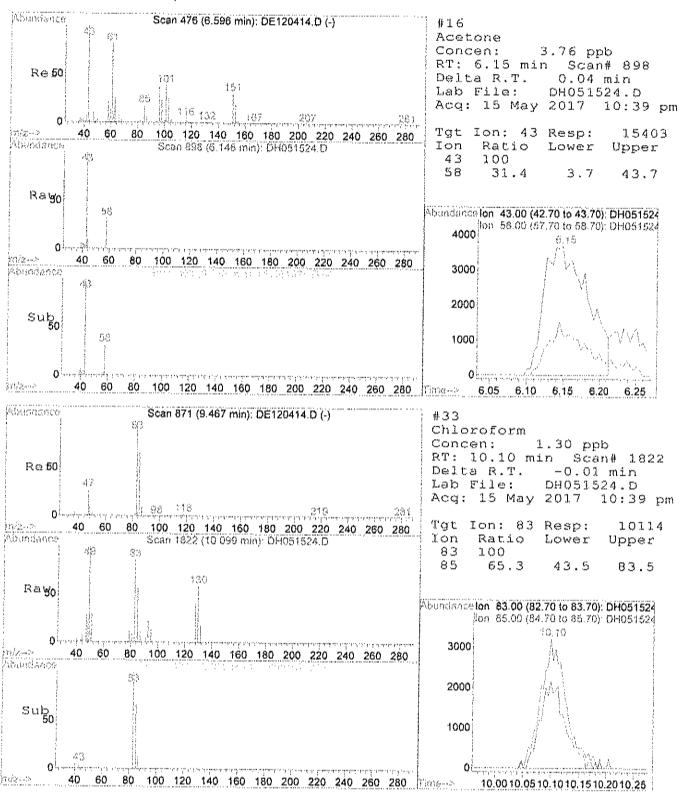
Quant Method: C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

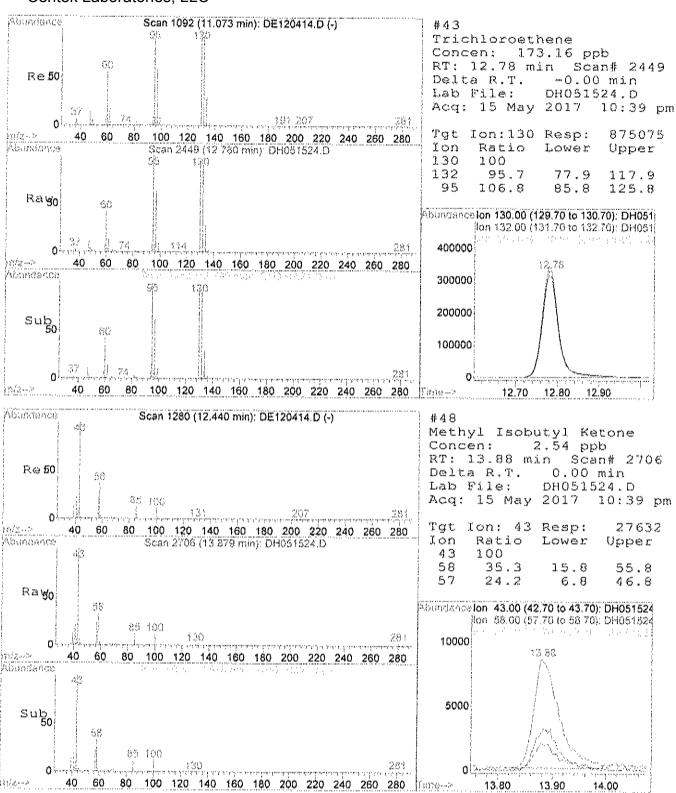
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

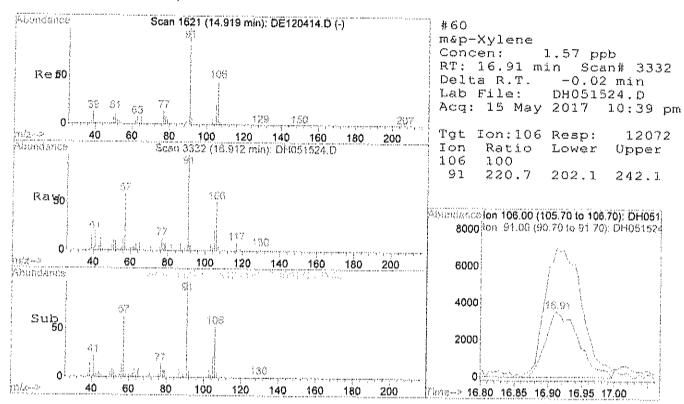
Internal Standards	R.T.	QIon	Response		nits	Dev(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.95 12.18 16.48	128 114 117	108852 644816 509696	50.00 50.00 50.00	dqq	0.00 0.00 0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70	95 - 130	278341 Recove			0.00
Target Compounds 16) Acetone 33) Chloroform 43) Trichloroethene 48) Methyl Isobutyl Ketone 60) m&p-Xylene	6.15 10.10 12.78 13.88 16.91	43 83 130 43 106	15403 10114 875075 27632 12072	3.76 1.30 173.16 -2.54 1.57	dqq	Qvalue 84 98 98 97 99

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Quantitation Report







Centek Laboratories, LLC LSC Area Percent Report

Multiplr: 1.00

Data File : C:\HPCHEM\1\DATA2\DH051524.D

Vial: 9 Acq On : 15 May 2017 10:39 pm Sample : C1705036-007A Misc : TO15 Operator: WD Inst : GCMS3

MS Integration Params: LSCINT.P

: C:\HPCHEM\l\METHODS\IO51lT15.M (RTE Integrator): VOA Standards for 5 point calibration

Title

Smoothing : ON

Filtering: 5
Min Area: 3 % of largest Peak
Max Peaks: 100
Peak Location: TOP Sampling : 1

Start Thrs: 0.2 Stop Thrs : 0

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

peak	R.T.	first	max	last	J.A	peak	corr.	corr.	% of
#		scan	scan	scan	BK	height	area	% max.	total
4	4.092	322	331	385	rVB	860487	2685087	54.23%	18.610%
	9.954	1771	1788	1816	rBV3	195098	823139	16.62%	5.705%
	12.177	2293	2308	2338	rBV2	530942	1557542	31.46%	10.795%
	12.780	2433	2449	2496	rBV	1807124	4951453	100.00%	34.317%
	13.883	2694	2707	2724	rBV2	20951	69410	1.40%	0.481%
7 8 9	15.425 16.488 16.933 17.949 18.153	3034 3239 3324 3521 3560		3063 3275 3350 3543 3595	rBV2 rBV rBV rBV	78564 686179 52704 569315 420604	219673 1653708 149888 1207172 1111368	4.44% 33.40% 3.03% 24.38% 22.45%	1.523% 11.461% 1.039% 8.367% 7.703%

Sum of corrected areas: 14428440

DH051524.D I0511T15.M Mon Jun 19 14:18:50 2017

LSC Report - Integrated Chromatogram

File : C:\APCHEM\1\DATA2\DH051524.D

Operator : Wo

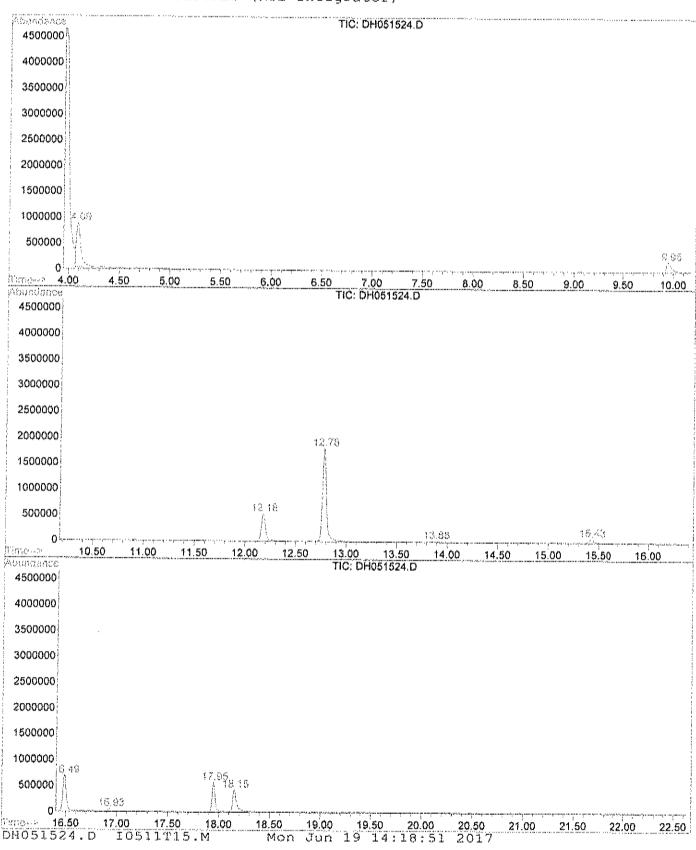
Acquired : 15 May 2017 10:39 pm using AcqMethod NEWl

Instrument : GCM\$3

Sample Name: C1705036-007A

Misc Info : TO15 Vial Number: 9

Quant File :10511T15.RES (RTE Integrator)



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051524.D Vial: 9 Acq On : 15 May 2017 10:39 pm Sample : C1705036-007A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 1 Hydrogen sulfide \$\$ Dihydrogen Concentration Rank 1 R.T. EstConc C. EstConc Area Relative to ISTD R.T. 4.09 163.10 ppb 2685090 Bromochloromethane Hit# of 5 Tentative ID MW Molform CAS# 1 Hydrogen sulfide \$\$ Dihydrogen mono 34 H2S 007783-06-4 78 2 Phosphine \$\$ Hydrogen phosphide \$\$ 34 H3P 007803-51-2 7 3 Methane, fluoro- \$\$ Fluoromethane \$ 34 CH3F 000593-53-3 3 4 Difluoramine \$\$ Difluoroamine \$\$ HN 53 F2HN 010405-27-3 2 Qual 007783-06-4 78 5000 3.80 4.00 4.20 4.40 0 20 40 60 80 100 120 140 160 180 200 220 m/z 32.90 38.31% YAShu o diamove 8000 6000 3.80 4.00 4.20 4.40 m/z 35.90 4.8 4000 4.88% 2000 0 20 40 60 80 100 120 140 160 160 200 Abundance 8000 3.80 4.00 4.20 4.40 m/z 34.90 2.6 6000 4000 2000 40 60 80 100 120 140 160 180 200 220 %bundaqoo #19: Methane, fluoro- \$\$ Fluoromethane \$\$ Freen 41 \$\$ Me 3.80 4.00 4.20 4.40 m/z 75.85 0 8000 6000 4000 2000 0 20 40 60 80 100 120 140 160 180 200 220 3.80 4.00 4.20 4.40

Library Search Compound Report

```
Data File : C:\HPCHEM\1\DATA2\DH051524.D
                                                          Vial: 9
   Acq On : 15 May 2017 10:39 pm
Sample : C1705036-007A
Misc : TO15
                                                       Operator: WD
                                                       Inst : GCMS3
                                                       Multiplr: 1,00
   MS Integration Params: LSCINT.P
   Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
   Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L
 *************
 Peak Number 2 Cyclotrisiloxane, hexamethyl- Concentration Rank 3
   R.T. EstConc
                         Area Relative to ISTD
      15.43 6.64 ppb 219673 Chlorobenzene-d5 16.48
 Hit# of 5
              Tentative ID
                                      MW Molform CAS#
                                                                Qual
 8000
   6000
   4000
   2000:
      45 65 76 115 133 184 281
                                                  15.00 15.20 15.40 15.60 15.80
                                                  m/z 207.90 21.568
      20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320
Arry trans. Sci.
Abundance
          #43616: Cyclotrisiloxane, hexamethyl- $$ Dimethylsiloxane c
   8000
   6000
   4000
                                                  15.00 15.20 15.40 15.60 15.80
                                                  m/z 95.90 16.01%
   2000
       20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320
Anundanco
                               2027
   80001
   6000
                                                 15.00 15.20 15.40 15.60 15.80
                                                  m/z 208.90 11.26%
   4000
   2000
      16 73 165 133 191 1222
    20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320
Khandance
              #82382; Arsenous acid, tris(trimethylsilyl) ester
                                                          بعداني وو
                                                 15.00 15.20 15.40 15.60 15.80
  8000
                                                  m/z 132.90 9.64%
  6000
  4000
  2000
       44 73 105 133 191 223 256
                                             327
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 15.00 15.20 15.40 15.60 15.80
```

Data File : C:\HPCHEM\1\DATA2\DH051524.D Vial: 9 Acq On : 15 May 2017 10:39 pm Sample : C1705036-007A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L Library ******* Peak Number 3 Cyclotetrasiloxane, octamethyl Concentration Rank 2 R.T. EstConc Area Relative to ISTD 18.15 33.60 ppb 1111370 Chlorobenzene-d5 Hit# of 5 Tentative ID MW MolForm CAS# Oual | m/z 280.90 100.00% Scan 3568 (18.148 min): DH051524.D (-) 5000 0 45 59 89 103 119 147 163 177 193 207 221 235 248 265 4 40 60 80 100 120 140 160 180 200 220 240 260 280 ce #70157; Cyclotetresiloxane, octamethyl- \$\$ Octamethylcyclot 17,80 18.00 18.20 18.40 m/z 281.90 29.00% Pabuoglance 8000 6000 4000 17.80 18.00 18.20 18.40 m/z 282.90 17.69% 2000 40 60 80 100 120 140 160 180 200 220 240 260 280 Alainstenkie 281 8000 17.80 18.00 18.20 18.40 m/z 132.90 10. 6000 10.23% 4000 2000 73 193 207 205 246 266 | The state of the st 40 60 80 100 120 140 160 180 200 220 240 260 280 #65620: 7H-Dibenzo[b,g]carbazole, 7-methyl-Abundanos 234 17.80 18.00 18.20 18.40 n/z 73.00 9.53% 8000 m/z6000 4000 2000 268

40 60 80 100 120 140 160 180 200 220 240 260 280 17.80 18.00 18.20 18.40

Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 15 May 2017 10:39 pm

Data File: C:\HPCHEM\1\DATA2\DH051524.D

Name: C1705036-007A Misc: T015

Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstCond Uni	ts Area	IntStd	ISRT	ISArea	ISConc
Hydrogen sulfide \$\$ Cyclotrisiloxane, he Cyclotetrasiloxane,	4.09 15.43 18.15	163.1 ppb 6.6 ppb 33.6 ppb	219673	ISTD01 ISTD03 ISTD03	16.48	823139 1653710 1653710	50.0
DH051524.D I0531T1	5.M	Mon Jun 1	9 14:18:58	2017			

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051525.D

Acq On : 15 May 2017 11:14 pm Sample : C1705036-007A 10X Misc : TO15

MS Integration Params: rteint.p Quant Time: Jun 1 10:39 2017

Vial: 9 Operator: WD Inst : GCMS3 Multipir: 1.00

Quant Results File: IOS11T15.RES

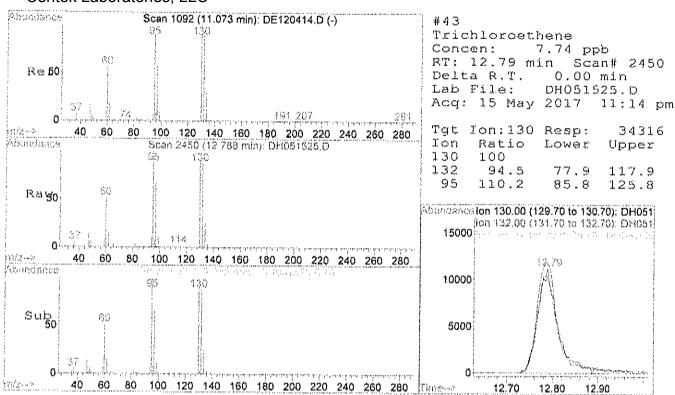
Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T. QIon	Response	Conc Units Dev(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.96 128 12.18 114 16.48 117	93477 565358 435066	50.00 dqq 00.00 50.00 dqq 00.00 50.00 dqq 00.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 95 Range 70 - 130		13 39.00 ppb 0.00 ry ≈ 78.00%
Target Compounds 43) Trichloroethene	12.79 130	34316	Qvalue 7.74 ppb 96

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Quantitation Report



CLIENT: CH2M - St Louis

C1705036

Project: Former Hampshire

Lab ID:

Lab Order:

C1705036-008A

Date: 22-Jun-17

Client Sample ID: WAT-SV14-050817

Tag Number: 600.63 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit (Qual Units	DF	Date Analyzed
FIELD PARAMETERS		FLE)		Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METH	IOD 3C		Analyst; WD
Carbon dioxide	0.158	1.90	J %	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	ND	0.580	%	1	5/15/2017
Nitrogen	75.1	8.30	%	1	5/15/2017
Oxygen	20.5	0.880	%	1	5/15/2017
PPB BY METHOD TO15		TO-1	5		Analyst: WD
1,1,1-Trichtoroethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 FM
1,1-Dichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,1-Dichloroethene	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0	Vdqq	†	5/17/2017 2:23:00 PM
1,2,4-Trimethylbenzene	< 5.0	5,0	ppbV	1	5/17/2017 2:23:00 PM
1,2-Dibromoethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,2-Dichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,2-Dichtoropropane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,3-butadiene	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
1,3-Dichtorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 2:23:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
1,4-Dioxane	< 10	10	ppbV	1	5/17/2017 2:23:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
4-ethyltoluene	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Acetone	5.0		J ppbV	1	5/17/2017 2:23:00 PM
Allyl chloride	< 5.0	5.0	ppb∨	1	5/17/2017 2:23:00 PM
Benzene	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Benzyl chloride	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Bromodichloromethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Bromoform	< 5.0	5.0	ppbV	, 1	5/17/2017 2:23:00 PM
3romomethane	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Carbon disulfide	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Carbon tetrachloride	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Chlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Chloroethane	< 5.0	5.0	∨dqq	1	5/17/2017 2:23:00 PM
Chloroform	62	5.0	ppbV	1	5/17/2017 2:23:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order:

C1705036

Project: Former Hampshire

Lab ID:

C1705036-008A

Date: 22-Jun-17

Client Sample ID: WAT-SV14-050817

Tag Number: 600.63 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual Units	ÐF	Date Analyzed
5PPB BY METHOD TO15		TO-	5		Analyst: WI
Chloromethane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PN
cis-1,2-Dichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PN
cis-1,3-Dichloropropene	< 5.0	5.0	∨dqq	1	5/17/2017 2:23:00 PM
Cyclohexane	< 5.0	5.0	ppb√	1	5/17/2017 2:23:00 PM
Dibromochloromethane	< 5.0	5,0	ppb∨	1	5/17/2017 2:23:00 PM
Ethyl acetate	< 10	10	ppbV	1	5/17/2017 2:23:00 PM
Ethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Freon 11	< 5.0	5.0	ppb∨	1	5/17/2017 2:23:00 PM
Freon 113	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Freon 114	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Freon 12	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Heptane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0	PpbV	1	5/17/2017 2:23:00 PM
Hexane	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Isopropyl atcohol	< 5.0	5.0	Vơqq	1	5/17/2017 2:23:00 PM
m&p-Xylene	< 10	10	ppbV	1	5/17/2017 2:23:00 PM
Methyl Butyl Ketone	< 10	10	ρρbV	1	5/17/2017 2:23:00 PM
Methyl Ethyl Ketone	< 10	10	ppbV	1	5/17/2017 2:23:00 PM
Methyl Isobutyl Ketone	3.1	10	J ppbV	1	5/17/2017 2:23:00 PM
Methyl tert-butyl ether	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Methylene chloride	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
o-Xylene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Propylene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Styrene	< 5,0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Tetrachloroethylene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Tetrahydrofuran	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Toluene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Trichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Vinyl acetate	< 5.0	5.0	ppbV	1	5/17/2017 2:23:00 PM
Vinyl Bromide	< 5.0	5.0	Vdqq	1	5/17/2017 2:23:00 PM
Vinyl chloride	< 5.0	5.0	ppb∨	1	5/17/2017 2:23:00 PM
Surr: Bromofluorobenzene	84.3	73.7-124	%REC	1	5/17/2017 2:23:00 PM
NOTES: No Tic's found.	- 11.11	10111121	731.2.0	ľ	37772017 2.23.00 FW
OW LEVEL SULFURS BY TO-15		TO-15	i		Analyst: WD
1-Propanethiol	< 5.0	5.0	₽₽bV	1	5/16/2017 4:25:00 PM
Carbon disulfide	< 5.0	5.0	Vdqq	1	5/16/2017 4:25:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-008A

Date: 22-Jun-17

Client Sample ID: WAT-SV14-050817 Tag Number: 600.63

Collection Date: 5/8/2017

Matrix: AlR

Analyses	Result	**Limit	Qua	l Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO	-15			Analyst: WD
Carbonyl sulfide	< 5.0	5.0		Vdqq	1	5/15/2017 4:25:00 PM
Dimethyl sulfide	< 5.0	5.0		Vdqq	1	5/16/2017 4:25:00 PM
Ethyl mercaptan	< 5.0	5.0		Vdqq	1	5/16/2017 4:25:00 PM
Hydrogen Sulfide	18	5.0		Vdqq	1	5/16/2017 4:25:00 PM
isopropyi mercaptan	< 5.0	5.0		ppbV	•	5/16/2017 4:25:00 PM
Methyl mercaptan	< 5.0	5.0		ppbV	1	5/16/2017 4:25:00 PM
Surr: Bromofluorobenzene	148	70-130	S	%REC	1	5/16/2017 4:25:00 PM

Qualifiers:

Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte, Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-008A

Date: 22-Jun-17

Client Sample ID: WAT-SV14-050817

Tag Number: 600.63 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		ΤO	-15			Analyst: WD
1,1,1-Trichloroethane	< 27	27		ug/m3	1	5/17/2017 2:23:00 PM
1,1,2,2-Tetrachloroethane	< 34	34		ug/m3	1	5/17/2017 2:23:00 PM
1,1,2-Trichloroethane	< 27	27		ug/m3	1	5/17/2017 2:23:00 PM
1,1-Dichloroethane	< 20	20		ug/m3	1	5/17/2017 2:23:00 PM
1,1-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 2:23:00 PM
1,2,4-Trichlorobenzene	< 37	37		ug/m3	1	5/17/2017 2:23:00 PM
1,2,4-Trimethylbenzene	< 25	25		ug/m3	1	5/17/2017 2:23:00 PM
1.2-Dibromoethane	< 38	38		ug/m3	1	5/17/2017 2:23:00 PM
1,2-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 2:23:00 PM
1,2-Dichloroethane	< 20	20		ug/m3	1	5/17/2017 2:23:00 PM
1,2-Dichloropropane	< 23	23		ug/m3	1	5/17/2017 2:23:00 PM
1,3,5-Trimethylbenzene	< 25	25		ug/m3	1	5/17/2017 2:23:00 PM
1,3-butadiene	< 11	11		ug/m3	1	5/17/2017 2:23:00 PM
1,3-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 2:23:00 PM
1,4-Dichlorobenzene	< 30	30		ug/m3	1	5/17/2017 2:23:00 PM
1,4-Dioxane	< 36	36		ug/m3	1	5/17/2017 2:23:00 PM
2,2,4-trimethylpentane	< 23	23		ug/m3	1	5/17/2017 2:23:00 PM
4-ethyltoluene	< 25	25		ug/m3	1	5/17/2017 2:23:00 PM
Acetone	12	24		ug/m3	1	5/17/2017 2:23:00 PM
Allyl chloride	< 16	15		ug/m3	1	5/17/2017 2:23:00 PM
Benzene	< 16	16		ug/m3	1	5/17/2017 2:23:00 PM
Benzyl chloride	< 29	29		ug/m3	1	5/17/2017 2:23:00 PM
Bromodichloromethane	< 33	33		ug/m3	1	5/17/2017 2:23:00 PM
3romoform	< 52	52	;	ug/m3	1	5/17/2017 2:23:00 PM
3romomethane	< 19	19		ug/m3	1	5/17/2017 2:23:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/17/2017 2:23:00 PM
Carbon tetrachloride	< 31	31		ug/m3	1	5/17/2017 2:23:00 PM
Chlorobenzene	< 23	23		ug/m3	1	5/17/2017 2:23:00 PM
Chloroethane	< 13	13		ug/m3	1	5/17/2017 2:23:00 PM
Chloroform	300	24		ug/m3	1	5/17/2017 2:23:00 PM
Chloromethane	< 10	10		ug/m3	1	5/17/2017 2:23:00 PM
sis-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 2:23:00 PM
is-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 2:23:00 PM
Cyclohexane	< 17	17		ug/m3	1	5/17/2017 2:23:00 PM
Dibromochloromethane	< 43	43		.g/m3	1	5/17/2017 2:23:00 PM
Ethyl acetate	< 36	36		ıg/m3	1	5/17/2017 2:23:00 PM
thylbenzene	< 22	22		ıg/m3	1	5/17/2017 2:23:00 PM
reon 11	< 28	28		ıg/m3	1	5/17/2017 2:23:00 PM
Freon 113	< 38	38		ıg/m3	1	5/17/2017 2:23:00 PM
Freon 114	< 35	35		ıg/m3	1	5/17/2017 2:23:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-008A

Date: 22-Jun-17

....

Client Sample ID: WAT-SV14-050817

Tag Number: 600.63 Collection Date: 5/8/2017

Matrix: AlR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-	·15			Analyst: WD
Freon 12	< 25	25	-	ug/m3	1	6/17/2017 2:23:00 PM
Heptane	< 20	20		ug/m3	1	5/17/2017 2:23:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/17/2017 2:23:00 PM
Hexane	< 18	18		սց/m3	1	5/17/2017 2:23:00 PM
isopropyl alcohol	< 12	12		ug/m3	1	5/17/2017 2:23:00 PM
т&р-Хујепе	< 43	43		ug/m3	1	5/17/2017 2:23:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/17/2017 2:23:00 PM
Methyl Ethyl Ketone	< 29	29		ug/m3	1	5/17/2017 2:23:00 PM
Methyl Isobutyl Ketone	13	41	j	ug/m3	1	5/17/2017 2:23:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/17/2017 2:23:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/17/2017 2:23:00 PM
o-Xylene	< 22	22		ug/m3	1	5/17/2017 2:23:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/17/2017 2:23:00 PM
Styrene	< 21	21		ug/m3	1	5/17/2017 2:23:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/17/2017 2:23:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/17/2017 2:23:00 PM
Toluene	< 19	19		ug/m3	1	5/17/2017 2:23:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 2:23:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 2:23:00 PM
Trichloraethene	< 27	27		ug/m3	1	5/17/2017 2:23:00 PM
Vinyl acetate	< 18	1 <i>B</i>		ug/m3	1	5/17/2017 2:23:00 PM
Vinyl Bromide	< 22	22		սց/m3	i	5/17/2017 2:23:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/17/2017 2:23:00 PM
NOTES:				_		
No Tic's found.						
OW LEVEL SULFURS BY TO-15		TO-1	5			Analyst: wp
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 4:25:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/16/2017 4:25:00 PM
Carbonyl sulfide	< 12	12	-	ug/m3	1	5/16/2017 4:25:00 PM
Dimethyl sulfide	< 19	19	1	ug/m3	1	5/16/2017 4:25:00 PM
Ethyl mercaptan	< 13	13	1	ug/m3	1	5/16/2017 4:25:00 PM
Hydrogen Sulfide	25	7.0		ug/m3	1	5/16/2017 4:25:00 PM
Isopropyl mercaptan	< 16	16		.g/m3	1	5/16/2017 4:25:00 PM
Methyl mercaptan	< 9.8	9.8	1	.g/m3	1	5/16/2017 4:25:00 PM

Qualifier:

- Quantitation Limit
- 8 Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- £ Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Quantitation Report (QT Reviewed)

Data Pile : C:\HPCHEM\1\DATA\DHO51711.D Acq On : 17 May 2017 2:23 pm Sample : C1705036-008A Misc : TO15 Vial: 10 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: Jun 1 11:18 2017 Quant Results File: IOS11715.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

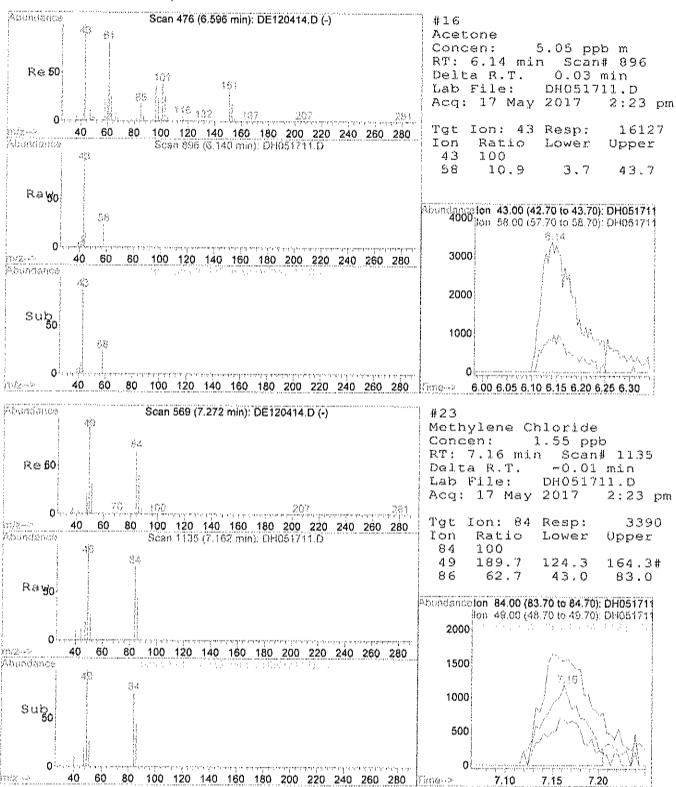
Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017 Response via : Initial Calibration

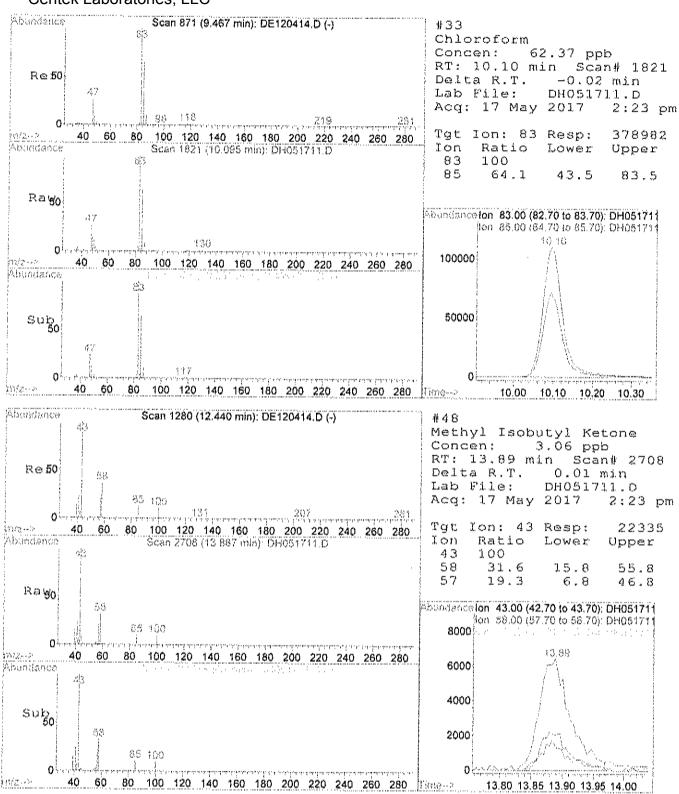
DataAcq Meth : NEW1

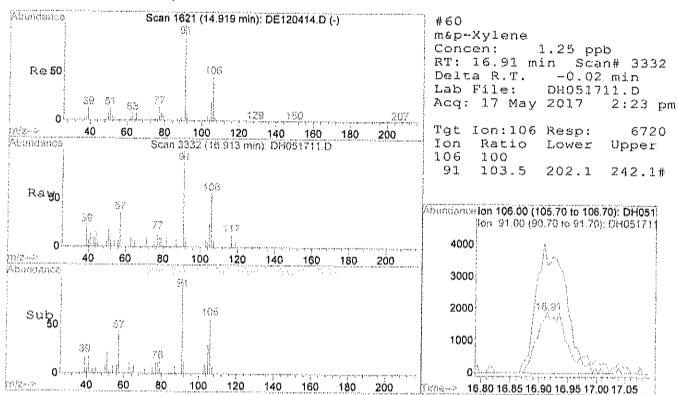
Internal Standards	R.T. QI	on Response Con	c Units Dev(Min)
1) Bromochloromethane40) 1,4-difluorobenzene57) Chlorobenzene-d5	12.18 1	14 433003 50	00.0 dqq 00.0 00.0 dqq 00.0
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70 -	95 213165 42 130 Recovery	.16 ppb 0.00 = 84.32%
Target Compounds 16) Acetone 23) Methylene Chloride 33) Chloroform 48) Methyl Isobutyl Ketone 60) m&p-Xylene	7.16 10.10 13.89	84 3390 1 83 378982 62 43 22335 3	Qvalue .05 ppb .55 ppb # 74 .37 ppb 99 .06 ppb 90 .25 ppb # 27

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Quantitation Report







Centek Laboratories, LLC LSC Area Percent Report

Data Fiie : C:\HPCHEM\1\DATA2\DH051711.D Acq On : 17 May 2017 2:23 pm Sample : C1705036-008A Misc : TO15 Vial: 10 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Method : G:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration

Smoothing : ON

Filtering: 5
Min Area: 3 % of largest Peak
Max Peaks: 100
Peak Location: TOP Sampling : 1

Start Thrs: 0.2

Stop Thrs : 0

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

• No.

peal		first	max	last	РK	peak	corr.	corr.	% of
#	mín	scan	scan	scan	$\mathbf{J},\mathbf{\lambda}$	height	area	% max.	total
		— — ···· ··· ···						— nm nur uw u-	
1,	9.950	1769	1,787	1806	rBV4	140843	588604	50.04%	11.331%
S	10.095	1808	1821		rVB	283244	968674	82.36%	18.648%
3	12.177	2292	2308	2334	rBV2	364584	1071687	91.12%	20.631%
4	13.883	2697	2707	2720	rBV2	14615	46038	3.91%	0.886%
5	15.432	3033	3049	3061	rBV3	30492	94916	8.078	1.8278
6 7 8 9	16.484 16.934 17.950 18.170	3520	3336		rBV7	506774 22584 492111	1176182 60839 1086605	100.00% 5.17% 92.38%	22.643% 1.171% 20.918%
,	31 C/ 2 31, 7 4,9	2264	3372	2286	7.13 A %	31168	101008	8.59%	1.944%

Sum of corrected areas: 5194553

DH051711.D I0511T15.M Mon Jun 19 14:37:41 2017

LSC Report - Integrated Chromatogram

file : C:\HPCHEM\1\DATA2\DH051711.D

Operator : WD

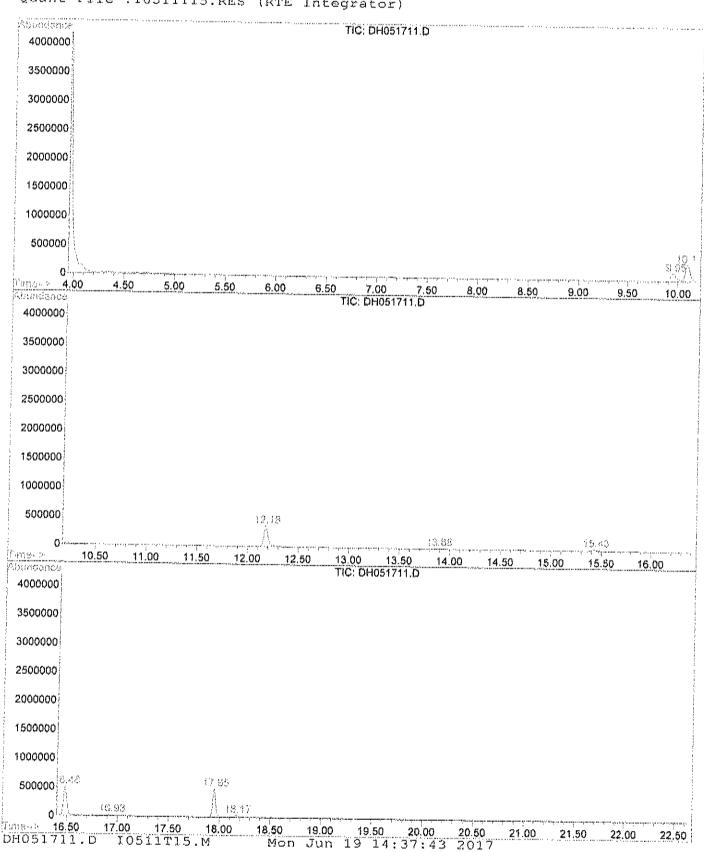
: 17 May 2017 : GCMS3 Acquired 2:23 pm using AcqMethod NEW1

Instrument :

Sample Name: C1705036-008A

Misc Info : TO15 Vial Number: 10

Quant File : IO511T15.RES (RTE Integrator)



Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 17 May 2017 2:23 pm

Data File: C:\HPCHEM\1\DATA2\DH051711.D

Name: C1705036-008A

Misc: TO15

Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name RT EstConc Units Area IntStd ISRT ISArea ISConc

DN051711.D I0511T15.M Mon Jun 19 14:37:43 2017

CLIENT: CH2M - St Louis

Lab Order:

C1705036

Project: Former Hampshire

Lab ID:

C1705036-009A

Date: 22-Jun-17

_____,

Client Sample ID: WAT-SV13-050817

Tag Number: 474.309 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit Q	ual Units	DF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METH		Analyst: WD	
Carbon dioxide	2.08	1.90	%	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	ЙM	0.580	%	1	5/15/2017
Nitrogen	77.8	8.30	%	1	5/15/2017
Oxygen	17.4	0.880	%	1	5/15/2017
PPB BY METHOD TO15		TO-15	;		Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5,0	ρρbV	1	5/17/2017 3:00:00 PM
1,1,2-Trichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
1,1-Dichloroethane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
1.1-Dichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
1,2,4-Trichtorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
1.2.4-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
1,2-Dibromoethane	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
1,2-Dichlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
1,2-Dichloroethane	< 5,0	5.0	ppbV	1	5/17/2017 3:00:00 PM
1,2-Dichloropropane	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
1,3-butadiene	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
1,3-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
1,4-Dioxane	< 10	10	∨dqq	1	5/17/2017 3:00:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
4-ethyltoluene	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Acetone	2.7	10	ppbV	1	5/17/2017 3:00:00 PM
Allyl chloride	< 5.0	5.0	ppb∨	t	5/17/2017 3:00:00 PM
Benzene	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Benzyl chloride	< 5,0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Bromodichloromethane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Bromoform	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Bromomethane	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Carbon disulfide	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Carbon tetrachloride	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Chlorobenzene	< 5.0	5.0	ppbV	7	5/17/2017 3:00:00 PM
Chloroethane	< 5.0	5.0	∨dqq	1	5/17/2017 3:00:00 PM
Chloroform	16	5.0	ppbV	1	5/17/2017 3:00:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
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- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order; (

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-009A

Date: 22-Jun-17

Client Sample ID: WAT-SV13-050817

Tag Number: 474.309 Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit	Qual Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-	15		Analyst: WE
Chloromethane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PA
cis-1,2-Dichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PA
cis-1,3-Dichloropropene	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PN
Cyclohexane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Dibromochloromethane	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PA
Ethyl acetate	< 10	10	ppb∨	1	5/17/2017 3:00:00 PM
Ethylbenzene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Freon 11	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Freon 113	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Freon 114	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Freon 12	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
Heptane	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
Hexane	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
isopropyl alcohol	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
m&p-Xylene	< 10	10	ppb∨	1	5/17/2017 3:00:00 PM
Methyl Butyl Ketone	< 10	10	ppb∨	1	5/17/2017 3:00:00 PM
Methyl Ethyl Ketone	< 10	10	ppbV	1	5/17/2017 3:00:00 PM
Methyl Isobutyl Ketone	< 10	10	Vdqq	1	5/17/2017 3:00:00 PM
Methyl tert-butyl ether	< 5.0	5.0	ppb∨	1	5/17/2017 3:00:00 PM
Methylene chloride	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
o-Xylene	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
Propylene	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
Styrene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Tetrachloroethylene	< 5.0	5.0	Vđạq	1	5/17/2017 3:00:00 PM
Tetrahydrofuran	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Toluene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Trichloroethene	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Vinyl acetate	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Vinyl Bromide	< 5.0	5.0	ppbV	1	5/17/2017 3:00:00 PM
Vinyl chloride	< 5.0	5.0	Vdqq	1	5/17/2017 3:00:00 PM
Surr: Bromofluorobenzene	80.9	73.7-124	%REC	1	5/17/2017 3:00:00 PM
NOTES: No Tic's found.					
OW LEVEL SULFURS BY TO-15		TO-1	5		Analyst: WD
1-Propanethiol	< 5.0	5.0	Vdqq	1	5/16/2017 5:00:00 PM
Carbon disulfide	< 5.0	5.0	ppb∨	1	5/16/2017 5:00:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated,
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-009A

Date: 22-Jun-17

Client Sample ID: WAT-SV13-050817 Tag Number: 474.309

Collection Date: 5/8/2017

Matrix: AIR

Analyses	Result	**Limit (Qual	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO- ⁻	15			Analyst: WD
Carbonyl sulfide	< 5.0	5.0	-	ppbV	1	5/16/2017 5:00:00 PM
Dimethyl sulfide	< 5.0	5.0		Vdqq	1	5/16/2017 5:00:00 PM
Ethyl mercaptan	< 5.0	5.0		Vdqq	1	5/16/2017 5:00:00 PM
Hydrogen Sulfide	20	5.0		Vdqq	1	5/16/2017 5:00:00 PM
Isopropyi mercaptan	< 5.0	5.0		Vdqq	1	5/16/2017 5:00:00 PM
Methyl mercaptan	< 5.0	5.0		Vdqq	1	5/16/2017 5:00:00 PM
Surr: Bromofluorobenzene	148	70-130	s	%REC	1	5/16/2017 5:00:00 PM

Qualifiers:

Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

Not Detected at the Limit of Detection

Page 27 of 42

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-009A

Date: 22-Jun-17

Client Sample ID: WAT-SV13-050817

Tag Number: 474.309 Collection Date: 5/8/2017

Matrix: AIR

	Result	Chilit	Qual Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC	-15		Analyst; WD
1,1,1-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 3:00:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	ug/m3	1	5/17/2017 3:00:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 3:00:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
1,1-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/17/2017 3:00:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 3:00:00 PM
1,2-Dibromoethane	< 38	38	ug/m3	1	5/17/2017 3:00:00 PM
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 3:00:00 PM
1,2-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
1,2-Dichtoropropane	< 23	23	ug/m3	1	5/17/2017 3:00:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 3:00:00 PM
1,3-butadiene	< 11	11	ug/m3	1	5/17/2017 3:00:00 PM
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 3:00:00 PM
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 3:00:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/17/2017 3:00:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/17/2017 3:00:00 PM
4-ethyltoluene	< 25	25	ug/m3	1	5/17/2017 3:00:00 PM
Acetone	6.4	24	J ug/m3	1	5/17/2017 3:00:00 PM
Allyl chloride	< 16	16	ug/m3	1	5/17/2017 3:00:00 PM
Benzene	< 15	16	ug/m3	1	5/17/2017 3:00:00 PM
Benzyl chloride	< 29	29	ug/m3	1	5/17/2017 3:00:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/17/2017 3:00:00 PM
Bromoform	< 52	52	ug/m3	1	5/17/2017 3:00:00 PM
Bromomethane	< 19	19	ug/m3	1	5/17/2017 3:00:00 PM
Carbon disulfide	< 16	16	ug/m3	1	
Carbon tetrachloride	< 31	31	ug/m3	1	5/17/2017 3:00:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/17/2017 3:00:00 PM
Chloroethane	< 13	13	ug/m3	1	5/17/2017 3:00:00 PM
Chloroform	78	24	ug/m3	1	5/17/2017 3:00:00 PM
Chloromethane	< 10	10	_		5/17/2017 3:00:00 PM
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
cis-1,3-Dichloropropene	< 23	23	ug/m3		5/17/2017 3:00:00 PM
Cyclohexane	< 17	23 17	ug/m3	1	5/17/2017 3:00:00 PM
Dibromochloromethane	< 43		ug/m3	1	5/17/2017 3:00:00 PM
Ethyl acetate	< 36	43 36	ug/m3	1	5/17/2017 3:00:00 PM
Ethylbenzene	< 22		ug/m3	1	5/17/2017 3:00:00 PM
Freon 11	< 28	22	ug/m3	1	5/17/2017 3:00:00 PM
Freon 113	< 38	28	ug/m3	7	5/17/2017 3:00:00 PM
Freon 114	< 35	38 35	ug/m3 ug/m3	1	5/17/2017 3:00:00 PM 5/17/2017 3:00:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-009A

Date: 22-Jun-17

Client Sample ID: WAT-SV13-050817

Tag Number: 474.309 Collection Date: 5/8/2017

Matrix; AIR

Analyses	Result	**Limit	Qual Units	DF	Date Analyzed
5PPB BY METHOD TO15		ТО	-15		Analyst: Wo
Freon 12	< 25	25	ug/m3	1	5/17/2017 3:00:00 PM
Heptane	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
Hexachloro-1,3-butadiene	< 53	53	ug/m3	1	5/17/2017 3:00:00 PM
Hexane	< 18	18	ug/m3	1	5/17/2017 3:00:00 PM
Isopropyl alcohol	< 12	12	ug/m3	1	5/17/2017 3:00:00 PN
m&p-Xylene	< 43	43	ug/m3	1	5/17/2017 3:00:00 PM
Methyl Bulyl Ketone	< 41	41	ug/m3	1	5/17/2017 3:00:00 PM
Methyl Ethyl Ketone	< 29	29	ug/m3	1	5/17/2017 3:00:00 PM
Methyl Isobutyl Ketone	< 41	41	ug/m3	1	5/17/2017 3:00:00 PM
Methyl tert-butyl ether	< 18	18	ug/m3	1	5/17/2017 3:00:00 PM
Methylene chloride	< 17	17	ug/m3	1	5/17/2017 3:00:00 PM
o-Xylene	< 22	22	ug/m3	1	5/17/2017 3:00:00 PM
Propylene	< 8.6	8.6	ug/m3	1	5/17/2017 3:00:00 PM
Styrene	< 21	21	ug/m3	1	5/17/2017 3:00:00 PM
Tetrachloroethylene	< 34	34	ug/m3	1	5/17/2017 3:00:00 PM
Tetrahydrofuran	< 15	15	υ <u>σ</u> /m3	1	5/17/2017 3:00:00 PM
Toluene	< 19	19	ug/m3	1	5/17/2017 3:00:00 PN
trans-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 3:00:00 PM
trans-1,3-Dichloropropene	< 23	23	ug/m3	1	5/17/2017 3:00:00 PM
Trichloroethene	< 27	27	ug/m3	1	5/17/2017 3:00:00 PM
Vinyl acetate	< 18	18	ug/m3	1	5/17/2017 3:00:00 PM
Vinyl Bromide	< 22	22	ug/m3	1	5/17/2017 3:00:00 PM
Vinyl chloride	< 13	13	ug/m3	1	5/17/2017 3:00:00 PM
NOTES:					
No Tic's found.					
OW LEVEL SULFURS BY TO-15		TO-	15		Analyst: WD
1-Propanethiol	< 16	16	ug/m3	1	5/16/2017 5:00:00 PM
Carbon disulfide	< 16	16	ug/m3	1	5/16/2017 5:00:00 PM
Carbonyl sulfide	< 12	12	ug/m3	1	5/16/2017 5:00:00 PM
Dimethyl sulfide	< 19	19	սց/m3	1	5/16/2017 5:00:00 PM
Ethyl mercaptan	< 13	13	ug/m3	1	5/16/2017 5:00:00 PM
Hydrogen Sulfide	28	7.0	ug/m3	1	5/16/2017 5:00:00 PM
isopropyi mercaptan	< 16	16	ug/m3	1	5/16/2017 5:00:00 PM
Methyl mercaptan	< 9.8	9.8	ug/m3	1	5/16/2017 5:00:00 PM

Qualifiers:	
-------------	--

Quantitation Limit

Page 18 of 28

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051712.D Acq On : 17 May 2017 3:00 pm Sample : C1705036-009A Vial: 11 Operator: WD

Inst : GCMS3 Multiplr: 1.00 Misc : TO15

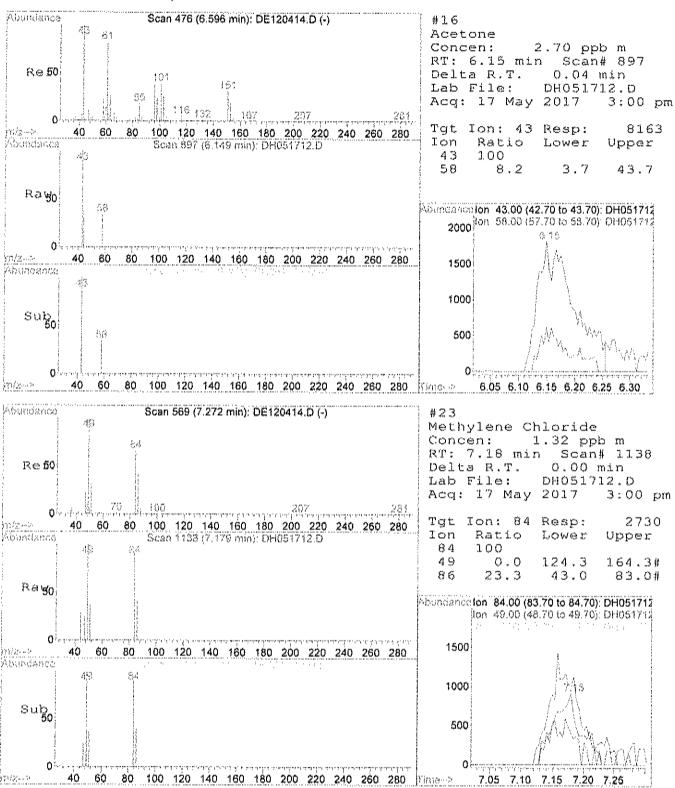
MS Integration Params: rteint.p Quant Time: Jun 1 11:20 2017 Quant Results File: IO511T15.RES

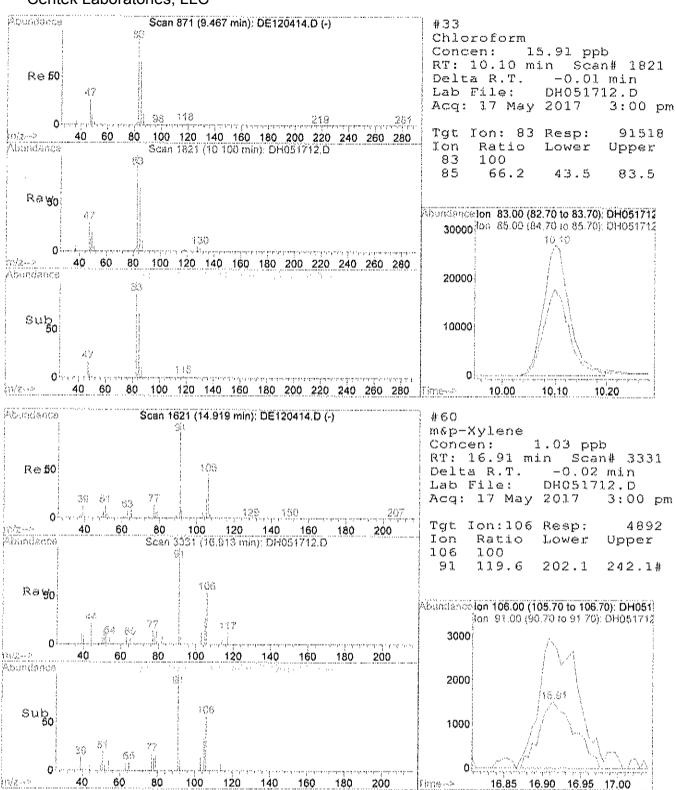
Quant Method : C:\HPCHEM\1\METHODS\IOS11T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc L	Jnits	Dev (Min)
l) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.95 12.18 16.48	128 114 117	80354m (v) 413454 314936		dqq (0.00 0.00 0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70		180664 Recover		1 ppb 80.	0.00 88%
Target Compounds 16) Acetone 23) Methylene Chloride 33) Chloroform 60) m&p-Xylene	6.15 7.18 10.10 16.91	43 84 83 106	8163m ↔ 2730m ↓ 91518 4892	1.32 15.91		Qvalue 96 # 37

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Quantitation Report





Centek Laboratories, LLC $_{\tt LSC\ Area\ Percent\ Report}$

Data File : C:\HPCHEM\1\DATA2\DH051712.D
Acq On : 17 May 2017 3:00 pm
Sample : C1705036-009A
Misc : TO15 Vial: 11 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration

Smoothing : ON Filtering: 5

Min Area: 3 % of largest Peak Max Peaks: 100

Sampling : 1 Start Thrs: 0.2 Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

peal	K R.T.	first	max	last	PΚ	peak	corr.	corr.	8 of
##	min	scan	scan	scan	TY	height	area	% max.	total
-m -m ma								<u> </u>	
1.	9.950	1769	1786	1808	rBV3	136723	568264	53.16%	15.053%
2	10.100	1811	1821	1838	rVB2	70439	231502	, _ + +	6.132%
3	12.177	2292	2307	2330	rBV	359933	1040056	97.298	27.5518
4	16.484		3249			459093		100.00%	28.319%
5	17.950		3529			405749		81.02%	22.945%

Sum of corrected areas: 3775077

DH051712.D I0511T15.M Mon Jun 19 14:38:37 2017

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA2\DH051712.D

Operator

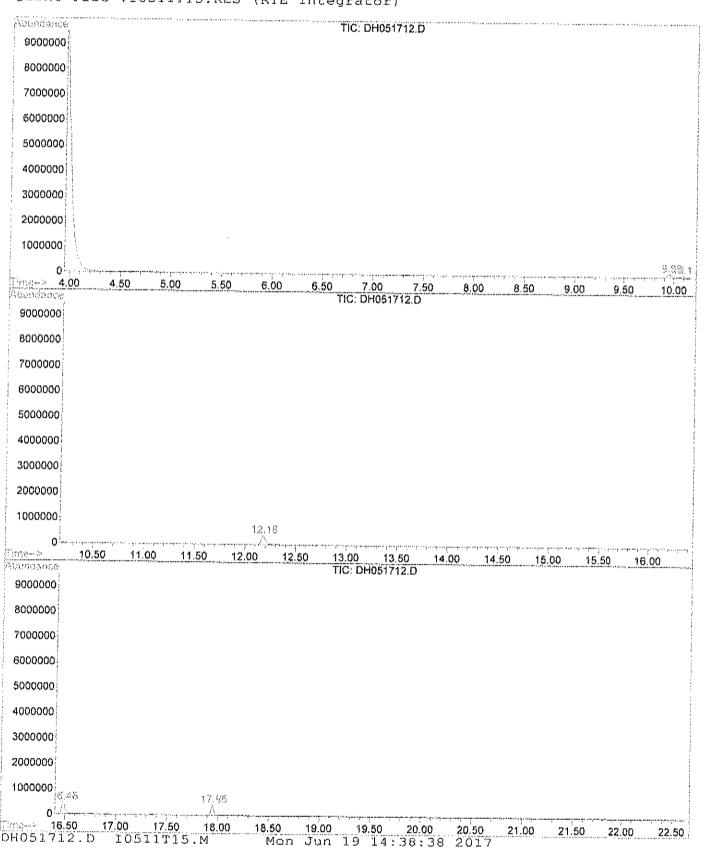
Acquired : 17 May 2017 : GCMS3 3:00 pm using AcqMethod NEW1

Instrument :

Sample Name: C1705036-009A

Misc Info : TO15 Vial Number: 11

Quant File : 10811T15.RES (RTE Integrator)



Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 17 May 2017 3:00 pm

Data File: C:\HPCHEM\1\DATA2\DH051712.D

Name: C1705036-009A

Misc: TO15

Method: C:\HPCHEM\1\METHODS\IO511Tl5.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name RT EstConc Units Area IntStd ISRT ISArea ISConc

DH051712.D I0511T15.M Mon Jun 19 14:38:38 2017

CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-010A

Date: 22-Jun-17

Client Sample ID: WAT-SV07-050917

Tag Number: 478.306 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FI	LD			Analyst:
Lab Vacuum In	-4		1	"Hg		5/12/2017
Lab Vacuum Out	-30		•	"Hg		5/12/2017
FIXED GAS SERIES		EPA ME	THOD 3	С		Analyst: WD
Carbon dioxide	0.266	1.90	J (%	1	5/15/2017
Carbon Monoxide	ND	0.880	•	%	1	5/15/2017
Methane	ND	0.580		%	1	5/15/2017
Nitrogen	78.9	8.30		%	1	5/15/2017
Oxygen	21.0	0.880	,	%	1	5/15/2017
5PPB BY METHOD TO15		TO	-15			Analyst: WD
1,1,1-Trichloroethane	< 5.0	5.0		ppb∨	1	5/17/2017 3:49:00 PM
1,1,2,2-Tetrachloroethane	< 5.0	5,0		Vđạc	1	5/17/2017 3:49:00 PM
1,1,2-Trichloroethane	< 5.0	5.0		opbV	1	5/17/2017 3:49:00 PM
1,1-Dichloroethane	< 5.0	5.0		opb∨	1	5/17/2017 3:49:00 PM
1,1-Dichloroethene	< 5.0	5.0		opbV	1	5/17/2017 3:49:00 PM
1,2,4-Trichlorobenzene	< 5.0	5.0		pb∨	1	5/17/2017 3:49:00 PM
1,2,4-Trimethylbenzene	< 5.0	5.0		opbV	1	5/17/2017 3:49:00 PM
1,2-Dibromoethane	< 5.0	5.0		Vdqc	1	5/17/2017 3:49:00 PM
1,2-Dichlorobenzene	< 5.0	5.0		∨dqc	1	5/17/2017 3:49:00 PM
1,2-Dichloroethane	< 5.0	5.0		Vdqc	1	5/17/2017 3:49:00 PM
1,2-Dichloropropane	< 5.0	5.0		pbV	1	5/17/2017 3:49:00 PM
1,3,5-Trimethylbenzene	< 5.0	5.0		pb∨	1	5/17/2017 3:49:00 PM
1,3-butadiene	< 5.0	5.0		Vdq	1	5/17/2017 3:49:00 PM
1,3-Dichlorobenzene	< 5.0	5.0		pbV	1	5/17/2017 3:49:00 PM
1,4-Dichlorobenzene	< 5.0	5.0	p	γρbV	1	5/17/2017 3:49:00 PM
1,4-Dioxane	< 10	10		pb∨	1	5/17/2017 3:49:00 PM
2,2,4-trimethylpentane	< 5.0	5.0	p	рЬ∨	1	5/17/2017 3:49:00 PM
4-ethyltaluene	< 5.0	5.0	p	pb∨	1	5/17/2017 3:49:00 PM
Acetone	58	100	J p	pbV	10	5/17/2017 4:24:00 PM
Allyl chloride	< 5.0	5.0	p	pbV	1	5/17/2017 3:49:00 PM
Benzene	< 5.0	5.0	-	pb∨	1	5/17/2017 3:49:00 PM
Benzyl chloride	< 5.0	5.0		pbV	1	5/17/2017 3:49:00 PM
Bromodichloromethane	< 5.0	5.0		pbV	1	5/17/2017 3:49:00 PM
Bromoform	< 5.0	5.0		pbV	1	5/17/2017 3:49:00 PM
Bromomethane	< 5.0	5.0		pb∨	1	5/17/2017 3:49:00 PM
Carbon disulfide	< 5.0	5.0	-	pb∨	1	5/17/2017 3:49:00 PM
Carbon tetrachloride	< 5.0	5.0		pbV	1	5/17/2017 3:49:00 PM
Chlorobenzene	< 5.0	5.0	-	pb∨	1	5/17/2017 3:49:00 PM
Chloroethane	< 5.0	5.0		, pbV	1	5/17/2017 3:49:00 PM
Chloroform	67	50		pbV	10	5/17/2017 4:24:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- 5 Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-010A

Date: 22-Jun-17

Client Sample ID: WAT-SV07-050917

Tag Number: 478.306 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qua	al Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC)-15			Analyst: W
Chloromethane	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PA
cis-1,2-Dichloroethene	< 5.0	5.0		Vdqq	1	5/17/2017 3:49:00 PA
cis-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Cyclohexane	< 5.0	5.0		Vdqq	1	5/17/2017 3:49:00 PN
Dibromochloromethane	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Ethyl acetate	< 10	10		ppbV	1	5/17/2017 3:49:00 PM
Ethylbenzene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Freon 11	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Freon 113	< 5.0	5.0		ppb∨	1	5/17/2017 3:49:00 PM
Freon 114	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Freon 12	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Heptane	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Hexane	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
isopropyl alcohol	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
m&p-Xylene	< 10	10		ppbV	1	5/17/2017 3:49:00 PM
Methyl Butyl Ketone	< 10	10		ppbV	1	5/17/2017 3:49:00 PM
Methyl Ethyl Ketone	< 10	10		ppbV	1	5/17/2017 3:49:00 PM
Methyl Isobutyl Ketone	95	100	J	ppbV	10	5/17/2017 4:24:00 PM
Methyl tert-butyl ether	< 5.0	5.0	•	ppbV	1	5/17/2017 3:49:00 PM
Methylene chloride	7.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
o-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Propylene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Styrene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Tetrachloroethylene	< 5.0	5.0		ppb∨	1	5/17/2017 3:49:00 PM
Tetrahydrofuran	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Toluene	< 5.0	5.0		₽₽₽₽V	1	5/17/2017 3:49:00 PM
trans-1,2-Dichloroethene	< 5.0	5.0		ppb∨	1	5/17/2017 3:49:00 PM
trans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Trichloroethene	16	5.0		ppbV	1	5/17/2017 3:49:00 PM
Vinyl acetate	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Vinyl Bromide	< 5.0	5.0		ppbV	1	5/17/2017 3:49:00 PM
Vinyl chloride	< 5.0	5.0		ppbV	1	
Surr; Bromofluorobenzene	86,8	73.7-124		%REC	1	5/17/2017 3:49:00 PM
TIC: Cyclotetrasiloxane, octamethyl- \$\$ Octam	60	0	JN	ppbV	1	5/17/2017 3:49:00 PM 5/17/2017 3:49:00 PM
TIC: Cyclotrisiloxane, hexamethyl	28	0	JN	ppbV	1	5/17/2017 3:49:00 PM
TIC: Silanol, trimethyl- \$\$ Hydroxytrimethyls	6.1	ō	JN	ppbV	1	5/17/2017 3:49:00 PM
OW LEVEL SULFURS BY TO-15		TO-	15			Analyst: WD

Qualifiers:

- Quantitation Limit
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ЛŲ Non-routine analyte. Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E. Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Client Sample ID: WAT-SV07-050917

Lab Order:

C1705036

Tag Number: 478.306

Project:

Collection Date: 5/9/2017

Lab ID:

Former Hampshire C1705036-010A

Matrix: AIR

The second secon					and the second of the second o
Analyses	Result	**Limit Qual	Units	DF	Date Analyzed
LOW LEVEL SULFURS BY TO-15		TO-15			Analyst: WD
1-Propanethiol	< 5.0	5.0	Vđqq	1	5/16/2017 5:35:00 PM
Carbon disulfide	< 5.0	5.0	Vdqq	1	5/16/2017 5:35:00 PM
Carbonyl suifide	< 5.0	5.0	ppbV	1	5/16/2017 5:35:00 PM
Dimethyl sulfide	< 5.0	5.0	ppbV	1	5/16/2017 5:35:00 PM
Ethyl mercaptan	< 5.0	5.0	₽₽bV	1	5/16/2017 5:35:00 PM
Hydrogen Sulfide	8.7	5.0	ppb∨	1	5/16/2017 5:35:00 PM
Isopropyl mercaptan	< 5.0	5.0	ppbV	t	5/16/2017 5:35:00 PM
Methyl mercaptan	< 5.0	5.0	ppbV	1	5/16/2017 5:35:00 PM
Surr: Bromofluorobenzene	145	70-130 S	%REC	1	5/16/2017 5:35:00 PM

Qualifiers:

ND Not Detected at the Limit of Detection

Page 30 of 42

Quantitation Limit

ß Analyte detected in the associated Method Blank

ŀſ Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-010A

Date: 22-Jun-17

Client Sample ID: WAT-SV07-050917

Tag Number: 478.306 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual Units	DF	Date Analyzed
5PPB BY METHOD TO15		то-		Analyst: WE	
1,1,1-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 3:49:00 PM
1,1,2,2-Tetrachloroethane	< 34	34	ug/m3	1	5/17/2017 3:49:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1.	5/17/2017 3:49:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 3:49:00 PM
1,1-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 3:49:00 PM
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/17/2017 3:49:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 3:49:00 PM
1,2-Dibromoethane	< 38	38	ug/m3	1	5/17/2017 3:49:00 PM
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 3:49:00 PM
1,2-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 3:49:00 PM
1,2-Dichloropropane	< 23	23	ug/m3	1	5/17/2017 3:49:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 3:49:00 PM
1,3-butadiene	< 11	11	ug/m3	;	5/17/2017 3:49:00 PM
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 3:49:00 PM
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 3:49:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/17/2017 3:49:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/17/2017 3:49:00 PM
4-ethyltoluene	< 25	25	ug/m3	1	5/17/2017 3:49:00 PM
Acetone	140	240	J ug/m3	10	5/17/2017 4:24:00 PM
Allyl chloride	< 16	16	ug/m3	1	5/17/2017 3:49:00 PM
Benzene	< 16	16	ug/m3	1	5/17/2017 3:49:00 PM
Bønzyl chloride	< 29	29	ug/m3	1	5/17/2017 3:49:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/17/2017 3:49:00 PM
Bromoform	< 52	52	ug/m3	1	5/17/2017 3:49:00 PM
Bromomethane	< 19	19	ug/m3	1	5/17/2017 3:49:00 PM
Carbon disulfide	< 16	16	ug/m3	1	5/17/2017 3:49:00 PM
Carbon tetrachloride	< 31	31	ug/m3	1	5/17/2017 3:49:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/17/2017 3:49:00 PM
Chloroethane	< 13	13	ug/m3	1	5/17/2017 3:49:00 PM
Chloroform	330	240	ug/m3	10	5/17/2017 4:24:00 PM
Chloromethane	< 10	10	ug/m3	1	5/17/2017 3:49:00 PM
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 3:49:00 PM
cis-1,3-Dichloropropene	< 23	23	ug/m3	1	5/17/2017 3:49:00 PM
Cyclohexane	< 17	17	ug/m3	1	5/17/2017 3:49:00 PM
Dibromochloromethane	< 43	43	ug/m3	1	5/17/2017 3:49:00 PM
thyl acetate	< 36	36	ug/m3	1	5/17/2017 3:49:00 PM
Ethylbenzene	< 22	22	ug/m3	1	5/17/2017 3:49:00 PM
reon 11	< 28	28	ug/m3	1	
reon 113	< 38	38	ug/m3	1	5/17/2017 3:49:00 PM 5/17/2017 3:49:00 PM
Freon 114	< 35	35	ug/m3	1	5/17/2017 3:49:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-010A

Date: 22-Jun-17

Client Sample ID: WAT-SV07-050917

Tag Number: 478.306

Collection Date: 5/9/2017 Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		ТО	-15			Analyst: WD
Freon 12	< 25	25		ug/m3	1	5/17/2017 3:49:00 PM
Heptane	< 20	20		ug/m3	1	5/17/2017 3:49:00 PM
Hexachloro-1,3-butadiene	< 5 3	53		ug/m3	1	5/17/2017 3:49:00 PM
Hexane	< 18	18		ug/m3	1	5/17/2017 3:49:00 PM
isopropyl alcohol	< 12	12		ug/m3	1	5/17/2017 3:49:00 PM
m&p-Xylene	< 43	43		ug/m3	1	5/17/2017 3:49:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/17/2017 3:49:00 PM
Methyi Ethyi Katone	< 29	29		ug/m3	1	5/17/2017 3:49:00 PM
Methyl Isobutyl Ketone	390	410	j	ug/m3	10	5/17/2017 4:24:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/17/2017 3:49:00 PM
Methylene chloride	24	17		ug/m3	1	5/17/2017 3:49:00 PM
o-Xylene	< 22	22		ug/m3	1	5/17/2017 3:49:00 PM
Propylene	< 8.6	8.6		ug/m3	1	5/17/2017 3:49:00 PM
Styrene	< 21	21		ug/m3	1	5/17/2017 3:49:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/17/2017 3:49:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/17/2017 3:49:00 PM
Toluene	< 19	19		սց/ու3	1	5/17/2017 3:49:00 PM
trans-1,2-Dichloroethone	< 20	20		ug/m3	1	5/17/2017 3:49:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 3:49:00 PM
Trichloroethene	86	27		ug/m3	1	5/17/2017 3:49:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/17/2017 3:49:00 PM
Vinyi Bromide	< 22	22		Lg/m3	1	5/17/2017 3:49:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/17/2017 3:49:00 PM
OW LEVEL SULFURS BY TO-15		TO-	15			Analyst: WD
1-Propanethiol	< 16	16		ug/m3	1	5/16/2017 5:35:00 PM
Carbon disulfide	< 16	16		ug/m3	1	5/16/2017 5:35:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 5:35:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 5:35:00 PM
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 5:35:00 PM
Hydrogen Sulfide	12	7.0		ug/m3	1	5/16/2017 5:35:00 PM
Isopropyl mercaptan	< 16	16		ug/m3	1	5/16/2017 5:35:00 PM
Methyl mercaptan	< 9.8	9.8		ug/m3	1	5/16/2017 5:35:00 PM

Qualifiers:

- Quantitation Limit
- В Analyte detected in the associated Method Blank
- **[-**] Holding times for preparation or analysis exceeded
- JN Non-routine analyte, Quantitation estimated,
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Ε Estimated Value above quantitation range
- Analyte detected below quantitation limit
- ИD Not Detected at the Limit of Detection

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051713.D Vial: 12 Operator: WD Acq On : 17 May 2017 3:49 pm Sample : C1705036-010A Inst : GCMS3 Multiplr: 1.00

Misc : TO15

MS Integration Params: rteint.p Quant Time: Jun 1 11:33 2017 Quant Results File: IO511T15.RES

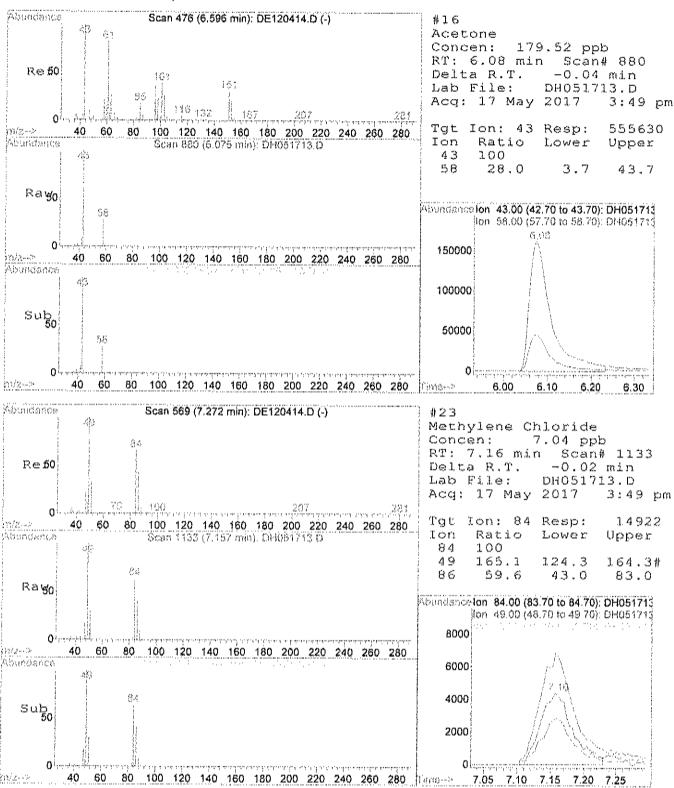
Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Lest Update : Thu May 11 14:01:S6 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

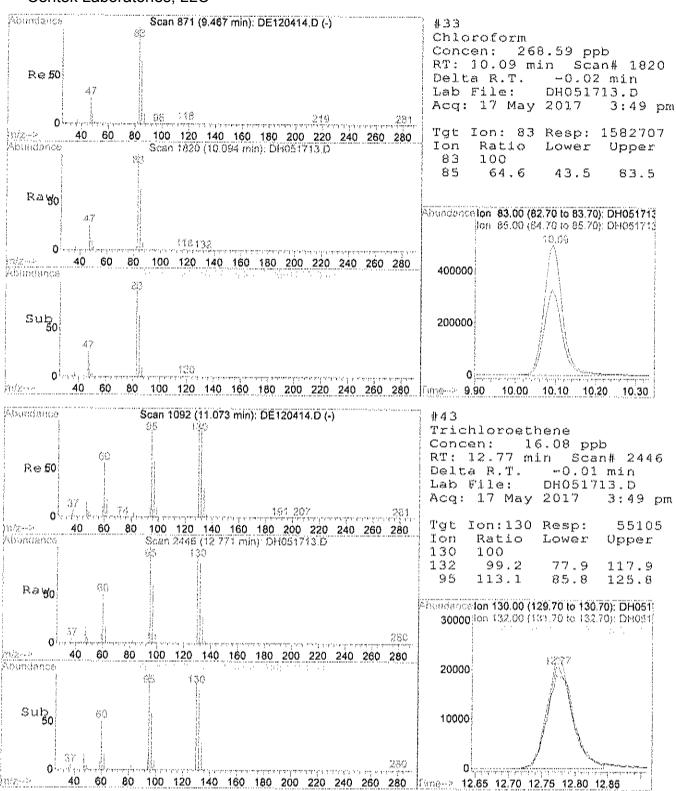
Internal Standards	Ŗ.T.	QIon	Response	Conc i	Units	Dev(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.94 12.17 16.48		82314m(437234 357549	~ 50.00	dqq 0 dqq 0 dqq 0	-0.01
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.94 Range 70					
Target Compounds 16) Acetone 23) Methylene Chloride 33) Chloroform 43) Trichloroethene 48) Methyl Isobutyl Ketone 60) map-Xylene	6.08 7.16 10.09 12.77 13.86 16.91	43 84 83 130 43	555630 14922 1582707 55105 2708108 7874	268.59 16.08 367.48	4 ppb 9 ppb 8 ppb	99

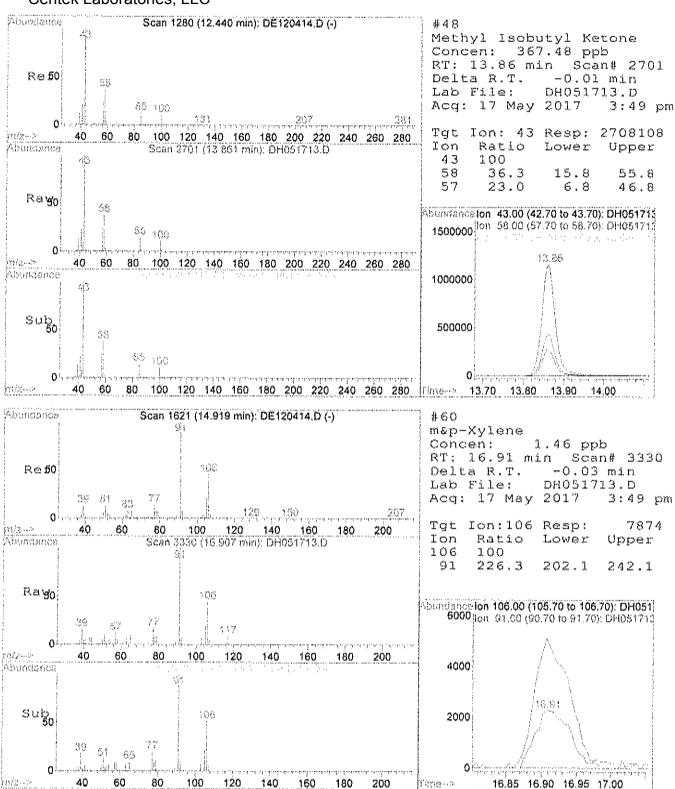
Page

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Quantitation Report







Centek Laboratories, LLC $_{\tt LSC\ Area\ Percent\ Report}$

Data File : C:\HPCHEM\1\DATA2\DH051713.D

Vial: 12 Acq On : 17 May 2017 3:49 pm Sample : C1705036-010A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Min Area: 3 % of largest Peak Max Peaks: 100

Method : C:\MPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Smoothing : ON Filtering: S
Sampling : 1 Min Area: 3 % o
Start Thrs: 0.2 Max Peaks: 100

Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

pea) # 1 2 3 4	R.T. min 6.075 8.016 9.940 10.090	first scan 871 1320 1766 1803	max scan 880 1334 1784 1819		PK TY rBV rBV3 rBV3	peak height 248542 24574 153757 1256011	corr. area 843786 71281 581752 3839996	Corr. % max 12.45% 1.05% 8.58% 56.66%	% of total 4.694% 0.397% 3.236% 21.362%
5	12.172	2290	2306	2332	rBV	401078	1095976	16.17%	6.0978
6 7 8 9 10	12.775 13.861 15.415 16.478 17.944	2424 2685 3030 3239 3519	2447 2701 3045 3248 3528	2462 2735 3064 3265 3542	rBV rBV rBV rBV rBV	123489 2958726 278237 541205 530364	347750 6777709 676023 1215010 1076233	5.13% 100.00% 9.97% 17.93% 15.88%	1.935% 37.704% 3.761% 6.759% 5.987%
1. 2.	18.148	3559	3567	3593	rBV	600265	1450690	21.40%	8.070%

Sum of corrected areas: 17976206

DH051713.D I0511T15.M Mon Jun 19 14:40:14 2017

LSC Report - Integrated Chromatogram

F'ile : C:\HPCHEM\1\DATA2\DH051713.D

Operator

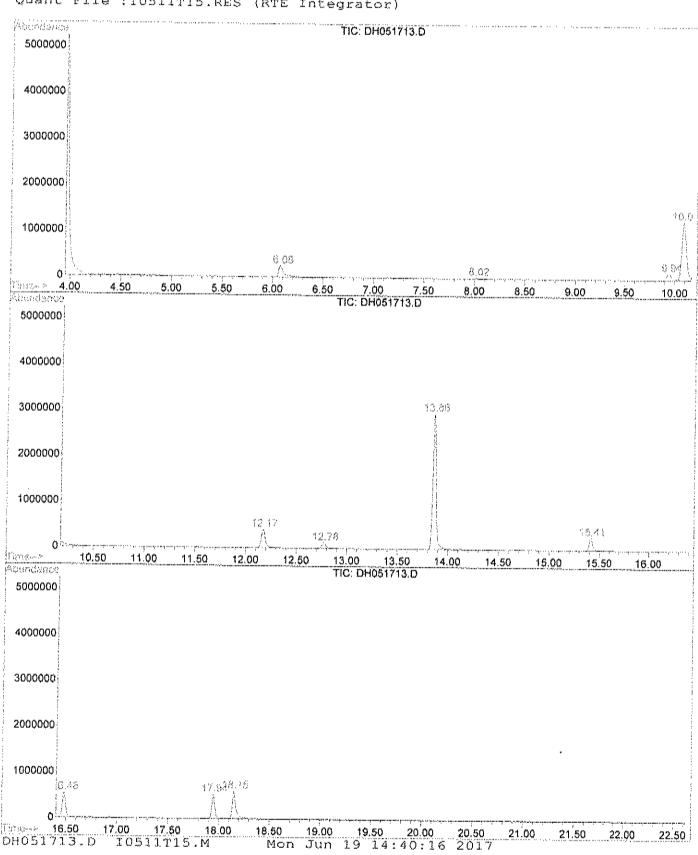
: 17 May 2017 : GCMS3 Acquired 3:49 pm using AcqMethod NEW1

Instrument :

Sample Name: C1705036-010A

Misc Info : TO15 Vial Number:

Quant File : IO511T15.RES (RTE Integrator)



Centek Laboratories, LLC Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051713.D Vial: 12 Acq On : 17 May 2017 3:49 pm Operator: WO Sample : C1705036-010A Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L *************** Peak Number 1 Silanol, trimethyl- \$\$ Hydroxy Concentration Rank 3 R.T. EstConc R.T. EstConc Area Relative to ISTD 8.02 6.13 ppb 71281 Bromochloromethane Hit# of 5 Tentative ID MW Molform CAS# Qual 1 Silanol, trimethyl- \$\$ Hydroxytrime 90 C3H10OSi 001066-40-6 83 2 Silanol, trimethyl- 90 C3H10OSi 001066-40-6 83 3 Formamide, N-methylthio 75 C2H5NS 000000-00-0 78 4 Silanol, trimethyl- 90 C3H10OSi 001066-40-6 78 Scan 1335 (8.021 min): DH051713.D (-) m/z 74.90 100.008 8000 6000 4000 2000 7.60 7.80 8.00 8.20 8.40 55.0 m/z 44.90 2 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 #1041: Sitanot, trimethyl- S\$ Hydroxytrimethylsilane S\$ Tr 8000 6000 4000 7,60 7.80 8.00 8.20 8.40 m/z 46.90 12.01% 2000 6 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 Abrodesco 8000 7.60 7.80 8.00 8.20 8.40 6000 m/z 75.90 8.46% 4000 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 #388: Formamide, N-methylthio 7.60 7.80 8.00 8.20 8.40 8000 m/z 76.90 6000 30 4000 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 7.60 7.80 8.00 8.20 8.40

Data File : C:\HPCHEM\1\DATA2\DH051713.D Vial: 12 Acq On : 17 May 2017 3:49 pm Operator: WD Sample : C1705036-010A Inst : GCMS3 Misc : TO15 Multiplr: 1.00 MS Integration Params: LSCINT.P

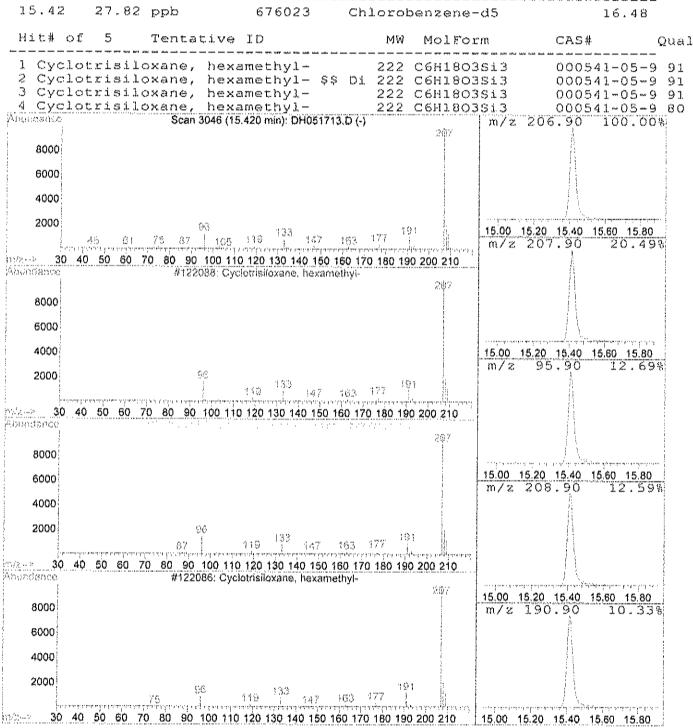
Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

: VOA Standards for 5 point calibration Title

Library : C:\DATABASE\NIST129.L

************** Peak Number 2 Cyclotrisiloxane, hexamethyl- Concentration Rank

R.T.	EstConc	Area	Relative to ISTD	R.T.
			~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ 	
15.42	27.82 ppb	676023	Chlorobenzene-d5	16.48



Centek Laboratories, LLC Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051713.D Vial: 12 Acq On : 17 May 2017 3:49 pm Sample : C1705036-010A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L ********* Peak Number 3 Cyclotetrasiloxane, octamethyl Concentration Rank R.T. EstConc Area Relative to ISTD 18.15 59.70 ppb 1450690 Chlorobenzene-d5 Hit# of 5 Tentative ID MW MolForm CAS# 1 Cyclotetrasiloxane, octamethyl- \$\$ 296 C8H24O4S14 2 Cyclotetrasiloxane, octamethyl- 296 C8H24O4S14 000556-67-2 86 000556-67-2 86 3 7H-Dibenzo[b,g]carbazole, 7-methyl- 281 C21H15N 003557-49-1 53 4 Cyclotetrasiloxane, octamethyl- 296 C8H24O4Si4 000556-67-2 38 50HC20C0 Scan 3567 (18.148 min): DH051713.D (-) m/z 281.00 100.00% Abuncanco 261 8000 6000 4000 2000 45 50 69 103 119 130 147 163 177 207 221 236 249 265 40 60 80 100 120 140 160 180 200 220 240 260 280 #70157: Cyclotetresificating, octamethyl-\$\$ Octamethylcyclot 17.80 18.00 18.20 18.40 m/z 282.00 28.97% Abundance 8000 6000 4000 17.80 18.00 18.20 18.40 m/z 283.00 17. 2000 73 (33 165 177 (91 207 235 249 265 40 60 80 100 120 140 160 180 200 220 240 260 280 Abundanco 284 8000 17.80 18.00 18.20 18.40 6000 m/z 192.90 12.79% 4000 2000 73 133 179 193 207 236 265 40 60 80 100 120 140 160 180 200 220 240 260 280 Abundance #65620: 7H-Dibenzo[b,g]carbazole, 7-methyl-17.80 18.00 18.20 18.40 8000 73.00 m/z 6000 4000 2000 288 133 40 60 80 100 120 140 160 180 200 220 240 260 280

Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 17 May 2017 3:49 pm

Data File: C:\HPCHEM\1\DATA2\DH051713.D

Name: C1705036-010A Misc: TO15

Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Silanol, trimethyl- Cyclotrisiloxane, he Cyclotetrasiloxane,	8.02 15.42 18.15	27.8	वव्य		ISTD01 ISTD03 ISTD03	16.48	581752 1215010 1215010	50.0

DH051713.D I0511T15.M Mon Jun 19 14:40:23 2017

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\l\DATA\DH051714.D

Vial: 12 Operator: WD Acq On : 17 May 2017 4:24 pm Sample : C1705036-010A 10X Inst : GCMS3 Multiplr: 1.00 Misc : TO15

MS Integration Params: rteint.p Quant Time: Jun 1 11:35 2017

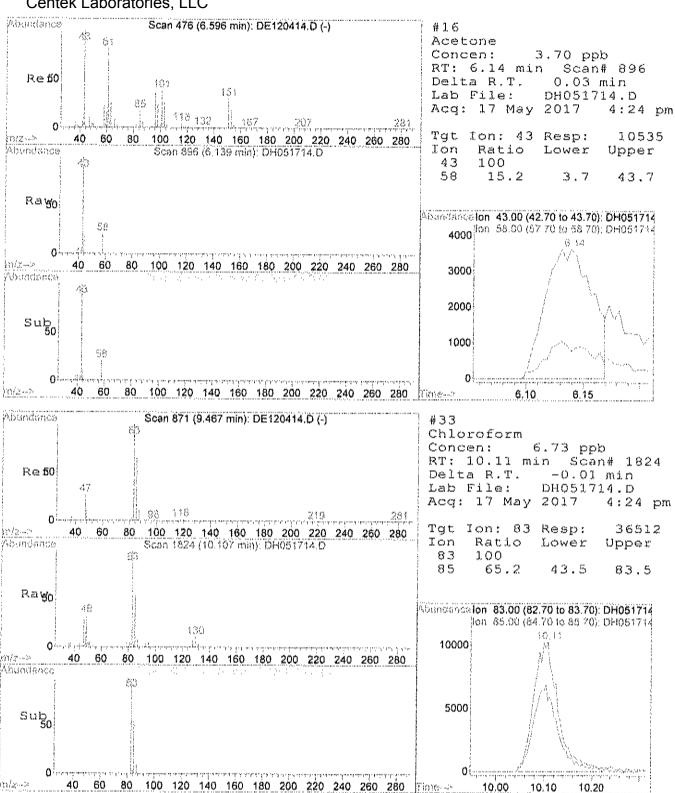
Quant Results File: IO511T15.RES

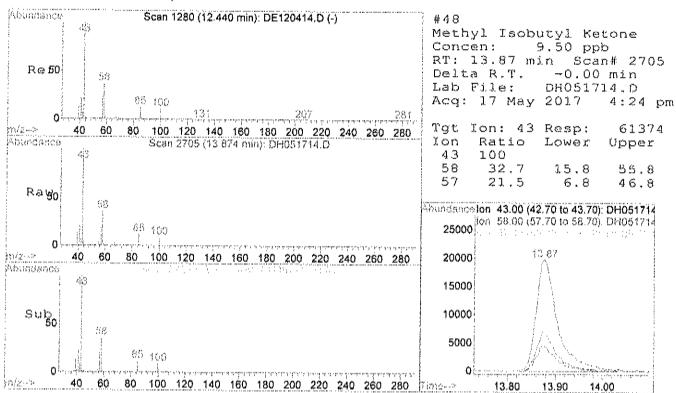
Quant Method : C:\HPCREM\l\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc U	nits E	Dev(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.96 12.18 16.48	128 114 117	75812m4 383303 301386		ववुव	0.00 0.00 0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000		95 - 130			ррb 73.3	0.00 34%
Target Compounds 16) Acetone 33) Chloroform 48) Methyl Isobutyl Ketone	6.14 10.11 13.87	43 83 43	10535 36512 61374	3.70 6.73 9.50	dqq	Qvalue 83 98 93

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Quantitation Report





CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-011A

Date: 22-Jun-17

Client Sample ID: WAT-SV08-050917

Tag Number: 427.79 Collection Date: 5/9/2017

Matrix: AIR

		manis, Att						
Analyses	Result	**Limit Q	ual Units	DF	Date Analyzed			
FIELD PARAMETERS		FLD	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Analyst;			
Lab Vacuum in	-6		"Hg		5/12/2017			
Lab Vacuum Out	-30		"Hg		5/12/2017			
FIXED GAS SERIES		EPA METHO	DD 3C		Analyst; WD			
Carbon dioxide	0.0270	1.90	J %	1	5/15/2017			
Carbon Monoxide	ND	0.880	%	1	5/15/2017			
Methane	ND	0.580	%	1	5/15/2017			
Nitrogen	79.1	8.30	%	1	5/15/2017			
Oxygen	20.4	0.880	%	1	5/15/2017			
PPB BY METHOD TO15		TO-15			Analyst: WD			
1,1,1-Trichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
1,1,2,2-Tetrachloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 5:01:00 PM			
1,1,2-Trichloroethane	< 5.0	5.0	Vdqq	1	5/17/2017 5:01:00 PM			
1,1-Dichloroethane	< 5.0	5.0	Vdoq	1	5/17/2017 5:01:00 PM			
1,1-Dichloroethene	< 5.0	5.0	∨dqq	1	5/17/2017 5:01:00 PM			
1,2,4-Trichlorobenzene	< 5.0	5.0	∨dqq	1	5/17/2017 5:01:00 PM			
1,2,4-Trimethylbenzene	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM			
1,2-Dibromoethane	< 5.0	5.0	Vdqq	1	5/17/2017 5:01:00 PM			
1,2-Dichlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM			
1,2-Dichloroethane	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
1,2-Dichloropropane	< 5.0	5.0	ppbV	ï	5/17/2017 5:01:00 PM			
1,3,5-Trimethylbenzene	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM			
1,3-butadiene	< 5.0	5.0	Vdqq	1	5/17/2017 5:01:00 PM			
1,3-Dichlorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
1,4-Dichtorobenzene	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
1,4-Dioxane	< 10	10	Vdqq	1	5/17/2017 5:01:00 PM			
2,2,4-trimethylpentane	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
4-ethyltoluene	< 5.0	5.0	Vdqq	1	5/17/2017 5:01:00 PM			
Acetone	88	50	ppbV	5	5/17/2017 5:36:00 PM			
Allyl chloride	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
Benzene	6.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
Benzyl chloride	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM			
Bromodichloromethane	< 5.0	5.0	Vdqq	1	5/17/2017 5:01:00 PM			
Bromoform	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
Bromomethane	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM			
Carbon disulfide	8.9	5.0	ppbV	1	5/17/2017 5:01:00 PM			
Carbon tetrachloride	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
Chlorobenzene	< 5.0	5.0	ppb∨	1	5/17/2017 5:01:00 PM			
Chloroethane	< 5.0	5.0	ppbV	1	5/17/2017 5:01:00 PM			
Chloroform	19	5.0	ppbV	1	5/17/2017 5:01:00 PM			

Qualifiers:

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^{*} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

[.] Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-011A

Date: 22-Jun-17

Client Sample ID: WAT-SV08-050917

Tag Number: 427.79 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qua	d Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC)-15			Analyst: WD
Chloromethane	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
cis-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
cis-1,3-Dichtoropropene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Cyclohexane	8.0	5.0		ppb∨	1	5/17/2017 5:01:00 PM
Dibromochloromethane	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Ethyl acetate	< 10	10		ppb∨	1	5/17/2017 5:01:00 PM
Ethylbenzene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Freon 11	< 5.0	5.0		ρρbV	1	5/17/2017 5:01:00 PM
Freon 113	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Freon 114	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Freon 12	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Heptane	9.8	5.0		ppbV	1	5/17/2017 5:01:00 PM
Hexachloro-1,3-butadiene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Hexane	12	5.0		ppbV	1	5/17/2017 5:01:00 PM
Isopropyl alcohol	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
m&p-Xylene	6.9	10	J	ppb∨	1	5/17/2017 5:01:00 PM
Methyl Butyl Ketone	< 10	10		ppbV	1	5/17/2017 5:01:00 PM
Methyl Ethyl Ketone	9.0	10	J	γdqq	1	5/17/2017 5:01:00 PM
Methyl Isobutyl Ketone	56	10		ppbV	1	5/17/2017 5:01:00 PM
Methyl tert-butyl ether	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Methylene chloride	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
p-Xylene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Propylene Propylene	52	5.0		ppbV	1	5/17/2017 5:01:00 PM
Styrene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
[etrachloroethylene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
etrahydrofuran	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
foluene	11	5.0		ppbV	1	5/17/2017 5:01:00 PM
rans-1,2-Dichloroethene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
rans-1,3-Dichloropropene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
richloroethene	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
finyl acetate	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
'inyl Bromide	< 5.0	5.0		ppb∨	1	5/17/2017 5:01:00 PM
inyl chloride	< 5.0	5.0		ppbV	1	5/17/2017 5:01:00 PM
Surr: Bromofluorobenzene	91.8	73.7-124		%REC	1	5/17/2017 5:01:00 PM
TIC: 1-Propene, 2-methyl-	15	0	JN	ppbV	1	5/17/2017 5:01:00 PM
TIC: Butane	28	Ō	JN	ppbV	1	5/17/2017 5:01:00 PM
TIC: Butane, 2,3-dimethyl- \$\$ iisopropyl \$\$	19	ŏ	JN	ppbV	1	5/17/2017 5:01:00 PM
TIC: Butane, 2-methyl-	24	0	JN	ppbV	1	5/17/2017 5:01:00 PM
TIC: Cyclohexane, methyl-	21	0	JN	ррьV	1	5/17/2017 5:01:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- 14 Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-011A

Date: 22-Jun-17

Client Sample ID: WAT-SV08-050917

Tag Number: 427.79 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15	111111111111111111111111111111111111111	то	-15			Analyst: WD
TIC: Cyclopentane, methyl-	19	0	JN	ppbV	1	5/17/2017 5:01:00 PM
TIC: Hydrogen sulfide \$\$ Dihydrogen monosulfi	980	0	ИĻ	ppbV	1	5/17/2017 5:01:00 PM
TIC: Isobutane	21	0	JN	Vđqq	1	5/17/2017 5:01:00 PM
TIC: Pentane \$\$ n-Pentane \$\$ Skellysolve A \$\$	33	0	JN	ppbV	1	5/17/2017 5:01:00 PM
TIC: Pentane, 3-methyl-	10	0	JN	ppbV	1	5/17/2017 5:01:00 PM
OW LEVEL SULFURS BY TO-15		TO	-15			Analyst: WD
1-Propanethiol	< 5.0	5.0		ppbV	1	5/16/2017 6:10:00 PM
Carbon disulfide	13	5.0		ppbV	1	5/15/2017 6:10:00 PM
Carbonyl sulfide	< 5.0	5.0		ppb∨	1	5/16/2017 6:10:00 PM
Dimethyl sulfide	< 5.0	5.0		Vdqq	1	5/16/2017 6:10:00 PM
Ethyl mercaptan	< 5.0	5.0		ppb∨	1	5/16/2017 6:10:00 PM
Hydrogen Sulfide	2300	50		ppb∨	10	5/16/2017 9:03:00 PM
isopropyi mercaptan	3.5	5.0	1	ppb∨	1	5/16/2017 6:10:00 PM
Methyl mercaptan	1.5	5.0	J	ppb∨	1	5/16/2017 6:10:00 PM
Surr: Bromofluorobenzene	153	70-130	\$	%REC	1	5/16/2017 6:10:00 PM
Surr: Bromofluorobenzene	102	70-130		%REC	10	5/16/2017 9:03:00 PM

Qualifiers:

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Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-011A

Date: 22-Jun-17

Client Sample ID: WAT-SV08-050917

Tag Number: 427.79 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit Ç	ual Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-1	5		Analyst: WD
1.1,1-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 5:01:00 PM
1,1,2,2-Tetrachioroethane	< 34	34	ug/m3	1	5/17/2017 5:01:00 PM
1,1,2-Trichloroethane	< 27	27	ug/m3	1	5/17/2017 5:01:00 PM
1,1-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 5:01:00 PM
1,1-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 5:01:00 PM
1,2,4-Trichlorobenzene	< 37	37	ug/m3	1	5/17/2017 5:01:00 PM
1,2,4-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 5:01:00 PM
1,2-Dibromoethane	< 38	38	ug/m3	1	5/17/2017 5:01:00 PM
1,2-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 5:01:00 PM
1,2-Dichloroethane	< 20	20	ug/m3	1	5/17/2017 5:01:00 PM
1,2-Dichloropropane	< 23	23	ug/m3	1	5/17/2017 5:01:00 PM
1,3,5-Trimethylbenzene	< 25	25	ug/m3	1	5/17/2017 5:01:00 PM
1,3-butadiene	< 11	11	ug/m3	1	5/17/2017 5:01:00 PM
1,3-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 5:01:00 PM
1,4-Dichlorobenzene	< 30	30	ug/m3	1	5/17/2017 5:01:00 PM
1,4-Dioxane	< 36	36	ug/m3	1	5/17/2017 5:01:00 PM
2,2,4-trimethylpentane	< 23	23	ug/m3	1	5/17/2017 5:01:00 PM
4-ethyltoluene	< 25	25	ug/m3	1	5/17/2017 5:01:00 PM
Acetone	210	120	ug/m3	5	5/17/2017 5:36:00 PM
Aliyl chloride	< 16	16	ug/m3	1	5/17/2017 5:01:00 PM
Benzene	19	16	ug/m3	1	5/17/2017 5:01:00 PM
Benzył chloride	< 29	29	ug/m3	1	5/17/2017 5:01:00 PM
Bromodichloromethane	< 33	33	ug/m3	1	5/17/2017 5:01:00 PM
Bromoform	< 52	52	ug/m3	1	5/17/2017 5:01:00 PM
Bromomethane	< 19	19	ug/m3	1	5/17/2017 5:01:00 PM
Carbon disulfide	28	16	ug/m3	1	5/17/2017 5:01:00 PM
Carbon tetrachloride	< 31	31	ug/m3	1	5/17/2017 5:01:00 PM
Chlorobenzene	< 23	23	ug/m3	1	5/17/2017 5:01:00 PM
Chloroethane	< 13	13	ug/m3	1	5/17/2017 5:01:00 PM
Chloroform	94	24	ug/m3	1	5/17/2017 5:01:00 PM
Chloromethane	< 10	10	ug/m3	1	5/17/2017 5:01:00 PM
cis-1,2-Dichloroethene	< 20	20	ug/m3	1	5/17/2017 5:01:00 PM
cis-1,3-Dichloropropene	· < 23	23	ug/m3	1	5/17/2017 5:01:00 PM
Cyclohexane	27	17	ug/m3	1	5/17/2017 5:01:00 PM
Dibromochloromethane	< 43	43	ug/m3	1	5/17/2017 5:01:00 PM
Ethyl acetate	< 36	36	ug/m3	1	5/17/2017 5:01:00 PM
thylbenzene	< 22	22	ug/m3	1	5/17/2017 5:01:00 PM
reon 11	< 28	28	ug/m3	1	5/17/2017 5:01:00 PM
reon 113	< 38	38	ug/m3	1	5/17/2017 5:01:00 PM
Freon 114	< 35	35	ug/m3	i	5/17/2017 5:01:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order: C1705036

Project: Former Hampshire

Lab ID: C1705036-011A

Date: 22-Jun-17

Client Sample ID: WAT-SV08-050917

Tag Number: 427.79 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC)-15			Analyst: WD
Freon 12	< 25	25		ug/m3	1	5/17/2017 5:01:00 PM
Heptane	40	20		ug/m3	1	5/17/2017 5:01:00 PM
Hexachloro-1,3-butadiene	< 53	53		ug/m3	1	5/17/2017 5:01:00 PM
Hexane	42	18		ug/m3	1	5/17/2017 5:01:00 PM
Isopropyl alcohol	< 12	12		ug/m3	1	5/17/2017 5:01:00 PM
m&p-Xylene	30	43	J	ug/m3	1	5/17/2017 5:01:00 PM
Methyl Butyl Ketone	< 41	41		ug/m3	1	5/17/2017 5:01:00 PM
Methyl Ethyl Ketone	27	29	j	ug/m3	1	5/17/2017 5:01:00 PM
Methyl Isobutyl Ketone	230	41		ug/m3	1	5/17/2017 5:01:00 PM
Methyl tert-butyl ether	< 18	18		ug/m3	1	5/17/2017 5:01:00 PM
Methylene chloride	< 17	17		ug/m3	1	5/17/2017 5:01:00 PM
o-Xylene	< 22	22		ug/m3	1	5/17/2017 5:01:00 PM
Propylene	89	8.6		սց/m3	1	5/17/2017 5:01:00 PM
Styrene	< 21	21		ug/m3	1	5/17/2017 5:01:00 PM
Tetrachloroethylene	< 34	34		ug/m3	1	5/17/2017 5:01:00 PM
Tetrahydrofuran	< 15	15		ug/m3	1	5/17/2017 5:01:00 PM
Toluene	43	19		ug/m3	1	5/17/2017 5:01:00 PM
trans-1,2-Dichloroethene	< 20	20		ug/m3	1	5/17/2017 5:01:00 PM
trans-1,3-Dichloropropene	< 23	23		ug/m3	1	5/17/2017 5:01:00 PM
Trichloroethene	< 27	27		ug/m3	1	5/17/2017 5:01:00 PM
Vinyl acetate	< 18	18		ug/m3	1	5/17/2017 5:01:00 PM
Vinyl Bromide	< 22	22		ug/m3	1	5/17/2017 5:01:00 PM
Vinyl chloride	< 13	13		ug/m3	1	5/17/2017 5:01:00 PM
OW LEVEL SULFURS BY TO-15		то	-15			Analyst; WD
1-Propanethiol	< 16	16		սց/m3	1	5/16/2017 6:10:00 PM
Carbon disulfide	39	15		ug/m3	1	5/16/2017 6:10:00 PM
Carbonyl sulfide	< 12	12		ug/m3	1	5/16/2017 6:10:00 PM
Dimethyl sulfide	< 19	19		ug/m3	1	5/16/2017 6:10:00 PM
Ethyl mercaptan	< 13	13		ug/m3	1	5/16/2017 6:10:00 PM
Hydrogen Sulfide	3300	70		ug/m3	10	5/16/2017 9:03:00 PM
Isopropyl mercaptan	11	16	J	ug/m3	1	5/16/2017 6:10:00 PM
Methyl mercaptan	3.0	9.8	J	ug/m3	1	5/16/2017 6:10:00 PM

O	 ~ (12	Œ	-44

^{*} Quantitation Limit

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B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Quantitation Report (QT Reviewed)

Vial: 13 Operator: WD

Inst : GCMS3

Data File : C:\HPCHEM\1\DATA\DH051715.D

Acq On : 17 May 2017 5:01 pm Sample : C1705036-011A Misc : T015

Multiplr: 1.00 MS Integration Params: rteint.p Quant Time: Jun 1 11:38 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Cone Ur	ារសេ	Dev(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.94 12.17 16.48	114	70577m () 361915 302363	50.00	dag	-0.01
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.94 Range 70	95 - 130	196894 Recover			
Target Compounds 2) Propylene 16) Acetone 23) Methylene Chloride 24) Carbon disulfide 29) Methyl Ethyl Ketone 30) Hexane 33) Chloroform 37) Benzene 39) Cyclohexane 42) Heptane 48) Methyl Isobutyl Ketone 52) Toluene 59) Ethylbenzene 60) m&p-Xylene 63) o-xylene	4.16 6.07 7.17 7.33 9.05 9.010 11.51 11.59 12.63 13.87 14.70 16.75 16.90		118797 462326 4395m4) 47080m 9992 37826 97826 97826 94986 35688 47609 340935 59503 4200 31238 21651	174.21 2.42 8.89 8.99 11.79 19.35 5.97 7.98 9.82 55.89 11.34 1.14	0	# 81 97 98 99 92 94 96

^{(#) =} qualifier out of range (m) = manual integration DH051715.D I0511T15.M Thu Jun 01 11:51:41 2017

5.0

5:01 pm

C1705036-011A

0

Acq On Sample

T015

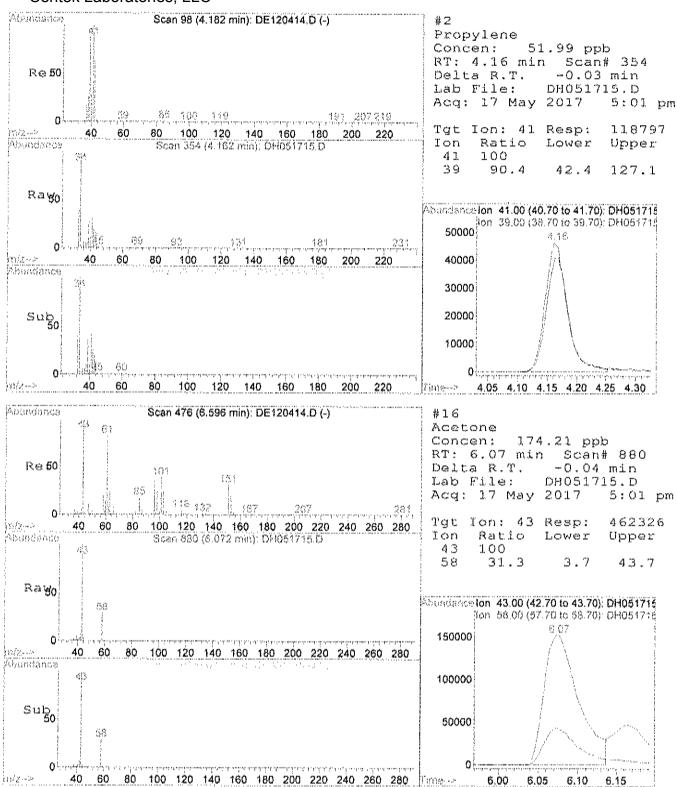
Misc

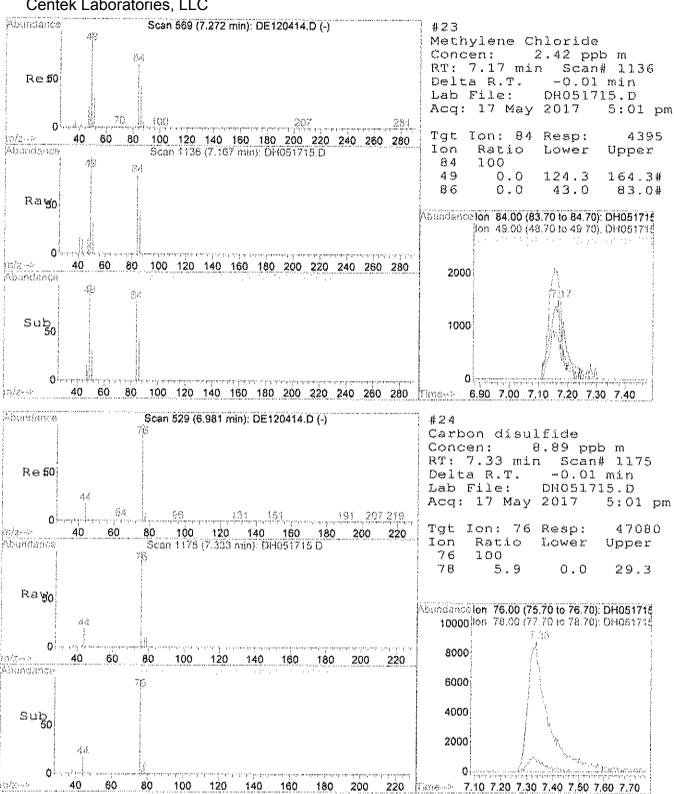
GCMS3

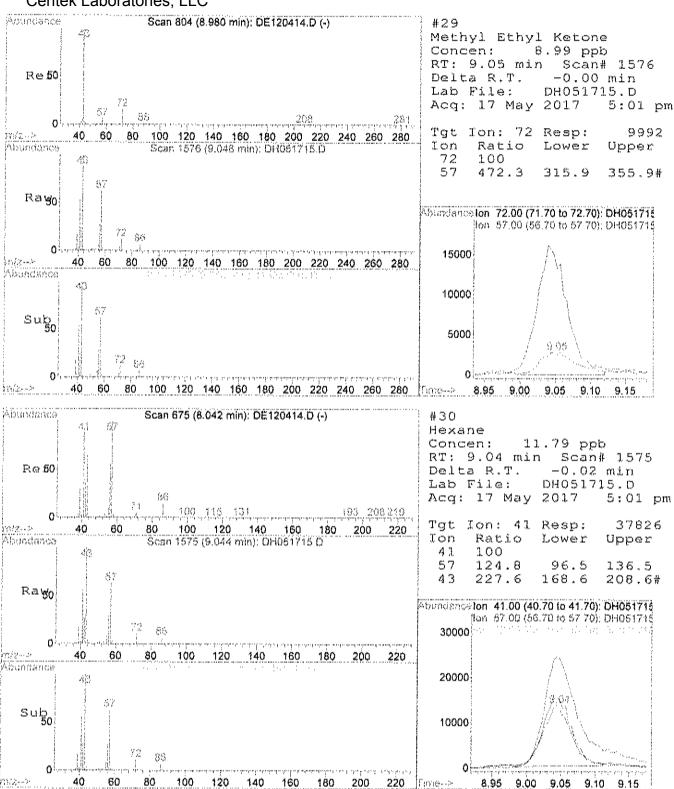
Operator:

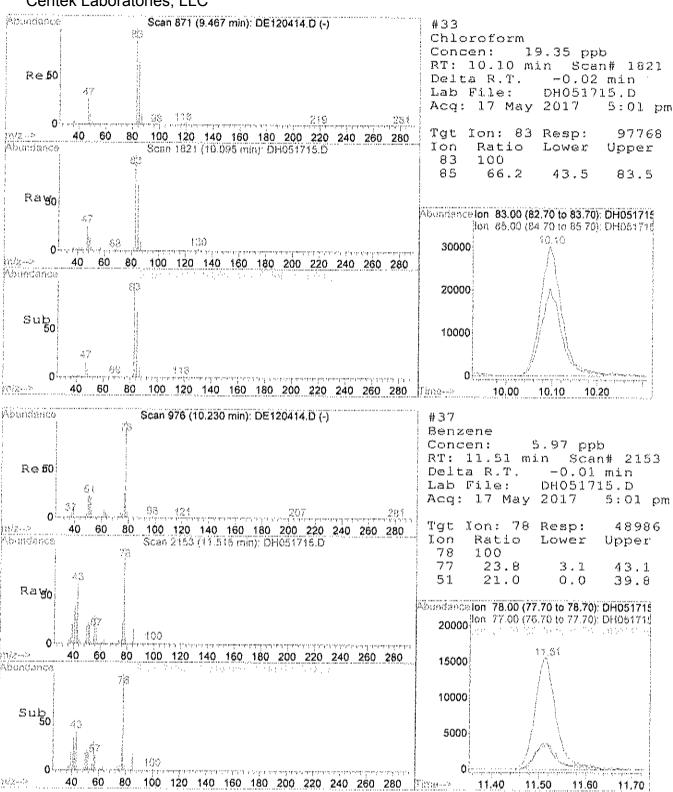
Inst

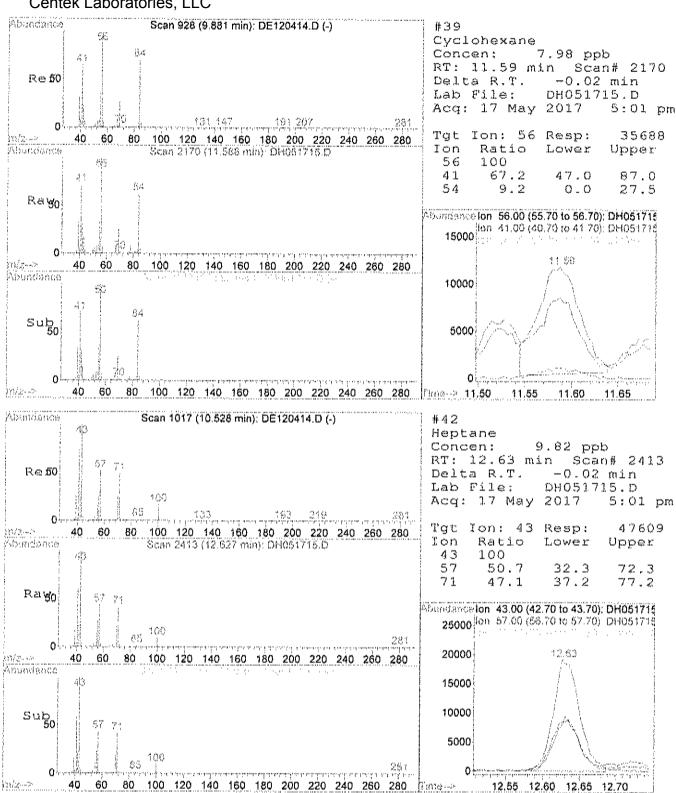
Vial:

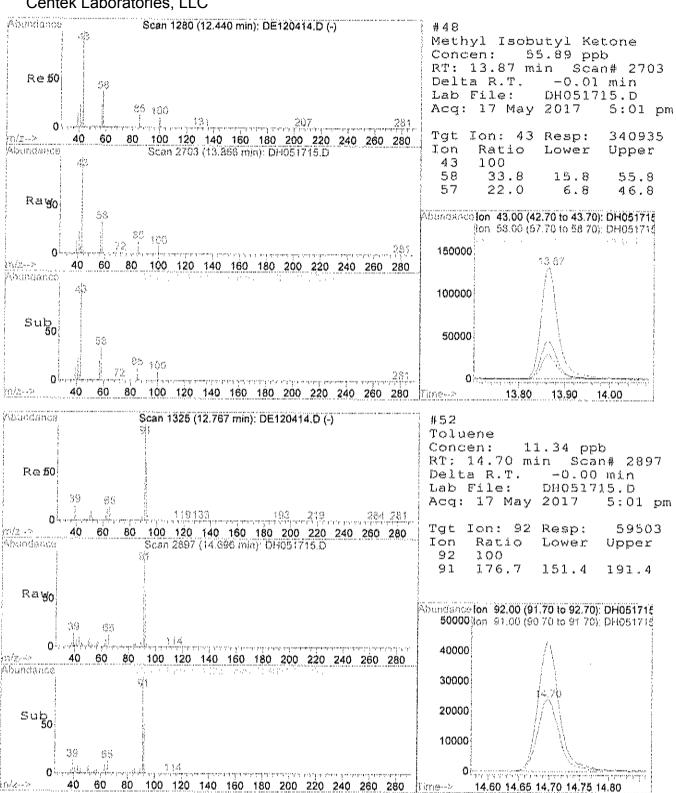


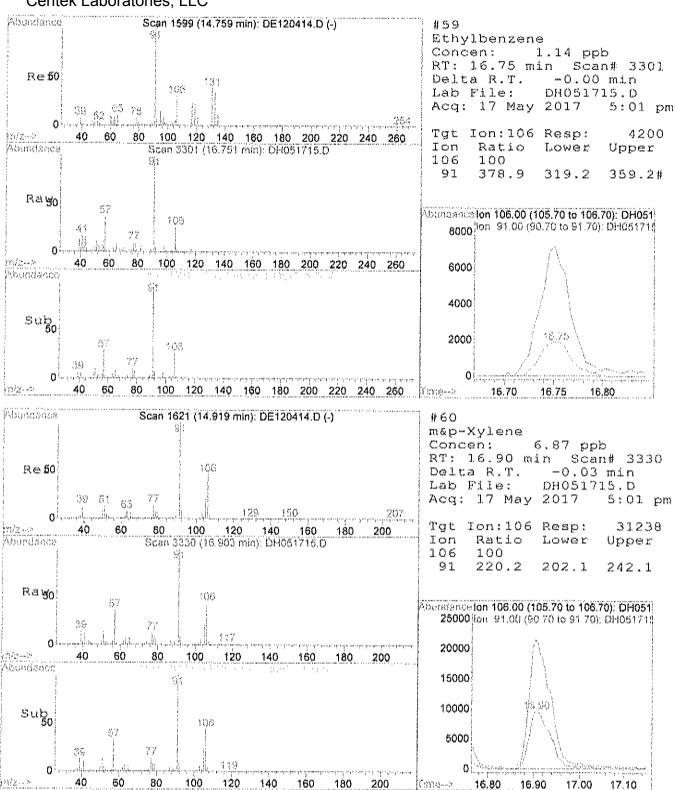


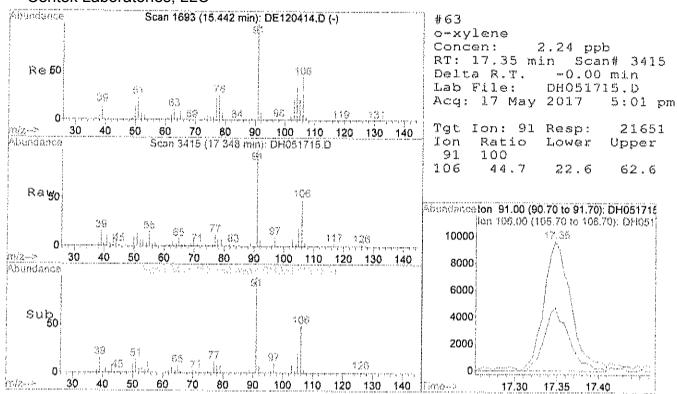












LSC Area Percent Report

Vial: 13 Data File : C:\HPCHEM\1\DATA2\DHOS1715.D Acq On : 17 May 2017 5:01 pm Operator: WD Inst : GCMS3 Sample : C1705036-011A Misc : T015 Multiplr: 1.00

MS Integration Params: LSCINT.P

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Smoothing : ON Filtering: 5
Min Area: 3 % of largest Peak
Max Peaks: 100
Peak Location: TOP Sampling : 1

Start Thrs: 0.2 Stop Thrs : 0

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

peak #	R.T. min		max scan	scan	TΥ	peak height	area	corr. % max.	% of total
1	4.084	312	328	351	rBV	3344217	10701485	100.00%	52.201%
2	4.462	441	453	470	rVB2	110908	233179	2.18%	1.137%
3	4.650	498	515	526	rBV4	59633	168784	1.58%	0.823%
4	4.722	528	539	560	rVB	136031	302158	2.82%	1.474%
5	5.679	777	788	807	rBV2	97514	266270	2.49%	1.299%
6	6.072	871	880	894	rBV	230829	719131	6.72%	3.508%
7	6.166	896	902	929	rVB2	112521	357732	3.34%	1.745%
8	8.009	1324	1333	1352	rV64	60937	211016	1.97%	1.029%
9	8.505	1433	1449	1465	rBV3	37262	113874	1.06%	0.555%
10	9.044	1561	1575	1595	rBV	82256	257333	2.40%	1.255%
11	9.942	1766	1785	1807	rBV3	145832	547969	5.12%	2.673%
12	10.095	1809	1821	1843	rVV2	87193	305834	2.86%	1.492%
13	10.249	1843	1857	1874	rVB3	63985	208623	1.95%	1.018%
14	11.515	2138	2153	2163	rBV5	71675	225450	2.11%	1.100%
15	11.588	2163	2170	2183	rVV3	53705	161687	1.51%	0.789%
16	11.848	2219	2231	2245	rVB2	45697	121794	1.14%	0.594%
17	12.173	2292	2307	2323	rBV2	328301	927166	8.66%	4.523%
18	12.635	2399	2415	2428	rBV2	75773	198910	1.86%	0.970%
19	13.584	2627	2637	2656	rVB2	147971	383773	3.59%	1.872%
20	13.866	2683	2703	2722	rBV2	317981	862405	8.06%	4.207%
21	14.696	2876	2897	2917	rBV3	123122	357446	3.34%	1.744%
22	15.290	3009	3022	3033	rBV5	46696	160602	1.50%	0.783%
23	15.416	3033	3046	3058	rVV3	60386	164635	1.54%	0.803%
24	16.337	3213	3222	3233	rVB2	53894	122452	1.14%	0.597%
25	16.484	3240	3250	3265	rBV	457460	1026335	9.59%	5.006%
26	16.924	3322	3334		rBV2	135902	383096	3.58%	1.869%
27	17.950	3514	3530		rBV	480027	1011325	9.45%	4.933%

Sum of corrected areas: 20500464

DH051715.D I0511T15.M Mon Jun 19 14:43:26 2017

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA2\DH051715.D

Operator : WD

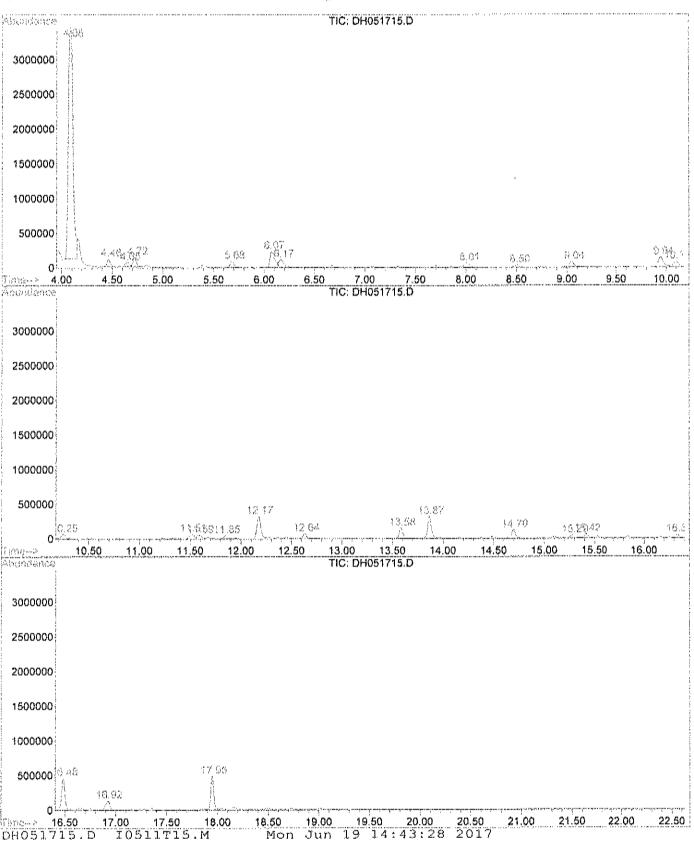
Acquired : 17 May 2017 5:01 pm using AcqMethod NEW1

Instrument: GCMS3

Sample Name: C1705036-011A

Misc Info : TO15 Vial Number: 13

Quant File : IO511T15.RES (RTE Integrator)



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Vial: 13 Data File : C:\HPCHEM\1\DATA2\DH051715.D Acq On : 17 May 2017 5:01 pm Operator: WD : C1705036-011A Sample Inst : GCMS3 : TO15 Multiplr: 1.00 Misc

MS Integration Params: LSCINT.P

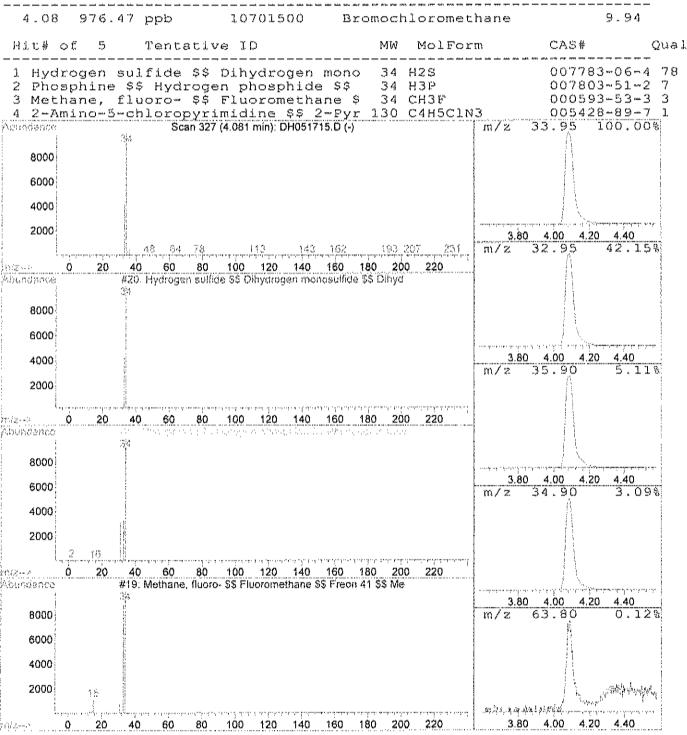
Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

: VOA Standards for 5 point calibration Title

Library : C:\DATABASE\NIST129.L

Peak Number 1 Hydrogen sulfide \$\$ Dihydrogen Concentration Rank

R.T.	EstConc	Area	Relative to	ISTO	R.T.
			NAME AND ADDRESS OF STATE AND ADDRESS OF THE TOTAL TOTAL		
4.08	976.47 ppb	10701500	Bromochlorome	thane	9.94



Vial: 13 Data File : C:\HPCHEM\1\DATA2\DH051715.D Acq On : 17 May 2017 5:01 pm Sample : C1705036-011A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

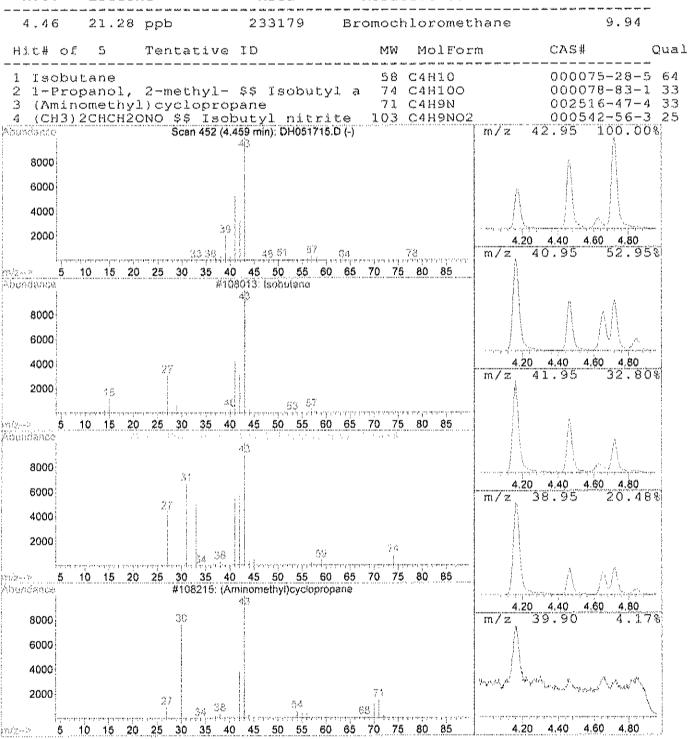
Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration

Library : C:\DATABASE\NIST129.L

Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
				~
4.46	21.28 ppb	233179	Bromochloromethane	9.94



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051715.D Vial: 13 Acq On : 17 May 2017 5:01 pm Sample : C1705036-011A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 3 1-Propene, 2-methyl-R.T. EstConc Area Relative to ISTD R.T. R.T. 4.65 15.40 ppb 168784 Bromochloromethane CAS# Qual Hitt of 5 Tentative ID MW MolForm 1 1-Propene, 2-methyl- 56 C4H8
2 2-Butene, (Z)-\$\$ (Z)-2-Butene \$\$ c 56 C4H8
3 2-Butene, (E)- 56 C4H8
--- 2-methyl- 56 C4H8 56 C4H8 000115-11-7 87 000590-18-1 80 000624-64-6 80 000115-11-7 80 m/z 40.95 100.00% Scan 515 (4.650 min): DH051715.D (-) 315 8000 53,0 6000 4000 2000 38 38 44 5063 4.40 4.60 4.80 5.00 m/z 56.00 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 #107982, 1-Fropene, 2-methyl-Andedance 8000 6000 $C_{2}(3)$ 4.40 4.60 4.80 5.00 4000 m/z 38.95 2000 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 Abundance 8000 4.40 4.60 4.80 5.00 6000 55.00 24.82% 4000 27 2000 15 34 2952 1 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 #107977: 2-Butene, (E)-Albem Ekmore 4.40 4.60 4.80 5.00 m/z 39.90 13.54% 8000 6000 88 4000 2000 30 38 | 4952 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 4.40 4.60 4.80 5.00

Data File : C:\HPCHEM\1\DATA2\DH051715.D Acq On : 17 May 2017 5:01 pm Sample : C1705036-011A Misc : T015 Vial: 13 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P

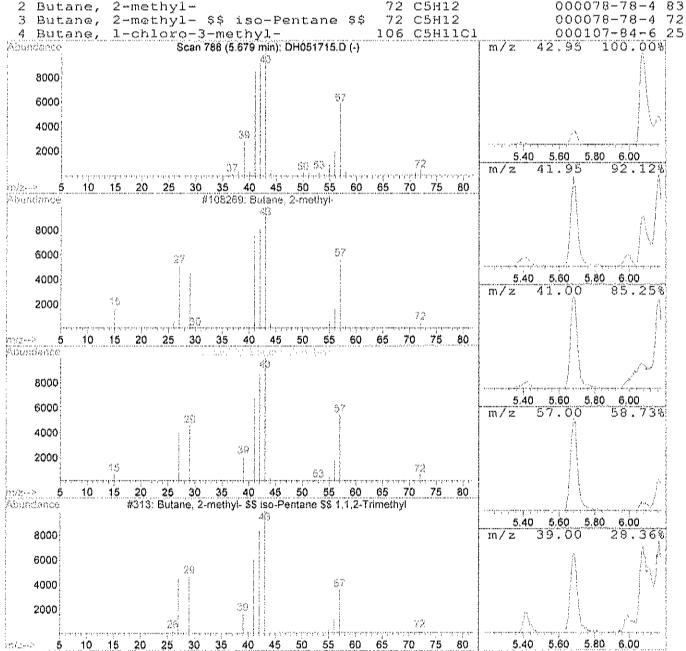
Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L

****************** Peak Number 4 Sutane Concentration Rank 3

R.T.	EstConc	Area	Relative to	ISTD	R.T.	
4.72	27.57 ppb	302158	Bromochlorome	hane	9.94	•
Hit# o	of 5 Tentati	e ID	MW MolFo		CAS#	Qual
3 Buta	ropen-2-ol, aceta ane \$\$ n-Butane : -Butanedione, mo	\$\$ Diethyl \$\$	Fr 58 C4H10 ace 101 C4H7N02	2 m/z 4	000106-97-8 000108-22-5 000106-97-8 000057-71-6 3.00 100.00	50 37 9
8000						
6000 4000						
2000		SC Direction comments of the control of the	207 restantifica est ambien estembrio estembrio est	3************************************	1.60 4.80 5.00 1.00 31.92	₹ .
Acandance Acandance	10 20 30 40 50 60 70 80	90 100110120130140 #108014: Butane	150 160 170 180 190 200 210			
8000					\mathbb{W}_{\star}	
6000 4000	29			4.40 4	1.60 4.80 5.00	-
2000	7÷ j 58		المنافضة والمشرفة والمنافضة والمنافضة والمنافضة والمنافضة والمنافضة والمنافضة والمنافضة والمنافضة والمنافضة وا		9.00 16.02	**
Abundance	10 20 30 40 50 60 70 80	90 100 110 120 130 140	150 160 170 180 190 200 210			
8000				Sec. Supplement	<u> </u>	ï
6000					0 <mark>.60 4.80 5.00</mark> 2.00 13.93	-8,
4000						
2000 meses 1 Akansance	10 20 30 40 50 60 70 80	100 90 100110120130140 utane \$\$ Diethyl \$\$ Fred	150 160 170 180 190 200 210			
8000	403			4.40 4	.60 4.80 5.00 7.95 13.61	9.
6000				1117.00		
4000	25 1					
2000	10 58			Δ.		
77/2-92 1	0 20 30 40 50 60 70 80	90 100 110 120 130 140	150 160 170 180 190 200 210	4,40 4	.60 4.80 5.00	r)

Centek Laboratories, LLC Library Search Compound Report Data File : C:\HPCHEM\1\DATA2\DH051715.D Vial: 13 Acq On : 17 May 2017 5:01 pm Operator: WD Sample : C1705036-011A Misc : TO15 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.F Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Library : C:\DATABASE\NIST129.L Peak Number 5 Butane, 2-methyl-Area Relative to ISTD R.T. EstConc R.T. 5.68 24.30 ppb 266270 Bromochloromethane CAS# Hit# of 5 Tentative ID MW Molform Oual 1 Butane, 2-methyl- 72 C5H12 000078-78-4 91 2 Butane, 2-methyl- 72 C5H12 000078-78-4 83 3 Butane, 2-methyl- \$\$ iso-Pentane \$\$ 72 C5H12 000078-78-4 83 4 Butane, 2-methyl- \$\$ iso-Pentane \$\$ 72 C5H12 000078-78-4 72 4 Butane, 1-chloro-3-methyl- 106 C5H11C1 000107-84-6 25 5 Scan 788 (5.679 min); DH051715.D (-) m/z 42.95 100.008 8000 97 6000



Data File : C:\HPCHEM\1\DATA2\DH051715.D Vial: 13 Acq On : 17 May 2017 5:01 pm Operator: WD Sample : C1705036-011A Misc : T015 Inst : GCMS3 Multiplr: 1.00

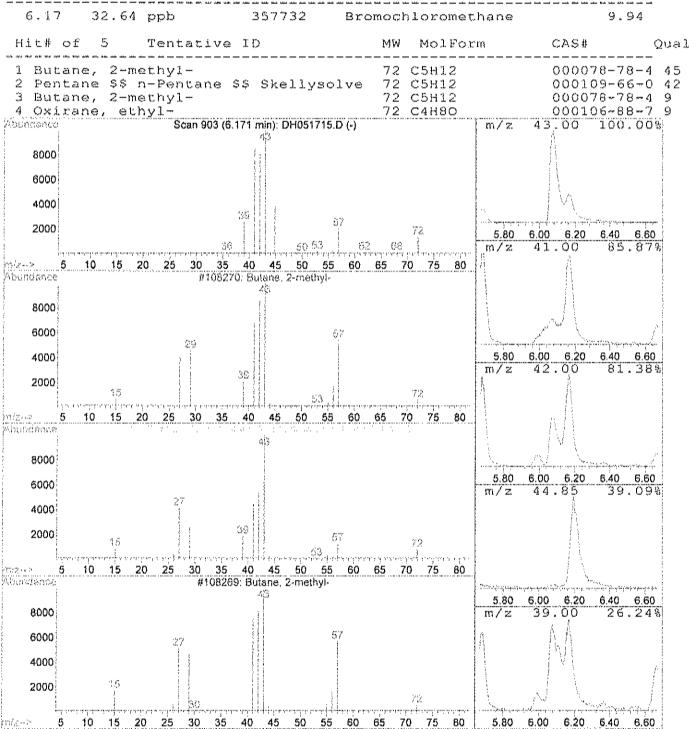
MS Integration Params: LSCINT.P

Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L

Pentane \$\$ n-Pentane \$\$ Skelly Concentration Rank

R.T.	EstConc	Area	Relative to	ISTD	R.T.
6.17	32.64 ppb	357732	Bromochloromet	hane	9.94



Data File : C:\HPCHEM\1\DATA2\DHO51715.D Vial: 13 Acq On : 17 May 2017 5:01 pm Operator: WD : C1705036-011A Sample Inst : GCMS3 : TO15 Misc Multiplr: 1.00

MS Integration Params: LSCINT.P

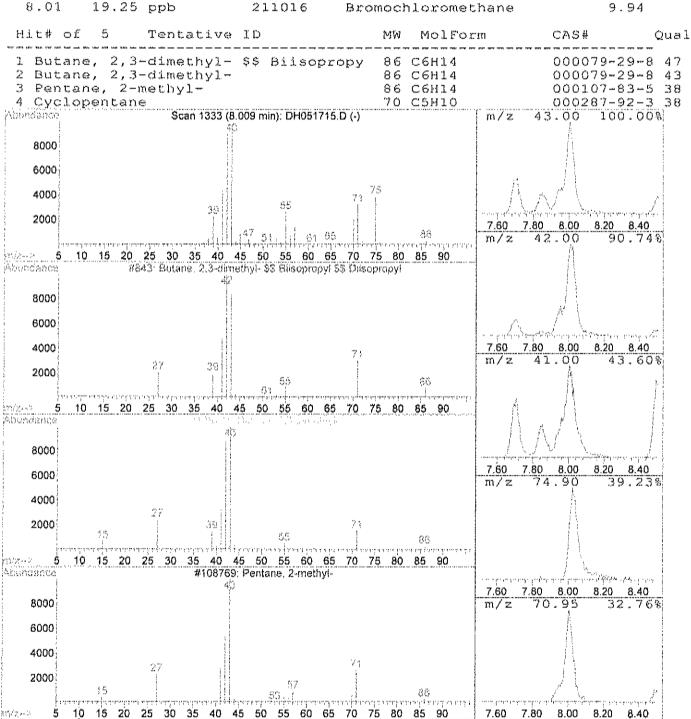
Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

: VOA Standards for 5 point calibration Title

: C:\DATABASE\NIST129.L Library

Butane, 2,3-dimethyl- \$\$ Biiso Concentration Rank

R.T.	EstConc	Area	Relative to ISTD	R.T.
		···		
8.01	19.25 ppb	211016	Bromochloromethane	9.94



Data File : C:\HPCHEM\1\DATA2\DH051715.D Vial: 13 Acq On : 17 May 2017 5:01 pm Sample : C1705036-011A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 8 Pentane, 3-methyl-Concentration Rank 10 Area Relative to ISTD R.T. EstConc к.т. 8.50 10.39 ppb 113874 Bromochloromethane MW MolForm Hit# of 5 CAS# Tentative ID Qual 1 Pentane, 3-methyl- 86 C6H14 000096-14-0 90 2 Oxirane, 2-methyl-3-(1-methylethyl) 100 C6H120 001192-31-0 64 3 Pentane, 3-methyl- 86 C6H14 000096-14-0 64 4 Pentane, 3-methyl- \$\$ 3-Methylpenta 86 C6H14 000096-14-0 52 000048-000 Scan 1448 (8.501 min): DH051715.D(-) m/z 57.00 100.00% 8000 6000 4000 2000 8.20 8.40 8.60 8.80 m/z 56.00 83.74% 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 Houndance #108771 Pentane, 3-methyl-8000 3.7 6000 8.20 8.40 8.50 8.80 4000 m/z 41.00 75.52% 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 BB Managia ace 8000 سود ونگود بدود و بو بوخونگونگ 8.20 8.40 8.60 8.80 6000 m/z 43.00 29.02% 4000 4.5 2000 53/ 72 72 85 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 #108772: Pentane, 3-methyland the second second second second second second second second second second second second second second seco 8.20 8.40 8.60 8.80 z 39.00 20.44% m/z 8000 6000 4000 2000 31/2---> 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 8.20 8.40 8.60 8.80

Data File : C:\HPCHEM\1\DATA2\DH051715.D Vial: 13 Acq On : 17 May 2017 5:01 pm Sample : C1705036-011A Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L

*************** Peak Number 9 Cyclopentane, methyl-Concentration Rank 8

R.T. EstCond Area Relative to ISTD

10.25 19.04 ppb	208623 Bro	omochlorometh	ane 9.94
Hit# of 5 Tentativ	e ID	MW MolForm	CAS# Qual
1 Cyclopentane, methyl 2 Cyclopentane, methyl 3 Cyclopentane, methyl 4 Cyclopentane, methyl Abundance Scan 1857	- - \$\$ Methyloyol	84 C6H12	000096-37-7 91 000096-37-7 91 000096-37-7 91 000096-37-7 87 m/z 55.95 100.00%
8000			
6000	\$1 }		
4000	60		
2000	so 53 es	80	10.00 10.20 10.40 10.60
my > 5 10 15 20 25 30 35 4	- \$ - \$\$	Section of the state from Annie Annie Annie Annie Annie Annie Annie Annie Annie Annie Annie Annie Annie Annie	m/z 40.95 57.09%
8000	. Y		
5000			and the second of the second o
2000 27	53 65	8=	10.00 10.20 10.40 10.60 m/z 69.00 40.06%
2012-2 5 10 15 20 25 30 35 4 0 Abundance	45 50 55 60 65 70	75 80 85 90	
8000	. 1		and the state of t
6000			10.00 10.20 10.40 10.60 m/z 39.00 27.36%
4000	69		
2000	53	84	
5 10 15 20 25 30 35 40) 45 50 55 60 65 70 nethyl-SS Methylcyclopentane	75 80 85 90	w. 04 / h
			10.00 10.20 10.40 10.60 n/z 55.00 27.10%
8000		I	n/z 55.00 27.10%
4000	7 69		
2000			
14 14 km may be may be made and 137 and	53	74 00 04 00	anamangan anamangan kanamangan anaman panya kan maga

20/200 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 10.00 10.20 10.40 10.60

Data File : C:\HPCHEM\1\DATA2\DH051715.D Acq On : 17 May 2017 5:01 pm

Operator: WD : C1705036-011A Sample Inst : GCMS3 Misc : TO15 Multiplr: 1.00

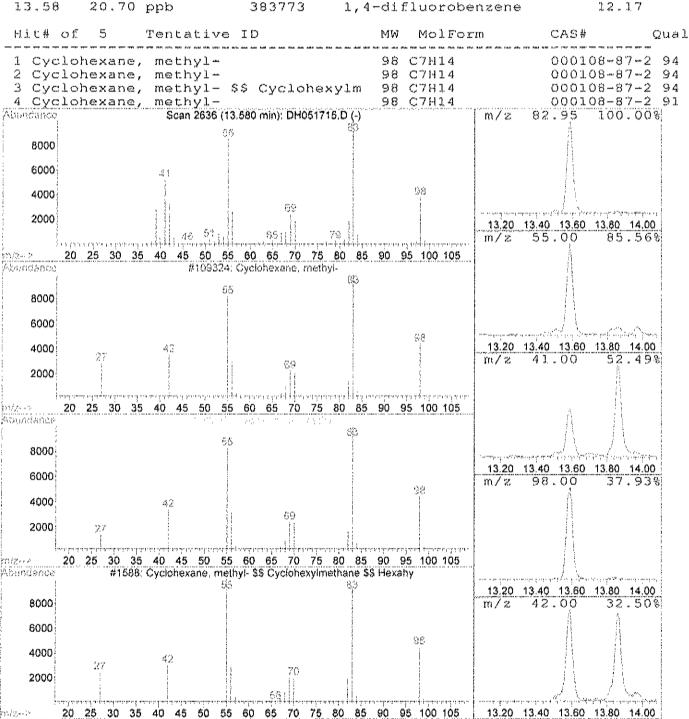
Vial: 13

MS Integration Params: LSCINT.P

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Library : C:\DATABASE\NIST129.L

Peak Number 10 Cyclohexane, methyl-Concentration Rank

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.58	20.70 ppb	383773	1,4-difluorobenzene	12.17



Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 17 May 2017 5:01 pm

Data File: C:\HPCHEM\1\DATA2\DHO51715.D

Name: C1705036-011A

Misc: TO15

Method: C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Hydrogen sulfide \$\$ Isobutane 1-Propene, 2-methyl- Butane Butane, 2-methyl- Pentane \$\$ n-Pentane Butane, 2,3-dimethyl Pentane, 3-methyl- Cyclopentane, methyl	4.08 4.46 4.65 4.72 5.68 6.17 8.01 8.50	976.5 21.3 15.4 27.6 24.3 32.6 19.3 10.4 19.0	ddd qdd qdd qdd qdd qdd qdd qdd	10701500 233179 168784 302158 266270 357732 211016 113874		9.94 9.94 9.94 9.94 9.94 9.94 9.94	547969 547969 547969 547969 547969 547969 547969 547969	50.0 50.0 50.0 50.0 50.0 50.0 50.0
Cyclohexane, methyl-	13.58	20.7	dqq	383773	ISTDOR	12.17	927166	50.0

DH051715.D I0S11T15.M

Mon Jun 19 14:43:44 2017

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DHO51716.D
Acq On : 17 May 2017 5:36 pm
Sample : C1705036-011A 5X
Misc : T015 Vial: 13 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 1 11:41 2017 Quant Results File: 10511715.RES

Quant Method : C:\HPCHEM\I\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration

DataAcq Meth : NEWl

Internal Standards	R.T.	QIon	Response	Conc (Jnits	Dev (Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.95 12.18 16.48	128 114 117	70443m io) 352890 273927	50.00	dqq (dqq (dqq (0.00 0.00 0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70					. 66%	0.00
Target Compounds 2) Propylene	4.17	41	16162m4D	7 09	dqa 6	Qve	lue
16) Acetone	6.11		46591	17.59			74
23) Methylene Chloride 24) Carbon disulfide	7.16 7.36	84 76	1846 6649m ա\	1.02	dqq S		72
30) Hexane 33) Chloroform 42) Heptane 48) Methyl Isobutyl Ketone 52) Toluene	9.05 10.09 12.64 13.88 14.70	41 83 43 43 92	4926 T 11097 5321 37567 8392	1.54 2.20 1.13 6.32	dqq H		49 97 88 92 96
60) m&p-Xylene	16.92	106	6269		वव्द ६		100

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Page

2017

11:51:57

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Jun

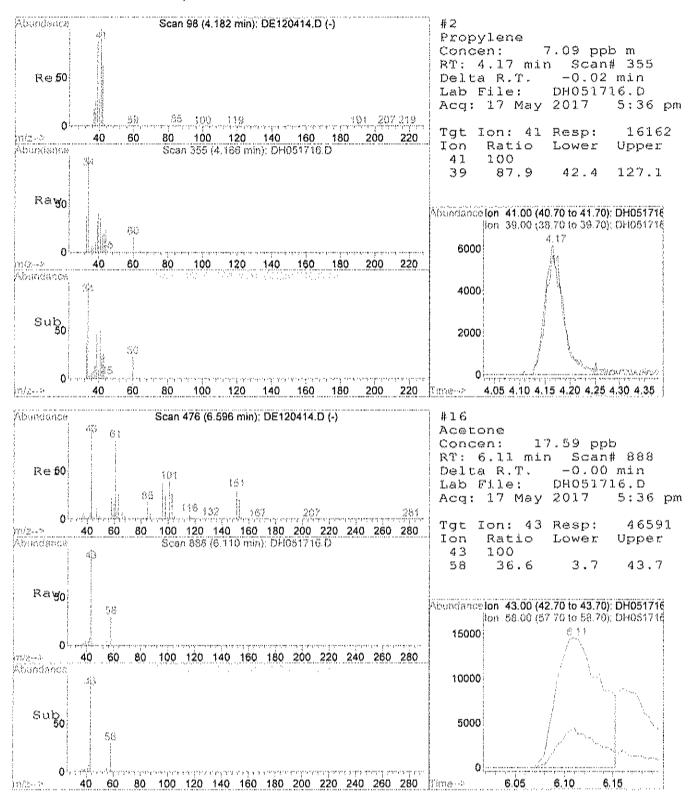
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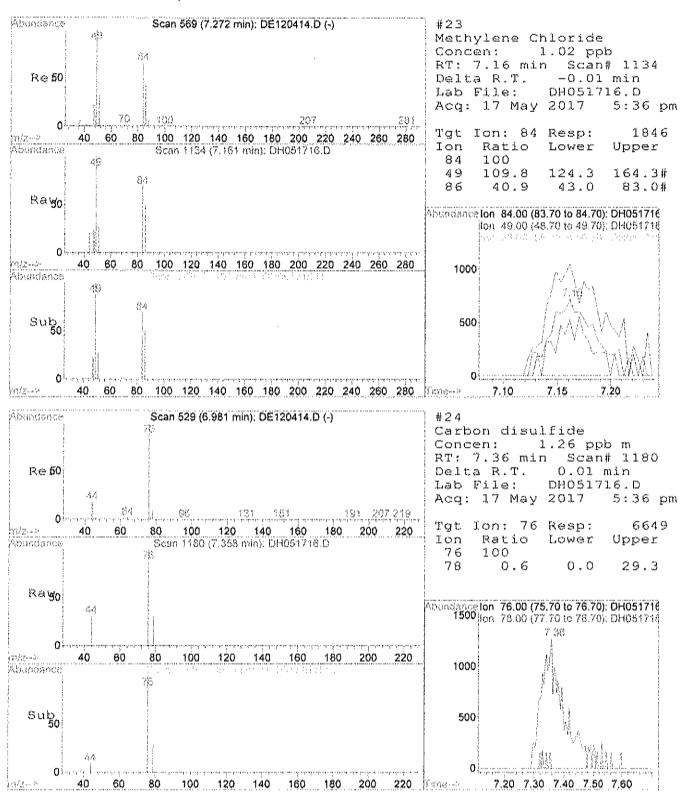
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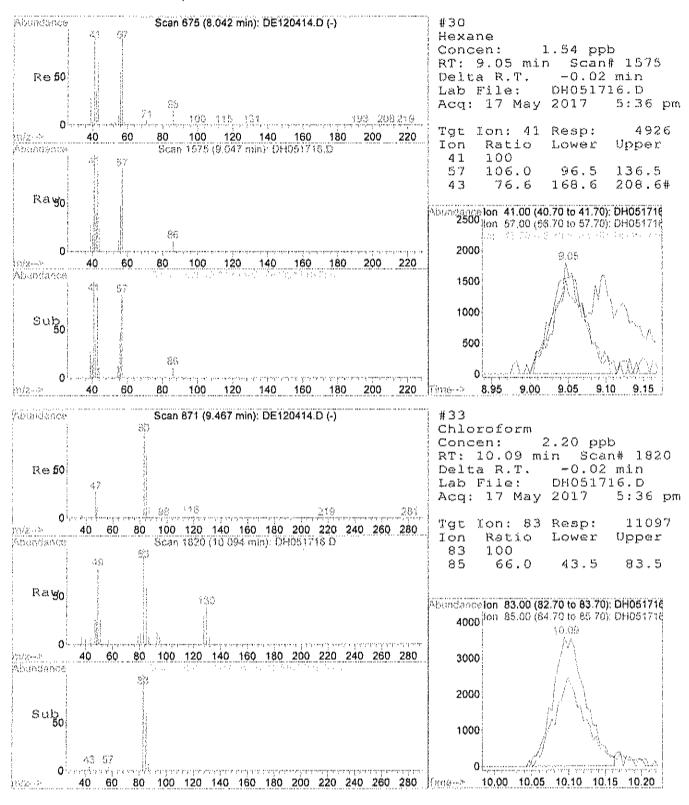
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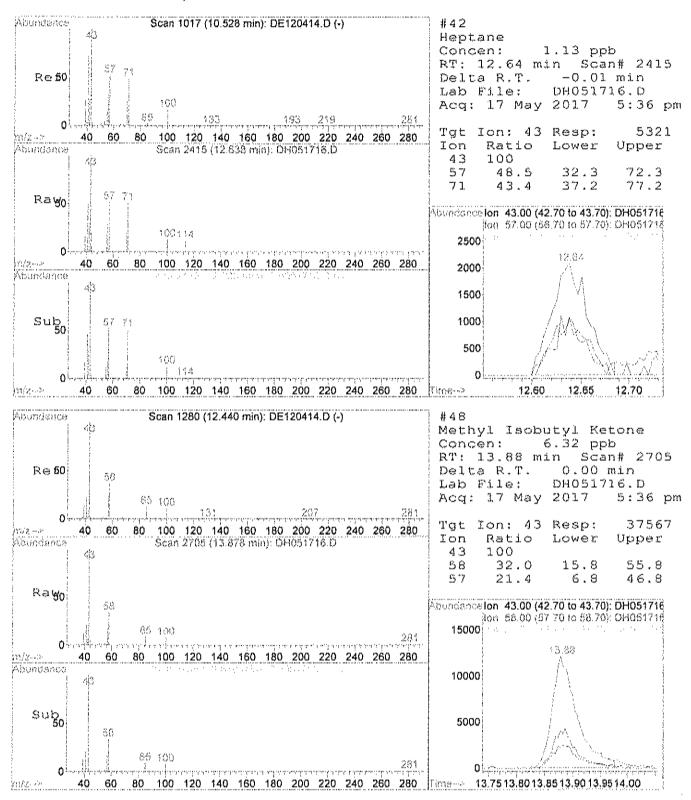
Page 326 of 572

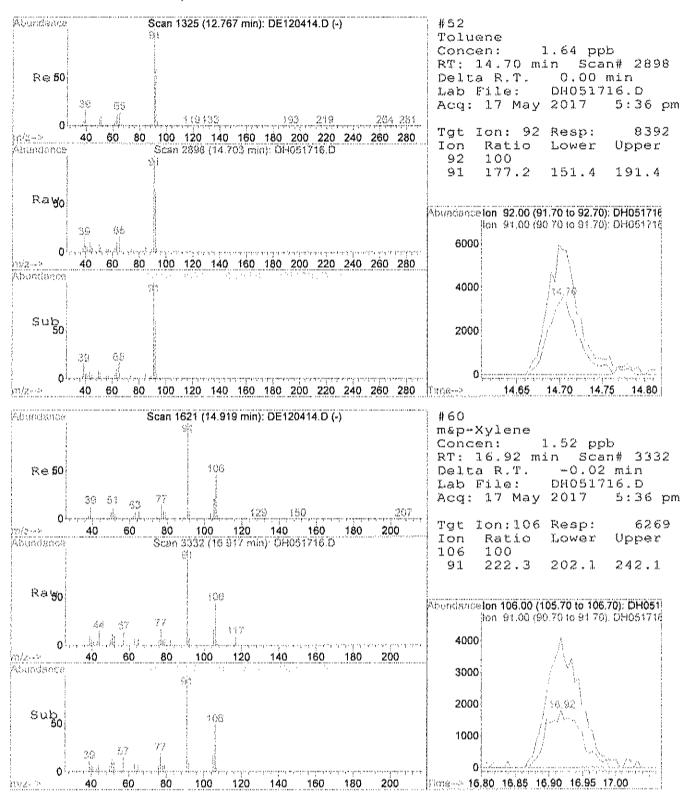
Quantitation Report











COLUMN TO THE THE PARTY OF THE

Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV15-050917

Lab Order:C1705036Tag Number:1019.403Project:Former HampshireCollection Date:5/9/2017

Lab ID: C1705036-012A Matrix: AIR

Analyses	Result	**Limit	Quai	Units	ĎF	Date Analyzed
FIELD PARAMETERS		FI	.D		· "	Analyst:
Lab Vacuum In	-4			"Hg		5/12/2017
Lab Vacuum Out	-30			"Hg		5/12/2017
FIXED GAS SERIES		EPA ME	THOD	3C		Analyst: WD
Carbon dioxide	32.1	1.90		%	1	5/15/2017
Carbon Monoxide	ND	0.880		%	1	5/15/2017
Methane	38.6	0.580		%	1	5/15/2017
Nitrogen	18.4	8,30		%	1	5/15/2017
Охудел	1.94	0.880		%	1	5/15/2017
SPPB BY METHOD TO15		то	-15			Analyst: WD
1,1,1-Trichloroethane	< 50	50		₽₽bV	10	5/15/2017 9:29:00 PM
1,1,2,2-Tetrachloroethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,1,2-Trichloroethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,1-Dichloroethane	39	50	J	ppbV	10	5/15/2017 9:29:00 PM
1,1-Dichloroethens	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
1,2,4-Trichlorobenzene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,2,4-Trimethylbenzene	≪ 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,2-Dibromoethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,2-Dichlorobenzene	< 50	50		₽₽₽V	10	5/15/2017 9:29:00 PM
1,2-Dichloroethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,2-Dichloropropane	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
1,3,5-Trimethylbenzene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,3-butadiene	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
1,3-Dichlorobenzene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
1,4-Dichlorobenzene	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
1,4-Dioxane	< 100	100		ppb∨	10	5/15/2017 9:29:00 PM
2,2,4-trimethylpentane	< 50	50		Vđqq	10	5/15/2017 9:29:00 PM
4-ethyltoluene	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
Acetone	6200	1300		Vdqq	128	5/17/2017 1:46:00 PM
Allyl chloride	< 50	50		Vđqq	10	5/15/2017 9:29:00 PM
Benzene	54	50		ppbV	10	5/15/2017 9:29:00 PM
Benzyl chloride	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Bromodichloromethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Bromoform	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
Bromomethane	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Carbon disulfide	3000	640		Vđqq	128	5/17/2017 1:46:00 PM
Carbon tetrachloride	< 50	50		Vđqq	10	5/15/2017 9:29:00 PM
Chlorobenzene	28	50	J	ppbV	10	5/15/2017 9:29:00 PM
Chloroethane	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
Chloroform	1400	640		ppbV	128	5/17/2017 1:46:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-012A

Client Sample ID: WAT-SV15-050917

Tag Number: 1019.403 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Quai	Units	DF	Date Analyzed
SPPB BY METHOD TO15		TO)-15			Analyst: WD
Chioromethane	< 50	50		νσας	10	5/15/2017 9:29:00 PM
cis-1,2-Dichloroethene	140	50		Vđqq	10	5/15/2017 9:29:00 PM
cis-1,3-Dichloropropene	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
Cyclohexane	45	50	J	ppb∨	10	5/15/2017 9:29:00 PM
Dibromochloromethane	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
Ethyl acetate	< 100	100		Vdqq	10	5/15/2017 9:29:00 PM
Ethylbenzene	800	50		Vdqq	10	5/15/2017 9:29:00 PM
Freon 11	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
Freon 113	< 50	50		∨dqq	10	5/15/2017 9:29:00 PM
Freon 114	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Freon 12	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
Heptane	300	50		ppbV	10	5/15/2017 9:29:00 PM
Hexachloro-1,3-butadiene	< 50	50		₽₽₽V	10	5/15/2017 9:29:00 PM
Hexane	970	50		ppb∨	10	5/15/2017 9:29:00 PM
Isopropyl alcohol	< 50	50		Vdqq	10	5/15/2017 9:29:00 PM
m&p-Xylene	11000	1300		ppb∨	128	5/17/2017 1:46:00 PM
Methyl Butyl Ketone	< 100	100		ppb∨	10	5/15/2017 9:29:00 PM
Methyl Ethyl Ketone	< 100	100		ppbV	10	5/15/2017 9:29:00 PM
Methyl Isobutyl Ketone	32000	6400		ppbV	640	5/17/2017 6:46:00 PM
Methyl tert-butyl ether	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
Methylene chloride	1700	640		₽₽bV	128	5/17/2017 1:46:00 PM
o-Xylene	3200	640		ppb∨	128	5/17/2017 1:46:00 PM
Propylene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Styrene	< 50	50		ρρb∨	10	5/15/2017 9:29:00 PM
Tetrachloroethylene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Tetrahydrofuran	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Toluene	2100	640		ppb∨	128	5/17/2017 1:46:00 PM
trans-1,2-Dichloroethene	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
trans-1,3-Dichloropropene	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
Trichloroethene	48	50	J	₽₽bV	10	5/15/2017 9:29:00 PM
Vinyl acetate	< 50	50		ppb∨	10	5/15/2017 9:29:00 PM
Vinyl Bromide	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Vinyl chloride	< 50	50		ppbV	10	5/15/2017 9:29:00 PM
Surr: Bromofluorobenzene	120	73.7-124		%REC	10	5/15/2017 9:29:00 PM
TIC: 1-Butanol, 3-methoxy-	5400	0	JN	Vđạq	10	5/15/2017 9:29:00 PM
TIC: 2,2'-Bifuran, octahydro-	3800	0	JN	ppbV	10	5/15/2017 9:29:00 PM
TIC: 2-Propanethiol \$\$ isopropanethiol \$\$ iso	16000	0	NĽB	ррьV	10	5/15/2017 9:29:00 PM
TIC: 3-Penten-2-one	13000	0	EJN	ppb∨	10	5/15/2017 9:29:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

Tag Number: 1019.403

CLIENT: CH2M - St Louis

M - St Louis Client Sample ID: WAT-SV15-050917

Lab Order: C1705036

Project: Former Hampshire Collection Date: 5/9/2017

Lab ID: C1705036-012A Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: WD
TiC: Butane, 1,1'- [ethylidenebis(oxy)]bis[2-m	8300	0	JN	Vdqq	10	5/15/2017 9:29:00 PM
TIC: Butanoic acid, 3-methylbutyl ester	4300	0	JN	ppbV	10	5/15/2017 9:29:00 PM
TIC: Cyclopropane, 1,2-dimethyl-, cis-	3500	0	JN	ppbV	10	5/15/2017 9:29:00 PM
TIC: Pentane, 1,1'-oxybis- (19.16)	4600	0	ЛĽ	ppbV	10	5/15/2017 9:29:00 PM
TIC: Pentane, 1,1'-oxybis- (19.63) NOTES: * The reporting limits were raised due to the	4000 e high concentra	0 ation of metha	JN ine in th	ppbV ne sample.	10	5/15/2017 9:29:00 PM
LOW LEVEL SULFURS BY TO-15	•		-15	·		Analyst: WD
1-Propanethiol	4000	640		∨dqq	128	5/18/2017 4:25:00 PM

LOW LEVEL SULFURS BY TO-15		TO-		Analyst: WD		
1-Propanethiol	4000	640		Vdqq	128	5/18/2017 4:25:00 PM
Carbon disulfide	2900	640		ρρbV	128	5/18/2017 4:25:00 PM
Carbonyl sulfide	< 50	50		Vđạq	10	5/16/2017 7:54:00 PM
Dimethyl sulfide	270	50		ρpb∨	10	5/16/2017 7:54:00 PM
Ethyl mercaptan	7100	640		ppbV	128	5/18/2017 4:25:00 PM
Hydrogen Sulfide	110000000	410000		ppb∀	81920	5/19/2017 7:44:00 AM
Isopropyl mercaptan	73000	6400		ppbV	1280	5/18/2017 5:01:00 PM
Methyl mercaptan	54000	6400		ppb∨	1280	5/18/2017 5:01:00 PM
Surr: Bromofivorobenzene	15 5	70-130	S	%REC	10	5/16/2017 7:54:00 PM
Surr: Bromoffuorobenzene	145	70-130	S	%REC	1280	5/18/2017 5:01:00 PM
Surr: Bromofluorobenzene	130	70-130		%REC	81920	5/19/2017 7:44:00 AM
Surr: Bromofluorobenzene	158	70-130	S	%REC	128	5/18/2017 4:25:00 PM

Qualifiers: ** Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis Client Sample ID: WAT-SV15-050917

Lab Order: C1705036 Cheft Sample 10: WA1-5V13-030917

 Lab Order:
 C1705036
 Tag Number:
 1019.403

 Project:
 Former Hampshire
 Collection Date:
 5/9/2017

 Lab ID:
 C1705036-012A
 Matrix:
 AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15	·	1 11	Analyst: WD
1,1,1-Trichloroethane	< 270	270		ug/m3	10	5/15/2017 9:29:00 PM
1,1,2,2-Tetrachloroethane	< 340	340		ug/m3	10	5/15/2017 9:29:00 PM
1,1,2-Trichloroethane	< 270	270		ug/m3	10	5/15/2017 9:29:00 PM
1,1-Dichloroethane	160	200	J	ug/m3	10	5/15/2017 9:29:00 PM
1,1-Dichloroethene	< 200	200		ug/m3	10	5/15/2017 9:29:00 PM
1,2,4-Trichlorobenzene	< 370	370		ug/m3	10	5/15/2017 9:29:00 PM
1,2,4-Trimethylbenzene	< 250	250		ug/m3	10	5/15/2017 9:29:00 PM
1,2-Dibromoethane	< 380	380		ug/m3	10	5/15/2017 9:29:00 PM
1,2-Dichlorobenzene	< 300	300		ug/m3	10	5/15/2017 9:29:00 PM
1,2-Dichloroethane	< 200	200		ug/m3	10	5/15/2017 9:29:00 PM
1,2-Dichloropropane	< 230	230		ug/m3	10	5/15/2017 9:29:00 PM
1,3,5-Trimethylbenzene	< 250	250		ug/m3	10	5/15/2017 9:29:00 PM
1,3-butadiene	< 110	110		ug/m3	10	5/15/2017 9:29:00 PM
1,3-Dichlorobenzene	< 300	300		ug/m3	10	5/15/2017 9:29:00 PM
1,4-Dichlorobenzene	< 300	300		ug/m3	10	5/15/2017 9:29:00 PM
1,4-Dioxane	< 360	360		ug/m3	10	5/15/2017 9:29:00 PM
2,2,4-trimethylperitane	< 230	230		ug/m3	10	5/15/2017 9:29:00 PM
4-ethyltoluene	< 250	250		ug/m3	10	5/15/2017 9:29:00 PM
Acetone	15000	3100		ug/m3	128	5/17/2017 1:46:00 PM
Aliyi chloride	< 160	160		ug/m3	10	5/15/2017 9:29:00 PM
Benzene	170	160		ug/m3	10	5/15/2017 9:29:00 PM
Benzyl chloride	< 290	290		ug/m3	10	5/15/2017 9:29:00 PM
Bromodichloromethane	< 330	330		ug/m3	10	5/15/2017 9:29:00 PM
Bramoform	< 520	520		ug/m3	10	5/15/2017 9:29:00 PM
Bromomethane	< 190	190		ug/m3	10	5/15/2017 9:29:00 PM
Carbon disulfide	9300	2000		ug/m3	128	5/17/2017 1:46:00 PM
Carbon tetrachloride	< 310	310		ug/m3	10	5/15/2017 9:29:00 PM
Chlorobenzene	130	230	J	ug/m3	10	5/15/2017 9:29:00 PM
Chloroethane	< 130	130		ug/m3	10	5/15/2017 9:29:00 PM
Chloroform	7000	3100		ug/m3	128	5/17/2017 1:46:00 PM
Chloromethane	< 100	100		ug/m3	10	5/15/2017 9:29:00 PM
cis-1,2-Dichloroethene	570	200		ug/m3	10	5/15/2017 9:29:00 PM
cis-1,3-Dichloropropene	< 230	230		ug/m3	10	5/15/2017 9:29:00 PM
Cyclohexane	160	170	J	ug/m3	10	5/15/2017 9:29:00 PM
Dibromochloromethane	< 430	430	-	ug/m3	10	5/15/2017 9:29:00 PM
Ethyl acetate	< 360	360		ug/m3	10	5/15/2017 9:29:00 PM
Ethylbenzene	3500	220		ug/m3	10	5/15/2017 9:29:00 PM
Freon 11	< 280	280		ug/m3	10	5/15/2017 9:29:00 PM
Freon 113	< 380	380		ug/m3	10	5/15/2017 9:29:00 PM
Freon 114	< 350	350		ug/m3	10	5/15/2017 9:29:00 PM

Qualifiers:

- * Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- IN Non-routine analyte, Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected

Date: 22-Jun-17

- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT: CH2M - St Louis Client Sample ID: WAT-SV15-050917

Lab Order: C1705036 Tag Number: 1019.403

Project: Former Hampshire Collection Date: 5/9/2017 Lab ID: C1705036-012A Matrix: AIR

Freen 12	Lab ID: C1705036-012A				Ma	trix: AIR	
Freen 12	Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
Heptane 1200 200 ug/m3 10 5/15/2017 9:29:00 PM Hexachloro-1,3-butadlene <530 530 ug/m3 10 5/15/2017 9:29:00 PM Hexane 3400 180 ug/m3 10 5/15/2017 9:29:00 PM Hexane 3400 180 ug/m3 10 5/15/2017 9:29:00 PM Bopropyl alcohol <120 120 ug/m3 10 5/15/2017 9:29:00 PM map-Xylene 47000 5600 ug/m3 128 5/17/2017 1:46:00 PM Methyl Butyl Ketone 4700 410 ug/m3 10 5/15/2017 9:29:00 PM Methyl Butyl Ketone <40 10 410 ug/m3 10 5/15/2017 9:29:00 PM Methyl Ethyl Ketone 130000 26000 ug/m3 10 5/15/2017 9:29:00 PM Methyl tert-butyl ether 130000 26000 ug/m3 640 5/17/2017 6:46:00 PM Methyl tert-butyl ether 4180 180 ug/m3 10 5/15/2017 9:29:00 PM Methyl tert-butyl ether 4180 180 ug/m3 10 5/15/2017 9:29:00 PM Methyl tert-butyl ether 4180 180 ug/m3 10 5/15/2017 9:29:00 PM Methylene chloride 5700 2200 ug/m3 128 5/17/2017 1:46:00 PM Propylene 486 86 ug/m3 10 5/15/2017 9:29:00 PM Styrene 4210 210 ug/m3 10 5/15/2017 9:29:00 PM Styrene 4340 340 ug/m3 10 5/15/2017 9:29:00 PM Tetrachloroethylene 4340 340 ug/m3 10 5/15/2017 9:29:00 PM Tetranydrofuran 4160 150 ug/m3 10 5/15/2017 9:29:00 PM Toluene 7800 2400 ug/m3 10 5/15/2017 9:29:00 PM Trans-1,2-Dichloropropene 4230 230 ug/m3 10 5/15/2017 9:29:00 PM Vinyl acetate 4180 180 ug/m3 10 5/15/2017 9:29:00 PM Vinyl shornide 4220 220 ug/m3 10 5/15/2017 9:29:00 PM Vinyl shornide 4220 220 ug/m3 10 5/15/2017 9:29:00 PM Vinyl shornide 4220 220 ug/m3 10 5/15/2017 9:29:00 PM Vinyl shornide 4220 220 ug/m3 10 5/15/2017 9:29:00 PM Vinyl shornide 4220 220 ug/m3 10 5/15/2017 9:29:00 PM Vinyl shornide 4200 200 ug/m3 128 5/18/2017 9:29:00 PM Vinyl shornide 420 200 ug/m3 10 5/15/2017 9:29:00 PM Vinyl shornide 420 200 ug/m3 10 5/15/2017 9:29:00 PM Vinyl shornide 420 ug/m3 128 5/18/2017 4:25:00 PM Vinyl shornide 420 ug/m3 128 5/18/2017 4:25:00 PM Vinyl shornide 420 ug/m3 128 5/18/2017 4:25:00 PM Vinyl shornide 420 ug/m3 128 5/18/20	5PPB BY METHOD TO15		то	-15			Analyst: WD
Hexachloro-1,3-butadlene	Freon 12	< 250	250		ug/m3	10	5/15/2017 9:29:00 PM
Hexane	Heptane	1200	200		ug/m3	10	5/15/2017 9:29:00 PM
Isopropy alcohol	Hexachloro-1,3-butadiene	< 530	530		ug/m3	10	5/15/2017 9:29:00 PM
m8p-Xylene 47000 5500 ug/m3 128 5/17/2017 1:46:00 PM Methyl Butyl Ketone < 410	Hexane	3400	180		ug/m3	10	5/15/2017 9:29:00 PM
Methyl Butyl Ketone < 410	Isopropyl alcohol	< 120	120		ug/m3	10	5/15/2017 9:29:00 PM
Methyl Ethyl Ketone < 290 290 ug/m3 10 5/15/2017 9:29:00 PM Methyl Isobutyl Ketone 130000 26000 ug/m3 640 5/17/2017 6:46:00 PM Methyl tert-butyl ether 1 80 180 ug/m3 10 5/15/2017 9:29:00 PM Methylene chloride 5700 2200 ug/m3 128 5/17/2017 1:46:00 PM o-Xylene 14000 2800 ug/m3 10 5/15/2017 9:29:00 PM Propylene < 86	m&p-Xylene	47000	5600		ug/m3	128	5/17/2017 1:46:00 PM
Methyl Isobutyl Ketone 130000 25000 ug/m3 640 5/17/2017 6:46:00 PM Methyl Iert-butyl ether < 180	Methyl Butyl Ketone	< 410	410		ug/m3	10	5/15/2017 9:29:00 PM
Methyl tert-butyl ether < 180 180 ug/m3 10 5/15/2017 9:29:00 PM Methylene chloride 5700 2200 ug/m3 128 5/17/2017 1:46:00 PM o-Xylene 14000 2800 ug/m3 128 5/17/2017 1:46:00 PM Propylene < 86	Methyl Ethyl Ketone	< 290	290		ug/m3	10	· 5/15/2017 9:29:00 PM
Methylene chloride 5700 2200 ug/m3 128 5/17/2017 1:46:00 PM o-Xylene 14000 2800 ug/m3 128 5/17/2017 1:46:00 PM Propylene 486 86 ug/m3 10 5/15/2017 9:29:00 PM Styrene 210 210 ug/m3 10 5/15/2017 9:29:00 PM Tetrachloroethylene 340 340 ug/m3 10 5/15/2017 9:29:00 PM Tetrahydrofuran 150 150 150 ug/m3 10 5/15/2017 9:29:00 PM Toliuene 7800 2400 ug/m3 10 5/15/2017 9:29:00 PM trans-1,2-Dichloroethene 2200 200 ug/m3 10 5/15/2017 9:29:00 PM trans-1,3-Dichloropropene 2300 230 ug/m3 10 5/15/2017 9:29:00 PM Trichloroethene 260 270 J ug/m3 10 5/15/2017 9:29:00 PM Vinyl acetate 4180 180 ug/m3 10 5/15/2017 9:29:00 PM Vinyl acetate 4180 180 ug/m3 10 5/15/2017 9:29:00 PM Vinyl chloride 4180 180 ug/m3 10 5/15/2017 9:29:00 PM NOTES: * The reporting limits were raised due to the high concentration of methane in the sample. **OW LEVEL SULFURS BY TO-15** 1-Propanethiol 12000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbon disulfide 9000 2000 ug/m3 10 5/16/2017 9:29:00 PM Unindisulfide 1100 190 ug/m3 10 5/16/2017 7:54:00 PM Hydrogen Sulfide 1100 190 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 15000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 15000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:54:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 5/18/2017 5/16/2017 7:54:00 PM Hydrogen Sulfide 5/18/2017 7:54:00 PM Hydrogen Sulfide 5/18/201	Methyl Isobutyl Ketone	130000	25000		ug/m3	640	5/17/2017 6:46:00 PM
o-Xylene 14000 2800 ug/m3 128 5/17/2017 1:46:00 PM Propylene < 86	Methyl tert-butyl ether	< 180	180		ug/m3	10	5/15/2017 9:29:00 PM
Propylene < 86 86 ug/m3 10 5/15/2017 9:29:00 PM Styrene < 210	Methylene chloride	5700	2200		ug/m3	128	5/17/2017 1:46:00 PM
Styrene < 210 210 ug/m3 10 5/15/2017 9:29:00 PM Tetrachloroethylene < 340	o-Xylene	14000	2800		ug/m3	128	5/17/2017 1:46:00 PM
Tetrachloroethylene	Propylene	< 86	86		ug/m3	10	5/15/2017 9:29:00 PM
Tetrahydrofuran < 150 150 ug/m3 10 5/15/2017 9:29:00 PM Toluene 7800 2400 ug/m3 128 5/17/2017 1:46:00 PM trans-1,2-Dichloroethene < 200 200 ug/m3 10 5/15/2017 9:29:00 PM trans-1,3-Dichloropropene < 230 230 ug/m3 10 5/15/2017 9:29:00 PM Trichloroethene 260 270 J ug/m3 10 5/15/2017 9:29:00 PM Vinyl acetate < 180 180 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Bromide < 220 220 ug/m3 10 5/15/2017 9:29:00 PM Vinyl chloride < 130 130 ug/m3 10 5/15/2017 9:29:00 PM NOTES: * The reporting limits were raised due to the high concentration of methane in the sample. **COW LEVEL SULFURS BY TO-15 TO-15 Analyst: WD 1-Propanethiol 12000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbon disulfide 9000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbonyl sulfide 1100 190 ug/m3 10 5/16/2017 7:54:00 PM Dimethyl sulfide 1100 190 ug/m3 10 5/16/2017 7:54:00 PM Ethyl mercaptan 18000 1600 ug/m3 128 5/18/2017 4:25:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 81920 5/19/2017 7:44:00 AM Isopropyl mercaptan 230000 2000 ug/m3 81920 5/19/2017 7:44:00 AM Isopropyl mercaptan 230000 2000 ug/m3 1280 5/18/2017 5:01:00 PM	Styrene	< 210	210		ug/m3	10	5/15/2017 9:29:00 PM
Toluene 7800 2400 ug/m3 128 5/17/2017 1:46:00 PM trans-1,2-Dichloroathene < 200 200 ug/m3 10 5/15/2017 9:29:00 PM trans-1,3-Dichloropropene < 230 230 ug/m3 10 5/15/2017 9:29:00 PM Trichloroethene 260 270 J ug/m3 10 5/15/2017 9:29:00 PM Vinyl acetate < 180 180 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Bromide < 220 220 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Chloride < 130 130 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Chloride < 130 130 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Chloride < 130 130 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Chloride	Tetrachloroethylene	< 340	340		ug/m3	10	5/15/2017 9:29:00 PM
trans-1,2-Dichloroethene < 200 200 ug/m3 10 5/15/2017 9:29:00 PM trans-1,3-Dichloropropene < 230 230 ug/m3 10 5/15/2017 9:29:00 PM Trichloroethene 260 270 J ug/m3 10 5/15/2017 9:29:00 PM Vinyl acetate < 180 180 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Bromide < 220 220 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Chloride < 130 130 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Chloride < 130 130 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Chloride < 130 130 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Chloride < 130 130 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Chloride	Tetrahydrofuran	< 150	150		ug/m3	10	5/15/2017 9:29:00 PM
trans-1,3-Dichloropropene < 230	Toluene	7800	2400		ug/m3	128	5/17/2017 1:46:00 PM
Trichloroethene 260 270 J ug/m3 10 5/15/2017 9:29:00 PM Vinyl acetate < 180	trans-1,2-Dichloroethene	< 200	200		ug/m3	10	5/15/2017 9:29:00 PM
Vinyl acetate < 180 180 ug/m3 10 5/15/2017 9:29:00 PM Vinyl Bromide < 220	trans-1,3-Dichloropropene	< 230	230		ug/m3	10	5/15/2017 9:29:00 PM
Vinyl Bromide < 220 220 ug/m3 10 5/15/2017 9:29:00 PM Vinyl chloride < 130	Trichloroethene	260	270	J	ug/m3	10	5/15/2017 9:29:00 PM
Vinyl chloride < 130 130 ug/m3 10 5/15/2017 9:29:00 PM NOTES: * The reporting limits were raised due to the high concentration of methane in the sample. * TO-15 Analyst: WE **OW LEVEL SULFURS BY TO-15 TO-15 Analyst: WE 1-Propanethiol 12000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbon disulfide 9000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbonyl sulfide < 120	Vinyl acetate	< 180	180		ug/m3	10	5/15/2017 9:29:00 PM
NOTES: * The reporting limits were raised due to the high concentration of methane in the sample. **OW LEVEL SULFURS BY TO-15 1-Propanethiol 12000 2000 12000 128 5/18/2017 4:25:00 PM Carbon disulfide 9000 2000 120 120 120 120 120 1	Vinyl Bromide	< 220	220		սց/m3	10	5/15/2017 9:29:00 PM
*The reporting limits were raised due to the high concentration of methane in the sample. OW LEVEL SULFURS BY TO-15 1-Propanethiol 12000 2000 2000 2000 2000 128 5/18/2017 4:25:00 PM Carbon disulfide 9000 2000 2000 2000 2000 2000 3 128 5/18/2017 4:25:00 PM Carbonyl sulfide <120 120 2007 3 10 5/16/2017 7:54:00 PM Dimethyl sulfide 1100 190 2007 2008 Ethyl mercaptan 18000 1600 2007 3 128 5/18/2017 4:25:00 PM Hydrogen Sulfide 150000000 570000 20000 20000 20000 3 128 5/18/2017 7:44:00 AM Isopropyl mercaptan 230000 20000	Vinyl chloride	< 130	130		ug/m3	10	5/15/2017 9:29:00 PM
Analyst: WE 1-Propanethiol 12000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbon disulfide 9000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbonyl sulfide < 120 120 ug/m3 10 5/16/2017 7:54:00 PM Dimethyl sulfide 1100 190 ug/m3 10 5/16/2017 7:54:00 PM Ethyl mercaptan 18000 1600 ug/m3 128 5/18/2017 4:25:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 128 5/18/2017 7:44:00 AM Isopropyl mercaptan 230000 20000 ug/m3 1280 5/18/2017 5:01:00 PM	-						
1-Propanethiol 12000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbon disulfide 9000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbonyl sulfide < 120	* The reporting limits were raised due to	the high concentra	ation of metha	ine in th	e sample.		
Carbon disulfide 9000 2000 ug/m3 128 5/18/2017 4:25:00 PM Carbonyl sulfide < 120	OW LEVEL SULFURS BY TO-15		TO	-15			Analyst: WD
Carbonyl sulfide < 120 120 ug/m3 10 5/16/2017 7:54:00 PM Dimethyl sulfide 1100 190 ug/m3 10 5/16/2017 7:54:00 PM Ethyl mercaptan 18000 1600 ug/m3 128 5/18/2017 4:25:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 81920 5/19/2017 7:44:00 AM Isopropyl mercaptan 230000 20000 ug/m3 1280 5/18/2017 5:01:00 PM	1-Propanethiol	12000	2000		_		5/18/2017 4:25:00 PM
Dimethyl sulfide 1100 190 ug/m3 10 5/16/2017 7:54:00 PM Ethyl mercaptan 18000 1600 ug/m3 128 5/18/2017 4:25:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 81920 5/19/2017 7:44:00 AM Isopropyl mercaptan 230000 20000 ug/m3 1280 5/18/2017 5:01:00 PM	Carbon disulfide	9000			-		5/18/2017 4:25:00 PM
Ethyl mercaptan 18000 1600 ug/m3 128 5/18/2017 4:25:00 PM Hydrogen Sulfide 150000000 570000 ug/m3 81920 5/19/2017 7:44:00 AM Isopropyl mercaptan 230000 20000 ug/m3 1280 5/18/2017 5:01:00 PM	Carbonyl sulfide	< 120	120		ug/m3	10	5/16/2017 7:54:00 PM
Hydrogen Sulfide 150000000 570000 ug/m3 81920 5/19/2017 7:44:00 AM Isopropyl mercaptan 230000 20000 ug/m3 1280 5/18/2017 5:01:00 PM	Dimethyl sulfide	1100	190		ug/m3	10	5/16/2017 7:54:00 PM
Isopropyl mercaptan 230000 20000 ug/m3 1280 5/18/2017 5:01:00 PM	Ethyl mercaptan	18000	1600		ug/m3	128	5/18/2017 4:25:00 PM
* **	Hydrogen Sulfide	150000000	570000		ug/m3	81920	5/19/2017 7:44:00 AM
Methyl mercaptan 110000 13000 ug/m3 1280 5/18/2017 5:01:00 PM	Isopropyl mercaptan	230000	20000		ug/m3	1280	5/18/2017 5:01:00 PM
	Methyl mercaptan	110000	13000		ug/m3	1280	5/18/2017 5:01:00 PM

Qualifiers:	**	Quantitation Limit
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B Analyte detected in the associated Method Blank

Page 24 of 28

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

Quantitation Report (QT Reviewed)

Vial: 16
Operator: WD
Inst : GCMS3
Multiplr: 1.00 Data File : C:\HPCHEM\1\DATA\DH051522.D Acq On : 15 May 2017 9:29 pm Sample : C1705036-012A 10X Misc : T015

MS Integration Params: rteint.p Quant Time: Jun 1 10:36 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	Qlon	Response	Conc t	Jnits	Dev	(Min)
 Bromochloromethane 1,4~difluorobenzene Chlorobenzene-d5 System Monitoring Compounds	9.97 12.19 16.48	114		50.00	dqq (0.02 0.00 0.00
67) Bromofluorobenzene Spiked Amount 50.000	17.94 Range 70	95 - 130	505779 Recove	59.75 ery =	ppb 119.	.50%	0.00
Target Compounds 16) Acetone 23) Methylene Chloride	6.12			© 5767.15	dqq d	_	alue
<pre>24) Carbon disulfide 28) 1,1-Dichloroethane</pre>	7.37 8.57	76 63	24836	355.93 3.91	dqq 8		82 100 99
30) Hexane 31) cis-1,2-dichloroethene 33) Chloroform	9.08 9.52 10.13	41 96 83	432185 42756 1421945	97.31 14.45 203.23	dqq . dqq :	#	24 97 98
37) Benzene 39) Cyclohexane 42) Heptane	11.53 11.62 12.64	78	60932	5.37	daa '		94 24 93
44) 1,2-Dichloropropane	12.79	130 63	20720 8180	4.85 1.85	dqq 8		94 90
52) Toluene 58) Chlorobenzene	16.53	112	36547	2252.37 438.73 2.77	dqq 8		84 99 97
59) Ethylbenzene 60) m&p-Xylene 61) Nonane 63) o-xylene	16.75 16.91 17.24 17.37	43	578354 4451290 1204669	90.84	dgg		96 86 99
66) Cumene	17.84	105	9033180 162769	6.37	dqq aqq		91 99

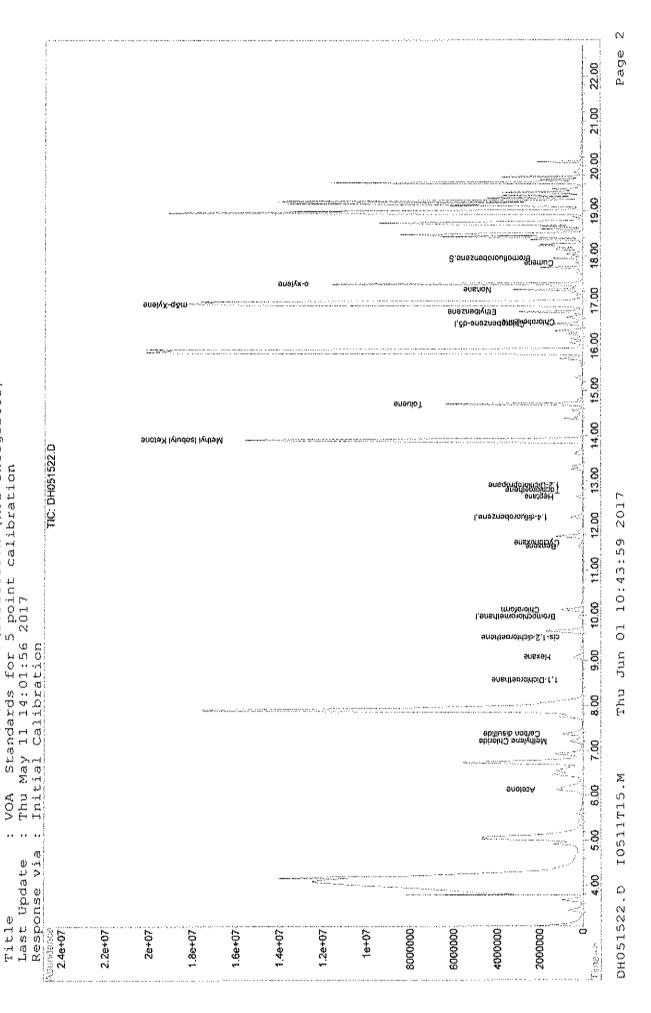
10511T15.RES

File:

Results

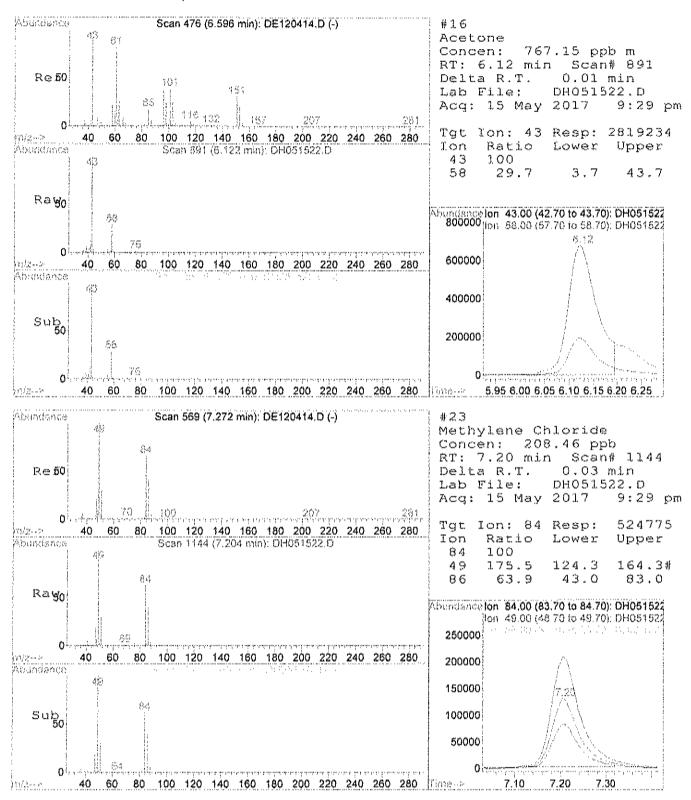
Quant

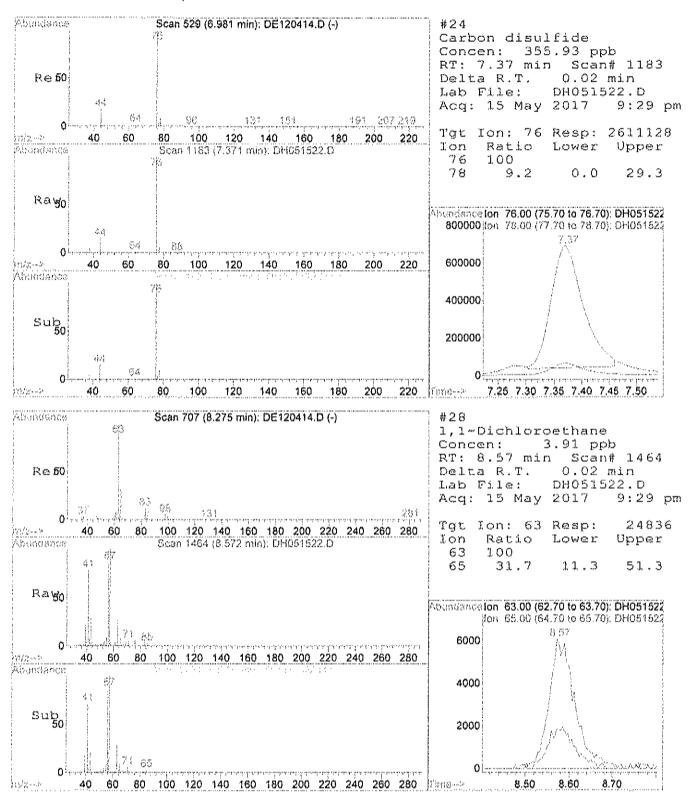
C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

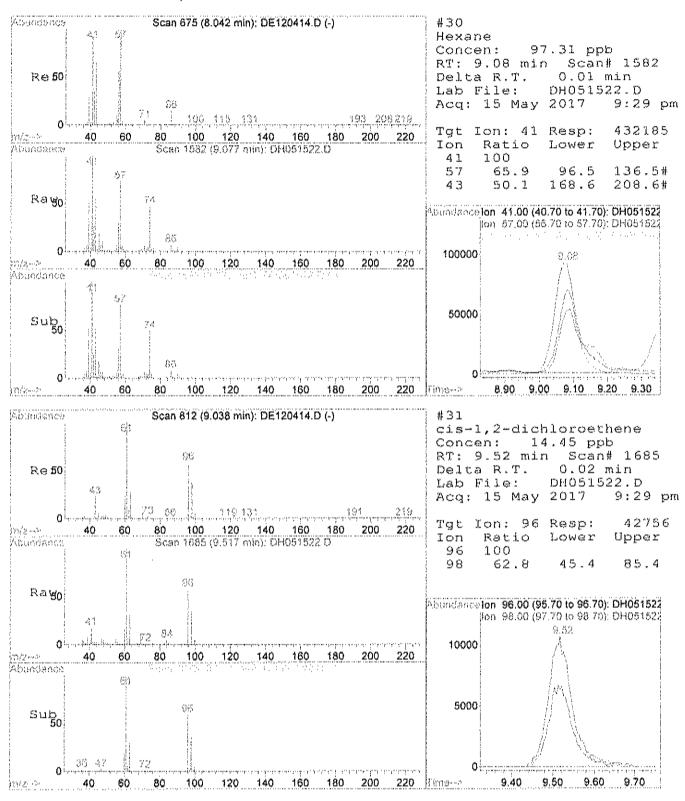


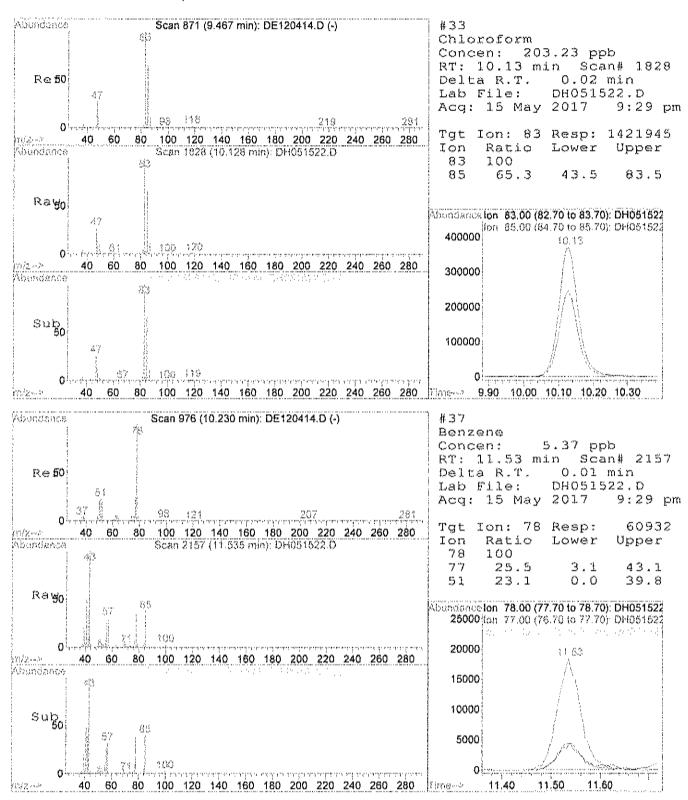
Page 338 of 572

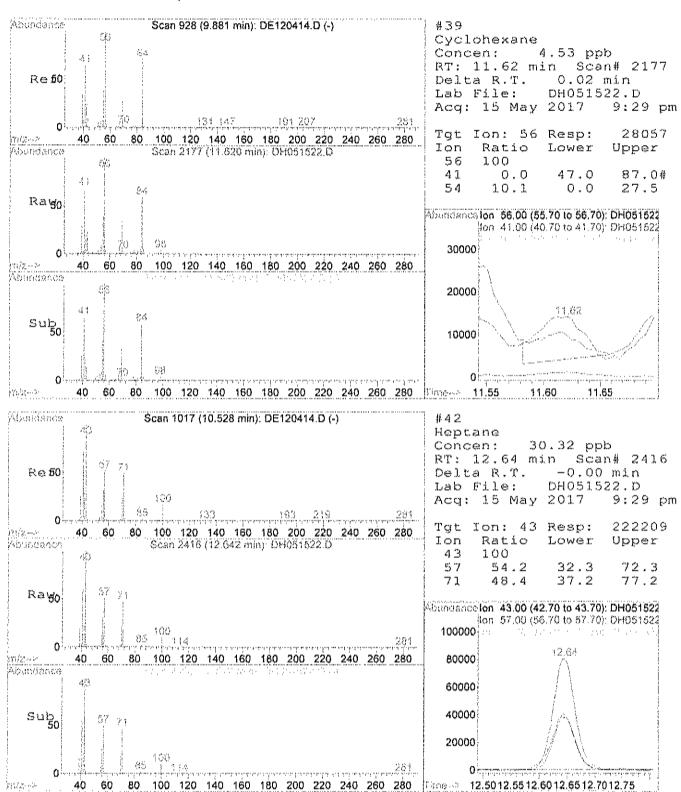
Method

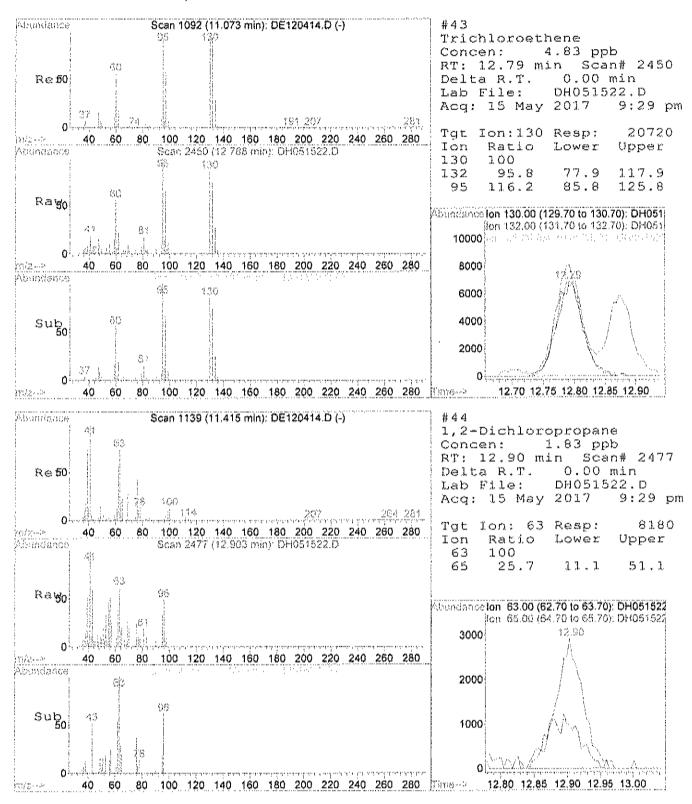


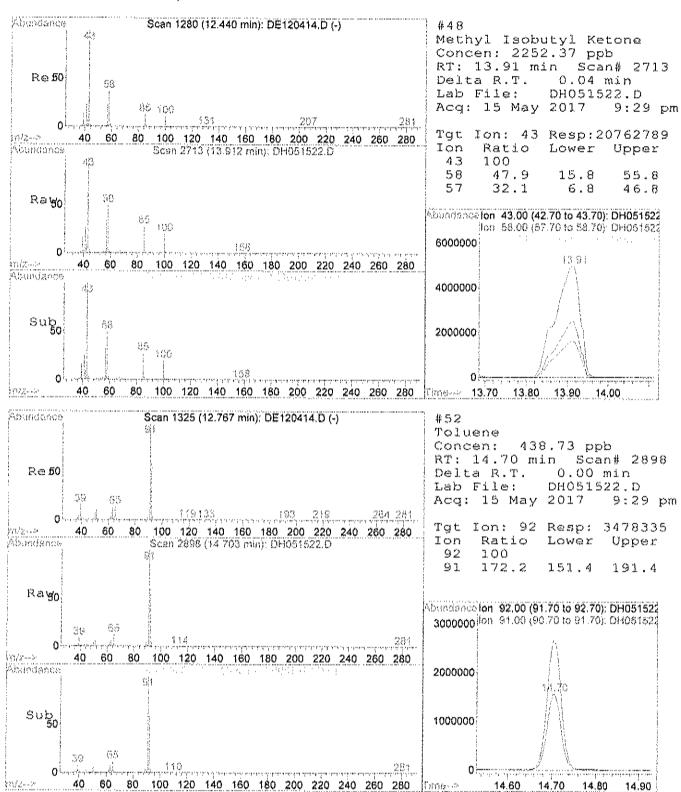


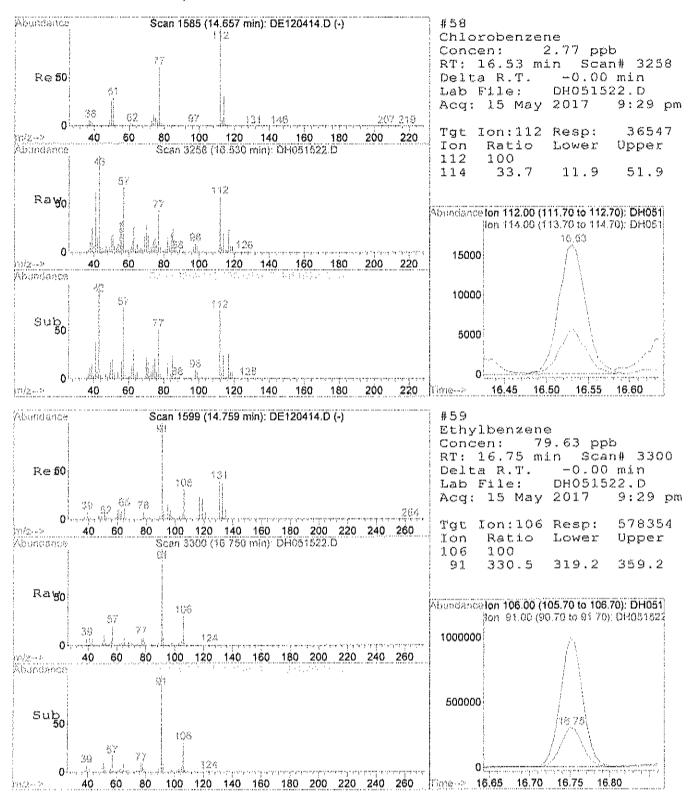


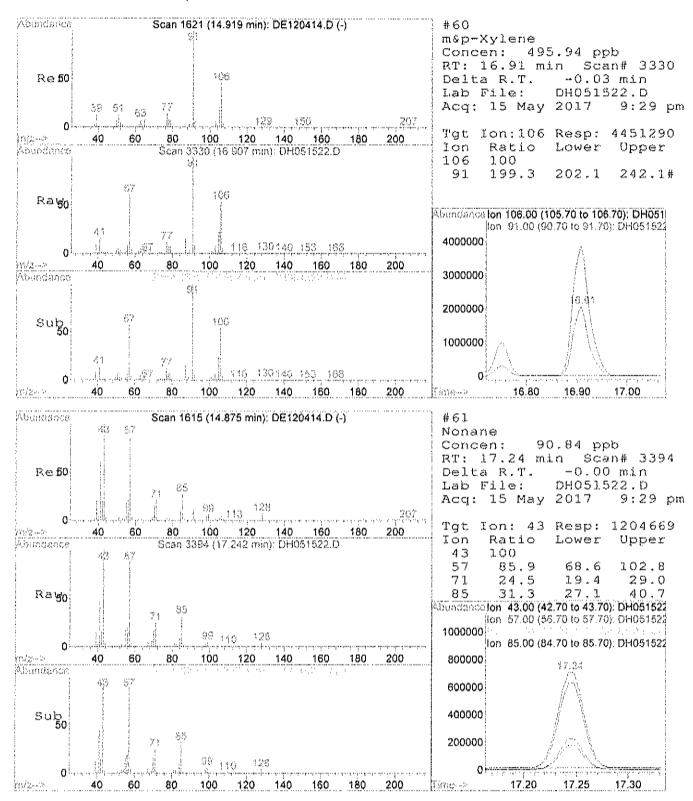


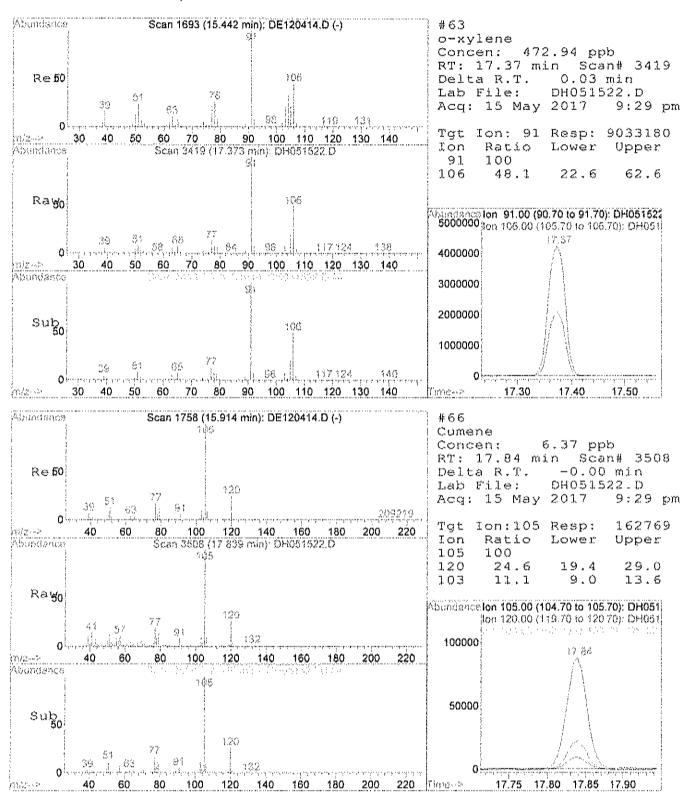












LSC Area Percent Report

Data File : C:\HPCHEM\1\DATA2\DH051522.D Vial: 16 Acq On : 15 May 2017 9:29 pm Sample : C1705036-012A 10X Operator: WD Inst : GCMS3 Multiplr: 1.00 Misc : TO15

MS Integration Params: LSCINT.P

: C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
: VOA Standards for 5 point calibration

Title

Smoothing : ON Filtering: 5

Min Area: 3 % of largest Peak Max Peaks: 100 Sampling : 1

Start Thrs: 0.2 Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

pea}		scan	max scan		PK TY	peak height 	corr. area	% max.	
1 2 3 4 5		354 593 624 864 951	355 605 636 891 971		rBV2 rBV2 rBV rBV	5936734 918650 3823169 1156944	10630592		1.319%
წ 7 8 9	6.725 6.926 7.208 7.371 7.755	1067 1131 1169	1032 1079 1145 1183 1273	1112 1167 1229	rVB3 rBV2 rVB	5306336 1220707 \$47374 938440 1122112		21.18% 4.31% 1.97% 3.68% 3.57%	3.042% 0.619% 0.283% 0.529% 0.512%
11 12 13 14 15	7.897 9.077 9.649 10.128 11.762	1558 1697 1810	1306 1582 1716 1828 2210	1612 1755 1849	rBV7 rVB rBV	453407 1700273 955183	115718755 2273624 6553772 3524431 4191083	100.00% 1.96% 5.66% 3.05% 3.62%	14.362% 0.282% 0.813% 0.437% 0.520%
16 17 18 19 20	12.189 13.254 13.326 13.609 13.912	2545 2568 2611	2310 2559 2576 2642 2713	2568 2593 2674	rBV3 rVB2 rBV5	587578 530377 483798 399416 15595122	1334831	1.63% 1.27% 1.15% 1.89% 56.12%	0.234% 0.183% 0.166% 0.271% 8.060%
21 22 23 24 25	14.382 14.703 15.719 15.860 16.070	2884 3093 3115	2823 2898 3103 3130 3170	2912 3115 3136	rBV rBV3 rBVS	849090 6374221 990656 20078772 567610	2032070 14554934 3127816 82507680 1477454	1.76% 12.58% 2.70% 71.30% 1.28%	0.252% 1.806% 0.388% 10.240% 0.183%
26 27 28 29 30	16.153 16.274 16.342 16.488 16.630	3196 3214	3186 3209 3222 3250 3277	3214 3231 3258	rBV	460896 646956 1196436 1538536 693171	1245978 1527198 2576208 3152913 2626553	1.08% 1.32% 2.23% 2.72% 2.27%	0.155% 0.190% 0.320% 0.391% 0.326%
	16.755 16.923 17.248 17.373 17.740	3315 3388	3333 3395 3419	3341 3401 3435	rVB rVV rBV2	2951530 19006592 3128182 11613948 1904927	6815902 80062279 5631165 25211539 3828705	5.89% 69.19% 4.87% 21.79% 3.31%	0.846% 9.936% 0.699% 3.129% 0.475%
36 37 38 39 40	17.944 18.038 18.153 18.227 18.263	3522 3540 3557 3573 3585	3546 3568 3582	3536 3557 3573 3585 3595	rVB rVB3 x8V2 xVV3 rVB	1211454 627338 1083734 1852992 1869239	2132225 1413157 2937848 4854303 3038482	1.84% 1.22% 2.54% 4.19% 2.63%	0.265% 0.175% 0.365% 0.602% 0.377%
41	18.363	3596	3608	3614	rBV	2373963	4167353	3.60%	0.517%

	Cente	k Labo	ratorie	s, LLC					
42	18.426	3614	3620	3624	rVV	6426399	11282097	9.75%	1.400%
43	18.473	3624	3629	3645	rVB2	8384148	23945369	20.69%	2.972%
44	18.598	3646	3653	3659	rBV	1827576	2840553	2.45%	0.353%
45	18.656	3659	3664	3668	rBV	1771832	2792562	2.41%	0.347%
46	18.734	3668	3679	3699	rVB3	9352127	34287940	29.63%	4.255%
47	18.965	3710	3723	3727	rBV3	19037819	52089312	45.01%	6.465%
48	19.001	3727	3730	3741	rVB	13215576	21621671	18.68%	2.683%
49	19.117	3746	3752	3755	rVV	5968964	10299803	8.90%	1.276%
50	19.164	3755	3761	3766	rVV	13457578	28870943	24.95%	3.583%
51 52 53 55 55	19.221 19.295 19.342 19.420 19.488	3766 3780 3791 3801 3815	3772 3786 3795 3810 3823	3780 3791 3801 3815 3840	rVV rVV rVV rVB2	13931329 4294073 3655770 3557809 1306712	27418145 6704715 5281542 6469898 3241839	23.69% 5.79% 4.56% 5.59% 2.80%	3.403% 0.832% 0.655% 0.803% 0.402%
56	19.630	3840	3850	3858	rBV2	11622303	25457748	22.00%	3.159%
57	19.692	3858	3862	3869	rVV2	1788372	2976713	2.57%	0.369%
58	19.761	3869	3875	3886	rVB	3737145	5568228	4.81%	0.691%
59	20.090	3932	3938	3948	rVB	2036897	3054568	2.64%	0.379%

Sum of corrected areas: 808754309

DH051522.D 10511T15.M Mon Jun 19 14:49:33 2017

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA2\DH051522.D

Operator : WD

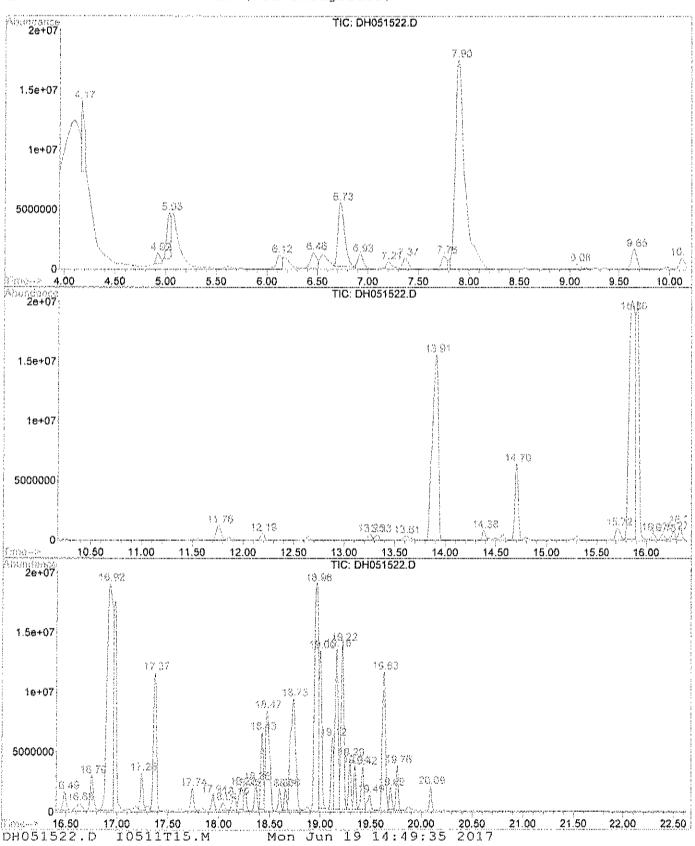
Acquired : 15 May 2017 9:29 pm using AcqMethod NEW1

Instrument: GCMS3

Sample Name: C1705036-012A 10X

Misc Info : TO15 Vial Number: 16

Quant File : IO511T15.RES (RTE Integrator)



Library Search Compound Report Data File : C:\HPCHEM\1\DATA2\DH051522.D Vial: 16 Acq On : 15 May 2017 9:29 pm Operator: WD Sample : C1705036-012A 10X Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 1 Cyclopropane, 1,2-dimethyl-, c Concentration Rank 9 R.T. EstConc Area Relative to ISTD R.T. 6.73 347.75 ppb 24512500 Bromochloromethane Hit# of 5 Tentative ID MW Molform CAS# Oual 8000 6000 70 4000 14.8 2000 50 / 61 76 6.40 6.60 6.80 7.00 m/z 70.00 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 #105199 Cyclogropana, 1,2-dimethyl-, cis-Albania terrak 8000 6000 70 4000 6.40 6.60 6.80 7.00 42 m/z 41.00 33.99% 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 Manustance 8000 6.40 6.60 6.80 7.00 6000 m/z 39.00 29.93% 70 4000 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 #251: 2-Pentene, (Z)- \$\$ (Z)-2-Pentene \$5 cis-.beta.-Amyl 6.40 6.60 6.80 7.00 8000 m/z 42.00 23.80% 6000 70 4000

Les en proposant es est bogo a rolling de consequent de separate en forma para promption promise en forma form

10/2-> 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 6.40 6.60 6.80 7.00

20001

Data File : C:\MPCHEM\1\DATA2\DH051522.D Vial: 16 Acg On : 15 May 2017 9:29 pm Sample : C1705036-012A 10X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

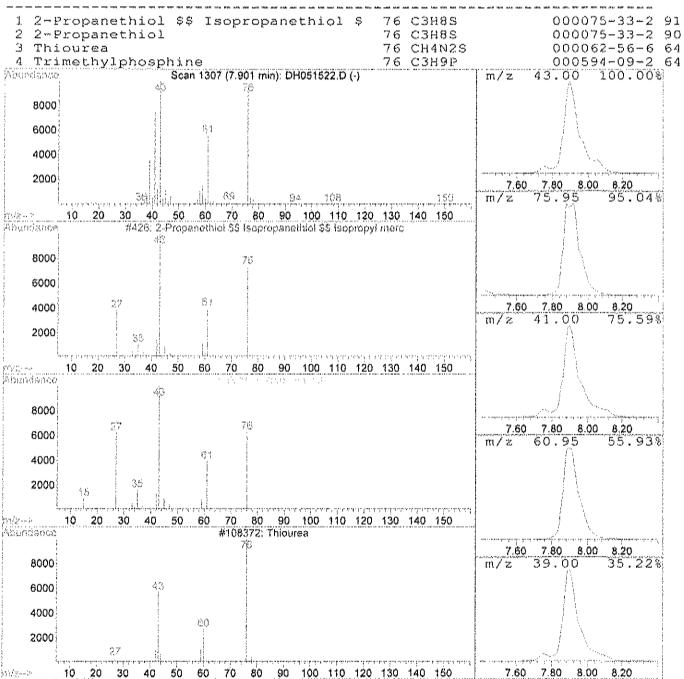
Quant Method : C:\HPCHEM\1\METHODS\10\$11T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L

****** Peak Number 2 2-Propanethiol \$\$ Isopropaneth Concentration Rank

T. EstConc Area Relative to ISTO R.T. R.T. EstConc

7.90 1641.67 ppb 115719000 Bromochloromethane 9.97 Hit# of 5 Tentative ID MW Molform CAS# Qual



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051522.D Vial: 16 Acg On : 15 May 2017 9:29 pm Sample : C1705036-012A 10X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\T0511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L *********** Peak Number 3 3-Penten-2-one Concentration Rank 2 Area Relative to ISTD R.T. EstConc _______ ------------15.86 1308.44 ppb 82507700 Chlorobenzene-d5 Hit# of S Tentative ID MW Molform CAS# Qual 1 3-Butyn-2-ol, 2-methyl- 84 C5H8O 000115-19-5 52 2 1H-Pyrazole, 4,5-dihydro-5-methyl- 84 C4H8N2 001568-20-3 46 3-Penten-2-one 84 C5H8O 000625-33-2 43 4 3-Penten-2-one. (E) - \$\$ (E) -3-Pente 84 C5H8O 003102-33-8 43 3 3-Penten-2-one 4 3-Penten-2-one, (E) - \$\$ (E) -3-Pente 84 C5H8O 003102-33-8 (E) -3-2420(4E SEC MIN) DHOS1522.D(4) m/z 69.00, 100.00% 003102-33-8 43 34 63.3 5000 15.60 15.80 16.00 16.20 m/z 43.05 79.04 75 11 98 104 3113 113 79.04% 0 60 70 80 90 100 110 120 #108600: 3-Butyn-2-ot, 2-methyl-30 40 50 60 Noundance (30) 8000 6000 15.60 15.80 16.00 16.20 - 41.05 76.428 4000 m/z 41.05 2000 20 30 40 50 60 70 80 90 100 110 120 8000 32 15.60 15.80 16.00 16.20 6000 60.02% m/z 84.00 Sa 4000 2000 70 80 90 100 110 120 20 30 40 50 60 #108586: 3-Penten-2-one Situation 15.60 15.80 16.00 16.20 50.67% 8000 m/z 60.95 6000 4000 2000 20 30 40 50 60 70 80 90 100 110 120 15.60 15.80 16.00 16.20

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DHO51522.D Vial: 16 Acg On : 15 May 2017 9:29 pm Sample : C1705036-012A 10X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L : C:\DATABASE\NIST129.L ***************** Peak Number 4 2,2'-Bifuran, octahydro- Concentration Rank 8 R.T. EstConc Area Relative to ISTD 18.47 379.73 ppb 23945400 Chlorobenzene-d5 Hit# of 5 Tentative ID MW MolForm CAS# Qual 1 2,2'-Bifuran, octahydro- 142 C8H14O2 001592-33-2 42
2 Butyric acid, neopentyl ester \$\$ te 158 C9H18O2 002050-00-2 38
3 Butanoic acid, anhydride 158 C8H14O3 000106-31-0 36
4 Butanoic acid, anhydride \$\$ Butyric 158 C8H14O3 000106-31-0 9

Scan 3629 (18.473 min): DH051522.D (-) m/z 71.00 100.00% 5000 32 115 18.20 18.40 18.60 18.80 0 79 67 101 129 143 167 176 m/z 43.00 43.78% 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 Albanderson #10570: 2,2"-Bifuran, octahydro-8000 43 6000 4000 18.20 18.40 18.60 18.80 m/z 115.00 28.748 2000 55, ... 84, ... 100, 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 & CONTRACTOR 8000 43 18.20 18.40 18.60 18.80 6000 m/z 41.00 12.048 4000 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 Abundance #116060: Butangic acid, anhydride 18.20 18.40 18.60 18.80 8000 m/z 55.00 9.78% 6000 4.3 4000 2000 55 89 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 18.20 18.40 18.60 18.80

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051522.D Vial: 16 Acq On : 15 May 2017 9:29 pm Operator: WD Sample : C1705036-012A 10X Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 5 1-Butanol, 3-methoxy-R.T. EstConc Area Relative to ISTD 18.73 543.75 ppb 34287900 Chlorobenzene-d5 16.48 Hit# of 5 Tentative ID MW Molform CAS# Qual Mirandanee 5000 $\Delta \Im$ 129 18.40 18.60 18.80 19.00 m/z 43.00 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 #109896: 1-Butanol, 3-methoxy-8000 6000 4000 18.40 18.60 18.80 19.00 73.00 m/z 35.09% 2000 T 42 71 89 Te re eer maa jala angala may alahama alamamaan keen ay an anay an ang an ang a an ang an anay an ang an ang a 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 Anundame 8000 لأرب أحسرت وتبرح تتكر الإنجوب بسك 18.40 18.60 18.80 19.00 6000 m/z 129.00 4000 2000 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 #2142: 3-Pentanol, 2-methyl- \$\$ 2-Methyl-3-pentanol \$\$ Pro Abundance 5l0 18.40 18.60 18.80 19.00 8000 71.00 6000 2.5 4000 20001

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 | 18.40 18.60 18.80 19.00

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051522.D Vial: 16 Acq On : 15 May 2017 9:29 pm Operator: WD Sample : C1705036-012A 10X Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L : C:\DATABASE\NIST129.L Peak Number 6 Butane, 1,1'-[ethylidenebis(ox Concentration Rank R.T. EstConc Area Relative to ISTD ______ 18.96 826.05 ppb 52089300 Chlorobenzene-d5 Hit# of 5 Tentative ID MW Molform CAS# Qual 1 Butane, 1,1'-[ethylidenebis(oxy)]bi 202 C12H2602 013535-43-8 78 2 2-Butanol, 3-(2,2-dimethylpropoxy)- 160 C9H2002 074793-66-1 50 Butyric acid, neopentyl ester \$\$ te 158 C9H1802 002050-00-2 50 4 Pentane, 3-bromo- 150 C5H11Br 001809-10-5 50 Scan 3722 (18.960 min): DH051522.D(-) m/z 71.00 100.00\$ Abundence 5000 18.60 18.80 19.00 19.20 0 35 1 79 87 97 106 123 143 158 43.00 20 30 40 50 50 70 80 90 100 110 120 130 140 150 160 170 180 190 Whundanse' #35418: Butane, 1,1'-{ethylidenebis(oxy)]bis(2-methyl-8000 116 6000 4000 18.60 18.80 19.00 19.20 30/2 45.00 27.45% 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 Maundames 8000 18 60 18 80 19 00 19 20 6000 m/z114.95 4000 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 #16747: Butyric acid, neopentyl ester \$\$ tert-Amyl butyrate Abundance 18.60 18.80 19.00 19.20 8000 m/z 41.00 43 6000 4000 2000 ing promote soft fire with the result of the fire of the fire of the fire of the fire of the fire of the fire of 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 | 18.60 18.80 19.00 19.20

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051522.D Vial: 16 Acq On : 15 May 2017 9:29 pm Operator: WD Sample : C1705036-012A 10X Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 7 unknown Concentration Rank 10 Area Relative to ISTD R.T. EstConc 19.00 342.88 ppb 21621700 Chlorobenzene-d5 Hit# of 5 Tentative ID MW MolForm CAS# Qual

 1 Guanidine \$\$ Aminoformamidine \$\$ Am
 59 CH5N3
 000113-00-8 5

 2 Acetamide \$\$ Acetic acid amide \$\$ A
 59 C2H5N0
 000060-35-5 4

 3 Formamide, N-methyl- \$\$ Methylforma
 59 C2H5NO
 000123-39-7 4

 4 Acetamide
 59 C2H5NO
 000060-35-5 4

 50 C2H5NO
 000060-35-5 4

 50 C2H5NO
 000060-35-5 4

 50 C2H5NO
 000060-35-5 4

 Abundance 5000 1220 43 18.60 18.80 19.00 19.20 19.40 0 36 36 51 76 87 99 111 121 140 189 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 m/z 129.00 40.80% #109: Guanidine \$5 Amineformamidine \$5 Aminomethanamidine Abundague 8000 6000 18.60 18.80 19.00 19.20 19.40 4000 m/z 43.00 24.62% 2000 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 Albaumino mon 8000 18.60 18.80 19.00 19.20 19.40 6000 41.00 5.85% m/z4000 2000 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 Abundance #110: Formamide, N-methyl- \$\$ Methylformamide \$\$ Monometh 18.60 18.80 19.00 19.20 19.40 80000 m/z57.00 4.10% 6000 30 4000 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 18.60 18.80 19.00 19.20 19.40

```
Data File : C:\HPCHEM\1\DATA2\DH051522.D
                                                                           Vial: 16
    Acq On : 15 May 2017 9:29 pm
Sample : C1705036-012A 10X
Misc : TO15
                                                                        Operator: WD
                                                                        Inst : GCMS3
                                                                        Multiplr: 1.00
    MS Integration Params: LSCINT.P
    Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
    Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L
 Peak Number 8 Pentane, 1,1'-oxybis-
                                                              Concentration Rank 5
   R.T. EstConc
   R.T. EstConc Area Relative to ISTD
  19.16 457.85 ppb 28870900 Chlorobenzene-d5
  Hit# of 5 Tentative ID
                                                  MW MolForm CAS# Qual
  1 Pentane, 1,1'-oxybis- 158 C10H220 000693-65-2 74 2 Undecane, 3,3-dimethyl- 184 C13H28 017312-65-1 40 3 Heptane, 3,3,5-trimethyl- $$ 3,3,5- 142 C10H22 007154-80-5 40 4 Decane, 2,8,8-trimethyl- 184 C13H28 000000-00-0 40 hunderce Scan 3760 (19.158 min): DH051522.D (-) m/z 71.00 100.00%
               2.3
    5000
      05 101
0 108115 129 143 158
                                                                  18.80 19.00 19.20 19.40
                                                                         43.00 46.71%
                                                                 m/2
      20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
                #116153; Pentane, 1,1'-oxybis-
 Sbandance
    8000
    6000
    4000
                                                                   18.80 19.00 19.20 19.40
                                                                        70.00
                                                                  m/z
    2000
      20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
Physicance
    8000
                                                                  18.80 19.00 19.20 19.40
    6000
                                                                 m/z 301.00
                                                                                 11.45%
    4000
    20001
                              99 113
       20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
          #10841: Heptane, 3,3,5-trimethyl- $$ 3,3,5-Trimethylheptane
                                                                 18.80 19.00 19.20 19.40
   8000
                                                                        55.00 10.16%
   6000
   4000
   2000
20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 18.80 19.00 19.20 19.40
```

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051522.D Vial: 16 Acq On : 15 May 2017 9:29 pm Operator: WD Sample : C1705036-012A 10X Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT,P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Library : C:\DATABASE\NIST129.L ************* Peak Number 9 Butanoic acid, 3-methylbutyl e Concentration Rank 6 R.T. EstConc Area Relative to ISTD 19.22 434.81 ppb 27418100 Chlorobenzene-d5 Hit# of 5 Tentative ID t# of 5 Tentative ID MW Molform CAS# Qual 5000 107 18.80 19.00 19.20 19.40 19.60 0 3510 63 76 57 169 119 127 135 142 156 174 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 de tarrentamentame #115086: Butanoic acid, 3-methylbutyl ester 8000 6000 EK 4000 18.80 19.00 19.20 19.40 19.60 m/z 43.00 67.228 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 Acundance transfer ett. 1920. State sange i San dåladen fyr fledir 8000 18.80 19.00 19.20 19.40 19.60 6000 m/z 69.00 42.67% 4000 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 #112246: Hexane, 3.3,4-trimethyl-18.80 19.00 19.20 19.40 19.60 8000 41.00 24.24% 6000 4000 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 18.80 19.00 19.20 19.40 19.60

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051522.D Vial: 16 Acq On : 15 May 2017 9:29 pm Sample : C1705036-012A 10X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L Peak Number 10 Pentane, 1,1'-oxybis-Concentration Rank R.T. EstConc Area Relative to ISTD R.T. 19.63 403.72 ppb 25457700 Chlorobenzene-d5 Hit# of 5 Tentative ID CAS# Qual MW Molform 1 Pentane, 1,1'-oxybis- 158 C10H220 000693-65-2 83 2 Pentane, 1,1'-oxybis- 158 Cl0H220 000693-65-2 74 3 Butanoic acid, 2-methylbutyl ester 158 C9H1802 051115-64-1 64 4 Butyrlc acid, neopentyl ester \$\$ te 158 C9H1802 002050-00-2 59 5 bundance Scan 3850 (19.630 min): DH051522.D (-) m/z 71.00 100.00% 5000 19.20 19.40 19.60 19.80 20.00 m/z 43.00 53.94 , 87 101 115 129 143 158 207 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 Africantianycha #116154. Pentane, 1,1-oxybis-0008 2.12 6000 4000 19.20 19.40 19.60 19.80 20.00 m/2 70.00 39.348 2000 87 103 175 168 1 175 175 170 470 480 190 200 210 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 Acundance 8000 19.20 19.40 19.60 19.80 20.00 6000 m/z 69.00 21.22% 4000 2000 89 101 158 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 Albindence #16721: Butanoic acid, 2-methylbutyl ester 19.20 19.40 19.60 19.80 20.00 8000 m/z = 41.006000 4000 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 160 170 180 190 200 210 19.20 19.40 19.60 19.80 20.00

Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 15 May 2017 9:29 pm

Data File: C:\HPCHEM\1\DATA2\DH051522.D

Name: C1705036-012A 10X Misc: TO15

Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title: VOA Standards for 5 point calibration
Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstConc			IntStd		ISArea D	
Cyclopropane, 1,2-di 2-Propanethiol \$\$ Is 3-Penten-2-one 2,2'-Bifuran, octahy 1-Butanol, 3-methoxy Butane, 1,1'-[ethyli unknown Pentane, 1,1'-oxybis Butanoic acid, 3-met Pentane, 1,1'-oxybis	6.73 7.90 15.86 18.47 18.73 18.96 19.00 19.16 19.22	347.6 1641.7 1308.4 379.7 543.8 826.1 342.9 457.8 434.8	ppb ppb ppb ppb ppb ppb ppb	24512500 11571900 82507700 23945400 34267900 52089300 21621700 28870900 27418100 25457700	O ISTDO1 ISTDO3 ISTDO3 ISTDO3 ISTDO3 ISTDO3 ISTDO3 ISTDO3	9.97 9.97 16.48 16.48 16.48 16.48 16.48	3524430 3524430 3152910 3152910 3152910 3152910 3152910 3152910 3152910	50.0
DH051522.D I0511T1			L. L	14:49:52		10.40	3132910	50.0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051710.D Vial: 16 Acq On : 17 May 2017 1:46 pm Sample : C1705036-012A 128X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 1 11:16 2017 Quant Results File: 10511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017 Response via : Initial Calibration

DataAcq Meth : NEWl

Internal Standards	R.T.	QIon	Response	Conc U	nits	Dev(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.95 12.18 16.48	128 114 117	101650 603882 500734	50.00 50.00 50.00	dqq	0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.94 Range 70	95 130			ppb 103.	
Target Compounds						Ovalue
16) Acetone	6.11	43	186534	48.80	daa	100
23) Methylene Chloride	7.17	84	33843	12.93		89
24) Carbon disulfide	7.33	76	177673	23.29		99
30) Hexane	9.05	4 1	22201	4.81	dqq	# 23
33) Chloroform	10.11	83	80985	11.13	dqq	98
42) Heptane	12.64	43	11261	1.39		91
48) Methyl Isobutyl Ketone	13.87	43	3182555	312.69	dqq	96
52) Toluene	14.70	92	141054	16.11		95
59) Ethylbenzene	16.76		26655	4.37		97
60) m&p-Xylene	16.91	106				# 85
61) Nonane	17.24	4.3	51519			# 88
63) o-xylene	17.35	91	406057	25.34	dqq	97

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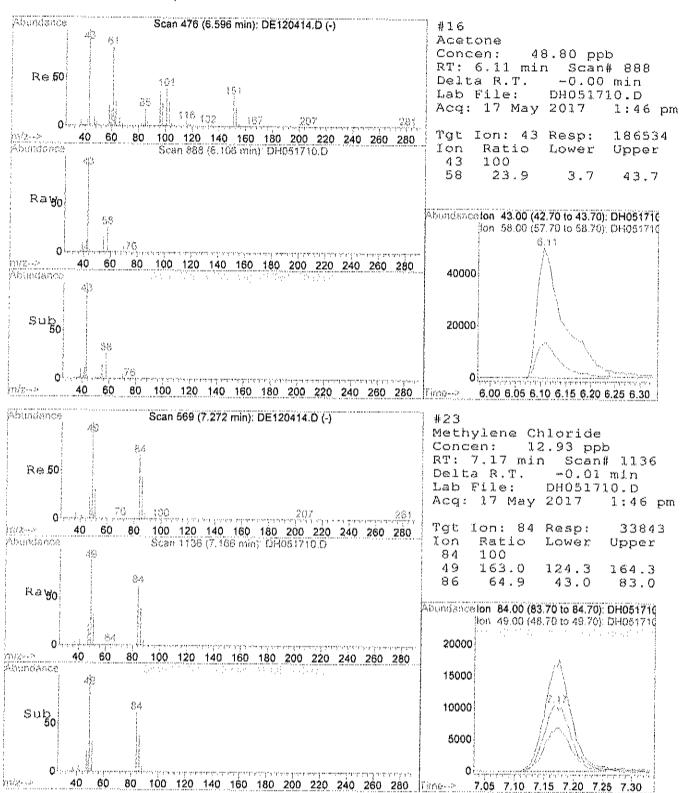
Jun

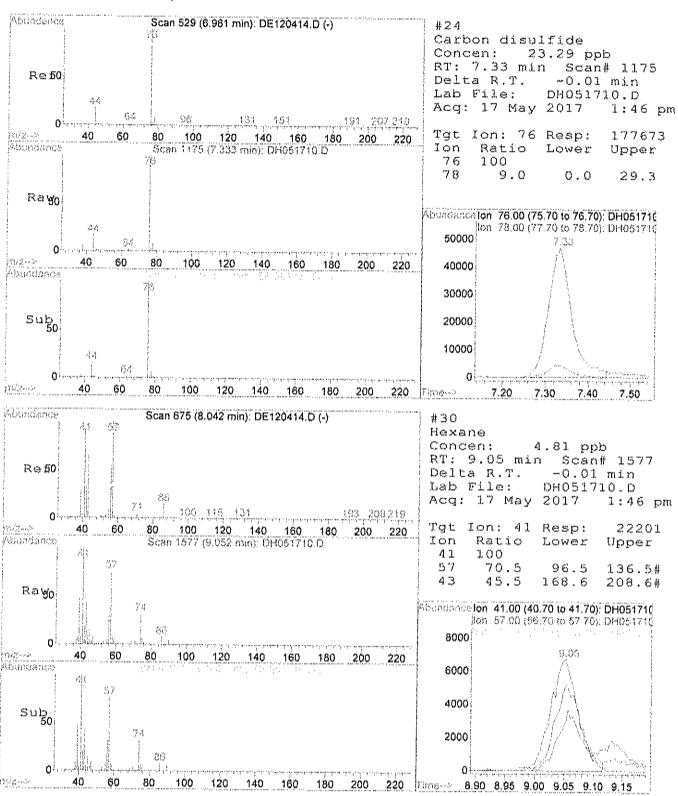
Thu

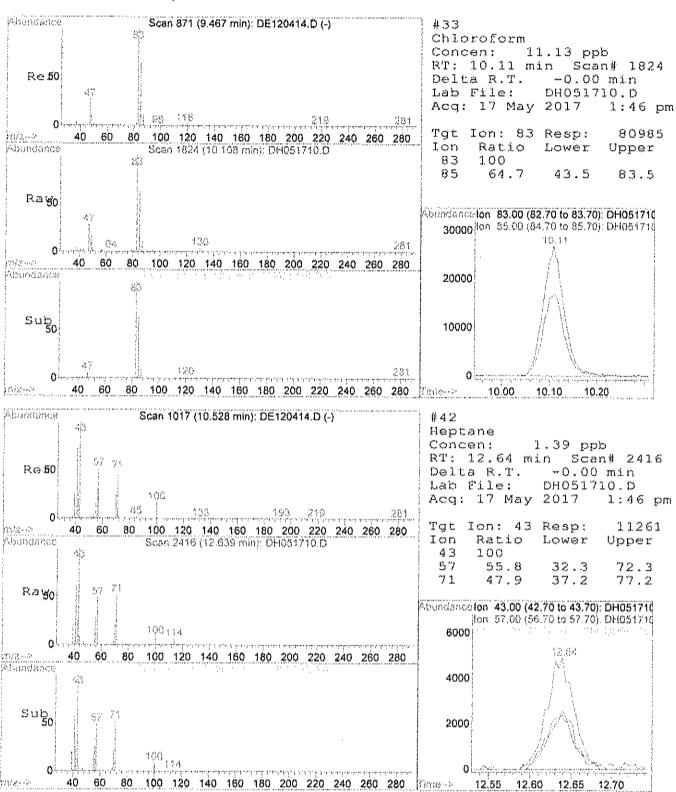
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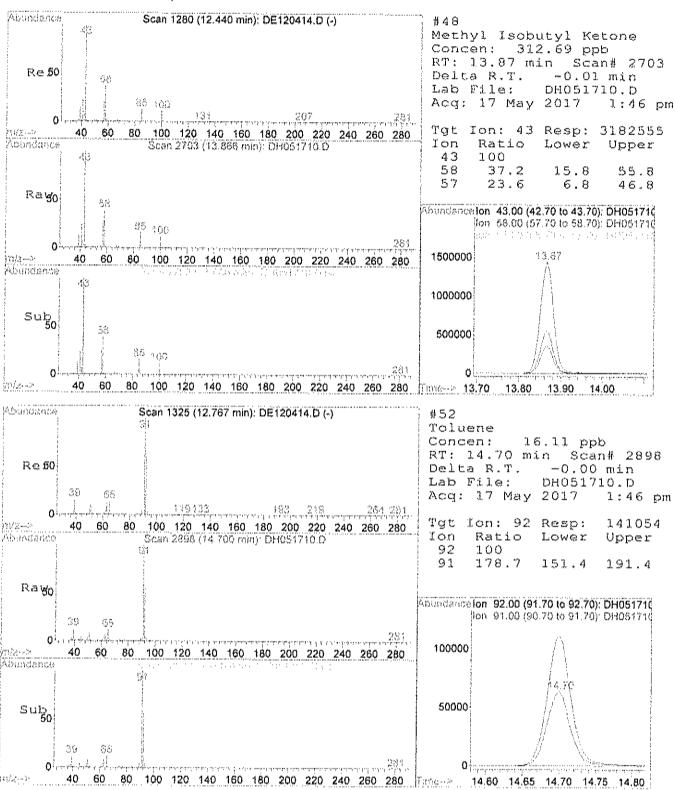
Report

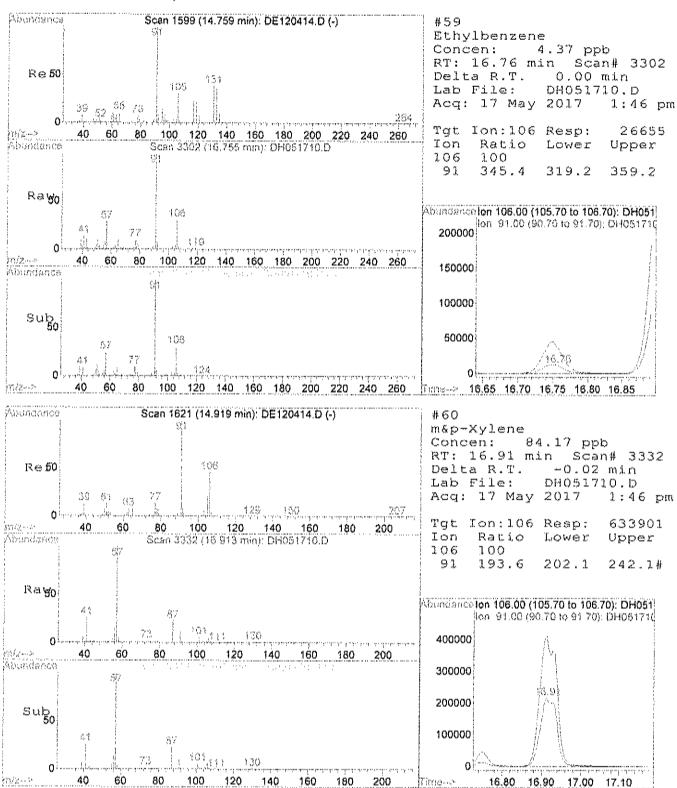
Quantitation

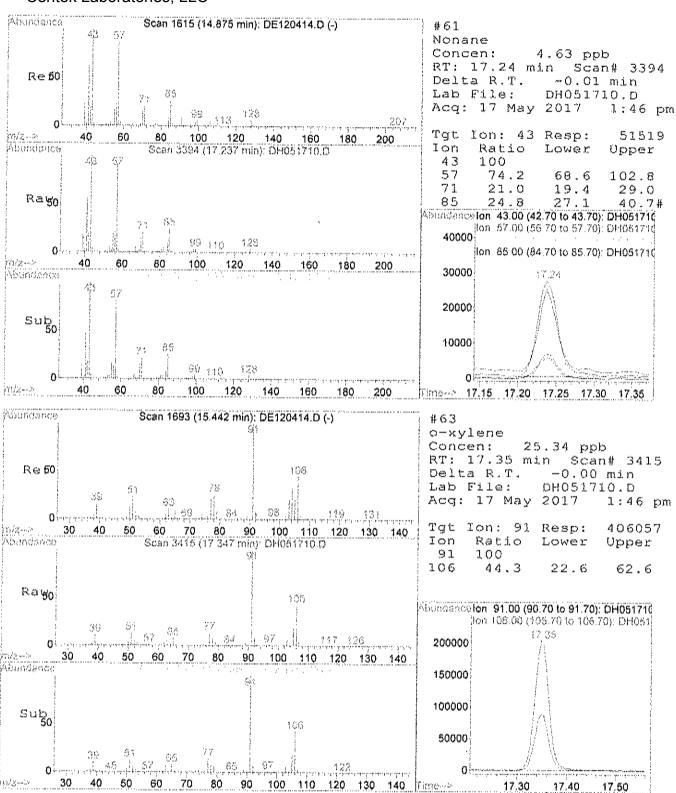












Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051718.D Vial: 16 Acq On : 17 May 2017 6:46 pm Sample : C1705036-012A 640X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

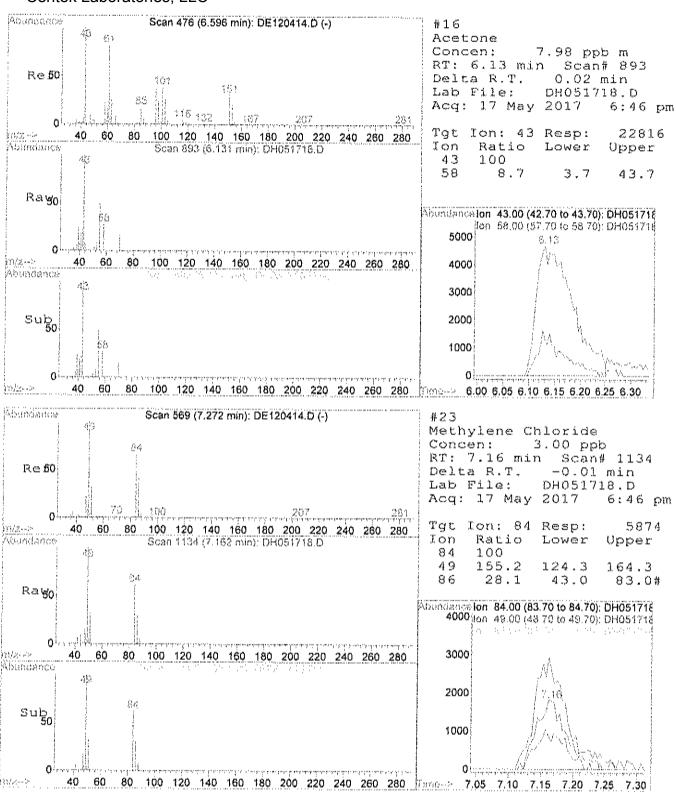
Quant Time: Jun 1 11:44 2017 Quant Results File: IOS11T15.RES

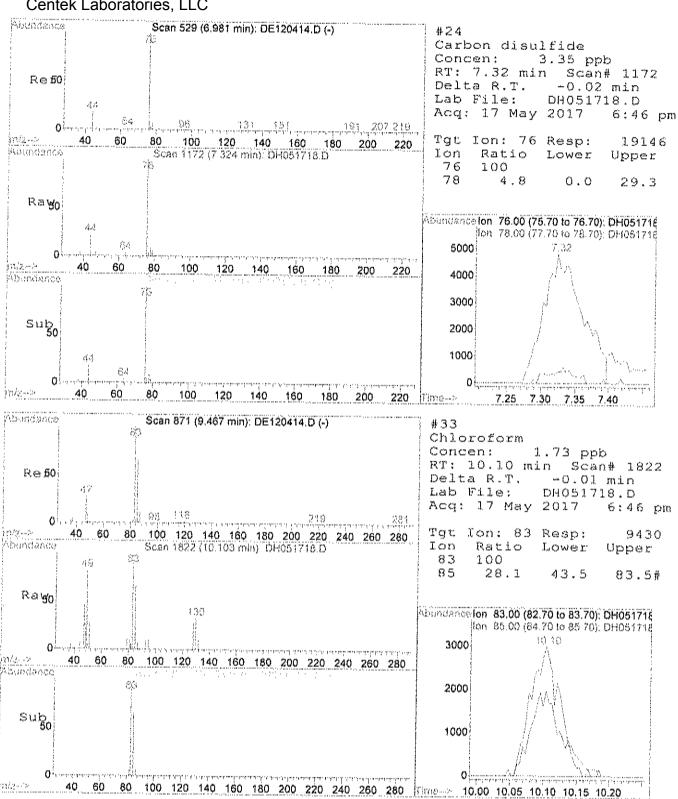
Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

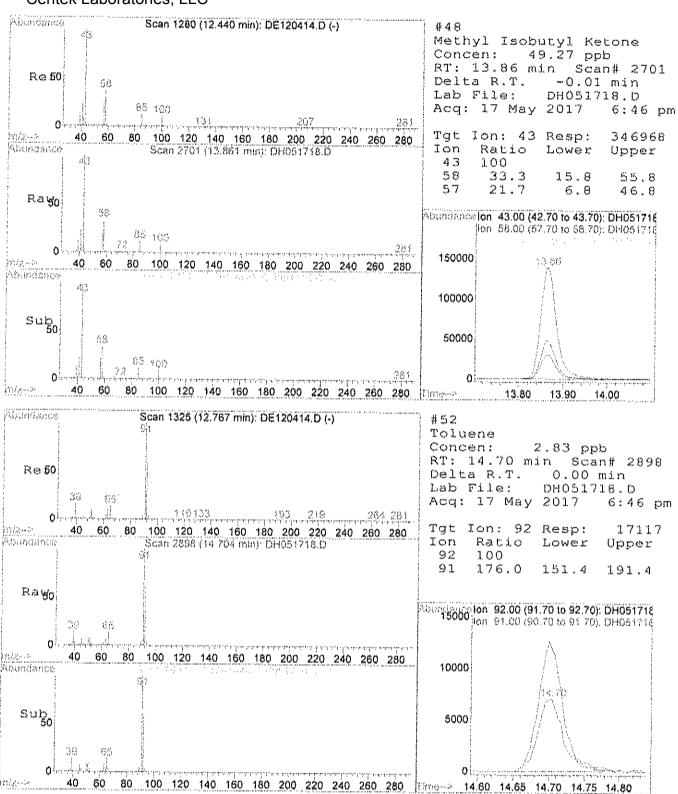
Internal Standards	R.T.	QIon	Response	Conc U		Dev	. ,
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.95 12.18 16.48	128 114 117	76075m' <u>v</u>) 417803 337962	50.00 50.00 50.00	dqq		0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000			216670 Recover		dqq 0e		0.00
The second of the second of the							
Target Compounds	2 33	4 - 3	anna e- M	. 7 00		Qva	alue
16) Acetone 23) Methylene Chloride 24) Carbon disulfide	6.13 7.16 7.32		22816m W 5874 19146	3.00	dqq	ŧt	80 88
16) Acetone23) Methylene Chloride24) Carbon disulfide33) Chloroform48) Methyl Isobutyl Ketone	7.16 7.32 10.10 13.86	84 76 83 43	5874 19146 9430 346968	3.00 3.35 1.73 49.27	4qq dqq dqq	#t ##	80 88 55 93
16) Acetone23) Methylene Chloride24) Carbon disulfide33) Chloroform	7.16 7.32 10.10	84 76 83 43 92	5874 19146 9430 346968 17117 4422	3.00 3.35 1.73 49.27 2.83	444 444 444 444 444	#t	80 88 55

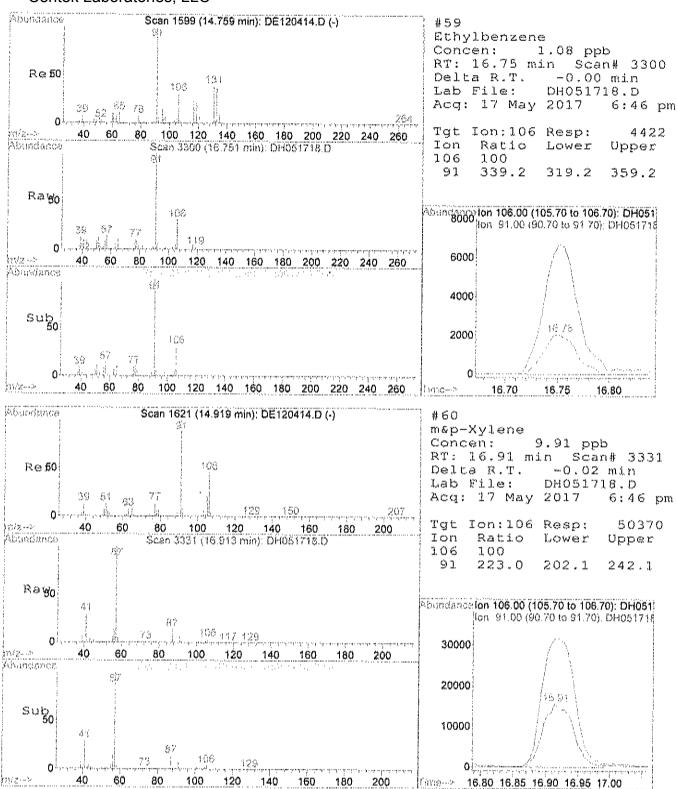
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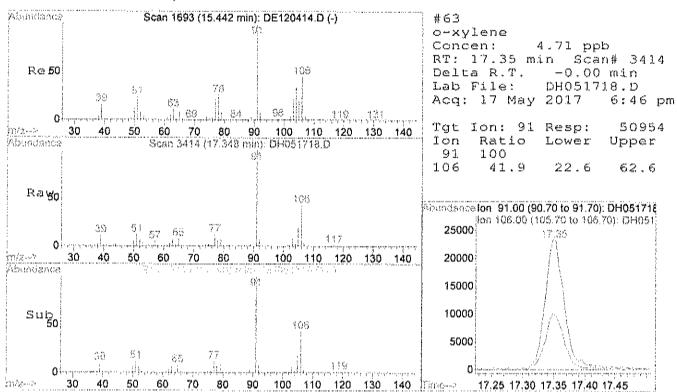
Quantitation Report











Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-013A

Client Sample ID: WAT-SV06-050917

Tag Number: 1018.56 Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit Qua	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD			Analyst:
Lab Vacuum In	-4		"Hg		5/12/2017
Lab Vacuum Out	-30		"Hg		5/12/2017
FIXED GAS SERIES		EPA METHOD	3C		Analyst: WD
Carbon dioxide	0.0520	1.90 J	%	1	5/15/2017
Carbon Monoxide	ND	0.880	%	1	5/15/2017
Methane	31.1	0.580	%	1	5/15/2017
Nitrogen	60.0	8.30	%	1	5/15/2017
Oxygen	2.87	0.880	%	1	5/15/2017
PPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
1,1,2,2-Tetrachloroethane	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
1,1,2-Trichtoroethane	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
1,1-Dichloroethane	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,1-Dichloroethene	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
1,2,4-Trichlorobenzene	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,2,4-Trimethylbenzene	< 50	50	Vdqq	10	5/17/2017 7:21:00 PM
1,2-Dibromoethane	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,2-Dichlorobenzene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
1,2-Dichloroethane	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,2-Dichloropropane	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,3,5-Trimethylbenzene	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,3-butadiene	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,3-Dichlorobenzene	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,4-Dichlorobenzene	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
1,4-Dioxane	< 100	100	ppb∨	10	5/17/2017 7:21:00 PM
2,2,4-trimethylpentane	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
4-ethyltoluene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Acetone	80	100 J	ppb∨	10	5/17/2017 7:21:00 PM
Allyl chloride	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Benzene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Benzyl chloride	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
Bromodichloromethane	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
Bromoform	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
Bromomethane	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Carbon disulfide	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Carbon tetrachloride	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
Chlorobenzene	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM
Chloroethane	< 50	50	ppbV	10	5/17/2017 7:21:00 PM
Chloroform	< 50	50	ppb∨	10	5/17/2017 7:21:00 PM

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated,
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis Client Sample ID: WAT-SV06-050917

Lab Order: C1705036 Tag Number: 1018.56

Project: Former Hampshire Collection Date: 5/9/2017

Lab ID: C1705036-013A Matrix: AIR

Analyses	Result	**Limit	Qua	Units	ÐF	Date Analyzed
5PPB BY METHOD TO15		TO	-15			Analyst: WD
Chloromethane	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
cis-1,2-Dichloroethene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
cis-1,3-Dichloropropene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Cyclohexane	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
Dibromochloromethane	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Ethyl acetate	< 100	100		ppbV	10	5/17/2017 7:21:00 PM
Ethylbenzene	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
Freon 11	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Freon 113	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Freon 114	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Freon 12	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Heptane	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
Hexachloro-1,3-butadiene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Hexane	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Isopropyi alcohol	< 50	50		ppb∨	10	5/17/2017 7:21:00 PM
m&p-Xylene	< 100	100		ppbV	10	5/17/2017 7:21:00 PM
Methyl Butyl Ketone	< 100	100		ppbV	10	5/17/2017 7:21:00 PM
Methyl Ethyl Ketone	< 100	100		ppbV	10	5/17/2017 7:21:00 PM
Methyl Isobutyl Ketone	< 100	100		ppb∨	10	5/17/2017 7:21:00 PM
Methyl tert-butyl ether	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Methylene chloride	< 50	50		₽₽₽V	10	5/17/2017 7:21:00 PM
o-Xylene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Propylene	6300	400		Vđạq	80	5/18/2017 3:15:00 PM
Styrene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Tetrachloroethylene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Tetrahydrofuran	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Toluene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
trans-1,2-Dichloroethene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
trans-1,3-Dichtoropropene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Trichloroethene	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Vinyl acetate	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Vinyl Bromide	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Vinyl chloride	< 50	50		ppbV	10	5/17/2017 7:21:00 PM
Surr: Bromofluorobenzene	76.0	73.7-124		%REC	10	5/17/2017 7:21:00 PM
TIC: 1-Butene, 2-methyl-	120	0	JN	ppbV	10	5/17/2017 7:21:00 PM
TIC: 1-Pentene, 4-methyl-	240	0	JN	ppbV	10	5/17/2017 7:21:00 PM
TIC: 1-Propene, 2-methyl-	100	o	JN	ppbV	10	5/17/2017 7:21:00 PM
TIC: Butane	180	0	ИL	Vdqq	10	5/17/2017 7:21:00 PM
TIC: Butane, 2-methyl-	140	0	JN	ppbV	10	5/17/2017 7:21:00 PM
TIC: Ethane, 1-chloro-1,1-difluoro	72	ō	JN	ppbV	10	5/17/2017 7:21:00 PM

Qualifiers:

Date: 22-hm-17

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^{**} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

E Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT:

CH2M - St Louis

Lab Order:

C1705036

C1703036

Project: Lab ID: Former Hampshire C1705036-013A Date: 22-Jun-17

Client Sample ID: WAT-SV06-050917

Tag Number: 1018.56

Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: WD
TIC: Hydrogen sulfide \$\$ Dihydrogen monosulfi	270	0	ИL	ppbV	10	5/17/2017 7:21:00 PM
TIC: Isobutane	110	0	JN	ppbV	10	5/17/2017 7:21:00 PM
TIC: Pentane, 2-methyl- \$\$ Isohexane \$\$ 2-Met NOTES:	440	0	JN	ppbV	10	5/17/2017 7:21:00 PM
* The reporting limits were raised due to th	e high concentra	ition of metha	ine in th	ne sample.		
LOW LEVEL SULFURS BY TO-15		то	-15			Analyst: WD
1-Propanethiol	< 50	50		√dqq	10	5/16/2017 6:45:00 PM
Carbon disulfide	< 50	50		Vdqq	10	5/16/2017 6:45:00 PM
Carbonyl sulfide	< 50	50		ppbV	10	5/16/2017 6:45:00 PM
Dimethyl sulfide	< 50	50		ppbV	10	5/16/2017 6:45:00 PM
Ethyl mercaptan	< 50	50		ppb∨	10	5/16/2017 6:45:00 PM
Hydrogen Sulfide	1500	50		ppbV	10	5/16/2017 6:45:00 PM
Isopropyl mercaptan	< 50	50		ppbV	10	5/16/2017 6:45:00 PM
Methyl mercaptan	< 50	50		ρρb∨	10	5/16/2017 6:45:00 PM
Surr: Bromofluorobenzene	133	70-130	s	%REC	10	5/16/2017 6:45:00 PM

Qualifiers:

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^{*} Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

JN Non-routine analyte. Quantitation estimated.

S Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

[€] Estimated Value above quantitation range

J Analyte detected below quantitation limit

ND Not Detected at the Limit of Detection

CLIENT: CH2M - St Louis

Lab Order: C1705036

...

Project: Former Hampshire

Lab ID: C1705036-013A

Date: 22-Jun-17

Client Sample ID: WAT-SV06-050917

Tag Number: 1018.56

Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO	TO-15		Analyst: WD
1,1,1-Trichtoroethane	< 270	270	ug/m3	10	5/17/2017 7:21:00 PM
1.1,2,2-Tetrachloroethane	< 340	340	ug/m3	10	5/17/2017 7:21:00 PM
1,1,2-Trichloroethane	< 270	270	ug/m3	10	5/17/2017 7:21:00 PM
1,1-Dichloroethane	< 200	200	ug/m3	10	5/17/2017 7:21:00 PM
1,1-Dichloroethene	< 200	200	ug/m3	10	5/17/2017 7:21:00 PM
1,2,4-Trichlorobenzene	< 370	370	ug/m3	10	5/17/2017 7:21:00 PM
1,2,4-Trimethylbenzene	< 250	250	ug/m3	10	5/17/2017 7:21:00 PM
1,2-Dibromoethane	< 380	380	ug/m3	10	5/17/2017 7:21:00 PM
1,2-Dichlorobenzene	< 300	300	ug/m3	10	5/17/2017 7:21:00 PM
1,2-Dichloroethane	< 200	200	սց/m3	10	5/17/2017 7:21:00 PM
1,2-Dichloropropane	< 230	230	ug/m3	10	5/17/2017 7:21:00 PM
1,3,5-Trimethylbenzene	< 250	250	սց/m3	10	5/17/2017 7:21:00 PM
1,3-butadiene	< 110	110	ug/m3	10	5/17/2017 7:21:00 PM
1,3-Dichlorobenzene	< 300	300	ug/m3	10	5/17/2017 7:21:00 PM
1,4-Dichlorobenzene	< 300	300	ug/m3	10	5/17/2017 7:21:00 PM
1,4-Dioxane	< 360	360	ug/m3	10	5/17/2017 7:21:00 PM
2,2,4-trimethylpentane	< 230	230	ug/m3	10	5/17/2017 7:21:00 PM
4-ethyltoluene	< 250	250	ug/m3	10	5/17/2017 7:21:00 PM
Acetone	190	240	J ug/m3	10	5/17/2017 7:21:00 PM
Allyl chloride	< 160	160	ug/m3	10	5/17/2017 7:21:00 PM
Benzene	< 160	160	ug/m3	10	5/17/2017 7:21:00 PM
Benzyl chloride	< 290	290	ug/m3	10	5/17/2017 7:21:00 PM
Bromodichloromethane	< 330	330	ug/m3	10	5/17/2017 7:21:00 PM
Bromoform	< 520	520	ug/m3	10	5/17/2017 7:21:00 PM
Bromomethane	< 190	190	ug/m3	10	5/17/2017 7:21:00 PM
Carbon disulfide	< 160	160	ug/m3	10	5/17/2017 7:21:00 PM
Carbon tetrachloride	< 310	310	ug/m3	10	5/17/2017 7:21:00 PM
Chlorobenzene	< 230	230	ug/m3	10	5/17/2017 7:21:00 PM
Chloroethane	< 130	130	ug/m3	10	5/17/2017 7:21:00 PM
Chloroform	< 240	240	ug/m3	10	5/17/2017 7:21:00 PM
Chloromethane	< 100	100	ug/m3	10	5/17/2017 7:21:00 PM
cis-1,2-Dichloroethene	< 200	200	ug/m3	10	5/17/2017 7:21:00 PM
cis-1,3-Dichloropropene	< 230	230	ug/m3	10	5/17/2017 7:21:00 PM
Cyclohexane	< 170	170	ug/m3	10	5/17/2017 7:21:00 PM
Dibromochioromethane	< 430	430	ug/m3	10	5/17/2017 7:21:00 PM
Ethyl acetate	< 360	360	ug/m3	10	5/17/2017 7:21:00 PM
Ethylbenzene	< 220	220	ug/m3	10	5/17/2017 7:21:00 PM
Freon 11	< 280	280	ug/m3	10	5/17/2017 7:21:00 PM
Freon 113	< 380	380	ug/m3	10	5/17/2017 7:21:00 PM
Freon 114	< 350	350	ug/m3	10	5/17/2017 7:21:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis Client Sample ID: WAT-SV06-050917

Lab Order: C1705036 Tag Number: 1018.56 Project: Collection Date: 5/9/2017 Former Hampshire

Lab ID: C1705036-013A Matrix: AIR

Analyses	Result	**Limit Qu	al Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-15		Analyst: WD	
Freon 12	< 250	250	ug/m3	10	5/17/2017 7:21:00 PM
Heptane	< 200	200	ug/m3	10	5/17/2017 7:21:00 PM
Hexachloro-1,3-butadiene	< 530	530	սց/m3	10	5/17/2017 7:21:00 PM
Hexane	< 180	180	ug/m3	10	5/17/2017 7:21:00 PM
Isopropyl alcohol	< 120	120	ug/m3	10	5/17/2017 7:21:00 PM
m&p-Xylene	< 430	430	ug/m3	10	5/17/2017 7:21:00 PM
Methyl Butyl Ketone	< 410	410	սց/m3	10	5/17/2017 7:21:00 PM
Methyl Ethyl Ketone	< 290	290	ug/m3	10	5/17/2017 7:21:00 PM
Methyl isobutyl Ketone	< 410	410	ug/m3	10	5/17/2017 7:21:00 PM
Methyl tert-butyl ether	< 180	180	սց/m3	10	5/17/2017 7:21:00 PM
Methylene chloride	< 170	170	ug/m3	10	5/17/2017 7:21:00 PM
o-Xylene	< 220	220	ug/m3	10	5/17/2017 7:21:00 PM
Propylene	11000	690	ug/m3	80	5/18/2017 3:15:00 PM
Styrene	< 210	210	սց/m3	10	5/17/2017 7:21:00 PM
Tetrachloroethylene	< 340	340	ug/m3	10	5/17/2017 7:21:00 PM
Tetrahydrofuran	< 150	150	ug/m3	10	5/17/2017 7:21:00 PM
Toluene	< 190	190	սց/m3	10	5/17/2017 7:21:00 PM
trans-1,2-Dichloroethene	< 200	200	ug/m3	10	5/17/2017 7:21:00 PM
trans-1,3-Dichloropropene	< 230	230	ug/m3	10	5/17/2017 7:21:00 PM
Trichloroethene	< 270	270	ug/m3	10	5/17/2017 7:21:00 PM
Vinyl acetate	< 180	180	ug/m3	10	5/17/2017 7:21:00 PM
Vinyl Bromide	< 220	220	ug/m3	10	5/17/2017 7:21:00 PM
Vinyl chloride	< 130	130	ug/m3	10	5/17/2017 7:21:00 PM
NOTES:					

^{*} The reporting limits were raised due to the high concentration of methane in the sample.

LOW LEVEL SULFURS BY TO-15		TO-15	;		Analyst: WD
1-Propanethiol	< 160	160	ug/m3	10	5/16/2017 6:45:00 PM
Carbon disulfide	< 160	160	սց/m3	10	5/16/2017 6:45:00 PM
Carbonyl sulfide	< 120	120	սց/m3	10	5/16/2017 5:45:00 PM
Dimethyl sulfide	< 190	190	ug/m3	10	5/16/2017 6:45:00 PM
Ethyl mercaptan	< 130	130	ug/m3	10	5/16/2017 6:45:00 PM
Hydrogen Sulfide	2100	70	սց/m3	10	5/16/2017 6:45:00 PM
isopropyl mercaptan	< 160	160	ug/m3	10	5/16/2017 6:45:00 PM
Methyl mercaptan	< 98	98	սց/m3	10	5/16/2017 6:45:00 PM

Qualifiers:

- Quantitation Limit
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ИĻ Non-routine analyte. Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected

Date: 22-Jun-17

- Ε Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- Not Detected at the Limit of Detection

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051719.D

Vial: 14 Operator: WD Acq On : 17 May 2017 7:21 pm Sample : C1705036-013A 10X Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: rteint.p

Quant Time: Jun 1 11:47 2017 Quant Results File: IO511T15.RES

Quant Method: C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title: VOA Standards for 5 point calibration
Last Update: Thu May 11 14:01:56 2017
Response via: Initial Calibration
DataAcq Meth: NEW1

Internal Standards	R.T.	QIon	Response Con	c Units	Bev(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9,95 12,18 16,48	128 114 117		dqq 00. dqq 00. dqq 00.	0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70	95 130	174839 38 Recovery	.01 ppb = 76	0.01
Target Compounds 2) Propylene 16) Acetone 23) Methylene Chloride 30) Hexane 62) Styrene	4.17 6.12 7.16 9.05 17.33	41 43 84 41 104	22675m ₩\ 7 2168m ₩ 1 6903 2	.27 ppb .96 ppb .11 ppb .01 ppb	, , , # 56

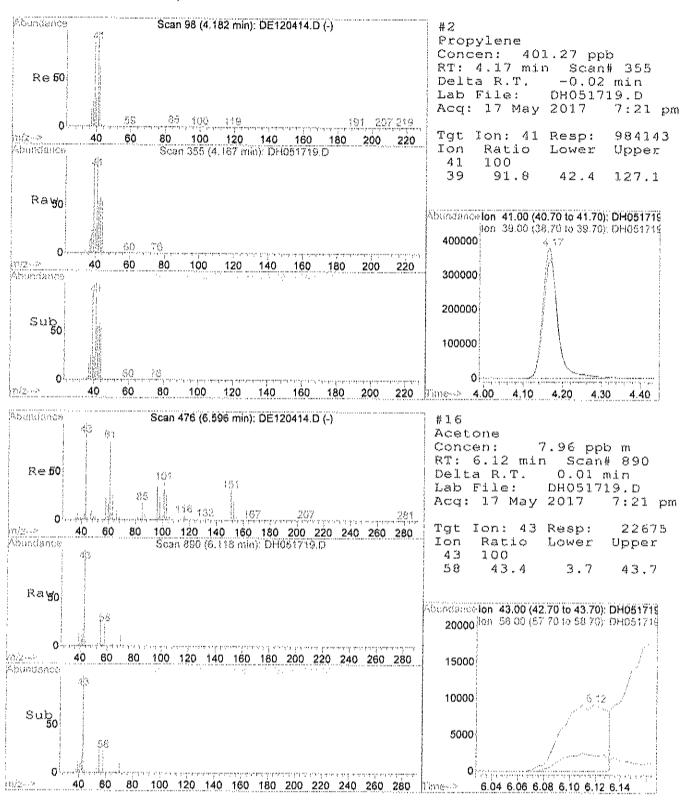
^{(#) =} qualifier out of range (m) = manual integrationDH051719.D T0511T15.M Thu Jun 01 11:52:22 2017

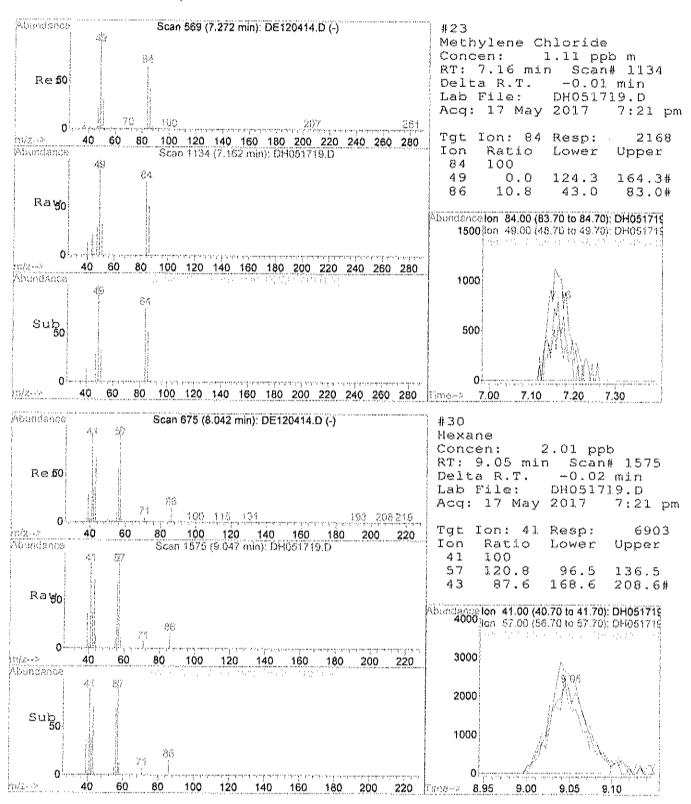
O

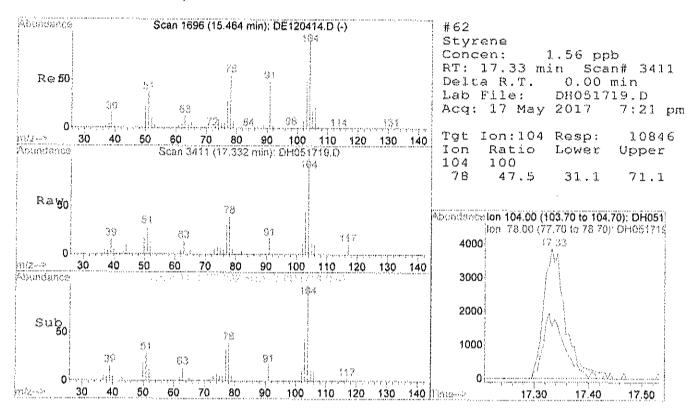
Page 384 of 572

Report

Quantitation







LSC Area Percent Report

Data File : C:\HPCHEM\I\DATA2\DH051719.D

Vial: 14 Acq On : 17 May 2017 7:21 pm Sample : C1705036-013A 10X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration

Smoothing : ON Sampling : 1 Start Thrs: 0.2 Min Area: 3 % of largest Peak Max Peaks: 100

Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >

Peak separation: 5

Signal : TIC

peak #	R.T.	first scan		last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.085	314	328	339	rBV	126800	307292	7.52%	3.117%
2	4.170	340	356	398	rVB4	1618845	4083926	100.00%	41.432%
3	4.376	416	424	439	rVB2	40925	83176	2.04%	0.844%
4	4.464	443	453	468	rVB2	62396	129131	3.16%	1.310%
5	4.649	501	514	527	xBV3	49982	116104	2.84%	1.178%
6	4.721	527	538	557	rVB3	93139	207833	5.09%	2.108%
7	5.682	775	788	803	rBV3	59646	159780	3.91%	1.621%
8	6.165	894	901	919	rVB3	45649	124357	3.05%	1.262%
9	6.661	1003	1017	1032	rBV3	46914	133982	3.28%	1.359%
10	7.696	1244	1259	1279	rBV3	88720	274563	6.72%	2.785%
	8.008	1307	1332	1359	rBV3	116197	512365	12.55%	5.198%
	8.504	1432	1448	1462	rBV4	13443	41644	1.02%	0.422%
	9.949	1769	1786	1815	rBV3	135245	577420	14.14%	5.858%
	12.177	2292	2307	2337	rBV	345442	1031117	25.25%	10.461%
	16.484	3239	3249	3267	rBV	471612	1120360	27.43%	11.366%
	17.342	3404	3413	3424	rBV5	16606	49988	1.22%	0.507%
	17.950	3520	3529	3543	rBV	418002	904011	22.14%	9.171%

Sum of corrected areas: 9857049

DH051719.D I0511T15.M Mon Jun 19 14:53:11 2017

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA2\DH051719.D

Operator : WD

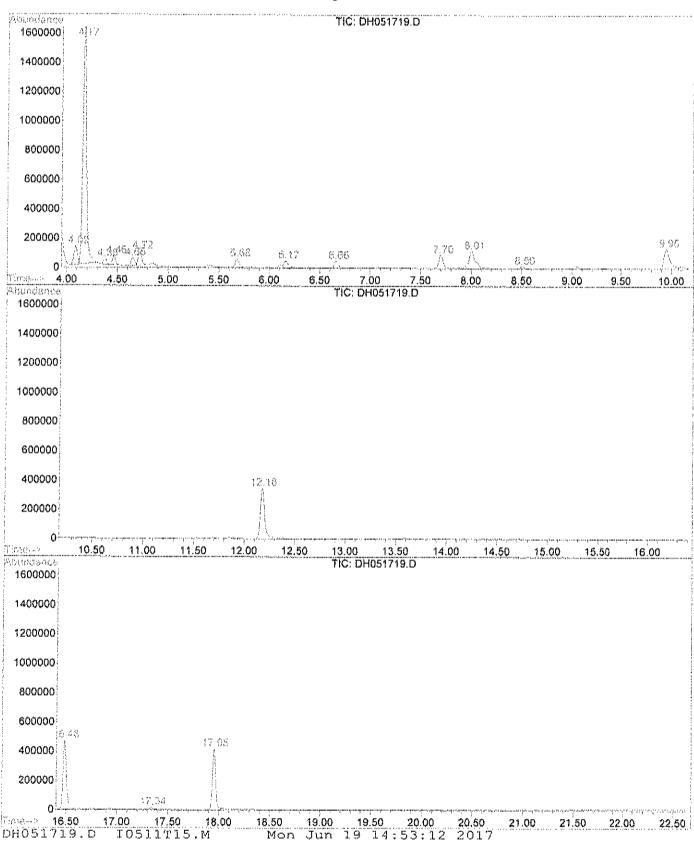
Acquired : 17 May 2017 7:21 pm using AcqMethod NEW1

Instrument: GCMS3

Sample Name: C1705036-013A 10X

Misc Info : TO15 Vial Number: 14

Quant File : IO511T15.RES (RTE Integrator)



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051719.D Vial: 14 Acq On : 17 May 2017 7:21 pm Operator: WD Sample : C1705036-013A 10X Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L ************* Peak Number l Hydrogen sulfide \$\$ Dihydrogen Concentration Rank R.T. EstConc Area Relative to ISTD _____ 4.09 26.61 ppb 307292 Bromochloromethane Hit# of 5 Tentative ID MW MolForm CAS# Qual l Hydrogen sulfide \$\$ Dihydrogen mono 34 H2S 8000 6000 4000 2000 3.80 4.00 4.20 4.40 m/z 32.90 38.4 0 5 10 15 20 25 30 35 40 45 50 My2--3žibentlance #20. Hydrogen sulfide \$\$ Dihydrogen monașulfide \$\$ Dihyd 8000 6000 4000 3.80 4.00 4.20 4.40 m/z 35.90 2000 0 5 10 15 20 25 30 35 40 45 Soundance 8000 6000 3.80 4.00 4.20 4.40 m/z 34.90 4000 31 2000 0 5 10 15 20 25 30 35 40 45 50 Abundance #19: Methane, fluoro- \$\$ Fluoromethane \$\$ Freon 41 \$\$ Me 3.80 4.00 4.20 4.40 Z 39.90 0.2 8000 m/z 6000 4000 2000 10 15 20 25 30 35 40 45 50 3.80 4.00 4.20 4.40

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051719.D Vial: 14 Acq On : 17 May 2017 7:21 pm Sample : C1705036-013A 10X Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L : C:\DATABASE\NIST129.L ****************** Peak Number 2 Ethane, 1-chloro-1,1-difluoro- Concentration Rank 9 R.T. EstConc Area Relative to ISTD 4.38 7.20 ppb 83176 Bromochloromethane Hit# of 5 Tentative ID MW MolForm CAS# Qual 1 Ethane, 1-chloro-1,1-difluoro- 100 C2H3C1F2 000075-68-3 74
2 Ethane, 1-chloro-1,1-difluoro- \$\$. 100 C2H3C1F2 000075-68-3 32
3 Propane, 2,2-difluoro- \$\$ Dimethyld 80 C3H6F2 000420-45-1 9
4 Propane, 2,2-difluoro- 80 C3H6F2 000420-45-1 4 2Nound smok 8000 6000 4000 2000 4.00 4.20 4.40 4.60 4.80 m/z 44.95 21.06% e nama tamamahayayninin ipordos erre dippyembria midepolitzikonma tilma 15 koorto kirosata hirosatalanoa. m/z10 20 30 40 50 60 70 80 90 100110120130140150160170180190200210 Soundance 8000 6000 4000 4.00 4.20 4.40 4.60 4.80 84.80 13.678 m/z2000 e iku e etan igalandi ganandigi (pilete militagi karanda mataka karantekini eten ini mata milita malala milita 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 Abundanses ing the second of the second o 8000 4.00 4.20 4.40 4.60 4.80 6000 m/z63.90 4000 4.5 2000 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 #467: Propane, 2,2-difluoro- \$\$ Dimethyldifluoromethane \$ l'Aburbiance CONTROL ON THE 4.00 4.20 4.40 4.60 4.80 m/z 80.80 4.574 ጸሰለሰ m/z 6000 4000 2000 apalaa yakan impekarahaja 121 makaan hii istamah rahiimah rahiimah kan sahaa ilmaa kan masa kan saha masa kan 12 - 53. 10 20 30 40 50 60 70 80 90 100110120130140150160170180190200210 4.00 4.20 4.40 4.60 4.80

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DHO51719.D Vial: 14 Acq On : 17 May 2017 7:21 pm Sample : C1705036-013A 10X Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L : C:\DATABASE\NIST129.L *************** Peak Number 3 Isobutane Concentration Rank 7 R.T. EstConc Area Relative to ISTD ____________ 4.46 ll.18 ppb 129131 Bromochloromethane 9.95 Hit# of 5 Tentative ID MW MolForm CAS# Qual 8000 6000 4000 2000 4.20 4.40 4.60 4.80 5 10 15 20 25 30 35 40 45 50 56 60 65 70 75 80 85 m/z 41.00 55.96% #106012, Isobutane 8000 6000 4000 4.20 4.40 4.60 4.80 2 42.00 32.88% 35 57 55 60 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 Absarance 8000 4.20 4.40 4.60 4.80 m/z 39.00 20.07% 6000 4000 2000 \$4 | 52 | 57 | 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 Administration #107: Isobutane \$\$ Propane, 2-methyl- \$\$ Trimethylmethane 4.20 4.40 4.60 4.80 m/z 57.00 5.86% 8000 6000 4000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 4.20 4.40 4.60 4.80

Library Search Compound Report

```
Data file : C:\HPCHEM\1\DATA2\DH051719.D
                                                                    Vial: 14
    Acq On : 17 May 2017 7:21 pm
                                                                Operator: WD
   Sample : C1705036-013A 10X
Misc : T015
                                                                Inst : GCMS3
                                                                Multiplr: 1.00
    MS Integration Params: LSCINT.P
   Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
   Title : VOA Standards for 5 point calibration
                  : C:\DATABASE\NIST129.L
               ****************
 Peak Number 4 1-Propene, 2-methyl-
                                                        Concentration Rank 8
                             Area Relative to ISTD
   R.T. EstConc
                             ________
                                          4.65 10.05 ppb
                          116104 Bromochloromethane
  Hit# of 5 Tentative ID
                                              MW Molform CAS# Qual
                                            56 C4H8 000115-11-7 86
56 C4H8 000115-11-7 76
56 C4H8 000115-11-7 72
56 C4H8 000287-23-0 49
    1-Propene, 2-methyl-
  2 1-Propene, 2-methyl-
3 1-Propene, 2-methyl- $$ Propene, 2-
  4 Cyclobutane Scan 514 (4.649 min): DH051719,D (-)
 Abundonde
    8000
                   75.63
    6000
    4000
    2000
                                                           4.40 4.60 4.80 5.00
m/z 39.00 64.61%
                       80 100 120 140 160 180 200 #107981 1-Propens 2-methyl-
               40
 4bandaoce
    8000
    6000
                  156
    4000
                                                              4.40 4.60 4.80 5.00
                                                          m/z 56.00 61.448
            22
    2000
        20 40 60 80 100 120 140 160 180
Abundance
    8000
                                                              4.40 4.60
   6000
                                                                      4.80 5.00
                                                          m/z 54.90
                                                                         25.668
   4000
   2000
                   60 80 100 120 140 160 180
              40
              #87; 1-Propene, 2-methyl- $$ Propene, 2-methyl- $$ .gamm
Aliborativa metuo
                                                              4.40 4.60 4.80 5.00
39.90 14.7
   8000
                                                                         14.70%
   6000
   4000
   2000
        1.6
20 40 60 80 100 120 140 160 180 200 4.40 4.60 4.80 5.00
```

Library Search Compound Report

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051719.D Vial: 14 Acq On : 17 May 2017 7:21 pm Operator: WD Sample : C1705036-013A 10X Misc : T015 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L : C:\DATABASE\NIST129.L **************** Peak Number 6 Butane, 2-methyl-Concentration Rank 5 Area Relative to ISTD R.T. EstConc 5.68 13.84 ppb 159780 Bromochloromethane 9.95 Hit# of 5 Tentative ID MW Molform CAS# Qual 1 Butane, 2-methyl- 72 C5H12 000078-78-4 86
2 Butane, 2-methyl- 72 C5H12 000078-78-4 78
3 Butane, 2-methyl- \$\$ iso-Pentane \$\$ 72 C5H12 000078-78-4 78
4 Propane, 1-chloro-2-methyl- 92 C4H9Cl 000513-36-0 39

Scan 787 (5.678 min): DH051719.D (-) m/2 43.00 100.008 8000 6000 4000 2000 5.40 5.60 5.80 6.00 m/z 41.00 93.76% or in an in contract of the contract by a straction and an action of the contract of the contr 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 Manustrans on #108269: Butane, 2-methyl-8000 6000 Barrier 1964 - 1964 - 1964 - 1964 - 1964 - 1964 - 1964 - 1964 - 1964 - 1964 - 1964 - 1964 - 1964 - 1964 - 1964 4000 5.40 5.60 5.80 6.00 m/z 41.95 83.8 83.87% 2000 15 70/2 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 8000 فيسيسسوهم والأسارات إدارت والمارة 5.40 5.60 5.80 6.00 m/z 57.00 55.22% 6000 m/z 57.00 4000 2000 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 #313: Butane, 2-methyl- \$\$ iso-Pentane \$\$ 1,1,2-Trimethyl Abundance وسيسيسهم فيحتث أبان بالراكان والمارات والراجات 5.40 5.60 5.80 6.00 m/z 39.00 32.92% 8000 6000 4000 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 5.40 5.60 5.80 6.00

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051719.D Vial: 14 Acq On : 17 May 2017 7:21 pm Operator: WD Sample : C1705036-013A 10X Misc : TO15 Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L : C:\DATABASE\NIST129.L ******************* Peak Number 7 1-Butene, 2-methyl-Concentration Rank 6 Area Relative to ISTD R.T. EstConc 6.66 11.60 ppb 133982 Bromochloromethane Hit# of 5 Tentative ID MW MolForm CAS# 1 1-Butene, 2-methyl- 70 C5H10 000563-46-2 91 2-Butene, 2-methyl- 70 C5H10 000513-35-9 91 3 2-Butene, 2-methyl- 70 C5H10 000513-35-9 90 4 2-Butene, 2-methyl- \$\$.beta.-Isoam 70 C5H10 000513-35-9 86 000513-35-9 86 000513-35-9 86 8000 6000 4000 70 20003 phone (2) 100 promoner, my most one 6.40 6.60 6.80 7.00 m/z 70.00 38.7 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 #108188 1-Butene, 2-methyl-8000 6000 والبوارات والمراوي والمنافي والموافقة لأراز والماكية والكسيد والتؤكر وكمورا والرابعة 4000 76 6.40 6.60 6.80 7.00 35.918 m/2 41.00 2000 51 i 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 Ástaumstavnica 8000 6,40 6.60 6.80 7.00 6000 m/z 39.00 4000 f(0)2.7 2000! 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 Abendance #108192: 2-Butene, 2-methyl-John James Harris Jakin Taling 6.40 6.60 6.80 7.00 8000 m/z 42.00 26.93% 6000 4000 70 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 6.40 6.60 6.80 7.00

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051719.D Vial: 14 Acq On : 17 May 2017 7:21 pm Sample : C1705036-013A 10X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L ************************ Peak Number 8 1-Pentene, 4-methyl-Concentration Rank 3 Area Relative to ISTD R.T. EstConc ______ 7.70 23.77 ppb 274563 Bromochloromethane Hit# of 5 Tentative ID MW MolForm CAS# Qual 1 1-Pentene, 4-methyl- 84 C6H12 000691-37-2 64
2 1-Pentene, 4-methyl- \$\$ 4-Methyl-1- 84 C6H12 000691-37-2 62
3 1-Pentene, 2-methyl- 84 C6H12 000763-29-1 53
4 1-Propene, 2-methyl- 56 C4H8 000115-11-7 49

Scan 1260 (7.700 min): DH051719.D (-) m/z 43.00 100.008 8000 6000 (543 39 4000 2000 7.40 7.60 7.80 8.00 42 60 53 S2 65 75 84 7.40 m/z 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 #108633: 1-Pantane, 4-methyl 8000 6000 4000 7.40 7.60 7.80 8.00 m/z 56.00 48.6 39||; 48.60% 75/2-- 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 Abundance 8000 7.40 7.60 7.80 8.00 2 42.00 38.89% 6000 m/z 42.00 4000 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 #108631; 1-Pentene, 2-methyl-7.40 7.60 7.80 8.00 m/z 38.90 36. 8000 36.87% 6000 4000 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 7.40 7.60 7.80 8.00

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA2\DH051719.D Vial: 14 Acq On : 17 May 2017 7:21 pm Sample : C1705036-013A 10X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration Library : C:\DATABASE\NIST129.L : C:\DATABASE\NIST129.L Peak Number 9 Pentane, 2-methyl- \$\$ Isohexan Concentration Rank 1 Area Relative to ISTD R.T. EstConc 8.01 44.37 ppb 512365 Bromochloromethane Hit# of 5 Tentative ID MW MolForm CAS# Oual ______ 1 Pentane, 2-methyl- \$\$ Isohexane \$\$ 86 C6H14 000107-83-5 90 2 Pentane, 2-methyl- 86 C6H14 000107-83-5 87 3 Pentane, 2-methyl- 86 C6H14 000107-83-5 87 4 Pentane, 2-methyl- 86 C6H14 000107-83-5 86 c6H14 000107-83-5 87 6 c6H14 000107-83-5 8 6 c6H14 000107-83-5 8 6 c6H14 000107-83-5 8 6 c6H14 000107-83-5 8 6 c6H14 000107-83-5 8 6 c6H14 000107-83-5 8 6 c6H14 000107-8 8000 6000 4000 2000 7.60 7.80 8.00 8.20 8.40 m/z 42.00 57.13% 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 #841: Pentane, 2-methyl- \$\$ Isohexane \$\$ 2-Methylpentane 8000 6000 4000 7.60 7.80 8.00 8.20 8.40 m/z 41.00 47.60% 39]] 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 8000 7.60 7.80 8.00 8.20 8.40 6000 m/z 71.00 4000 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 #108767: Pentane, 2-methyl-Abundanca 7.60 7.80 8.00 8.20 8.40 8000 39.00 m/z6000 4000 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 7.60 7.80 8.00 8.20 8.40

Tentatively Identified Compound (LSC) summary

Operator ID: WD Operator ID: WD Date Acquired: 17 May 2017 7:21 pm Data File: C:\HPCHEM\1\DATA2\DH051719.D

Name: C1705036-013A 10X

Misc: TO15

Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea :	ISConc
Hydrogen sulfide \$\$ Ethane, 1-chloro-1,1 Isobutane 1-Propene, 2-methyl- Butane Butane, 2-methyl- 1-Butene, 2-methyl- 1-Pentene, 4-methyl- Pentane, 2-methyl- \$\$	4.09 4.38 4.46 4.65 4.72 5.68 6.66 7.70 8.01	26.6 7.2 11.2 10.1 18.0 13.8 11.6 23.8 44.4	555 555 555 555 555 555 555 555 555 55	83176 129131 116104 207833 159780 133982 274563	ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1	9.95 9.95 9.95 9.95 9.95 9.95 9.95	577420 577420 577420 577420 577420 577420 577420 577420 577420	50.0 50.0 50.0 50.0
DH051719.8 T0511715	м	Mon Ju	n 10	7/1-53.20	2017			

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\I\DATA\DH051812.D Vial: 14 Operator: WD Acq On : 18 May 2017 3:15 pm Sample : C1705036-013A 80X Misc : TO15 Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: Jun 1 11:59 2017 Quant Results File: IO511T15.RES

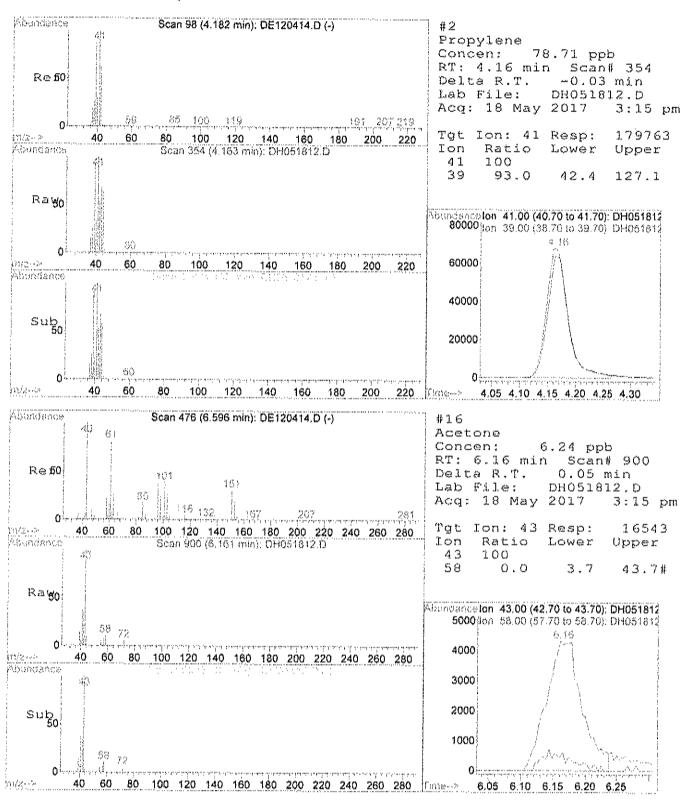
Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

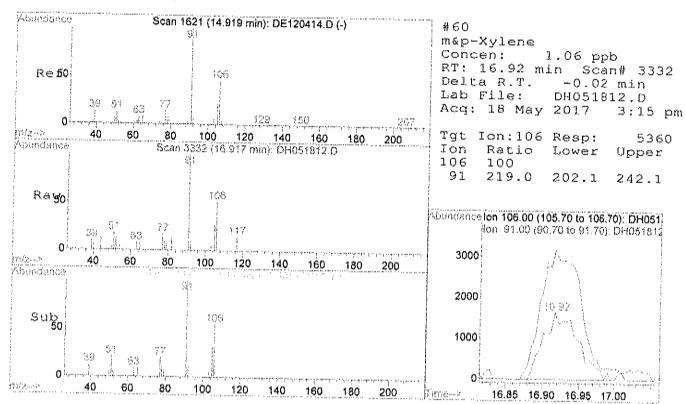
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Cone U	nits	Dev(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.95 12,18 16.49	128 114 117	70538 432921 337259	50.00 50.00 50.00	طوع	0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70	95 - 130	200404 Recove	41.89 ry =		
Target Compounds 2) Propylene 16) Acetone 60) m&p-Xylene	4.16 6.16 16.92	41 43 106	179763 16543 5360	78.71 6.24 1.06	dqq	Qvalue 91 # 52 98

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Quantitation Report





CH2M - St Louis

Lab Order:

C1705036

Project:

CLIENT:

Former Hampshire

Lab ID:

C1705036-014A

Date: 22-Jun-17

Client Sample ID: DUP-SV-050917

Tag Number: 614

Collection Date: 5/9/2017

Matrix: AIR

Lab ID: C1703030-014A										
Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed				
FIELD PARAMETERS		FL	D			Analyst:				
Lab Vacuum In	-4			"Hg		5/12/2017				
Lab Vacuum Out	-30			"Hg		5/12/2017				
FIXED GAS SERIES		EPA MET	HOD:	3C		Analyst: WD				
Carbon dioxide	0.0440	1.90	J	%	1	5/15/2017				
Carbon Monoxide	ND	0.880		%	1	5/15/2017				
Methane	33.9	0.580		%	1	5/15/2017				
Nitrogen	64.0	8.30		%	1	5/15/2017				
Oxygen	2.76	0.880		%	1	5/15/2017				
SPPB BY METHOD TO15		TO-	15			Analyst: WD				
1,1,1-Trichloroethane	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,1,2,2-Tetrachloroethane	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,1,2-Trichloroethane	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1.1-Dichloroethane	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,1-Dichloroethene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,2,4-Trichlorobenzene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,2,4-Trimethylbenzene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,2-Dibromoethane	< 50	50		рρόV	10	5/17/2017 7:56:00 PM				
1,2-Dichlorobenzene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,2-Dichloroethane	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,2-Dichloropropane	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM				
1,3,5-Trimethy/benzene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,3-butadiene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
1,3-Dichlorobenzene	< 50	50		ρρbV	10	5/17/2017 7:56:00 PM				
1,4-Dichlorobenzene	< 50	50		γσαq	10	5/17/2017 7:56:00 PM				
1,4-Dioxane	< 100	100		ppbV	10	5/17/2017 7:56:00 PM				
2,2,4-trimethylpentane	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
4-ethyltoluene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
Acetone	68	100	J	ppbV	10	5/17/2017 7:56:00 PM				
Allyl chloride	< 50	50		ppbV	10	5/17/2017 7:58:00 PM				
Benzene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
Benzyl chloride	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM				
Bromodichloromethane	< 50	50		Vdqq	10	5/17/2017 7:56:00 PM				
Bromoform	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
Bromomethane	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
Carbon disulfide	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
Carbon tetrachloride	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
Chlorobenzene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
Chloroethane	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				
Chloroform	< 50	50		ppbV	10	5/17/2017 7:56:00 PM				

Qualifiers:

- Quantitation Limit
- Analyte detected in the associated Method Blank 3
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Ë Estimated Value above quantitation range
- Analyte detected below quantitation limit j
- ND Not Detected at the Limit of Detection

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CLIENT: CH2M - St Louis

Lab Order:

C1705036

Former Hampshire

Project: Lab ID:

C1705036-014A

Date: 22-Jun-17

Client Sample ID: DUP-SV-050917

Tag Number: 614

Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TO-	15			Analyst: WD
Chloromethane	< 50	50		Vđqq	10	5/17/2017 7:56:00 PM
cis-1.2-Dichloroethene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
cis-1,3-Dichloropropene	< 50	50		∨dqq	10	5/17/2017 7:56:00 PM
Cyclohexane	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
Dibromochloromethane	< 50	50		Vđqq	10	5/17/2017 7:56:00 PM
Ethyl acetate	< 100	100		γdqq	10	5/17/2017 7:56:00 PM
Ethylbenzene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Freon 11	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Freon 113	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Freon 114	< 50	50		Vdqq	10	5/17/2017 7:56:00 PM
Freon 12	< 50	50		ppb∨	10	5/17/2017 7:56:00 PM
Heptane	< 50	50		Vdqq	10	5/17/2017 7:56:00 PM
Hexachioro-1,3-butadiene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Mexane	< 50	50		Vdqq	10	5/17/2017 7:56:00 PM
Isopropyl alcohol	< 50	50		Vdqq	10	5/17/2017 7:56:00 PM
m&p-Xylene	< 100	100		ppbV	10	5/17/2017 7:56:00 PM
Methyl Butyl Ketone	< 100	100		Vdqq	10	5/17/2017 7:56:00 PM
-	< 100	100		ppbV	10	5/17/2017 7:56:00 PM
Methyl Ethyl Ketone	< 100	100		ppbV	10	5/17/2017 7:56:00 PM
Methyl Isobutyl Ketone	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Methyl tert-butyl ether	< 50	50		Vđạq	10	5/17/2017 7:56:00 PM
Methylene chloride	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
o-Xylene	6100	400		ppbV	80	5/18/2017 3:50:00 PM
Propylene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Styrene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Tetrachioroethylene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Tetrahydrofuran	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Toluene	< 50 < 50	50		ppbV	10	5/17/2017 7:56:00 PM
trans-1,2-Dichloroethene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
trans-1,3-Dichloropropene	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Trichloroethene		50		ppbV	10	5/17/2017 7:56:00 PM
Vinyl acetate	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Vinyl Bromide	< 50	50		ppbV	10	5/17/2017 7:56:00 PM
Vinyl chloride	< 50	73,7-124		%REC	10	5/17/2017 7:56:00 PM
Surr: Bromofluorobenzene	76.9		DAT		10	5/17/2017 7:56:00 PM
TIC: 1-Pentene, 4-methyl-	240	0	JN	ppbV ppbV	10	5/17/2017 7:56:00 PM
TIC: 1-Propene, 2-methyl-	100		JN		10	5/17/2017 7:56:00 PM
TIC: Butane	170	0	NL.	ppbV ppbV	10	5/17/2017 7:56:00 PM
TIC: Butane, 2-methyl-	140	0	JN		10	5/17/2017 7:56:00 PM
TtC: Cyclopropane, 1,2-dimethyl-, trans-	120	0	JN	Aqdd	10	WATER TO LINE OF THE

Qualifiers:

- Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

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Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Client Sample ID: DUP-SV-050917

Lab Order:

C1705036

Tag Number: 614

Project:

Collection Date: 5/9/2017

Former Hampshire

Lab ID:

C1705036-014A

Matrix: AIR

Lab 1D: C1/03030-014A						
Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		TC	>-15			Analyst: WD
TIC: Ethane, 1-chloro-1,1-difluoro	73	0	ИL	ppbV	10	5/17/2017 7:56:00 PM
\$\$,alpha						
TIC: Hydrogen sulfide \$\$	940	Ö	JN	Vdqq	10	5/17/2017 7:56:00 PM
Dihydrogen monosulfi					4.6	5147/0647 7:55:00 DM
TIC: Isobutane	110	0	ЛV	ppb∨	10	5/17/2017 7:56:00 PM
TIC: Pentane, 2-methyl-	440	0	JN	Vdqq	10	5/17/2017 7:56:00 PM
NOTES:						
* The reporting limits were raised due to th	e high concentr	ation of meth	ane in ti	ne sample.		
LOW LEVEL SULFURS BY TO-15		то)-15			Analyst: WD
1-Propanethiol	< 50	50		Vdqq	10	5/16/2017 7:19:00 PM
Carbon disulfide	< 50	50		Vaqq	10	5/16/2017 7:19:00 PM
	< 50	50		ppb∨	10	5/16/2017 7:19:00 PM
Carbonyl sulfide	< 50	50		ppbV	10	5/16/2017 7:19:00 PM
Dirnethyl sulfide	< 50	50		ppbV	10	5/16/2017 7:19:00 PM
Ethyl mercaptan		*-			10	5/16/2017 7:19:00 PM
Hydrogen Sulfide	3900	50		ppbV		4
Isopropyl mercaptan	< 50	50		ppbV	10	5/16/2017 7:19:00 PM
Methyl mercaptan	< 50	50		Vdqq	10	5/16/2017 7:19:00 PM
Surr: Bromofluorobenzene	140	70-130	S	%REC	10	5/16/2017 7:19:00 PM

Qualifiers:

- Quantitation Limit
- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded í-i
- Non-routine analyte. Quantitation estimated. JN
- Spike Recovery outside accepted recovery limits
- Results reported are not blank corrected
- Estimated Value above quantitation range Ε
- Analyte detected below quantitation limit ĭ
- Not Detected at the Limit of Detection

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CH2M - St Louis

CLIENT: Lab Order:

C1705036

Project:

Former Hampshire

Lab ID:

C1705036-014A

Date: 22-Jun-17

Client Sample ID: DUP-SV-050917

Tag Number: 614

Collection Date: 5/9/2017

Matrix: AIR

Analyses	Result	**Limit Qua	Units	DF	Date Analyzed
SPPB BY METHOD TO15		TO-15			Analyst: WD
1,1,1-Trichloroethane	< 270	270	ug/m3	10	5/17/2017 7:56:00 PM
1,1,2,2-Tetrachloroethane	< 340	340	ug/m3	10	5/17/2017 7:56:00 PM
1,1,2-Trichloroethane	< 270	270	ug/m3	10	5/17/2017 7:56:00 PM
1,1-Dichloroethane	< 200	200	ug/m3	10	5/17/2017 7:56:00 PM
1,1-Dichloroethene	< 200	200	սց/m3	10	5/17/2017 7:56:00 PM
1,2,4-Trichlorobenzene	< 370	370	ug/m3	10	5/17/2017 7:56:00 PM
1,2,4-Trimethylbenzene	< 250	250	ug/m3	10	5/17/2017 7:56:00 PM
1,2-Dibromoethane	< 380	380	ug/m3	10	5/17/2017 7:56:00 PM
1,2-Dichlorobenzene	< 300	300	ug/m3	10	5/17/2017 7:56:00 PM
1,2-Dichloroethane	< 200	200	սց/m3	10	5/17/2017 7:56:00 PM
1,2-Dichloropropane	< 230	230	ug/m3	10	5/17/2017 7:56:00 PM
1,3,5-Trimethylbenzene	< 250	250	սց/m3	10	5/17/2017 7:56:00 PM
1,3-butadiene	< 110	110	ug/m3	10	5/17/2017 7:56:00 PM
1,3-Dichlorobenzene	< 300	300	սց/m3	10	5/17/2017 7:56:00 PM
1,4-Dichlorobenzene	< 300	300	ug/m3	10	5/17/2017 7:56:00 PM
1,4-Dioxane	< 360	360	սց/m3	10	5/17/2017 7:56:00 PM
2,2,4-trimethylpentane	< 230	230	ug/m3	10	5/17/2017 7:56:00 PM
4-ethyltoluene	< 250	250	ყ ყ/თ3	10	5/17/2017 7:56:00 PM
Acetone	160	240 J	ոā/ლვ	10	5/17/2017 7:56:00 PM
Allyl chloride	< 160	160	ug/m3	10	5/17/2017 7:56:00 PM
Benzene	< 160	160	սց/m3	10	5/17/2017 7:56:00 PM
Benzyl chloride	< 290	290	ug/m3	10	5/17/2017 7:56:00 PM
Bromodichloromethane	< 330	330	սց/m3	10	5/17/2017 7:56:00 PN
Bromoform	< 520	520	սց/m3	10	5/17/2017 7:56:00 PM
Bromomethane	< 190	190	ug/m3	10	5/17/2017 7:56:00 PM
Carbon disulfide	< 160	160	սց/m3	10	5/17/2017 7:56:00 PM
Carbon tetrachloride	< 310	310	ug/m3	10	5/17/2017 7:56:00 PN
Chlorobenzene	< 230	230	ug/m3	10	5/17/2017 7:56:00 PN
Chloroethane	< 130	130	ug/ភា3	10	5/17/2017 7:56:00 PM
Chloroform	< 240	240	ug/m3	10	5/17/2017 7:56:00 PA
Chloromethane	< 100	100	սց/m3	10	5/17/2017 7:56:00 PN
cis-1,2-Dichloroethene	< 200	200	ug/m3	10	5/17/2017 7:56:00 PM
cis-1,3-Dichloropropene	< 230	230	นg/กา3	10	5/17/2017 7:56:00 PN
Cyclohexane	< 170	170	ug/m3	10	5/17/2017 7:56:00 PN
Dibromochloromethane	< 430	430	ug/m3	10	5/17/2017 7:56:00 PM
Ethyl acetate	< 360	360	ug/m3	10	5/17/2017 7:56:00 PM
Ethylbenzene	< 220	220	սց/m3	10	5/17/2017 7:56:00 PN
Freon 11	< 280	280	ug/m3	10	5/17/2017 7:56:00 PM
Freen 113	< 380	380	ug/m3	10	5/17/2017 7:56:00 PM
Freon 114	< 350	350	սց/m3	10	5/17/2017 7:56:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- . Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

Page 27 of 28

Date: 22-Jun-17

CLIENT:

CH2M - St Louis

Client Sample ID: DUP-SV-050917

Lab Order:

C1705036

Tag Number: 614

Project:

Former Hampshire

Collection Date: 5/9/2017

C1705036-014A Lab ID:

Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
5PPB BY METHOD TO15		то	-15			Analyst: WD
Freon 12	< 250	250		սց/m3	10	5/17/2017 7:56:00 PM
Heptane	< 200	200		սց/m3	10	5/17/2017 7:56:00 PM
Hexachloro-1,3-butadiene	< 530	530		ug/m3	10	5/17/2017 7:56:00 PM
Hexane	< 180	180		ug/m3	10	5/17/2017 7:56:00 PM
Isopropyl alcohol	< 120	120		ug/m3	10	5/17/2017 7:56:00 PM
m&p-Xylene	< 430	430		ug/m3	10	5/17/2017 7:56:00 PM
Methyl Butyl Kelone	< 410	410		ug/m3	10	5/17/2017 7:56:00 PM
Methyl Ethyl Kelone	< 290	290		ug/m3	10	5/17/2017 7:56:00 PM
Methyl isobulyl Ketone	< 410	410		ug/m3	10	5/17/2017 7:56:00 PM
Methyl tert-butyl ether	< 180	180		ug/m3	10	5/17/2017 7:56:00 PM
Methylene chloride	< 170	170		£m\gu	10	5/17/2017 7:56:00 PM
o-Xylene	< 220	220		սց/m3	10	5/17/2017 7:56:00 PM
Propylene	10000	690		ug/m3	80	5/18/2017 3:50:00 PM
Styrene	< 210	210		ug/m3	10	5/17/2017 7:56:00 PM
Tetrachioroethylene	< 340	340		ug/m3	10	5/17/2017 7:56:00 PM
Tetrahydrofuran	< 150	150		սց/m3	10	5/17/2017 7:56:00 PM
Toluene	< 190	190		ug/m3	10	5/17/2017 7:56:00 PM
trans-1,2-Dichloroethene	< 200	200		ug/m3	10	5/17/2017 7:56:00 PM
trans-1,3-Dichloropropene	< 230	230		ug/m3	10	5/17/2017 7:56:00 PM
Trichloroethene	< 270	270		ug/m3	10	5/17/2017 7:56:00 PM
Vinyl acetate	< 180	180		ug/m3	10	5/17/2017 7:56:00 PM
Vinyl Bromide	< 220	220		ug/m3	10	5/17/2017 7:56:00 PM
Vinyl chloride	< 130	130		ug/m3	10	5/17/2017 7:56:00 PM
NOTES: The reporting limits were raised due to the	e high concentr	ation of metha	ane in th	ie sample.		
OW LEVEL SULFURS BY TO-15		TC)-15			Analyst: Wt
1-Propanethiol	< 160	160		ug/m3	10	5/16/2017 7:19:00 PM
Carbon disulfide	< 160	160		ug/m3	10	5/16/2017 7:19:00 PN
Carbonyl sulfide	< 120	120		ug/m3	10	5/16/2017 7:19:00 PM
Dimethyl sulfide	< 190	190		ug/m3	10	5/16/2017 7:19:00 PM
Ethyl mercaptan	< 130	130		ug/m3	10	5/16/2017 7:19:00 PN
Hydrogen Sulfide	5500	70		ug/m3	10	5/16/2017 7:19:00 PN
Isopropyl mercaptan	< 160	160		ug/m3	10	5/16/2017 7:19:00 PN
•						

Qualifiers:

Methyl mercaptan

< 98

10

Not Detected at the Limit of Detection

ug/m3

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5/16/2017 7:19:00 PM

Quantitation Limit

Analyte detected in the associated Method Blank В

Holding times for preparation or analysis exceeded Н

Non-routine analyte. Quantitation estimated.

Spike Recovery outside accepted recovery limits

Results reported are not blank corrected

 $[\]mathbf{E}$ Estimated Value above quantitation range

Analyte detected below quantitation limit J

Quantitation Report (QT Reviewed)

Vial: 15 Operator: WD Data File : C:\HPCHEM\1\DATA\DH051720.D Acq On : 17 May 2017 7:56 pm Sample : C1705036-014A 10X Misc : TO15 Inst : GCMS3

Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: Jun 1 11:49 2017 Quant Results File: 10511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

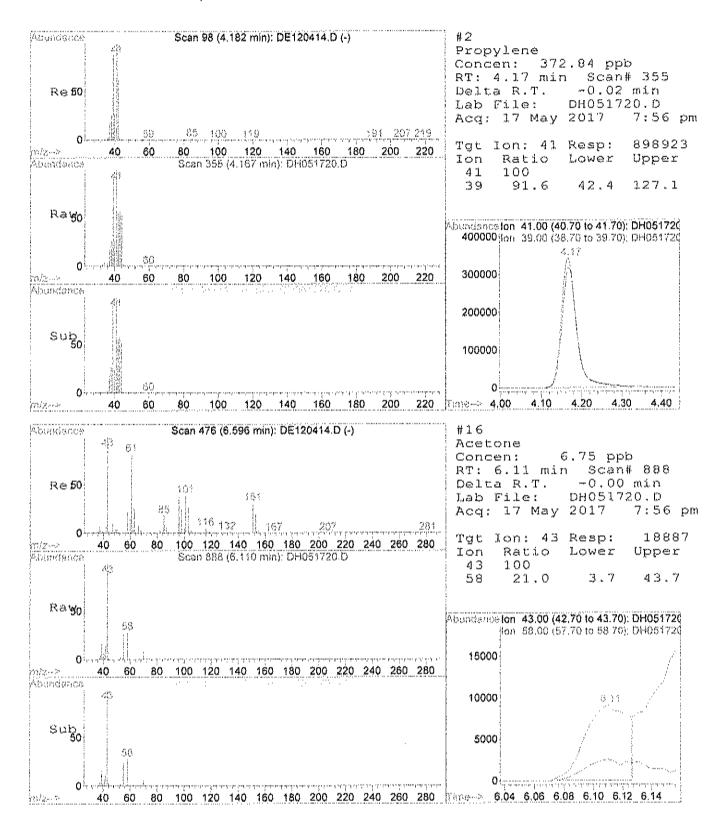
Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017 Response via : Initial Calibration DataAcq Meth : NEW1

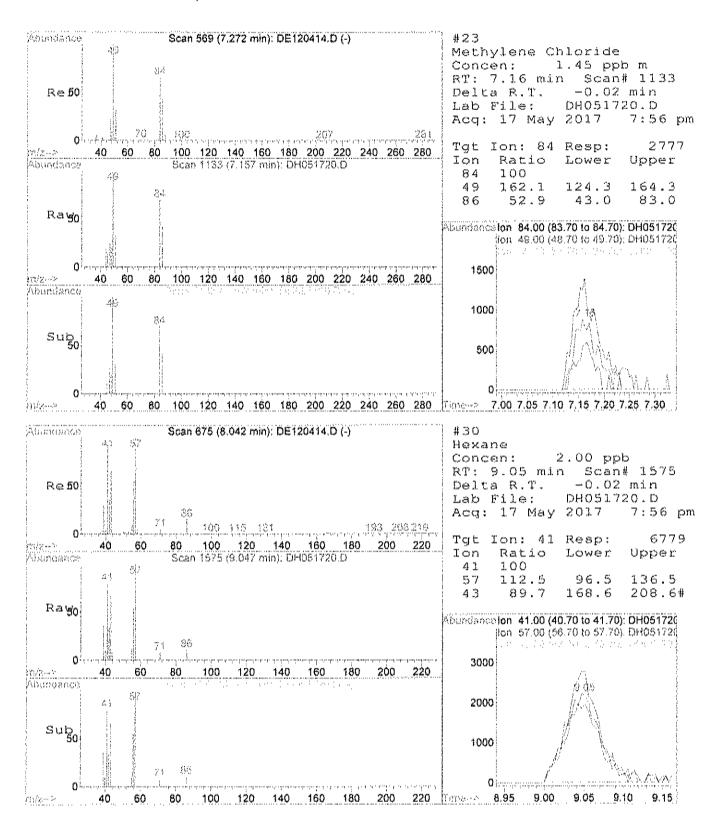
Internal Standards	R.T.	QIon	Response C	Conc Or	nits	Dev(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.95 12.18 16.48	128 114 117	74464m 4) 390360 321457	50.00 50.00 50.00	ppb	0.00 0.00 0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000		95 - 130	175445 Recovery			
Target Compounds						Qvalue
2) Propylene	4.17	41	898923 3	372.84		92
16) Acetone	6.11	43	18887	6.75		95
23) Methylene Chloride	7.16		2777m 41			12. E2. ***}
30) Hexane	9.05	41.	6779 9240	2.00 1.34		# 57 93
62) Styrone	17.33	104	32 4 C)	1	For For the	22

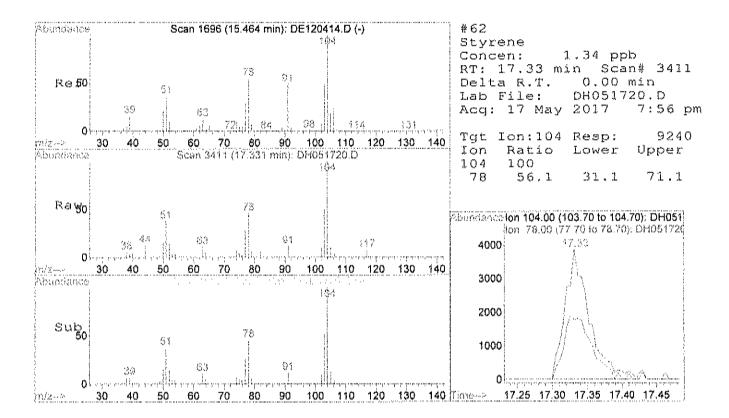
N

Page 410 of 572

Quantitation Report







LSC Area Percent Report

Data File : C:\HPCHEM\1\DATA2\DH051720.D
Acq On : 17 May 2017 7:56 pm
Sample : C1705036-014A 10X
Misc : T015 Vial: 15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: LSCINT.P

Method: C:\HPCHEM\1\METHODS\IOS11T15.M (RTE Integrator)Title: VOA Standards for 5 point calibrationSmoothing: ONFiltering: 5Sampling: 1Min Area: 3 % orStart Thrs:0.2Max Peaks: 100Stop Thrs:: OPeak Location: TOP Filtering: 5
Min Area: 3 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent > Peak separation: 5

Signal : TIC

peak	R.T.	first	max	last	PK	peak	corr.	comm.	% of
#	min	scan	scan	scan	TY	height	area	8 max.	total
							NAME AND PART AND ADDRESS OF THE		
:1	4.085	312	328	341	rBV	414793	1042742	28.178	10.330%
2 3	4.170	342	356	389	rVB3	1478236	3701804	100.00%	36.673%
3	4.379	416	425	440	rVB2	39784	81118	2.19%	0.804%
4	4.464	444	453	469	rVB2	60091	120475	3.25%	1.194%
5	4.651	500	515	526	rBV3	47460	110666	2.99%	1.096%
6	4.724	528	539	556	1: VB3	85079	193662	5.23%	1.919%
'7	5.404	712	723	7 37	rBV6	15595	51057	1.38%	0.506%
8	5.682	774	788	803	rBV2	56821	151091	4.08%	1.497%
9	6.114	877	889	892	rBV3	20651	42363	1.14%	0.420%
10	6.165	894	901	917	rVB2	42465	118000	3.19%	1.169%
3. 1.	6.661	1002	1017	1033	rBV2	44627	129015	3.49%	1.278%
12	7.704	1245	1261	1288	rBV3	86396	263900	フ、13%	2.614%
13	8.004	1306	1331	1357	rBV3	109758	486829	13.15%	4.823%
1.4	8,504	1435	1448	1460	rBV4	13015	38805	1.05%	0.384%
15	9.945	1770	1785	1811	rBV3	131578	554271	14.97%	5.491%
1.6	12.181	2293	2308	2328	rBV	339102	987090	26.67%	9.779%
1.7	16.483	3239	3249	3271	rВV	466352	1117453	30.19%	11.070%
18	17.949	3519	3529	3544	rBV	419588	903754	24.41%	8.953%

Sum of corrected areas: 10094095

DHO51720.D IOS11T15.M Mon Jun 19 14:55:31 2017

LSC Report - Integrated Chromatogram

F11c : C:\HPCHEM\1\DATA2\DH051720.D

Operator

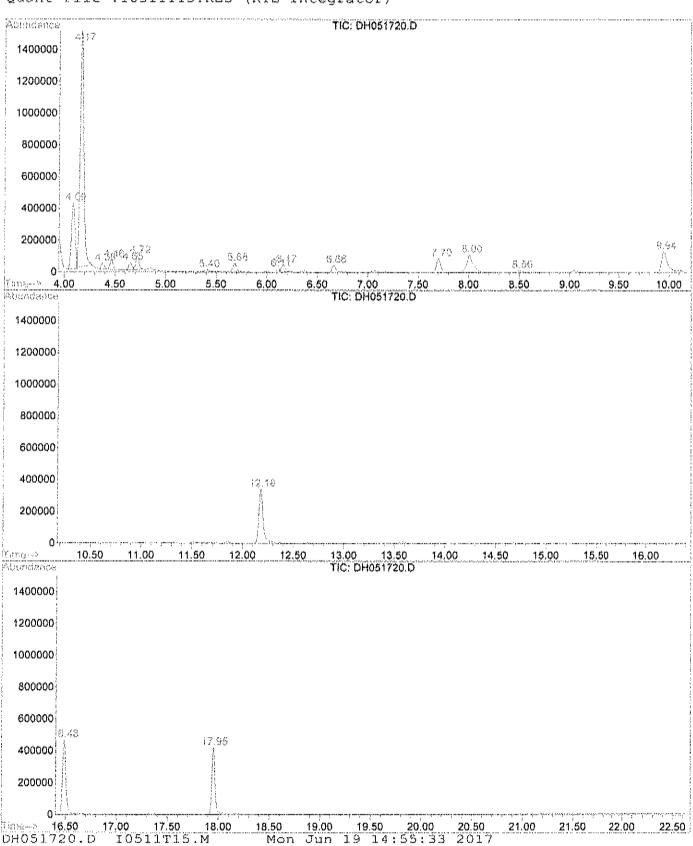
17 May 2017 GCMS3 7:56 pm using AcqMethod NEWl Acquired

Instrument :

Sample Name: C1705036-014A 10X

Misc Info : TO15 Vial Number: 15

Quant File : 10511T15.RES (RTE Integrator)



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Vial: 15 Data File : C:\HPCHEM\1\DATA2\DH051720.D : 17 May 2017 7:56 pm : C1705036-014A 10X Operator: WD Inst : GCMS3 Sample : TO15 Multiplr: 1.00 Misc MS Integration Params: LSCINT.P Ouant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L Peak Number 1 Hydrogen sulfide \$\$ Dihydrogen Concentration Rank 1 EstConc Area Relative to ISTD R.T. 4.09 94.06 ppb 1042740 Bromochloromethane 9.95 Hit# of 5 Tentative ID MW MolForm CAS# Oual 007783~06~4 83 1 Hydrogen sulfide \$\$ Dihydrogen mono 34 H2S 2 Phosphine \$\$ Hydrogen phosphide \$\$ 34 H3P 3 Methane, fluoro~ \$\$ Fluoromethane \$ 34 CH3F 4 2-Amino-5~chloropyrimidine \$\$ 2~Pyr 130 C4H5C1N3 007803-51-2 7 000593-53-3 3 005428-89-7 1 .../2 33.90 Scan 330 (4.091 min): DH051720.D (-) 100.00% 0000 6000 4000 2000 3,80 4.00 4.20 4.40 m/z 32.90 38.95% 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 #20. Hydrogen suffice SS Dihydrogen monosuffice SS Dihyd Minindance 8000 6000 3.80 4.00 4000 m/z 35.90 2000 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 Misundiana 8000 4.20 4.40 3.80 4.00 4 2 34.90 6000 m/24000 2000 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 #19: Methane, fluoro- \$\$ Fluoromethane \$\$ Freon 41 \$\$ Me History and Marson A service from the 3.80 4.00 4.20 4.40 48.00 8000 0.09% 6000 4000 2000 3.80 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 60 85 4.00

Library Search Compound Report

Data File : C:\APCHEM\1\DATA2\DH051720.D Vial: 15 Acq On : 17 May 2017 7:56 pm Sample : C1705036-014A 10X Operator: WD Inst : GCMS3 : TO15 Misc Multiplr: 1.00 MS Integration Params: LSCINT, P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L Library *********** Peak Number 2 Ethane, 1-chloro-1,1-difluoro- Concentration Rank 10 R.T. EstConc Relative to ISTD R.T. Area 81118 Bromochloromethane 7.32 ppb Hit# of S Tentative ID MW MolForm CAS# 1 Ethane, 1-chloro-1,1-difluoro- \$\$. 100 C2H3C1F2 000075-68-3 43 2 Propane, 1,1,2,2-tetrafluoro- 116 C3H4F4 3 Ethane, 1-chloro-1,1-difluoro- 100 C2H3C1F2 040723-63-5 43 3 Ethane, 1-chloro-1,1-dirluoro-4 Propane, 2,2-difluoro- \$\$ Dimethyld 80 C3H6F2 000420-45-1 \$ 000420-45-1 \$\$ m/2 64.90 100.008 000075-68-3 32 000420-45-1 9 8000 6000 4000 50. 2000 4.00 4.20 4.40 4.60 4.80 22.99% m/z 44.95 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 #1715: Ethane, 1-chloro-1,1-difluoro- \$5 ,alpha -Chloroeth Shundanco 8000 6000 4.60 4.80 4.20 4.00 4.40 4000 45 m/z84.85 14.49% 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 Algeria de la Arrico 8000 4.00 4.20 4.40 4.60 4.80 6000 86.90 5.41% 4000 2000 101 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 #109420; Ethane, 1-chloro-1,1-difluoro-4.00 4.20 4.40 4.60 4.80 4.88% 8000 80.80 m/z6000 4000 4.6 2000 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 4.00 4.20 4.40

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Data File : C:\HPCHEM\1\DATA2\DH051720.D Vial: 15 Acq On : 17 May 2017 7:56 pm Sample : C1705036-014A 10X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE integrator) Title : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L Peak Number 3 Isobutane Concentration Rank 7 R.T. EstConc Area Relative to ISTD R.T. 4.46 10.87 ppb 120475 Bromochloromethane 9.95 Hit# of 5 Tentative ID CAS# MW Molform Qual l Isobutane 58 C4H10 000075-28-5 64 2 Isobutane 58 C4H10 000075-28-5 64 2 Isobutane 3 (CH3)2CHCH2ONO \$\$ Isobuty1 nitrite 103 C4H9NO2 000542-56-3 25 4 Isobutane \$\$ Propane, 2-methyl- \$\$ 58 C4Hl0 000075-28-5 9 m/z 43.00 100.00% 8000 6000 4000 30 2000 4.20 4.40 4.60 4.80 33.36 47.50.53 57 64 80 5 10 15 20 25 30 35 40 45 50 55 60 66 70 75 80 85 m/2 41.00 49.17% #108012: Isobutane 8000 6000 4000 4.20 4.40 4.60 4.80 31.77% 42.00 2000 1.5 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 8000 4.20 4.40 4.60 4.80 39.00 22.3 6000 4000 27 2000 16 49 53 57 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 #2180: (CH3)2CHCH2ONO \$\$ Isobutyt nitrite \$\$ Nitrous acid, 413 4.20 4.40 4.60 4.80 56.90 8000 4.678 6000 4000 27 2000 er fine vega seviga kere fik erre fra i klag fil fik frå angen veganter efter vega anev grave myrenne myrenne m 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 4.20 4.40 4.60

Data File : C:\HPCHEM\1\DATA2\DH051720.D Vial: 15 : 17 May 2017 7:56 pm : C1705036-014A 10X Operator: WD Aca On Inst : GCMS3 Sample TOIS Multiplr: 1.00 Misc MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator) : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L Peak Number 4 1-Propene, 2-methyl-Concentration Rank 9 R.T. EstConc Relative to ISTD Area 4.65 9.98 ppb 110666 Bromochloromethane Hit# of 5 Tentative ID CAS# MW MollEgron 1 1-Propene, 2-methyl-56 C4H8 000115-11-7 87 2 1-Propene, 2-methyl-000115-11-7 68 56 C4H8 3 2-Butene \$\$.beta.-Butene \$\$.beta. 56 C4H8 000107-01-7 59 56 C4H8 000106-98-9 52 m/2 40.95 100.00% Scan 515 (4.651 min): DH051720.D (-) Moundance 8000 36 6000 4000 2000 4.40 4.60 4.80 5.00 m/z 56.00 57.48% 80 100 120 140 160 180 Abundence #107981, 1-Propene, 2-methyl-8000 6000 4000 4.40 4.60 4.80 5.00 m/z = 38.952000 20 40 60 80 100 120 140 160 180 200 Albertanon 8000 4.40 4.60 4.80 5.00 55.00 25.2 6000 4000 2000 27 40 60 80 100 120 140 160 180 200 #85; 2-Butene \$\$.beta.-Butene \$\$.beta.-Butylene \$\$ Pse ារាក្សពេញមានប្រ 4.40 4.60 4.80 5.00 8000 m/z53.00 9.56% 6000 4000 2000 15 4.40 4.60 60 80 100 120 140 160 180 200 4.80 5.00

Library Search Compound Report

Vial: 15 Data File : C:\APCHEM\1\DATA2\DH051720.D Acq On : 17 May 2017 7:56 pm Sample : C1705036-014A 10X Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L Library ****************** Peak Number 5 Butane Concentration Rank 4 Area Relative to ISTD R.T. EstConc 4.72 17.47 ppb 193662 Bromochloromethane Hit# of 5 Tentative ID MW Molform CAS# Qual 58 C4H10 000106-97-8 72 2 Butane \$\$ n-Butane \$\$ Diethyl \$\$ Fr | 58 C4H10 | 000106-97-8 64 3 1-Propen-2-ol, acetate \$\$ Isopropen 100 C5H8O2 000108-22-5 50 4 1-Propen-2-ol, acetate 100 C5H8O2 000108-22-5 9 000108-20-5 9 000108-20-5 9 000108-20-5 9 000108-20-5 9 000108-20-5 9 4 1-Propen-2-ol, acetate

onadence Scan 538 (4.721 min): DH051720.D (-) m/z 43.00 100.00% 8000 6000 4000 2000 4.40 4.60 4.80 5.00 41.00 31.36% m/z10 20 30 40 50 60 70 80 90 100110120130140150160170180190200210 Abunilanca #108014; Sutone 8000 6000 4000 4.40 4.60 4.80 5.00 58.00 2000 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 Edgungtarkus 8000 4.40 4.60 4.80 5.00 6000 38.95 4000 2000 10 20 30 40 50 60 70 80 90 100110120130140150160170180190200210 #1778: 1-Propen-2-ol, acetate \$\$ Isopropenyl acetate \$\$ Pr 4.40 4.60 4.80 5.00 41.95 8000 12.45% m/z 6000 4000 2000 10 20 30 40 50 60 70 80 90 100110120130140150160170180190200210 4.40 4.60 4.80 5.00

Data File : C:\HPCHEM\1\DATA2\DH051720.D Vial: 15 Acq On : 17 May 2017 7:56 pm Sample : C1705036-014A 10X Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L ****************** Peak Number 6 Butane, 2-methyl-Concentration Rank Area Relative to ISTD R.T. EstConc 151091 Bromochloromethane 5.68 13.63 ppb 9.95 Hit# of 5 Tentative ID MW MolForm l Butane, 2-methyl-72 C5H12 000078-78-4 90 2 Butane, 2-methyl- \$\$ iso-Pentane \$\$ 72 C5H12 000078-78-4 78 72 C5H12 000078-78-4 74 3 Butane, 2-methyl-4 1-Butene 56 C4H8 000106-98-9 10 m/z 43.00 Scan 788 (5.682 min): DH051720.D (-) Adolanei a noce 100.00% 8000 87 6000 4000 39 2000 5.40 5.60 5.80 6.00 50 80 ; m/z 41.00 89.65% 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 #105269. Butane, 2-methyl-8000 67 6000 and a second control of the first of the control of the control of the control of the control of the control of 4000 5.40 5.60 5.80 6.00 m/z 42.00 85.25% 15 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 talian Parana a a en tempe 8000 5.40 5.60 5.80 6.00 m/2 57.00 61.4 6000 61.44% 29 67 4000 39 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 #108270: Butane, 2-methyl-5.40 5.60 5.80 6.00 8000 m/z 39.00 28.12% 6000 257 4000 39 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 5,40 5,60 5.80 6,00

Data File : C:\HPCHEM\1\DATA2\DH051720.D Acg On : 17 May 2017 7:56 pm Sample : C1705036-014A 10X Misc : TO15 Vial: 15 Operator: WD Inst : GCMS3 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method: C:\HFCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for S point calibration : C:\DATABASE\NIST129.L Peak Number 7 unknown Concentration Rank 8 R.T. EstConc Area Relative to ISTD R.T. ______ 6.17 10.64 ppb 118000 Bromochloromethane 9.95 Hit# of 5 Tentative ID CAS# MW Molform Qual 1 Butane, 2-methyl-72 C5H12 000078-78-4 56 2 Butane, 2-methyl-72 CSH12 000078-78-4 9 72 C5H12 000109-66-0 9 3 Pentane 4 3-Buten-1-ol \$\$ Allylcarbinol \$\$ 1- 72 C4H8O 000627-27-0 m/z 43.00 100.00% 000627-27-0 7 8000 6000 4000 2000 5.80 6.00 6.20 6.40 6.60 42.00 m/z 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 #108270: Butane, 2-methyl-8000 6000 5.80 6.00 6.20 6.40 4000 58.97% m/z 41.00 39 2000 15 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 8000 5.80 6.00 6.20 6.40 6.60 6000 m/z57.00 4000 2000 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 #108268; Pontane Abundance 5.80 6.00 6.20 6.40 6.60 8000 39.00 6000 4000 2000 Hhamis 52 ph. - processor of the congret | Sign - Spect - Spect - Spe \$372-0 5 10 15 20 26 30 35 40 45 50 55 60 65 70 75 80 5.80 6.00 6.20 6.40 €

Vial: 15 Data File : C:\HPCHEM\l\DATA2\DH051720.D : 17 May 2017 7:56 pm Operator: WD : C1705036-014A 10X Inst : GCMS3 Sample : TO15 Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L ******* Peak Number 8 Cyclopropane, 1,2-dimethyl-, t Concentration Rank Relative to ISTD R.T. EstConc \mathbb{R} . \mathbb{T} . Area 6.66 11.64 ppb 129015 Bromochloromethane Hit# of 5 MW MolForm Tentative ID 1 Cyclopropane, 1,2-dimethyl-, trans- 70 C5H10 2 Cyclopropane, 1,2-dimethyl-, cis- 70 C5H10 002402-06-4 91 000930-18-7 91 70 C5H10 000563-46-2 90 3 1-Butene, 2-methyl-70 C5H10 70 C5H10 000513-35-9 90 4 2-Butene, 2-methylm/z 55.00 100.00% Scan 1017 (6.661 min); DH051720.D (-) Maundance 8000 6000 3965 4000 2000 6.40 6.60 6.80 7.00 516365⁶⁷ 70.00 m/z 35 40 45 50 55 60 65 70 75 80 #108189. Cyclopropane, 1,2-dimethyl-, trans-8000 6000 6.40 6.60 6.80 4000 37.36% 38.90 40 2000 Marie de la competencia del competencia del competencia de la competencia del competencia del competencia de la competencia del co 40 45 50 60 65 70 75 80 Aprinceance Theregone is a 8000 6.40 6.60 6.80 7.00 41.00 35.7 6000 4000 2000 4991 سمستكسدهم شاراتك مشههيره أشاده فافراقه المعادي والمداكرة 50 40 45 55 #108188: 1-Butene, 2-methylohundanon 6.40 6.60 6.80 7.00 m/z 42.00 26.5 26.50% 8000 6000 4000 2000 80 6.40 6.60 6.80 7.00 kti//a--> 20 25 30 35 40 45 50 55 60 65 70 75

Vial: 15 Data File : C:\HPCHEM\1\DATA2\DH051720.D Acq On : 17 May 2017 7:56 pm Operator: WD : C1705036-014A 10X Inst : GCMS3 Sample : TO15 Multiplr: 1.00 Misc MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator) : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L **************** Concentration Rank 3 Peak Number 9 1-Pentene, 4-methyl-Relative to ISTD R.T. EstConc Area 263900 Bromochloromethane 7.70 23.81 ppb CAS# Hit# of 5 Tentative ID MW MolForm Oual 000691-37-2 91 l l-Pentene, 4-methyl-84 C6H12 84 C6H12 000691-37-2 91 2 1-Pentene, 4-methyl- \$\$ 4-Methyl-1-002769-64-4 50 83 C5H9N 56 C4H8 3 Butane, 1-isocyano-000115-11-7 38 4 1-Propene, 2-methylm/z 43.00 100.00% Scan 1260 (7.700 min); DH051720.D (-) 8000 6000 39. 4000 2000 7.40 7.60 7.80 8.00 Z 41.00 92. .50 ⁵³ | ... TW The real of the second value. m/z 92.64% 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 #108633: 1-Pentene, 4-methyl-400 8000 6000 7.40 7.60 7.80 8.00 m/z 56.00 54. 4000 54.15% 3889 2000 300 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 Spendance 8000 7.40 7.60 7.80 /2 38.90 6000 41.22% m/z88 4000 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 #108542: Butane, 1-isocyano-Abundance 7.40 7.60 7.80 8.00 42.00 m/z8000 6000 4000 75.5% 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 7.40 7.60 7.80 8.00

Vial: 15 Data File : C:\HPCHEM\1\DATA2\DH051720.D Operator: WD Acq On : 17 May 2017 7:56 pm : C1705036-014A 10X : T015 Inst : GCMS3 Sample Multiplr: 1.00 MS Integration Params: LSCINT.P Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator) Title : VOA Standards for 5 point calibration : C:\DATABASE\NIST129.L ************************************** Concentration Rank 2 Peak Number 10 Pentang, 2-methyl-Area Relative to ISTD н.т. R.T. EstConc 8.00 43.92 ppb 486829 Bromochloromethane CAS# MW Molform Hit# of 5 Tentative ID 1 Pentane, 2-methyl- 86 C6H14 000107-83-5 86
2 Pentane, 2-methyl- 86 C6H14 000107-83-5 86
3 Pentane, 2-methyl- \$\$ Isohexane \$\$ 86 C6H14 000107-83-5 83
4 Butane, 2,3-dimethyl- \$\$ Biisopropy 86 C6H14 000079-29-8 58

| Scan 1330 (7.999 min): DH051720.D (-) | m/z 43.00 100.00% 8000 6000 4000 2.0 7.60 7.80 8.00 8.20 8.40 m/z 42.00 57.40% 2000 m/z 42.00 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 #108767, Pentane, 2-methyl-8000 6000 7,60 7.80 8.00 8.20 8.40 4000 41.00 m/22000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 Abundanne 8000 7.60 7.80 8.00 8.20 8.40 6000 71.00 4000 2000 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 #841; Pentane, 2-methyl- \$\$ isohexane \$\$ 2-Methylpentane 7,60 7.80 8.00 8.20 8.40 39.00 20.74% m/2 0008 6000 4000 2000 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 7.60 7.80 8.00 8.20 8.40

Tentatively Identified Compound (LSC) summary

Operator ID: WD Date Acquired: 17 May 2017 7:56 pm Data File: C:\HPCHEM\1\DATA2\DH051720.D

Name: C1705036-014A 10X Misc: T015

Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title: VOA Standards for 5 point calibration

Library Searched: C:\DATABASE\NIST129.L

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	
Hydrogen sulfide \$\$ Ethane, 1-chloro-1,1 Isobutane 1-Propene, 2-methyl- Butane Butane, 2-methyl- unknown Cyclopropane, 1,2-di 1-Pentene, 4-methyl- Pentane, 2-methyl-	4.09 4.465 4.652 5.667 6.70 8.00	94.1 7.3 10.9 10.0 17.5 13.6 10.6 11.6 23.8 43.9	ppb ppb ppb ppb ppb ppb	120475 110666 193662 151091 118000 129015 263900	ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1 ISTDO1	9.95	554271 554271 554271 554271 554271 554271 554271 554271 554271	50.0
pH051720.D 10511T15	_ M	Mon Ju	ın 19	14:55:50	2017			

Quantitation Report (QT Reviewed)

Vial: 15 Operator: WD Data File : C:\HPCHEM\1\DATA\DH051813.D Acq On : 18 May 2017 3:50 pm Sample : C1705036-014A 80X Misc : TO15 Inst : GCMS3 Multiplr: 1.00

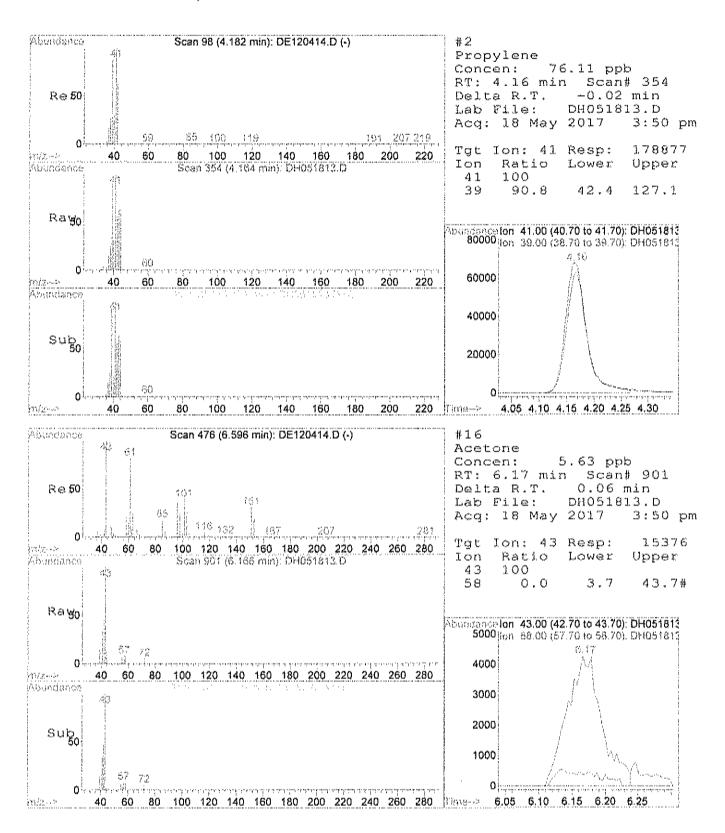
MS Integration Params: rteint.p Quant Results File: IO511T15.RES Quant Time: Jun 1 12:01 2017

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc U	nits	Dev(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.95 12.18 16.48	128 114 117	72585m ¹ 396415 313648	ديگ 50.00 50.00 50.00	dqq	0.00 0.00 0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70		171012 Recove			
Target Compounds 2) Propylene 16) Acetone	4.16 6.17	41 43	178877 15376	76.11 5.63	dqq	Qvalue 93 # 52

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Quantitation Report



GC/MS VOLATILES-WHOLE AIR

METHOD TO-15 STANDARDS DATA

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15 INITIAL CALIBRATION

Response Factor Report GCMS3

Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017 Response via : Initial Calibration

Calibration Files

=DH051109.D 10 =DH051106.D 75 =DH051109.D -DH051108.D 25 =DH051107.D =DH051108.D 25 ∞DH051105.D 100 50 ≈DH051104.D

	Compound	5	10	25	50	75	100	Avg	&RSD
1) I 1) 34) 56) 78) 01123) 1156) 1123 1156) 1122 1222 1233 1333 1333 1333	Bromochloromethane Propylene Freon 12 Freon 114 Chloromethane Acetaldehyde Vinyl Chloride Butane 1,3-butadiene Bromomethane Chloroethane Ethanol Vinyl Bromide Freon 11 Acrolein Acetone Pentane Isopropyl alcohol 1,1-Dichloroethene Freon 113 t-butyl alcohol Allyl chloride Methylene Chloride Carbon disulfide trans-1,2-dichloroe methyl tert-butyl e Vinyl acetate 1,1-Dichloroethane Methyl Ethyl Ketone Hexane cis-1,2-dichloroeth Ethyl acetate Chloroform Tetrahydrofuran	1.983734 9837334 5.15167996 02.201.64972335516 1.1516972335516 1.1516972335516 1.151697233324 1.16179335516 1.1617933324 1.161793324 1.161793324 1.161793324 1.16179324 1.1		1.5749 4.5749 5.4896761.058761.0587001.0587001.0587001.058001392007997050139210021.0561340021.0561340021.0561340021.0561320021.0561200021.0561200021.0561200000000000000000000000000000000000	- 1.42591279688995024093277223691889502440932772236918895037422369183599601.0001.0001.0002331232444302103210321032103210321032	1.39725374053740537405371950041840537440537195004184481 1.001.3762753740537195062888184420532122321324428021032	1.489 4.054 5.124 0.3615 1.6847 1.0.6847 1.0.7644 1.0.7644 1.425 1.925 1.935 1.925 1.335 1	1.619344477671527911065463396534447767152791106339633953834983325412325422543021032	
		2.548 4.414 2.542 6.811 4.463	2.235 4.031 2.283 6.266 4.104	2.268 3.684 2.248 5.693 3.847	2.170 3.567 2.200 5.455 3.720	2.081 3.373 2.102 5.241	2.151 3.460 2.194 5.393 3.796	2.242 3.755 2.262 5.810 3.925	
40) I 41) 42) 43) 44) 45) 46) 47) 48) 49) 51) 52) 53)	1,4-difluorobenzene 2,2,4-trimethylpent Heptane Trichloroethene 1,2-Dichloropropane Methyl methacrylate 1,4-dioxane Bromodichloromethan Methyl Isobutyl Ket cis-1,3-Dichloropro trans-1,3-Dichlorop 1,1,2-Trichloroetha Toluene Methyl Butyl Ketone Dibromochloromethan	2.122 0.816 0.421 0.507 0.493 0.245 0.848 0.978 0.567 0.451 0.518 0.873	1.654 0.652 0.375 0.402 0.430 0.203 0.672 0.792 0.496 0.389 0.430 0.701 0.600	1.710 0.672 0.399 0.410 0.502 0.706 0.856 0.560 0.479 0.457 0.715	-ISTD- 1.663 0.647 0.399 0.396 0.501 0.699 0.826 0.567 0.500 0.443 0.713	1.553 0.605 0.376 0.365 0.477 0.192 0.660 0.784 0.538 0.482 0.428 0.665 0.690	1.596 0.628 0.373 0.494 0.197 0.681 0.550 0.556 0.435 0.683 0.734	1.716 0.670 0.392 0.409 0.483 0.209 0.711 0.843 0.546 0.468 0.452 0.725 0.694	12.00 11.23 4.49 12.50 5.65 8.98 9.72 8.42 4.97 9.21 7.55 10.36 6.94 7.60

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Response Factor Report GCMS3

Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017 Response via : Initial Calibration

	Compound	5	10	25	50	75	100	Avg	%RSD
55) 56)	Tetrachloroethylene 1,2-dibromoethane	0.494 0.602	0.409 0.508	0.440 0.578	0.459 0.596	0.451 0.573	0.474 0.596	0.455 0.575	6.45 6.06
57) I 58) 59) 61) 62) 64) 65) 66) 772) 774) 775) 778) 790)	Chlorobenzene-d5 Chlorobenzene Ethylbenzene m&p-Xylene Nonane Styrene o-xylene Bromoform 1,1,2,2-Tetrachloro Cumene Bromofluorobenzene Propylbenzene 2-Chlorotoluene 4-ethyltoluene 1,3,5-trimethylbenz 1,2,4-trimethylbenz 1,3-dichlorobenzene benzyl chloride 1,4-dichlorobenzene 1,2,3-Trimethylbenz 1,2-dichlorobenzene 1,2,4-trichlorobenzene 1,2,4-trichlorobenzene 1,2,4-trichlorobenzene 1,2,4-trichlorobenzene 1,2,4-trichlorobenzene	0.893 0.809 1.714 0.791 0.483 0.865	1.041 0.567 0.700 1.900 1.995 1.965 0.4486 0.4486 0.6619 1.3680 0.6619 0.415 0.415 0.751		-ISTD- 1.123 0.609 0.763 1.136 1.596 1.597 1.747 0.5524 1.7743 0.5524 1.791 0.983 1.905 1.905 1.905 1.102 1.026	1.033 0.5613 1.0563 1.068 1.479 0.837 1.0143 0.7553 1.9753 1.9753 1.9753 0.1227 0.1227 0.1270 1.9758	1.042 0.572 0.738 1.065 1.124 1.540 0.893 1.070 2.098 0.763 2.603 0.517 2.0734 1.077 1.077 1.077 1.077 1.077	2.105 0.752 1.1070 1.6028 1.0700 1.0700 1.0709 1.709 1.709 1.709 1.768 1	8.20 7.15 9.77 9.130 8.336 8.336 10.382 10.382 10.888 12.095 12.095 13.884 14.80 15.884 16.195

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051104.D
Acq On : 11 May 2017 10:08 am
Sample : DSTD100_TO15
Misc : TO15 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: May 11 11:48 2017

Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 11:45:50 2017
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\DH051106.D
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc U	nits	D⊚v	(Min)
1) Bromochloromethane	9,95	328	126048	50 00	ncb		0.00
40) l,4-difluorobenzene	12.19	3, 1, 4	715839	50.00	ppb		0.00
40) 1,4-difluorobenzene 57) Chlorobenzene-dS	16.48	1, 1, 7	635035	50.00	dqq		0.00
System Monitoring Compounds							
67) Bromofluorobenzene							0.00
Spiked Amount 50.000	Range 70	- 130	Recove	гУ Ж	102.	.12%	
Parget Compounds						Qva	alue
2) Propylene	4.17	41	375310	99.49	qqq		85
3) Freon 12	4.23	85	1022035 1291806 430967	95.29	qqq		98
4) Freon 114	4.44	88	1291806	108.13	add		88
5) Chloromethane	4.44	50	430967	122.92	ppp		86
6) Acetaldehyde	4.65	44	91529	109.23	ppp		94
7) Vinyl Chloride	4.64	62	405801	105.41	ppb		98
8) Butane	4.74	43	405801 465204 270677	113.98	ppp		94
9) 1,3-butadiene	4.75	54	270677	105.70	qqq		86
10) Bromomethane	5.11	94	358127	96.77	ppp		100
11) Chloroethane	5.29	64	358127 200291 162391	93.71	ppp		98
12) Ethanol	5.11 5.29 5.41 5.63 5.91	45	162391	94.92	مطط		94
13) Vinyl Bromide	5.63	106	312751 989444 134757	92.90	aqq		100
14) Freon 11	5.91	1.03	989444	97.64	ppp		100
15) Acrolein	6.00	56	134/5/	87.30	ppp		97
16) Acetone 17) Pentane	6.10	4.3	486817 965865 741169	95.90	ppp		72
	6.19 6.21	4.3	900000	99.51	bbb	ш	92
18) Isopropyl alcohol	0.21	45	741703	97.71	ppp	#	1
19) 1,1-Dichloroethene	0.09	96	314463	93.60	ppp		92
20) Freon 113 21) t-butyl alcohol 22) Allyl chloride	6.04	101 59	713653 874093	95.25 92.52	ppp		96
21) t-butyl alcohol 22) Allyl chloride 23) Methylene Chloride 24) Carbon disulfide	0.94	41	587452	200 01	agg		98
23) Methylene Chloride	7.17	84					96
24) Carbon disulfide	7.33		293522 840943	89.13	gaz		93
25) trans-1,2-dichloroethene			543848	97.81	Extra		99
26) methyl tert-butyl ether		61, 73	1201640	27.01			100 99
	0.10		1201648	96.31 99.29	End Financial		99
27) Vinyl acetate 28) 1,1-Dichloroethane	0.55	63	1116677 742368	96.30	ENERGE PO		98
29) Methyl Ethyl Ketone	9.05	72	202166	96.44	ENENEN ENENEN	#	82
30) Hexane	9.06		536200	99.71			66
31) cis-1.2-dichloroethene	9.50	9.6	536200 357104	93.48	E E E	17	98
31) cis-1,2-dichloroethene 32) Ethyl acetate	9 64	45	147229	97 44	anh		95
33) Chloroform	10.12	83	822007	96.02	nph		98
34) Tetrahydrofuran	10.28	42	542270	99.13			91
35) 1,1,1-Trichloroethane	10.92	97	872314	97.00			98
36) 1,2-Dichloroethane	11.23	62	553224	99.76			99
37) Benzene	11.53	78	1359617	98.86			96
38) Carbon Tetrachloride	11.55	117	957018	102.06			98
39) Cyclohexane	11.60	56	732312	97.99			90
41) 2,2,4-trimethylpentane	12.32	57	2285395	96.00			92
42) Heptane	12.64	43	898916	97.05	כלכוכו		96
43) Trichloroethene	12.79	130	546181	95.70			98
44) 1,2-Dichloropropane	12.90	63	533807	94.24	dad		99
45) Methyl methacrylate	13.00	41	706745	98.46			91
46) 1,4-dioxane	13.03	88	281772	95.41			90
47) Bromodichloromethane	13.22	83	975395	97.46			99

^{(#) =} qualifier out of range (m) = manual integration DH051104.D I0511T15.M Thu Jun 01 08:45:47 2017

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051104.D Vial: 1 Acq On : 11 May 2017 10:08 am Sample : DSTD100_TO15 Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 11 11:48 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 11:45:50 2017
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\DH051106.D
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Conc Uni	t Qvalue
48)	Methyl Isobutyl Ketone	13.87	 43	1176036	99.46 p	ob 95
49)	cis-1,3-Dichloropropene	13.95	75	788056		99 de
50)		14.64	75	725125		ob 96
51)	1,1,2-Trichloroethane	14.94	97	623110		ob 99
52)	Toluene	14.70	92	978221		ob 98
53)	Methyl Butyl Ketone	15.09	4 3	1050528		ob 94
54)	Dibromochloromethane	15.58	129	1108963	103.17 pj	ob 1.00
55)	Tetrachloroethylene	15.64	164	678554		ob 97
56)	l,2-dibromoethane	15.81	107	853064	99.89 pj	ob 99
58)	Chlorobenzene	16.53	115	1324008	92.83 p	ob 99
59)	Ethylbenzene	16.75	306	726513		ob 92
60)	m&p-Xylene	16.93	1.06	1874380m <u>a</u>	<u>}</u> 193.40 pr	ob
61)	Nonane	17.24	43	1352780	94.22 pj	ob 98
62)	Styrene	17.33	1.04	1427310		ob 98
63)	o-xylene	17.35	91	1955624	96.48 p	EQ do
64)	Bromoform	17.45	173	1133638		ob 99
65)	1,1,2,2-Tetrachloroethane	17.76	83	1359559	97.20 pi	ob 98
66)	Cumene	17.84	105	2665226	96.64 pp	ob 96
68)	Propylbenzene	18.31	91	3305682	98.48 pr	ob 99
69)	2-Chlorotoluene	18.35	356	656182	98.54 pr	ob 79
70)	4-ethyltoluene	18.45	105	2649868	101.11 pp	ob 95
71.)	1,3,5-trimethylbenzene	18.49	105	2281049		ob 95
72)	1,2,4-trimethylbenzene	18.88	1.05	2208295	100.43 pr	
73)	1,3-dichlorobenzene	19.13	146	1326206	110.45 p	
74)	benzyl chloride	19.19	91	1537440	107.29 p	
75)	1,4-dichlorobenzene	19.24	146	1367614	118.95 pg	
76)	1,2,3-Trimethylbenzene	19.27	105	2353761	101.02 pg	
77)	l,2-dichlorobenzene	19.50	146	1288309	102.86 pp	
	1,2,4-trichlorobenzene	21.02	180	784518	115.97 ສຸຊ	
79)	Naphthalene	21.19	128	1494385	106.67 pg	
80)	Hexachloro-1,3-butadiene	21.26	225	1491592	114.49 pp	ob 98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051105.D
Acq On : 11 May 2017 10:44 am
Sample : DSTD75_T015
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3

Multiplr: 1.00 MS Integration Params: rteint.p

Quant Time: May 11 11:47 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 11:45:50 2017
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\DH051106.D
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response				
1) Bromochloromethane	9.96	128	137676	50.00	dgg		0.00
40) 1,4-difluorobenzene 57) Chlorobenzene-d5	12.18	114	780956	50.00	dqq		0.00
57) Chlorobenzene-d5	16.48	117	683530	50.00	ppb		0.00
System Monitoring Compounds							
67) Bromofluorobenzene							0.00
Spiked Amount 50.000	Range 70	- 130	Recove	ry ==	100	.72%	
Target Compounds						Qva	alue
2) Propylene	4.17		284965	69.16	dag		86
3) Freon 12	4.23		804733	68.69	qqq		99
4) Freon 114	4.43	85	958605 290133	73.46	ggq	#	83
5) Chloromethane	4.43	50	290133	75.76			86
6) Acetaldehyde	4.64		61036				97
7) Vinyl Chloride	4.63	62	300959 332087	71.57	aqq		97
8) Butane 9) 1,3-butadiene	4.73		332087	74.49	ppp		96
10) Bromomethane	4.74 5.11		203427	72.73			88
11) Chloroethane	5.28	94	275983	68.28	ppp		99
12) Ethanol	5.41	64	159280 132913	68.23 71.13	ppp		98
13) Vinyl Bromide	5.63	45 106	253699	69.00			93 100
14) Freon 11	5.91	101	778968	70.38			100
15) Acrolein	6.00	56	116580	69.15	daa		100
16) Acetone	6.09	43	395122	71.27	ppp		73
17) Pentane			751185	70.85	ppb		91
18) Isopropyl alcohol	6.18 6.20	45	566639	68.39	pph	#	73
19) 1,1-Dichloroethene	6.69	96	251997	68.67	to to be	"	91
20\ \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	6.88	101	571090	69.79			96
21) t-butyl alcohol	6.92	50	571090 686157 455781	66.50	chara		99
22) Allyl chloride 23) Methylene Chloride 24) Carbon disulfide	6.92 7.15	41	455781	71.61			98
23) Methylene Chloride	7.17	84	237624	70.04			95
24) Carbon disulfide	7.33	76	681319	66.11	daa		99
25) trans-1,2-dichloroethene	8.12	61	681319 424403	69.88	daa		99
26) methyl tert-butyl ether		73	966549		daa		100
27) Vinyl acetate	8.53	43	868488	70.70			99
27) Vinyl acetate 28) 1,1-Dichloroethane	8.55	63	868488 590527	70.13	dag		98
29) Methyl Ethyl Ketone	9.04	72	161986	70.75			1.
		4 1	417462	71.07	dag	#	62
30) Hexane 31) cis-1,2-dichloroethene 32) Ethyl acetate	9.49	96		70.20	ppb		98
32) Ethyl acetate	9.64	4.5	116418	70.54			98
33) Chloroform	10.11	83	657552	70.32	ರಭರ		98
34) Tetrahydrofuran	10.27	42	429695	71.92	dag		93
35) 1,1,1-Trichloroethane	10.92	97	696647	70.92			98
36) 1,2-Dichloroethane	11.23	62	434110	71.67	dqq		3,00
37) Benzene	11.52	78	1082263	72.05	dqq		95
38) Carbon Tetrachloride	11.55	117	747943	73.03			99
39) Cyclohexane	11.60	56	581068	71.18			89
41) 2,2,4-trimethylpentane	12.31	57	1819479	70.06	ppp		91
42) Heptane	12.64	43	708545	70.12	ppp		97
43) Trichloroethene	12.78	130	440779	70.80			98
44) 1,2-Dichloropropane	12.90	63	428130	69.28			99
45) Methyl methacrylate	13.00	41	559278	71.42			91
46) 1,4-dioxane	13.03	88	225282	69.92			91
47) Bromodichloromethane	13.21	83	772662	70.76	agg		99

^{(#) =} qualifier out of range (m) = manual integration DH051105.D 10511T15.M Thu Jun 01 08:45:57 2017

Quantitation Report (QT Reviewed)

Vial: 1 Data File : C:\HPCHEM\l\DATA\DHO51105.D Acq On : 11 May 2017 10:44 am Sample : DSTD75_T015 Misc : T015 Operator: WD Inst : GCMS3

Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: May 11 11:47 2017 Quant Results File: TO511T15.RES

Quant Method: C:\HPCHEM\1\METHODS\10511T15.M (RTE integrator)
Title: VOA Standards for 5 point calibration
Last Update: Thu May 11 11:45:50 2017
Response via: Continuing Cal File: C:\HPCHEM\1\DATA\DH051106.D

DataAcq Meth : NEWl

	Compound	R.T.	Qlon	Response	Conc Unit	Qvalue
48)	Methyl Isobutyl Ketone	13.87	43	918127	71.17 ppb	95
49)	cis-1,3-Dichloropropene	13.95	75	630288	71.17 ppb	99
50)	trans-1,3-Dichloropropene	14.64	75	564572	72.36 ppb	97
51)	1,1,2-Trichloroethane	14.94	97	501211	72.48 ppb	99
52)	Toluene	14.70	92	778755	69.98 ppb	97
53)	Methyl Butyl Ketone	15.09	43	808290	71.82 ppb	93
54)	Dibromochloromethane	15.58	129	842780	71.87 ppb	98
55)	Tetrachloroethylene	15.64	3,64	528491	73.76 ppb	96
56)	1,2-dibromoethane	15.81	107	670791	72.00 ppb	99
58)	Chlorobenzene	16.53	112	1059158	68.99 ppb	1.00
59)	Ethylbenzene	16.75	106	575290	69.08 ppb	92
6O)	m&p-Xylene	16.93	106	1461623m (
61)	Nonane	17.24	43	1053319	ີ‴ 68.16 ppb	98
62)	Styrene	17.32	104	1094793	69.87 ppb	99
63)	o-xylene	17.35	91	1516691	69.52 ppb	93
	Bromoform	17.45	173	858647	71.90 ppb	99
	1,1,2,2-Tetrachloroethane	17.76	83	1040182	69.09 ppb	98
66)	Cumene	17.84	105	2065153	69.57 ppb	96
68)	Propylbenzene	18.31	91	2412984	66.78 ppb	97
69)	2-Chlorotoluene	18.35	126	503673	70.27 ppb	89
	4-ethyltoluene	18.45	105	2005872	71.11 ppb	98
71)	1,3,5-trimethylbenzene	18.49	105	1713249	69.74 ppb	93
72)	1,2,4-trimethylbenzene	18.87	105	1677337	70.87 ppb	95
73)	1,3-dichlorobenzene	19.13	146	945498	73.16 ppb	98
74)	benzył chłoride	19.19	91	1155110	74.89 ppb	97
75)	1,4-dichlorobenzene	19.24	146	949420	76.72 ppb	97
76)	l,2,3-Trimethylbenzene	19.26	1.05	1792850	71.48 ppb	92
77)	1,2-dichlorobenzene	19.51	146	976134	72.40 ppb	97
	1,2,4-trichlorobenzene	51.05	180	582315	79.97 ppb	99
79)	Naphthalene	21.19	128	1097479	72.78 ppb	99
80)	Hexachloro-1,3-butadiene	21.26	225	1103102	78.66 ppb	99

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051106.D Vial: 1 Acq On : 11 May 2017 11:19 am Sample : DSTD50_T015 Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 11 11:44 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Tue May 09 07:34:46 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	rnal Standards	R.T.	QIon	Response	Conc U	nits	Dev	(Min)
	Bromochloromethane	9.95	128	139592	50.00	dqq		0.00
40)	1,4-difluorobenzene	12.18	3.14	779502 658072	50.00	ppp		0.00
57)	Chlorobenzene-d5	16.48	117	658072	50.00	dqq		0.00
	em Monitoring Compounds							
	Bromofluorobenzene							0.00
sp.	iked Amount 50.000	Range 70	- 130	Recove	ry ==	109	.84%	
	et Compounds						Qv	alue
	BrobAreue	4.17		208892				84
	Freon 12	4.22		593911				99
-	Freon 114	4.43		661506 194136	62.69	ppp	#	81.
5)	Chloromethane	4.43		194136	64.22	gqq		87
6)	Acetaldehyde Vinyl Chloride	4.63		46398	86.19	ppb		94
7)	Vinyl Chloride	4.63		213177 226007	65.64	ppb		99
0 /	Dutane	4.73	43	226007	62.94	pp		97
	1,3-butadiene	4.73		141804	65.14	ppp		90
10)		5.10		204917 118355 94731	50.16	aga		100
	Chloroethane	5.27		118355	49.74	dqq		97
	Ethanol	5.39	45	94731	54.66	طوط		95
	Vinyl Bromide	5.62	106	186409 561141 85470	50.83	dqq		99
	Freon 11	5.90	101	561141	55.46	dqq		100
	Acrolein	5.99	56	85470	50.27	dqq		94
16)		6.09	43	281078	63.36			71
	Pentane	6.18	43	537479 420044	51.71	ppb		91
	Isopropyl alcohol	6.19		420044	55.97	dqq	#	75
19)				186041	49.94	ppp	#	89
20)	Freon 113 t-butyl alcohol Allyl chloride Methylene Chloride	6.87 6.91	101	414853 523115	51.62			96
21)	t-butyl alcohol	6.91	59	523115	53.68	ppb		98
22)	Allyl chloride	7.14	41	322679	54.40			98
	recing well officers			172005	48.99	dqq		95
2 4 1	Carbon district	<i>ذ.</i> ذ_ ـ . ∕	76	172005 522437 307873	49.38	ppb		99
	trans-1,2-dichloroethene			307873	53.68			97
26)	methyl tert-butyl ether	8.11	7.3	690862	51.82	dqq		99
27)	Vinyl acetate 1,1-Dichloroethane	8.52	43	622762	60.20	$_{\rm dqq}$		99
28)	l,l-Dichloroethane	8.54	63	426866	50.87			99
29)	Methyl Ethyl Ketone	9.03	72	116074	53.45	dqq	#	.1
30)	Hexane	9.05	41	297780 211533	55.41	qqq	#	63
31)	cis-1,2-dichloroethene Ethyl acetate	9.48	96	211533	51.78	qqqq		99
32)	Ethyl acetate	9.63	45	83666				95
33)		10.10	83	474032	52.31	dqq		98
34)	Tetrahydrofuran	10.27	42	302908	55.14	dqq		94
35)	1,1,1-Trichloroethane	10.92	97	497986	55.49	dqq		99
36)	1,2-Dichloroethane	11.22	62	307076	56.14			99
37)	Benzene	11.52	7.8	761533	48.69			96
38)	Carbon Tetrachloride	11.54	1.1.7	519229	58.73			98
39)	Cyclohexane	11.59	56	413835	50.06			89
41.)	2,2,4-trimethylpentane	12.31	57	1296186	53.31			91
42)	Heptane	12.63	43	504297	56.47			97
43)	Trichloroethene	12.78	130	310724	55.21			98
44)	1,2-Dichloropropane	12.89	63	308409	52.33	daa		1.00
	Methyl methacrylate	12.99	41	390807	62.40			91
,	1,4-dioxane	13.03	88	160795	53.28			91
46)	1,4-0108010	"Y 3 (1)						

^{(#) =} qualifier out of range (m) = manual integration DH051106.D I0511T15.M Thu Jun 01 08:46:08 2017

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051106.D Vial: 1 Acq On : 11 May 2017 11:19 am Sample : DSTD50_T015 Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 11 11:44 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\l\METHODS\IO51lTl5.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Tue May 09 07:34:46 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methyl Isobutyl Ketone	13.86	43	643795	57.46 ppb	95
49)	cis-l,3-Dichloropropene	13.94	75	442009	dag 88.83	99
50)	trans-1,3-Dichloropropene	14.64	7.5	389410	59.90 ppb	97
51)	1,1,2-Trichloroethane	14.94	97	345133	52.94 ppb	99
52)	Toluene	14.70	92	555397	52.55 ppb	98
53}	Methyl Butyl Ketone	15.08	43	561688	62.29 ppb	93
54)	Dibromochloromethane	15.58	129	585241	62.86 ppb	99
55)	Tetrachloroethylene	15.63	164	357588	59.04 ppb	97
56)	1,2-dibromoethane	15.81	107	464955	57.67 ppb	99
58)	Chlorobenzene	16.53	112	739039	55.25 ppb	99
59)	Ethylbenzene	16.75	1.06	400933	53.86 ppb	92
60)	m&p-Xylene	16.93	106	1004346m ($\sqrt{110.43}$ ppb	
61)	Nonane	17.24	4.3	743914	61.25 ppb	98
62)	Styrene	17.32	1.04	754256	58.29 ppb	98
63)	o-xylene	17.35	91	1050235	55.14 ppb	93
64)	Bromoform	17.45	173	574910	65.63 ppb	1.00
65)	1,1,2,2-Tetrachloroethane	17.76	83	724724	56.07 ppb	98
66)	Cumene	17.84	105	1428952	57.46 ppb	96
68)	Propylbenzene	18.31	91	1739284	62.23 ppb	1.00
69)	2-Chlorotoluene	18.35	126	345024	60.02 ppb	79
70)	4-ethyltoluene	18.45	105	1357962	63.14 ppb	99
71)	1,3,5-trimethylbenzene	18.49	1.05	1182539	58.11 ppb	94
72)	1,2,4-trimethylbenzene	18.88	105	1139326	59.62 ppb	95
73)	1,3-dichlorobenzene	19.13	146	622118	66.29 ppb	98
74)	benzyl chłoride	19.19	91	742467	54.23 ppb	97
75)	1,4-dichlorobenzene	19.24	146	595741	64.42 ppb	97
76)	1,2,3-Trimethylbenzene	19.26	105	1207301	59.48 ppb	93
77)	1,2-dichlorobenzene	19.50	146	648977	63.16 ppb	98
78)	1,2,4-trichlorobenzene	21.03	180	350519	62,27 ppb	99
79)	Naphthalene	21.20	128	725887m 4	.)	
80)	Hexachloro-1,3-butadiene	21.26	225	675053	73.37 ppb	98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051107.D
Acq On : 11 May 2017 11:54 am
Sample : DSTD25_T015
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 11 12:31 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for S point calibration
Last Update : Thu May 11 11:45:50 2017
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\DH051106.D
DataAcq Meth : NEW1

Internal Standards	F2 _ 17 _	Olon	Response	Conc. U	nite	Dev (Min
1) Bromochloromethane40) 1,4-difluorobenzene57) Chlorobenzene-d5	9.95	128	137908	20.00	dqq	_	0.01
40) 1,4-difiuorobenzene	12.18	114	783584 661632	50.00	ppb		0.00
5/) Chloropenzene-d5	16.48	117	661632	50.00	dqq		0.00
System Monitoring Compounds							
67) Bromofluorobenzene							0.00
Spiked Amount 50.000	Range 70	- 130	Recove	ry =	95.	.08%	
Target Compounds						Qva	lue
2) Propylene	4.17 4.22 4.43 4.43	41	108552	26.30	dqq		86
3) Freon 12	4.22	85	313695 349401 102443	26.73	dqq		99
4) Freon 114	4.43	85	349401	26.73	daa	#	82
Chloromethane	4.43	50	102443	26.71	dqq		87
6) Acetaldehyde	4.64 4.63	44	20209	22.04	dqq	#	87
7) Vinyl Chloride	4.63	62	106957	25.39	dqq		96
8) Butane	4.73	43	20209 106957 127378	28.52	dag		94
7) Vinyl Chloride 8) Butane 9) 1,3-butadiene 10) Bromomethane 11) Chloroethane 12) Ethanol 13) Vinyl Bromide 14) Freon 11 15) Acrolein 16) Acetone 17) Pentane 18) Isopropyl alcohol 19) 1,1-Dichloroethene	4.74	54	75034 108061 60405	26.78	dqq		89
10) Bromomethane	5.10	94	108061	26.69	dag		99
ll) Chloroethane	5,27	64	60405	25.83	dag		100
12) Ethanol	5.41	45	48360	25.84	daa		94
13) Vinyl Bromide	5.62	106	96827	26.29	daa		96
14) Freon 11	5.90	101	293552	26.48	daa		99
15) Acrolein	6.00	56	48360 96827 293552 45440	26.91	daa		86
16) Acetone	6.09	43	142143 292831 226198	25.59	daa		70
17) Pentane	6.17	4.3	292831	27.57	daa	#	90
18) Isopropyl alcohol	6.19	4.5	226198	27.25	dag	#	1
19) 1,1-Dichloroethene	6.68	96	96339 209534 271442	26.21	dag	#	89
20) Freon 113 21) t-butyl alcohol	6.87	101	209534	25.56	dag		96
21) t-butyl alcohol	6.92	59	271442	26.26	dag		99
22) Allyl chloride	1 1 61	41	164798	25.85	daa		99
23) Methylene Chloride 24) Carbon disulfide	7.16	84	91386	26.89	daa		98
24) Carbon disulfide	7.33	76	260614	25.25	daa		99
25) trans-1,2-dichloroethene	8.11	61	271442 164798 91386 260614 151788 363611 302950 223445	24.95	daa		98
26) methyl tert-butyl ether		73	363611	26.64	dqq		99
27) Vinyl acetate	8.53	4 3	302950	24.62	daa		99
27) Vinyl acetate 28) 1,1-Dichloroethane	8.54	63	223445	26.49	dag		99
29) Methyl Ethyl Ketone	9.04	72	57231	24.95	dag	#	76
30) Hexane	9.05	41	152519	25.92	dag	#	64
31) cis-1,2-dichloroethene 32) Ethyl acetate	9.49	១៩	57231 152519 108058	25.85	dag		97
32) Sthyl acetate	9.64	45	42717	25.84	dag		98
55 CHAOROLOEM	10.10	83	244549	26.11			98
34) Tetrahydrofuran	10.27	42	156379	26.13			93
35) 1,1,1-Trichloroethane	10.92	97	254050	25.82			98
36) 1,2-Dichloroethane	11.22	62	154983	25.54	dag		100
37) Benzene	11.52	78	392568	26.09			96
38) Carbon Tetrachloride	11.54	117	265271	25.86			99
39) Cyclohexane	11.59	56	213913	26.16			89
41) 2,2,4-trimethylpentane	12.31	57	669876	25.71			91
42) Heptane	12.63	43	263360	25.98			96
43) Trichloroethene	12,78	130	156296	25.02			98
44) 1,2-Dichloropropane	12.89	63	160551	25.89			100
45) Methyl methacrylate	13.00	41	196602	25.02			92
46) 1,4-dioxane	13.04	88	83135	25.72			93
47) Bromodichloromethane	13.21	83	276519	25.24			99

^{(#) =} qualifier out of range (m) = manual integration DH051107.D 10511T15.M Thu Jun 01 08:46:17 2017

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051107.D
Acq On : 11 May 2017 11:54 am
Sample : DSTD25_T015
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 11 12:31 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 11:45:50 2017
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\DH051106.D

DataAcq Meth : NEWl

	Compound	R.T.	Qion	Response	Conc Unit	Qvalue
48)	Methyl Isobutyl Ketone	13.87	43	335231	25.90 ppb	96
49)	cis-1,3-Dichloropropene	13.95	75	219485	24.70 ppb	1.00
50)	trans-1,3-Dichloropropene	14.64	75	187608	23.96 ppb	95
51)	1,1,2-Trichloroethane	14.94	97	179039	25.80 ppb	100
52)	Toluene	14.70	92	279947	25.07 ppb	96
53)	Methyl Butyl Ketone	15.09	4.3	278128	24.63 ppb	93
54)	Dibromochloromethane	15.58	129	283052	24.06 ppb	98
55)	Tetrachloroethylene	15.63	164	172514	24.00 ppb	97
56)	1,2-dibromoethane	15.81	107	226310	24.21 ppb	99
58)	Chlorobenzene	16.53	112	370361	24.92 ppb	100
59)	Ethylbenzene	16.75	1.06	203769	25.28 ppb	92
60)	m&p-Xylene	16.93	106	494633	48.98 ppb	89
61)	Nonane	17.24	43	375700	25.12 ppb	97
62)	Styrene	17.33	1.04	359888	23.73 ppb	97
63)	o-xylene	17.35	91	524804	24.85 ppb	93
64)	Bromoform	17.45	173	271285	23.47 ppb	100
65)	1,1,2,2-Tetrachloroethane	17.76	83	359690	24.68 ppb	98
66)	Cumene	17.84	105	707360	24.62 ppb	97
68)	Propylbenzene	18.30	91	813426	23.26 ppb	99
69)	2-Chlorotoluene	18.35	126	168200	24.24 ppb	87
70)	4-ethyltoluene	18.45	105	626653	22.95 ppb	97
71)	1,3,5-trimethylbenzene	18.49	105	581124	24.44 ppb	98
72)	1,2,4-trimethylbenzene	18.88	105	544627	23.77 ppb	96
73)	l,3-dichlorobenzene	19.13	146	279054	22.31 ppb	98
74)	benzyl chloride	19.19	91	311150	20.84 ppb	96
75)	l,4-dichlorobenzene	19.24	146	252805	21.10 ppb	98
76)	l,2,3-Trimethylbenzene	19.27	105	580033	23.89 ppb	95
77)	1,2-dichlorobenzene	19.50	146	298713	22.89 ppb	97
78)	1,2,4-trichlorobenzene	21.03	180	136703	19.40 ppb	96
79)	Naphthalene	21.20	128	329302	22.56 ppb	96
80)	Hexachloro-1,3-butadiene	21.26	225	285760	21.05 ppb	97

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051108.D Acq On : 11 May 2017 12:28 pm Sample : DSTD10_T015 Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: May 11 13:19 2017

Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 11:45:50 2017
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\DH051106.D

DataAcq Meth : NEW1

Internal Standards	R.T.	Qïon	Response				
1) Bromochloromethane	9.96	128	116207		dag		0.00
40) 1,4-difluorobenzene	12.19	114	738484	50.00	dqq		0.00
57) Chlorobenzene-d5	16.48	117	626434	50.00	dqq		0.00
System Monitoring Compounds							
67) Bromofluorobenzene	17.95						0.00
Spiked Amount 50.000	Range 70	- 130	Recove.	rγ =	88	.428	
Target Compounds						Qva	alue
2) Propylene	4.17	41	41611	11.96	dqq		85
3) Freon 12	4.23		115928	11.72			98
4) Freon 114	4.43	85	141303	12.83	dgg		89
5) Chloromethane	4.44	50	46939 7879m <u>4</u> 41624	14.52	dqq		88
6) Acetaldehyde	4.66	44	7879m Հ	3 10.20	dqq		
7) Vinyl Chloride	4.64	62	41624	11.73	dqq		98
8) Butane	4.74	43	47001 26199 39762 23579 14401 34250	12.49	dqq		98
9) 1,3-butadiene	4.75	54	26199	11.10			86
10) Bromomethane	5 - 1 1	94	39762	11.65			96
11) Chloroethane	5.28	64 45	23579	11.97	ppb		95
12) Ethanol	5.46	45	14401	9.13			85
13) Vinyl Bromide	5.64	106	34250	11.04	ppp		98
14) Freon 11	5.90	101	112517	12.04	qqqq		97
15) Acrolein	6.02	56	12755m გ 37410	× 8.96	ppp		
16) Acetone	6.12	43					87
17) Pentane	6.18	4.3	113337	12.67			88
18) Isopropyl alcohol	6.23 6.69	4.5	78279 34755	11.19	ppb	#	1
19) 1,1-Dichloroethene 20) Freon 113		96	34755	11.22	qqq		91
20) Freon 113	6 - 88	101	79413 95084 57782 30006	11.50	ppp		95
21) t-butyl alcohol 22) Allyl chloride 23) Methylene Chloride	6.96	59	95084	10.92		14	97
22) Milyi Chioride	7.15	41	5//82	10.76	ppp		95
23) Methylene Chioride	7.1/	84	30006	10.48	agg		91
za, carbon orsurrace	7.35	/6	85442 46623 132764	9.82	ppp		86
25) trans-1,2-dichloroethene	8.12	10 .L	40023	9.10			95
26) methyl tert-butyl ether 27) Vinyl acetate	0.17	7.3	102/04	11.54	ppo		98
20) 1 1-Diablareathana	8.55	€⊃	20015	77 06	ppp		91
28) 1,1-Dichloroethane 29) Methyl Ethyl Ketone	0.33	72	90612 84199 16964	8.78	ppp	44.	98 35
30) Hexane	9.06	/ 4. / 1	10204 55726	11.24	Fatara	#	74
·		96	55726 36273 12685	10.30	ENENEN FAFATA	717	97
31) cis-1,2-dichloroethene 32) Ethyl acetate	9.65	45	12695	9 11	to to bo		96
33) Chloroform	10.11	7.J	89668	11.36	ra ra ka		99
34) Tetrahydrofuran	10.30	42	51944	10.30	ppb		92
35) 1,1,1-Trichloroethane	10.92	97	93691	11.30	pp		99
36) 1,2-Dichloroethane	11.23	62	53066	10.38			1.00
37) Benzene	11.53	78	145620	11.48			98
38) Carbon Tetrachloride	11.55	117	95394	11.03			99
39) Cyclohexane	11.60	56	79505	11.54			90
41) 2,2,4-trimethylpentane	î2.3î	57	244266	9.95			92
42) Heptane	12.64	43	96286	10.08			96
43) Trichloroethene	12.78	130	55425	9.41			95
44) 1,2-Dichloropropane	12.90	63	59433	10.17			99
45) Methyl methacrylate	13.01	41	63526	8.58			89
46) 1,4-dioxane	13.06	88	30044	9.86			100
47) Bromodichloromethane	13.22	83	99262	9.61			100

^(#) = qualifier out of range (m) = manual integration DH051108.D T0511T15.M Thu Jun 01 08:46:27 2017

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051108.D Acq On : 11 May 2017 12:28 pm Sample : DSTD10_T015 Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 11 13:19 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 11:45:50 2017
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\DH051106.D
DataAcq Meth : NEW1

	Compound	к.т.	QIon	Response	Conc Unit	Qvalue
48)	Methyl Isobutyl Ketone	13.88	43	116966	9.59 ppb	95
49)		13.96	75	73199	8.74 ppb	
50)		14.65	75	57485	7.79 ppb	
51)	1,1,2-Trichloroethane	14.94	97	63525	9.71 စို့ချော်	
52)	Toluene	14.70	92	103462	9.83 ppb	
53)	Methyl Butyl Ketone	15.10	43	88606	dqq 88.8	94
54)	Dibromochloromethane	15.58	129	92334	dqq 88.8	
55)	Tetrachloroethylene	15.64	164	60369	8.91 ppb	95
56)	1,2-dibromoethane	15.82	107	75066	8.52 ppb	98
58)	Chlorobenzene	16.53	112	130376	9.27 ppb	99
59)	Ethylbenzene	16.76	106	71006	9.30 ppb	95
60)	m&p-Xylene	16.93	106	175311m 🍇	∆ 18.34 ppb	
61)	Nonane	17.24	43	125990	8.90 ppb	97
62)	Styrene	17.33	104	114264	7.96 ppb	94
63)	o-xylene	17.35	91	186633	9.33 ppb	93
64)	Bromoform	17.45	173	87882		99
65)	1,1,2,2-Tetrachloroethane	17.76	83	120844	8.76 ppb	97
66)	Cumene	17.84	105	244441	8.99 ppb	97
68)	Propylbenzene	18.31	91	247790	7.48 ⴒჹხ	96
69)	2-Chlorotoluene	18.35	126	561.96	ർവുവു 08.8	98
70)		18.45	105	186007	7.19 ppb	9 "7
71)	1,3,5-trimethylbenzene	18.50	105	196474	8.73 ppb	99
72)		18.88	105	173755	8.01 ppb	96
73)	l,3-dichlorobenzene	19.13	146	79253mW	<u>ე</u> 6.69 ppb	
74)	benzyl chloride	19.20	91	100354m j	7.10 ppb	
	l,4-dichlorobenzene	19.24		85209m	7.51 ppb	
76)	1,2,3-Trimethylbenzene	19.27		202881m 🎸		
77)	,	19.50	146	90139 '	7.30 წმენ	97
78)	1,2,4-trichlorobenzene	21.05	180	51985m എ		
	Naphthalene	21.22	128	129871m }	9.40 ppb	
80)	Hexachloro-1,3-butadiene	21.26	225	94141m 🕻	7.33 ppb	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051109.D Vial: 1 Acq On : 11 May 2017 1:02 pm Sample : DSTD5_T015 Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 11 13:59 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 11:45:50 2017
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\DHOS1106.D

DataAcq Meth : NEWl

•							
Internal Standards	R.T.	QIon	Response	Conc Ur	nits	Dev	(Min)
1) Bromochloromethane	9.96	128	119912m 🌖	50.00	pob		0.00
1) Bromochloromethane40) 1,4-difluorobenzene57) Chlorobenzene-dS	12.19	114	659810	50 00	cicro		0.00
57) Chlorobenzene-dS	16.48	117	544827	50.00	dag		0.00
			70 A W W 10 .		Ca La		
System Monitoring Compounds							
67) Bromofluorobenzene	17.95	95	338326	41.54	daa		0.00
Spiked Amount 50.000		- 130	Recover		83.		
	-			•			
Target Compounds						Qv	alue
2) Propylene	4.17	41	23787	6.63	ppb		83
3) Freon 12	4.23	85	67596	6.62			97
4) Freon 114	4.43	8.5	85537	7.53	$_{\rm dqq}$		86
5) Chloromethane	4.43	50	25828	7.74	dqq		85
6) Acetaldehyde	4.68	44	23020 6191m ⊾} 26825	7.77	dqq		
7) Vinyl Chloride	4.64	62	26825 ⁻ 37157	7.32	dqq		68
8) Butane	4.74	43	37157	9.57	dqq		95
9) 1,3-butadiene	4.75	54	19382	7.96			90
10) Bromomethane	5.11	54 94 64	29855	8.48	dqq		99
11) Chloroethane	5.28	64	13996	6.88			93
12) Ethanol	5.43	45	926I	5.69		#	5 l
13) Vinyl Bromide	5.63	106	19096 64192	5.96			93
14) Freon 11	5.90	101	64192	6.66	dqq		99
15) Acrolein	6.02	56	8219m სე 21001m წ 67579	5.60	dqq		
16) Acetone	6.13	4.3	21001m 🌾	4.35	ppb		
17) Pentane	6.18					#	88
18) Isopropyl alcohol	6.23	45	46513			#	1
19) 1,1-Dichloroethene	6.69	96	19218	6.01			95
20) Freon 113	6.88	101	45689 53998	6.41	dqq		94
21) t-butyl alcohol	6.95	59				#	97
22) Allyi chloride	7.15	41	31556	5.69			99
23) Methylene Chloride 24) Carbon disulfide	7.17	84	18750 56180	6.34			97
,		76	56180	6.26		#	74
25) trans-1,2-dichloroethene	8.12	61	24425	4.62			87
26) methyl tert-butyl ether	8.13	73	74977 48357	6.32			95
27) Vinyl acetate	8.55	4.3					93
28) 1,1-Dichloroethane	8.56	63	45474	6.20	ppb		98
29) Methyl Ethyl Ketone	9.07	72	8964 32873	4.50			28
30) Hexane	9.06	41	32873	6.43	agg	#	83
	9.50	96	19257	5.30	bbb		100
32) Ethyl acetate	9.65	45	8092	5.63	ದಿರದ		85
33) Chloroform	10.11	83	50735	6.23			98
34) Tetrahydrofuran	10.31	42	30558	5.87	ppp	#	47
35) 1,1,1-Trichloroethane	10.92	97	52930	6.19			99
36) 1,2-Dichloroethane	11.23	62	30484	5.78			97
37) Benzene	11.53	78	81670	6.24			97
38) Carbon Tetrachloride	11.55	117	53513	6.00			98
39) Cyclohexane	11.60	56 57	45642	6.42			89
41) 2,2,4-trimethylpentane	12.31	57 47	139984	6.38			93
42) Heptane 43) Trichloroethene	12.64	43	53868	6.31	bbp		95
44) 1,2-Dichloropropane	12.78	130	27750	5.28	ಗ್ಗಳ		93
45) Methyl methacrylate	12.90 13.01	63 41	33463 32498	6.41			99
46) 1,4-dioxane		41 88		4.91 5.94			87 96
47) Bromodichloromethane	13.07 13.22	8.3	16160 55930	6.06			96 100
-, , , , , , , , , , , , , , , , , , ,		·					.1 0 0
(#) - cuslifies out of sone	7						

^{(#) =} qualifier out of range (m) = manual integration DH051109.D 10511T15.M Thu Jun 01 08:46:37 2017

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051109.D
Acq On : 11 May 2017 1:02 pm
Sample : DSTD5_T015
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 11 13:59 2017 Quant Results File: 10511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 11:45:50 2017
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\DH051106.D
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methyl Isobutyl Ketone	13.88	43	64508	5.92 ppb	97
49)		13.96	7.5	37386	daa 00.5	
50)		14.65	7.5	29769	4.52 ppb	
51)		14.94	97	34185	5.85 ppb	
52)	Toluene	14.70	92	57613	6.13 ppb	
53)	Methyl Butyl Ketone	15.11	43	46709	4.91 ppb	
54)	Dibromochloromethane	15.58	129	50917	5.14 ppb	
55)	Tetrachloroethylene	15.64	164	32620	5.39 ppb	
56)	1,2-dibromoethane	15.82	107	39718	5.05 ppb	
58)	Chlorobenzene	16.53	112	69382	5.67 ppb	100
59)	Ethylbenzene	16.75	106	39571	5.96 ppb	97
60)	m&p-Xylene	16.93	1,06	92742	11.15 ppb	93
61)	Nonane	17.24	43	70961	5.76 ppb	
62)	Styrene	17.33	104	58903	4.72 ppb	87
63)	o-xylene	17.35	91	104111	5.99 ppb	
64)	Bromoform	17.45	173	45937	4.83 ppb	
65)	1,1,2,2-Tetrachloroethane	17.76	83	66889	طوو 75.5	98
66)	Cumene	17.84	105	134320	5.68 ppb	99
68)	Propylbenzene	18.31	91	123160	4.28 ppb	93
69)	2-Chlorotoluene	18.36	126	31018	5.43 ppb	90
70)	4-ethyltoluene	18.45	105	93909	4.18 ppb	
71)	1,3,5-trimethylbenzene	18.50	1.05	101574	5.19 ⴒⴒხ	96
	1,2,4-trimethylbenzene	18.88	105	88483	4.69 ppb	
73)	1,3-dichlorobenzene	19.14	1.46	35334	3.43 ppb	98
74)	benzyl chłoride	19.20	91	48658m 4 <u>≥</u>		
75)	l, 4-dichlorobenzene	19.25	146	44074m U		
	1,2,3-Trimethylbenzene	19.27	105	93376	4.67 ppb	95
	1,2-dichlorobenzene	19.51	146	43086	4.01 ppb	97
78)	- · - · ·	21.08	180	26293ო სტ		
79)	Naphthalene	21.25	128	47112m	3.92 ppb	
80)	Hexachloro-1,3-butadiene	21.27	225	49522m √	4,43 ppb	

Response Factor Report GCM\$3

Method : C:\HPCHEM\1\METHODS\I0406H2S.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Mon Jun 19 12:15:19 2017 Response via : Initial Calibration

Calibration Files

5) S

*DM040612.D 100 =DH040610.D 250 ⇔DH040609.D ≈DH040608.D 1000 500 =DH040607.D 2000 ∞DH040606.D

		Compound	5	100	250	500	1000	2000	Avg	%RSD	
1)		Bromochloromethane Hydrogen Sulfide		0.931							
3)	I	1,4-difluorobenzene				rsrp					
4)	I	Chlorobenzene-d5				ISTD					

Bromofluorobenzene 0.599 0.604 0.609 0.600 0.596 0.617 0.604 1.32

Page 446 of 572

Response Factor Report GCMS3

Method : C:\HPCHEM\1\METHODS\IO412SSL.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu Apr 13 06:48:03 2017
Response via : Initial Calibration

Calibration Files

=DH041213.D 10 =DH041210.D 40 = DHO41213.D=DH041212.D 15 =DH041211.D 25 -DH041209.D 50 =DH041208.D

··· ··· ·		Compound	5	10	15	25	40	50	Avg	%RSD
1) 2) 34) 567 8)	H to to to to to	Bromochloromethane Carbonyl Sulfide Methyl Mercaptan Ethyl Mercaptan Dimethyl Sulfide Carbon Disulfide Isopropyl Mercaptan Trimethyl silanol 1-Propanethiol	3.166 1.518 1.055 1.607 4.586 1.958	3.702 1.738 1.238 1.768 5.456 2.336 0.396	3.442 1.848 1.180 1.673 4.689 2.284 0.336	3.434 1.792 1.228 1.586 4.644 2.296	3.310 1.864 1.188 1.625 4.780 2.203 0.281	3.242 1.855 1.211 1.559	1.803 1.183 1.605 4.738 2.183 0.299	5.65 6.54 4.80 5.24 6.01 5.35 17.33
10)	I ţ	1,4-difluorobenzene Hexamethyldisiloxan								9.11
12) 13) 14) 15) 16) 17) 18) 19)	I 6 6 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Chlorobenzene-d5 Hexamethylcyclotris Octamethyltrisiloxa Bromofluorobenzene Octamethylcyclotetr Decamethyltetrasilo Decamethylcyclopent Dodecamethylpentasi Dodecamethylcyclohe	5.823 3.898 0.583 5.712 5.454 5.828 1.218	4.853 3.305 0.570 4.869 4.575 4.024 1.454	4.711 3.191 0.565 4.866 4.048 4.096 1.085	4.746 3.418 0.529 5.464 4.670 4.476 1.375	4.426 3.351	4.386 3.438 0.453 6.192 5.396 4.133 1.321	4.697 3.493 0.486 5.844 5.131 4.136 1.399	9.71 6.40 16.45 11.47 11.37 18.82 17.12 9.85

Response Factor Report HP G1530A

Method Path : C:\MSDchem\l\METHODS\

Method File : CI0831FG.M

Title : Fixed Gases by TCD Last Update : Fri Jul 08 09:32:21 2016 Response Via : Initial Calibration

Calibration Files

1.88 =CI083107.D 3.75 =CI083106.D 7.5 =CI083105.D 15.0 =CI083102.D 30 =CI083101.D

	Compound	1.88	3.75	7.5	15.0	30	Avg		&RSD
1) T 2) T 3) T 4) T 5) T	Carbon Dioxide Oxygen Nitrogen Methane Carbon Monoxide	3.782 3.808 3.047	3.572 3.741 2.966	3.867 4.021 3.148	3.671 3.812 3.035	3.750 3.805 3.112	1.208 3.728 3.838 3.061 3.874	E7 E7 E7	

^{(#) =} Out of Range

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15 CALIBRATION VERIFICATION

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DH051504.D
Acq On : 15 May 2017 10:36 am
Sample : DSTD50_T015
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min Max. RRF Dev : 30% Max. Rel. Area : 150%

	1.10(1)	KKT Dev : 30% Max. Rel.	Alea :	150%			
	THE APP MAY THAT NAME	Compound	AvgRF	CCRF	%Dev		Dev(min)
1234567890123456789012345678	I	Bromochloromethane Propylene Freon 12 Freon 114 Chloromethane Acetaldehyde Vinyl Chloride Butane 1,3-butadiene Bromomethane Chloroethane Ethanol Vinyl Bromide Freon 11 Acrolein Acetone Pentane Isopropyl alcohol 1,1-Dichloroethene Freon 13 t-butyl alcohol Allyl chloride Methylene Chloride Carbon disulfide trans-1,2-dichloroethene methyl tert-butyl ether Vinyl acetate 1,1-Dichloroethane Methyl Ethyl Ketone Hexane cis-1,2-dichloroethene Ethyl acetate Chloroform Tetrahydrofuran 1,1,1-Trichloroethane 1,2-Dichloroethane Benzene Carbon Tetrachloride	1.880 4.346 3.203 3.139 3.845 2.398 3.755 2.110 4.237 3.757 4.237 3.758 2.758 2.759 2.759 2.756 2.756 2.756 2.756	1.000 1.461 3.920 4.425 1.824 1.775 2.460 1.727 0.639 1.423 3.917 0.501 3.892 2.807 1.418 3.064	0.8100276873622266445238 19129421664445238 - 2213395326508	998829042129128468181397075973706413 11111	0.02 -0.01 0.0000 0.000
41 42 43	I	Cyclohexane 1,4-difluorobenzene 2,2,4-trimethylpentane Heptane Trichloroethene	3.169 1.000 1.716 0.670 0.392	3.159 1.000 1.579 0.588 0.373	0.3 0.0 8.0 12.2 4.8	101 103 98 93 96	0.00 0.01 0.01 0.00 0.01
4456789012 1		1,2-Dichloropropane Methyl methacrylate 1,4-dioxane Bromodichloromethane Methyl Isobutyl Ketone cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Toluene	0.409 0.483 0.209 0.711 0.843 0.546 0.468 0.452 0.725	0.383 0.427 0.193 0.641 0.717 0.528 0.446 0.431 0.680	6.4 11.6 7.7 9.8 14.9 3.3 4.6 6.2	99 87 96 94 89 96 92 100	0.01 0.02 0.00 0.01 0.00 0.00

^{(#) =} Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DHO51504.D Vial: 1 Acq On : 15 May 2017 10:36 am Sample : DSTD50 T015 Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. RRF Dev : 30% Max. Rel. Area : 150% 0.000 Min. Rel. Area: 50% Max. R.T. Dev 0.50min

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
53 54 55 56	Methyl Butyl Ketone Dibromochloromethane Tetrachloroethylene 1,2-dibromoethane	0.694 0.727 0.455 0.575	0.616 0.612 0.408 0.553	11.2 15.8 10.3 3.8	88 84 91 95	0.02 0.00 0.00 0.00
55566666666667777777777777777777777777	Chlorobenzene-d5 Chlorobenzene Ethylbenzene m&p-Xylene Nonane Styrene o-xylene Bromoform 1,1,2,2-Tetrachloroethane Cumene Bromofluorobenzene Propylbenzene 2-Chlorotoluene 4-ethyltoluene 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene t,3-dichlorobenzene benzyl chloride 1,4-dichlorobenzene 1,2,3-Trimethylbenzene 1,2,d-dichlorobenzene	1.000 1.105 0.609 0.752 1.111 1.070 1.600 0.828 1.078 2.140 0.709 2.383 0.510 1.868 1.742 1.627 0.839 1.017 0.860 1.754 0.894	1.000 1.000 0.543 0.666 0.957 0.994 1.376 0.961 1.693 0.961 1.744 2.133 0.446 1.523 1.407 1.523 1.409 0.725 1.444 0.765	0.5 10.8 11.4 13.9 14.0 16.3 10.9 13.9 10.5 12.6 13.6 12.6 13.7 17.7 14.4	108 996 991 995 990 998 990 998 988 988 988 988	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
79 80	l,2,4-trichlorobenzene Naphthalene Hexachloro-1,3-butadiene	0.505 1.041 0.967	0.419 1.016 0.699	17.0 2.4 27.7		0.00 0.00 0.00

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051504.D
Acq On : 15 May 2017 10:36 am
Sample : DSTD50_T015
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 15 11:25 2017 Quant Results File: 10511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Inte	rnal Standards	R.T		QI on	Response	Conc U	nits	Dev	(Min)
3.)	Bromochloromethane	9.9	8	128	132275	50.00	dqq		0.02
40)	l,4-difluorobenzene	12.2	3.0	114	800659	50.00	dqq		
57)	Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5	16.4	19	117	708648	50.00	ppb		0.00
	em Monitoring Compounds								
	Bromofluorobenzene	17.9							0.00
Sp	iked Amount 50.000	Range 7	°0 -	- 130	Recover	λ ==:	104	.90%	
Targ	et Compounds							Qν	alue
2)	Propylene	4.1	. "7	41	193304	45.13	dqq		83
∄)	Freon 12	4.2	2.3	8.5	518504	42.95	dqq		99
4)	Freon 114	4.4		85	518504 585326	40.49	dqq		96
		4.4	5	50	248790	55.51	daa		86
	Acetaldehyde	4.6		44	42851 234788	45.43	dqq	#	82
7)	Vinyl Chloride	4.€	5.5	62	234788	52.34	dqq		97
	Butane	4.7		43	325461	61.30	ppb		90
9)	1,3-butadiene	4.7		54	325461 173286 228397	56.91	dqq		87
	Bromomethane	5.1	. 2	94	228397	51.84	dqq		98
11)	Chloroethane	5.2	9	64	97360	40.36	dag		100
12)	Ethanol	5.4	7	45	84531m ∿∑	47,22	ppb		
	Vinyl Bromide	5.€	4	106	84531m ∿∆ 188292	51.61	ppb		1.00
14)	Freon 11	5.9	2	101	518093	44.90	ppb		1.00
15)	Acrolein	6.0	3		66240	41.68	dag		98
3.6)	Acetone	6.1	4	43	100023	36 20	print print him	44	36
	Pentane	6.2	0	43	514775m ატ 371252	44.77	dag		
18)	Isopropyl alcohol	6.2	:7	4.5	371252	43.81	dqq	#	1
1.9)	1,1-Dichloroethene	6.7 6.9	0	96	187611	51.29	dag	11	87
20)	Freon 113	6.9	0	101	405279	48.80	dag		95
21)	t-butyl alcohol	6.9	9	59	187611 405279 475391 300198 169825 452578	46.74	dag		97
22)	Allyl chloride Methylene Chloride	7.1	7	41	300198	47.42	dqq		98
23)	Methylene Chloride	7.1	9	84	169825	49.85	dad		99
24)	Carbon disulfide	7.3	25	76	452578	45.58	dqq		99
25)	trans-1,2-dichloroethene methyl tert-butyl ether Vinyl acetate	8.1	4	61	276894	49.60	dag		95
26)	methyl tert-butyl ether	8.1	5	7.3	668004	47.89			99
27)	Vinyl acetate	8.5	6	43	528551	47.16	ppb		98
28)	1,1-Dichloroethane	8.5	7	63	422126	49.05			99
29)	1,1-Dichloroethane Methyl Ethyl Ketone	9.0	8	72	112397	53.95			7,9
30)	Hexane	9.0	В	41	277330	46.14	daa	#	62
31)	cis-1,2-dichloroethene	9.5	1	96	206101	51.46	dag		98
32)	Ethyl acetate	9.6	7	45	206101 75493	47.73	dqq		94
33)	Chloroform	10.1	3	83	457032	48.26	dag		98
34)	Tetrahydrofuran	10.3	1	42	285829	48.19	ppb		98
35)	1,1,1-Trichloroethane	10.9	4	9"7	452498	45.55	dag		99
	1,2-Dichloroethane	11.2	5	62	284148	47.49	daa		100
37)	Benzene	11.5		7.8	776591	50.53	dag		94
38)	Carbon Tetrachloride	11.5		117	451460	43.47			98
	Cyclohexane	11.6		56	417863	49.85	dag		84
41)	7	12.3		57	1264376	46.01			90
	Heptane	12.6		43	470841	43.88			98
	Trichloroethene	12.8		130	298248	47.53	dag		98
	1,2-Dichloropropane	12.9		63	306643	46.83			99
	Methyl methacrylate	13.0		41	341740	44.20		#	82
	1,4-dioxane	13.0		88	154407	46.07		.,	94
4 (0)									

^{(#) =} qualifier out of range (m) = manual integrationDH051504.D 10511T15.M Thu Jun 01 08:54:59 2017

Quantitation Report (QT Reviewed)

Vial: 1 Operator: WD Data File : C:\HPCHEM\1\DATA\DH051504.D Acq On : 15 May 2017 10:36 am Sample : DSTD50 TO15 Misc : TO15 Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 15 11:25 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methyl Isobutyl Ketone	13.89	43	574238	42.55 ppb	94
49)		13.96	75	422553	48.30 ppb	98
50)		14.65	75	356955	47.64 ppb	93
51)	1,1,2-Trichloroethane	14.95	97	345053	47.69 ppb	99
52)	Toluene	14.71	92	544280	46.90 စိုစ်ချ	99
53)	Methyl Butyl Ketone	15.10	43	493589	44.44 ppb	90
54)	Dibromochloromethane	15.59	129	490188	42.09 ppb	93
55)	Tetrachloroethylene	15.64	1,64	326839	44.90 ppb	97
56)	1,2-dibromoethane	15.82	1.07	442827	48.05 ppb	99
58)	Chlorobenzene	10.54	112	708804	45.24 ppb	99
59)	Ethylbenzene	1.6.76	106	384450	44.57 ppb	92
60)	m&p-Xylene	16.93	1.06	943260	dqq 03.88	# 88
61)	Nonane	17.24	43	678157	43.06 ppb	97
62)	Styrene	17.33	104	704597	46.47 ppb	99
63)	o-xylene	17.35	91	975172	42.99 ppb	92
64)	Bromoform	17.45	173	491339	41.87 ppb	99
65)	1,1,2,2-Tetrachloroethane	17.76	83	680770	44.57 ppb	98
66)	Cumene	17.84	105	1308196	43.14 ppb	96
68)	Propylbenzene	18.31	91	1511316	44.75 ppb	98
69)	2-Chlorotoluene	18.35	126	316171	43.76 ppb	93
70)	4-ethyltoluene	18.45	105	1160260	43.82 ppb	95
71)	1,3,5-trimethylbenzene	18.50	105	1079532	43.72 ppb	97
72)	1,2,4-trimethylbenzene	18.88	105	995676	43.17 ppb	95
73)	l,3-dichlorobenzene	19.13	1.46	541072	45.48 ppb	99
74)	benzyl chloride	19.19	91	665339	46.17 ppb	97
75)		19.24	146	513853	42.15 ppb	99
76)	l,2,3-Trimethylbenzene	19.27	105	1023210	41.16 ppb	94
77)	1,2-dichlorobenzene	19.50	146	541815	42.75 ppb	98
78)	1,2,4-trichlorobenzene	21.03	180	296582	41.45 ppb	97
79)	Naphthalene	21.20	1,28	720312	48.82 ppb	98
80)	Hexachloro-1,3-butadiene	SJ-S6	225	495230	36.15 ppb	99

IOSIITIS.RES

Results File:

Quant

Integrator)

(RTE

C:\HPCHEM\1\METHODS\10511T15.M

MS Integration Params: rteint.p Quant Time: May 15 11:25 2017

DSTD50 TO15

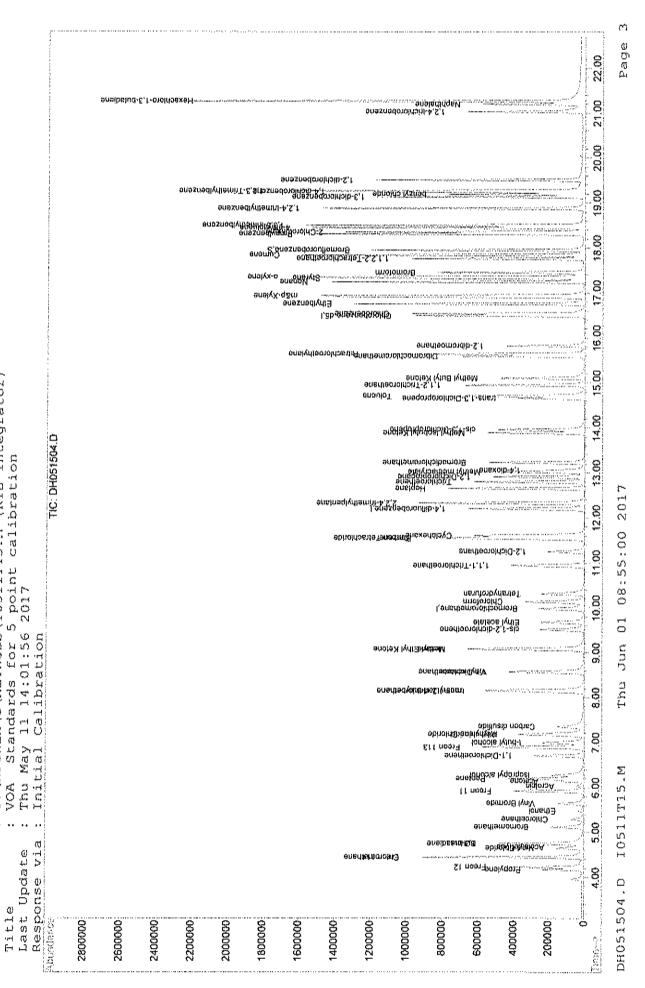
Acq On Sample

Misc

Multiplr:

Vial Operator

C:\HPCHEM\1\DATA\DH051504.D 15 May 2017 10:36 am DSTD50 T015



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Method

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DH051703.D Vial: 1 Acq On : 17 May 2017 9:34 am Sample : DSTD50_TO15 Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHOD\$\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Areas	Dev (min)
1 1 1 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 2 2 2 2 2 2 2 3 3 3 3 3 4 3 3 3 3 3 3	Bromochloromethane Propylene Freon 12 Freon 114 Chloromethane Acetaldehyde Vinyl Chloride Butane 1,3-butadiene Bromomethane Chloroethane Ethanol Vinyl Bromide Freon 11 Acrolein Acetone Pentane Isopropyl alcohol 1,1-Dichloroethene Freon 113 t-butyl alcohol Allyl chloride Methylene Chloride Carbon disulfide trans-1,2-dichloroethene methyl tert-butyl ether Vinyl acetate 1,1-Dichloroethane Methyl Ethyl Ketone Hexane cis-1,2-dichloroethene Ethyl acetate Chloroform	1.619 4.54694 5.6695967 1.65527 1.695967 1.6917791 1.6917791 1.68403395117235824 1.28325117235824 1.2225422599 1.5999	1.52417 2.3024344 2.3324344 2.445249 3.0445249 3.12555449 3.12555449 3.1265549 3.1265549 3.1265549 3.1265549 3.1265549 3.126559 3.1265549 3.1265549 3.126559	0.1.197.1.602.55.3.1.08.03.1.7.58.7.0.90.4.66.7.7.2.4.9.1.5		0.00 -0.03 -0.03 -0.03 -0.03 -0.02 -0.03 -0.03 -0.03 -0.03 -0.04 -0.04 -0.05 -0.
		3.579 2.242			60 62 61 65	
40 I 41 42 43 44 45 46 47 48 49 50 51 52	1,4-difluorobenzene 2,2,4-trimethylpentane Heptane Trichloroethene 1,2-Dichloropropane Methyl methacrylate 1,4-dioxane Bromodichloromethane Methyl Isobutyl Ketone cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Toluene	1.000 1.716 0.670 0.392 0.409 0.483 0.209 0.711 0.843 0.546 0.468 0.452	1.000 1.545 0.628 0.348 0.364 0.497 0.173 0.678 0.808 0.510 0.453 0.398 0.626	0.0 10.0 11.2 11.0 -2.9 17.6 4.2 63.2 11.9	3915833127776 5555555555555555555555555555555555	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0

^{(#) =} Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DH051703.D
Acq On : 17 May 2017 9:34 am
Sample : DSTDS0_T015
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiple: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. RRF Dev : 30% Max. Rel. Area : 150% 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

	Compound	AvgRF	CCRF	%Dev	Areas	Dev(min)
53 54 55 56	Methyl Butyl Ketone Dibromochloromethane Tetrachloroethylene 1,2-dibromoethane	0.694 0.727 0.455 0.575	0.692 0.688 0.401 0.533	0.3 5.4 11.9 7.3	55	0.00 0.00 0.00 0.00
57 1 57 8 59 66 66 66 66 66 66 66 66 66 66 66 66 66	Chlorobenzene-d5 Chlorobenzene Ethylbenzene m&p-Xylene Nonane Styrene o-xylene Bromoform 1,1,2,2-Tetrachloroethane Cumene Bromofluorobenzene Propylbenzene 2-Chlorotoluene 4-ethyltoluene 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene benzyl chloride	1.000 1.105 0.609 0.752 1.111 1.070 1.600 0.828 1.078 2.140 0.709 2.383 0.510 1.868 1.742 1.627 0.839 1.017	1.000 0.895 0.488 0.614 1.068 0.925 1.366 0.736 0.936 1.839 0.836 2.142 0.443 1.737 1.509 1.456 0.795 0.886	0.0 19.0 19.9 18.4 3.9 13.6 14.6 11.1 13.2 14.1 -17.9 10.1 13.1 7.0 13.4 20.5 5.2	១៩៦០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
76 77 78 79 80	1,4-dichlorobenzene 1,2,3-Trimethylbenzene 1,2-dichlorobenzene 1,2,4-trichlorobenzene Naphthalene Hexachloro-1,3-butadiene	0.860 1.754 0.894 0.505 1.041 0.967	0.751 1.554 0.817 0.417 0.743 0.896	12.7 11.4 8.6 17.4 28.6 7.3	58 59 58 54 47# 61	0.00 0.00 0.00 0.00 0.00

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051703.D Acq On : 17 May 2017 9:34 am Sample : DSTD50_T015 Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Results File: IO511T15.RES Quant Time: May 17 10:05 2017

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017 Response via : Initial Calibration DataAcq Meth : NEW1

	rnal Standards	R.	Τ.	QIon	Response	Conc t)nits	Dev	(Min)
1.)	Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5	9.	95	128	88790	50.00	dqq (0.00
40)	1,4-difluorobenzene	12.	18	114	492391	50.00	वंदाद (0.00
57)	Chlorobenzene-d5	16.	48	117	457206	50.00	dgg (0.00
Syst	em Monitoring Compounds								
67)	Bromofluorobenzene iked Amount 50.000	1.7.	94	95	382026	58.90	dqq (0.00
Sp	iked Amount 50.000	Range	70	- 130	Recove	к. À =	117	. 80%	
	et Compounds							Qv	alue
	Propylene		16	41	139342	48.47	dqq		85
	Freon 12		21	85	376544	46.47	, bbp		98
	Freon 114	4.		85	376544 567126 180078	58.45	ggg	#	83
	Chloromethane	4.	4.3	50	180078	59.86	ववुद्ध :		92
	Acetaldehyde	4.	6.3	44	39326	62.11	. ppp		97
	Vinyl Chloride Butane	4.	72	0.4	104242	67 7	dag s		100 98
	1,3-butadiene		73	5.4	120050	67.70	, bbb		90 86
	Bromomethane	5	0.9	94	39326 182349 220161 128959 117563 70040	30.75	, ppo		97
	Chloroethane	F.	つフ	64	70040	43.25	opb		97
		5.	40	45	59932	49.88	daa 8		93
	Vinyl Bromide	5.	62	106	105243	42.97	daa 1		99
	Freon 11	S.	89	101	367964	47.51	dgg .		1.00
15)	Acrolein	5.	99	56	59932 105243 367964 49193 173565 353721 252992	46.11	dqq .		91
16)	Acetone	6.	09	4 3	173565	51.99	dqq (7.5
17)	Pentane	6.	17	43	353721	45.83	dqq 8		92
18)	Isopropyl alcohol	6.	19	45	252992	44.47	dqq ⁸	#	1
19)	l,1-Dichloroethene	6.	67	96	103558	42.19	dqq (98
20)	Freon 113	6.	87	101	241060	43.25	dad o		95
× 1)	r-butyr arconor	Ð.	3 T	59	307993	45.13	agg .		97
001	Mathalana Chlanta	/·	13	41	202502	47.00	bbp c	44	92 87
201	Carbon disulfida	-/, -	33	O 4	202202	44.00	, ppp	11.	98
251	trapsml 2mdichloroethene	á.	10	7 G	293707 181774	49.0	, ppp		95
261	methyl tert-butyl other	8	17	フラ	400803	42.81	daa agg		93
271	Vinvl acetate	8.	53	4.3	359031	47.72	daa '		96
28)	1,1-Dichloroethane	8.	54	63	258280	44.71	dag .		
29)	Methyl Ethyl Ketone	9.	0.3	72	61065	43,66	dag	#1	62
30)	Hexano	9.	0.4	4 1	194174	48.12	dqq !	# #	7.3
31)	cis-1,2-dichloroethene	9,	48	96	115354	42.97	ppb		96
32)	Isopropyl alcohol 1,1-Dichloroethene Freon 113 t-butyl alcohol Allyl chloride Methylene Chloride Carbon disulfide trans-1,2-dichloroethene methyl tert-butyl ether Vinyl acetate 1,1-Dichloroethane Methyl Ethyl Ketone Hexane cis-1,2-dichloroethene Ethyl acetate Chloroform	9.	63	45	46524	43.82	dqq !		87
.3 .3)	Chloroform	10.	10	83	286473	45.07	dqq		98
	Tetrahydrofuran	10.		42	187339	47.05			86
	1.1.1-Trichloroethane	10.		97	302102	45.30			98
	1,2-Dichloroethane	11.		62	198862	49.52	dqq !		98
	Benzene	11.		78	430074	41.69	add ,		97
	Carbon Tetrachloride Cyclohexane	11.		117	327065	46.92 43.18	day :		98 97
	2,2,4-trimethylpentane	11. 12.		56 57	242950 760717	45.03			95
	Heptane	12.		43	309208				92
	Trichloroethene	12.		130	171114	44.34			98
	1,2~Dichloropropane	12.		63	178989	44.45			100
	Methyl methacrylate	12.		41	244596	51.46	dag	ŧ‡	97
	l,4-dioxane	13.			85099	41.28			8.7
	Bromodichloromethane	13.		8.3	333742	47.67			99

^{(#) =} qualifier out of range (m) = manual integration DH051703.D I0511T15.M Thu Jun 01 09:06:18 2017

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051703.D Acq On : 17 May 2017 9:34 am Sample : DSTD50_T015 Misc : TO15 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 17 10:05 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methyl Isobutyl Ketone	13.87	43	397674	47.92 ppb	95
49)		13.95	75	251337	46.72 ppb	100
50)	trans-1,3-Dichloropropene	14.64	7.5	223264	48.46 ppb	95
51)	1,1,2-Trichloroethane	14.93	97	196041	44.06 ppb	1.00
52)	Toluene	14.70	92	308426	43.21 ppb	96
53)	Methyl Butyl Ketone	15.09	43	340676	49.87 ppb	98
54)	Dibromochloromethane	15.58	129	338714	47.29 ppb	99
55)	Tetrachloroethylene	15.63	164	197600	44.14 ppb	98
56)	l,2-dibromoethane	15.81	107	262636	46.34 ppb	100
58)	Chlorobenzene	16.53	112	409077	40.47 ppb	99
59)	Ethylbenzene	16.75	106	222923	40.06 ppb	97
60)	m&p-Xylene	16.93	106	561254	81.62 ppb	93
61)	Nonane	17.24		488314	48.06 დენ	92
62)	Styrene	17.33	104	423083	43.25 ppb	93
63)	o-xylene	17.35	91	624754	42.69 ppb	95
64)	Bromoform	17.45	173	336352	44.42 ppb	99
65)	1,1,2,2-Tetrachloroethane	17.76	83	427800	43.41 ppb	98
66)	Cumene	17.84	105	840934	42.98 ppb	98
68)	Propylbenzene	18.31	91	979339	44.95 ppb	99
69)	2-Chlorotoluene	18.35	126	202390	43.42 ppb	83
70)		18.45	105	794207	46.49 ppb	100
71)	1,3,5-trimethylbenzene	18.49	105	689764	43.30 ppb	95
72)	1,2,4-trimethylbenzene	18.68	105	665584	44.73 ppb	97
73)	1,3-dichlorobenzene	19.13	146	363576	47.37 ppb	98
	benzyl chloride	19.19	91	404959	43.56 ppb	100
75)	1,4-dichlorobenzene	19.24	146	343243	43.64 ppb	98
76)	1,2,3-Trimethylbenzene	19.26	105	710699	44.32 ppb	96
77)	l,2-dichlorobenzene	19.50	146	373659	45.69 ppb	98
	1,2,4-trichlorobenzene	21.03	180	190667	41.30 ppb	97
79)	Naphthalene	21.20	128	339794	35.69 ppb	99
80)	Hexachloro-1,3-butadiene	21.26	225	409785	46.36 ppb	97

I0511T15.RES

Results File:

Quant

(RTE Integrator)

₽.8

C:\HPCHEM\1\METHODS\I0511T1

GCMS3 1.00

Multiplr:

Operator Vial

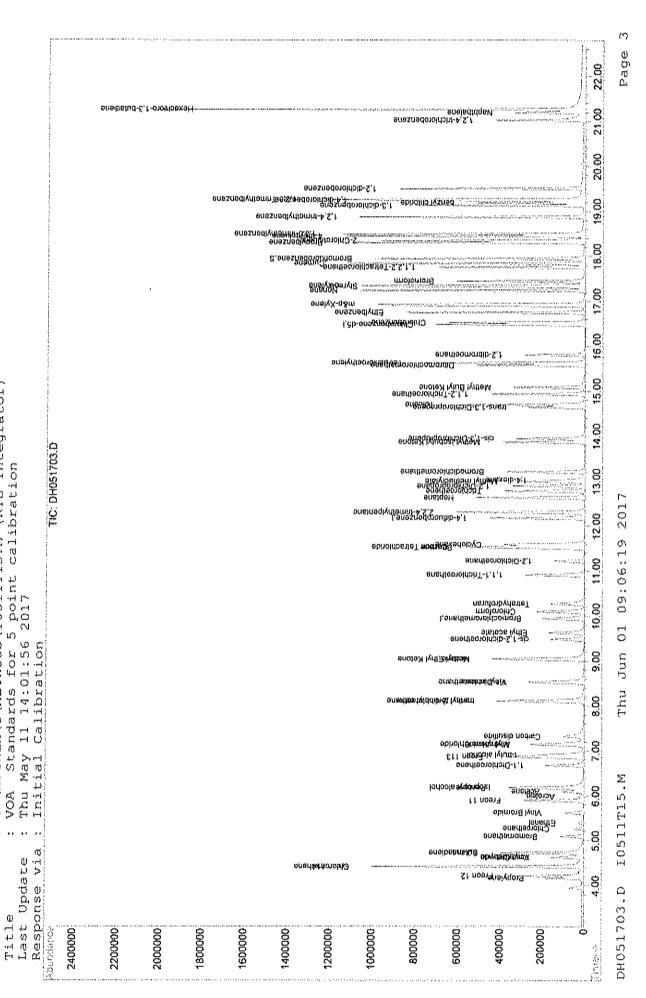
C:\HPCHEM\1\DATA\DH051703.D 17 May 2017 9:34 am DSTD50_T015 T015

Data File

င် Sample

Acq

MS Integration Params: rteint.p Ouant Time: May 17 10:05 2017



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Method

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DH051807.D
Acq On : 18 May 2017 12:16 pm
Sample : DSTD50_T015
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

: C:\HPCHEM\1\METHOD\$\IO511T15.M (RTE Integrator)

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Intitle : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017 Response via : Multiple Level Calibration

0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Min. RRF : 0.000 Min. Rel. Area : 50% Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	& Dev	Area% Dev(min)
	Bromochloromethane Propylene Freon 12 Freon 114 Chloromethane Acetaldehyde Vinyl Chloride Butane 1,3-butadiene Bromomethane Chloroethane Ethanol Vinyl Bromide Freon 11 Acrolein Acetone Pentane Isopropyl alcohol 1,1-Dichloroethene Freon 13 t-butyl alcohol Allyl chloride Methylene Chloride Carbon disulfide trans-1,2-dichloroethene methyl tert-butyl ether Vinyl acetate 1,1-Dichloroethane Methyl Ethyl Ketone Hexane cis-1,2-dichloroethene Ethyl acetate Chloroform Tetrahydrofuran 1,1-Trichloroethane 1,2-Dichloroethane Benzene Carbon Tetrachloride Cyclohexane	1.6193 4.546947671527911063395383027358248992 1.696796110633953830277211.00.336833953830277214.5524303333532543021.552	1.000 2.062 4.025 5.674 2.088 0.434 1.995 2.566 1.367 1.423 0.764 1.206 3.937 0.617 2.390 4.931 3.516 1.273 2.799 4.091 2.870 1.241 3.650	0.0 -27.4 11.8 -3.8	51 -0.03 48# -0.03 61 -0.03 61 -0.03 63 -0.03 66 -0.03 66 -0.03 66 -0.03 67 -0.03 67 -0.03 68 -0.03 68 -0.03 68 -0.03 68 -0.03 68 -0.03 68 -0.03 68 -0.03 69 +0.03 60 +0
401 412 423 445 445 447 449 445 555	1,4-difluorobenzene 2,2,4-trimethylpentane Heptane Trichloroethene 1,2-Dichloropropane Methyl methacrylate 1,4-dioxane Bromodichloromethane Methyl Isobutyl Ketone cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Toluene	1.000 1.716 0.670 0.392 0.409 0.483 0.209 0.711 0.843 0.546 0.468 0.452 0.725	1.000 1.847 0.784 0.323 0.426 0.616 0.191 0.708 0.974 0.580 0.508 0.415 0.677	0.0 -7.0 -17.6 -4.2 -27.5 -4.5 -15.2 -8.6 -8.6	52 -0.01 58 0.00 64 -0.01 42# 0.00 56 0.00 64 -0.01 49# 0.00 53 -0.01 62 0.00 54 0.00 53 0.00 49# 0.00 53 0.00

^{(#) =} Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DH051807.D Vial: 1 Acq On : 18 May 2017 12:16 pm Sample : DSTD50_T015 Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. RRF Dev : 30% Max. Rel. Area : 150% 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

	Compound	AvgRF	CCRF	%D⊕√	Area%	Dev(min)
53 54 55 56	Methyl Butyl Ketone Dibromochloromethane Tetrachloroethylene 1,2-dibromoethane	0.694 0.727 0.455 0.575	0.811 0.597 0.351 0.531	-16.9 17.9 22.9 7.7	59 42# 40# 47#	0.00 0.00 0.00
5 5 5 5 5 6 6 6 6 6 6 6 6 7 7 7 7 7 7 7	Chlorobenzene-d5 Chlorobenzene Ethylbenzene m&p-Xylene Nonane Styrene o-xylene Bromoform 1,1,2,2-Tetrachloroethane Cumene Bromofluorobenzene Propylbenzene 2-Chlorotoluene 4-ethyltoluene 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene benzyl chloride 1,4-dichlorobenzene 1,2,3-Trimethylbenzene	1.005 0.751 0.609 0.751 1.070 1.6028 1.070 0.8278 2.140 0.35168 1.7629 1.8637 0.8642 1.8639 0.8642	1.000 0.876 0.493 0.6260 0.943 0.6031 0.6031 1.88813 0.4254 1.7509 1.7549 1.7549 1.7549 1.7549 1.7549	7.7 0.0 20.7 19.0 16.6 13.4 11.6 10.4 14.3 14.3 14.3 16.3 16.3 16.4 17.6 17.6 10.0 16.4	# ### # # ############################	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
77 78 79 80	1,2-dichlorobenzene 1,2,4-trichlorobenzene Naphthalene Hexachloro-1,3-butadiene	0.894 0.505 1.041 0.967	0.728 0.391 0.739 0.622	18.6 22.6 29.0 35.7#	43# 43# 39#	0.00 0.00 0.00

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051807.D Vial: 1 Acq On : 18 May 2017 12:16 pm Sample : DSTD50_T015 Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 18 13:18 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc U	nits	Dev	(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.94	128	70916m 4	50.00	dag		-0.02
40) l,4-difluorobenzene	12.17	114	408744	50.00	dqq		-0.01
57) Chlorobenzena-d5	16.48	117	384998	50.00	ppb		0.00
system Monitoring Compounds							
67) Bromofluorobenzene	17.94	95	341528	62.54	dag		0.00
Spiked Amount 50.000	Range 70	~ 130	Recover	:У =	125	.08%	
Parget Compounds						Ova	alue
2) Propylene 3) Freon 12 4) Freon 114 5) Chloromethane 6) Acetaldehyde 7) Vinyl Chloride	4.16	41	146220	63.68	dag	w ₁	92
3) Freon 12	4.21		285404	44.10	dag		99
4) Freon 114	4.42	8.5	402397 148064	51.92 61.62	ppb		96
5) Chloromethane	4.42	50	148064	61.62	ppb		92
6) Acetaldehyde	4.63	44	30800	60.90	dag	4#	
7) Vinyl Chloride	4.62	62	141502 181998	58.84	dqq		98
8) Butane	4.72	43	181998	63.94	ppp		96
9) 1,3-butadiene	4.73	54	96917 100937 66553 54197	59.36	dqq		89
10) Bromomethane	5.09	94	100937	42.73	qqq		99
11) Chloroethane 12) Ethanol	5.26	64	66553	51.46	ppp		96
13) Vinyl Bromide	5.39 5.61	45	05406	56.48	agg		94
14) Freon 11	5.89 5.89	100	85496 279175 43724	43.71	ppp		99
	5.99	56	4 7 D T 7 D	45.13	aqq		99
16) Acetone	6.08	43	75729 760760	51.32 63.55	ppb		87 76
17) Pentane	6 17	n ⊃ 4 R	169459 349715 249329	56.73	ppo		93
18) Isopropyl alcohol	6.19	4.5	249329	54.88	ppb	₩	1
19) 1,1-Dichloroethene	6.67	96	90268	46.03	2,2,2,2	17	92
201 France 112		* **	198487	44.58	daa		88
21) t-butyl alcohol 22) Allyl chloride 23) Methylene Chloride 24) Carbon disulfide	6.91	59	198487 290147	53.21	dag		97
22) Allyl chloride	7.13	41	203542	59 98	dag		89
23) Methylene Chloride	7.15	8 4	88001	48.18	daa	ŧ	77
24) Carbon disulfide	7.32	76	258876	48.63	dqq		99
-491 Uransti.Zmglebloroethene	8.10	6.1	171759	57.38	dqq		87
26) methyl tert-butyl ether 27) Vinyl acetate	8.11	73	371295 361866 247865	49.65	dqq		89
27) Vinyl acetate	8.52	43	361866	60.22	ppb		95
28) 1,1-Dichloroethane	8 - 53	63	247865	53.72	ppb		
20) Metuli Etuli Ketone	9.04	72	57787	51.73	qqq	#	55
30) mexane	9.04	41	195190	60.57	aga	it	76
28) 1,1-Dichloroethane 29) Methyl Ethyl Ketone 30) Hexane 31) cis-1,2-dichloroethene 32) Ethyl acetate 33) Chloroform 34) Tetrahydrofuran	9.48	96	99211	46.20	ದರದ		98
33) Chloroform	9.63	45	46992	57.78	ppp		85
34) Tetrahydrofuran	10.10	63 42	249887	49.22	ppp		99
35) 1,1,1-Trichloroethane	10.27	97	186899 244551	58.77 45.92	ppp		84
36) 1,2-Dichloroethane	11.22	62	185956	57.97			99 99
37) Benzene	11.51	78	402553	48.85	ppp		98
38) Carbon Tetrachloride	11.54	117	235798	42.35	ppp		99
39) Cyclohexane	11.59	56	245025	54.52	ppb		97
41) 2,2,4-trimethylpentane	12.31	57	754895	53.81	dad		94
42) Heptane	12.63	43	320510	58.51	dqq		89
43) Trichloroethene	12.78	130	131887	41.17			92
44) l.2-Dichloropropane	12.89	63	174105	52.09			99
45) Methyl methacrylate	12.99	41	251797	63.80		#	93
46) 1,4-dioxane	13.03	88	78184	45.69	dqq		79
47) Bromodichloromethane	13.20	83	289290	49.78			98

^{(#) =} qualifier out of range (m) = manual integrationDH051807.D I0511T15.M Thu Jun 01 09:10:45 2017

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051807.D
Acq On : 18 May 2017 12:16 pm
Sample : DSTD50_T015
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 18 13:18 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response (Conc Uni	t Qvalue	
48)	Methyl Isobutyl Ketone	13.87	43	398170	57,80 p	pb 94	3
49)		13.94	7.5	237032	-	pb 100	Š
50)		14,64	7 5	207586	-	pb 95	5
51)	1,1,2-Trichloroethane	14.93	97	169789		pb 99	3
52)	Toluene	14.70	92	276707	46.70 p	96 dq	5
53)	Methyl Butyl Ketone	15.09	43	331540		3e dq	3
54)	Dibromochloromethane	15.58	129	244167		pb 97	7
55)	Tetrachloroethylene	15.63	164	143672		96 dq	3
56)		15.81	1.07	216997		99 dq	9
58)	Chlorobenzene	16.53	112	337309		DD dq)
59)	Ethylbenzene	16.75	106	189919	40.53 p	pb 97	7
60)	m&p-Xylene	16.93	106	482798m 🐼 እ	83.38 p	ob	
61)	Nonane	17.24	4.3	485104		pb # 91	L
62)	Styrene	17.32	104	364164	44.21 p	98 dq	5
63)	o-xylene	17.35	91	551894	44.79 p	pb 98	3
64)	Bromoform	17.45	1.73	230941	36.22 p	pb 100)
65)	1,1,2,2-Tetrachloroethane	17.76	83	396996	47.84 p	pb 98	3
66)	Cumene	17.83	105	706507	42.88 p	. do	3
68)	Propylbenzene	18.31	91	890349	48.53 p	рь 97	7
69)	2-Chlorotoluene	18.35	126	164247	41.85 p	ob 91	į
70)	4-ethyltoluene	18.45	105	675101	46.93 p	ენ 100)
71.)	1,3,5-trimethylbenzene	18.49	105	619642	46.19 p	9e dg	3
72)	1,2,4-trimethylbenzene	18.87	1.05	564649		DO.E de)
73)	l,3-dichlorobenzene	19.13	146	290567	44.96 p	pb 98	3
74)	benzyl chloride	19.19	91	363821		pb 97	7
75)	1,4-dichlorobenzene	19.24	146	276764	41.78 pt	ob 97	7
	1,2,3-Trimethylbenzene	19.26	105	588422	43.57 p	pb 97	1
77)	1,2-dichlorobenzene	19.50	146	280224	40.69 p	98 dq	3
78)	1,2,4-trichlorobenzene	21.03	180	150409m എ്	38.69 p	ob	
79)	Naphthalene	21.20	128	284327		ob 94	ĺ
80)	Nexachloro-1,3-butadiene	21.26	225	239350m4 <u>)</u>	32.15 p	de	

IOS11T15.RES

Results File:

Quant

(RTE Integrator)

C:\HPCHEM\1\METHODS\I0511T15.M

MS Integration Params: rteint.p Quant Time: May 18 13:18 2017

18 May DSTD50 TO15

Acq On Sample calibration

GCMS3 1.00

Vial

Multiplr: Operator:

Inst

C:\HPCHEM\1\DATA\DH051807.D 18 May 2017 12:16 pm DSTD50 T015

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Method Title

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA2\DH051605.D Vial: 2 Acq On : 16 May 2017 10:24 am Sample : DSTD500_H2S Misc : Siloxane Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: RTEINT, P

Method : C:\HPCHEM\1\METHODS\10406H2S.M (RTE Integrator)
Title : VOA Standards for 5 point calibration

Title : VOA Standards for 5 point calibration Last Update : Mon Jun 19 12:15:19 2017 Title

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area% Dev(min)
	r t	Bromochloromethane Hydrogen Sulfide	1.000 1.060	1.000 1.079	0.0 -1.8	221# -0.04 192# -0.08
3	Œ	1,4-difluorobenzene	1.000	1.000	0.0	193# -0.03
_	I S	Chlorobenzene-d5 Bromofluorobenzene	1.000	1.000 0.592	0.0	192# -0.01 190# -0.01

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA2\DH051805.D
Acq On : 18 May 2017 10:42 am
Sample : DSTD500_H2S
Misc : Siloxane Vial: 2 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: RTEINT.P

: C:\HPCHEM\1\METHODS\I0406H2S.M (RTE Integrator)

Method : C:\HPCHEM\1\METHODS\10406H2S.M (RTE Int Title : VOA Standards for 5 point calibration Last Update : Mon Jun 19 12:15:19 2017 Response vía : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. RRF Dev : 30% Max. Rel. Area : 150% 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

_		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	
	r t	Bromochloromethane Hydrogen Sulfide	1.000 1.060	1.000 1.057	0.0		-0.05 -0.08	
3	I	1.4-difluorobenzene	1.000	1.000	0.0	169#	-0.02	
4 5	I S	Chlorobenzene-d5 Bromofluorobenzene	1.000 0.604	1.000 0.634	0.0 -5.0	11	-0.01 -0.01	

Evaluate Continuing Calibration Report

Data File : F:\GCMS4DATA\2017MS4\2017MAY\DH051603.D Acq On : 16 May 2017 9:14 am Sample : DSTD50_SLXSF Misc : Siloxane Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\10412SSL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu Apr 13 06:48:03 2017

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev Area% Dev(min)
1 1 t t t t t t t t t t t t t t t t t t	Bromochloromethane Carbonyl Sulfide Methyl Mercaptan Ethyl Mercaptan Dimethyl Sulfide Carbon Disulfide Isopropyl Mercaptan Trimethyl silanol 1-Fropanethiol	1.000 3.312 1.803 1.183 1.605 4.738 2.183 0.299 1.011	1.000 2.405 1.424 0.900 1.258 3.895 1.533 0.528 0.903	0.0 117 -0.04 27.4 87 -0.09 21.0 90 -0.08 23.9 87 -0.08 21.6 95 -0.07 17.8 99 -0.06 29.8 84 -0.06 -76.6# 225# -0.06 10.7 100 -0.04
10 I 11 t	1,4-difluorobenzene Hexamethyldisiloxane-L2 Chlorobenzene-d5	1.000 6.242	1.000 5.409	0.0 117 -0.03 13.3 105 -0.03
13 t 14 t 15 t 16 t 17 t 18 t 19	Hexamethylcyclotrisiloxane- Octamethyltrisiloxane-L3 Bromofluorobenzene Octamethylcyclotetrasiloxan Decamethyltetrasiloxane-L4 Decamethylcyclopentasiloxan Dodecamethylpentasiloxane-L Dodecamethylcyclohexasiloxa	1.000 4.697 3.493 0.486 5.844 5.131 4.136 1.399 1.670	1.000 3.938 2.940 0.403 11.904 4.311 5.447 0.533 0.690	0.0 134 -0.01 16.2 120 -0.01 15.8 115 -0.01 17.1 119 -0.01 -103.7# 258# -0.01 16.0 107 -0.01 -31.7# 177# -0.01 61.9# 54 0.00 58.7# 55 0.00

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA2\DH051803.D Acq On : 18 May 2017 9:33 am Sample : DSTD50 SLXSF Misc : Siloxane Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\IO412SSL.M (RTE Integrator)

Title : VOA Standards for 5 point calibration Last Update : Thu Apr 13 06:48:03 2017 Title

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	&Dev	Area%	Dev(min)	
1 2 3 4 5 6 7 8 9	E	Bromochloromethane Carbonyl Sulfide Methyl Mercaptan Ethyl Mercaptan Dimethyl Sulfide Carbon Disulfide Isopropyl Mercaptan Trimethyl silanol 1-Propanethiol	1.000 3.312 1.803 1.183 1.605 4.738 2.183 0.299 1.011	1.000 2.735 1.427 1.035 1.535 4.313 1.593 0.347 0.967	0.0 17.4 20.9 12.5 4.4 9.0 27.0 -16.1 4.4	116 98 89 99 114 109 86 146	-0.05 -0.10 -0.09 -0.08 -0.08 -0.07 -0.07	
10 11		1,4-difluorobenzene Hexamethyldisiloxane-L2	1.000	1.000	0.0	124 104	-0.03 -0.03	
12 13 14 15 16 17 18 19 20	t t s t	Chlorobenzene-d5 Hexamethylcyclotrisiloxane- Octamethyltrisiloxane-L3 Bromofluorobenzene Octamethylcyclotetrasiloxan Decamethyltetrasiloxane-L4 Decamethylcyclopentasiloxan Dodecamethylpentasiloxane-L Dodecamethylcyclohexasiloxa	1.000 4.697 3.493 0.486 5.844 5.131 4.136 1.399	1.000 3.644 2.690 0.498 4.799 3.680 3.552 0.851 2.137	0.0 22.4 23.0 -2.5 17.9 28.3 14.1 39.2# -28.0	102	-0.01 -0.01 -0.01 -0.00 -0.01 -0.01 -0.01 -0.02	

Evaluate Continuing Calibration Report

Data Path : C:\MSDchem\1\DATA\

Data File : CK051501.D

Signal(s) : TCD1A.CH

Acq On : 15 May 2017

Operator : WD

Sample : CCFG-051517 Misc : 1 ml

ALS Vial : 1 Sample Multiplier: 1

Integration File: events.e

Quant Time: May 15 08:57:17 2017
Quant Method: C:\MSDchem\l\METHODS\CI0831FG.M

Quant Title : Fixed Gases by TCD

QLast Update : Fri Jul 08 09:32:21 2016

Response via : Initial Calibration

Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. Signal Phase : Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

Compound	AvgRF	CCRF	&Dev	Area% Dev(Min)
1 T Carbon Dioxide 2 T Oxygen 3 T Nitrogen 4 T Methane 5 T Carbon Monoxide	12.078 37.285 38.376 30.614 38.743	9.182 E6 36.899 E6 38.614 E6 28.382 E6 40.860 E6	24.0 1.0 -0.6 7.3	89 0.02 101 0.00 101 -0.03 94 -0.02 106 -0.13

Evaluate Continuing Calibration Report - Not Founds

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDchem\1\DATA\

Data File : CK051511.D

Signal(s) : TCD1A.CH

Acg On : 15 May 2017 10:46 am

Operator : WD

Sample : CCFG2-051517

Misc : 1 ml

ALS Vial : 1 Sample Multiplier: 1

Integration File: events.e

Quant Time: May 15 10:57:25 2017
Quant Method: C:\MSDchem\1\METHODS\CI0831FG.M

Quant Title : Fixed Gases by TCD

QLast Update : Fri Jul 08 09:32:21 2016

Response via : Initial Calibration

Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. Signal Phase : Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min Max. RRF Dev : 30% Max. Rel. Area : 150%

Compound		AvgRF	CCRF	&Dev	Area%	Dev(Min)
1 T 2 T 3 T 4 T	Carbon Dioxide Oxygen Nitrogen Methane Carbon Monoxide	12.078 37.285 38.376 30.614 38.743	9.175 E 36.483 E 38.098 E 28.395 E 40.005 E	26 2.2 36 0.7 36 7.2	89 99 100 94	0.02 0.00 -0.03 -0.02

Evaluate Continuing Calibration Report - Not Founds

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDchem\1\DATA\

Data File : CK051519.D Signal(s) : TCD1A.CH

Acq On : 15 May 2017 12:24 pm

Operator : WD

Sample : CCFG3-051517 Misc : 1 ml

ALS Vial : 1 Sample Multiplier: 1

Integration File: events.e

Quant Time: May 15 12:36:49 2017 Quant Method : C:\MSDchem\1\METHODS\CI0831FG.M

Quant Title : Fixed Gases by TCD QLast Update : Fri Jul 08 09:32:21 2016

Response via : Initial Calibration

Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : Signal Phase : Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area% Dev(Min)
1 T	Carbon Dioxide Oxygen Nitrogen Methane Carbon Monoxide	12.078	10.623 E6	12.0	103 0.01
2 T		37.285	30.803 E6	17.4	84 0.00
3 T		38.376	38.948 E6	-1.5	102 -0.03
4 T		30.614	29.057 E6	5.1	96 -0.02
5 T		38.743	41.208 E6	-6.4	107 -0.14

Evaluate Continuing Calibration Report - Not Founds

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

RAW DATA

BFB

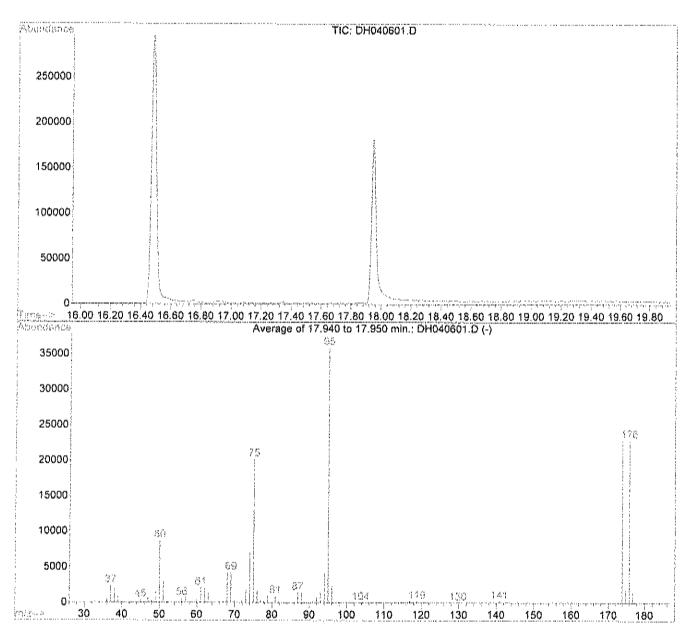
Data File: C:\HPCHEM\1\DATA2\DH040601.D Vial: 1
Acq On : 6 Apr 2017 7:54 am Operator: WD

Sample : BFB Inst : GCMS3
Misc : TO15 Multiplr: 1.00

MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\10406H2S.M (RTE Integrator)

Title : VOA Standards for 5 point calibration



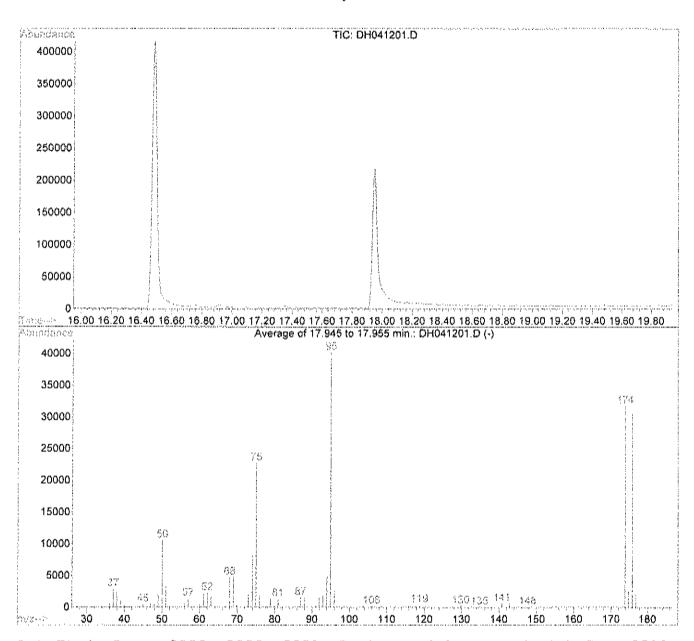
AutoFind: Scans 3527, 3528, 3529; Background Corrected with Scan 3518

1	Target Mass	1	Rel. to Mass	1	Lower Limit%	t I	Upper Limit%	1	Rel. Abn§	1	Raw Abn	.	Result Pass/Fail	}
	50 75 95 96 173 174 175	1	95 95 95 95 174 95	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 30 100 5 0.00 50	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	40 66 100 9 2 120	 	24.2 56.3 100.0 6.6 0.0 63.5		8704 20227 35957 2364 0 22837 1857	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	PASS PASS PASS PASS PASS PASS	}
1	175		174 176	1	95 5	ì	101 9	}	100.3 6.6	1	22912 1516	1	PASS PASS	1

Misc : TO15 MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\10406H2S.M (RTE Integrator)

Title : VOA Standards for 5 point calibration



AutoFind: Scans 3529, 3530, 3531; Background Corrected with Scan 3519

1	Target Mass	1	Rel. to Mass	‡ {	Lower Limit%	1	Upper Limit%		Rel. Abn%		Raw Abn	ł	Result Pass/Fail	
1	50		95	 I	8	}	40	1	26.2	}	10563	 	PASS	1 Tab
i	7.5	į	95	i	30	į	66	į	56.6	i	22765	i	PASS	į
ĺ	95	}	95	į	100	i	100	i	100.0	İ	40256	İ	PASS	1
ł	96	1	95	1	5	1	9	1	6.8	i	2719	Ī	PASS	1
ŧ	173	-	1,74	1	0.00	1	2	İ	0.0	1	0		PASS	1
}	1.74	-	95	1	50	1	120	1	78.8	1	31739		PASS	1
1	1.75	1	174	1	4	Ι	9	1	7.7	1	2452	1	PASS	1
1	176	-	174	1	95	Ι	101	Ι	96.3	1	30549	1	PASS	1
ł	エフフ	j	176	Ţ	<u> 5</u>	-	9	1	7.1	- 1	2161	1	PASS	ļ

Data File : C:\HPCHEM\l\DATA\DHO51101.D

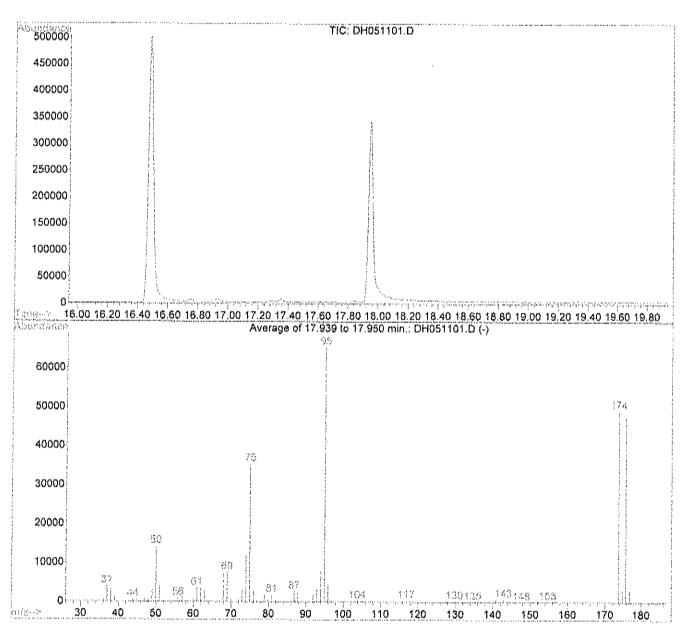
Acq On : 11 May 2017 8:18 am

Sample : BFB Misc : TO1S Vial: 1
Operator: WD
Inst : GCMS3
Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration



Spectrum Information: Average of 17.939 to 17.950 min.

1	Target Mass	1	Rel. to Mass	1	Lower Limit%	}	Upper Limit%	1	Rel. Abn%	1	Raw Abn	1	Result Pass/Fail	i į
}	50 75		95 95		15 30	!	40 66		21.8	1	14300	!	PASS	
	95	į	95	Ì	1.00		100	Į.	100.0	-	35432 65536	1	PASS PASS	
1	96 173	1	95 174		5 0.00	1	9 2	ì	6.9 0.0	i !	4524 0	† 	PASS PASS	1
1	174 175	1	95 174	1	50 5	ł	100 9	1	75.3 7.3	l	49320 3586	l	PASS PASS	1
} 1	176 177		174 176	1	95 5		101 9		96.5 6.6	! }	47605 3144	i 1	PASS PASS	į

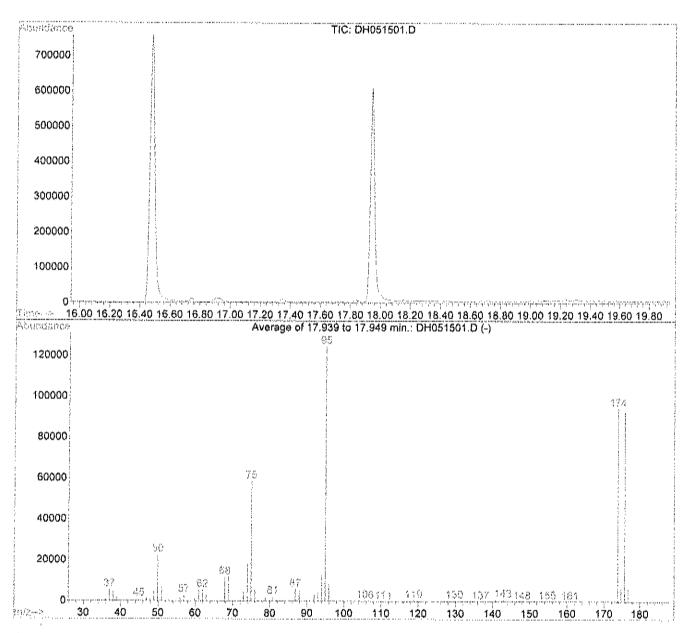
Data File : C:\HPCHEM\1\DATA\DHOS1501,D

Vial: 1 Acq On : 15 May 2017 8:24 am Operator: WD Sample : BFB : GCMS3 Inst Misc : TO15 Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

: VOA Standards for 5 point calibration



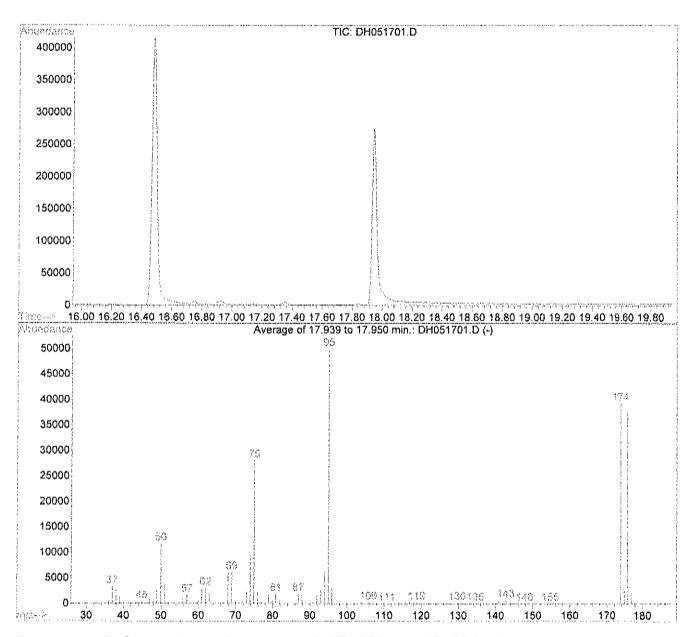
Spectrum Information: Average of 17,939 to 17,949 min.

1	Target Mass	 	Rel. to Mass	} 	Lower Limit&		Upper Limit%	! }	Rel. Abn%	ļ i	Raw Abn	‡ 	Result Pass/Fail	{
{	50	1	95	1	1.5	1	40		18.1		22555	·	PASS	 1
1	75	-1	95	1	30	Ì	66	Ì	47.0	i	58707	i	PASS	í
!	95	Ì	95	}	100	Ĺ	100	į	1,00.0	i	124795	į	PASS	i
ţ	96	-	95	ĺ	5		9	1	6.9	i	8549	į	PASS	i
1	173	-	1.74	Ì	0.00	1	2	i	0.0	i	٥	i	PASS	i
ì	174	1	95	1	50	Ĺ	100	Ĺ	75.8	i	94611	ì	PASS	i
- 1	175	ļ	174	1	5	Ĺ	9	į	7.3	i	6910	i	PASS	i
1	176	1	174	1	95	į	101	1	98.1	İ	92859	i	PASS	í
1	177	}	176	Ī	5	1	9	ŧ	6.8	į	6314	ĺ	PASS	į
		N 400 B												

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\10511T16.M (RTE Integrator)

Title : VOA Standards for 5 point calibration



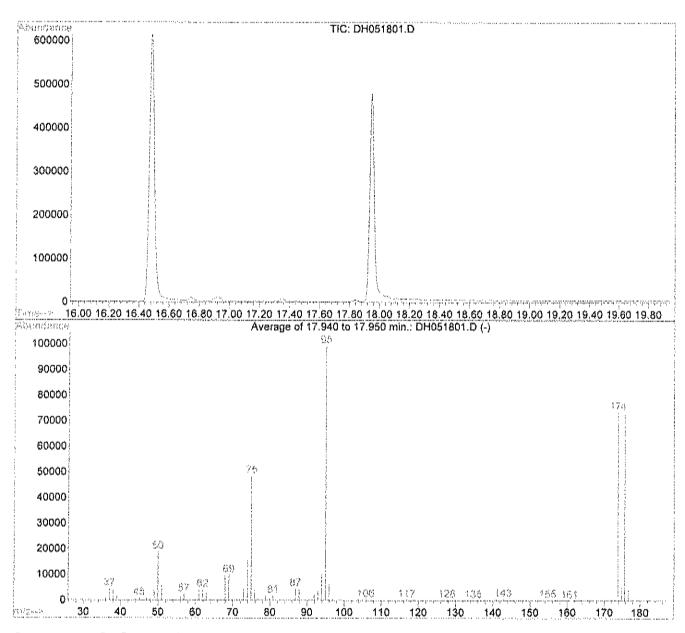
Spectrum Information: Average of 17.939 to 17.950 min.

i !	Target Mass		Rel. to Mass	1	Lower Limits	1	Upper Limit%	1	Rel. Abn%	!	Raw Abn		Result Pass/Fail	1
	50		95	Į	15	·	40	<i>.</i>	23.6	1	11804	1	PASS	 I
i	7.5	į	95	1	30	i	66	i	56.4	i	28189	í	PASS	i
j	95	Í	95	1	100	ì	100	i	100.0	ì	50024		PASS	ĺ
1	96	1	95	1	5	1	9	1	6.5	Ì	3245	ŧ	PASS	i
1	173	-	174	1	0.00	1	2	1	0.0	l	0	1	PASS	
ŧ	1.74	1	95	1	50	(100	1	78.7	ł	39368	1	PASS	
1	175	-	174	1	5	1	9	1	7.5	}	2938	Ţ	PASS	1
1	176	1	174	- 1	95	-	101	ı	95.9	1	37755	-	PASS	1
-1	1.77	1	176	1	5		9	Ī	6.4	}	2403	1	PASS	1

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for S point calibration



Spectrum Information: Average of 17.940 to 17.950 min.

!	Target Mass	1	Rel. to Mass	Ì	Lower Limit%	ŧ	Upper Limit%	1	Rel. Abn%	1	Raw Abn	1	Result Pass/Fail	1
1	50	n	95		15		40		19.0		18963		T3 73 C1 C3	
,		1	4- 40-	í		- 1		ı		ļ		- 1	PASS	ı
1	75	1	95	1	30	1	66	ł	48.9		48699		PASS	- 1
1	95	1	95	í	100	1	100	ŧ	100.0	1	99581	ļ	PASS	!
i	96	1	95	- 1	2	1	9	1	ნ.ნ		6535	1	PASS	1
1	1.73	- 1	174	-	0.00	1	2	Ì	0.0		0	i	PASS	Ì
1	174	1	95		5 Q	ĺ	1.00	ĺ	73.9	ţ	73632	j	PASS	į
- 1	175	ì	174	1	5	1	9	1	7.1	1	5252	1	PASS	1
-	176	ŧ	1,74	1	95	1	101	1	98.7	1	72696	1	PASS	I
1	177	1	176	İ	5	1	9	į	6.7		4844	I	PASS	1

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15
RAW QC DATA

TestCode: TO15

Date: 01-Jun-17

ANALYTICAL QC SUMMARY REPORT

CH2M - St Louis C1705036 Work Order: CLIENT:

Project:

Former Hampshire

Sample ID: DMB_TO15-051517 SampType: MBLK	SampType: MBLK	TestCode: TO15	Units: pobV	Prep Date:	RunNo: 12257
Client ID: ZZZZZ	Batch ID: R12257	TestNo: TO-15		Analysis Date: 5/15/2017	SeqNo: 143176
Analyte	Result	PQL SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	Vaf %RPD RPDLimit Qual
1,1,1-Trichloroethane	< 5.0	59			

	Not Detected at the Limit of Detection	-	Analyte detected below quantitation fimit Snike Recovery outside accepted recover limits	S
Hoteling times for preparation or analysis exceeded	Estimated Value above quantitation range	tu	Results reported are not blank corrected	Qualifiers: Results reported a
		5.0	< 5.0	Bromomethane
		5.0	< 5.0	Вготобот
		5.0	< 5.0	Bromodichloromethane
		5.0	< 5.0	Benzył chloride
		5.0	< 5.0	Велzепе
		5.0	< 5.0	Allyl chloride
		40	< 10	Acetone
		5.0	< 5.0	4-ethyltoluene
		5.0	< 5.0	2,2,4-trimethylpentane
		10	< 10	1,4-Dioxane
		5.0	< 5.0	1,4-Dichlorobenzene
		5.0	< 5.0	1,3-Dichlorobenzene
		5.0	< 5.0	t,3-butadiene
		5.0	< 5.0	1,3,5-Trimethylbenzene
		5.0	< 5.0	1,2-Dichłoropropane
		5.0	< 5.0	1,2-Dichloroethane
		5.0	< 5.0	1,2-Dichlorobenzene
		5.0	< 5,0	1,2-Dibromoethane
		5.0	< 5.0	1,2,4-Trimethylbenzene
		5.0	< 5.0	1,2,4-Trichlorobenzene
		5.0	< 5.0	1,1-Dichloroethene
		5.6	< 5.0	1,1-Dichlorcethane
		5.0	< 5.0	1,1,2-Trichloroethane
		5.0	< 5.0	1, 1, 2, 2. Tetrachloroethane
		5.0	< 5.0	1,1,1-Trichloroethane

Page I of 7

Fourtier Hampshite Fourtie	Work Order: C1705036	C1705036										
200222 Batch ID. R12537 Test/Oxder. TO15 Onlike poby Prep Date. Frep Date. Frep Date. Frep No. 143176 Fresh No. 143176 Fresh No. 143176 Seq-No. 143176	Project: Forme	er Hampshire						Ē		.015		
	Sample ID: DMB_T015-06	1	TestCod	e. TO15	Units: ppbV		Prep Date:			RunNo: 122	757	
Post Post	Client ID: ZZZZZ		TestN	o: TO-15		An	alysis Date:		.	SeqNo: 143	3176	
Action C C C C C C C C C	Analyte	Result	PQL	SPK value	SPK Ref Val				(PD Ref Val	%RPD	RPDLimit	Qua
Second	Carbon disulfide	< 5.0	5.0									
sene < 5.0 5.0 ree < 5.0 5.0 hiorocethene < 5.0 5.0 hiorocethene < 5.0 5.0 shorocethene < 5.0 5.0 hiorocethene < 5.0 5.0 shorocethene < 5.0 5.0 ne nerocethene < 5.0 5.0 shorocethene < 5.0 5.0	Carbon tetrachloride	< 5.0	5.0									
1.5 2.5	Chlorobenzene	< 5.0	5.0									
Note than C 5,0	Chloroethane	< 5.0	5.0									
National	Chloroform	< 5.0	5.0									
Notroethene < 5.0	Chloromethane	< 5.0	5.0									
Normetrane	cis-1,2-Dichloroethene	< 5.0	5.0									
Control than book Control to Control than book Control tha	cis-1,3-Dichloropropene	< 5.0	5.0									
connetthane < 5,0 5,0 connecthane < 10 10 connecthane < 10 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 5,0 connecthane < 5,0 connecthane < 5,0 connecthane < 5,0 connecthane < 5,0 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connecthane < 10 connec	Cyclohexane	< 5.0	5.0									
sne < 10 10 sne < 5.0 5.0 < 5.0 5.0 8.0 < 5.0 5.0 8.0 < 5.0 5.0 8.0 < 5.0 5.0 8.0 < 5.0 5.0 8.0 icohol 5.0 8.0 icohol 6.0 9.0 yi Ketone < 10 10 budyi Ketone < 10 10 budyi Ketone < 10 10 budyi Ketone < 10 10 budyi Ketone < 10 10 budyi Ketone < 10 10 budyi Ketone < 10 10 budyi Ketone < 10 10 budyi Ketone < 10 10 budyi Ketone < 10 10 budyi Ketone < 10 10 chilo	Dibromochloromethane	< 5.0	5.0									
Second Second	Ethyl acetate	< 10	10									
\$5.0 \$0.0 \$5.0 \$0.0	Ethylbenzene	< 5.0	5.0									
< 5.0	Freon 11	0.5 >	5.0									
< 5.0	Freon 113	< 5.0	5.0									
< 5.0	reon 114	< 5.0	5.0									
65.0 5.0 1.3-butadiene 65.0 5.0 45.0 5.0 5.0 41 Metone 410 10 41 Ketone 410 10 42 Metone 410 10 43 Ketone 410 10 44 Ketone 410 10 54 Ketone 410 10 54 Ketone 410 10 54 Ketone 410 10 54 Ketone 410 10 54 Ketone 420 50 55 Chloride 50 50 50 50 50 50 50 50 50 50 50 50 50 50 64 Kuran 50 50 65 Chross 50 50 65 Chross 50 50 65 Chross 50 50 7 Kesulls reported are not blank corrected 50 50 7 Kesulls reported below quantitation limit	Peon 12	< 5.0	5.0									
Solution Solution	Тербале	< 5.0	5.0									
Cohol	łexachloro-1,3-butadiene	0.5 >	5.0									
Sobola S.0 S	fexane	< 5.0	5.0									
e < 10 10 yl Ketone < 10 10 Julyl Ketone < 10 10 Dutlyl Ketone < 10 10 Dutlyl Ketone < 5.0 5.0 Chloride < 5.0 5.0 Chloride < 5.0 5.0 < 5.0 5.0 5.0 ethylene < 5.0 5.0 furan < 5.0 5.0 furan < 5.0 5.0 A mallyte detected below quantitation limit E Stimated Value above quantitation range H J Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	sopropyl alcohol	< 5.0	5.0									
yl Ketone < 10 10 yl Ketone < 10 10 bullyl Ketone < 10 10 bullyl Ketone < 10 10 chloride < 5.0 5.0 5.0 chloride < 5.0 5.0 5.0 chloride < 5.0 5.0 5.0 ethylene < 5.0 5.0 5.0 furan < 5.0 5.0 5.0 furant < 5.0 5.0 5.0 furant < 5.0 5.0 5.0 furant < 5.0 5.0 5.0 furants < 5.0	m&p-Xylene	< 10	10									
yl Ketone < 10 10 bullyl Ketone < 10	Wethyl Butyl Ketone	< 10	10									
Outly Ketone < 10 10 Duty Interfer < 5.0 5.0 Cathoride < 5.0 5.0 Cathoride < 5.0 5.0 < 5.0 5.0 5.0 Furnan < 5.0 5.0 A Results reported are not blank corrected E Stimated Value above quantitation sange H A Results reported below quantitation limit ND Not Detected at the Limit of Detection R	Methyl Ethyl Ketone	< 10	10									
-bulty lether < 5.0 5.0 chloride < 5.0	Methyl Isobulyl Ketone	> 10	10									
chloride < 5.0 5.0 < 5.0	Methyl tert-butyl ether	< 5.0	5.0									
< 5.0	Methylene chloride	< 5.0	5.0									
< 5.0	o-Xylene	< 5.0	5.0									
< 5.0 5.0	Propytene	< 5.0	9.0									
furan < 5.0 5.0 furan < 5.0 5.0 Kesults reported are not blank corrected Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	Styrene	< 5.0	5.0									
furan <5.0 5.0 Results reported are not blank corected E Estimated Value above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	Tetrachloroethylene	< 5.0	5.0									
Results reported are not blank corrected E Estimated Value above quantitation range H J Analyte detected below quantitation firmit ND Not Detected at the Limit of Detection R	Fetrahydrofuran	< 5.0	5.0									
Analyte detected below quantitation limit ND Not Detected at the Limit of Detection		s reported are not blank corrected		į	ted Value above quanti	ation range		į	teing times for	этерагацон от а	malysis exceede	· ·
		in distributed had one manufaction lines.										

TestCode: TOIS

Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

I M

Estimated Value above quantitation range Not Detected at the Limit of Detection

<u></u> ⊕

< 5.0

× 10

Methyl Butyl Ketone Methyl Ethyl Ketone

Qualifiers:

m&p-Xylene

Isopropyl ałcohol

0! ×

Results reported are not blank conrected
Analyte detected below quantitation limit
Spike Recovery outside accepted recovery limits

Quai "RPD RPDLinit SeqNo: 143185 RunNo: 12258 %REC LowLimit HighLimit RPD Ref Val Analysis Date: 5/17/2017 Prep Date: Units: ppbV SPK value SPK Ref Val TestNo: TO-15 FestCode: TO15 ğ 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 Batch ID: R12258 Resuft < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 × 10 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 SampType: MBLK Sample ID: DMB_T015-051717 Hexachloro-1,3-butadiene cis-1,3-Dichloropropene Bromodichloromethane Dibromochloromethane cis-1,2-Dichloroethene Carbon tetrachloride 22222 Carbon disulfide Chloromethane Bromomethane Chlorobenzene Benzył chloride 4-ethyttoluene Chloroethane Ethyibenzene Aliyi chloride Cyclohexane Ethy! acetate Chloroform Bromoform Freon 113 Clent ID: Freon 114 Benzene Freon 11 Freon 12 Acetone Heptane Hexane Analyte

Former Hampshire

CH2M - St Louis

C1705036

Work Order:

Project:

CLIENT:

Project: Former Hampshire	mpshire						TestCode:	TOIS	
Sample ID: DMB_TO15-051717	SampType: MBLK	TestCo	TestCode: TO15	Units: ppbV		Prep Date:		RunNo: 12258	
Client ID: ZZZZZ	Batch ID: R12258	Test	TestNo: TO-15			Analysis Date: 5	5/17/2017	SegNo: 143185	
Analyte	Result	Pol	SPK value	SPK Ref Val	%REC	LowLimit High	HighLimif RPD Ref Val	%RPD RPDLimit	Qual
Methyl Isobutyl Ketone	< 10	2							
Methyf tert-butyl ether	< 5.0	5.0							
Methylene chloride	< 5.0	5.0							
o-Xylene	< 5.0	5.0							
Propylene	< 5.0	5.0							
Styrene	< 5.0	5.0							
Tetrachloroethylene	< 5.0	5.0							
Tetrahydrofuran	< 5.0	5.0							
Toltene	< 5.0	5.0							
trans-1,2-Dichtoroethene	< 5.0	5.0							
frans-1,3-Dichloropropene	< 5.0	5.0							
Trichloroethene	< 5.0	5.0							
Vinyl acetate	< 5.0	5.0							
Vinyl Bromide	< 5.0	5.0							
Vinyl chloride	< 5.0	5.0							
Surr. Bromofluorobenzene	37.00	٥	50	0	74.0	55.8	141		
Sample ID: DMB_T015-051817	SampType: MBLK	TestCo	TestCode: TO15	Units: ppbV		Prep Date:		RunNo: 12259	
Client ID: ZZZZZ	Batch ID: R12259	Test	TestNo: TO-15			Analysis Date: 5	5/18/2017	SenNo: 143202	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	.모	Limit RPD Ref Val	WRPD RPDI imit	Č.
1, f, 1-Trichloroethane	< 5.0	5.0						ı	
1,1,2,2-Tetrachloroethane	< 5.0	5.0							
1, 1, 2- Frichloroethane	< 5.0	5.0							
1,1-Dichloroethane	< 5.0	5.0							
1,1-Dichloroethene	< 5.0	5.0							
1,2,4-Frichlorobenzene	< 5.0	5.0							
1,2,4-Trimethylbenzene	< 5.0	5.0							
1,2-Dibromoethane	< 5.0	5.0							
1,2-Dichlorobenzene	< 5.0	5.0							
1	Results reported are not blank conrected			Estimated Value above quantitation range	Ration rang	9.		Holding times for preparation or analysis exceeded	
J Analyte delect	Analyte detected below quantitation limit		NO Not D	Not Detected at the Limit of Detection)efection		R RPD outside acce	RPD outside accepted recovery limits	
	opiake necevery outside accepted recovery imits	2)5[5						Pa	Page 5 of 7

CH2M - St Louis C1705036

CLIENT; Work Order:

B_T(B)_T(B)_T(B)_T(B)_T(B)_T(B)_T(B)_T(B	Former Hampshire Former Hamp	Work Orden C1705025	Louis									
Posture Hampshire Posture Posture Hampshire Posture Hampshire Posture Post	POTTICET Hamppslitre		;									
22222 Baltin LD. R12289 Teat/Code: TO15 Units. ppbV Prep Date: Frumbring Supply (MBLK) FrumBry (MBLK) FrumBry (MBLK) FrumBry	22222 Beach IO: R42299 TestCode. TO15 Units. ppbV Prep Date: F1822 22222 Beach IO: R42299 TestNor: TO-15 Units. ppbV Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0 5.0 Analysis Date: 5182 Analysis Date: 5182 rectbrane < 5.0		pstine							015		
Coopinion of Control	Persont Feasult Foot SPK Nable SPK Nable SPK Nable SPK Ref Val %REC Lowdinint High Limit rochtane < 5.0 5.0	Sample ID: DMB_T015-051817	SampType: MBLK	TestCoo	le: T015	Units: ppbV		Prep Date:		RunNo: 12	259	
Continue Continue	Poll SPK value SPK Ref Val WREC LowLinnt HighLinnt		Batch ID: R12259	Testh	lo: TO-15		~1 <u>,</u>		12017	SegNo: 14	3202	
coeptrane < 5.0	Continue	Analyte	Result	POL	SPK value	SPK Ref Val	%REC			%RPD		Qual
Participane	Copropane C S D S D C D	1,2-Dichloroethane	<5.0	5.0								
ethylibenzene < 5.0 5.0 anne < 5.0 5.0 cobernzene < 5.0 5.0 cobernzene < 5.0 5.0 cobernzene < 5.0 5.0 intitylbenkrane < 5.0 5.0 che < 5.0 5.0	ethylibenzene < 5.0 5.0 anne < 5.0 5.0 cobenzene < 5.0 5.0 de < 5.0 5.0 Athybentane < 5.0 5.0 anne < 5.0 5.0 anne < 5.0 5.0 de < 5.0 5.0 choromethane < 5.0 5.0 anne < 5.0 <t< td=""><td>f,2-Dichloropropane</td><td>< 5.0</td><td>5.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	f,2-Dichloropropane	< 5.0	5.0								
Section	Section	1,3,5-Trimethylbenzene	< 5.0	5.0								
robenzene < 5.0 5.0 Accounted are not plank corrected < 5.0 5.0 Accounted are not plank corrected < 5.0 5.0 Accounted are not plank corrected < 5.0 Accounted are not plank corrected < 5.0 Accounted are not plank corrected < 5.0 Accounted are not plank corrected < 5.0 Accounted are not plank corrected < 5.0 Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Estimated value are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted are not plank corrected Accounted at the Limin of Detection Accounted are not plank corrected Accounted at the Limin of Detection Accounted are not plank corrected Accounted at the Limin of Detection Accounted are not plank corrected Accounted at the Limin of Detection	State Stat	1,3-butadiene	< 5.0	5.0								
robenzene	Contention	1,3-Dichlorobenzene	< 5.0	5.0								
10 10 10 11 11 12 13 13 13 13 13	10 10 10 10 10 10 10 10	1,4-Dichlorobenzene	< 5.0	5.0								
State Stat	45.0 5.0 ene < 5.0 5.0 conde < 5.0 5.0 conde < 5.0 5.0 conde < 5.0 5.0 conde < 5.0 5.0 doronedhane < 5.0 5.0 nne < 5.0 5.0 nne < 5.0 5.0 nne < 5.0 5.0 Ahoroethene < 5.0 5.0 nne < 5.0 5.0 Ahoroethene < 5.0 5.0 ane < 5.0 5.0 chromethrane < 5.0 5.0 chromethrane < 5.0 5.0 chromethrane < 5.0 5.0 chromethrane < 5.0 5.0 ane < 5.0 5.0 chromethrane < 5.0 5.0 chromethrane < 5.0 5.0 chromethrane < 5.0 5.0 chromethrane < 5.0 5.0 chromethr	1,4-Dioxane	< 10	10								
Contide	Composition Composition	2,2,4-trimethytpentane	< 5.0	5.0								
C 10 10 10 10 10 10 10	C 10 10 10 10 10 10 10	4-ethyltoluene	< 5.0	5.0								
C C C C C C C C C	Section	Acetone	< 10	40								
Contide	Contider Contider	Allyl chloride	< 5.0	5.0								
oridde	Second Second	Benzene	< 5.0	5.0								
Somethane	Somethane \$5.0 5.0	Benzyl chloride	< 5.0	5.0								
1	National State Section 19,0 Se	Bromodichloromethane	< 5.0	5.0								
hane < 5.0 5.0 sulfide < 5.0 5.0 rackborde < 5.0 5.0 zene < 5.0 5.0 zene < 5.0 5.0 zene < 5.0 5.0 ne < 5.0 5.0 Alloroptropene < 5.0 5.0 Alloroptropene < 5.0 5.0 informethane < 5.0 5.0 ate < 4.0 1.0 ate < 5.0 5.0 sene < 5.0 5.0 < 5.0 5.0 5.0 sene < 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5	hane < 5.0 5.0 sulfide < 5.0 5.0 racklorisde < 5.0 5.0 zene < 5.0 5.0 zene < 5.0 5.0 racklorisde < 5.0 5.0 hane < 5.0 5.0 Alloroptopene < 5.0 5.0 shoromethane < 5.0 5.0 ate < 4.0 1.0 ate < 4.0 1.0 she < 5.0 5.0 ate < 5.0 5.0 she < 5.0 5.0 A Analyse detected below quantitatin fair in fair in the Limit of Detection R S Shile Recovery outside arrounded proveed inning B) Not Detected at the Limit of Detection R S Shile Recovery outside arrounded proveed inning B) Not Detected at the Limit of Detection R	Bromoform	< 5.0	5.0								
vulfide < 5.0 5.0 rackhorsde < 5.0 5.0 sene < 5.0 5.0 n < 5.0 5.0 n < 5.0 5.0 hane < 5.0 5.0 Alloroetherne < 5.0 5.0 ster < 5.0 5.0 atter < 10 10 shoromethane < 5.0 5.0 atter < 5.0 5.0 shoromethane < 5.0 5.0 atter < 5.0 5.0 shoromethane < 5.0	sulfide < 5.0 5.0 rackloride < 5.0 5.0 zene < 5.0 5.0 sine < 5.0 5.0 ne < 5.0 5.0 Alloroptropene < 5.0 5.0 Alloroptropene < 5.0 5.0 ne < 5.0 5.0 iforomethane < 5.0 5.0 ste < 5.0 5.0 ate < 10 10 she < 5.0 5.0 ste < 5.0 5.0 she < 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 <td>Bromomethane</td> <td>< 5.0</td> <td>5.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Bromomethane	< 5.0	5.0								
rachloride 5.0 5.0 sene < 5.0	rachlorisde < 5.0 5.0 zene < 5.0 5.0 nne < 5.0 5.0 Alloroethene < 5.0 5.0 Alloroptopene < 5.0 5.0 Alloroptopene < 5.0 5.0 Alloroptopene < 5.0 5.0 Alloroptopene < 5.0 5.0 ate < 4.0 1.0 ate < 4.0 1.0 she < 5.0 5.0 she < 5.0 5.0 she < 5.0 5.0 Analyse detected below quantitatin limit Ni) Not Detected at the Limit of Detection H Shike Recovery outside arrounded procovery limites Ni) Not Detected at the Limit of Detection R	Carbon disulfide	< 5.0	5.0								
zene < 5.0 5.0 nne < 5.0 5.0 hane < 5.0 5.0 Alloroptropene < 5.0 5.0 Alloroptropene < 5.0 5.0 Alloroptropene < 5.0 5.0 Alloroptropene < 5.0 5.0 Ane < 5.0 5.0 Aller < 5.0 5.0 Atter < 5.0 5.0 Ane < 5.0 A Cosults reported are not blank contected Estimated Value above quantitation range H A Analyse detected below quantitation limit N3D Not Detected at the Limit of Detection R	zene < 5.0	Carbon tetrachloride	< 5.0	5.0								
Note that the corrected below quantitation family and the corrected and the Limit of Detection by the corrected and the Limit of Detection by the correction of the correction of the corrected by the corrected by the correct of the correction of	Not Recovery curicide accorded for some state \$5.0 A Sanike Recovery curicide accorded for some state \$5.0 A Sanike Recovery curicide accorded for some state \$5.0 A Sanike Recovery curicide accorded for some state \$5.0 A Sanike Recovery curicide accorded for some state \$5.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery limits \$3.0 A Sanike Recovery curicide accorded for sowery li	Chlorobenzene	< 5.0	5.0								
hane < 5.0 5.0 hloroethene < 5.0 5.0 hloroethene < 5.0 5.0 hloropropene < 5.0 5.0 no < 5.0 5.0 niconmethane < 5.0 5.0 ate < 10 10 ate < 10 10 ane < 5.0 5.0 shee 5.0 5.0 c 5.0 5.0 5.0 <td> 1</td> <td>Chloroethane</td> <td>< 5.0</td> <td>5.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1	Chloroethane	< 5.0	5.0								
table < 5.0 5.0 Alloroethene < 5.0 5.0 Alloroethene < 5.0 5.0 Alloropropene < 5.0 5.0 Alloromethane < 5.0 5.0 Atter < 410 10 Atter < 5.0 5.0 Analysis < 5.0 5.0 < 5.0 5.0 < 5.0 5.0 < 5.0 5.0 < 5.0 5.0 < 5.0 5.0 < 5.0 5.0 < 5.0 5.0 < 5.0 5.0 < 5.0 5.0 < 5.0 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 </td <td>hane < 5.0 5.0 Alloroethene < 5.0 5.0 Alloropropene < 5.0 5.0 Informed hane < 5.0 5.0 Arie < 5.0 5.0 Analyse detected below quantitation limit Analyse detected below quantitation limit B. Estimated Value above quantitation range H S. Shike Recovery outside around for outside around for now all limits NID Not Detected at the Limit of Detection R</td> <td>Chloroform</td> <td>< 5.0</td> <td>5.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	hane < 5.0 5.0 Alloroethene < 5.0 5.0 Alloropropene < 5.0 5.0 Informed hane < 5.0 5.0 Arie < 5.0 5.0 Analyse detected below quantitation limit Analyse detected below quantitation limit B. Estimated Value above quantitation range H S. Shike Recovery outside around for outside around for now all limits NID Not Detected at the Limit of Detection R	Chloroform	< 5.0	5.0								
# Analyke detected below quantitation finit is a single size of th	Alloroethene < 5.0 5.0 Alloropropene < 5.0 5.0 informethane < 5.0 5.0 ate < 10 10 are < 5.0 5.0 are < 5.0 5.0 are < 5.0 5.0 A Analyse detected below quantitation limit R) Not Detected at the Limit of Detection R S Shike Recovery outside around for outside around for outside around limits NI) Not Detected at the Limit of Detection R	Chloromethane	< 5.0	5.0								
# Analyke detected below quantitation in finite of 25.0	Appropries	cis-1,2-Dichloroethene	< 5.0	5.0								
ne < 5.0 5.0 idoromethane < 5.0 5.0 ate < 10 10 ate < 10 5.0 ate < 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 < 5.0 5.0 5.0 Analyse detected below quantitation limit Estimated Value above quantitation range H A hardyse detected below quantitation limit Nil) Not Detected at the Limit of Detection R	Sociation	cis-1,3-Díchloropropene	< 5.0	5.0								
Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected below quantitation limit Applying detected performance Applying detected	State Second of the corrected are not blank corrected as Shirk Recovery outside around in the state Shirt	Cyclohexane	< 5.0	5.0								
Applyte detected below quantitation limit Ni) Not Detected at the Limit of Detection R	Society Content of the content o	Dibromochioromethane	< 5.0	5.0								
Columbia Columbia	 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 Analyse detected below quantitation limit S. Shike Recovery outside around for now illimits S. Shike Recovery outside around for now illimits S. Shike Recovery outside around for now illimits 	Ethyl acetate	< 10	9								
 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 Suffine above quantitation range Analyte detected below quantitation limit Ni) Not Detected at the Limit of Detection 	 < 5.0 < 5.0 < 5.0 S.0 Substitute the ported are not blank corrected I Analyte detected below quantitation limit S. Shike Recovery outside around persone limits S. Shike Recovery outside around persone limits 	Elhylbenzene	< 5.0	5.0								
 < 5.0 < 5.0 S.0 Results reported are not blank corected I Analyse detected below quantitation limit NI) Not Detected at the Limit of Detection 	 < 5.0 < 5.0 Solution are not blank corected F. Estimated Value above quantitation range J. Analyte detected below quantitation limit S. Shike Recovery outside arouncid persone limits 	Freon 11	< 5.0	5.0								
Sessifis reported are not blank corrected Analyse detected below quantitation limit Ni) Not Detected at the Limit of Detection	Results reported are not blank corrected E Estimated Value above quantitation range H Analyse detected below quantitation limit ND Not Detected at the Limit of Detection R S Shike Recovery outside arouncide personal limits	Freon 113	< 5.0	5.0								
Results reported are not blank corrected E Estimated Value above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	Results reported are not blank tonceted E Estimated Value above quantitation range H J Analyse detected below quantitation limit ND Not Detected at the Limit of Detection R S Suike Recovery outside arcented provery limits	Freon 114	< 5.0	5.0								
Analyse detected below quantitation firmit ND Not Detected at the Limit of Detection R	Analyse detected below quantitation limit ND Not Detected at the Limit of Detection R. Snike Recovery outside arcented preview limits	•	ed are not blank conected			ed Value above quantit	tion range		Holding times for	preparation or a	malysis exceed	25
	Spike Recovery outside seconded preavent limite		ed below quantitation limit			ected at the Limit of De	tection	æ	RPD outside accep	sted recovery lin	PIES	

CLIENT:	CH2M - St Louis	Louis								
Work Order:	C1705036									
Project:	Former Hampshire	npshire						TestCode:	T015	
Sample ID: DMB_T015.051817	T015-051817	SampType: MBLK	TestCoc	TestCode: TO15	Units: ppbV		Prep Date:	 	RunNo: 12259	
Client ID: ZZZZZ	2	Batch ID: R12259	Testh	TestNo: TO-15		*	Analysis Date:	e: 5/18/2017	SeqNo: 143202	
Analyte		Result	Pol	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Freon 12		< 5.0	5.0							
Heptane		< 5.0	9.0							
Hexachloro-1,3-butadiene	sadiene	< 5.0	5.0							
Hexane		< 5.0	5.0							
isopropyl alcohol		< 5.0	5.0							
т&р-Хујепе		< 10	#							
Methyl Butyl Ketone	je je	< 10	£0							
Methyl Ethyl Ketone	96	< 10	10							
Methyl Isobutyl Ketone	done	< ±0	40							
Methyl tert-butyl ether	ther	< 5.0	5.0							
Methylene chloade	п»	< 5.0	5.0							
o-Xylene		< 5.0	5.0							
Propylene		<5.0	5.0							
Styrene		< 5.0	5.0							
Tetrachioroethylene	Ę.	< 5.0	5.0							
Tetrahydrofuran		< 5.0	5.0							
Toluene		< 5.0	5.0							
trans-1,2-Dichloroethene	ethene	< 5.0	5.0							
trans-f,3-Dichloropropene	propene	< 5.0	5.0							
Trichloroethene		< 5.0	5.0							
Vinyl acetate		< 5.0	5.0							
Vinyl Bromide		< 5.0	5.0							
Vinyl chloride		< 5.0	5.0							
Surr. Bromofluorobenzene	торенzепе	35.27	0	90	0	70.5	55.8	141		
Qualifiers:	Results report	Results reported are not blank corrected		E Estim	Estimated Value above quantitation range Not Detected at the Limit of Detection	titation range Detection		H Holding times	Holding times for preparation or analysis exceeded RDD outside accounted recovered limits	
, 40	Spike Recover	Spike Recovery outside accepted recovery limits	inits		מו ונוגר ביוונון כו	Torrespond				ا م م م
	•								1.48	Page / of /

Centek Laboratories, LLC

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051508.D Vial: 1 Acq On : 15 May 2017 1:00 pm Sample : DMB_T015-051517 Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: May 15 13:32 2017 Quant Results File: IO511T15.RES

Quant Method : C:\MPCHEM\1\METHODS\T0511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration

DataAcg Meth : NEW1

Internal Standards	R.T. Qion	Response	Conc Units De	v(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.96 128 12.19 114 16.48 117	783626	50.00 ppb 50.00 ppb 50.00 ppb	0.00 0.00 0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 95 Range 70 - 13	307750m k	aj 36.06 ppb ory ≈ 72.12	0.00

Target Compounds Qvalue

Page 488 of 572

Report

Quantitation

Centek Laboratories, LLC

Quantitation Report (QT Reviewed)

Data file : C:\HPCHEM\1\DATA\DH051706.D Vial: 1 Acq On : 17 May 2017 11:18 am Sample : DMB T015-051717 Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 17 12:16 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc Ur	nits D	ev(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.95 12.18 16.48	128 114 117	106084 645962 515205	50.00 50.00 50.00	વવુવ	0.00 0.00 0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000	17.95 Range 70	95 130	270398m (Recove	37.00		0.00

Target Compounds

Ovalue

(#) = qualifier out of range (m) = manual integration

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Quantitation Report

Centek Laboratories, LLC

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051811.D Acq On : 18 May 2017 2:39 pm Sample : DMB_T015-051817 Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 18 15:02 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
OataAcq Meth : NEW1

Internal Standards	R.T. QI	on Response	Conc Unit	s Dev(Min)
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	12.18 1	28 77664 14 476928 17 367493	50.00 pp 50.00 pp 50.00 pp	0.00
System Monitoring Compounds 67) Bromofluorobenzene Spiked Amount 50.000			35.27 pp ery = 7	
Target Compounds 60) m&p-Xylene	16.93 1	06 5717	1.03 pp	Qvalue b # 77

N

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Quantitation Report

TestCode: T015

Spike Recovery outside accepted recovery limits Analyte detected below quantitation limit

- S

CENTEK LABORATORIES, LLC

ANALYTICAL QC SUMMARY REPORT

Date: 01-Jun-17

CH2M - St Louis CLIENT:

C1705036 Work Order: Former Hampshire Project:

						sch vate		CURING. 1225/	
Client ID: ZZZZ	Batch ID: R12257	Test	Testino: TO-15			Analysis Date:	5/15/2017	SeqNo: 143177	
Analyte	Resuit	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLímit RPD Ref Val	%RPD RPDLimit (Qual
1,1,1-Trichloroethane	41,20	5.0	95	0	82.4	76.6	124		
1,1,2,2-Tetrachloroethane	44.93	5.0	50	0	69.9	47.3	139		
1, 1,2-Trichloroethane	44.81	5.0	20	¢	89.6	59.9	149		
1,1-Dichloroethane	45.84	5.0	90	0	91.7	56.9	146		
1, 1-Dichioroethene	51.97	5.0	℃	0	104	50.2	131		
1,2,4-Trichlorobenzene	43.64	5.0	50	o	87.3	27	127		
1,2,4-Trimethylbenzene	45.18	5.0	20	0	90.4	49	138		
1,2-Dibromoethane	45.37	5.0	<u>33</u>	0	7.06	59	145		
1,2-Dichtorobenzene	44.88	5.0	50	0	89.8	36.5	138		
1,2-Dichloroethane	43.02	5.0	S	0	0.39	71.5	126		
1,2-Dichloropropane	44,01	5.0	50	0	88.0	62.9	156		
1,3,5-Trimethylbenzene	44.44	5.0	20	0	68.9	48.2	136		
1,3-butadiene	36.98	5.0	50	တ	73.9	17.2	190		
1,3-Dichlorobenzene	47.47	5.0	50	0	94.9	35.9	141		
1,4-Dichlorobenzene	43.31	5.0	20	0	96.6	41.5	136		
1,4-Dioxane	47.08	10	20	ð	94.2	52.4	150		
2,2,4-trimethylpentane	43.77	5.0	50	0	87.5	60.6	159		
4-ethyltoluene	43.42	5.0	92	0	86.8	52.2	129		
Acetone	48.04	₽	<u>2</u> 2	Û	36.1	65.4	142		
Ally! chloride	42.66	5.0	92	0	85.3	52	176		
Вепгепе	46,15	5.0	20	0	92.3	58.5	151		
Benzył chloride	49.24	5.0	50	0	58.5	35.5	106		
Bromodichloromethane	42.24	5.0	S	0	84.5	73.9	129		
Bromoform	41.95	5.0	50	O	83.9	15.5	180		
Bromomethane	40.30	5.0	20	O	80.6	51.5	126		
Qualifiers: Results reporte	Results reported are not biank corrected		E Estim	Estimated Value above quantitation range	fitation ran		H Flolding times fo	Folding times for preparation or analysis exceeded	
described and the second secon							•		

Formore Hamposhire											
Part Part		mpshire						TestCo		315	
Patch Patc	Sample ID: DLCS_T015-05151;	- 11	TestCo	de: TO15	Units: pobV		Pren Dat	.a		Demalo: 40067	
Presult Presult Prot.	Client ID: ZZZZZ	Batch ID: R12257	Test	Vo: TO-15	<u>t</u>		Analysis Dat			SeqNo: 143177	
ording 47.56 5.0 50 95.2 55 144 44.83 5.0 5.0 9.0 78.5 142 44.83 5.0 5.0 9.0 78.5 70 112 ethene 44.83 5.0 5.0 9.0 86.7 48.7 142 properte 4.45 5.0 5.0 9.0 8.0 4.8 130 properte 4.45 5.0 5.0 9.0 8.0 9.2 142 properte 4.65 5.0 5.0 9.0 8.2 5.2 146 properte 4.67 5.0 5.0 0 9.1 1.2 1.8 properte 4.67 5.0 5.0 0 9.1 1.4 1.8 1.4 properte 4.67 5.0 5.0 0 9.1 2.2 1.4 1.2 properte 4.67 5.0 5.0 0 9.1 1.4 <t< th=""><th>Analyte</th><th>Resuft</th><th>POL</th><th>SPK value</th><th>SPK Ref Val</th><th>%REC</th><th>LowLimit</th><th></th><th>tef Vai</th><th></th><th>Qual</th></t<>	Analyte	Resuft	POL	SPK value	SPK Ref Val	%REC	LowLimit		tef Vai		Qual
pride 38 23 5 0 50 78 5 70 122 44 35 5 0 5 0 6 0 83 7 48 7 142 44 35 5 0 5 0 6 0 88 7 48 7 142 sthere 44 50 5 0 5 0 6 0 88 7 48 7 143 sthere 44 50 5 0 5 0 6 0 88 7 48 7 143 stream 48 77 5 0 5 0 6 0 88 9 5 2 146 stream 48 77 5 0 5 0 6 0 88 9 5 74 142 stream 48 77 5 0 5 0 6 0 88 9 5 74 142 stream 48 77 5 0 5 0 6 0 88 9 5 74 142 stream 48 78 5 0 5 0 6 0 7 2 142 142 stream 48 74 5 0 5 0 6 0 7 2 142 142 <td>Carbon disulficie</td> <td>47.58</td> <td>5.0</td> <td>50</td> <td>d</td> <td>95.2</td> <td>55</td> <td>124</td> <td></td> <td></td> <td></td>	Carbon disulficie	47.58	5.0	50	d	95.2	55	124			
Here 44.35 5.0 5.0 6.0 68.7 42.7 142 44.50 5.0 5.0 0 0 0 0 68.7 153 propere 45.34 5.0 5.0 5.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Carbon tetrachloride	39.23	5.0	20	, 0	78.5	8 ⊱	123			
H 3.35	Chlorobenzene	44.83	5.0	େ	0	89.7	49.7	42			
Henne 45.50 5.0 5.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Chloroethane	43.35	5.0	20	0	86.7	. es	138			
SS 12 SO SO TO2 ST 1 ISS Incheme 49,77 SO SO TO	Shloroform	44.50	5.0	50	Đ	89.0	64.8	130			
hethene 49,77 5,0 50 69,5 53,2 145 properte 45,84 5,0 5,0 50 0 9,95 53,2 145 hethane 39,87 5,0 50 0 0 8,9 57,4 129 ethane 39,87 5,0 50 0 0 79,7 52,5 145 44,47 6,0 50 0 0 79,7 52,5 145 39,47 5,0 50 0 0 70,4 138 butadiene 38,64 5,0 50 0 0 70,4 138 core 40,087 5,0 50 0 0 70,4 128 butadiene 38,64 5,0 50 0 0 70,5 143 core 44,05 0 0 0 0 70,5 143 core 44,05 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Chloromethane	35.12	5.0	8	o	70.2	55	153			
propertie 45.84 5.0 5.0 91.7 70.4 129 eithane 44.47 5.0 5.0 6.0 91.7 70.4 129 eithane 43.92 1.0 50 6.0 1.0 73.4 162 eithane 43.92 1.0 50 6.0 1.0 73.4 14.7 45.32 5.0 5.0 6.0 1.0 73.4 14.7 14.7 49.17 5.0 5.0 6.0 1.0 72.4 14.7 14.7 49.17 5.0 5.0 0 7.2 12.5 14.7 bulladishe 5.0 5.0 0 7.2 12.5 12.8 bulladishe 5.0 5.0 0 7.2 12.9 12.8 bulladishe 5.0 5.0 0 7.2 12.9 12.8 bulladishe 5.0 5.0 0 7.2 12.9 12.8 bulladishe	is-1,2-Dichloroethene	49.77	5.0	55	0	99.5	53.2	146			
ethlane 44.17 5.0 50 0 88.9 57.4 162 43.87 5.0 5.0 5.0 0 78.7 145 43.82 1.0 5.0 5.0 0 0.0 147 45.32 5.0 5.0 5.0 0 0.0 1.25 45.32 5.0 5.0 5.0 0 0 1.25 33.46 5.0 5.0 0 0 1.25 1.25 38.27 5.0 5.0 0 0 7.65 1.25 buladishe 38.24 5.0 0 0 7.65 1.25 buladishe 5.0 5.0 0 0 7.65 1.25 buladishe 5.0 5.0 0 0 7.65 1.66 buladishe 5.0 5.0 0 0 7.23 1.25 buladishe 5.0 5.0 0 0 7.23 1.24	is-1,3-Dichloropropene	45.84	5.0	50	0	91.7	70.4	129			
reth are 39.87 50 50 79.7 52.5 145 43.22 10 50 50 61.5 147 45.32 50 50 60 54.8 61.5 147 45.32 50 50 60 74.9 62.2 147 49.17 50 50 0 74.9 62.2 156 38.24 50 50 60 76.5 162 166 A1.11 50 50 60 82.2 65.2 156 Maddlene 38.64 50 60 82.2 65.2 156 More 44.42 50 50 60 82.2 65.2 156 More 44.42 50 50 60 88.8 53.4 141 More 44.42 50 50 60 88.9 141 More 44.42 50 50 60 88.9 141	Syclohexane	44.47	5.0	8	0	88 9.88	57.4	162			
43.92 43.92 10 50 97.8 61.5 147 43.92 43.83 43.84	Dibromochloromethane	39.87	5.0	95	0	79.7	52.5	145			
45.32 5.0 5.0 90.6 54.0 138 3.7.46 5.0 5.0 90.6 94.0 125 49.17 5.0 5.0 90.6 94.3 125 38.24 5.0 5.0 90.8 92.3 155 38.24 5.0 5.0 90.8 92.3 155 41.11 5.0 5.0 90.8 92.3 155 butaddene 38.64 5.0 5.0 90 76.5 191 butaddene 38.64 5.0 5.0 90 82.2 156 butaddene 44.05 5.0 5.0 90 82.2 156 butaddene 44.05 10 50 80 81.7 12 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 50 88.1 745 cone 44.05 10 88.1 745	thyl acetate	43.92	5	90	0	87.8	51.5	147			
Notation Notation	thylbenzene	45.32	5.0	8	0	90.6	<u>72</u> 86	138			
49.17 5.0 50 98.3 55.5 122 122 132 1	reon 11	37.46	5.0	50	o	74.9	69.2	125			
35.22 5.0 5.0 70.4 6.26 166 186	reon 113	49.17	5.0	90	0	98.3	55.5	122			
38.24 5.0 5.0 76.5 79.1 72.9 79.1 72.9 79.1 72.9 79.1 72.9 79.1 72.9 72.4 72.9 72.4 72.9 72.4 7	reon 114	35.22	5.0	90	0	70.4	62.6	166			
buttactione 38.64 5.0 5.0 6.2.2 65.2 15.4 buttactione 38.64 5.0 5.0 77.3 35.9 124 one 40.87 5.0 6.0 81.7 61.6 15.1 one 40.87 6.0 81.7 61.6 14.7 cone 44.02 6.0 100 88.9 53.4 14.7 cone 44.05 1 50 8.0 1 14.7 14.7 cethor 44.05 1 50 8.0 1 14.2 14.7 cethor 44.01 5.0 50 0 8.0 1 2 14.2 cethor 44.01 5.0 50 0 8.0 1 2 1 1 2 1 <td>rean 12</td> <td>38.24</td> <td>5.0</td> <td>90</td> <td>0</td> <td>76.5</td> <td>79.1</td> <td>129</td> <td></td> <td></td> <td>S</td>	rean 12	38.24	5.0	90	0	76.5	79.1	129			S
butadiene 38.64 50 50 77.3 35.9 124 40.87 50 50 6 81.7 61.6 151 10 40.87 50 9 81.7 61.6 151 10 44.42 5.0 10 88.1 74.5 141 10ne 44.05 10 50 88.1 74.5 141 10ne 44.05 10 50 9.8 74.5 141 10ne 44.05 10 50 0 88.1 74.5 142 10ne 44.01 5.0 50 0 88.0 67.2 142 10e 50 50 50 0 86.7 62.4 140 10e 50 50 50 50 60 86.7 62.4 140 10e 43.36 50 50 60 86.7 62.4 140 10e 42.68 50	leptane	41.11	5.0	20	Û	82.2	65.2	158			
House 40.87 5.0 5.0 6.0 61.5 6	fexachloro-1,3-butadiene	38.64	5.0	50	0	77.3	35.9	124			
14.42 5.0 5.0 6.8 5.3.4 14.1 14.42 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.1	fexane	40.87	5.0	20	o	81.7	61.6	151			
Figure F	sopropyl atcohol	44.42	5.0	20	0	88.8	53.4	147			
torne 44.05 10 50 0 88.1 74.5 11 torne 49.89 10 50 0 99.8 57.2 142 Ketone 41.48 10 50 0 83.0 73 122 ether 44.01 5.0 50 0 88.0 67.4 134 ether 50.04 5.0 50 0 86.7 62.4 140 43.36 5.0 50 60 86.7 62.4 140 86.3 50 50 72.7 51.7 165 86.4 50 60 85.4 45.5 149 86.3 50 50 85.4 45.5 149 86.5 50 60 85.4 45.5 149 87.3 50 50 86.5 56.6 149 88.5 43.24 53.0 50 86.5 56.5 149 88.5	n&p-Xylene	89.68	10	100	0	89.7	64.6	141			
tone 49.89 10 50 0 99.8 57.2 14.2 Ketone 41.48 10 50 0 83.0 73 122 ether 44.01 5.0 50 60 88.0 67.4 134 dether 50.04 5.0 50 0 86.7 62.4 140 36.37 5.0 50 0 86.7 62.4 140 ene 46.45 5.0 50 0 85.4 45.7 145 ene 43.24 5.0 50 0 85.4 45.5 149 Anally redeceded below quantitation limit Estimated Value above quantitation range H H H Anally detected below quantitation limit ND Not Detected at the Limit of Detection R F H	flethyl Butyf Ketone	44.05	10	50	O	88.1	74.5	117			
Ketone 41.48 10 50 83.0 73 122 ether 44.01 5.0 50 0 88.0 67.4 134 ide 50.04 5.0 50 0 86.7 62.4 142 ide 43.36 5.0 50 0 86.7 62.4 140 ide 46.45 5.0 50 0 72.7 51.7 165 ide 46.45 5.0 50 0 86.7 51.7 149 ene 42.68 5.0 50 0 85.4 45.5 149 43.24 5.0 50 0 86.5 58.6 149 in Results reported are not blank corrected Estimated Value above quantitation range H 45.5 149 in Analyse detected below quantitation limit ND Not Detected at the Limit of Detection H H	flethyl Ethyl Ketone	49.89	10	ß	o	8.66	57.2	142			
ether 44.01 5.0 50 0 88.0 67.4 134 ide 50.04 5.0 50 0 190 48.6 142 43.36 5.0 5.0 0 86.7 62.4 140 36.37 5.0 50 0 72.7 51.7 165 ene 42.68 5.0 50 0 85.4 45.5 149 43.24 5.0 50 0 86.5 56.6 149 Analyse eported are not blank corrected Estimated Value above quantitation range H Analyse detected below quantitation limit ND Not Detected at the Limit of Detection H	fethyl Isobutyf Ketone	41.48	10	S	0	83.0	73	122			
Ide 50.04 5.0 50 100 48.6 142 43.36 5.0 5.0 62.4 140 36.37 5.0 50 0 86.7 51.7 165 ene 46.45 5.0 50 0 92.9 49.4 147 ene 42.68 5.0 50 0 85.4 45.5 149 43.24 5.0 50 0 86.5 58.6 149 Analyte detected below quantitation limit Estimated Value above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detection H	fethyl tert-butyl ether	44.01	5.0	90	0	88.0	67.4	134			
43.36 5.0 50 86.7 62.4 140 36.37 5.0 5.0 0 86.7 51.7 165 46.45 5.0 50 0 82.9 49.4 147 ene 42.68 5.0 50 0 85.4 45.5 149 43.24 5.0 50 0 86.5 58.6 149 Results reported are not blank corrected Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	fethylene chloride	\$0.04	5.0	55	0	100	48.6	142			
36.37 5.0 5.0 72.7 51.7 165 46.45 5.0 5.0 0 92.9 49.4 147 42.68 5.0 5.0 0 85.4 45.5 149 43.24 5.0 5.0 0 86.5 58.6 149 Results reported are not blank corrected Estimated Value above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R Results reported are not blank corrected ND Not Detected at the Limit of Detection R Results reported are not blank corrected ND Not Detected at the Limit of Detection R Results reported are not blank corrected ND Not Detected at the Limit of Detection R Results reported are not blank corrected ND Not Detected at the Limit of Detection R Results reported are not blank corrected ND Results reported are not blank corrected ND Results reported are not blank corrected ND Results reported are not blank corrected ND Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R Results reported are not blank corrected R R	-Xylene	43.36	5.0	95	0	86.7	62.4	140			
46.45 5.0 50 92.9 49.4 147 148 148 149 148 149 148 149 148 149 148 149 148 149 148 149 148 1	Propylene	36.37	5.0	20	0	72.7	51.7	165			
42.68 5.0 50 0 85.4 45.5 149 43.24 5.0 5.0 0 86.5 58.6 149 45.5 149 45.5 149 45.5 149 45.5 149 45.5 149 45.5 149 45.5 149 45.5 149 45.5 149 45.5 149 140	Хугепе	46.45	5.0	99	0	92.9	49.4	147			
43.24 5.0 50 86.5 58.6 149 Results reported are not blank corrected Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	etrachloroethylene	42.68	5.0	90	0	85.4	45.5	149			
Results reported are not blank corrected E Estimated Value above quantitation range H Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	etrahydrofuran	43.24	5.0	20	0	36.5	58.6	149			
Analyte detected below quantitation limit ND Not Detected at the Limit of Detection R	,	ted are not blank corrected		į	ed Value above quant	sation rang	9	1	times for pa	eparation or arralysis exce	gred
		Constitution of the Consti									

CLIENT: CH2M-	CH2M - St Louis								
Work Order: C1705036	36								
Project: Former	Former Hampshire						TestCode:	de: TO15	
Sample ID: DLCS_T015-051517	1517 SampType: LCS	TesfCo	TestCode: TO15	Units: ppbV		Prep Date	te:	RunNo: 12257	
Client ID: ZZZZZ	Batch ID: R12257	Test	TestNo: TO-15			Analysis Date:	te: 5/15/2017	SeqNo: 143177	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	ef Val %RPD RPDLimit	Qual
Toluene	44.33	5.0	909	0	88.7	60.3	147		
trans-1,2-Dichloroethene	48.28	5.0	50	0	96.6	6.99	152		
trans-1,3-Dichloropropene	45.83	5.0	55	0	91.7	79.5	136		
Trichloroethene	45.22	5.0	50	0	90.4	57.4	144		
Vinyl acetate	48.11	5.0	50	0	96.2	64.9	157		
Vinyl Bromide	46.15	5.0	50	0	92.3	69.1	134		
Vinyl chioride	35.82	5.0	99	0	71.6	59.9	147		
Surr. Bromofluorobenzene	49.69	0	50	0	99.4	70.6	129		
Sample ID: DLCS_T015-051717	1717 SampType; LCS	TestCo	TestCode: TO15	Units: ppbV		Prep Date:	je.	RunNo: 12258	
Client ID: ZZZZZ	Batch ID: R12258	Test	TestNo: TO-15			Analysis Date:	te: 5/17/2017	SeqNo: 143186	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	ef Val %RPD RPDLimit	Oual
1,1,1-Trichloroethane	49.01	5.0	99	0	98.0	76.6	124		
1,1,2,2-Tetrachloroethane	46.52	5.0	90	0	93.0	47.3	139		
1,1,2-Trichloroethane	46.58	5.0	50	0	93.2	59.9	149		
1,1-Dichloroethane	49.13	5.0	50	0	98.3	56.9	146		
1,1-Dichloroethene	50.08	5.0	50	0	100	50.2	131		
1,2,4-Trichlorobenzene	46.60	5.0	90	0	93.2	27	127		
1,2,4-Trimethylbenzene	49.46	5.0	8	0	98.6	49	138		
1,2-Dibromoethane	48.64	5.0	55	0	97.3	53	145		
1,2-Dichlorobenzene	49.15	5.0	89	0	98.3	36.5	138		
1,2-Dichloroethane	52.42	5.0	55	0	165	71.6	126		
1,2-Dichloropropane	45.88	5.0	50	0	91.8	62.9	156		
1,3,5-Trimethylbenzene	49.00	5.0	90	0	98.0	48.2	136		
1,3-butadiene	57.77	5.0	20	0	116	17.2	190		
1,3-Dichloroženzene	52.06	5.0	50	0	2	35.9	143		
1,4-Dichlorobenzene	47.53	5.0	50	0	95.1	41.5	136		
1,4-Dioxane	46.72	10	50	0	93.4	52.4	150		
2,2,4-trimethylpentane	47.20	5.0	90	0	94.4	9'09	159		
Qualifiers: Results n	Results reported are not blank corrected		E Estim	Estimated Value above quantitation range	kitation ran	돮	H Holding	Holding times for preparation or analysis exceeded	eđ
	Analyte detected below quantitation limit		ND Not D	Not Detected at the Limit of Detection	Detection	ı	R RPD out	RPD outside accepted recovery limits	
S Spike Re	Spike Recovery outside accepted recovery limits	mils.						n de	Page 3 of 7

CH2M - St Louis	C1705036	Former Hampshire
CLIENT	Work Order:	Project:

TestCode: TO15

Sample ID: DLCS_T015-051717	SampType: LCS	TestCoo	TestCode: TO15	Units: ppbV		Prep Date:		RunNo: 12258
Client ID: ZZZZZ	Batch ID: R12258	Testh	TestNo: TO-15			Analysis Date:	5/17/2017	SeqNo: 143186
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPE	RPD Ref Vai %RPD RPDLimit Quai
4-ethyltoluene	47.89	5.0	65	0	95.8	52.2	129	
Acetone	57.83	9	90	0	116	65.4	142	
Allyl chloride	48.96	5.0	50	0	97.9	55	176	
Велгеле	45.60	5.0	cs S	0	91.2	58.6	151	
Benzyl chloride	48.89	5.0	20	0	97.8	36.5	106	
Bromodichioremethane	48.70	5.0	99	0	97.4	73.9	129	
Bromoform	50.28	5.0	50	0	101	15.5	180	
Bromomethane	40.53	5.0	50	0	81.1	51.5	126	
Carbon disulfide	47.46	5.0	99	0	94.5	55	144	
Carbon tetrachloride	50.36	5.0	99	0	101	70	122	
Chlorobenzene	44.76	5.0	50	0	89.5	49.7	142	
Chloroethane	43.14	5.0	50	0	86.3	\$ \$	138	
Chloroform	48.87	5.0	50	0	97.7	64.8	130	
Chloromethane	58.64	5.0	50	0	117	57	153	
cis-1,2-Dichloroethene	47.26	5.0	99	0	94.5	53.2	146	
cis-1,3-Dichtoropropene	48.18	5.0	99	0	96.4	70.4	129	
Cyclohexane	45.86	5.0	20	0	91.7	57.4	162	
Dibromochloromethane	49.98	5.0	\$	0	100	52.5	145	
Ethyl acetate	50.13	10	90	0	100	61.5	147	
Ethylbenzere	44.53	5.0	æ	0	89.1	54.8	138	
Frean 11	46.68	5.0	8	0	93.4	69.2	125	
Freon 113	51.67	5.0	90	0	103	55.5	122	
Freon 114	56.84	9.0	50	0	114	62.6	166	
Frecn 12	47.52	5.0	90	ð	95.0	79.1	129	
Неріале	48.56	5.0	90	0	97.1	65.2	158	
Hexachloro-1,3-butadiene	52.17	5.0	90	٥	45	35.9	124	
Hexane	49.68	5.0	50	c	99.4	61.6	5	
Isopropyl alcohol	52.28	5.0	50	٥	105	53.4	147	
т&р-ХуІвле	91.63	9	100	0	91.6	64.6	141	
Methyi Butyi Ketone	54.20	10	20	0	108	74.5	117	
Methyl Ethyl Ketone	48.68	9	8	٥	97.4	57.2	142	
Qualifiers: Results report	Results reported are not blank corrected		E Estima	Estimated Value above quantitation range	litation rang	Ų.	ibioit it	Holding times for preparation or arelysis exceeded
J Analyte detec	Analyte detected below quantitation limit		ND Not D	Not Detected at the Limit of Detection	Detection		R RPD	RPD outside accepted recovery limits

Work Order:	C1705036											
Project:	Former Hampshire	pshire						TestCode:		TOIS		
Sample ID: DLCS_T015-051717	S_T015-051717	SampType: LCS	TestCo	TestCode: TO15	Units: ppbV		Prep Date	ei.		RunNo: 12258		
Client ID: 22222	22	Batch ID: R12258	Test	TestNo: TO-15			Analysis Date.	le: 5/17/2017		SeqNo: 143186		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD F	RPD Ref Val	%RPD RF	RPDLimit	Qual
Methyl Isobutyl Ketone	Getone	51.53	5	55	0	103	73	122				
Methyl tert-butyl ether	ether	47.12	5.0	25	0	94.2	67.4	134				
Methylene chloride	de	48,34	5.0	50	0	96.7	48.6	142				
o-Xylene		46.75	5.0	50	0	93.5	62.4	140				
Propylene		45.57	5.0	50	0	94.1	51.7	165				
Styrene		47.30	5.0	50	0	94.6	49.4	147				
Tetrachloroethylene	me	47.28	5.0	50	0	94.6	45.5	149				
Tetrahydrofuran		49.24	5.0	20	Ф	98.5	58.6	149				
Toluene		45.07	9.0	8	Φ	8	60.3	147				
trans-1,2-Dichloroethene	oethene	51.14	5.0	20	0	102	6.99	152				
trans-1,3-Dichloropropene	opropene	50.41	5.0	50	O	101	79.5	136				
Trichloroethene		46.45	5.0	50	င	92.9	57.4	144				
Vinyl acetate		55.07	5.0	S	0	110	64.9	157				
Vinyl Bromide		45.22	5.0	50	0	90.4	69.1	134				
Vinyi chloride		29.07	5.0	23	0	118	56.6	147				
Surr: Bromofluorobenzene	orobenzene	53.61	0	\$	ø	107	70.6	129				
Sample ID: DLCS_TO15-051817	S_T015-051817	SатърТуре: LCS	TestCoo	TestCode: TO15	Units: ppbV		Prep Date:	ie.		RunNo: 12259		
Client ID: ZZZZZ	z	Batch ID: R12259	Testh	TestNo: TO-15			Analysis Date:	e: 5/18/2017		SenNo: 143203		
				•						oodine. interes		
Analyte		Result	PGL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	tef Val	%RPO RP	RPDLimit	Qual
1,1,1-Trichioroethane	nane	54.99	5.0	90	0	110	76.6	124				
1,1,2,2-Tetrachloroethane	roethane	57.51	5.0	50	0	115	47.3	139				
1,1,2-Trichiorcethane	ane	51.58	5.0	909	Ç	103	59.9	149				
f, 1-Dichloroethane	Je	65.91	5.0	50	0	132	56.9	146				
1,1-Dichloroethene	Je	62.22	5.0	50	0	124	50.2	131				
1,2,4-Trichiorobenzene	auazu	40.73	5.0	90	0	81.5	27	127				
1,2,4-Trimethylbenzene	enzene	54.93	5.0	90	Ф	110	49	138				
1,2-Dibromoethane	원	51.76	5.0	50	0	104	59	145				
1,2-Dichlorobenzene	ene	49.62	5.0	50	¢	99.2	36.5	138				
Qualifiers:	Results reporte	Results reported are not blank conected		E Estima	Estimated Value above quantitation range	iitation ran	<u>ئ</u>	H Holding	times for pr	Holding times for preparation or analysis exceeded	as exceeded	
m		Analyte detected below quantitation limit		ND Not Do	Not Detected at the Limit of Detection	Detection		R RPD out	side accepte	RPD outside accepted recovery limits		
Ø		Spike Recovery outside accepted recovery limits	mits								Pa	Page 5 of 7

CH2M - St Louis

CLIENT:

Project:	Former Hampshire	mpshire						Te	TestCode: T	T015		
Sample ID: DLCS_TO15-051817	TO15-051817	7 SampType: LCS	TestCo	TestCode: TO15	Units: ppbV		Prep Date	ė		RunNo: 12259	59	
Client ID: ZZZZZ		Batch ID: R12259	Test	TestNo: TO-15		~4	Analysis Date:	te: 5/18/2017	r.	SeqNo: 143203	203	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Vai	%RPD	RPDLimit	Quai
1,2-Dichloroethane	.	67.35	5.0	50	0	135	71.6	126				S
1,2-Dichloropropane	ě	56.98	5.0	90	0	**	62.9	156				•
1,3,5-Trimethylbenzene	zene	52.87	5.0	50	0	106	48.2	136				
1,3-butadiene		60.49	5.0	90	0	121	17.2	190				
1,3-Dichlorobenzene	æ	54.67	5.0	50	0	109	35.9	141				
1,4-Dichlorobenzene	£	52.08	5.0	90	0	104	41.5	138 85				
1,4-Dioxane		54.85	10	50	0	110	52.4	150				
2,2,4-trimethylpentane	ane	59.62	5.0	90	0	119	60.6	159				
4-ethyltoluene		55.37	5.0	50	0	4	52.2	129				
Асебопе		79.25	10	50	0	158	65.4	142				s
Allyl chloride		69.04	5.0	20	0	138	25	176				
Велгепе		17.65	5.0	50	0	119	58.6	151				
Benzył chloride		60.28	5.0	50	0	121	36.5	10%				s
Bromodichloromethane	hane	54.16	5.0	20	0	108	73.9	129				
Вготобот		44,29	5.0	90	¢	38.6	15.5	180				
Bromomethane		57.08	5.0	50	0	114	51.5	126				
Carbon disulfide		61.63	5.0	50	0	123	55	144				
Carbon tetrachloride	ē	50.72	5.0	50	O	103	70	122				
Chlorobenzene		48,25	5.0	90	Q	96.5	49.7	142				
Chloroethane		62.07	5.0	20	0	124	28	138				
Chloroform		60.13	5.0	50	0	120	64.8	130				
Chloromethane		64.54	5.0	50	0	129	2,7	153				
cis-1,2-Dichloroethene	ene	56.33	5.0	50	Q	113	53.2	146				
cis-1,3-Dichloropropene	реле	57.74	5.0	50	O	115	70.4	129				
Cyclohexane		64.63	5.0	50	0	129	57.4	162				
Dibromochloromethane	hane	45.73	5.0	50	0	91.5	52.5	145				
Ethyl acetate		66.41	9	50	0	133	61.5	147				
Ethylbenzene		49.70	5.0	50	0	99.4	54.8	138				
Freon 11		51.89	5.0	50	0	104	69.2	125				
Freon 113		24.09	5.0	50	O	122	55.5	122				
Freon 114		57.11	5.0	20	0	114	62.6	166				
Qualifiers:	Resuits repor	Resuits reported are not blank corrected			Estimated Value above quantitation range	litation rang	ñ	11 110	Holding unes for preparation or analysis exceeded	preparation or an	alysis exceeds	Ş
•	Anafyte delet	Analyte delected below quantitation limit		ND Not Do	Not Detected as the Limit of Detection	Detection		R R	RPD outside accepted recovery limits	нед гесоvогу Гяті	ijts	
δl	Spike Recove	Spike Recovery outside accepted recovery limits	mis								d	Page 6 of 7

CH2M - St Louis C1705036

Work Order: CLIENT:

CLIENT: CH2M - St Louis Work Order: C1705036	CH2M - St Louis C1705036						E	1		
	ankonne						resicone:	sue: tots	•	
Sample ID: DLCS_T015-051817	7 SampType: LCS	TestCode: TO15	7015	Units: ppbV		Prep Date	ē.	Ru	RunNo: 12259	
Cilent ID: ZZZZZ	Batch ID: R12259	TestNo: TO-15	TO-15		***	Analysis Date:	e: 5/18/2017	S,	SeqNo: 143203	
Anafyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD	RPD Ref Val	%RPD RPDLimit	Qual
Freon 12	56.15	5.0	50	0	112	79.1	129			
Heptane	62.63	5.0	20	o	125	65.2	158			
Hexachloro-1,3-butadiene	39.72	5.0	20	O	79.4	35.9	‡2 4			
Hexane	69.14	2.0	20	Đ	138	6.1.6	151			
sopropyi aicoho	73.00	5.0	20	o	146	53.4	147			
m&p-Xylene	101.2	#	100	0	101	64.6	######################################			
Methyl Bulyl Ketone	67.28	10	20	0	135	74.5	117			ψ
Methyl Ethyl Ketone	64.98	10	8	0	130	57.2	142			
Methyl Isobutyl Ketone	64.57	₽	8	o	129	23	122			S
Methyl tert-butyl ether	60.80	2.0	20	0	122	67.4	134			
Methylene chloride	62.51	5.0	20	0	125	48.6	142			
o-Xylene	53.85	5.0	S	0	108	62,4	140			
Propylene	62.69	5.0	20	¢	125	51.7	165			
Styrene	53.53	5.0	20	0	107	49.4	147			
Tetrachioroethylene	43.93	5.0	20	Đ	87.9	45.5	149			
Tetrahydrofuran	69.17	5.0	90	۵	138	58.6	149			
Toluene	51.93	5.0	20	O	104	60.3	147			
trans-1,2-Dichloroethene	65.25	5.0	20	ø	130	6.99	152			
trans-1,3-Dichloropropene	60.05	5.0	20	¢	120	79.5	136			
Trichloroethene	46.19	5.0	20	0	92.4	57.4	144			
Vinyl acetate	76.13	5.0	90	O	152	64.9	157			
Vinyl Bromide	55.42	2.0	20	Φ	11	69.1	134			
Vînyl chtoride	62.19	5.0	20	0	124	59.9	147			
Surr. Bromofluoroberzene	57.74	0	80	Ö	115	70.6	129			
Orrolliters: Receipt renor	Receipt cenaded are not blank corrected		F Esting	Estimated Value ahave mantitation range	define rano		# Molding	times for arma	helding times the mengethan an action to see the	#4F2
, <u>¬</u>	Analyte detected below quantitatyn limit	,	_	Not Detected at the Limit of Detection	Defection	Į.		RPD outside accepted recovery limits	covery limits	
S Spike Recove	Spike Recovery outside accepted recovery limits	nits								Page Tak?

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051505.D
Acq On : 15 May 2017 11:18 am
Sample : DLCS_T015-051517
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 15 11:48 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc U	nits	Dev(Min)
1) Bromochloromethane	9.95	128	149458	50.00	dqq	707	0.01
40) 1.4-difluorobenzene	12.17	114	867691	50.00	qqq	~	0.01
57) Chlorobenzene-d5	16.48	117	727533	50.00	qqq		0.00
System Monitoring Compounds							
67) Bromofluorobenzene	17.94	95					0.00
Spiked Amount 50.000	Range 70	- 130	Recove	ry =	99.	.38%	
Target Compounds						Qva	lue
2) Propylene	4.16	41	1.75988				83
3) Freon 12	4.21		521666	38.24	ppp		99
4) Freon 114	4.42	85	575220m 4 177841m	35.22	ppb		
5) Chloromethane	4.42		177841m	35.12	qqq		
7) Vinyl Chloride	4.62	62	181521m	35.82	gqqq		
8) Butane	4.73	43	209875m 127163m \	34.99	agg		
9) 1,3-butadiene	4.73 5.09	54	12/163m '	V 36.96	ppp		7.00
10) Bromomethane		94	200628	40.30	agg		100
11) Chloroethane 12) Ethanol	5.27 5.40	04	110104	45.30	ppp		96
13) Vinyl Bromide	5.62	45	31373	49.49	En Forts		92 98
14) Freon 11	5.89	101	120244	37 46	En En En		100
15) Acrolein	5.99	5.5	74520	41 50	F2 F2 F2		99
16) Acetone	6.09	43	118164 91929 190244 488348 74520 269959	48 04	\$25.50 p.2 \$25.50 p.2		62
17) Pentane	6.18	43	526224	40.50	me	#	91
18) Isopropyl alcohol		45	425384	44.42	ppb	"	82
19) 1,1-Dichloroethene	6.19 6.67	0.6	425384 214801	51.97	daa	#	86
20) Freon 113	6.86	101	214801 461372 541492 305131 192628	49.17	daa	,	95
		59	541492	47.12	dag		96
21) t-butyl alcohol 22) Allyl chloride	6.91 7.13	41	305131	42.66	ppb		98
23) Methylene Chloride	7.15	84	192628	50.04	dqq		96
24) Carbon disulfide	7.32	/ ()	533796	47.58	વવુવ		96
25) trans-1,2-dichloroethene 26) methyl tert-butyl ether 27) Vinyl acetate	8.10	61	304569 693595	48.28	ppb		95
26) methyl tert-butyl ether	8.11	73	693595	44.01	ppp		98
27) Vinyl acetate	8.52	43	609295	48.11	dqq		98
28) 1,1-Dichloroethane	8.54 9.04	63	445780 117457	45.84	qqqq		98
28) 1,1-Dichloroethane 29) Methyl Ethyl Ketone		72	117457	49.89	ppp	#	87
30) Hexane	9.04		277599	40.87	agg	#	59
31) cis-1,2-dichloroethene	9.48	96	225219 78487	49.77	ppn		97
32) Ethyl acetate 33) Chloroform	9.63 10.10	43	476103	43,92	ppp		93 98
34) Tetrahydrofuran	10.10	42	289808	43.24	ppp		98 98
35) 1,1,1-Trichloroethane	10.91	97	462463	41.20			
36) 1,2-Dichloroethane	11.22	62	290832	43.02			98 99
37) Benzene	11.52	78	801537	46.15			94
38) Carbon Tetrachloride	11.54	117	460295	39.23			99
39) Cyclohexane	11.59	56	421231	44.47	cdad		84
41) 2,2,4-trimethylpentane	12.31	57	1303488	43.77	daa		89
42) Heptane	12.63	43	477998	41.11			97
43) Trichloroethene	12.78	130	307522	45.22	daa		99
44) 1,2-Dichloropropane	12,90	63	312300	44.01	daa		99
45) Methyl methacrylate	12.99	4 1	334346	39.90		#	85
46) 1,4-dioxane	13.03	88	171013	47.08			95
47) Bromodichloromethane	13.21	83	521109	42.24	ppb		99
48) Methyl Isobutyl Ketone	13.87	43	606573	41.48			93

^{(#) =} qualifier out of range (m) ≈ manual integration DH051505.D I0511T15.M Thu Jun 01 08:56:14 2017

Centek Laboratories, LLC

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051505.D
Acq On : 15 May 2017 11:18 am
Sample : DLCS_TO15-051517
Misc : TO15 Vial: l Operator: WD Inst : GCMS3
Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 15 11:48 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Cone Unit	Qvalue
49)	cis-1,3-Dichloropropene	13.94	75	434593	45.84 ppb	99
50)	trans-1,3-Dichloropropene	14.64	75	372096	45.83 ppb	95
51)	1,1,2-Trichloroethane	14.94	97	351400	44.81 ppb	99
52)	Toluene	14.70	92	557564	44.33 ppb	97
53)	Methył Butyl Ketone	15.08	4.3	530284	44.05 ppb	90
54)	Dibromochloromethane	15.58	129	503215	39.87 ppb	95
55)	Tetrachloroethylene	15.63	164	336677	42.68 ppb	97
56)	1,2-dibromoethane	15.81	107	453130	45.37 ppb	99
58)	Chlorobenzene	16.53	112	721004	44.83 ppb	100
59)	Ethylbenzene	16.75	106	401271	45.32 ppb	# 90
60)	m&p-Xylene	16.93	106	981429	89.69 ppb	# 87
61)	Nonane	17.24	43	683666	42.29 ppb	95
62)	Styrene	17.32	104	723116	46.45 ppb	100
63)	o-xylene	17.35	91	1009667	43.36 ppb	92
64)	Bromoform	17.45	173	505474	41.95 ppb	99
65)	1,1,2,2-Tetrachloroethane	17.75	83	704544	44.93 ppb	98
66)	Cumene	17.84	105	1376163	44.20 ppb	96
68)	Propylbenzene	18.31	93.	1.567800	45.22 ppb	98
69)	2-Chlorotoluene	18.35	126	325619	43.90 ppb	93
70)	4-ethyltoluene	18.45	105	1180208	43.42 ppb	96
71)	l,3,5-trimethylbenzene	18.49	105	1126588	44.44 ppb	96
72)	1,2,4-trimethylbenzene	18.87	105	1069825	45.18 ppb	94
73)	l,3-dichlorobenzene	19,13	146	579790	47.47 ppb	98
	benzyl chloride	19.19	91	728363	49.24 ppb	97
75)	1,4-dichlorobenzene	19.24	146	542084	43.31 ppb	98
76)	1,2,3-Trimethylbenzene	19.26	105	1111927	43.57 ppb	93
77)	1,2-dichlorobenzene	19.50	146	584010	44.88 ppb	98
78)	1,2,4-trichlorobenzene	21.02	180	320581	43.64 ppb	98
79)	Naphthalene	21.19	128	844459	55.74 ppb	95
80)	Hexachloro-1,3-butadiene	21.26	225	543516	38.64 ppb	99

Operator:

Viai

:\RPCHEM\1\DATA\DH051505.D 5 May 2017 11:18 am

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Data File

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051704.D Vial: 1 Acq On : 17 May 2017 10:09 am Operator: WD : DLCS_TO15-051717 Sample Inst : GCMS3 Misc : TO15 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 17 10:37 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards R.T. QIon Response Conc Units Dev (M:	.n)
1) Bromochloromethane 9.95 128 104225 50.00 ppb -0 40) 1,4-difluorobenzene 12.18 114 596368 50.00 ppb 0 57) Chlorobenzene-d5 16.48 117 529494 50.00 ppb 0	.01
40) 1,4-difluorobenzene 12.18 114 596368 50.00 ppb 0	.00
57) Chlorobenzene-d5 16.48 117 529494 50.00 ppb 0	.00
System Monitoring Compounds	
	.00
Spiked Amount 50.000 Range 70 - 130 Recovery = 107.22%	
Target Compounds Qvalu 2) Propylene 4.16 41 153779 45.57 ppb	ມ⊜ 85
	100
4) Freon 114 4.42 85 647389 56.84 ppb	84
5) Chloromethane 4.43 50 207062 58.64 ppb	89
	100
8) Butane 4.72 43 259233 61.97 ppb	96
9) 1,3-butadiene 4.73 54 138602 57.77 ppb	88
9) 1,3-butadiene 4.73 54 138602 57.77 ppb 10) Bromomethane 5.09 94 140706 40.53 ppb 11) Chloroethane 5.27 64 82002 43.14 ppb	98
11) Chloroethane 5.27 64 82002 43.14 ppb	98
12) Ethanol 5.40 45 74086 52.53 ppb	96
13) Vinyl Bromide 5.62 106 129990 45.22 ppb	99
14) Freen 11 5.89 101 424410 46.68 ppb	100
15) Acrolein 5.99 56 53386 42.63 ppb	98
16) Acetone 6.09 43 226651 57.83 ppb	75
13) Vinyl Bromide 5.62 106 129990 45.22 ppb 14) Freon 11 5.89 101 424410 46.68 ppb 15) Acrolein 5.99 56 53386 42.63 ppb 16) Acetone 6.09 43 226651 57.83 ppb 17) Pentane 6.17 43 433572 47.86 ppb 18) Isopropyl alcohol 6.19 45 349099 52.28 ppb #	91
18) Isopropyl alcohol 6.19 45 349099 52.28 ppb #	1
19) 1,1-Dichloroethene 6.68 96 144344 50.08 ppb	98
000 million 110 0 00 101 200100 01 67 Help	96
20) Freen 113 6.86 101 338100 51.67 ppb 21) t-butyl alcohol 6.91 59 419456 52.34 ppb	98
22) Allyl ablarida	94
23) Methylene Chloride 7.16 84 129770 48.34 ppb #	88
23) Methylene Chloride 7.16 84 129770 48.34 ppb # 24) Carbon disulfide 7.32 76 371261 47.46 ppb	98
25) trans-1,2-dichloroethene 8.10 61 224980 51.14 ppb	96
26) methyl tert-butyl ether 8.11 73 517913 47.12 ppb	95
26) methyl tert-butyl ether 8.11 73 517913 47.12 ppb 27) Vinyl acetate 8.52 43 486327 55.07 ppb 28) 1,1-Dichloroethane 8.54 63 333139 49.13 ppb	97
27) Vinyl acetate 8.52 43 486327 55.07 ppb 28) 1,1-Dichloroethane 8.54 63 333139 49.13 ppb 29) Methyl Ethyl Ketone 9.03 72 79908 48.68 ppb #	99
29) Methyl Ethyl Ketone 9.03 72 79908 48.68 ppb #	74
29) Methyl Ethyl Ketone 9.03 72 79908 48.68 ppb # 30) Hexane 9.05 41 235294 49.68 ppb # 31) cis-1,2-dichloroethene 9.48 96 149156 47.26 ppb	70
31) cis-1,2-dichloroethene 9.48 96 149156 47.26 ppb	97
32) Ethyl acetate 9 63 45 62480 50.13 ppb	88
33) Chloroform 10.10 83 364649 48.87 ppb 34) Tetrahydrofuran 10.27 42 230143 49.24 ppb	98
33) Chloroform 10.10 83 364649 48.87 ppb 34) Tetrahydrofuran 10.27 42 230143 49.24 ppb	89
35) 1,1,1-Trichloroethane 10.91 97 383608 49.01 ppb	98
36) 1,2-Dichloroethane	99
37) Benzene 11.51 78 552230 45.60 ppb	97
38) Carbon Tetrachloride 11.54 117 412068 50.36 ppb	98
39) Cyclohexane 11.60 56 302902 45.86 ppb	95
41) 2,2,4-trimethylpentane 12.31 57 966242 47.20 ppb	94
42) Heptane 12.63 43 388043 48.56 ppb	93
43) Trichloroethene 12.78 130 217100 46.45 ppb	98
	1.00
45) Methyl methacrylate 13.00 41 277592 48.20 ppb	94
46) 1,4-dioxane 13.03 88 116642 46-72 ppb	90
	100
47) Bromodichloromethane 13.21 83 412956 48.70 ppb 148) Methyl Isobutyl Ketone 13.87 43 517940 51.53 ppb	95

^{(#) =} qualifier out of range (m) = manual integration DH051704.D I0511T15.M The Jun 01 09:06:35 2017

Centek Laboratories, LLC

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051704.D
Acq On : 17 May 2017 10:09 am
Sample : DLCS_T015-051717
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Ouant Results File: 10511T15.RES Quant Time: May 17 10:37 2017

Title : VOA Standards for 5 point calibration Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration DataAcq Meth : NEW1 Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

	Compound	R.T.	QIon	Response	Conc Unit	Q.	value
49)	cis-1,3-Dichloropropene	13.95	 75	313922	48.18 pp	b	98
50)	trans-1,3-Dichloropropene	14.64	75	281306	50.41 pp	b	96
51)	1,1,2-Trichloroethane	14.94	97	251057	46.58 pp	b	100
52)	Toluene	14.70	92	389596	45.07 pp	b	95
53)	Methyl Butyl Ketone	15.09	43	448413	54.20 pp	d	96
54)	Dibromochloromethane	15.58	129	433628	49.98 pp	b	100
55)	Tetrachloroethylene	35.63	164	256336	47.28 pp	þ	96
56)	1,2-dibromoethane	15.81	107	333868	48.64 pp	ď	1.00
58)	Chlorobenzene	3.6.53		523928	44.76 pp	b	100
59)	Ethylbenzene	16.75	106	286965	44.53 pp	b	97
60)	m&p-Xylene	16.93	106	729726m 4	qq E3.16 µ		
61)	Nonane	17.24		610459	7 51.88 pp		94
62)	Styrene	17.32	104	535852	47.30 pp		93
63)	o-xylene	17.35	91	792364	46.75 pp		96
64)	Bromoform	17.45	173	440883	50.28 pp		99
65)	1,1,2,2-Tetrachloroethane	17.76		530884	46.52 pp		98
66)	Cumene	17.84		1097132	48.42 pp		98
68)	Propylbenzene	18.31		1265629	50.16 pp		99
69)	2-Chlorotoluene	18.35	126	254362	47-12 pp		81
70)	4-ethyltoluene	18.45		947359	47.89 pp		98
71)	1,3,5-trimethylbenzene	18.49	3.05	904100	49.00 pp		99
72)	1,2,4-trimethylbenzene	18.87	1,05	852299	49.46 pp		96
73)	1,3-dichlorobenzene	19.13	146	462753	52.06 pp		98
74)	benzyl chloride	19.19		526365	48.89 pp		99
75)	1,4-dichlorobenzene	19.24		432980	47.53 pp		98
76)		19.26		903658	48.65 pp		95
77)	1,2-dichlorobenzene	19,50		465487	49.15 pp		98
78)	1,2,4-trichlorobenzene	21.02	180	249146	46.60 pp		97
79)		21.20		620235	56.25 pp		92
80)	Hexachloro-1,3-butadiene	21.26	225	534093	52.17 pp	b	97

I0511T15.RES

File:

Results

Quant

: rteint.p :37 2017

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Quant

Params

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MS Integra

Sample

Acq

Misc

T015

GCMS3

Multiplr

Inst

Vial: Operator:

C:\HPCHEM\1\DATA\DH051704.D 17 May 2017 10:09 am

Data File

17 May 2017 10:09 DLCS_TO15-051717

Page 505 of 572

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051808.D
Acq On : 18 May 2017 12:51 pm
Sample : DLCS_T015-051817
Misc : T015 Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 18 13:18 2017 Quant Results File: 10511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511Tl5.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards			Response				
1) Bromochloromethane	9.95		74179				0.00
40) 1,4-difluorobenzene		1. 1. 4	463540	50.00	qqq		0.00
57) Chlorobenzene-d5	16.48	117	400893	50.00	dqq		0.00
System Monitoring Compounds							
67) Bromofluorobenzene	17.94						0.00
Spiked Amount 50.000	Range 70	- 130	Recove	х, λ =	115.	. 488	
Target Compounds						Qv	alue
2) Propylene	4.16	41	150566	62.69	dqq		84
3) Freon 12	4.21		380163	56.15	dqq		99
4) Freon 114	4.42		462950	57.11	dqq		94
Chloromethane	4.42		162197 156437	64.54	qqq		88
7) Vinyl Chloride	4.62		156437	62.19	dgg		100
8) Butane	4.72		190829	64,10			97
9) 1,3-butadiene	4.73		103292 141037	60.49	dqq		88
10) Bromomethane	5.09	94	141037	57.08			100
11) Chloroethane	5.27	64	83975	62.07			97
12) Ethanol	5.40	45	76311 113393	76.02		##	75
13) Vinyl Bromide	5.62	106	113393	55.42	$_{ m ppb}$		99
14) Freon 11	5.89	101	335767	51.89	dqq		100
15) Acrolein	5.99	56	49228 221047 438174	55.23	dqq		98
16) Acetone	6.09	43	221047	79.25	dqq		73
17) Pentane	6.17	43	438174	67.95	dqq	#	91
18) Isopropyl alcohol		4.5	346909	73.00			1.
19) 1,1-Dichloroethene	6.68 6.87	96	127627 282999	62.22			94
20) Freon 113	6.87	101	282999	60.77	dqq		90
21) t-butyl alcohol	6.92	59	411499	72.14	ppb		98
22) Allyl chloride 23) Methylene Chloride	7.14 7.16	41	245097 119434	69.04			91
23) Methylene Chloride	7.16	84	119434	62.51		#	83
24) Carbon disulfide	7.32	76	343145	61.63			100
25) trans-1,2-dichloroethene 26) methyl tert-butyl ether 27) Vinyl acetate	8.11	61	204283	65.25	dqq		92
26) methyl tert-butyl other	8.12	73	204283 475590	60.80	dqq		92
27) Vinyl acetate	8.53	43	478543	76.13	dqq		96
28) 1,1-Dichloroethane	8.55	63	318098	65.91	dqq		99
29) Methyl Ethyl Ketone	9.04	72	75926	64.98	dqq	#	67
30) Hexane	9.05	43	318098 75926 233078	69.14	dqq	\$\$.	72
31) cis-1,2-dichloroethene	9.49	96	126525	56.33	dqq		97
32) Ethyl acetate	9.64	4.5	58901 319330	66.41	ppb		93
33) Chloroform	10.11	83	319330	60.13	dqq		99
34) Tetrahydrofuran	10.27		230076	69.17	dqq		85
35) 1,1,1-Trichloroethane	10.92	97	306327	54.99	ppb		98
36) 1,2-Dichloroethane	11.23	62	225971	67.35	ppb		98
37) Benzene	11.52	78	514636	59.71	dqq		98
38) Carbon Tetrachloride	11.54	117	295393	50.72			99
39) Cyclohexane	11.59	56	303823	64.63			94
41) 2,2,4-trimethylpentane	12.31	57	948603	59.62			93
42) Heptane	12.64	4.3	389038	62.63			90
43) Trichloroethene	12.78	1.30	167783	46.19			93
44) 1,2-Dichloropropane	12.89	63	215980	56.98			1,00
45) Methyl methacrylate	13.00	4 1	276842	61.85		#	95
46) 1,4-dioxane	13.04	88	106448	54.85			79
			356934	54.16			98
47) Bromodichloromethane	13.21	83	226324	34.10	FaFara		20

^(#) \approx qualifier out of range (m) = manual integration DH051808.D I0511T15.M Thu Jun 01 09:10:58 2017

Centek Laboratories, LLC

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051808.D Vial: 1 Acq On : 18 May 2017 12:51 pm Sample : DLCS_TO15-051817 Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 18 13:18 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Cone Unit	Qval	Lue
49)	cis-1,3-Dichloropropene	13.95	75	292469	57.74 ppb		100
50)	trans-1,3-Dichloropropene	14.64	ララ	260453	60.05 ppb		95
51)	1,1,2-Trichloroethane	14.94	97	216058	51.58 ppb		98
52)	Toluene	14,70	92	348912	51.93 ppb		96
53)	Methyl Butyl Ketone	15.09	4.3	432702	67.28 ppb		96
54)	Dibromochloromethane	15.58	129	308360	45.73 ppb		97
55)	Tetrachloroethylene	1.5.63	164	185126	43.93 ppb		96
56)	1,2-dibromoethane	15.81	107	276127	51.76 ppb		100
58)	Chlorobenzene	16.53	112	427611	48.25 ppb		100
59)	Ethylbenzene	16.75	106	242505	49.70 ppb		99
60)	m&p-Xylene	16.93	106	610351	101.23 ppb		97
61)	Nonane	17.24	43	589680	66.l9 ppb	#	94
62)	Styrene	17.33	104	459114	53.53 ppb		89
63)	o-xylene	17.35	91	691006	53.85 ppb		99
64)	Bromoform	17-45	173	294033	44.29 ppb		99
65)	1,1,2,2-Tetrachloroethane	1.7.76	83	496916	57.51 ppb		99
66)	Cumene	17.84	105	907530	52.90 ppb		99
68)	Propylbenzene	18.30	91	1154490	60.43 ppb		95
69)	2-Chlorotoluene	18.35	1.26	203639	49.82 ppb		1.00
70)	4-ethyltoluene	18.45	105	829406	55.37 ppb		99
71)	1,3,5-trimethylbenzene	18.49	105	738579	52.87 ppb		1.00
72)	l,2,4-trimethylbenzene	18.88	105	716714	54.93 ppb		98
73)	1,3-dichlorobenzene	19.13	146	367909	54.67 ppb		98
74)	benzył chloride	19.19	91.	491378	60.28 ppb		98
75)	1,4-dichlorobenzene	19.24	146	359176	52.08 ppb		99
76)	1,2,3-Trimethylbenzene	19.26	105	757398	53.86 ppb		97
		19.50	146	355811	49.62 ppb		99
78)	1,2,4-trichlorobenzene	21.02	180	164849	40.73 ppb		95
79)	Naphthalene	21.19	128	456711	54.71 ppb		97
80)	Hexachloro-1,3-butadiene	21.26	225	307902	39.72 ppb		97

 \Box

C:\HPCHEM\1\DATA\DH051808. 18 May 2017 12:51 pm

Data File

Acq On Sample

DLCs_T015-051817

tion Params: rteint.p : May 18 13:18 2017

MS Integra

Misc

Quant

I0511T15.RES

File:

Results

Quant

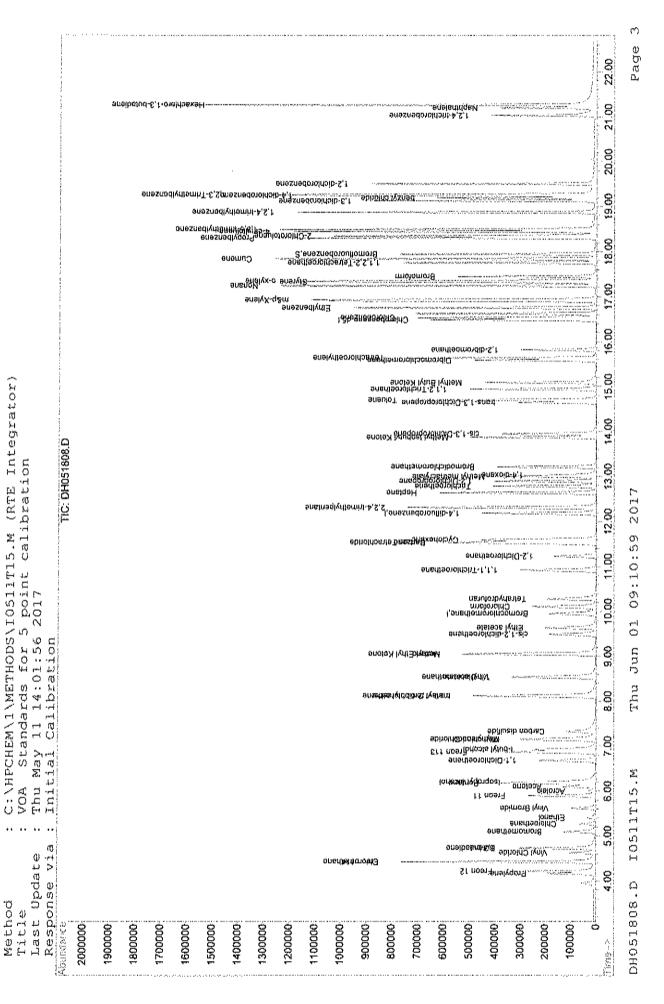
1.00 GCMS

Multiplr

Inst

Operator:

Vial



TestCode: TO15

CENTEK LABORATORIES, LLC

ANALYTICAL QC SUMMARY REPORT

Date: 01-5un-17

CH2M - St Louis CLIENT;

C1705036 Work Order: Former Hampshire Project:

Sample ID: DLCSD_TO15-05151 SampType: LCSD	SampType: LCSD	TestCox	TestCode: TO15	Units: ppbV		Prep Date:			RunNo: 12257	.27	
Client ID: ZZZZZ	Batch (D: R12257	Test	TestNo: TO-15		~	Analysis Date:	5/15/2017	<u>*-</u>	SeqNc: 143178	178	***************************************
Analyte	Result	PQ	SPK value	SPK Ref Val	%REC	LowLimit Hi	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
t,1,1-Trichloroethane	44.06	5.0	50	0	88.1	64.6	141	41.2	6.71	0	
1,1,2,2-Tetrachloroethane	49.56	5.0	90	0	99.1	62.1	130	44.93	9.80	0	
1, 1, 2-Trichloroethane	50.76	5.0	50	Ф	102	63.1	147	44.8	12.5	0	
1,1-Dichloroethane	48.63	5.0	90	0	97.3	62.4	134	45.84	5.91	0	
f, 1-Dichloroefhene	55.75	5.0	50	0	112	54.5	125	51.97	7.02	0	
1,2,4-Trichlorobenzene	47.54	5.0	20	0	95.1	25.1	129	43.64	8.55	0	
1,2,4-Trimethylbenzene	49.74	5.0	90	0	99.5	60.4	139	45.18	9.61	0	
1,2-Dibromoethane	52.04	5.0	50	0	104	63.6	140	45.37	13.7	0	
1,2-Dichlorobenzene	48.96	5.0	50	ō	97.9	52.7	128	44,68	8.70	0	
1,2-Dichloroethane	45.95	5.0	50	O	91.9	63.7	139	43.02	6.59	0	
1,2-Dichloropropane	50.32	5.0	89	o	101	67.3	144	44.01	13.4	0	
1,3,5-Trimethylbenzene	48.59	5.0	8	0	97.4	999	136	44.44	9.13	0	
1,3-butadiene	39.16	5.0	20	0	78.3	21.8	166	36.96	5.78	Ö	
1,3-Dichlorobenzene	51.38	5.0	35	0	103	52.6	134	47.47	7.91	0	
1,4-Dichlorobenzene	47.54	5.0	ß	0	95.1	54.6	131	43.31	9.31	0	
1,4-Dioxane	52.64	01	œ	0	‡0 €	56.8	141	47.08	11.2	0	
2,2,4-frimethylpentane	50.14	5.0	90	0	100	71.8	138	43.77	13.6	0	
4-ethylloluene	48.83	5.0	95	0	5.79	60.6	130	43.42	11.7	0	
Acetone	53,19	10	50	0	106	49.5	149	48.04	10.2	O.	
Allyl chforide	45.21	5.0	90	Ф	90.4	55.5	156	42.66	5.80	0	
Benzene	49.06	5.0	50	Ф	98.1	62	140	46.15	6.11	Ф	
Benzyl chforide	52.61	5.0	93 93	0	1 05	42.5	106	49.24	6.62	Ф	
Bromodichloromethane	48,16	5.0	90	0	96.3	63.6	144	42.24	13.1	0	
Вготогога	46.50	5.0	20	0	93.0	43.9	148	41.95	10.3	Ģ	
Bromomethane	42.39	5.0	8	0	84.8	42.6	139	40.3	5.06	0	
Qualifiers: Results reported	Results reported are not blank corrected		E Estimo	Estimated Value above quantitation range	itation rang		Ŧ	Holding times for preparation or analysis exceeded	preparation or as	alysis exceede	7

Analyte detected below quantitation limit -- en

Spike Recovery outside accepted recovery limits

ND Not Detected at the Limit of Detection

RPD outside accepted recovery limits I & Page 1 of 7

CH2M - St Louis	
CLIENT:	

Work Order: C1705036

Former Hampshire	
'roject:	

TestCode: TO15

Sample ID: DLCSD_TO15-05151 SampType: LCSD	SampType: LCSD	TestCod	TestCode: TO15	Units: ppbV		Prep Date			RinNo 12	12257	
Client ID: ZZZZZ Bs	Batch ID: R12257	Testh	TestNo: TO-15			Anaiysis Date∷	5/15/2017	7		3178	
Anaiyte	Resuit	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RP0	RPDLimit	Qua
Carbon disulfide	52.44	5.0	8	0	105	59.9	133	47 58	0.77	-	
Carbon tetrachloride	41.98	5.0	22	0	84.0	63.2	39	39.23	6.77	o c	
Chlorobenzene	49.29	5.0	50	0	98.6	58.9	136	44.83	9.48	, ¢	
Chloroethane	45.91	5.0	20	0	91.8	56.1	134	43.35	5.74	• •	
Chloroform	47.56	5.0	93	0	95.1	62.4	135	44.5	6.65		
Chloromethane	34.03	9.0	20	Φ	68.1	58.5	150	35.12	3,15	0	
cis-1,2-Dichloroethene	52.96	5.0	90	0	106	61.7	135	49.77	6.21	0	
cis-1,3-Dichloropropene	52.90	5.0	ß	o	1 36	63.1	\$	45.84	14.3	0	
Cyclohexane	47.24	5.0	22	0	94.5	65.5	142	44.47	5.04	0	
Dibromochloromethane	46.47	5.0	50	0	92.9	61.5	137	39.87	15.3	0	
Ethyl acetate	47.00	10	25	0	94.0	46.6	140	43.92	6.78	0	
Ethylbenzene	49.60	5.0	99	0	99.2	62.4	140	45.32	9.05	0	
Freon 11	39.65	5.0	20	0	79.3	44.7	165	37.46	5.68	0	
Freon 113	52.62	5.0	50	O	105	58	\$24	49.17	6.78	0	
Freon 114	35.65	5.0	90	Φ	71,3	62	176	35.22	1.21	0	
Freon 12	41.33	5.0	20	O	82.7	52.5	163	38.24	7.77	0	
Heptane	46.74	5.0	20	0	93.5	65.5	144	41.11	12.8	0	
Hexachloro-1,3-butadiene	42.39	5.0	50	Đ	84.8	32.9	129	38.64	9.26	0	
Hexane	43.00	5.0	20	0	86.0	59.1	148	40.87	5.08	Ð	
fsopropyl alcohof	45.38	5.0	8	0	90.8	50.5	142	44.42	2.14	0	
m&p-Xylene	98.35	₽	82	0	98.4	5.69	137	89.69	9.21	0	
Methyi Butyl Ketone	49.46	10	99	0	98.9	59.1	125	44.05	11.6	0	
Methyi Ethyl Ketone	54.31	5	50	0	109	51.3	137	49.89	8.48	D	
Methyl Isobutyl Ketone	47.37	10	90	0	94.7	58.3	127	41.48	13.3	0	
Melityl tert-butyl ether	47.09	9.0	20	0	94.2	62.9	134	44.01	6.76	0	
Methylene chloride	53.67	5.0	20	0	107	57.4	131	50.04	7.00	0	
o-Xylene	47.30	5.0	20	0	94.6	99	142	43,36	8.69	0	
Propylene	39.08	5.0	92	0	78.2	45.4	150	36.37	7.21	O.	
Styrene	50.77	5.0	90	O	102	60.4	135	46,45	8.89	0	
Tetrachloroethylene	49,24	5.0	8	0	58.5	59.1	138	42.68	4.3	0	
Tetrahydrofuran	46.10	5.0	8	0	92.2	57.3	136	43,24	6.40	0	
Qualifiers: Resalts reported are	Resails reported are not blank corrected		E Estima	Estimated Value above quantitation range	tation rang	· ·	н Но	Holding limes for preparation or analysis exceeded	preparation or a	malysis exceed	eđ
J Analyte detected bel	Analyte detected below quantitation limit		ND Not De	Not Detected at the Limit of Detection	Petection		R	RPD outside accepted recovery limits	ited recovery lin	nits	
S Spike Recovery outs	Spike Recovery outside accepted recovesy limits	mis						•	,		,
										a	Page 2 057

TestCode: TO15

S Spike Recovery outside accepted recovery limits

Post of the post o	, ind	SampType: LCSD	TestCode: TO15	T015	Units: ppbV		Prep Date:	te:		RunNo: 12257	257	
Place Plac	Client ID: ZZZZ	Batch ID: R12257	TestNo	: TO-15			Analysis Dai		1	SeqNo: 143	3178	
St. Add St. O St	Anahite	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimít	RPD Ref Val	%RPD	RPDLimit	Qua
Signature Sign	Toluene	51.40	5.0	95	0	103	63.9	142	44.33	14.8	0	
Sizi	trans-1,2-Dichforœthene	51.54	5.0	8	0	103	70.2	142	48.28	6.53	• •	
Part Part	(rans-1,3-Dichloropropene	52.11	5.0	50	0	104	71.5	145	45.83	12.8	0	
51.56 50 50 103 51.50 51.0 103 51.50 51.0 103 51.50 51.0 103 51.50 51.0 103 51.50 51.0 103 51.50 51.0 103 51.50 51.0 103 51.50 51.0 103 51.50 51.5	Trichloroethene	52.14	5.0	20	0	104	64.5	135	45.22	14.2	¢	
1444 145	Vinyl acetate	51.56	5.0	95	0	103	55.9	150	48.11	6.92	0	
13544 5.0 5.0 5.0 6.0 70.3 59.9 151 35.82 107	Vinyl Bromide	49.45	5.0	55	O	98.9	54.7	150	46.15	6.90	Ф	
DLCSQ_INTORFACENER Safety ILCSD Testicode: TOTA Lorent Markety International procedures 1,70 Markety ILCSD Testicode: TOTA Lorent Markety ILCSD Markety ILCSD Testicode: TOTA Markety ILCSD Markety ILCSD Testicode: TOTA Markety ILCSD Mark	Vinyl chloride	35.44	5.0	90	0	70.9	59.9	151	35.82	107	0	
CAZZZZ Batch ID: R12258 TestRoode: TO45 Units: ppbV Analysis Date: 6717/2017 SeqNo: 143187 RunNo: 12268 ZZZZZ Batch ID: R12258 TestRoode. TO45 MREC LowLinit High Limit RPD Ref Val SeqNo: 143187 Accellante A75 SO SO 95.3 64.6 14 49.01 SeqNo: 143187 Accellante A6.83 SO SO 95.3 64.6 14 49.01 SeqNo: 143187 Accellante 46.49 SO SO 93.7 62.1 14 49.01 SeqNo: 143187 Accellante 46.49 SO SO 93.7 62.1 14 46.50 0.05 Accellante 46.49 SO SO 93.7 62.1 126 0.05 0.05 Accellante 46.49 SO SO 93.0 63.1 140 46.50 0.05 0.05 Accellante 51.28 SO SO SO 50.4 125 46.	Surr: Bromofluorobenzene	51.70	Q.	95 20	0	103	71.1	142	0	0	0	
ZEZZZ Baetch ID: R12256 TestNo: TO-15 TestNo: TO-15 TestNo: TO-15 Analysis Date: Statistical strain Stat	Sample ID: DLCSD_T015-05171	ĺ	TestCode	TO15	Units: ppbV		Prep Dat	.e.;			258	
forcethane 47.63 SPK value SPK Ref Val %REC LowLinnt HightLimit RPD Ref Val %RPD RPD Limit rachlorotethane 47.63 5.0 50 0 93.7 62.1 141 49.01 2.86 0 trachlorotethane 46.83 5.0 50 0 93.7 62.1 141 46.52 0.664 0 brockhane 46.89 5.0 50 0 95.1 62.4 134 46.58 0.163 0 obeherzene 43.76 5.0 50 0 96.5 52.4 134 46.13 3.25 0.66 subherzene 43.10 5.0 50 0 98.2 50.08 1.73 48.46 0.731 0 obehrzene 43.10 5.0 50 50 0 99.8 52.7 128 48.15 1.47 obehrzene 50.73 50 50 50 0 99.8 52.7 <t< td=""><td></td><td>Batch ID: R12258</td><td>TestNo</td><td>. TO-15</td><td></td><td></td><td>4เลยโysis Dat</td><td></td><td>11</td><td>SeqNo: 143</td><td>3187</td><td></td></t<>		Batch ID: R12258	TestNo	. TO-15			4เลยโysis Dat		11	SeqNo: 143	3187	
torcettane 47.63 5.0 50 95.3 64.6 141 rad/loroethane 46.83 5.0 50 0 95.3 62.1 147 borcethane 46.89 5.0 50 0 95.1 62.1 147 oethane 47.56 5.0 50 0 95.1 62.4 134 oethane 47.56 5.0 50 0 95.1 62.4 134 oethane 49.29 5.0 50 0 98.5 54.5 125 strylbenzene 49.10 5.0 50 0 98.5 63.6 140 oberszene 48.77 5.0 50 0 99.8 57.1 128 oethane 50.73 5.0 50 0 99.8 57.7 128 oberszene 50.73 5.0 50 0 90.5 67.3 144 street 53.90 5.0 50 0	Analyte	Result		SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPOLimit	Qual
rachloroethane 46.83 5.0 50 93.7 62.1 130 loroethane 46.49 5.0 50 0 93.0 63.1 147 oethane 47.56 5.0 50 0 95.1 62.4 134 oethane 49.29 5.0 50 0 98.6 54.5 125 stophenzene 49.10 5.0 50 0 98.2 60.4 139 athylbenzene 48.77 5.0 50 0 98.2 60.4 139 obertane 48.77 5.0 50 0 99.8 52.1 128 othane 50.73 5.0 50 0 90.5 63.5 144 optropane 45.23 5.0 50 0 90.5 67.3 144 othan 50 50 0 90.5 67.3 144 othan 50 50 0 90.5 67.3 1	f,1,1-Trichloroethane	47.63	5.0	8	0	95.3	64.6	141	49.01	2.86	0	
loroethane 46.49 5.0 50 0 93.0 63.1 147 oethane 47.56 5.0 50 0 95.1 62.4 134 oethane 47.56 5.0 50 0 98.5 54.5 125 forobenzene 51.28 5.0 50 0 98.2 60.4 139 athylbenzene 48.77 5.0 50 0 98.2 60.4 139 obenzene 48.77 5.0 50 0 97.5 63.6 140 obenzene 50.73 5.0 50 0 90.5 67.7 139 oethane 45.23 5.0 50 0 90.5 67.3 144 athylbenzene 50.0 50 0 90.5 67.3 144 sine 50.0 50 0 90.5 67.3 144 obenzene 51.51 50 0 90.5 50.8 <th< td=""><td>1,1,2,2-Tetrachloroethane</td><td>46,83</td><td>5.0</td><td>20</td><td>0</td><td>93.7</td><td>62.1</td><td>130</td><td>46.52</td><td>0.664</td><td>0</td><td></td></th<>	1,1,2,2-Tetrachloroethane	46,83	5.0	20	0	93.7	62.1	130	46.52	0.664	0	
oethane 47.56 5.0 50 95.1 62.4 134 oethane 49.29 5.0 50 0 98.6 54.5 125 storbenzene 51.28 5.0 50 0 403 25.1 129 ethylbenzene 49.10 5.0 50 0 98.2 60.4 139 obenzene 48.77 5.0 50 0 97.5 63.6 140 obenzene 50.73 5.0 50 0 97.5 63.6 144 opkopare 50.73 50 50 0 90.5 67.3 144 dylbenzene 50.73 50 0 90.5 67.3 144 obenzene 51.51 50 50 0 90.5 52.7 136 obenzene 51.51 50 50 0 90.5 52.6 134 e 46.16 10 90.5 60 0 90.5 <td>1,1,2-Trichloroethane</td> <td>46,49</td> <td>9.0</td> <td>S</td> <td>0</td> <td>93.0</td> <td>63.1</td> <td>147</td> <td>46.58</td> <td>0.193</td> <td>0</td> <td></td>	1,1,2-Trichloroethane	46,49	9.0	S	0	93.0	63.1	147	46.58	0.193	0	
oethene 49.29 5.0 50 98.6 54.5 125 forobenzene 51.28 5.0 50 0 103 25.1 129 ethylbenzene 49.10 5.0 50 0 98.2 60.4 139 obenzene 48.77 5.0 50 0 97.5 63.6 140 obenzene 48.77 5.0 50 0 99.8 52.7 128 optropane 45.23 5.0 50 0 90.5 67.3 144 optropane 48.60 5.0 50 0 90.5 67.3 144 shylbenzene 51.51 5.0 50 0 90.5 67.3 141 obenzene 51.51 5.0 50 0 95.6 54.6 131 e 46.16 10 50 0 95.3 71.8 138 rhylpenzene 46.89 5.0 50 0 <t< td=""><td>1,1-Dichloroethane</td><td>47.56</td><td>5.0</td><td>8</td><td>0</td><td>95.1</td><td>62.4</td><td>33</td><td>49.13</td><td>3.25</td><td>0</td><td></td></t<>	1,1-Dichloroethane	47.56	5.0	8	0	95.1	62.4	33	49.13	3.25	0	
forobenzene 51.28 5.0 50 103 25.1 129 athylbenzene 49.10 5.0 50 60 98.2 60.4 139 oberizene 48.77 5.0 50 90 97.5 63.6 140 oberizene 49.88 5.0 50 90 97.5 63.6 140 optropane 45.23 5.0 50 90 90.5 67.3 144 athylbenzene 45.60 5.0 50 90 97.2 56 136 athylbenzene 53.90 5.0 50 97.2 56 136 athylbenzene 51.51 5.0 50 90.5 67.3 141 obenzene 51.51 5.0 50 90.5 52.6 131 e 46.16 10 50 92.3 56.8 141 e 46.18 50 60 93.8 71.8 138 e	1,1-Dichloroethene	49.29	5.0	25	O	98.6	54.5	125	50.08	1.59	0	
ethylbenzene 49.10 5.0 50 98.2 60.4 139 obertzene 48.77 5.0 50 0 97.5 60.4 130 obertzene 49.88 5.0 50 0 99.8 52.7 128 oethane 50.73 5.0 50 0 101 63.7 136 optropane 45.23 5.0 50 0 90.5 67.3 144 ethylbenzene 48.60 5.0 50 0 97.2 56 136 ene 53.90 5.0 50 0 97.2 56 134 obenzene 51.51 5.0 50 0 95.6 51.8 145 e 46.16 10 50 0 95.6 52.6 134 thylpenzene 46.16 10 50 0 95.6 52.6 134 e 46.16 10 50 0 95.6	1,2,4-Trichlorobenzene	51.28	5.0	20	o	103	25.1	129	46.6	9.56	0	
noethane 48.77 5.0 50 97.5 63.6 140 obenzene 49.88 5.0 50 99.8 52.7 128 oethane 50.73 5.0 50 0 99.8 52.7 139 optropane 45.23 5.0 50 0 90.5 67.3 144 sthylbenzene 48.60 5.0 50 0 97.2 56 136 she 53.90 5.0 50 0 103 51.8 166 obenzene 47.82 5.0 50 0 95.6 54.6 134 e 46.16 10 50 0 95.6 54.6 134 thylpentane 46.89 5.0 50 0 95.6 54.6 134 e 46.89 5.0 50 0 95.8 71.8 138 results reported are not blank conected E Estimated Value above quantitation range H	f,2,4-Trimethylbenzene	49.10	5.0	90	0	98.2	50.4	139	49.46	0.731	0	
obenizene 49.88 5.0 50 99.8 52.7 128 oethane 50.73 5.0 50 0 101 63.7 139 opropane 45.23 5.0 5.0 50 0 90.5 67.3 144 ethylbenzene 48.60 5.0 50 0 97.2 56 136 sine 51.81 50 50 0 103 51.8 166 obenizene 47.82 5.0 50 0 95.6 54.6 131 e 46.16 10 50 0 95.6 54.6 131 thylpentane 46.89 5.0 50 0 92.3 56.8 141 thylpentane 46.89 5.0 50 0 92.3 56.8 141 w 46.89 5.0 50 0 93.8 71.8 138 Results reported are not blank conected E Estimated Value above quanti	1,2-Dibromoethane	48.77	5.0	æ	0	97.5	63.6	140	48.64	0.267	0	
cefthane 50.73 5.0 50 101 63.7 139 opropane 45.23 5.0 50 0 90.5 67.3 144 ethylbenzene 48.60 5.0 50 0 97.2 56 136 ene 53.90 5.0 50 0 97.2 56 136 obenzene 47.82 5.0 50 0 103 52.6 131 e 46.16 10 50 0 95.6 54.6 131 thylpentane 46.89 5.0 50 0 92.3 56.8 141 Results reported are not blank concerted E Estimated Value above quantitation range H H	1,2-Dichlorobenzene	49.88	5.0	æ	0	99.8	52.7	128	49,15	1.47	0	
Optropane 45.23 5.0 50 90.5 67.3 144 ethylbenzene 48.60 5.0 5.0 5.0 97.2 56 136 sne 53.90 5.0 5.0 0 97.2 56 136 obenzene 51.51 5.0 5.0 0 103 52.6 131 e 46.16 10 50 0 95.6 54.6 131 ttylpentane 46.89 5.0 50 0 92.3 56.8 141 Results reported are not blank concerted E Estimated Value above quantitation range H H	1,2-Dichloroethane	50,73	5.0	39	0	101	63.7	139	52.42	3.28	0	
ethylbenzene 48.60 5.0 50 97.2 56 136 ene 53.90 5.0 50 0 108 21.8 166 obenzene 51.51 5.0 50 0 103 52.6 134 obenzene 47.82 5.0 50 0 95.6 54.6 131 ithylpentane 46.16 10 50 0 92.3 56.8 141 Ithylpentane 46.89 5.0 50 0 93.8 71.8 138 Results reported are not blank conected E Estimated Value above quantitation range H H	t,2-Dichloropropane	45.23	5.0	20	0	90.5	67.3	144	45.88	1.43	0	
sine 53.90 5.0 50 60 68 21.8 166 obenzene 51.51 5.0 50 0 103 52.6 134 obenzene 47.82 5.0 50 0 95.6 54.6 131 e 46.16 10 50 0 92.3 56.8 141 thylpentane 46.89 5.0 50 0 93.8 71.8 138 Results reported are not blank conected E Estimated Value above quantitation range H	f,3,5-Trimethylbenzene	48.60	5.0	25	0	97.2	99	136	49	0.820	0	
obenzene 51.51 5.0 50 f03 52.6 134 obenzene 47.82 5.0 50 0 95.6 54.6 131 e 46.16 10 50 0 92.3 56.8 141 thylpentane 46.89 5.0 50 0 93.8 71.8 138 Results reported are not blank conected E Estimated Value above quantitation range H	1,3-butadiene	53.90	5.0	50	٥	108	21.8	166	57.77	6.93	0	
obenzene 47.82 5.0 50 0 95.6 54.6 131 e 46.16 10 50 0 92.3 56.8 141 thylpentane 46.89 5.0 60 0 93.8 71.8 138 Results reported are not blank concuted E Estimated Value above quantitation range H	f,3-Dichlorobenzene	51.51	5.0	50	0	103	52.6	2	52.06	1.06	0	
e 46.16 10 50 0 92.3 56.8 141 thylpentane 46.89 5.0 50 0 93.8 71.8 138 Results reported are not blank concuted E Estimated Value above quantitation range H	1,4-Dichlorobenzene	47.82	5.0	3	0	95.6	54.6	131	47.53	0.608	0	
thylpentane 46.89 5.0 50 0 93.8 71.8 138 Results reported are not blank conected E Estimated Value above quantitation range H	³,4-Dioxane	45.16	10	20	0	92.3	56.8	141	46.72	1.23	0	
Results reported are not blank conected E Estimated Value above quantitation range	2,2,4-frimethylpentane	46.89	5.0	90	o	93.8	71.8	138	47.2	0.659	0	
Accounts reported are not effected.								İ	,			
		eg are not etank concerco			ted value above quan	litation rang	ч.		olding times for	preparation or a	anelysis excee	pg pg
	5 , 6											

CH2M - St Louis C1705036

CLJENT: Work Order:

Project:

Former Hampshire

Analyte detected below quantitation limit Spike Recovery outside accepted recovery limits

CH2M - St Louis	C1305036
CELENT:	Work Order

C1705036 Work Under:

Former Hampshire **Project**:

TestCode: T015

Clear LD. STAZZA Batch ID. R72289 Foreign Control Sept. To Location Hope of Acade and Ac	Sample ID: DLCSD_T015-05171	1 SampType: LCSD	TestCod	TestCode: TO15	Units: pabV		Prep Date	a		RunNo: 12258	258	
Presult Polity SPK varie SPK Ref Val SpGE Lond, limit Highling RDD Ref Val SpGE Cond Mighling RDD Ref Val SpGE Cond Mighling RDD Ref Val SpGE Cond Mighling RDD Ref Val SpGE Cond SpGE Cond Mighling RDD Ref Val SpGE		Batch ID: R12258	Test	to: TO-15			4nalysis Da		17	SeqNo: 14	3187	
100 100	Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Vai	%RPD	RPDLimit	Qua
1994 10 59.46 11 11 11 11 11 11 11	4-ethytloluene	47.63	5.0	95	0	95.3	60.6	130	47.89	0.544	0	
the the third between the thir	Acetone	59.46	10	99	0	119	49.5	149	57.83	2.78	0	
44.93 5.0 5.0 6.	Allyl chloride	47.36	5.0	20	0	94.7	55.5	156	48.96	3.32	O	
1000 1000	Вепzеле	44.93	5.0	50	0	89.9	62	140	45.6	1.48	0	
144 145	Benzył chloride	48.59	5.0	\$£	0	97.2	42.5	106	48.89	0.616	0	
thate 4992 50 60 99 8 43.9 49.9 hane 40.76 50 50 99.8 43.9 43.9 Lulfide 47.51 50 50 0 95.0 135 426 135 carchloride 44.46 50 50 0 98.9 63.9 135 see 42.02 50 50 0 88.9 58.9 135 see 42.02 50 50 0 88.9 58.9 135 see 42.02 50 50 0 96.3 62.4 135 hane 47.06 50 50 0 96.3 62.4 134 hane 48.56 50 50 50 0 97.4 62.5 135 hane 44.88 50 50 0 97.4 62.5 132 hane 44.88 50 50 50 0 97.4 <td>Bromodichloromethane</td> <td>48.61</td> <td>5.0</td> <td>20</td> <td>0</td> <td>97.2</td> <td>63.6</td> <td>144</td> <td>48.7</td> <td>0.185</td> <td>Ф</td> <td></td>	Bromodichloromethane	48.61	5.0	20	0	97.2	63.6	144	48.7	0.185	Ф	
139 139	Вготобит	49.92	5.0	20	0	8.68	43.9	148	50.28	0.719	Ф	
1879 1875 5.0 5.0 0.0 0.5.	Broncenethane	40.76	5.0	20	O	81.5	42.6	139	40.53	0.566	Ö	
13.00 1.00	Carbon disulfide	47.51	5.0	8	Đ	95.0	59.9	133	47.46	0.105	Ů	
seele 44.46 5.0 50 68.9 58.9 136 inte 42.02 50 50 68.9 58.9 58.9 138 inte 42.02 50 50 50 69.3 62.1 134 hane 47.66 50 50 50 96.3 62.1 135 hloroptropene 44.69 50 50 90 94.1 61.7 135 incompetence 44.69 50 50 90 94.1 61.7 135 incompetence 44.69 50 50 90 92.4 61.7 135 incompetence 44.69 50 50 90 96.5 62.5 142 incompetence 44.69 50 50 90 96.5 62.5 142 incompetence 44.69 50 50 90 96.5 46.6 143 incompetence 44.78 50 50 90	Carbon (etrachloride	49.05	5.0	50	0	98.1	63.2	139	50.36	2.64	O	
the 42.02 5.0 5.0 6.4 84.0 56.1 134 hance 55.34 5.0 5.0 6.24 135 hance 55.34 5.0 5.0 10 95.3 62.4 135 haloroethene 44.56 5.0 5.0 5.0 108 58.5 150 haloroethene 44.58 5.0 5.0 5.0 10 94.1 61.7 135 horomethane 50.14 5.0 5.0 5.0 10 94.1 61.7 134 horomethane 44.50 5.0 5.0 10 100 61.5 137 hale 44.50 5.0 5.0 5.0 10 89.8 62.4 140 ne 44.50 5.0 5.0 5.0 10 89.8 62.4 140 ne 44.77 5.0 5.0 5.0 10 89.8 62.4 147 44.77 5.0 5.0 5.0 10 101 58 14.3-buladiene 55.72 5.0 5.0 5.0 111 58.1 132 hichola 52.53 10 50 50 10 101 50.5 137 hi ketone 52.53 10 50 10 100 6 90.2 191 hi ketone 52.53 10 50 10 100 101 101 101 hi ketone 64.80 10 100 101 101 101 hi ketone 64.80 10 100 101 101 101 hi ketone 64.80 10 100 101 101 101 hi ketone 64.80 10 100 101 101 101 hi ketone 64.80 10 100 101 101 101 hi halove quantitation range 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Chlorobenzene	44.46	5.0	50	0	88.9	58.9	136	44.76	0.672	Ö	
thate 47.66 5.0 50 96.3 62.4 135 hanne 53.94 5.0 50 96.3 62.4 150 hibrorethene 47.06 5.0 50 94.1 61.7 135 hibrorethene 47.06 5.0 50 90 94.1 61.7 135 hibrorethene 48.58 5.0 50 90 94.1 61.7 135 hibrorethene 44.88 5.0 50 90 94.1 61.7 135 hie 44.88 5.0 50 50 60 96.5 44.7 145 sie 44.78 5.0 50 60 96.5 44.7 145 5-1.3-buladiene 5.0 50 50 96 97.1 32.9 174 se 50.73-buladiene 50.5 50 60 97.1 32.9 174 se 50.51-buladiene 50.51-buladiene 50.51-buladiene	Chloroethane	42.02	5.0	80	O	84.0	56.1	134	43.14	2.63	Ď	
hance 53.84 5.0 50 108 58.5 150 hilotocethene 47.06 5.0 50 94.1 61.7 135 hilotocethene 47.06 5.0 50 0 94.1 61.7 135 hilotocethene 48.58 5.0 50 0 94.1 61.7 134 ne 44.68 5.0 5.0 6 9.4 65.1 142 ne 48.26 10 5.0 6 9.6 65.5 142 sie 44.20 5.0 5.0 6 6 6.5 142 sie 44.78 5.0 5.0 6 6 4.7 145 sie 44.78 5.0 5.0 6 6 4.7 145 sie 46.71 5.0 5.0 5 6 6 147 148 sic 48.56 5.0 5.0 5 6 5 142	Chloroform	47.66	5.0	SS	0	95.3	62.4	135	48.87	2.51	0	
hilotroethene 47.06 5.0 5.0 5.0 94.1 61.7 135 131 131 131 131 131 131 131 131 131	Chloromethane	53.94	5.0	æ	0	108	58.5	150	58.64	8.35	0	
Allocopropoene 48.58 5.0 50 97.2 63.1 134 ne 44.69 5.0 50 0 89.4 65.5 142 dipormethane 44.69 5.0 50 0 89.4 65.5 142 sile 48.26 10 50 0 96.5 46.6 140 sile 44.90 5.0 50 0 89.6 46.7 140 sile 44.78 5.0 50 0 89.6 44.7 165 sile 50.74 5.0 50 0 90.5 44.7 165 52.87 5.0 50 50 0 93.4 52.5 176 51.3.buladiene 55.72 5.0 50 0 93.4 52.5 163 sicholol 50.51 50 50 0 95.7 174 48 se 90.15 10 50 0 97.1 137<	cis-1,2-Dichloroethene	47.06	2.0	20	0	94.1	61.7	135	47.26	0.424	0	
be discouncible and the solution of the soluti	cis-1,3-Dichloropropene	48.58	5.0	50	0	97.2	63.1	134	48.18	0.827	0	
atie 50.14 5.0 50 100 61.5 137 atie 48.26 10 50 0 96.5 46.6 140 and 48.26 10 50 0 96.5 46.5 140 and 44.78 5.0 50 0 98.8 62.4 140 44.78 5.0 50 0 0 89.6 44.7 165 50.74 5.0 50 0 0 101 58 124 52.87 5.0 50 0 0 106 62 176 52.87 5.0 50 0 0 106 62 176 52.87 5.0 50 0 0 93.4 52.5 143 54.3-butadiene 55.72 5.0 50 0 94.7 52.5 144 44.5-butadiene 56.51 50 50 0 97.1 53.9 144	Cyclohexane	44.69	5.0	50	Ф	89.4	65.5	142	45.86	2.58	0	
alie 48.26 10 50 96.5 46.5 140 ane 44.90 5.0 50 0 96.5 46.7 140 44.78 5.0 50 0 89.6 44.7 165 50.74 5.0 50 0 101 58 124 140 52.87 5.0 50 0 101 62 175 142 52.87 5.0 50 0 93.4 52.5 162 46.71 5.0 50 0 93.4 52.5 163 5.13-buladiene 55.72 5.0 50 93.4 52.5 144 48.56 5.0 50 97.1 59.1 148 icohol 50.5 50 97.1 59.1 142 yl Ketone 52.53 10 100 97.4 51.3 137 yl Ketone 52.53 10 50 90.2 69.7 51.3 <td>Dibromochloromethane</td> <td>50.14</td> <td>5.0</td> <td>89</td> <td>0</td> <td>100</td> <td>61.5</td> <td>137</td> <td>49.98</td> <td>0.320</td> <td>Đ</td> <td></td>	Dibromochloromethane	50.14	5.0	89	0	100	61.5	137	49.98	0.320	Đ	
Step 5.0 5.0 62.4 14.0 44.78 5.0 50 0 89.8 62.4 14.0 44.78 5.0 5.0 0 0 89.6 44.7 165 50.74 5.0 5.0 0 101 58 124 165 52.87 5.0 5.0 0 106 62 176 176 178 174 165 176 176 178 174 168 174 168 174 168 174 178 174 178	Ethyl acetale	48.26	9	20	0	96.5	46.6	140	50.13	3.80	0	
44.78 5.0 50 6 89.6 44.7 165 50.74 5.0 50 0 101 58 124 52.87 5.0 50 0 106 62 176 46.71 5.0 50 0 93.4 52.5 163 47.77 5.0 50 0 95.5 65.5 144 5-1,3-butadiene 55.72 5.0 0 95.5 65.5 144 48.56 5.0 50 0 97.1 59.1 148 selicohol 50.51 50 0 97.1 59.1 142 yl Ketone 50.51 10 100 0 90.2 69.7 137 yl Ketone 52.53 10 50 0 97.4 51.3 137 yl Ketone 52.53 10 50 0 97.4 51.3 137 . Russuks reported are not blank conceted Estimated Value above quantitation range Estimated Value above quantitation range H . Russuks reported are not blank conceted	Ethybenzene	44.90	5.0	50	0	89.8	62.4	140	44.53	0.827	0	
50.74 5.0 50 101 58 124 52.87 5.0 50 0 106 62 176 46.71 5.0 50 0 93.4 52.5 163 -1,3-butadiene 55.72 5.0 50 0 95.5 65.5 144 -1,3-butadiene 55.72 5.0 50 0 111 32.9 129 129 129 129 129 129 129 129 129 129 129 129 129 129 129 129 129 142 129 142 148 129 142 148 142 148 142 142 148 142 148 142 148 142 148	Freon 11	44.78	5.0	90	Đ	89.6	44.7	165	46.68	₹.15	Φ	
52.87 5.0 50 0 106 62 176 46.71 5.0 50 0 93.4 52.5 163 47.77 5.0 50 0 93.4 52.5 163 5-1,3-buladiene 55.72 5.0 50 0 111 32.9 129 48.56 5.0 50 0 111 32.9 129 129 sicohol 50.51 5.0 50 0 101 50.1 142 se 90.15 10 100 0 90.2 69.7 137 yl Ketone 52.53 10 50 0 105 59.1 125 yl Ketone 48.69 10 50 0 97.4 51.3 137 . Results reported are not blank conceted E Estimated Value alvore quantitation range H 137 137 . Results reported below quantitation limit ND Not Directed at the Limit of Detection Protection Protection Protection Protection Protection Protection Protection Pro	Freon 113	50.74	5.0	50	O	101	58	124	51.67	1.82	0	
46.71 5.0 50 93.4 52.5 163 47.77 5.0 50 0 95.5 144 7.13-buladiene 55.72 5.0 50 0 111 32.9 129 48.56 5.0 50 0 171 59.1 148 siconic location 50.51 5.0 0 97.1 59.1 142 yl Ketone 90.15 10 100 0 90.2 69.7 137 yl Ketone 48.69 10 50 0 105 59.1 125 yl Ketone 48.69 10 50 0 97.4 51.3 137 . Results reported are not blank conceted E Estimated Value above quantitation range H H 10 NO Not Directed at the Limit of Detection R 137 137	Freon 114	52.87	5.0	99	¢	106	62	176	56.84	7.24	¢	
47.77 5.0 50 95.5 65.5 144 5-1,3-butadiene 55.72 5.0 50 0 111 32.9 129 48.56 5.0 5.0 0 111 32.9 129 Icohol 50.51 5.0 0 97.1 59.1 148 Ny Ketone 90.15 10 100 0 90.2 69.7 137 yl Ketone 52.53 10 50 0 105 59.1 125 yl Ketone 48.69 10 50 0 97.4 51.3 137 . Results reported are not blank conceted E Estimated Value above quantitation range H . Results reported are not blank conceted E Estimated Value above quantitation range H	Freon 12	46.71	5.0	<u>S</u>	0	4.69	52.5	163	47.52	1.72	O	
2-1,3-buladiene 55.72 5.0 50 0 111 32.9 129 48.56 5.0 5.0 0 97.1 59.1 148 elicohol 50.51 5.0 5.0 0 101 50.5 142 se 90.15 10 100 0 90.2 69.7 137 yl Ketone 52.53 10 50 0 105 59.1 125 yl Ketone 52.53 10 50 0 97.4 51.3 137 Analyte detected are not blank conceted Extinated Value above quantitation range Extinated Value above quantitation range H	Heptane	47.77	5.0	90	O	95.5	65.5	144	48.56	1	Ф	
48.56 5.0 50 97.1 59.1 148 sticohol 50.51 5.0 50 0 101 50.5 142 se 90.15 10 100 0 90.2 69.7 137 yl Ketone 52.53 10 50 0 105 59.1 125 yl Ketone 48.69 10 50 0 97.4 51.3 137 . Results reported are not blank conceted E Estimated Value above quantitation range H R . Analyte detected below areantitation limit ND Not Detected at the Limit of Detection R R	Hexachioro-1,3-butadiene	55.72	5.0	50	¢	111	32.9	\$23	52.17	6.58	¢	
10 10 10 10 10 10 10 10	Hexane	48.56	5.6	20	O	97.1	59.1	148	45.68	2.28	0	
100 0 80.2 69.7 137	Isopropyl alcohol	50.51	5.0	20	0	101	50.5	142	52.28	3.44	٥	
yl Ketone 52.53 10 50 0 105 59.1 f 25 yl Ketone 48.69 10 50 0 97.4 51.3 137 Results reported are not blank conceted E Estimated Value above quantitation range H H J. Analyte detected below areantitation limit ND. Not Directed at the Limit of Detection R	m&p-Xyene	90.15	5	100	۵	90.2	69.7	137	91.63	1.63	0	
yl Ketone 48.69 10 50 0 97.4 51.3 137 Results reported are not blank conceted E Estimated Value above quantitation range H Analyte detected below areanitation limit ND Not Detected at the Limit of Detection R	Methyl Butyl Ketone	52.53	10	20	Đ	105	59.1	125	54.2	3.13	0	
Results reported are not blank conceted E Estimated Value above quantitation range H Analyte detected below ananitation limis ND Not Detected at the Limit of Detection R	Methyl Ethyl Ketone	48.69	0	25	0	97.4	51.3	137	48.68	0.0205	0	
ND Not Detected at the Limit of Petertion		rted are not blank conceted	7		ded Value above quanti	itation rang		_	olding times for	preparation or a	italysis exceed	ę
	.] Analyte deter	cted below agantitation limit			erecest of the Limit of F	Materation o			PD cuteida acea	etast raconomia	arite.	}

CLIENT:	CH2M - St Louis							 				
Work Order:	C1705036											
Project:	Former Hampshire	a						<u></u>	TestCode;	TO15		
Sample ID: DLCSD_T015-05171	11	SampType: LCSD	TestCo	TestCode: TO15	Units: ppbV		Prep Date	te:		RunNo: 12	12258	
Client ID: ZZZZZ		Batch ID: R12258	Test	TestMo: TO-15			Analysis Date:	le: 5/17/2017	<u>.</u>		3187	
Anaiyte		Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Gual
Methyl Isobutyl Ketone	lone	50.06	5	50	0	100	583	127	51 53	08.0		
Methyl tert-butyf ether	ther	45.96	5.0	50	0	91.9	62.9	<u>\$</u>	47.12	2.49	0	
Methylene chloride	a .	48.45	5.0	50	0	96.9	57.4	131	48.34	0.227	· •	
о-Хуюве		46.17	5.0	50	٥	92.3	63	142	46.75	1.25	• •	
Ргоруюте		43.92	5.0	S	0	87.8	45.4	150	45.57	3.69	· •	
Styrene		47.29	5.0	33	0	94.6	60.4	135	47.3	0.0211	•	
Теtrachloroeshylene	ψ.	46.99	5.0	20	ð	94.0	59.1	138	47.28	0.615	0	
Tetrahydrofuran		48.35	5.0	20	0	96.7	57.3	136	49.24	1.82	0	
Тојиеле		45.48	5.0	OS	0	91.0	8.9	142	45.07	0.906	Ö	
trans-1,2-Dichloroethene	sthene	50.93	5.0	50	0	102	70.2	142	51.14	0.411	0	
trans-1,3-0ichloropropene	propene	50.49	9.0	99	0	101	71.5	145	50.41	0.159	0	
Trichloroethene		46.72	5.0	9 9	0	93.4	64.5	135	46.45	0.580	0	
Vinyl acetate		55.51	5.0	90	0	****	55.9	150	55.07	0.796	0	
Vinyl Bromide		44.36	5.0	8	0	88.7	54.7	150	45.22	1.92	0	
Vinyl chloride		56.03	5.0	50	0	112	59.9	151	59.07	5.28	0	
Surr: Bromofluorobenzene	robenzene	54.78	0	50	Ф	110	71.1	142	0	0	0	
Sample ID: DLCSD_T015-05181	11	SampType: LCSD	TestCoc	TestCode: TO15	Units: ppbV		Prep Date:	, as		RunNo: 12259	559	
Client ID: ZZZZZ		Batch ID: R12259	Testh	TestNo: TO-15		•	Analysis Date:	ie: 5/18/2017	1	SegNo: 143204	3204	
Analyte		Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	ମନ	53.60	5.0	50	0	107	64.5	141	54.99	2.56	0	
1,1,2,2-Tetrachloroethane	ethane	56.34	5.0	50	0	113	62.1	130	57.5	2.06	C	
1,1,2-Trichloroethane	me	52.56	5.0	33	0	105	63.1	\$47	51.58	1.88	ф	
1,1-Dichloroethane		62.98	5.0	20	Đ	126	62.4	134	65.91	4.55	0	
1,1-Dichloroethene	41	61.51	5.0	20	0	123	54.5	125	62.22	0.985	0	
1,2,4-Trichlorobenzene	zene	43.35	5.0	50	0	86.7	25.1	129	40.73	6.23	٥	
1,2,4-Trimethylbenzene	zene	54.12	5.0	20	0	108	60.4	139	54.93	1.49	0	
1,2-Dibromoethane	a.	52.13	5.0	50	0	\$	63.6	140	51.76	0.712	0	
1,2-Dichlorobenzene	je.	47.80	5.0	2 0	0	95.6	52.7	128	49.62	3.74	0	
Qualifiers:	Results reported are not blank corrected	ot blank corected			Estimated Value above quantitation range	itation rang	ų	Ħ	iding times for	Holding times for preparation or analysis exceeded	navsis exceed	pa
eran, (Analyte detected below quantitation limit	w quantitation limit		ND Not D.	Not Detected at the Limit of Detection	Rection			'D ourside acce	RPD outside accepted recovery limits	rais	
S	Spike Recovery ouiss	Spike Recovery outside accepted recovey limits	꾩								ď	Page 5 of 7

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TestCode: TO15

Sample ID: DLCSD_IO15-05181 SampType: LCSD	SampType: LCSD	TestCod	de: TO15	Units: ppbV		Prep Date	 G		RunNo: 12259	259	
Client ID: ZZZZ	Batch ID: R12259	Testin	4o: TO-15			Analysis Date:	e: 5/18/2017	<u> </u>	SeqNo: 143204	3204	
Ånalyte	Resuft	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Quai
1,2-Dichloroethane	64.30	5.0	20	0	129	63.7	139	67.35	4.63	0	
1,2-Dichloropropane	57.74	5.0	95	0	115	67.3	<u>1</u>	56.98	1.32	•	
1,3,5-Trimethylbenzene	51.30	5.0	25	ð	103	88	136	52.87	3.01	0	
1,3-butadiene	50.98	5.0	50	0	102	21.8	166	60.49	17.1	0	
1,3-Dichlorobenzene	50.65	5.0	50	0	101	52.6	134	54.67	7.63	0	
1,4-Dichlorobenzene	47.30	9.0	25	0	94.6	54.6	131	52.08	9.62	0	
1,4-Dioxane	55.84	10	8	0	112	56.8	141	54.85	1.79	0	
2,2,4-trimethylpentane	59.44	5.0	8	0	119	6,1	138	59.62	0.302	0	
4-ethylfoluene	54.52	5.0	8	0	109	9.09	130	55.37	1.55	0	
Acetone	76.31	10	25	0	153	49.5	149	79.25	3.78	0	S
Allyl chforide	65.54	5.0	50	0	131	55.5	3 8	69,04	5.20	0	
Вепzеле	58.59	5.0	÷	0	117	62	140	59.71	1.89	٥	
Benzyl chloride	27.30	5.0	92	0	116	42.5	136	60.28	4.03	0	S
Bromodichloromethane	53.91	5.0	50	0	108	63.6	144	54.16	0.453	0	
Вготогот	44.00	5.0	55	0	88.0	43.9	148	44.29	0.657	0	
Bromomethane	49.16	5.0	£0	0	98.3	42.6	139	57.08	14.9	0	
Carbon disulfide	62.74	5.0	25	0	125	59.9	133	61.63	1.78	0	
Carbon letrachloride	49.29	5.0	99	0	98.6	63.2	139	50.72	2.86	0	
СЫоторепzепе	49.47	5.0	50	0	6.86	58.9	136	48.25	2.50	0	
Chloroethane	57.10	5.0	25	0	400 200 400	56.1	134	62.07	9.34	0	
Chlaroform	57.74	5.0	89	0	115	62.4	135	60.13	4.06	0	
Chloromethane	51.89	5.0	50	Đ	104	58.5	150	64.54	21.7	0	
cis-1,2-Dichloroethene	57.42	5.0	50	0	15	51.7	135	56.33	1.92	0	
cis-1,3-Dichloropropene	58.88	5.0	\$	Ģ	<u>**</u>	63.1	2	57.74	1.96	0	
Cyclohexane	62.30	5.0	50	0	125	65.5	142	64.63	3.67	0	
Dibromochloromethane	47.25	5.0	92	0	94.5	61.5	137	45.73	3.27	0	
Ethyl acetale	65.40	10	S	Ф	‡31	46.6	140	56.41	1.53	0	
Ethylbenzene	50.20	5.0	90	Đ	100	62.4	140	49.7	1.00	0	
Freon 11	48.35	5.0	50	0	96.7	44.7	165	51.89	7.06	0	
Frean 113	58,84	5.0	50	0	118	58	124	60.77	3,23	0	
Freon 114	48.98	5.0	50	0	98.0	62	176	57.11	15.3	0	
Qualifiers: Results report	Results reported are not blank corrected		E Estim	Estimated Value above quantitation range	itation rang	2	H	Holding times for preparation or anitysis exceeded	preparation or	aralysis excee	ded
) Analyte detect	Analyte detected below quantitation limit		ND Not D	Not Detected at the Limit of Detection	Detection		R	RPD assisting appended sections bigging	rited secondary list	raife	
	•							The Control of the Control	the contract of	Chi	

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C1705036 Work Order:

Former Hampshire Project:

RunNo: 12259	:
Prep Date:	
Units: pobV	
TestCode: TO15	Tacible: TO 45
SampType: LCSD	Raich ID: 0430Ed
Sample ID: DLCSD_T015-05181 Sa	Client ID: 7777

TestCode: TOIS

Sample ID: DLCSD_TO15-05181 SampType: LCSD	-05181 SampType: LCSD	TestCo	TestCode: TO15	Units: ppbV		Prep Date:			RunNo: 12259	59	
Clent ID: ZZZZZ	Batch ID: R12259	Test	TestNa: TO-15			Analysis Date:	5/18/2017	17	SeqNo: 143204	1204	
Anatyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Freon 12	52.85	6.0	S	0	106	52.5	163	56.15	90.9	¢	
Heptane	61,43	5.0	50	0	123	65.5	144	62.63	1.93	0	
Hexachloro-1,3-butadiene	41.06	5.0	<u>S</u>	0	82.1	32.9	129	39.72	3.32	O	
Hexane	64.34	5.0	20	0	129	59.1	148	69.14	7.19	0	
isopropyl alcohol	67.01	5.0	50	O	2 2	50.5	142	7.3	8.56	0	
กเ&p-Xylene	102.5	10	100	0	103	59.7	137	101.2	1.28	0	
Methyl Butyl Ketone	65.88	10	8	0	132	59.1	125	67.28	2.10	0	Ø
Methyl Ethyl Ketone	64.50	10	55	0	129	5,3	137	64.98	0.741	0	
Methyl Isobutyl Ketone	63.73	10	55 25	0	127	58.3	127	64.57	1.31	0	Ø
Methyl tert-butyl ether	59.43	5.0	50	0	119	62.9	134	60.8	2.28	0	
Methylene chloside	61.57	5.0	50	0	123	57.4	131	62.51	1.52	0	
o-Xylene	53.30	5.0	99	0	107	68	142	53.85	1.03	0	
Propylene	90'29	5.0	90	0	<u>**</u>	45.4	150	62.69	9.40	¢.	
Styrene	53,66	5.0	50	0	107	60.4	135	53.53	0.243	0	
Tetrachkoroethylene	43.62	5.0	56	0	87.2	59.1	138	43.93	0.708	0	
Tefrahydrofuran	65.37	5.0	90	0	131	57.3	136	69.17	5.65	¢	
Toluene	52.50	5.0	90	0	105	63.9	142	51.93	1.09	0	
frans-1,2-Dichloroefhene	68.85	5.0	50	0	138	70,2	142	65.25	5.37	c	
trans-1,3-Dichloropropene	29'65	5.0	90	0	119	71.5	145	60.05	0.719	0	
Trichloroethene	48.23	5.0	20	0	96.5	64.5	135	46.19	4.32	0	
Vinyl acetate	75.60	5.0	90 20	0	151	55.9	150	76.13	0.699	0	S
Vinyl Bromide	53.04	5.0	90	0	106	54.7	150	55.42	4.39	0	
Vinyl chłoride	52.90	5.0	90	¢	106	59.9	53	62.19	16.1	c	
Surr. Bromofluorobenzene	54.96	Đ	20	0	110	71.1	142	0	0	¢	

Spike Recovery outside accepted recovery limits Analyte detected below quantitation limit Results reported are not biank corrected

Qualifiers:

E Estimated Value above quantitation range ND Not Detected at the Limit of Detection

Holding times for preparation or arthysis exceeded RPD outside accepted recovery Jimits **≖** ≈

Quantitation Report (QT Reviewed)

Vial: 1 Operator: WD Inst : GCMS3 Multiplr: 1.00 Data File : C:\HPCHEM\1\DATA\DHOS1506.D Acq On : 15 May 2017 11:52 am Sample : DLCSD_T015-051517 Misc : T015

MS Integration Params: rteint.p

Quant Results File: IO511T15.RES Quant Time: May 15 12:22 2017

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

DataAcq Meth : NEWl							
			Response				
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	9.95	128	147271	50.00	dqg	-0	.01
40) l,4-difluorobenzene	12.18	114	799073	50.00	dqq	0	.00
57) Chlorobenzene-d5	16.48	117	699699	50.00	ppp	0	.00
System Monitoring Compounds							
67) Bromofluorobenzene	17.95	95	513129	51.70	dqq	0	.00
67) Bromofluorobenzene Spiked Amount 50.000	Range 70	- 130	Recover	cÀ =	103	.40%	
Target Compounds						Qval	ue
2) Propylene	4.17		186375	39.09	dqq		84
3) Freon 12	4.22	ខេច	555536 573758m 49	41.33	dqq		99
4) Freon 114	4.42	85	573758m 🛶	<u> 35.65</u>	dqq		
5) Chloromethane	4.43	50	169823m √	, 34.03	ppb		
7) Vinyl Chloride	4.63	62	176988	35.44	dqq		96
8) Butane	4.73	4.3	222265	37.60	ppb		95
9) 1,3-butadiene	4.73	5.4	132758	39.16	ppb		90
10) Bromomethane	5.10	94	207922	42.39	dqq		1.00
5) Chloromethane 7) Vinyl Chloride 8) Butane 9) 1,3-butadiene 10) Bromomethane 11) Chloroethane 12) Ethanol 13) Vinyl Bromide 14) Freon 11 15) Acrolein 16) Acetone 17) Pentane 18) Isopropyl alcohol 19) 1,1-Dichloroethene 20) Freon 113	5.27	64	123322	45.91	dqq		97
12) Ethanol	5.39	45	100753	50.56	ppb		95
13) Vinyl Bromide	5.62	106	200871	49.45	dqq		99
14) Freon 11	5.89	101	509368	39.65	dqq		100
15) Acrolein	5.99	56	88164	49.82	qqq		98
16) Acetone	6.09	43	294548	53.19	qqqq		65
17) Pentano	6.17	43	532558	41.60	qqq	护	91
18) Isopropyl alcohol	6.18	45	428150	45.38	dqq		83
19) 1,1-Dichloroethene	6.68	96	227016	55.75	dqq	#	84
20) Freon 113	6.87	101	486545 556314 318652 203591 579688 320362	52.62	dqq		95
21) t-butyl alcohol 22) Allyl chloride	6.91	59	556314	49.13	ppp		90
22) Allyl chloride	7.14	4 1	318652	45.21	dqq		97
23) Methylene Chloride	7.16	84	203591	53.67	ppb		96
24) Carbon disulfide 25) trans-1,2-dichloroethene 26) methyl tert-butyl ether 27) Vinyl acetate	7.33	76	579688	52.44	ppb		99
25) trans-1,2-dichloroethene	8.11	61	320362	51.54	gqq		93
26) methyl tert-butyl ether	8.11	73	731316	47.09	aqq		98
27) Vinyl acetate	8.52	4.3	643398 465970	51.56	gqqq		97
28) 1,1-Dichloroethane	8.54	63	465970	48.63	add		99
27) Vinyl acetate 28) 1,1-Dichloroethane 29) Methyl Ethyl Ketone 30) Hexane	9.04	72	125974	54.31	ggg	#	90
30) Hexane	9.05	41	287783	43.00	agg	#	57
28) 1,1-Dichloroethane 29) Methyl Ethyl Ketone 30) Hexane 31) cis-1,2-dichloroethene 32) Ethyl acetate 33) Chloroform 34) Tetrahydrofuran	9.48	96	236182	52.96	ppp		98
32) Ethyl acetate	9.63	45	82761	47.00	ppo		96 98
33) Chloroform	10.10	83	501385	47.56	ppo		
,, , , , , , , , , , , , , , , , , , , ,							90
35) l,l,l-Trichloroethane	10.91	97	487373	44.06			99
36) 1,2-Dichloroethane	11.22	62	306068	45.95			100 94
37) Benzene	11.52	78	839499	49.06			99
38) Carbon Tetrachloride	11.54	117	485336	41.98			83
39) Cyclohexane	11.59	56	440873	47.24			89
41) 2,2,4-trimethylpentane	12.31	57 43	1375297	50.14 46.74			97
42) Heptane	12.63 12.78	43	500461 326516	52.14			99
43) Trichloroethene		1.30	326516	50.32			100
44) 1,2-Dichloropropane	12.89	63 41	328790 346467	44.90			84
45) Methyl methacrylate	12.99 13.03	88	176106	52.64			94
46) 1,4-dioxane	13.21	83	547182	48.16			100
47) Bromodichloromethane	13.87	43	637947	47.37			94
48) Methyl Isobutyl Ketone	13.07						

^{(#) =} qualifier out of range (m) = manual integration DH051506.D 10511T15.M Thu Jun 01 08:56:26 2017

Centek Laboratories, LLC

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051506.D Vial: 1 Acq On : 15 May 2017 11:52 am Sample : DLCSD_T015-051517 Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 15 12:22 2017 Quant Results File: 10511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Cone Unit	Qvalue
49)	cis-1,3-Dichloropropene	13.94	75	461837	52.90 ppb	100
50)	trans-1,3-Dichloropropene	14.64	75	389645	52.11 ppb	95
51)	1,1,2-Trichloroethane	14.94	97	366560	50.76 ppb	100
52)	Toluene	34.70	92	595390	51.40 ppb	99
53)	Methyl Butyl Ketone	15.08	43	548277		89
54)	Dibromochloromethane	15.58	129	540135	46.47 ppb	96
55)	Tetrachloroethylene	15.63	164	357685	49.24 ppb	97
56)	l,2-dibromoethane	15.81	107	478579	52.04 ppb	99
58)	Chlorobenzene	16.53	112	762502	49.29 ppb	100
59)	Ethylbenzene	16.75	106	422406	49.60 ppb	# 90
60)	m&p~Xylene	16.93	106	1034990	98.35 ppb	# 87
61)	Nonane	17.24	43	715582	46.02 ppb	95
62)	Styrene	17.32	104	759997	50.77 ppb	100
63)	o-xylene	17.35	91	1059334	47.30 ppb	92
64)	Bromoform	17.45		538886	46.50 ppb	99
65)	1,1,2,2-Tetrachloroethane	17.75	83	747367	49.56 ppb	98
66)	Cumene	17.84	105	1484199	49.57 ppb	96
68)	Propylbenzene	18.31	91	1706172	51.17 ppb	98
69)	2-Chlorotoluene	18.35	126	347883	48.77 ppb	90
70)	4-ethyltoluene	18.44	105	1276571	48.83 ppb	97
71)	1,3,5-trimethylbenzene	18.50	105	1187077	48.69 ppb	96
72)	1,2,4-trimethylbenzene	18.87	1.05	1132557	49.74 ppb	94
73)	l,3-dichlorobenzene	19.13	146	603572	51.38 ppb	98
74)	benzyl chloride	19.19	91	748562	52.61 ppb	97
75)	l,4-dichlorobenzene	19.24	146	572232	47.54 ppb	98
76)	1,2,3-Trimethylbenzene	19.26	105	1175187	47.88 ppb	93
77)	1,2-dichlorobenzene	19.51	1.46	612745	48.96 ppb	98
78)	1,2,4-trichlorobenzene	21.02	180	335862	47.54 ppb	99
79)	Naphthalene	21.19	128	822543	56.46 ppb	96
80)	Hexachloro-1,3-butadiene	21.26	225	573494	42.39 ppb	99

Vial Operator

C:\HPCHEM\1\DATA\DHO51506.D 15 May 2017 11:52 am

Data File

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Acq

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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051705.D Vial: 1 Acq On : 17 May 2017 10:44 am Sample : DLCSD_T015-051717 Misc : T015 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 17 11:07 2017 Quant Results File: IO511T15.R£S

Quant Method : C:\HPCHEM\1\METHODS\10511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEWI

Internal Standards	R.T.	QIon	Response		Dev (Min)
				50.00 ppb	-0.01
40) 1.4-difluorobenzene	12.18	114	636022	daa 00.02	0.00
40) 1,4-difluorobenzene 57) Chlorobenzene-d5	16.48	117	565460	dqq 00.02	0.00
_ · · •				` *	
System Monitoring Compounds					
67) Bromofluorobenzene Spiked Amount 50.000	17.94	95	439393	54.78 ppb	0.00
Spiked Amount 50.000	Range 70	- 130	Recove	xy = 109	.56%
Target Compounds					Ovalue
2) Propylene	4.16	41	360457	43.92 ppb	
3) Freon 12	4.21	85	481037	46.71 ppb	1 ÕÕ
4) Freon 114	4.42	85	651883	46.71 ppb 52.87 ppb 53.94 ppb 56.03 ppb 57.50 ppb 57.50 ppb 40.76 ppb 42.02 ppb 42.02 ppb 44.36 ppb 44.36 ppb 44.78 ppb 44.77 ppb 59.46 ppb 44.17 ppb 44.17 ppb 59.46 ppb 44.17 ppb 59.46 ppb	8.4
E \ 75 by T and an area of the colors	4.42	50	206184	53.94 ppb	90
7) Vinyl Chloride 8) Butane 9) 1,3-butadiene 10) Bromomethane 11) Chloroethane 12) Ethanol 13) Vinyl Bromide 14) Freon 11 15) Acrolein 16) Acetone	4.62	62	214365	56.03 ppb	99
8) Butane	4.72	43	260362	57.50 ppb	96
9) 1,3-butadiene	4.73	54	139990	53.90 ppb	88
10) Bromomethane	5.09	94	153186	40.76 ppb	99
11) Chloroethane	5.26	64	86474	42.02 ppb	98
12) Ethanol	5.39	4.5	84244	55.18 ppb	94
13) Vinyl Bromide	5.61 5.89	106	138067	44.36 ppp	99
14) Freon II	5.89	101	440698	44.78 ppp	99 95
15) Acrolein	5 - 98 6 - 08	20 42	20222	42.97 ppb	95 79
16) Acetone 17) Pentane	6.17	4.5	733160	33.46 ppp	93
17) Fencane 18) Isopropyl alcohol	6.1Ω	45	355090	50 51 ppb	# 1
19) 1,1-Dichloroethene	6.10	96	353764	49.29 ppb	96
20) Freon 113	6.67 6.86	101	359425	50.74 ppb	96
	6.91	59	448725	51.72 ppb	99
21) t-butyl alcohol 22) Allyl chloride 23) Methylene Chloride 24) Carbon disulfide	7.13	41	255732	51.72 ppo 47.36 ppb 48.45 ppb 47.51 ppb 50.93 ppb 45.96 ppb 55.51 ppb	94
23) Methylene Chloride	7 . 1.5	84	140812	48.45 ppb	89
24) Carbon disulfide	7.32	76	402350	47.51 ppb	99
25) trans-1,2-dichloroethene	8.10	61	242522	50.93 ppb	97
26) methyl tert-butyl ether 27) Vinyl acetate	8-11	7.3	546838	45.96 ppb	96
27) Vinyl acetate	8.51	4.3	530717	55.51 ppb	98
28) 1,1-Dichloroethane	8.54	63	349117	47.56 ppb	98
29) Methyl Ethyl Ketone	9.03	7.2	86535	48.69 ppb	# 1
30) Hexane	9.04	41	248968	48.56 ppb	# 69
31) cis-1,2-dichloroethene	9.48	96	160760	47.06 ppp	97 91
32) Ethyl acetate	3.62	40	00109	47.56 ppb 48.69 ppb 48.56 ppb 47.06 ppb 48.26 ppb 47.66 ppb	98
33) Chloroform 34) Tetrahydrofuran	10.09	42	244620	48.35 ppb	88
35) l,l,l-Trichloroethane	10.27		403633	47.63 ppb	97
36) 1,2-Dichloroethane	11.22	62	258895	50.73 ppb	100
37) Benzene	11,51		589055	44.93 ppb	98
38) Carbon Tetrachloride	11.54	1.1,7	434488	49.05 ppb	
39) Cyclohexane	11.59	56	31,9568	44.69 ppb	
41) 2,2,4-trimethylpentane	12.31	57	1023741	46.89 ppb	94
42) Heptane	12.63	4.3	407172	47.77 ppb	94
43) Trichloroethene	12.78	130	232858	46.72 ppb	
44) 1,2-Dichloropropane	12.89	63	235245		
45) Methyl methacrylate	12.99	41	292222		
46) 1,4-dioxane	13.03	88 83	122899 439575	46.16 ppb	
47) Bromodichloromethane	13.21	83	439575	48.61 ppb 50.06 ppb	99
48) Methyl Isobutyl Ketone	13.86			DU.U6 ppp	

^(#) = qualifier out of range (m) = manual integration DH051705.D 10511T15.M Thu Jun 01 09:06:51 2017

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Quantitation Report (QT Reviewed)

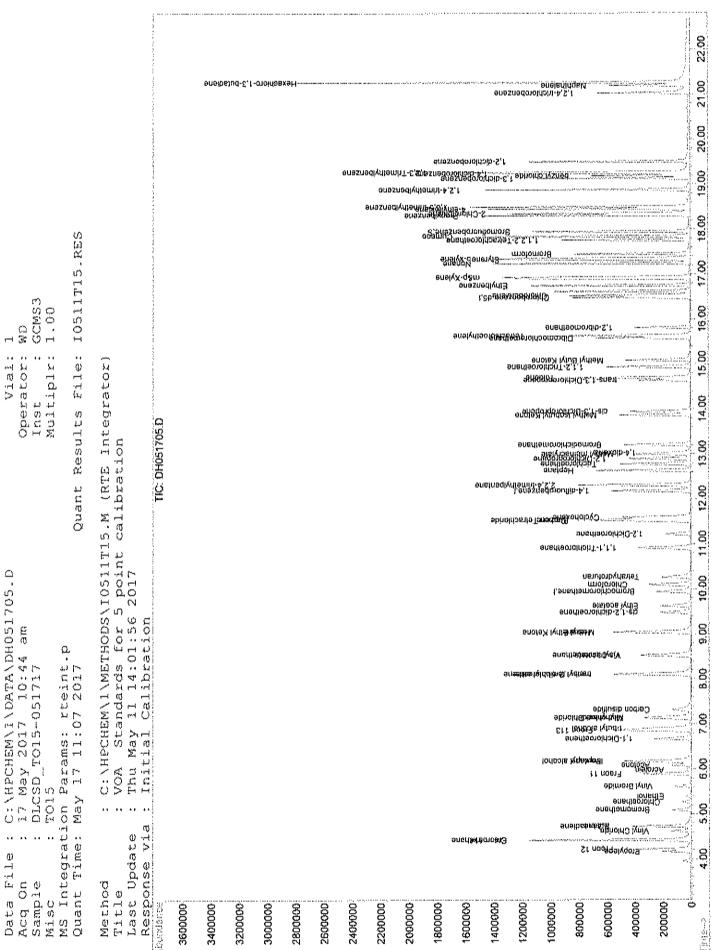
Vial: 1 Operator: WD Data File : C:\HPCHEM\1\DATA\DH051705.D Acq On : 17 May 2017 10:44 am Sample : DLCSD_T015-051717 Misc : T015 Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p Quant Time: May 17 11:07 2017 Ouant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\l\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	cis-1,3-Dichloropropene	13.94	 75	337622	48.58 ppb	1.00
50)	trans-1,3-Dichloropropene	14.64	75	300475	50.49 ppb	95
51)	1,1,2-Trichloroethane	14.93	97	267224	46.49 ppb	100
52)	Toluene	14.70	92	419270	45.48 ppb	97
53)	Methyl Butyl Ketone	15.08	43	463544	52.53 ppb	96
54)	Dibromochloromethane	15.58	129	463928	50.14 ppb	1.00
55)	Tetrachloroethylene	15.63	164	271724	46.99 ppb	98
56)	1,2-dibromoethane	15.81	1.07	357005	48.77 ppb	100
58)	Chlorobenzene	16.53	1, 1, 2	555823	44.46 ppb	99
59)	Ethylbenzene	16.75	106	309025	44.90 ppb	95
60)	m&p-Xylene	16.93	106	766742	90.15 ppb	93
61)	Nonane	17.24	4.3	634744	50.51 გეხ	94
62)	Styrene	17.32	104	572112	47.29 ppb	94
63)	o-xylene	17.35	91	835652	46.17 ppb	95
64)	Bromoform	17.45	173	467510	49.92 ppb	100
65)	1,1,2,2-Tetrachloroethane	17.76	83	570681	46.83 ppb	98
66)	Cumene	17.84	105	1156795	47.80 ppb	97
68)	Propylbenzene	18.31	91	1325447	49.19 ppb	99
69)	2-Chlorotoluene	18.35	126	271422	47.08 ppb	94
70)	4-ethyltoluene	18.45	105	1006377	47.63 ppb	98
71.)	1,3,5-trimethylbenzene	18.49	305	957647	48.60 ppb	99
72)	1,2,4-trimethylbenzene	18.87	1.05	903547	49.10 ppb	96
73)	1,3-dichlorobenzene	19.13	146	488965	51.51 ppb	98
74)	benzyl chloride	19.18	91	558632	48.59 ppb	98
"75)	1,4-dichlorobenzene	19.24	146	465174	47.82 ppb	98
76)	1,2,3-Trimethylbenzene	19.26	105	964892	48.65 ppb	95
77)	1,2-dichlorobenzene	19.50	146	504476	49.88 ppb	98
78)	1,2,4-trichlorobenzene	21.02	1.80	292777	51.28 ppb	99
79)	Naphthalene	21.19	128	573915	48.74 ppb	98
80)	Hexachloro-1,3-butadiene	21.26	225	609128	55.72 ppb	98

Vial



Quantitation Report (QT Reviewed)

Vial: 1 Data File : C:\MPCHEM\1\DATA\DH051809.D Acq On : 18 May 2017 1:26 pm Sample : DLCSD_TO15-051817 Misc : TO15 Operator: WD Inst : GCMS3 Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: May 18 13:53 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)

Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

Internal Standards	R.T.	QIon	Response	Conc Unit		
1) Bromochloromethane 40) 1,4-difluorobenzene 57) Chlorobenzene-d5	9.95	128	83236	50.00 pp	b	-0.01
40) 1,4-difluorobenzene	12.17	1.14	499565	50.00 pp	b	-0.01
57) Chlorobenzene-d5	16.48	117	427123	50.00 pp	þ	0.00
System Monitoring Compounds						
67) Bromofluorobenzene	17.94			54.96 pp		
Spiked Amount 50.000	Range 70	- 130	Recove	ry × 10	9.92%	
Target Compounds					Qv	alue
2) Propylene 3) Freon 12 4) Freon 114 5) Chloromethane	4.16	41	153776	57.06 pp 52.85 pp 48.98 pp	b	86
3) Freon 12	4.21	85	401499	52.85 pp	b	100
4) Freon 114	4.42	85	445573	48.98 pp	b	90
5) Chloromethane	4.42	50	146332	51.89 pp	Þ	88
17) Nichara (1 /7 to 1 consection)	4 6.7	60	149306	52.90 pp	b	100
8) Butane	4.72	43	182918	54.75 pp	b	96
9) 1,3-butadiene	4.73	54	97690	50.98 pp	b	90
10) Bromomethane	5.09	94	136302	49.16 pp	D	99
11) Chloroethane	5.26	64	86687	57.10 pp	D C	98
12) Ethanol	5.38	45	84274	74.82 pp) D	95
(3) Vinyi Bromide	5.61	100	127/14	22.04 pp	h	98 100
14) treon 11	D.09	101	63052	40.32 bb	in.	27. 27.
7) Vinyi Chiofide 8) Butane 9) 1,3-butadiene 10) Bromomethane 11) Chloroethane 12) Ethanol 13) Vinyl Bromide 14) Freon 11 15) Acrolein 16) Acetone	5.90 6.09	2 G	22022 22025	48.98 ppp ppp ppp ppp ppp ppp ppp ppp ppp p	ь ь	76
17) Pentane	6.17	4.3	439171	60 70 pp	b	93
18) Isopropyl alcohol	*** * **. *	45	357350	67.01 pp	b #	1
19) 1,1-Dichloroethene	6 67	96	141799	61.61 pp	b "	99
20) Freen 113	6.86	101	307495	58.84 pp	d	90
20) Freon 113 21) t-butyl alcohol 22) Allyl chloride 23) Methylene Chloride 24) Carbon disulfide	6.90	59	428586	66.96 pp	b	99
22) Allvi chloride	7.13	41	261060	65.54 pp	b	92
23) Methylene Chloride	7,15	84	131993	61.57 pp	# 4	85
24) Carbon disulfide	7.32	76	391991	62.74 pp	b	100
25) trans-1,2-dichloroethene	8.10	61	241896 521582 533231 341052	68.85 pp	b	93
26) methyl tert-butyl ether	8.11	73	521582	59.43 pp		94
27) Vinyl acetate 28) 1,1-Dichloroethane	8.51	43	533231	75.60 pp	b	97
28) 1,1-Dichloroethane	8.53	63	341052	62.98 pp	b	99
29) Methyl Ethyl Ketone	9.03	72	84564	64.50 pp	b #	7.3
30) Hexane	9.04	4 7	243349	64.50 pp 64.34 pp 57.42 pp	b #	67
31) cis-1,2-dichloroethene 32) Ethyl acetate	9.48	96	144710	57.42 pp	b	100
	9.62	4.5	65092	65.40 pp 57.74 pp 65.37 pp	D	92
33) Chloroform	10.09	83	344048	57.74 pp	 	99
34) Tetrahydrofuran	10.27	4.2	243996	65.37 pp	D	87 99
35) 1.1.1-Trichloroethane	10.91	97	335075	53.60 pp 64.30 pp	p	99
36) 1,2-Dichloroethane	11.22 11.51	62 78	242071 566660	58.59 pp	L)	97
37) Benzene	11.51	1.17	322115	49.29 pp		99
38) Carbon Tetrachloride	11.59	56	328635	62.30 pp		92
39) Cyclohexane 41) 2,2,4-trimethylpentane	12.31	57	1019336	59.44 pp		93
42) Heptane	12.63	43	411237			93
43) Trichloroethene	12.78	130	188831	48.23 pp		93
44) 1,2-Dichloropropane	12.89		235877	57.74 pp		100
45) Methyl methacrylate	12.99	41	296559	57.74 pp 61.48 pp	b #	95
46) 1,4-dioxane	13.03	88	116792	55-84 pp	b	83
47) Bromodichloromethane	13.21	83	382914	53.91 pp	b	99
48) Methyl Isobutyl Ketone	13.87	4 3	536643	53.91 pp 63.73 pp	þ	96

^{(#) ≈} qualifier out of range (m) ≈ manual integration DH051809.D 10511T15.M Thu Jun 01 09:11:09 2017

Centek Laboratories, LLC

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\DH051809.D Acq On : 18 May 2017 1:26 pm Sample : DLCSD_T015-051817 Vial: 1 Operator: WD Inst : GCMS3 Misc : TO15 Multiplr: 1.00

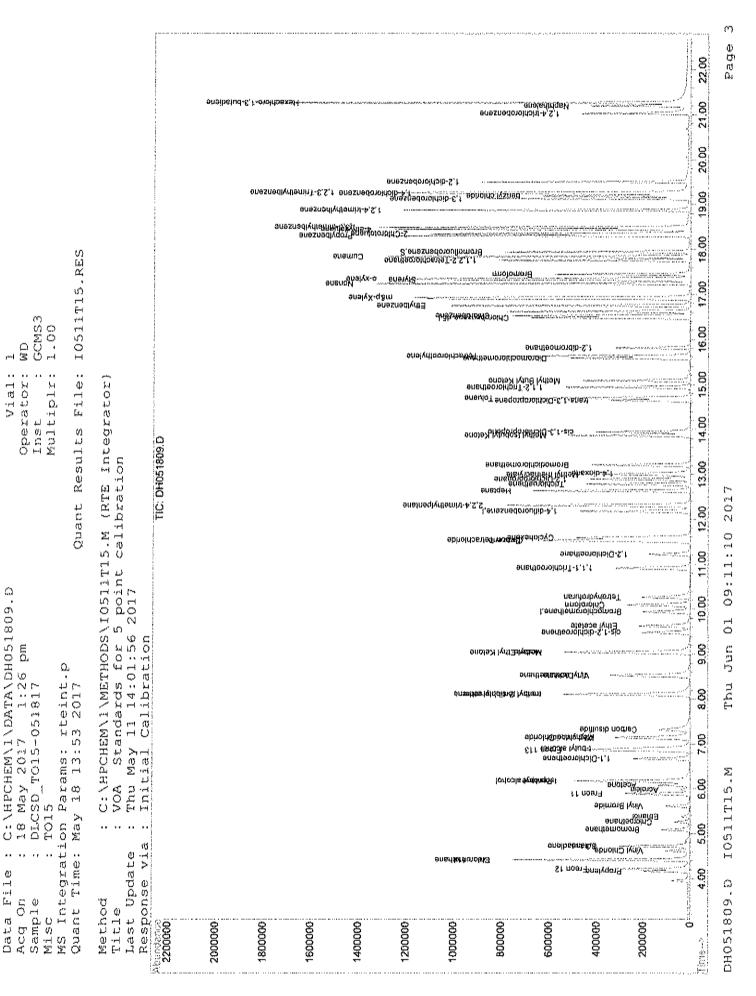
MS Integration Params: rteint.p Quant Time: May 18 13:53 2017 Quant Results File: IO511T15.RES

Quant Method : C:\HPCHEM\1\METHODS\IO511T15.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu May 11 14:01:56 2017
Response via : Initial Calibration
DataAcq Meth : NEW1

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	cis-1,3-Dichloropropene	13.94	 75	321401	dqq 88.82	100
50)	trans-1,3-Dichloropropene	14.64	7.5	278698	59.62 ppb	97
51)	1,1,2-Trichloroethane	14.93	97	237280	52.56 ppb	100
52)	Toluene	14.70	92	380170	52.50 ppb	96
53)	Methyl Butyl Ketone	15.08	43	456632	65.88 ppb	96
54)	Dibromochloromethane	15.58	129	343381	47.25 ppb	100
55)	Tetrachloroethylene	15.63	164	198079	43.62 ppb	97
56)	1,2-dibromoethane	15.81	107	299750	52.13 ppb	99
58)	Chlorobenzene	16.53	112	467123	49.47 ppb	1.00
59)	Ethylbenzene	16.75	106	260974	50.20 ppb	99
60)	m&p-Xylene	16.93	106	658641m4	_{ol} 102.53 ppb	
61)	Nonane	17.24	43	613427	3 64.63 ppb	95
62)	Styrene	17.32	104	490404	53.66 ppb	90
63)	o-xylene	17.35	91	728646	53.30 ppb	97
64)	Bromoform	17.45	173	311213	44.00 ppb	7.00
65)	1,1,2,2-Tetrachloroethane	17.76	83	518675	56.34 ppb	98
66)	Cumene	17.84	105	958693	52.45 ppb	98
68)	Propylbenzene	18.31	91	1167357	57.35 ppb	98
69)	2-Chlorotoluene	18.35	126	215561	49.50 ppb	97
70)	4-ethyltoluene	18.45	105	870133	54.52 ppb	98
77].)	1,3,5-trimethylbenzene	18,49	105	763548	51.30 ppb	97
72)	1,2,4-trimethylbenzene	18.88	105	752297	54.12 ppb	98
73)	1,3-dichlorobenzene	19.13	146	363184	50.65 ppb	98
74)	benzyl chloride	19.19	91	502868	57.90 ppb	98
75)	1,4-dichlorobenzene	19.24	146	347594	47.30 ppb	98
76)	1,2,3-Trimethylbenzene	19.26	105	784094	52.34 ppb	96
77)	1,2-dichlorobenzene	19.50	146	365209	47.80 ppb	98
78)	1,2,4-trichlorobenzene	21.02	180	186938	43.35 ppb	98
79)	Naphthalene	21.19	128	519869	58.45 ppb	# 92
80)	Hexachloro-1,3-butadiene	21.26	225	339042	41.06 ppb	98

Data File

Vial



Page 524 of 572

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15 INJECTION LOG

		Centek	Laborato	ries, LLC			
	C	Directory:	C:\HPCHEM	\1\Data2	Injection Log	instrument #_H_59 Internal Standard Stock #_A Standard Stock #_A4920, M LOS Stock #_A4920, M Mothod Paft EPA TO-	N934 11935, 11 1936 634, 14135, 11 1936
ine	Vial	FileName	Multiplier	SampleName		Misc Info	Injected
;	1 1 1 2 2 1 1 1 1 3	Dh040301.d Dh040302.d Dh040303.d Dh040305.d Dh040305.d Dh040307.d Dh040308.d Dh040309.d Dh040310.d	1. 1. 1. 1. 1. 1.	BFB DSTD50_SLXSF DLCS_SLXSF-040317 DSTD500_H2S DLCS_H2S-040317 DSTD50_TO15 DLCS_TO15-040317 DMB_SLXSF-040317 DMB_TO15-040317 WAC040317A		TO15 Siloxane Siloxane Siloxane Siloxane TO15 TO15 Siloxane TO15 Siloxane	3 Apr 2017 09:24 3 Apr 2017 08:59 3 Apr 2017 09:33 3 Apr 2017 10:07 3 Apr 2017 10:41 3 Apr 2017 11:20 3 Apr 2017 12:08 3 Apr 2017 12:42 3 Apr 2017 13:19 3 Apr 2017 14:14
1234567890	3 4 4 5 6 1 1 1	Dh040311.d Dh040312.d Dh040313.d Dh040315.d Dh040501.d Dh040502.d Dh040503.d Dh040504.d Dh040505.d	1, 1, 1, 1, 1, 1,	WAC040317B WAC040317C WAC040317D WAC040317D WAC040317D BFB DSTD100_TO15 DSTD100_TO15 DSTD75_TO15 DSTD50_TO15		Siloxane Siloxane TO15 Siloxane TO15 TO15 TO15 TO15 TO15 TO15 TO15	3 Apr 2017 14:48 3 Apr 2017 15:21 3 Apr 2017 16:01 3 Apr 2017 16:35 3 Apr 2017 17:15 5 Apr 2017 08:57 5 Apr 2017 09:48 5 Apr 2017 10:25 5 Apr 2017 11:01 6 Apr 2017 11:36
123450 890	1 1 1 1 1 1 1 1 1 1 1	Dh040506.d Dh040507.d Dh040508.d Dh040509.d Dh040511.d Dh040512.d Dh040513.d Dh040514.d Dh040515.d	1. 1. 1. 1. 1. 1. 1.	DSTD25_TO15 DSTD10_TO15 DSTD5_TO15 BLANK DSTD100_SLXSF DSTD100_SLXSF DSTD75_SLXSF DSTD60_SLXSF DSTD50_SLXSF DSTD40_SLXSF		TO15 TO15 Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	5 Apr 2017 12:10 5 Apr 2017 12:44 5 Apr 2017 13:18 5 Apr 2017 14:04 5 Apr 2017 14:41 5 Apr 2017 15:20 5 Apr 2017 15:56 5 Apr 2017 16:32 5 Apr 2017 17:07 5 Apr 2017 17:42
1234567890	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dh040516.d Dh040517.d Dh040518.d Dh040519.d Dh040520.d Dh040521.d Dh040601.d Dh040602.d Dh040603.d Dh040604.d	1. 1. 1. 1. 1. 1. 1.	DSTD25_SLXSF DSTD15_SLXSF DSTD10_SLXSF DSTD5_SLXSF BLANK BLANK BFB DSTD50_SLXSF DSTD50_SLXSF DSTD50_SLXSF		Siloxane Siloxane Siloxane Siloxane Siloxane TO15 Siloxane Siloxane Siloxane Siloxane	5 Apr 2017 18:16 5 Apr 2017 18:50 5 Apr 2017 19:24 5 Apr 2017 19:58 5 Apr 2017 20:32 5 Apr 2017 21:06 6 Apr 2017 07:54 6 Apr 2017 08:28 6 Apr 2017 09:03 6 Apr 2017 09:40
12345678901	22222221	Dh040605.d Dh040606.d Dh040607.d Dh040609.d Dh040611.d Dh040611.d Dh040613.d Dh040614.d	1. 1. 1. 1. 1. 1. 1.	DSTD500_H2S DSTD2000_H2S DSTD1000_H2S DSTD500_H2S DSTD250_H2S DSTD100_H2S DSTD25_H2S DSTD5_H2S DLCS_H2S-040617 DMB_SLXSF-040617		Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	6 Apr 2017 10:14 6 Apr 2017 10:51 6 Apr 2017 11:26 6 Apr 2017 12:00 6 Apr 2017 12:34 6 Apr 2017 13:08 6 Apr 2017 13:42 6 Apr 2017 14:16 6 Apr 2017 14:57 6 Apr 2017 15:30 6 Apr 2017 16:04
	5	Dh040616.d	1.	C1704009-001A 2X		Siloxane Siloxane	6 Apr 2017 16:38 6 Apr 2017 17:12

6 Apr 2017 17:12

6 Apr 2017 17:46

6 Apr 2017 18:20

Siloxane

Siloxane

Siloxane

C1704009-001A 34X

C1704009-002A 2X

BLANK

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Dh040617.d

Dh040618.d

Dh040619.d

		OCHICK	Laborator	ics, LLO			_
.ine		Directory: (FileName	C:\HPCHEM Multiplier	\1\Data2 SampleName	Injection Log	Inclument # 4 59.73% Internal Standard Stock # A199 Standard Stock # A999, A199 LCS Stock # A1992 A1996 Method Ref: EPA 10.45 / Misc Info	<u>0</u> <u>144 (11947)</u>
112 113 114 115 116 117 118 119 20	7 8 8 9 10 10 1 12 9	Dh041021.d Dh041022.d Dh041023.d Dh041024.d Dh041025.d Dh041026.d Dh041027.d Dh041029.d Dh041030.d	1, 1. 1. 1. 1. 1. 1.	C1704009-002A 10X C1704010-001A C1704010-001A 10X C1704017-001A 4X C1704017-001A 10X C1704017-002A 4X C1704017-002A 10X BLANK C1704011-002A C1704011-002A		TO15 TO15 TO15 TO15 TO15 TO15 TO15 Siloxane Siloxane Siloxane	10 Apr 2017 20:15 10 Apr 2017 20:53 10 Apr 2017 21:31 10 Apr 2017 22:09 10 Apr 2017 22:47 10 Apr 2017 23:25 11 Apr 2017 00:03 11 Apr 2017 00:41 11 Apr 2017 01:18 11 Apr 2017 01:55
21 22 23 24 25 26 27 28 29 30	9 10 10 1 1 1 1	Dh041031.d Dh041032.d Dh041033.d Dh041035.d Dh041101.d Dh041102.d Dh041103.d Dh041104.d Dh041105.d	1, 1. 1, 1, 1, 1, 1, 1,	C1704017-001A 10X C1704017-002A 4X C1704017-002A 10X BLANK BLANK BFB DSTD50_TO15 DSTD50_TO15 DSTD50_TO15 DSTD50_TO15		Siloxane Siloxane Siloxane Siloxane Siloxane TO15 TO15 TO15 TO15 TO15	11 Apr 2017 02:32 11 Apr 2017 03:08 11 Apr 2017 03:45 11 Apr 2017 04:22 11 Apr 2017 04:58 11 Apr 2017 08:27 11 Apr 2017 09:09 11 Apr 2017 10:19 11 Apr 2017 10:56
31 32 33 34 35 33 38 39 40	1 1 6 6 7 8 8 11 11	Dh041106.d Dh041107.d Dh041108.d Dh041109.d Dh041110.d Dh041111.d Dh041111.d Dh041113.d Dh041114.d Dh041116.d	1. 1. 1. 1. 1. 1. 1.	DLCSD_TO15-041117 DMB_TO15-041117 C1704027-001A 640X C1704027-001A 1280X C1704027-002A 640X C1704027-003A 640X C1704027-003A 1280X C1704017-001A 126X C1704017-001A 630X C1704017-001A 1260X		TO15 TO15 TO15 TO15 TO15 TO15 TO15 TO15	11 Apr 2017 11:32 11 Apr 2017 12:07 11 Apr 2017 12:51 11 Apr 2017 13:33 11 Apr 2017 14:09 11 Apr 2017 14:45 11 Apr 2017 15:21 11 Apr 2017 15:56 11 Apr 2017 16:32 11 Apr 2017 17:07
41 42 43 44 45 46 47 48 49 50	1 1 1 1	Dh041116.d Dh041117.d Dh041118.d Dh041119.d Dh041120.d Dh041121.d Dh041122.d Dh041123.d Dh041124.d Dh041125.d	1. 1. 1. 1. 1. 1. 1.	C1704017-002A 89X C1704017-002A 445X C1704017-002A 890X BLANK BLANK BLANK DSTD50_SLXSF DSTD50_SLXSF DSTD50_SLXSF DSTD50_SLXSF		TO15 TO15 TO15 Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	11 Apr 2017 17:43 11 Apr 2017 18:18 11 Apr 2017 18:54 11 Apr 2017 19:29 12 Apr 2017 00:38 12 Apr 2017 01:13 12 Apr 2017 01:48 12 Apr 2017 02:23 12 Apr 2017 02:58 12 Apr 2017 03:33
51 52 53 54 55 56 57 58 59 60	2 1 1 2 2 1	Dh041126.d Dh041127.d Dh041128.d Dh041129.d Dh041130.d Dh041201.d Dh041202.d Dh041203.d Dh041204.d Dh041205.d	1, 1. 1. 1. 1. 1.	DSTD500_H2S DSTD500_H2S DSTD500_H2S BLANK BLANK BFB DSTD500_H2S DLCS_H2S-041217 DSTD50_SLXSF DSTD100_SLXSF		Siloxane Siloxane Siloxane Siloxane TO15 Siloxane Siloxane Siloxane Siloxane	12 Apr 2017 04:07 12 Apr 2017 04:42 12 Apr 2017 05:16 12 Apr 2017 05:50 12 Apr 2017 06:24 12 Apr 2017 08:23 12 Apr 2017 08:56 12 Apr 2017 09:30 12 Apr 2017 10:04 12 Apr 2017 10:58
61 64 65	1 1 1	Dh041206.d Dh041207.d Dh041208.d Dh041209.d Dh041210.d	1. 1. 1. 1.	DSTD75_SLXSF DSTD60_SLXSF DSTD50_SLXSF DSTD40_SLXSF DSTD25_SLXSF		Siloxane Siloxane Siloxane Siloxane Siloxane	12 Apr 2017 11:34 12 Apr 2017 12:09 12 Apr 2017 12:44 12 Apr 2017 13:18 12 Apr 2017 13:52

Injection Log

		Centek	Laborator	ies, LLC			
		•	C:\HPCHEM		Injection Log	Instrument in 4 5973m Internal Standard Stock # A197 Standard Stock # A1971 A LCS Stock # A1972 A1974 Method Ref: EPA TO-157	<u>+0</u> 1 <u>946, A19</u> 47, A1948 6, <u>A1947,</u> A1948 1Jan. 1998
ine	Vial	FileName	Multiplier	SampleName		Misc Info	Injected
167 168 169 170 171 172 173 174	1 1 1 1 1 5 6 7 7	Dh041211.d Dh041212.d Dh041213.d Dh041214.d Dh041215.d Dh041216.d Dh041217.d Dh041218.d Dh041219.d Dh041220.d	1. 1. 1. 1. 1. 1.	DSTD15_SLXSF DSTD10_SLXSF DSTD5_SLXSF DLCS_SLXSF-041217 DMB DMB_SLXSF-041217 C1704028-001A 4X C1704029-001A 4X C1704032-001A C1704032-001A 4X		Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	12 Apr 2017 14:26 12 Apr 2017 14:59 12 Apr 2017 15:33 12 Apr 2017 16:08 12 Apr 2017 16:42 12 Apr 2017 17:16 12 Apr 2017 17:51 12 Apr 2017 18:59 12 Apr 2017 18:59 12 Apr 2017 19:34
176 177 178 179 180 181 182 183 184	8 9 10 1 1 1 1	Dh041221.d Dh041222.d Dh041223.d Dh041224.d Dh041225.d Dh041226.d Dh041227.d Dh041301.d Dh041303.d	1.	C1704031-001A 4X C1704031-001A 10X C1704031-002A C1704033-001A 4X BLANK BLANK BLANK BLANK BFB DSTD50_SLXSF DSTD50_SLXSF		Siloxane Siloxane Siloxane Siloxane Siloxane TO15 TO15 Siloxane Siloxane	12 Apr 2017 20:08 12 Apr 2017 20:43 12 Apr 2017 21:17 12 Apr 2017 21:51 12 Apr 2017 22:26 12 Apr 2017 23:30 12 Apr 2017 23:37 13 Apr 2017 07:58 13 Apr 2017 08:32 13 Apr 2017 09:07
186 187 188 189 190 193 194 195	1 2 2 2 2 1 1 5 7	Dh041304.d Dh041305.d Dh041306.d Dh041307.d Dh041308.d Dh041309.d Dh041310.d Dh041311.d Dh041312.d Dh041313.d	1. 1. 1. 1. 1. 1. 1.	DLCS_SLXSF-041317 DSTD500_H2S DSTD500_H2S DSTD500_H2S DLCS_H2S-041317 DMB DMB_SLXSF-041317 C1704028-001A 2410X C1704032-001A 65X C1704033-001A 2005X		Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	13 Apr 2017 09:42 13 Apr 2017 10:16 13 Apr 2017 10:49 13 Apr 2017 11:24 13 Apr 2017 11:57 13 Apr 2017 12:31 13 Apr 2017 13:05 13 Apr 2017 13:41 13 Apr 2017 14:15 13 Apr 2017 14:49
96 97 98 99 90 90 101 102 103 104	6 8 8 9 9 1 1 2 3	Dh041314.d Dh041315.d Dh041316.d Dh041317.d Dh041318.d Dh041319.d Dh041701.d Dh041702.d Dh041703.d	1. 1. 1. 1. 1. 1. 1.	C1704036-001A 3710X C1704036-001A 4X C1704036-001A 10X C1704038-001A C1704038-001A 4X C1704038-001A 10X BLANK BFB ASTD50 ALCS-041717		Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane TO15 TO15	13 Apr 2017 15:23 13 Apr 2017 15:57 13 Apr 2017 16:31 13 Apr 2017 17:05 13 Apr 2017 17:39 13 Apr 2017 18:13 13 Apr 2017 18:48 17 Apr 2017 09:57 17 Apr 2017 10:38
06 07 08 09 10 11 12 13 14	5 7 13 13 14 14	Dh041704.d Dh041706.d Dh041706.d Dh041707.d Dh041708.d Dh041710.d Dh041711.d Dh041711.d Dh041713.d	1. 1. 1. 1. 1. 1. 1.	DSTD50_SLXSF DSTD500_H2S AMB-041717 DMB_SLXSF-041717 WAC041717A WAC041717B WAC041717B WAC041717C WAC041717C		TO15 TO15 TO15 Siloxane TO15 QC Can Siloxane QC Can TO15 QC Can Siloxane QC Can TO15 QC Can Siloxane QC Can TO15 QC Can	17 Apr 2017 14:10 17 Apr 2017 14:44 17 Apr 2017 15:32 17 Apr 2017 16:07 17 Apr 2017 17:22 17 Apr 2017 17:56 17 Apr 2017 18:36 17 Apr 2017 19:11 17 Apr 2017 19:51 17 Apr 2017 20:28
16 19 20	17 16 16	Dh041714.d Dh041715.d Dh041716.d Dh041717.d Dh041718.d	1. 1. 1. 1.	C1704046-001A C1704046-001A 10X C1704042-001A 4X C1704042-001A 10X Blank		Sulfurs Sulfurs Sulf/Silx Sulf/Silx Sulf/Silx	17 Apr 2017 21:04 17 Apr 2017 21:41 17 Apr 2017 22:18 17 Apr 2017 22:54 17 Apr 2017 23:30

Injection Log

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ine	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
66 67 68 69 70 71 72 73 74 75	1 1 1 1 1 5 6	Dh050901.d Dh050902.d Dh050903.d Dh050905.d Dh050906.d Dh050906.d Dh050908.d Dh050909.d Dh0509010.d	1. 1. 1. 1. 1. 1.	BFB DSTD50_TO15 BFB DSTD50_TO15 DLCS_TO15-050917 DLCSD_TO15-050917 DMB DMB_TO15-050917 C1705018-001A 475X C1705018-002A 17420X	TO15 TO15 TO15 TO15 TO15 TO15 TO15 TO15	9 May 2017 08:45 9 May 2017 09:35 9 May 2017 10:32 9 May 2017 11:12 9 May 2017 11:54 9 May 2017 12:29 9 May 2017 13:04 9 May 2017 13:38 9 May 2017 14:15 9 May 2017 14:49
76 77 78 79 80 81 82 83 84 85	7 8 9 10 1 11 11 4 4	Dh050911.d Dh050912.d Dh050913.d Dh050914.d Dh050915.d Dh050916.d Dh050918.d Dh050919.d Dh050920.d	1. 1. 1. 1. 1. 1. 1.	C1705018-004A 6530X C1705018-001A 12780X C1705018-003A 27840X C1705018-005A 6720X BLANK C1705020-002A 4X C1705020-002A 10X BLANK C1705024-001A 4X C1705024-001A 10X	TO15 TO15 TO15 TO15 TO15 TO15 TO15 TO15	9 May 2017 15:23 9 May 2017 15:58 9 May 2017 16:32 9 May 2017 17:07 9 May 2017 17:42 9 May 2017 18:16 9 May 2017 18:52 9 May 2017 19:27 9 May 2017 20:02 9 May 2017 20:37
86 87 88 89 90 91 92 93 94	1 2 3 4 5 10 1 1 1	Dh050921.d Dh050922.d Dh050923.d Dh050924.d Dh050925.d Dh050926.d Dh051001.d Dh051002.d Dh051003.d Dh051004.d	1, 1, 1, 1, 1, 1, 1, 1,	BLANK BLANK BLANK BLANK BLANK BLANK C1705018-005A 672X BFB DSTD50_SLXSF DSTD50_SLXSF DSTD50_H2S	TO15 TO15 TO15 TO15 TO15 TO15 TO15 Siloxane Siloxane Siloxane	9 May 2017 21:12 9 May 2017 21:47 9 May 2017 22:21 9 May 2017 22:56 9 May 2017 23:31 10 May 2017 07:47 10 May 2017 10:02 10 May 2017 10:37 10 May 2017 11:13 10 May 2017 11:46
96 97 98 99 00 01 02 03 04 05	2 1 1 1 4 4 1 1	Dh051005.d Dh051006.d Dh051007.d Dh051008.d Dh051010.d Dh051011.d Dh051012.d Dh051013.d Dh051014.d	1. 1. 1. 1. 1. 1. 1.	DLCS_H2S-051017 DSTD50_SLXSF DLCS_SLXSF-051017 DTSD50_TO15 DMB_SLXSF-051017 C1705024-001A 4X C1705024-001A 10X BLANK BLANK BLANK	Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	10 May 2017 12:20 10 May 2017 12:54 10 May 2017 13:29 10 May 2017 14:14 10 May 2017 14:48 10 May 2017 15:22 10 May 2017 15:56 10 May 2017 16:30 10 May 2017 17:04 10 May 2017 17:38
06 07 08 09 10 11 12 13 14	1 1 1 1 1 1 1 1	Dh051015.d Dh051101.d Dh051102.d Dh051103.d Dh051104.d Dh051105.d Dh051106.d Dh051107.d Dh051108.d Dh051109.d	1. 1. 1. 1. 1. 1. 1.	BLANK BFB DSTD50_TO15 DSTD100_TO15 DSTD100_TO15 DSTD75_TO15 DSTD50_TO15 DSTD25_TO15 DSTD10_TO15 DSTD10_TO15	Siloxane TO15 TO15 TO15 TO15 TO15 TO15 TO15 TO15	10 May 2017 18:12 11 May 2017 08:18 11 May 2017 08:54 11 May 2017 09:32 11 May 2017 10:08 11 May 2017 10:44 11 May 2017 11:19 11 May 2017 11:54 11 May 2017 12:28 11 May 2017 13:02
16 17 18 19 20	1 1 1 1 12	Dh051110.d Dh051111.d Dh051112.d Dh051113.d Dh051114.d	1. 1. 1. 1.	DLCS_TO15-051117 DLCSD_TO15-051117 DMB DMB_TO15-051117 C1705027-001A	TO15 TO15 TO15 TO15 TO15	11 May 2017 13:38 11 May 2017 14:13 11 May 2017 14:55 11 May 2017 15:29 11 May 2017 16:05

Injection Log

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Instrument # 1 59 1575
Internal Standard Stock # A1986
Standard Stock # A1989 A1994 A1995 A1996
LCS Stock #A1990 A1995 A1996
Nistrand Res FRA TO: 15 / Jan. 1999

ine	Vial	FileName	Multiplier	SampleName	Nishod Rof EPA TO-15 / Misc Info	Jan. 1999 Injected
21 22 23 24 25 26 27 28 29 30	12 13 13 14 14 1 11 11	Dh051115.d Dh051116.d Dh051117.d Dh051118.d Dh051119.d Dh051120.d Dh051121.d Dh051123.d Dh051123.d Dh051124.d	1. 1. 1. 1. 1. 1. 1.	C1705027-001A 10X C1705027-002A C1705027-002A 10X C1705027-003A C1705027-003A 10X BLANK C1705020-002A 77X C1705020-002A 385X C1705020-002A 770X BLANK	TO15 TO15 TO15 TO15 TO15 TO15 TO15 TO15	11 May 2017 16:39 11 May 2017 17:15 11 May 2017 17:50 11 May 2017 18:26 11 May 2017 19:02 11 May 2017 19:38 11 May 2017 20:14 11 May 2017 20:50 11 May 2017 21:26 11 May 2017 22:01
31 32 33 34 35 36 37 38 39 40	4 1 1 1 1 1 1 1 1 1 1 1	Dh051125.d Dh051126.d Dh051127.d Dh051128.d Dh051129.d Dh051130.d Dh051201.d Dh051202.d Dh051203.d Dh051204.d	1. 1. 1. 1. 1. 1. 1.	C1705024-001A 46X C1705024-001A 184X BLANK BLANK BLANK BLANK BLANK BFB DSTD50_SLXSF DSTD50_SLXSF DLCS	TO15 TO15 TO15 TO15 TO15 TO15 TO15 Siloxane Siloxane Siloxane	11 May 2017 22:37 11 May 2017 23:13 11 May 2017 23:49 12 May 2017 00:25 12 May 2017 01:00 12 May 2017 01:36 12 May 2017 08:42 12 May 2017 09:17 12 May 2017 09:52 12 May 2017 10:29
41 42 43 44 45 46 47 48 49 50	2 1 1 1 4 5 12 13	Dh051205.d Dh051206.d Dh051207.d Dh051208.d Dh051209.d Dh051210.d Dh051211.d Dh051212.d Dh051213.d Dh051214.d	1. 1. 1. 1. 1. 1. 1.	DSTD500_H2S DLCS_H2S-051217 DLCS_SLXSF-051217 DMB_H2S-051217 DMB_SLXSF-051217 C1705024-001A 460X C1705024-001A 3340X C1705034-003A 4X C1705034-002A 4X C1705034-001A 4X	Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	12 May 2017 11:04 12 May 2017 11:38 12 May 2017 12:13 12 May 2017 12:48 12 May 2017 13:23 12 May 2017 13:58 12 May 2017 14:34 12 May 2017 15:09 12 May 2017 15:44 12 May 2017 16:20
51 52 53 54 55 56 57 58 59 60	12 13 14 13 14 1 1 1	Dh051215.d Dh051216.d Dh051217.d Dh051218.d Dh051219.d Dh051220.d Dh051221.d Dh051222.d Dh051223.d Dh051224.d	1. 1. 1. 1. 1. 1. 1. 1.	C1705034-003A 10X C1705034-002A 10X C1705034-001A 10X C1705034-002A C1705034-001A BLANK BLANK BLANK BLANK BLANK BLANK BLANK BLANK	Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	12 May 2017 16:56 12 May 2017 17:32 12 May 2017 18:08 12 May 2017 18:44 12 May 2017 19:21 12 May 2017 19:57 12 May 2017 20:34 12 May 2017 21:10 12 May 2017 21:47 12 May 2017 22:24
61 62 63 64 65 66 67 68 69 70	1 1 1 1 1 1 1 3 4	Dh051501.d Dh051502.d Dh051503.d Dh051504.d Dh051506.d Dh051506.d Dh051508.d Dh051508.d Dh051509.d Dh051510.d	1, 1, 1, 1, 1, 1, 1, 1,	BFB DSTD50 DSTD50 DSTD50_TO15 DLCS_TO15-051517 DLCSD_TO15-051617 DMB DMB_TO15-051517 C1705036-001A 10X C1705036-002A 10X	TO15 TO15 TO15 TO15 TO15 TO15 TO15 TO15	15 May 2017 08:24 15 May 2017 09:02 15 May 2017 09:41 15 May 2017 10:36 15 May 2017 11:18 15 May 2017 11:52 15 May 2017 12:26 15 May 2017 13:00 15 May 2017 13:49 15 May 2017 14:23
71 72 73 74 75	5 6 7 8 9	Dh051511.d Dh051512.d Dh051513.d Dh051514.d Dh051515.d	1. 1. 1. 1.	C1705036-003A C1705036-004A C1705036-005A C1705036-006A C1705036-007A	TO15 TO15 TO15 TO15 TO15	15 May 2017 14:59 15 May 2017 15:34 15 May 2017 16:09 15 May 2017 16:45 15 May 2017 17:20

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Directory:

Injection Log

Instrument # 4 54 1515
Internal Standard Stock # A1988
Standard Stock # A1989, A1994, A1995, A1996
LCS Stock # A1990, A494 A1995, A1996
Method Rate CRA 70215 / Len 1999

					Method Ref: EPA 70-157	Jan. 1999
ine	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
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86 87 88 89 90 91 93 94 95	10 11 12 12 13 13 14 15 1	Dh051526.d Oh051527.d Dh051528.d Dh051529.d Dh051530.d Dh051531.d Dh051532.d Dh051533.d Dh051601.d Dh051602.d	1. 1. 1. 1. 1. 1. 1.	C1705036-008A C1705036-009A C1705036-010A C1705036-010A 10X C1705036-011A C1705036-011A 10X C1705036-013A 10X C1705036-014A 10X BFB BFB	TO15 TO15 TO15 TO15 TO15 TO15 TO15 TO15	15 May 2017 23:49 16 May 2017 00:25 16 May 2017 01:01 16 May 2017 01:35 16 May 2017 02:11 16 May 2017 02:45 16 May 2017 03:20 16 May 2017 03:54 16 May 2017 07:57 16 May 2017 08:40
96 97 98 99 00 01 02 03 04 05	1 1 2 2 1 3 4 5 6 7	Dh051603.d Dh051604.d Dh051605.d Dh051606.d Dh051607.d Dh051608.d Dh051609.d Dh051610.d Dh051611.d Dh051611.d	1. 1. 1. 1. 1. 1. 1.	DSTD50_SLXSF DLCS_SLXSF-051617 DSTD500_H2S DLCS_H2S-051617 DMB_SLXSF-051617 C1705036-001A C1705036-002A C1705036-003A C1705036-004A C1705036-005A	Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	16 May 2017 09:14 16 May 2017 09:49 16 May 2017 10:24 16 May 2017 10:59 16 May 2017 11:44 16 May 2017 12:19 16 May 2017 12:54 16 May 2017 13:30 16 May 2017 14:05 16 May 2017 14:40
06 07 08 09 10 11 12 13 14	8 9 10 11 12 13 14 15 16	Dh051613.d Dh051614.d Dh051615.d Dh051616.d Dh051617.d Dh051618.d Dh051619.d Dh051620.d Dh051621.d Dh051622.d	1. 1. 1. 1. 1. 1. 1.	C1705036-006A C1705036-007A C1705036-008A C1705036-009A C1705036-010A C1705036-011A C1705036-013A 10X C1705036-014A 10X C1705036-012A 10X BLANK	Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane Siloxane	16 May 2017 15:15 16 May 2017 15:50 16 May 2017 16:25 16 May 2017 17:00 16 May 2017 17:35 16 May 2017 18:10 16 May 2017 18:45 16 May 2017 19:19 16 May 2017 19:54 16 May 2017 20:28
16 17 18 19 20 21 22 23 24 25	13 3 1 1 1 1 1 1	Dh051623.d Dh051624.d Dh051625.d Dh051626.d Dh051701.d Dh051702.d Dh051703.d Dh051704.d Dh051705.d Dh051706.d	1. 1. 1. 1. 1. 1. 1.	C1705036-011A 10X C1705036-001A 10X BLANK BLANK BFB DSTD50_TO15 DSTD50_TO15 DLCS_TO15-051717 DLCSD_TO15-051717 DMB_TO15-051717	Siloxane Siloxane Siloxane Siloxane Siloxane TO15 TO15 TO15 TO15 TO15	16 May 2017 21:03 16 May 2017 21:38 16 May 2017 22:12 16 May 2017 22:47 17 May 2017 08:17 17 May 2017 08:58 17 May 2017 09:34 17 May 2017 10:09 17 May 2017 10:44 17 May 2017 11:18
26 27 28 29 30	3 4 8 16 10	Dh051707.d Dh051708.d Dh051709.d Dh051710.d Dh051711.d	1. 1. 1. 1. 1.	C1705036-001A C1705036-002A C1705036-006A C1705036-012A 128X C1705036-008A	TO15 TO15 TO15 TO15 TO15	17 May 2017 11:58 17 May 2017 12:34 17 May 2017 13:11 17 May 2017 13:46 17 May 2017 14:23

Injection Log Internal Standard Stock if A1988

instrument if 4 59 (3ms

Standard Stock # 41981, 41944, 41995, 41996 Directory: C:\HPCHEM\1\Data2 LCS Stock #**A996 A1997, A1996** Method Ref: EPA TO 15 / Jan. 1999 ine Vial FileName Multiplier SampleName Misc Info Injected 31 11 Dh051712.d 1. C1705036-009A TO15 17 May 2017 15:00 17 May 2017 15:49 32 12 Dh051713.d 1. C1705036-010A **TO15** 33 12 Dh051714.d 1. C1705036-010A 10X TO15 17 May 2017 16:24 34 13 Dh051715.d 1. C1705036-011A TO15 17 May 2017 17:01 35 13 Dh051716.d 1. C1705036-011A 5X TO15 17 May 2017 17:36 TO15 36 3 Dh051717.d 1. C1705036-001A 40X 17 May 2017 18:11 17 May 2017 18:46 37 16 Dh051718.d 1. C1705036-012A 640X **TO15** 38 14 Dh051719.d 1. C1705036-013A 10X TO15 17 May 2017 19:21 39 15 Dh051720.d 1. C1705036-014A 10X TO15 17 May 2017 19:56 40 5 Dh051721.d 1. C1705042-001A 4X TO15 17 May 2017 20:31 5 TO15 1. C1705042-001A 10X 17 May 2017 21:06 41 Dh051722.d TO15 17 May 2017 21:41 42 1 Dh051723.d 1. BLANK **TQ15** 17 May 2017 22:16 Dh051724.d BLANK 43 1 1. **BLANK TO15** 17 May 2017 22:51 1 44 Dh051725.d 1. 18 May 2017 08:21 45 1 Dh051801.d 1. BFB TO15 DSTD50_SLXSF 18 May 2017 08:58 46 1 Dh051802.d 1. Siloxane 18 May 2017 09:33 47 1 Dh051803.d DSTD50 SLXSF Siloxane 1. 48 1 Siloxane 18 May 2017 10:08 Dh051804.d 1. DLCS_SLXSF-051817 DSTD500 H2S 49 2 Dh051805.d 1. Siloxane 18 May 2017 10:42 50 2 Dh051806.d 1. DLCS_H2S-051817 Siloxane 18 May 2017 11:16 51 1 Dh051807.d 1. DSTD50_TO15 TO15 18 May 2017 12:16 52 1 Dh051808.d 1. DLCS_TO15-051817 TO15 18 May 2017 12:51 53 1 Dh051809.d 1. DLCSD_TO15-051817 TO15 18 May 2017 13:26 18 May 2017 14:01 54 1 Dh051810.d 1. DMB_SLXSF-051817 Siloxane TO15 18 May 2017 14:39 55 1 Dh051811.d 1. DMB_TO15-051817 18 May 2017 15:15 56 14 Dh051812.d 1. C1705036-013A 80X **TO15** 57 15 Dh051813.d 1. C1705036-014A 80X **TO15** 18 May 2017 15:50 18 May 2017 16:25 58 16 Dh051814.d 1. C1705036-012A 128X Siloxane Siloxane 18 May 2017 17:01 59 16 Dh051815.d 1. C1705036-012A 1280X 18 May 2017 17:37 60 5 Dh051816.d 1. C1705043-001A 4X Siloxane 5 Siloxane 18 May 2017 18:12 61 Dh051817.d 1. C1705043-001A 10X 6 1. Siloxane 18 May 2017 18:48 62 Dh051818.d C1705044-001A 4X Siloxane 18 May 2017 19:24 6 C1705044-001A 10X 63 Dh051819.d 1. 18 May 2017 19:59 1 Dh051820.d BLANK Siloxane 64 1. C1705043-001A 1000X Siloxane 18 May 2017 20:35 65 3 Dh051821.d 1. 18 May 2017 21:10 4 Siloxane Dh051822.d C1705044-001A 4210X 66 1. 7 18 May 2017 21:46 67 Siloxane Dh051823.d 1. C1705042-001A 10X 18 May 2017 22:21 1 Dh051824.d 1. BLANK Siloxane 68 Dh051825.d Siloxane 18 May 2017 22:56 69 8 1. C1705048-001A 10X Siloxane 18 May 2017 23:31 70 9 C1705053-001A Dh051826.d 1. 10 Dh051827.d 1. C1705055-001A Siloxane 19 May 2017 00:06 72 11 Dh051828.d 1. C1705055-002A Siloxane 19 May 2017 00:41 19 May 2017 01:16 73 1 Dh051829.d 1. BLANK Siloxane 19 May 2017 01:51 74 1 1. Siloxane Dh051830.d BLANK 75 12 Dh051831.d 1. C1705036-012A 81920X Siloxane 19 May 2017 07:44 76 1 Dh051901.d 1. BFB TO15 19 May 2017 09:14 77 1 1. DSTD50_SLXSF Siloxane 19 May 2017 09:49 Dh051902.d 19 May 2017 10:23 78 1 Dh051903.d 1. DSTD50_SLXSF Siloxane 79 1 Dh051904.d 1. DLCS SLXSF-051917 Siloxane 19 May 2017 10:58 30 2 Dh051905.d 1. DSTD500_H2S Siloxane 19 May 2017 11:32 2 Siloxane 19 May 2017 12:05 Dh051906.d DLCS_H2S-051917 81 1. 19 May 2017 12:45 82 1 Dh051907.d 1. DSTD50_TO15 T015 33 1 Dh051908.d 1. DSTD50_TO15 T015 19 May 2017 13:26 DLCS_TO15-051917 1 T015 19 May 2017 14:00 34 1. Dh051909.d Siloxane 19 May 2017 14:34 35 DMB_SLXSF-051917 1 Dh051910.d 1.

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<u>-</u>	Comments																			HIGH	- - - -	,		/	
¥ 00-1	Time																								
Logbook	Inj. Date	8 31 15					9 3115							>	9/11/15	-									
Injection Look #(s): Aos (s	Group Number																								
Injection Log Standard Stock #(s): AoS177 LCS Stock #(s) AoS172	MethodQ File	CTOS31RS				>	CI&31Kg	CI 6930C						>	c1c83 F6	3116075					>				
*	Inj Vol ac	2 m		0.55 A	0,25 m	0.12	-£							>	 R	-					>				
	Dil. Factor		-			À		1						\Rightarrow	_						7	 			
ories, LLC rco⁄FID	Data File Name	प्रकार ।	1 02	50	ઝુ	しゅう	c169030j	70	63	<u>ئ</u>	55	90	(0)	80 A	CLOGINOI	70 1	69	40	So	90	\				_
Centek Laboratories, LLC Instrument: HP6890 TCD/FID GC Column: CTR I	Login Number	573 A		57.53	STD 4	5 G	-09031S	FALLS - 090315	FGM3-090315	C1509003-001A	C150905-001A	C1509607-001/1	C1509 008-001/A	CCFG 2-090315	591115	FALCS-691115	PAMB-091115	C1509016-001A	ccF62-091115	C1509028-001A	CVS 1000-20012512				-
	Detector TCD/FID	61	\ _			>	65	-				Ť	y	>	100	1-			_		5	/			

Page No:

Analyzed by:__ Form C148

	Comments CD BackUp#			C	_																						TTTTOWN A PAUL	7
on Logbook GC-1 Aee73 Se73	nj. e Time	5/9/17					\ \		7/1/9/	***************************************											·		We also	APT(16		>		
ectii Sillectii	Group Number		33						2																			
Standard Stock #	Inj MethodQ Vol cc File	1 m C1C831 F	CK&S&FC				>											-unit								> ?		
province	Dil. Factor						7			-																>		
aboratories, LLC HP6890 TCD/FID CTR I	Data File Name	CKOSOGOL	700	7	95	જ	70	1 N. N. J. N. J.	20 -	03	10	So	96	6	-∞	60	(0)		2/	2		<u>V</u>	9		>?	7		
Centek Laboratories, LLC Instrument: HP6890 TCD/FID GC Column: CTR I	. 1)		F4105 - 050411	4105020-00-1H	21765626-0020	21705024-0014	15050-75E	たいこととはいる	F6KS-051517	RAMB-051517	C1705036-001A	t/200-	-603.A	\$20-	1 COO -	1000-	¥[30-	ЖI.	C1705036-005KH	1,600-	1010-	W110-	4507			CCF63-05617		/5
	1	Δ				***	1				Y								<u> </u>							*		Anghizod hu

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15 STANDARDS LOG

Centek Laboratories, LLC

GC/MS Calibration Standards Logbook

Std #	Date Prep	Date Prep Date Exp		Description	Stock #	Stock Conc	Initial Vol (psig)	Finial Vol (psia)	Stock Conc Initial Vol (psig) Finial Vol (psia) Final Conc (ppb)	Prep by Chkd by	Chkd by
A-AUTH	8/13/1/15	<u>5/17/5</u>	400	\$140 X	55784	NO000	30	30	50	ω'	
A-A4567				306	A02.70	1001	1,5				
A-00568			/	4,5	120269	1000m	<u>}</u> ,	-,4	500		
A-A05169			70151	TO15/11/c- IS	A0960	50,000	9.6	45	~4 <u>44,</u>		
A-406120			1100-1-0-1-0-1	57.0	19561	•••			-		
A-40571		- j	}	957	77504				j	7	
A-0972	1-13/15	મિષ્ટા	(JAIXE)	S CASES	159-46-	96 Varies	ノカ	Mell re X	أسارودار	£ 3	
4.007B	13/5/15	اااله	FIXED	্ কেন্ড	6 AD 3 1805-F3		70	6	(3)7) 583-171	7,3	
4-0974	51/4/6	1/12/16	FORM	A-0974 9/7/15 17/24/16 FORMALDENTAL FF 29/67	F FF 29%	57 ATR		82	Sta 11. Sporm	7.7	
4.0975	1.0975 91-115 91415	9/14/15	FORMSD	M 50	AOGTH	.13.		45	50 11	→	
A. 0580	91814	4115/19	TO15 IS	T.S	1430V	Lad I		08 大彩	ξo	PW	
A- 09 81				570	A0534	1	•	1 1			
A- 0482				46.5	A054 6						
A-0183				4 PCA	5125		- >	 			
A. 0984				HPCHS	13500	50,00B	3.0	24 082	به		
A-0985				FORMSO		16.5 pp	0.25	30	50		
A- 0586				×9718	48.84	500 aaB	30				
A-0587				201	0129V	1 ppm	1.5		4		
A-0188			7	1425	A0269	10001	}		500		
A-0589	· · · · · ·		TryTOSIS	8IZ	1005 gr6	5.000	0.9	45	,		
A-0590	9	-)	1 m TO	1 m TON STO	19500	<u>_</u> 9	7)	ゝ	7		
FORM 153			*							} •	

Page 536 of 572

AOA72 Carbon Monoxide 15%

Carbon Monoxide 55%

MATOGEN

MATOGEN

Carbon Dioxide 15%

Carbon Monoxide 15%

Carbon Monoxide 15%

MATOGEN

METHONE

METHONE

METHONE

METHONE

68:5%

GC/MS Calibration Standards Logbook

Centek Laboratories, LLC

# ptS	Date Prep	Date Prep Date Exp	Description	iption	Stock #	Stock Conc	Initial Vol (psig	Finial Vol (psia)	Stock Conc Initial Vol (psig] Finial Vol (psia) Final Conc (ppb)	Prep by	Chkd by
A- (20 i	11/2/11	1/22/16	7015	AH	A1168	IDDM	1.5	30	50	SU/	
A-1203	7	-	701516		A1201	KOOOA	510	45	4	- ,	
A-1103	11/18/16	11/18/11			<u>.</u>	100 M	LINDE	TOIS MIX	iæn	M	
A- 1204		[2107 SZJ 1/18/11/18/18	015	11	A6534		1 MON S	(S. 100m	ارا دارا	
A-1205		1/25/16	TO15	J. 23	HC114	- 48 - 48	. 5	30	50,000	du	
A-1206			,	LCS	AIJOY	-					
A-1207			,	57.0	AIZO3	>	— ,	 J	- ,		
A-1208	***		TOIS F	FORM	A0974	11.5 Apm	o.30	45			
A-1369	- i i i i i		5	SILOX	MITTER A	101754 Alora / 500408	3.0	30			
A-1210			5	SULF	AOITO	1000	100		- }		
A-1211			4	H2S	A0265	1000N	-3		500,000		
A-12(2			TOIS YPCH	464	9519	1000	1.5	30	50,000		
A-12B			, ,	4 R.45	AILIA	50008	3.0	-4	5008		
A-12.14			7015106 IS	±±5.	A1205	-	5.0	45	1,008		
A-1215					Avon		-		-		
A. 12.16	,	-	- }	Z	A1206	- 9	اد_	→	+		
A-1217	1/25/16	125/16 dill6	1015	75	Amy	I man	ا.خ ا	30	50 ppb	5	
A-1218	Ì	1		\$7	A1203		_				
A-1219				203	Anort						
A. 1220				4PC#	4519	>	\rightarrow	>	>		
A-122)	\ 	ا ا	\	4Pat5	91220	502	3,0	30	7.2	->	
						-					

FORM 153

Centek Laboratories, LLC

GC/MS Calibration Standards Logbook

)ei
Std #	Date Prep	Date Exp	Description	Stock #		Initial Vol (psig)	Stock Conc Initial Vol (psig) Finlal Vol (psia)	Final Conc (ppb)	Prep by	ntek Sylco
A-A1788	12/22/16	12/29 lie	TOIS STLX	A logs	500mh	3.0	30	50	77	La
A-1789			SULF	A02.70	i wad	5	30	50		bora
A-1790			A H2S	A0269	10 ppm	1,5	30	500		ator
A- 1791			TDIS IUG IS	A1782	50 pp	60	π ''υ			ies,
1792			ST	A1.783					 	, F L
1793	>	^	S) I	 	->	>	 	+)		G
A-1794	12/29/116	115117	TOIS IS	Œ	1 000	1.5	30	· l's	1/3	
A-173995	<u>-</u>		(TZ	A1203			}		\ -	
A-1796			Son	Paria		11-1111				
1797			HOCH		>	->	>	-		
8671			出名と	- A	50 ook	3.0	L (N	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
4. 1799	****		FORM	AOGTH	11.5 nom	0 2 0) () ()		
A- 1800			SILOX	SILOX (41088	1,000 por	300	7,7	25		
A. 180]			30.7	A0270	Maga) \ <u>\</u>	0 4	500		
A. 1802			V H2S	4	10 poin		0,00	Sac		
A- 1803			TOIS THE IS	_	50 00	0.0	12/2			
A- 1804			CT2	AITAS		_				
A-1805	->	->	207	A1796	->	->	 ->	 	 	
4-1806 		<u>8</u> 8	TOIS 15	FF-47206	6 LINDE	灰	2000 psia	1 30m	3	
A-180/	15117		STOR TOIS ST	年-	45347	LINDE	2200 psig	1 2Pm	3	
A-1308	11/9/1	1/12/10	1015 XX 4CS	1	100m	E	? - #	FB 188	R	
FORM 153			E	AIZOB	" A 1203	570	15 NOW 21	49		

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GC/MS Calibration

Centek Laboratories, LLC

Chkd by Prep by 3 Ź 8 Stock Conc Initial Vol (psig) Finial Vol (psia) Final Conc (ppb) 58 9 4 2.00 50 0 20 50 30,000M 30 13 30 75 30 43 36 Ň 0 り つ つ 4.0 ر د د 9 . 6 ーナ 11.500m 500pp 50002 10gpm 50,000 1 ppm g 1001 MODOL 500y S P1088/108 A1973 A1407 A0174 A1940 A1808 ABATU A0269 7651d 41506 9515 25 R19.28 A1806 P1807 A1808 SULF | A0270 17511 A1933 191929 H25 A0269 10 E 4PC#5 ₹<u></u> S Xonis FOAM 4 PCF るしたが SILOX 250 3 270 577 57 H 25 7015/109 JS SIOA Description Tois 144 7015 7015 Tois 1115117 4/201/1 Date Exp 4417 Date Prep 4/5/17 <u>3817</u> A-1950 A-1949 A-1583 A-1945 A. 1936 A-1951 A-1937 A-1954 A. 1939 A-1941 A. 1913 1938 A-19 46 A-1946 A. 19 44 A-1947 A-1944 A-1541 <u>[83,</u> A- (93) #PIS 5

FORM 153

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GC/MS Calibration Standards Logbook

Chkd by																					
Prep by	23					,						N	(j)	_							>
Stock Conc Initial Vol (psig) Finial Vol (psia) Final Conc (ppb)	<i>2</i> ()			⇒	ĵs	50	5/2	SO	520	4		->	50		\rightarrow	50	72	50	50	50	900
Finial Vol (psia)	30			>	30	45	35	30	33	Sh		\rightarrow	30		->	30	35	45	30	30	30
Initial Vol (psig	1,5			⇒	3,0	ా, ం	3.0	1.5	10	6,0		\rightarrow	1,5		\rightarrow	3	3.8		0% J. O. C.	13	1.5
Stock Conc	NOOM			\Rightarrow	Somb	11,5 Jan	9005	l	10 0/m	5		\uparrow	/ Dom		7		50,05	IIS DOM	88		
Stock #	Arsch	A1807	A1808	9519	A1979	A0974	#1055 A	A2270	4.0269	A1976	FIGT	87.P1-8	1980C	A1807	क्षा भ	9519	1661	17501	5/20x A1088	A0270	A0269
Description	Ĥ	As	LCS	Hodh	Stroth	mge_		SULF		77 9h/	<u> </u>	2531 /	1.5	£5	27	to the	APAS.	1205	\$07/5	2007	165
D D	to IS	_								15/54			105/								
Date Exp	5/11/17			<u></u>								7	5/18/17	_						·	7
Date Prep	-										•	>,	Shilin								
Std #	A. 1976	A. 1917)	A. 1978	A 1979	A- 1980	A. (98/	A. 1982	A. M83	A. 1984	A- 1985	A-14-1986	A.74.1987	A. 1988	A. 1989	A. 1550	4-1991	A-1991Z	A-1993	A. IGOL	A. 1995	A- 1996

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GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

CANISTER CLEANING LOG

Centek Laboratories, LLC

Instrument: Entech 3100

QC Canister Cleaning Logbook

Centek Laborate					
Leak Test 24hr Int & Date + 30 4.78 47 1	+ + + -	+ + + +	+ + + +	+ + + + +	+ + +
90 P + + + 30 P = 10 P 10 P	+ 30 + 30 + 30 + 30	+ 30 + 30 + 30 + 30 + 30	+ 30 + 30 + 30 + 30	+ 30 + 30 + 30 + 30	+ 30 + 30 + 30
Defection Limits					
	73	2	2	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
OC Batch Number	AK OHIDITAS	100 H		ABC O'TO THE	
Date Cleaned		3			
#of Cycles					->
Can Number					
ter Size (ac		31.	623		
mper Canic					
Canister Number Canister Size OC Can Number 598 LUb 616 CUb 572 643	35 25 55	431	537 536 536 536	5,000 5,415 5,416	174

yrm C151

QC Canister Cleaning Logbook

ntek Laboratories, LLC rument: Entech 3100

Leak Test 24hr Int & Date	130426	4	194	4	4	4	-	4			-	+	→	+	+	-	نواد	+	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-fe-	+	4	+	+	+	~ (1)
LeakTe	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	+ 30	
Detection Limits	Spale (LEED)												\rightarrow													
QC Batch Number C	WAR ON DID I	×		×		a-	O	~	~		n	\wedge	Л													
ini & Date Cleaned	4.24.0 V V												⇒													
200	30	_											>													
	7 0	594	437	214	573	235	1027	55	1018	510	33	1026	H N	, , , , , , , , , , , , , , , , , , , 												
Canister Size UC: Can Number													_>			**************************************										
Bister Number	544	<u>्र</u> ीस्	\ 57	35	73	13.5	727	551	318	<u>5</u>	313	226	14										,			

Centek Laboratories, LLC

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042709.D Vial: 13 Acq On : 27 Apr 2017 7:44 pm Sample : WAC042717A Misc : B0323LED.M QC Can Operator: LL Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Apr 28 09:22:43 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator) Title : TO-15 VOA Standards for 5 point calibration Last Update : Thu Mar 23 17:24:54 2017

Response via : Initial Calibration

DataAcq Meth : LEEDRUN

Internal Standards	R.T.	QIon	Response	Conc U	nits Dev	(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	8.40 10.67 15.14	128 114 117	112285 439716 391187	50.00 50.00 50.00	dąą	0.05 0.05 0.02
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70	95 1.30	291755 Recove	49.18 ry =	ppb 98.36%	0.01
Target Compounds					Qν	alue

(QT Reviewed)

Quantitation Report

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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042710.D

Vial: 14 Acq On : 27 Apr 2017 8:28 pm Operator: LL : WAC042717B Inst : MSD #2 Sample Misc : B0323LED.M QC Can Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Results File: B0323LED.RES Quant Time: Apr 28 09:22:52 2017

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator)

: TO-15 VOA Standards for 5 point calibration

Last Update : Thu Mar 23 17:24:54 2017

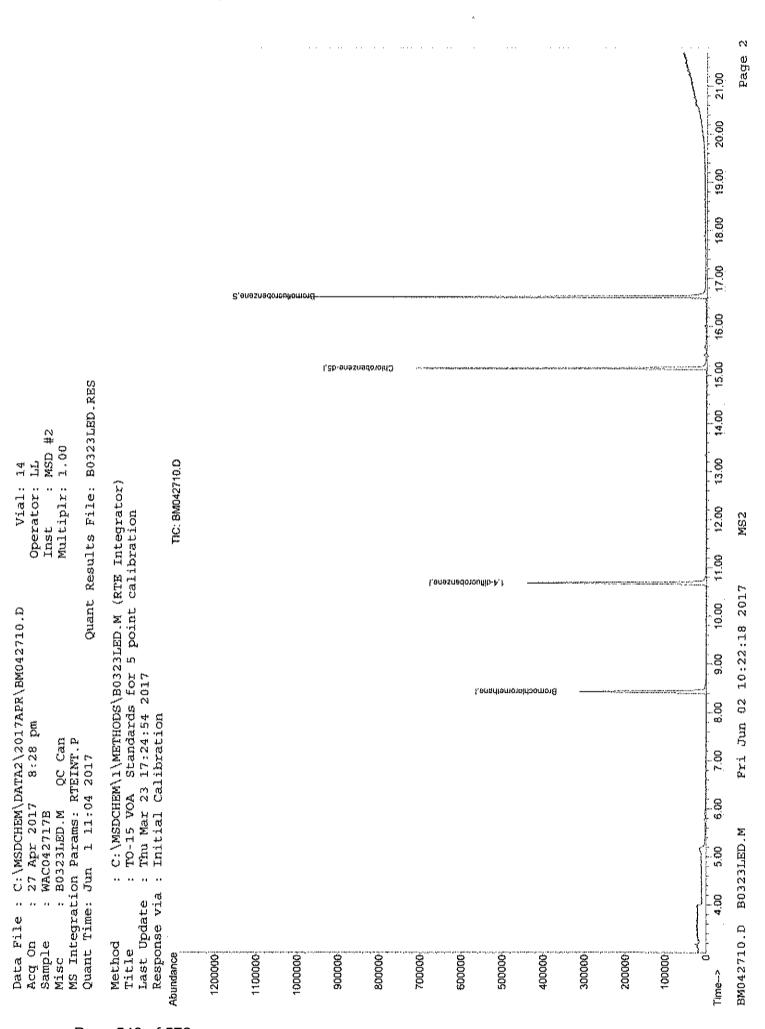
Response via : Initial Calibration

DataAcq Meth : LEEDRUN

Internal Standards	R.T.	QIon	Response	Conc U	nits Dev(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	8.42 10.69 15.14	128 114 117	93752 362093 326277	50.00 50.00 50.00	30.0 dqq
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70	95 - 130	247224 Recove	49.97 ry =	11
Target Compounds					Qvalue

(QT Reviewed)

Quantitation Report



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042713.D Vial: 34 Acq On : 27 Apr 2017 10:14 pm Operator: LL : WAC042717E Sample Inst : MSD #2 Misc : B0323LED.M OC Can Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Apr 28 09:24:22 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator) : TO-15 VOA Standards for 5 point calibration

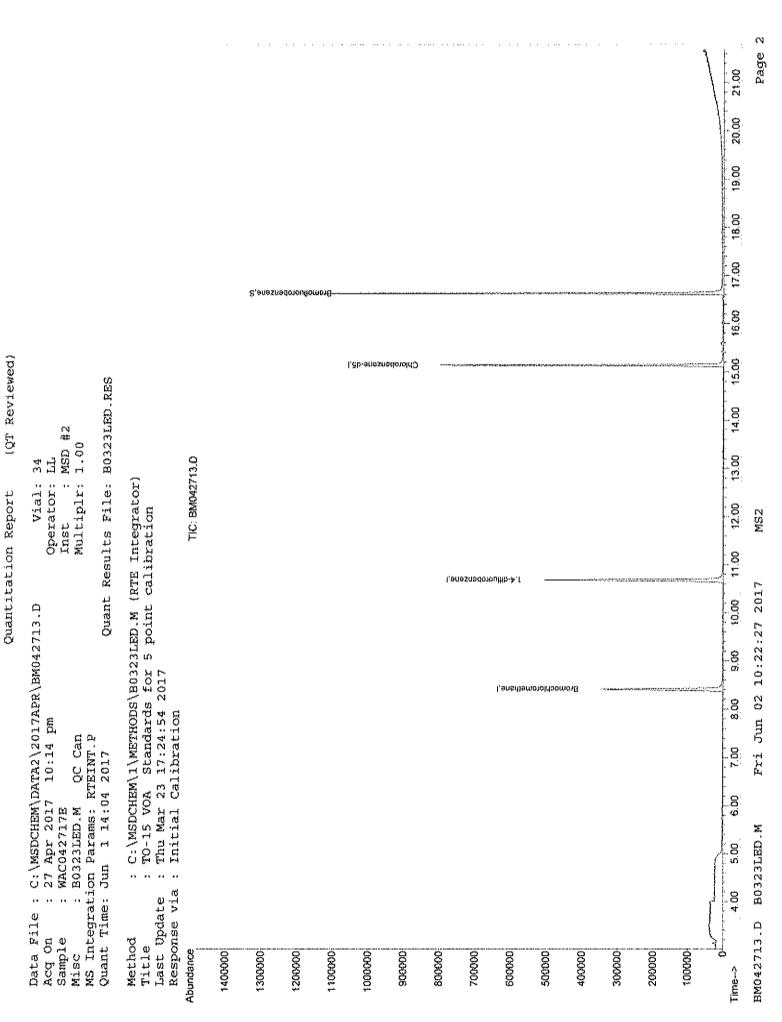
Last Update : Thu Mar 23 17:24:54 2017

Response via : Initial Calibration DataAcq Meth : LEEDRUN

Internal Standards	R.T. Q	Ion Response	Conc Uni	ts Dev(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	10.67	128 105579 114 402280 117 361848	50.00 p 50.00 p 50.00 p	pb 0.05
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70 -	95 280410 130 Recove	51.10 p ry = 1	pb 0.01 02.20%

Target Compounds Qvalue

^{(#) =} qualifier out of range (m) = manual integration (+) = signals summed BM042713.D B0323LED.M Fri Jun 02 10:22:26 2017



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042714.D Vial: 35 Acq On : 27 Apr 2017 10:49 pm Operator: LL : WAC042717F Sample Inst : MSD #2 Misc : B0323LED.M OC Can Multiplr: 1.00

MS Integration Params: RTBINT.P

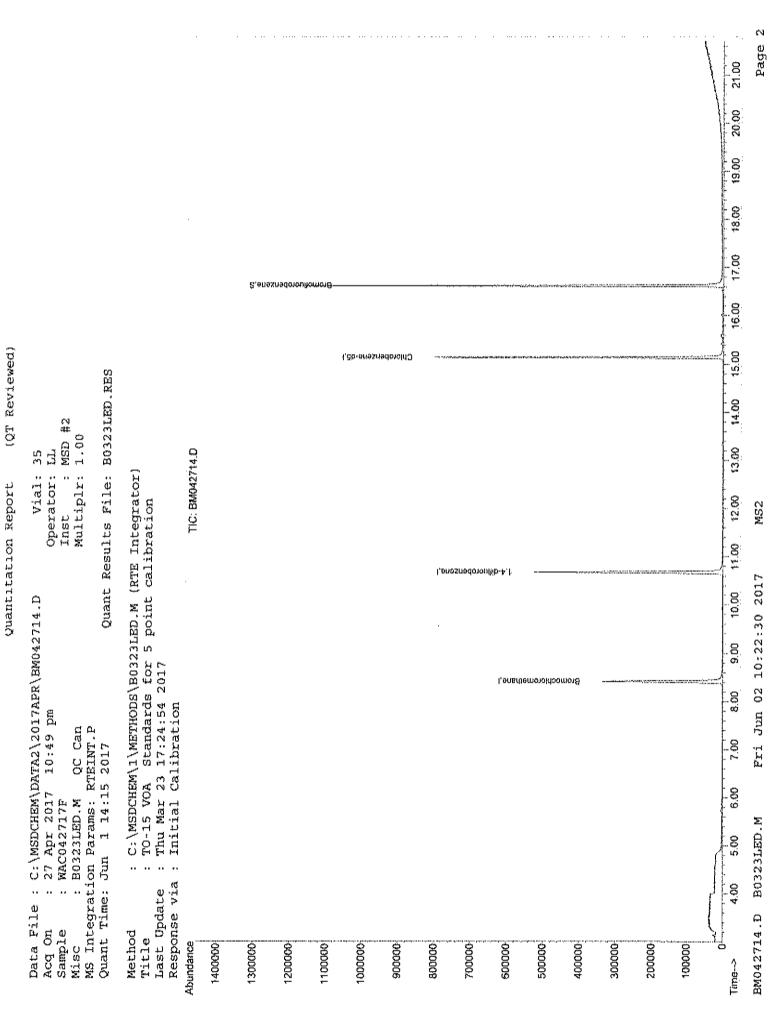
Quant Time: Apr 28 09:25:01 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator) Title : TO-15 VOA Standards for 5 point calibration Last Update : Thu Mar 23 17:24:54 2017 Response via : Initial Calibration

DataAcq Meth : LEEDRUN

Internal Standards	R.T.	QIon	Response	Conc U	nits Dev	(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	8.41 10.68 15.14	128 114 117	101415 401215 358869	50.00 50.00 50.00	ppb	0.06 0.05 0.02
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70	95 ~ 130	267821 Recove	49.21 ry =	ppb 98.42%	0.02
Target Compounds					Qv.	alue

(#) = qualifier out of range (m) = manual integration (+) = signals summed BM042714.D B0323LED.M Fri Jun 02 10:22:29 2017



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042715.D Vial: 36 Acq On : 27 Apr 2017 11:24 pm Operator: LL Sample : WAC042717G Misc : B0323LED.M QC Can Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Apr 28 09:25:31 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator) Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 23 17:24:54 2017
Response via : Initial Calibration
DataAcq Meth : LEEDRUN

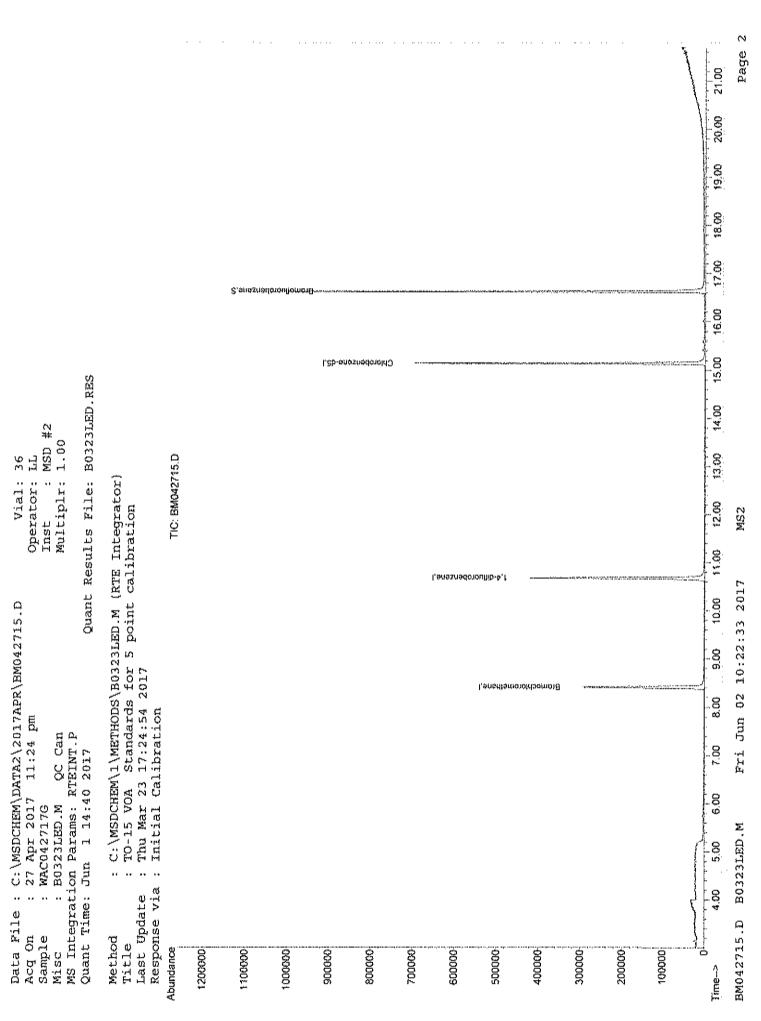
Internal Standards	R.T.	QIon	Response	Conc U	nits Dev	(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	8.41 10.68 15.14	128 114 117	88370 332934 307318	50.00 50.00 50.00	ppb	0.05 0.06 0.02
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70	95 ~ 130	234594 Recove	50.34 ry ××		0.02
Target Compounds					Ov.	alue

Target Compounds

^{(#) =} qualifier out of range (m) = manual integration (+) = signals summed BM042715.D B0323LED.M Fri Jun 02 10:22:32 2017 MS2

(OT Reviewed)

Quantitation Report



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042716.D Vial: 37 Acq On : 28 Apr 2017 12:00 am Sample : WAC042717H Misc : B0323LED.M QC Can Operator: LL Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

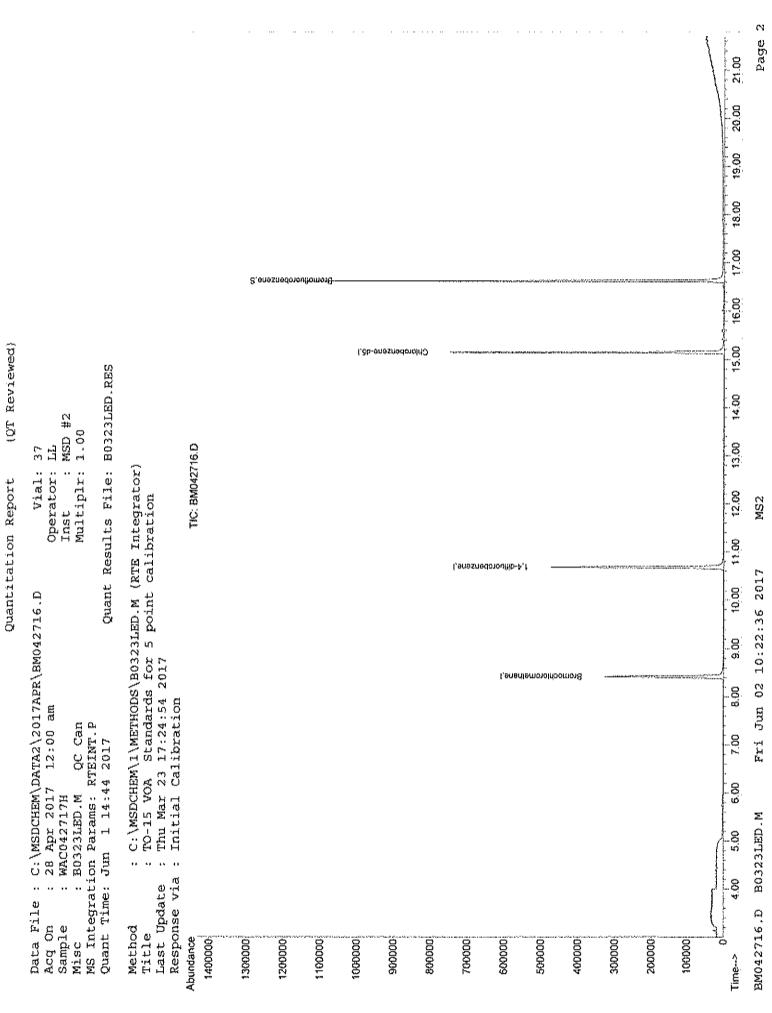
Quant Time: Apr 28 09:26:09 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 23 17:24:54 2017
Response via : Initial Calibration

DataAcq Meth : LEEDRUN

Internal Standards	R.T.	QIon	Response	Conc U	nits Dev	(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	8.41 10.68 15.14	128 114 117	100494 374084 339366	50.00 50.00 50.00	dqq	0.06 0.06 0.02
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70	95 - 130	260079 Recove	50.54 xy =	ppb 101.08%	0.02
Target Compounds					Qv	alue

(QT Reviewed)



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042717.D Vial: 38 Acq On : 28 Apr 2017 12:35 am Operator: LL Sample : WAC042717I Misc : B0323LED.M QC Can Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Apr 28 09:26:32 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator) Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 23 17:24:54 2017
Response via : Initial Calibration

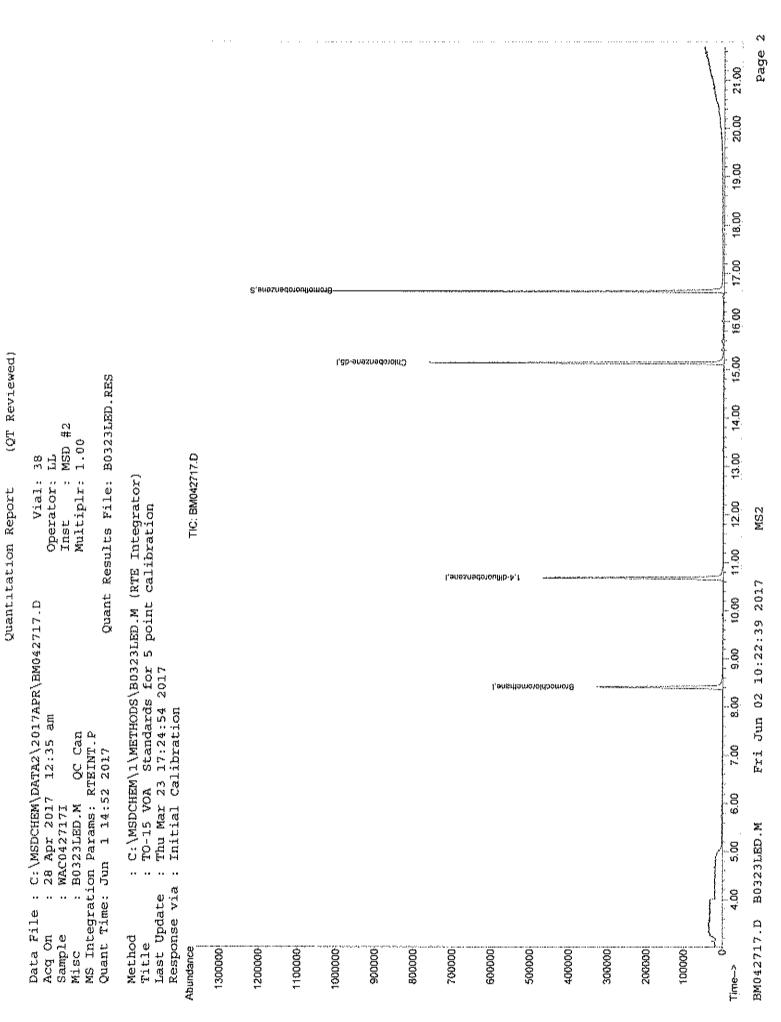
DataAcq Meth : LEEDRUN

Internal Standards	R.T. QIon	Response	Conc Units Dev(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	8.41 128 10.68 114 15.14 117	99251 369875 344512	50.00 ppb 0.05 50.00 ppb 0.05 50.00 ppb 0.02
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 95 Range 70 - 130	253788 Recove	48.58 ppb 0.02 ry = 97.16%

Target Compounds

Qvalue

^{(#) =} qualifier out of range (m) = manual integration (+) = signals summed BM042717.D B0323LED.M Fri Jun 02 10:22:38 2017 MS2



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042718.D Vial: 39 Acq On : 28 Apr 2017 1:10 am Operator: LL Sample : WAC042717J Misc : B0323LED.M QC Can Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

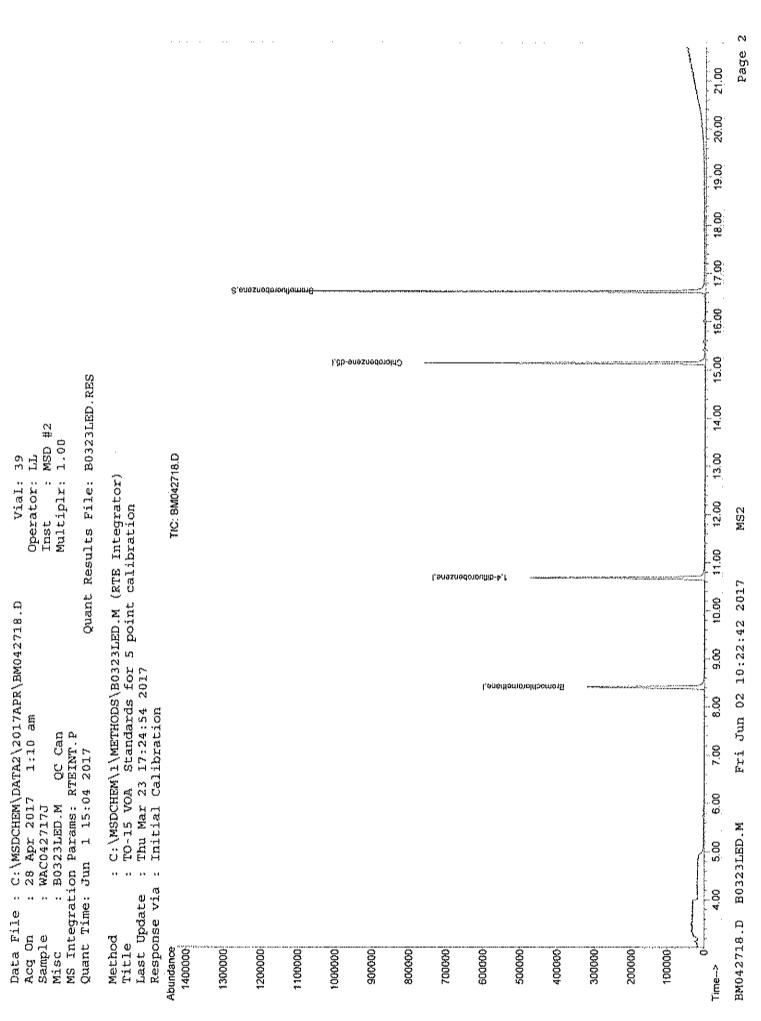
Quant Time: Apr 28 09:26:53 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 23 17:24:54 2017
Response Via : Initial Calibration
DataAcq Meth : LEEDRUN

Internal Standards	R.T.	QIon	Response	Conc U	nits Dev	(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	8.41 10.68 15.14	128 114 117	100698 374134 343143	50.00 50.00 50.00	dag	0.06 0.05 0.02
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70	95 - 130	255952 Recove	49.19 xy =	ppb 98.38%	0.02
Target Compounds					Ωv	alue

Target Compounds Ovalue (QT Reviewed)

Quantitation Report



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Quantitation Report (OT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042720.D Vial: 31 Acq On : 28 Apr 2017 2:21 am Sample : WAC042717L Misc : B0323LED.M QC Can Operator: LL Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Apr 28 09:27:48 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator) Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 23 17:24:54 2017
Response Via : Initial Calibration

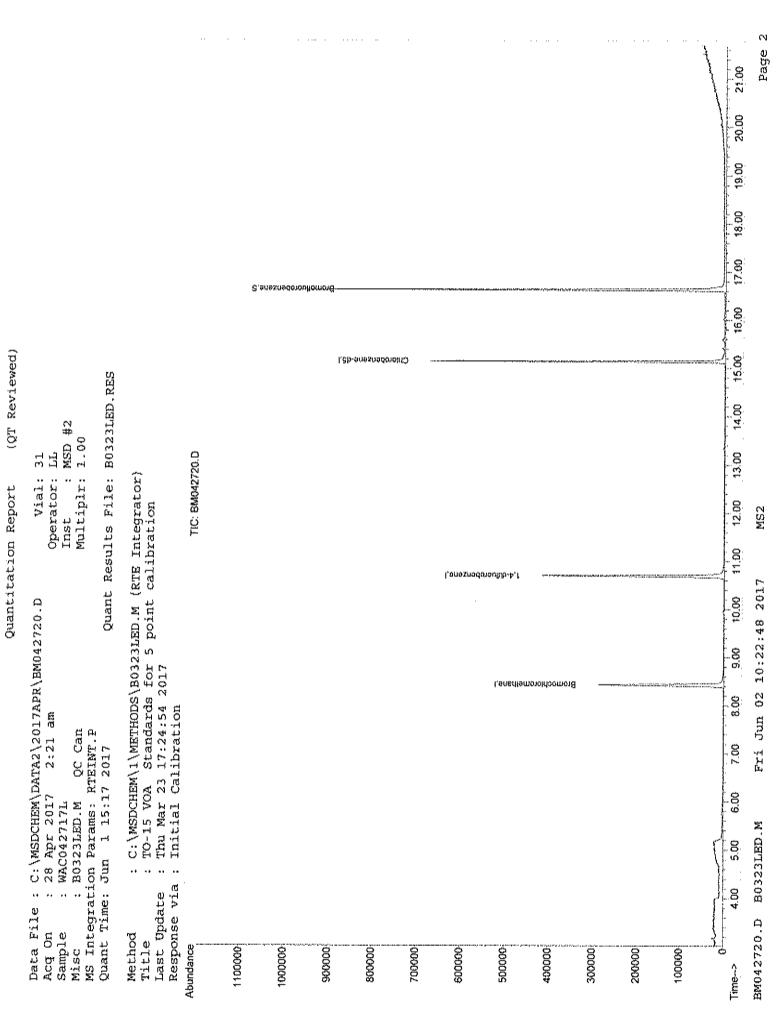
DataAcq Meth : LEEDRUN

Internal Standards	R.T.	QIon	Response	Conc U	nits Dev	(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	8.43 10.69 15.14	128 114 117	88943 327545 302797	50.00 50.00 50.00	dqq	0.07 0.06 0.02
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70	95 - 130		49.50 ry =		0.02
The second of th					<u></u>	-

Target Compounds

Qvalue

^{(#) =} qualifier out of range (m) \simeq manual integration (+) = signals summed BM042720.D B0323LED.M Fri Jun 02 10:22:47 2017 MS2



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042721.D Vial: 32 Acg On : 28 Apr 2017 2:56 am Sample : WAC042717M Misc : B0323LED.M QC Can Operator: LL Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

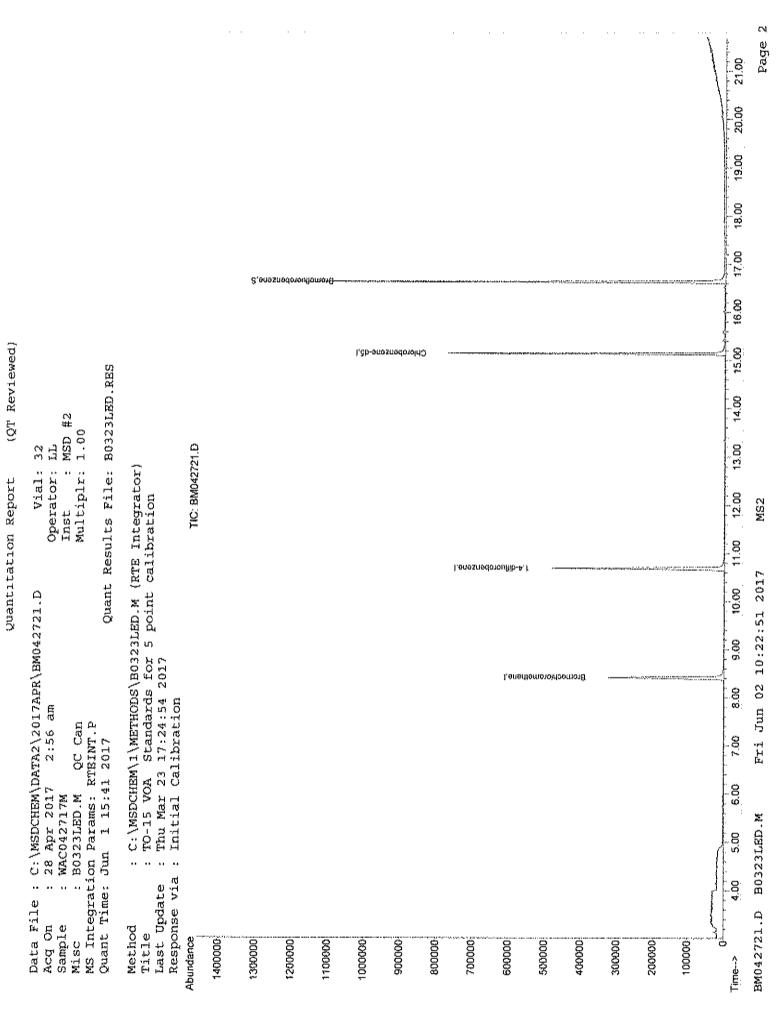
Quant Time: Apr 28 09:30:35 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator) Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 23 17:24:54 2017
Response via : Initial Calibration

DataAcq Meth : LEEDRUN

Internal Standards	R.T, QI	on Response	Conc Units Dev(Min)
 Bromochloromethane 1,4-difluorobenzene Chlorobenzene-d5 	10.68 1	28 99291 14 375315 17 346435	50.00 ppb 0.06 50.00 ppb 0.05 50.00 ppb 0.02
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70 -	95 260879 130 Recove:	49.66 ppb 0.02 ry = 99.32%
Target Compounds			Qvalue

^{(#) =} qualifier out of range (m) = manual integration (+) = signals summed BM042721.D B0323LED.M Fri Jun 02 10:22:50 2017 MS2



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Quantitation Report (QT Reviewed)

MS Integration Params: RTEINT.P

Quant Time: Apr 28 09:31:09 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration

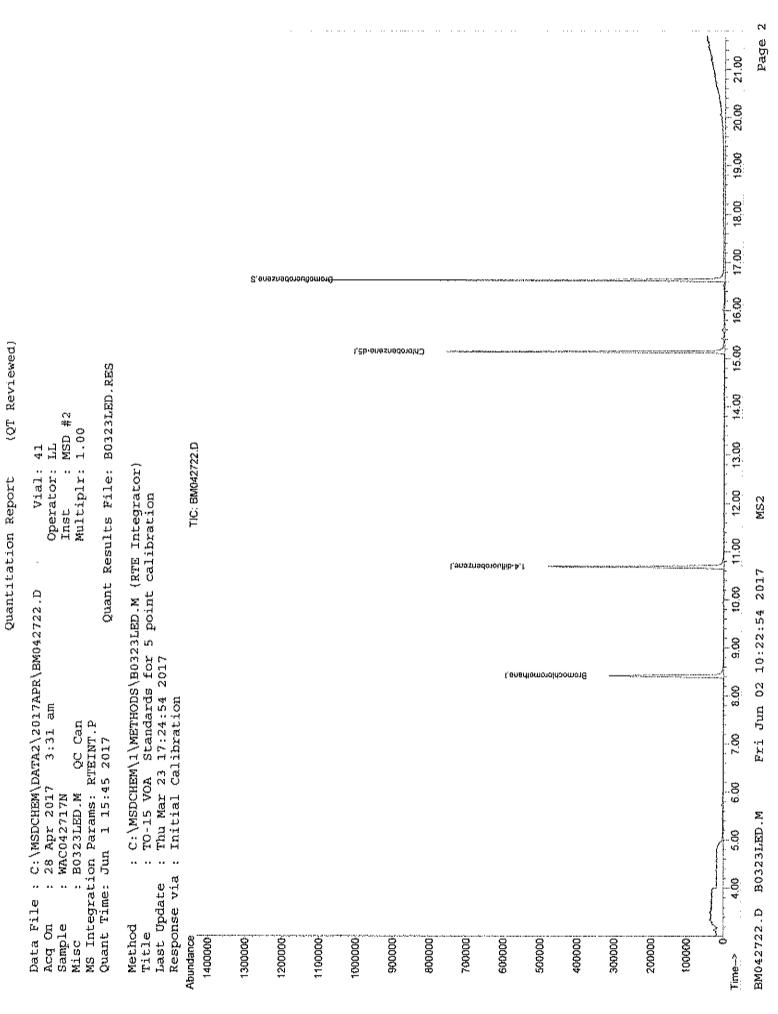
Last Update : Thu Mar 23 17:24:54 2017

Response via : Initial Calibration

DataAcq Meth : LEEDRUN

Internal Standards	R.T. QI	on Response	Conc Unit	s Dev(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	10.68 1	28 101197 14 371204 17 347444	50.00 pr 50.00 pr 50.00 pr	ob 0.05
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70 -	95 264569 130 Recove:	50.22 pr ry = 10	

Target Compounds Qvalue



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042727.D
Acq On : 28 Apr 2017 6:27 am
Sample : WAC042717S
Misc : B0323LED.M QC Can Vial: 46 Operator: LL Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Apr 28 09:34:57 2017 Quant Results File: B0323LED.RES

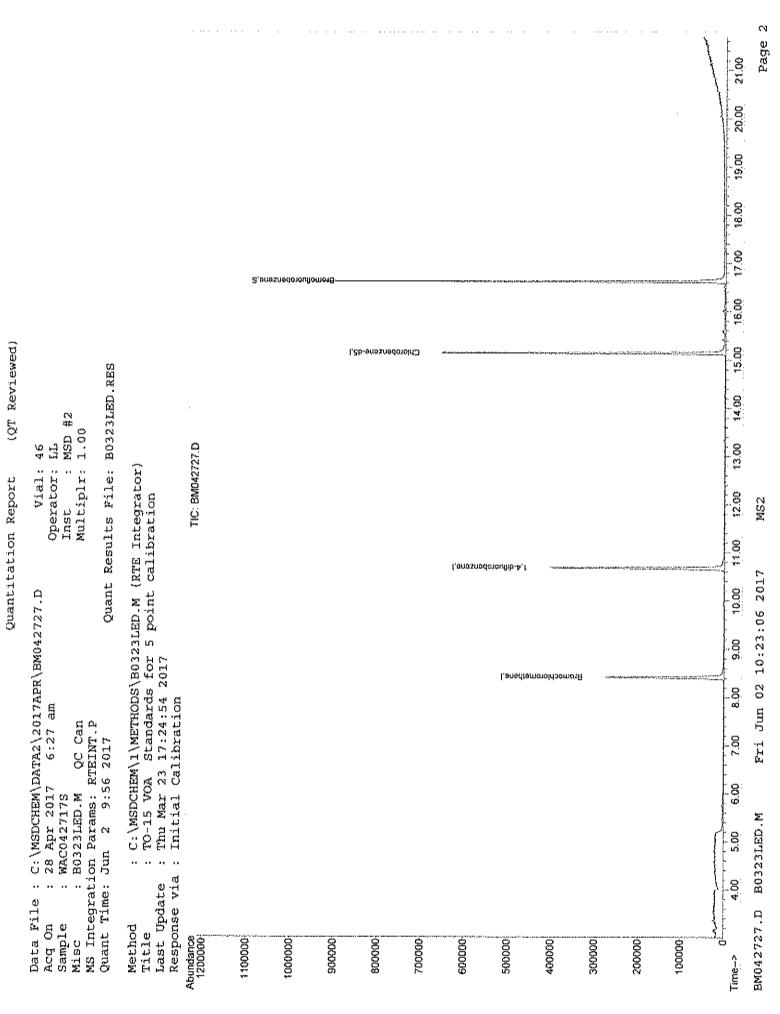
Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator) Title : TO-15 VOA Standards for 5 point calibration Last Update : Thu Mar 23 17:24:54 2017 Response via : Initial Calibration

DataAcq Meth : LEEDRUN

Internal Standards	R.T. Qion	Response	Conc Units Dev(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	8.41 128 10.68 114 15.13 117	316142	50.00 ppb 0.05 50.00 ppb 0.05 50.00 ppb 0.01
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 95 Range 70 - 13	231824 0 Recove	51.28 ppb 0.01 xy = 102.56%

Target Compounds

Qvalue



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042728.D Vial: 47 Acq On : 28 Apr 2017 7:03 am Sample : WAC042717T Misc : B0323LED.M QC Can Operator: LL Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Apr 28 09:35:35 2017 Quant Results File: B0323LED.RES

Quant Method : C:\MSDCHEM\1\METHOD\$\B0323LED.M (RTE Integrator) Title : TO-15 VOA Standards for 5 point calibration Last Update : Thu Mar 23 17:24:54 2017

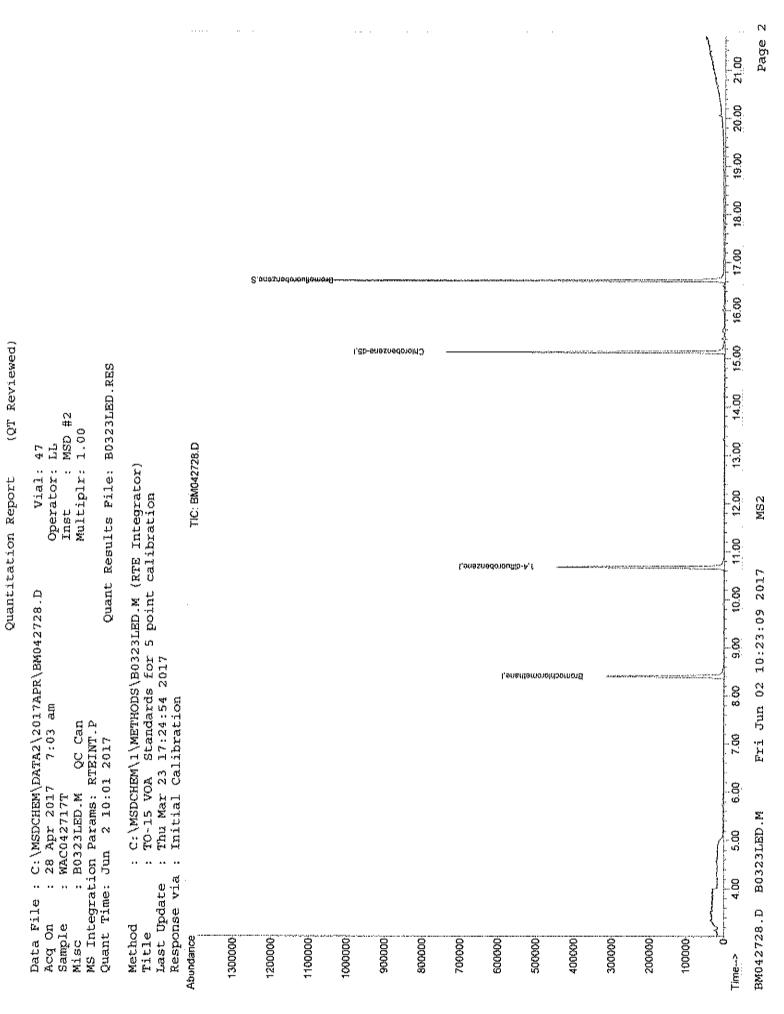
Response via : Initial Calibration

DataAcq Meth : LEEDRUN

Internal Standards	R.T.	QIon	Response	Conc U	nits De	ev(Min)
1) Bromochloromethane 36) 1,4-difluorobenzene 51) Chlorobenzene-d5	8.40 10.67 15.13	128 114 117	97922 358312 337731	50.00 50.00 50.00	dqq	0.05 0.05 0.01
System Monitoring Compounds 66) Bromofluorobenzene Spiked Amount 50.000	16.62 Range 70	95 - 130	263221 Recove	51.40 ry =		0.01

Target Compounds

Ovalue



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\DATA2\2017APR\BM042731.D Vial: 11 Acq On : 28 Apr 2017 8:49 am Sample : WAC042717W Misc : B0323LED.M QC Can Operator: LL Inst : MSD #2 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Apr 28 09:37:14 2017 Quant Results File: B0323LED.RES

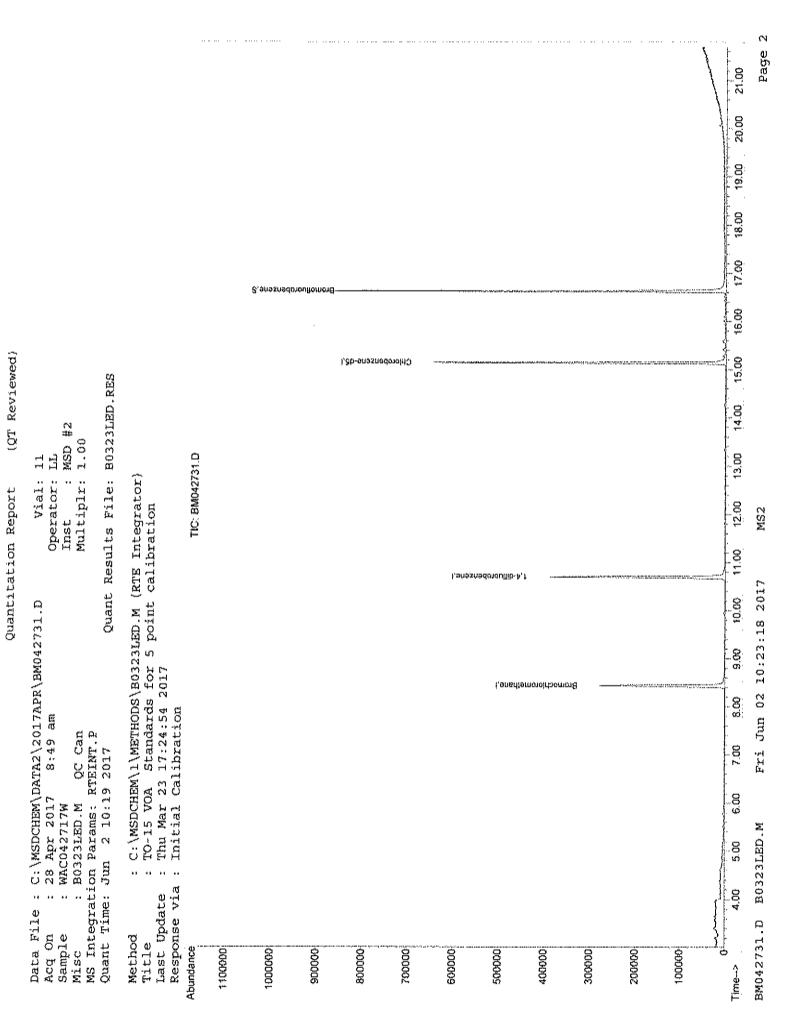
Quant Method : C:\MSDCHEM\1\METHODS\B0323LED.M (RTE Integrator) Title : TO-15 VOA Standards for 5 point calibration Last Update : Thu Mar 23 17:24:54 2017 Response via : Initial Calibration

DataAcq Meth : LEEDRUN

Internal Standards	;	R.T.	QIon	Response	Conc Ur	nits De	v(Min)
1) Bromochlorome		8.43	128	83633	50.00		0.07
36) 1,4-difluorobenzene 51) Chlorobenzene-d5		10.69 15.14	$\begin{array}{c} 114 \\ 337 \end{array}$	306684 295169	50.00 50.00		0.06 0.02
System Monitoring Compounds							
66) Bromofluorobenzene		16.62	95	221480	49.48	dqq	0.02
Spiked Amount	50.000	Range 70	- 130	Recove	ry =	98.96	Ġ
Target Compounds							re 1 110

Target Compounds

Qvalue



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Attachment 2



Final Report Utility/Structure Clearance at 18 Proposed Boring Locations, and Void Detection beneath a ~120' x 210' Building and Environs Former Hampshire Chemical Corporation – DOW Chemical Site Waterloo, NY Enviroscan Reference Number 011737d

Prepared For: CH2M
Prepared By: Enviroscan, Inc.
June 14, 2017







June 14, 2017

Mr. David Newman **CH2M**

RE: Geophysical Survey

Utility/Structure Clearance at 18 Proposed Boring Locations, and Void Detection beneath a ~120' x 210' Building and Environs Former Hampshire Chemical Corporation – DOW Chemical Site

Waterloo, NY

Enviroscan Reference Number 011737d

Dear Mr. Newman:

Pursuant to our proposal dated February 1, 2017, Enviroscan, Inc. (Enviroscan) has completed a multi-technique geophysical survey at the above-referenced site. The purposes of the survey were to detect and delineate voids, or areas of less dense (higher porosity) materials, beneath an active chemical plant, and to provide utility clearance at 18 boring locations. The following report and figures describe the methods and results of the investigation.

Site Description

The geophysical survey was conducted over a five-day period ending April 12, 2017. The survey was performed within accessible interior and exterior portions of the site, encompassing several rooms within the former Hampshire Chemical Plant, and associated asphalt parking lots southeast of the plant (see Figure 1). Some exterior areas were inaccessible at the time of the survey due to tanks and other obstructions, while scattered interior obstructions included immovable equipment and floating slab flooring.

The site bedrock geology, reported by New York State Museum and New York State Geological Survey, consists of a the Middle Devonian Onondaga Limestone, a calcarenitic to cherty limestone with minor shale deposits (D.W. Fisher, Y.W. Isachsen, L.V. Rickard, 1970). The regional geologic strike, based on the geologic mapping, is west to east (Ibid.). Historical aerials show the same building, with the earliest image dating back to 1995 (www.historicaerials.com). However, as informed by onsite personnel, the main building itself dates back to the late 1800's; therefore, documentation of karst-related features associated with the landscape is essentially non-existent.





Survey Methods

In order to provide confident detection of potential subsurface features and processes associated with the sinkholes, Enviroscan used multiple independent but complementary geophysical techniques:

Microgravity Mapping – to detect and delineate soil cavities, or zones of low-density soils, which result from rearrangement of soil fines and/or wholesale washouts or soil piping; and

Ground Penetrating Radar (GPR) – to detect and delineate shallow subsurface voids, or zones of low-density soils, which result from rearrangement of soil fines and/or wholesale washouts or soil piping – as well as shallow bedrock pinnacles.

The field investigation was completed using the techniques and procedures described below.

Microgravity

Microgravity meters are capable of measuring the force of gravity with great precision. Worldwide, the acceleration of gravity has been adopted as 980 centimeters per second squared (cm/s²). However, this is really an average value since the actual measured value of gravity at a given station is dependent upon many things, including:

- the elevation of the station reading (since higher stations are farther from the center of mass of the earth);
- the latitude and longitude of the station (since the earth is not truly spherical);
- the positions of the sun and the moon (which create not only the readily observed ocean tides, but small deformations of the entire earth called earth tides);
- minute changes in the calibration of the gravity meter (called instrument drift);
- the attraction of massive landforms near or obliquely above the station (i.e. the mass of a nearby mountain actually produces a gravitational attraction which can have a significant effect on a precise gravity reading); and
- the density of materials immediately beneath a station.

The variations in gravity due to the first four factors above typically have magnitudes measured in milligals (where 1000 milligals equal one cm/s²). The fifth and sixth factors are typically measured in microgals (where 1000 microgals equal one milligal). Since the purpose of a microgravity survey is generally to determine factor six above (i.e. the density or mass distribution in the subsurface of a survey site), the raw gridded or profile gravity measurements that comprise a gravity survey must be corrected for factors one through five. This yields a set of numbers (which are generally several parts per billion of the earth's adopted average gravity) that can be interpreted to determine subsurface mass distribution (see e.g. Telford et al., 1990).

To arrive at a number representative of the subsurface mass distribution, raw gravity readings are subjected to the following corrections:

reference ellipsoid correction – corrects for the non-spherical shape of the earth, based on the latitude and longitude of a station;

earth tide correction – corrects for deformation of the earth under the gravitational influence of the sun and moon;

drift correction – corrects for slow changes in the calibration of a gravity meter based on repeated measurements at a fixed base station;

free air correction – corrects for the elevation of a station above (or below) mean sea level, based on a surveyed station elevation;

Bouguer slab correction – corrects for the density of the hypothetical slab of material between the station elevation and mean sea level, based on an assumed average terrain density.

Processed microgravity data are called Bouguer gravity, and should retain only information on the mass or density distribution beneath a survey station. Bouguer gravity anomalies can be caused either by subsurface mass excesses (gravity highs) or deficiencies (gravity lows). Gravity highs commonly represent locally shallow bedrock pinnacles or float blocks in the soil profile, zones of particularly massive bedrock, etc. Gravity lows may represent locally deep bedrock cutters or clay seams where soil displaces bedrock; air-, water- or mud-filled voids within bedrock; stoping voids in the soil above bedrock; or zones where soils have been made less dense by removal of fines.

To complete the microgravity survey, Enviroscan completed the following specific tasks:

- Gravity readings were collected at 10-foot intervals along profiles spaced 10 feet apart, throughout accessible portions of the site (see gray circle [●] symbols on Figure 2), using a Scintrex CG-5 microgravity meter. At each station, the metered gravity (representing a 60-second average), meter height, reading date and time were recorded in the logger.
- A fixed base station was re-occupied with the gravimeter approximately once every hour to provide drift control data.
- The location of each station point was mapped, and most were surveyed using the Topcon HyperLite RTK Global Positioning System (RTK-DGPS).
- The relative elevation of interior (and some exterior) station points were surveyed with a Ziplevel Pro.
- Initial data processing was automatically applied in the field by the instruments, which calculate the reference ellipsoid, earth tide, and coarse drift corrections. Free air, fine drift, and Bouguer corrections were calculated in a spreadsheet using standard formulae (see e.g. Telford et al., 1990), and applied during post-processing.
- The best-fitting (in the least squares sense) simple planar surface was removed from the Bouguer data, to delete the effects of any deep geologic source or regional gravity trend.
- The resulting residual gravity data were contoured in SURFER by Golden Software, and are shown on Figure 3. Note that the values should depict the general plan-view shallow mass distribution beneath the survey area, with lower values (red) representing mass deficiencies and higher values (blue) representing mass excesses.

GPR

In an effort to detect and delineate shallow cavities (voids) immediately beneath the ground surface, Enviroscan also completed a modified GPR investigation. Scanning was performed using a GSSI SIR-4000 GPR controller with a color display and internal hard drive, utilizing a 400-megaHertz (mHz) scanning antenna. GPR systems produce cross-sectional images of subsurface features and layers by continuously emitting pulses of radar-frequency energy from a scanning antenna as it is towed along a survey profile. The radar pulses are reflected by interfaces between materials with differing dielectric properties. The reflections return to the antenna and are displayed on a video monitor as a continuous cross section in real time. Subsurface voids, rock surfaces, and soil type changes produce recognizable reflections.

For this investigation, GPR profiles were collected in areas within the microgravity grid where space allowed for continuous profile collection, with the majority of the interest in Buildings 3 and 4 as directed by on-site personnel. GPR scanning could not be performed throughout much of the plant, due to limited access caused by equipment and storage. Additionally, GPR scanning was greatly inhibited within the building interior due to reinforcement within the concrete. The data were examined in real time to delineate any radar reflections consistent with near-surface voids or dipping GPR reflectors indicative of subsurface subsidence.

Utility Clearance at Proposed Boring Locations

Enviroscan provided utility clearance in an approximate 10-foot radius around 18 client-designated proposed boring locations, using a combination of GPR (described above), electromagnetic (EM), and metal detection (MD) techniques – including the Fisher TW-6 EM pipe and cable locator, the Radiodetection CAT and Genny, the Radiodetection RD8000, and the GSSI HandyScan with a 1.6-GHZ scanning antenna (for mapping rebar and generally capable of scanning to depths of 18 to 20 inches). Note that the presence of metallic structures at the ground surface limited the effectiveness of several techniques; therefore, most of the clearance was conducted using GPR, the HandyScan, and the CAT. As a final product for this portion of the survey, identified utility and structure locations were marked directly on the ground surface using semi-permanent marking paint.

Void Detection Results

The microgravity data are depicted on Figure 3 as color contours representing the relative density of the subsurface, with blue for high-density, green for "site normal", and red for low-density areas. The microgravity results delineate mass-deficient, or low-mass, areas – as well as mass-excess, high-mass areas covering most of the site. The most notable mass-deficiencies (outlined by black-dashed lines) are located in the western portion of Building 4, and covering the majority of Building 11. Although the anomaly amplitudes are not alarmingly high, the transition from mass excess to mass deficiency within individual rooms is significant – possibly indicating non-geologic (e.g. utility- or structure-related) voids. Please note that the high-amplitude mass deficiency along the northern wall of Building 3 is likely the result of a terrain effect. This is caused by the drastic change in elevation from Building 3 to the asphalt lot above (~12 feet) outside of Building 13-A. Irregularities in topography cause a reduction in gravity due to the excess or deficit of mass; in this case, the stations are experiencing both.

Spectral analysis was applied to the microgravity dataset to predict anomaly source depths based on gravity power. This analysis was only performed within Building 4, where the largest anomaly was located and terrain effects were minimal. The deepest source depths display a range between 12-15 feet; however, the majority of the data are from much shallower source depths, averaging between 2-5 feet.

The GPR data indicated two significant GPR anomalies beneath the site, both in Building 4 (purple-dashed circles). Severe GPR signal attenuation, caused by reinforcement in the slab, inhibited the use of GPR in the interior of the building; however, anomalous areas were identified. The anomaly in the northwest corner of the building is indicative of a possible buried metallic plate, while the anomaly in the southeast corner of the same building shows characteristics of buried reinforced concrete.

Limitations

The geophysical survey described above was completed using standard and/or routinely accepted practices of the geophysical industry and equipment representing the best available technology. Enviroscan does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen site-specific conditions. In particular, Enviroscan cannot make any warranties concerning the future occurrence or development of soil piping activity. However, we make every effort to identify and notify the client of such limitations or conditions.

We have enjoyed and appreciated the opportunity to have worked with you. If you have any questions, please do not hesitate to contact me.

Sincerely,

Enviroscan, Inc.

Max Griffiths

Project Geophysicist

Technical Review By:

Enviroscan, Inc.

Felicia K. Bechtel, MSc, PG

President

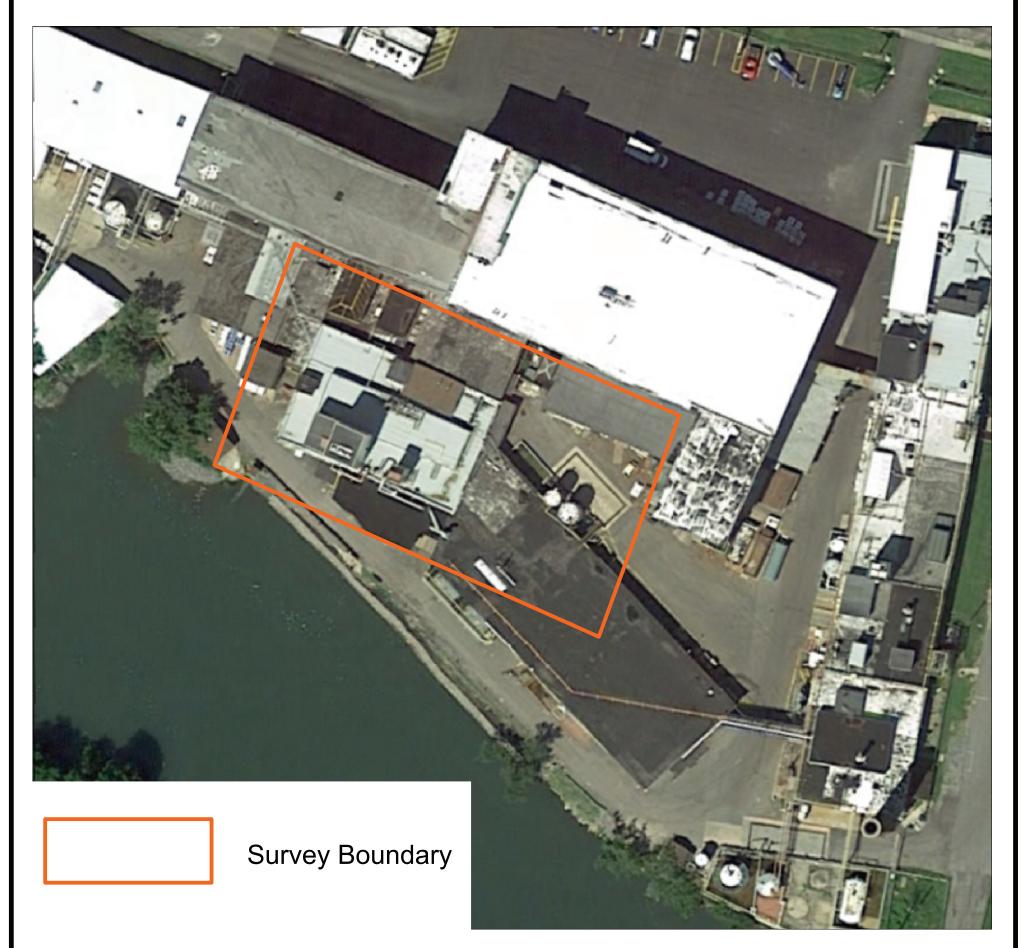
Enclosures: Figure 1: Geophysical Survey Data Coverage Map

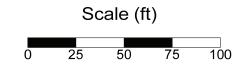
Figure 2: Microgravity Survey Data Coverage Map

Figure 3: Residual Microgravity Contour Map

References







Notes:

Coordinates in New York State Plane Grid, NAD-83 datum.

Figure composed using aerial image from Google Earth and DGPS survey by Enviroscan, Inc. personnel.



Survey Boundary Map Project Location:

Former Hampshire
Chemical Corporation
Waterloo, NY

Project Number
011737d

Revision/Issue
6/14/2017

Original Scale

Figure

1

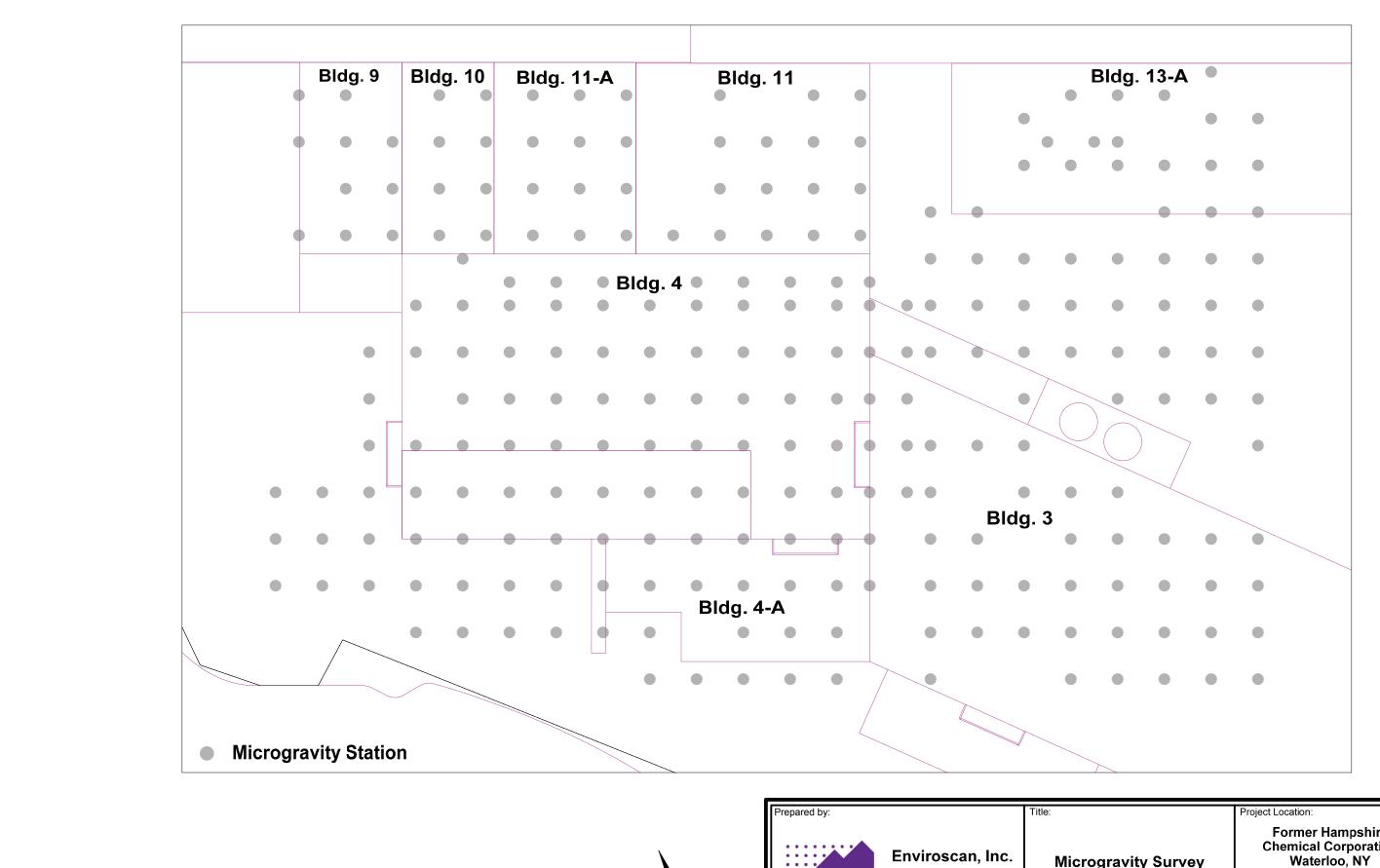
Approved by

4/06/2017

FKB

MEG

1" = 50'



ENVIROSCAN, INC.

Enviroscan, Inc.

1051 Columbia Ave.
Lancaster PA 17603
717-396-8922
www.enviroscan.com

Microgravity Survey Data Coverage Map Former Hampshire
Chemical Corporation
Waterloo, NY

ect Number
011737d

Revision/Issue
6/14/2017

1" = 20'

Revision/Issue
6/14/2017

Survey Ending Date
4/06/2017

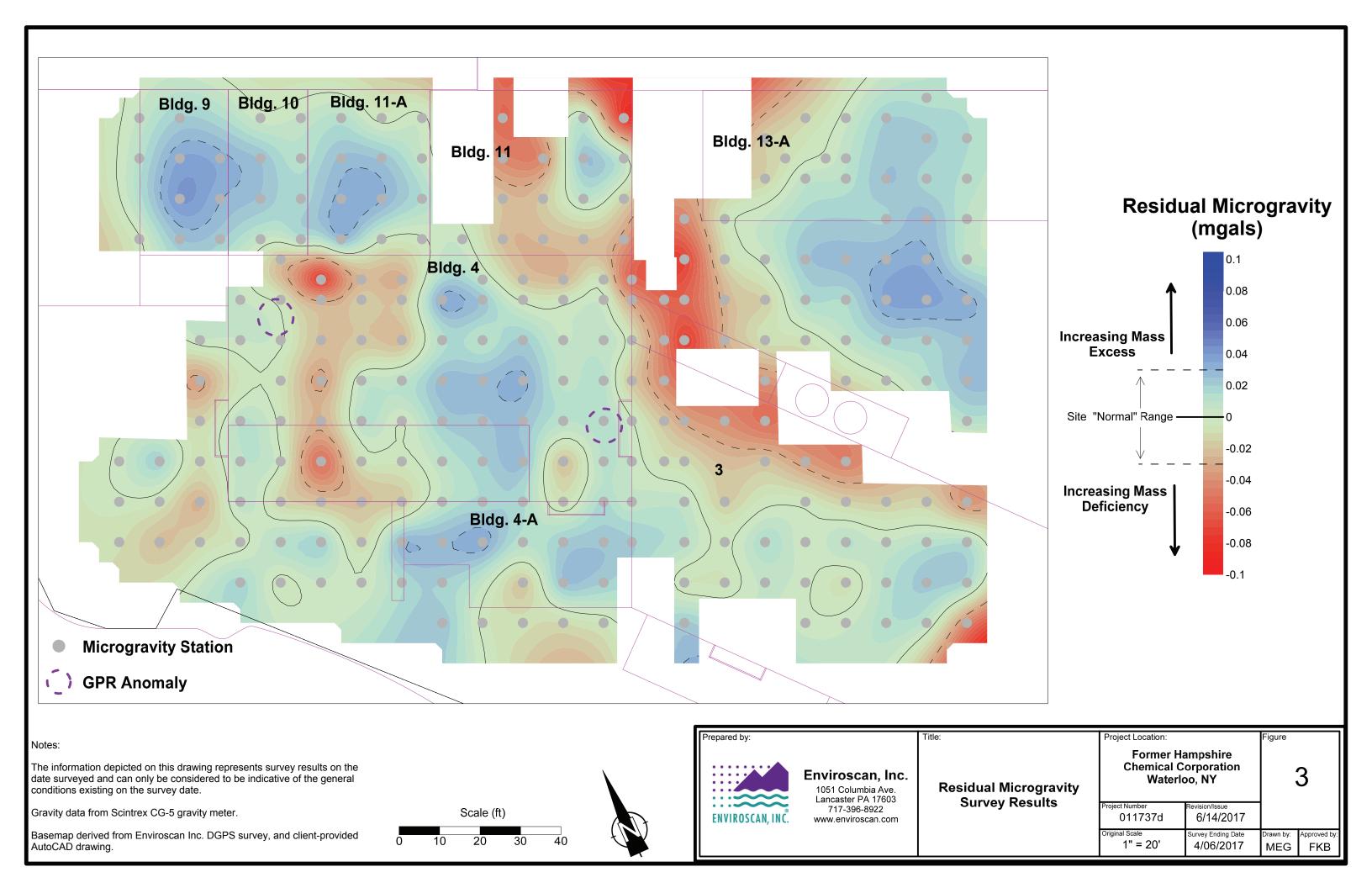
MEG FKB

Notes:

Basemap derived from Enviroscan Inc. DGPS survey, and client-provided AutoCAD drawing.

Scale (ft)

10 20 30 40



References

- Fisher, D. W., Isachsen, Y. W., and Rickard, L. V. (1970), <u>Geologic Map of New York State</u>, Map and Chart Series Publication 15, New York State Geological Survey, Albany, NY.
- Historical Aerials by NETR online, 2017, Nationwide Environmental Title Research, https://www.historicaerials.com
- Newton, J.G. (1987) Development of Sinkholes Resulting from Man's Activities in the Eastern United States, U.S. Geological Survey Circular 968.



