*FINAL*

# 2017 Vapor Intrusion Investigation Report

## Former Lockheed Electronics Company Site
## Boroughs of Watchung & North Plainfield,
## Somerset County, New Jersey

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# ACRONYMS

| | |
|---|---|
| AOC | Area of Concern |
| ECRA | Environmental Cleanup Responsibility Act |
| FSPM | Field Sampling Procedures Manual |
| GWES | Groundwater Extraction System |
| gpm | Gallons per minute |
| GWSL | Ground Water Screening Level |
| IASL | Indoor Air Screening Level |
| ISRA | Industrial Site Recovery Act |
| LSRP | Licensed Site Remediation Professional |
| LEC | Lockheed Electronics Company |
| Lockheed Martin | Lockheed Martin Corporation |
| LOTO | Lock-out-tag-out |
| $ug/m^3$ | microgram per cubic meter |
| ug/L | microgram per liter |
| mL/min | milliliters/minute |
| N.J.A.C. | New Jersey Administrative Code |
| NJDEP | New Jersey Department of Environmental Protection |
| PID | photoionization detector |
| RAP | Remedial Action Permit |
| RAPR | Remedial Action Progress Report |
| SGSL | Soil Gas Screening Level |
| TCE | Trichloroethene |
| Tetra Tech | Tetra Tech, Inc. |
| U.S. | United States |
| USEPA | United States Environmental Protection Agency |
| VOC | volatile organic compounds |
| VI | vapor intrusion |
| VITG | Vapor Intrusion Technical Guidance (August 2016) |

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# 1.0 INTRODUCTION AND SITE BACKGROUND

On behalf of Lockheed Martin Corporation (Lockheed Martin), Tetra Tech, Inc. (Tetra Tech) has prepared this *2017 Vapor Intrusion Investigation Report* that describes the vapor intrusion (VI) investigation conducted in January 2017 in connection with the former Lockheed Electronics Company (LEC) Site (hereinafter the "Site"). This report presents the 2017 sampling results as well as the conclusions and recommendations of the investigation.

The scope of the 2017 investigation was based on the recommendations of the *2016 Vapor Intrusion Investigation Report* (Tetra Tech, 2016). The 2016 VI investigation was conducted at Avalon Watchung (formerly Crystal Ridge Club), a large residential apartment complex located to the southwest (hydraulically downgradient) of the former LEC property. This complex, along with Regency Village (a condominium complex located further southwest of Avalon Watchung) and the Wal-Mart store located on the southwest corner of the former LEC property have been the focus of past VI investigations. Based on the recommendations of the 2012 VI investigation, no further VI investigation was warranted for the Wal-Mart store. Based on the recommendations of the 2013 Comprehensive VI investigation, no further VI investigation was warranted for the buildings at Regency Village, and confirmatory investigations were recommended for three buildings investigated at Avalon Watchung (Buildings 3, 6 and 7). Based on the recommendations of the 2014 VI investigation, confirmatory investigations were recommended for only two buildings at Avalon Watchung, specifically Buildings 3 and 6; the conclusion of the 2014 VI investigation was that no further investigations were warranted for Building 7 at Avalon Watchung. Based on the recommendations of the 2015 VI investigation, confirmatory investigations were again recommended for Buildings 3 and 6. Based on the recommendations of the 2016 VI investigation, confirmatory investigation was recommended for only one building, specifically Building 6; the conclusion of the 2016 VI investigation was that no further investigation was warranted for Building 3 at Avalon Watchung. Accordingly, the scope of work for the 2017 investigation was confined to Building 6.

All activities were conducted using field sampling methods consistent with the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (FSPM) dated August 2005, the NJDEP Technical Requirements for Site Remediation (New Jersey

Administrative Code [N.J.A.C.] 7:26E), and the August 2016 Vapor Intrusion Technical Guidance (VITG).

## 1.1 SITE LOCATION AND DESCRIPTION

The former LEC Site is located on U.S. Route 22 West in the Boroughs of Watchung and North Plainfield, Somerset County, New Jersey. The Site is a parcel of land approximately 80 acres in size located on the north side of U.S. Route 22. LEC activities at the Site ceased in 1989 and the Site was redeveloped as the Watchung Square Mall in 2000.

The Site is located in a mixed residential and commercial area. The Site is bordered to the south by U.S. Route 22, which is a predominately commercial area with residential properties located on side streets and mapped wetlands in drainage areas. The Site is bordered to the west by an apartment complex (formerly Crystal Ridge Club, presently Avalon Watchung); further to the west is the Regency Village Condominiums complex. Forested areas and residences border the Site to the north, and commercial properties border the Site to the east.

The Site location is shown on Figure 1-1. The Site ranges in elevation from 140 to 320 feet above mean sea level, sloping to the south from higher elevations on the First Watchung Mountain, located northwest of the Site, to lower elevations along U.S. Route 22, located southeast of the Site. The closest surface water body is Crab Brook located south of the Site and U.S. Route 22 (Figure 1-1). Wetlands areas have been mapped by the NJDEP within one mile of the Site at locations immediately to the north of the Site, and south of the Site along U.S. Route 22.

## 1.2 SITE HISTORY

The Site was originally developed in 1953 by Stavid Engineering. Lockheed Martin acquired Stavid Engineering in 1959 and created Lockheed Electronics Corporation, which was subsequently operated by Sanders, a Lockheed Martin Company. Additional land acquisitions resulted in the current Site boundaries. The Site was used to manufacture, assemble, and test electronic components. Trichloroethene (TCE) was used at the Site as a non-flammable liquid coolant in conjunction with low-temperature testing of electronic components and to clean circuit boards. Operations at the Site ceased in 1989.

The cessation of Site activities in 1989 triggered a Site investigation under the New Jersey Environmental Cleanup Responsibility Act (ECRA) (superseded by the Industrial Site Recovery Act [ISRA]). The initial investigations identified several areas of concern (AOCs) and included collection of soil, sediment, groundwater, and surface water samples. Investigation and remedial action results have been documented in a series of reports submitted to the NJDEP since 1991. Soil AOCs contained volatile organic compounds (VOCs), primarily TCE, as well as fuel oil, and were addressed either through excavation and off-Site disposal or soil-vapor extraction. Site-wide soil remediation has been completed to the satisfaction of the NJDEP.

Early investigation activities identified a TCE groundwater plume emanating from the Site. An extensive monitoring well network has been installed to delineate and monitor the TCE concentrations and groundwater monitoring activities are ongoing in accordance with the Site's NJDEP-approved monitoring schedule.

To remediate the groundwater plume and intercept groundwater base flow to Crab Brook, the Site's groundwater extraction system (GWES) was activated on July 17, 2003. Until the GWES was deactivated in late May 2011, groundwater was pumped from extraction well RW-1, located on North Drive in North Plainfield, at a rate of approximately 120 gallons per minute (gpm). Until deactivation, the GWES had worked almost continuously from start-up and functioned as designed, providing control of the bedrock groundwater plume and intercepting groundwater base flow to Crab Brook. The GWES was deactivated in May 2011.

A long-term groundwater and surface water monitoring program commenced in 2003 coincident with the construction and activation of the GWES. An extensive monitoring well network has been installed to delineate and monitor the TCE concentrations. There are currently 45 active monitoring wells and piezometers associated with this project in the Boroughs of Watchung and North Plainfield. Groundwater monitoring activities are ongoing in accordance with the monitoring schedule provided in the NJDEP-approved Groundwater Remedial Action Permit (RAP) dated June 26, 2014. Based on the approved RAP, the GWES building was demolished and recovery well RW-1 was abandoned in 2015.

## 1.3 PHYSICAL SETTING

Based on previous investigations, the overburden at the Site is generally composed of construction fill associated with the remediation area of former LEC Building 3, a sandy outwash deposit, and a

thin layer of glacial till. In the vicinity of the Site, the thickness of the overburden decreases towards the south-southwest but increases south of Crab Brook. The overburden deposits are underlain by the Passaic Formation, a reddish-brown siltstone of Jurassic age. The upper surface of the bedrock is generally weathered and soft, and becomes more competent with depth. Bedrock surface topography generally slopes to the southeast perpendicular to the First Watchung Mountain.

Groundwater at the Site occurs within the bedrock, and locally within the overburden. Dissolved VOC migration within the bedrock is influenced by both bedrock structure and local groundwater discharge areas, particularly Crab Brook. The groundwater in the bedrock enters the Site from upgradient to the northeast, moves across the Site to the southwest (along the strike direction of regional bedrock bedding), and then trends in a more southerly direction toward Crab Brook. At monitoring well cluster MW-549 (located at the Site), the depth to groundwater is approximately 55 feet below ground surface (bgs). At monitoring well cluster MW-550 (located near Regency Village both topographically and hydraulically downgradient of the Site), the depth to groundwater is approximately 21 feet bgs. While no monitoring wells are present at Avalon Watchung, the depth to groundwater beneath the apartment complex is expected to be between 21 and 55 feet bgs. Based on the September 2016 groundwater elevation data, the average horizontal hydraulic gradient in the shallow water-table zone across the Site is approximately 0.009 feet per foot (ft/ft), steepening slightly downgradient and southwest of the Site to approximately 0.017 ft/ft.

# 2.0 2017 VAPOR INTRUSION INVESTIGATION

As noted in Section 1, following cessation of activities at the Site by LEC, the Site was redeveloped as the Watchung Square Mall with a Wal-Mart Store located in the southwest corner. Avalon Watchung is a residential apartment complex located adjacent to the southwestern boundary of the former LEC property. Southwest of Avalon Watchung is Regency Village, a condominium complex. Due to the proximity of these properties to the groundwater plume source area, the Wal-Mart, Avalon Watchung and Regency Village were the areas of potential concern for vapor intrusion. The locations of the Wal-Mart, Avalon Watchung, and Regency Village are shown on Figure 2-1. All three properties have been the focus of past VI investigations and Avalon Watchung is the remaining area of vapor intrusion concern. The scope of work for the 2017 investigation is limited to confirmatory sampling for Building 6 at Avalon Watchung.

## 2.1 PRIOR INVESTIGATIONS

The July 2009 Remedial Action Progress Report (RAPR) presented an evaluation of the potential for exposure to vapor within structures located above the Site's groundwater contaminant plume. The July 2009 RAPR included an evaluation of the known or suspected Site-specific contaminants, contaminant migration pathways, potential human receptors and the exposure routes by which these receptors may come in contact with contaminants. The evaluation concluded that the potential for VI to occur and to result in unacceptable indoor air concentrations in occupied structures nearest to the Site exists, and that further investigation was warranted.

Since the submittal of the July 2009 RAPR, work plans were submitted and VI investigations have been conducted. These investigations have been documented in the following reports that have been submitted to NJDEP and/or to the Licensed Site Remediation Professional (LSRP):

- ***Revised VI Investigation Work Plan, August 2010***. The 2010 Work Plan was approved by NJDEP on December 9, 2010.
- ***VI Investigation Report, November 22, 2011*.** NJDEP issued a technical review and comment letter, dated December 9, 2011 in response to this report.

- ***VI Investigation Report Addendum, January 31, 2012.*** This investigation implemented the recommendations of the November 22, 2011 report. NJDEP commented via e-mail on June 25, 2012. The report recommended that an additional round of sub-slab soil gas samples be collected from Avalon Watchung Buildings 3, 6, 7 and 12 and from the Clubhouse. To provide correlative data for the evaluation of the sub-slab soil gas sampling proposed, additional indoor air sampling was also recommended for Avalon Watchung Buildings 3, 6, 7 and 12 and the Clubhouse.
- ***VI Investigation Data Submittal, April 10, 2012.*** This submittal presented the data collected at Wal-Mart.
- ***2013 Comprehensive Vapor Intrusion Investigation Report, June 11, 2013.*** The 2013 Comprehensive VI Investigation addressed the recommendations of the January 2012 VI Investigation Report Addendum. The 2013 Comprehensive VI Investigation also addressed the VI concerns related to Regency Village as discussed in the 2011 RAPR. The 2011 RAPR recommended that the construction of Regency Village Buildings 3, 4, 5, and 6 (closest to the former LEC facility) be evaluated to determine whether there were any ground floor or basement living units in any of the buildings. These four buildings did not have living spaces but did have crawl spaces and were included as part of the 2013 Comprehensive VI Investigation. The investigation was later expanded to include Buildings 17, 26, 36 and 38 at Regency Village which were found to have (or potentially have) basement living units. The 2013 investigation also included an additional round of sub-slab soil gas and indoor air samples from Avalon Watchung Buildings 3, 6, 7 and 12 and from the Clubhouse. Results from the 2013 comprehensive VI investigation indicated that the VI pathway is not complete at Avalon Watchung Building 12 and the Clubhouse, and no further work was recommended at these buildings.
- ***2014 Vapor Intrusion Investigation Report.*** The 2014 Vapor Intrusion Investigation Report addressed the recommendations of the 2013 Comprehensive Vapor Intrusion Investigation Report. The 2014 Vapor Intrusion Investigation included one round of sub-slab soil gas and indoor air samples from Avalon Watchung Buildings 3, 6, and 7. Results from the 2014 VI investigation indicated that the VI pathway is not complete at Avalon Watchung Building 7, and no further work was recommended at this building.
- ***2015 Vapor Intrusion Investigation Report.*** The 2015 VI Investigation Report addressed the recommendations of the 2014 VI Investigation Report. The 2015 Vapor Intrusion Investigation included one round of sub-slab soil gas and indoor air samples from Avalon

Watchung Buildings 3 and 6. The analytical results for Buildings 3 and 6 indicated that additional sub-slab sampling was needed to confirm that the concentrations of TCE in sub-slab soil gas beneath these buildings continued to decline to levels less than the residential Soil Gas Screening Level (SGSL). Analysis of additional indoor air samples was also recommended contingent upon the sub-slab soil gas sampling results.

- ***2016 Vapor Intrusion Investigation Report.*** The 2016 VI Investigation Report addressed the recommendations of the 2015 VI Investigation Report. The 2016 VI Investigation included one round of sub-slab soil gas and indoor air samples from Avalon Watchung Building 3 and 6. Results from the 2016 VI investigation indicated that the VI pathway is not complete at Avalon Watchung Building 3, and no further work was recommended at this building.

## 2.2 AREAS OF INVESTIGATION

The scope of the 2017 VI investigation was based on the recommendations of the 2016 Vapor Intrusion Investigation (Tetra Tech, 2016). Since the 2016 VI investigation, additional groundwater data at the Site has been collected during groundwater sampling events conducted in March and September 2016. These data were evaluated against the current (2013) vapor intrusion Ground Water Screening Level (GWSL) for TCE of 2 microgram per liter (ug/L).

As noted in the 2016 RAPR (Tetra Tech, 2017), reported TCE concentrations in the shallow zone groundwater only exceeded the 2 µg/L GWSL in monitoring well MW-547S during the September 2016 sampling event (3.5 µg/L; see Figure 2-2). The TCE concentration in MW-547S reported in March 2016 was below the laboratory reporting limit (0.43µg/L). As discussed in the 2016 RAPR, the elevated TCE concentrations reported in MW-547S are considered to be anomalous and unrelated to the Site, based on concentration gradients in Site monitoring wells that are not consistent with a source related to the former LEC Site and the detection of compounds in MW-547S that are unrelated to the Site (specifically chlorobenzene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene). Tetra Tech notified NJDEP (via the NJDEP Hotline) regarding the elevated TCE concentrations in well MW-547S on January 12, 2015 (NJDEP incident number 15-01-12-1759-36, PI number 722540). On January 13 and January 23, 2015, Tetra Tech provided the NJDEP receptor survey team with additional information about the location of MW-547S to facilitate their search for the potential source(s) of the unknown discharge. On January 26, 2015, Tetra Tech sent an email to NJDEP providing detailed justification for considering the elevated TCE

concentrations in MW-547S as anomalous and unrelated to the former LEC Site. The lines of evidence included those noted above (i.e., concentration gradients in monitoring wells located upgradient of MW-547S that are not consistent with a TCE source related to the former LEC Site and the presence of other VOCs in MW-547S that are unrelated to the former LEC Site), as well as the lack of TCE detections in Crab Brook, which receives shallow groundwater flow and is located immediately upgradient of shallow monitoring well MW-547S.

### 2.2.1 Avalon Watchung

The Avalon Watchung complex consists of seventeen buildings (15 apartment buildings, a Clubhouse and a maintenance building) identified in Figure 2-1. The buildings are located on a steeply graded property with buildings close to Route 22 at lower elevations than those along the north property line. As noted earlier, the conclusions of the 2016 Vapor Intrusion Investigation Report (Tetra Tech, 2016) recommended that additional sampling be conducted at one building within the Avalon Watchung complex:

**Building 6:** During the 2016 VI investigation, TCE was not detected in sub-slab soil gas at concentrations higher than its residential SGSL value. An additional sub-slab sampling event in 2017 was recommended to confirm that the concentration of TCE in sub-slab soil gas remains less than the residential SGSL. If sub-slab soil gas concentrations exceed the residential SGSL, an indoor air sample was to be collected from the ground floor storage room for analysis.

In addition, an ambient air sample would be collected concurrent with the indoor air samples. As with the 2014, 2015, and 2016 investigations, the ambient sample was collected at the Clubhouse located between Buildings 3 and 6.

The location of Building 6 is highlighted in Figure 2-1; the Clubhouse is also identified. The buildings at Avalon Watchung were constructed with a passive radon mitigation system beneath the concrete slab. This system represents a physical barrier for migrating vapors, and hence sub-slab samples collected from beneath the existing concrete slab would not be an effective measure of vapor intrusion. In addition, drilling through the slab could potentially damage the radon mitigation system, thereby compromising its integrity. Therefore, sub-slab soil gas samples were collected through the walls of the elevator pit. Building 6 has an elevator located in the center of the building and the pit is located at a depth of approximately 4 feet below building ground floor

level. Soil gas samples were collected through the sidewall of the pit at an elevation of approximately 2 feet below the building ground floor level.

To provide correlative indoor air data, indoor air sampling was also recommended for Building 6. The 2017 VI Investigation addressed this recommendation through the collection of an indoor air sample from the ground floor of Building 6 at a location close to the elevator pit, specifically a ground floor storage room adjacent to the elevator pit. The indoor air sample was collected prior to the sub-slab sampling event, but the sample was only to be analyzed if the sub-slab sample exceeded the SGSL.

## 2.3 SAMPLING LOCATIONS RATIONALE

As with earlier investigations, sub-slab soil gas samples were collected from the sidewall of the building elevator pit at a location beneath the level of the ground floor slab. These locations were close to the sample locations from earlier events to ensure spatial consistency. The indoor air sampling location in Building 6 was selected to be as close as possible to the elevator shaft while ensuring that the sample would not be disturbed and was sufficiently removed from potential background sources and other physical impairments. The sample location was confirmed during a walk-through with Avalon Watchung property management personnel.

### 2.3.1 Sampling Location - Building 6

The sub-slab soil gas sample was collected through the sidewall of the elevator pit which is centrally located within the building's footprint. The adjacent utility room was found to house hydraulic equipment that services the elevator. The utility room also housed containers of hydraulic fluid and oil stains were noted; therefore, this location was deemed unacceptable for indoor air sampling. A large storage area is located to the west of the elevator shaft. The storage room is used by building tenants for storage of personal items held within large locked units. A portion of the storage room abuts the northwest wall of the elevator shaft. The proposed sampling location was adjacent to the elevator shaft wall as close to the sub-slab location as possible. During the walk-through conducted prior to the 2016 VI sampling event, a small amount of hydraulic oil was observed on the floor of the nearby electrical supply room. To minimize the potential for background contamination, the indoor air sample was collected from a location further to the southwest in the storage room. Although hydraulic oil was not observed in the electrical supply room during the 2017 walk-through, this location was also selected for the 2017 VI investigation out of an abundance of caution. The

location of the indoor air and sub-slab sampling locations are superimposed onto the ground floor plan (provided by Avalon Watchung) and included as Figure 2-3.

### 2.3.2 Ambient Sampling Location - Clubhouse

Per the recommendations of the VITG, an ambient air sample was collected to coincide with the indoor air sampling event. The purpose of an ambient sample is to quantify potential background sources from outside of the sampling domain that could impact the indoor air results. As the indoor air sampling was being conducted in Building 6, the ambient sample was collected on the balcony of the Clubhouse. As shown on Figure 2-1, the Clubhouse is located near Building 6 and provides a representative location for ambient air. In addition, the balcony is covered and access is limited, minimizing potential disturbances. The ambient sampling location was superimposed onto the floor plan (provided by Avalon Watchung) and is included on Figure 2-4.

Ambient temperatures and pressures were recorded at a select location during the 24-hour period of indoor air sampling. A portable weather station was set to collect ambient weather data during the entirety of the sampling event; however, due to a malfunction of the weather station unit, the data was not recorded. In lieu of the site-specific weather station data, publically available meteorological data from Weather Underground for the indoor air sampling period (beginning on January 10 and ending on January 11, 2017) are provided in Appendix A.

## 2.4 BUILDING WALK-THROUGH SURVEYS

The building walk-through survey can identify likely sources of background volatile compounds and can be used as a line of evidence to assess the potential for vapor intrusion. All observations from the walk-through survey were documented in the NJDEP's Indoor Air Building Survey and Sampling Forms. The completed forms are included in Appendix B. The walk-through survey was conducted by a Tetra Tech scientist accompanied by a representative of the property. If any potential background sources were identified, they were removed (if possible) or were documented and were retained for consideration as lines of evidence for evaluating the indoor air sampling results.

### 2.4.1 Building 6 Walk-Through

The indoor air sample was collected from the first floor storage room, at a location southwest of the Building 6 elevator pit (Figure 2-3). Entry is through a single door located along the main building hallway to the south. The storage room floor is constructed of poured concrete that was painted

and no cracks or other floor penetrations were observed. The walls are primarily plasterboard or similar material, except for the poured concrete wall of the elevator shaft located to the east. A locked private metal storage unit belonging to one of the building residents was present, but was not accessed since it is privately owned. A small mechanical room containing a furnace and air conditioning unit with associated duct work adjoins the storage room to the south. Ducts feed upstairs units only, thus no floor penetrations are present. An electrical supply room containing numerous subsurface conduits feeding large circuit panels through an unfinished concrete floor is located to the northeast. The hydraulic oil on the floor of the electrical supply room that was documented during the 2016 building walk-through was observed to have been cleaned. There was no evidence of a recent spill or hydraulic oil leak. Single doors separate the main building hallway, mechanical room, and electric room from the main storage room space, all of which were kept closed and locked during the sampling event.

As documented in the Indoor Air Building Survey and Sampling Form (Appendix B), no potential sources of background contamination were evident in the first floor storage room, although one locked, private storage unit prevented inspection of the entire sample space. There were no obvious odors, no photoionization detector (PID) readings, and atmospheric conditions (pressure and temperature) appeared normal during canister placement and retrieval. According to Avalon Watchung's maintenance supervisor, no substantial construction or cleaning work had occurred prior to sampling. As noted above, the door to the adjacent electrical supply room was kept closed and locked during the sampling event. The indoor air sample (CR011017-IA-B6) was collected in the storage room at a location distant from the electrical supply room and southwest of the elevator.

### 2.4.2 Clubhouse Walk-Through – Ambient Location

The ambient air sample (CR011017-AMB-01) was collected at a rear balcony outside of the Clubhouse. The balcony was only accessible through weather tight exterior doors which were kept closed and locked due to the low outside temperatures. Maintenance personnel and associated staff were instructed not to open these doors during the sampling event. There were no obvious odors or PID readings during canister placement and retrieval.

## 2.5 SUBSURFACE UTILITIES

Efforts were made to obtain maps and drawings of subsurface utilities for both complexes. These maps can be of use in locating preferential pathways from a source and the building under investigation.

Construction drawings provided by Avalon Watchung show points where sanitary sewer, gas and water supply lines enter the buildings. Utility conduits enter along the perimeter of the ground floor or basement. While these may present preferential pathways, the buildings were constructed with a passive radon mitigation system beneath the concrete slab and the system represents a physical barrier for migrating vapors, thereby negating any preferential pathways. As sub-slab sampling in Building 6 was conducted on the only location without a barrier (i.e., through the sidewall of the elevator pit), the sampling approach adequately addresses the only pathway into the building.

# 3.0 SAMPLE COLLECTION AND ANALYSIS

Indoor air and sub-slab sampling was conducted using methods consistent with the August 2016 NJDEP VITG (NJDEP, 2016). The indoor air samples were collected over a 24-hour sampling period on the first day of the investigation (January 10, 2017) prior to sub-slab sampling (conducted on January 11, 2017). Note that the investigation was conducted during the heating season (November 1st through March 31st) which is considered the "worst case" conditions for vapor intrusion.

In addition to the walk-through survey forms that were completed for each indoor sampling location, parameters recorded as part of sampling procedures were separately documented. These included:

- Identification and recording of canister and flow controller ID's and sample location
- Sampling time and date at both beginning and end of the event
- Recording of ambient temperature and pressure at the beginning and end of the sampling period
- Canister pressure at the start and end of each sampling event
- Existing meteorological conditions (i.e., temperature and atmospheric pressures) during the sampling event

All this information was captured in the VI Investigation Field Log and is provided in Table 3-1.

Individually certified canisters and the flow controllers were provided by the laboratory contracted to conduct the analysis. All canisters and flow controllers were under the control of Tetra Tech for the duration of the event. Once sampled, all canisters were shipped to the laboratory at the end of the sampling day.

## 3.1 INDOOR AIR SAMPLING

For indoor air sampling, air samples were collected at breathing-zone height and were collected over an approximate 24-hour period using laboratory certified 6-liter stainless steel SUMMA® canisters. Individually certified SUMMA® canisters and calibrated regulators were supplied by the

laboratory responsible for sample analysis. The flow regulators were calibrated for a 24-hour sampling duration.

Canister pressures were documented at the start and end of each sampling event. Time, temperature, and ambient pressure were also recorded at the end of sampling. All recorded data are provided in Table 3-1. A tag providing contact and general information was attached to the canister so as to inform residents of the purpose of the canister and provide a means to contact Tetra Tech in case of questions. The sample locations were selected to be as unobtrusive as possible to minimize possible interference. Photographs of the sampling locations and canister configuration are provided in Appendix C.

Once the indoor air sample was collected, the flow controller was closed and the sampling canister was sealed and removed from the sampling location. Chain of custody information was completed by Tetra Tech and all canisters were kept under the control of Tetra Tech until collection by the laboratory. Note that the VITG has a requirement for a residual vacuum of -5 inches of mercury at the completion of the indoor air sampling event. Both the indoor air sample and the ambient air sample met this requirement.

## 3.2 SUB-SLAB SAMPLING

Sub-slab sampling was conducted by EST Associates under the supervision of Tetra Tech. A Tetra Tech scientist was responsible for documentation of the sampling canisters and flow controllers. The sub-slab samples were collected from the sidewalls of the elevator pits adjacent to the sampling locations from previous events. Given the hazardous nature of entering an operational elevator shaft, special health and safety procedures were developed and reviewed by Tetra Tech's Health and Safety personnel prior to sample collection. The company responsible for maintaining the elevator (Otis Elevator) was directly contracted to provide personnel to immobilize the drive mechanisms for the elevators. Lock-out-tag-out (LOTO) procedures were also implemented by Tetra Tech. In addition, secondary supports were placed into the elevator pits to further protect the sampling crew.

### 3.2.1 Temporary Port Installation

Temporary sample ports were installed at all sampling locations. Temporary ports were drilled using a rotary hammer drill and a 5/16" masonry bit to drill through the sidewalls of the elevator pit.

The hole was then advanced 2" to 3" into the sub-slab material. Teflon tubing (¼" outer diameter), was placed through the port through the thickness of the slab. The tubing was then sealed at the slab surface using a non-VOC and non-shrinking putty.

### 3.2.2 Integrity Testing

The VITG provides performance objectives for ensuring that the soil gas probe and the sampling train are not susceptible to dilution by ambient air. One of the methods recommended by the VITG is to place a shroud over the soil gas probe and sampling train and to fill the shroud with helium to a target concentration. Helium is then used as a tracer in the soil gas sample and if the helium concentration in the sample is greater than 10% of the concentration under the shroud, a leak is likely present. This process was followed for the Building 6 sub-slab location using a purpose-built shroud with integrated sampling ports. Laboratory grade helium was used to avoid introducing new contaminants. The helium concentration was measured within the shroud and from within the sampling tube (leading to the canister) until the performance criterion was met.

Independent of the shroud test, the VITG also provides guidance for a shut-in test. The shut-in test is used to assess the integrity of the valves lines and fittings downstream of the sampling port. The closed-valve lines are evacuated to a measured vacuum and the pressure of the vacuum is observed for a minimum of 1 minute for any observable loss. The shut-in test is not necessary if the complete sampling train has been included in the shroud leak check. However, since 6-Liter canisters were used, placing the entire sampling train within a shroud would be difficult. There were additional challenges of performing a leak check with a shroud at Avalon Watchung where a sample port was installed through a vertical wall located within a confined space. As a 6-liter sampling canister would be part of the sampling train, the shroud would need to be prohibitively large to accommodate the sampling port, tubing, valves and a 6-liter canister. The shroud would also need to be held tight against the vertical wall while maintaining a seal. An alternative approach was developed to perform both tests (helium shroud and shut-in tests) over different portions of the sampling train. The two stage process included:

1. Per the VITG, a leak check was performed over the soil gas probe using a shroud filled with helium tracer gas over the sealed vapor point. This ensured that there was no break-through at the sampling port. The vapor shroud was placed over the sampling port and filled with laboratory grade helium to a concentration of 20% or greater. The level of helium in the shroud was measured through a sample port in the shroud using a Dielectric helium

meter. A soil gas sample was extracted from the sampling line into a Tedlar® bag using a low-flow pump. The helium meter was used to ensure that the helium concentration in the Tedlar® bag did not exceed 10% of the concentration in the shroud.

2. A separate shut-in test was performed on the remaining sampling train to verify that the aboveground fittings did not leak. The shut-in test consisted of assembling the aboveground apparatus (valves, lines and fittings downstream of the top of the sample probe) and evacuating the line to a measured vacuum greater than or equal to -10 inches Hg with closed valves on opposite ends of the sample train. The vacuum gauge was observed for at least 1 minute with no observable loss of vacuum.

Once the shroud test and the shut-in test had been successfully performed, the sample train was then purged of three volumes with the low-flow pump. The stainless steel "T" quick-connect fitting was switched to the 6-liter SUMMA® canister which was then opened to begin sample collection. Samples were collected using individually certified 6-liter stainless steel SUMMA® canisters. During sub-slab soil gas sampling, the sample flow rate did not exceed a maximum of 200 milliliters/minute (mL/min), which corresponds to a sample time of 30 minutes for a 6-liter canister. Given that the portable weather station was not operational, temperature and barometric readings as reported by Weather Underground were recorded at the start and end of sampling.

The masonry bit was bucket washed using phosphate-free detergent and water followed by a water rinse prior to drilling the sampling port. Dedicated Teflon tubing was placed in the port to collect the sub-slab soil gas sample at each sampling location. Following sampling, the implant location was abandoned with granular bentonite, while the borehole advanced through concrete was capped with hydraulic cement.

### 3.2.3 Sampling Observations

As noted, the sub-slab sample was collected from the sidewall of the elevator pit in Building 6 and the sampling location was located as close to the previous sampling locations as possible. Components of the elevator extend to the floor of the pit and these are bolted to the concrete floor (Appendix C). The floor of the elevator pit also houses a sump pit that is covered with a steel grate (Appendix C). A pump was noted in the sump pit. During the sampling event, a small amount of water was noted in the sump.

## 3.3 AMBIENT SAMPLING

Per the recommendations of the VITG, an ambient air sample was collected to coincide with the indoor air sampling event. The purpose of an ambient sample is to quantify potential background sources from outside of the sampling domain that could impact the indoor air results. This may be of concern for an urban environment where neighboring industrial facilities and vehicular traffic result in atmospheric releases that could migrate into indoor spaces and compromise indoor air samples.

The ambient sample was placed outdoors but beyond the influence of potentially inclement weather. The sample placement needed to be representative of the investigation area and therefore the ambient sample was placed on the balcony of the Clubhouse. As shown in Figure 2-1, the Clubhouse is located near Building 6 and provides a representative ambient location. Given that the portable weather station was not operational, ambient temperature and barometric readings as reported by Weather Underground were recorded during the 24-hour period of indoor air sampling (Appendix A).

The sample was collected using an individually certified 6-liter SUMMA® canister with a flow controller calibrated for 24 hours of sampling time. The canister used for the ambient sample was randomly selected from the canisters supplied by the laboratories for the sampling event.

## 3.4 LABORATORY ANALYSIS

Ambient, indoor air and sub-slab samples were submitted to an NJDEP certified laboratory for analysis using United States Environmental Protection Agency (USEPA) Low Level Method TO-15. Alpha Analytical Laboratories of Mansfield, Massachusetts was used to analyze the ambient, sub-slab and indoor air samples and is certified by NJDEP for EPA Low Level Method TO-15. The canisters and flow controllers were also provided by Alpha Analytical Laboratories. As requested, all 6-liter SUMMA® canisters were individually certified. Based on discussions with Lockheed Martin, the LSRP, and Avalon Bay property management, the samples were submitted for laboratory analysis of site-related analytes only, specifically TCE, 1,2-dichloroethene (cis and trans), and vinyl chloride, via USEPA Method TO-15. The indoor air and ambient samples were held at the lab and not analyzed, pending a review of the sub-slab soil gas analytical results.

All laboratory-provided chains of custody were completed by Tetra Tech scientists and all field observations made during sampling were documented. Tetra Tech arranged for sample collection at the end of each day of sampling to minimize the possibility of interference. All samples were picked up at Tetra Tech's office by the laboratory's courier.

# 4.0 RESULTS AND ANALYSIS

The analytical results for the sub-slab soil gas samples are summarized in Table 4-1. The analytical results from the sub-slab soil gas samples were compared to the March 2013 version of NJDEP's Residential SGSL. The residential screening levels are risk-based criteria based on the exposure assumptions of a person occupying a home for 350 days per year for 30 years. These risk-based screening levels were estimated so as to not exceed an incremental lifetime cancer risk of $1x10^{-6}$ and/or a non-cancer Hazard Quotient of 1. The appropriate residential SGSL for the analyzed compounds are provided in Table 4-1.

The sub-slab soil gas results for the samples collected in Building 6 indicate that no analyte concentrations exceeded their respective residential SGSL. Given that the SGSL was not exceeded, the ambient and indoor air samples collected and submitted to the laboratory were not analyzed. A full data analysis report generated by the laboratory is provided in Appendix D.

## 4.1 DATA USABILITY ASSESSMENT

The samples were analyzed by Alpha Analytical Laboratories for the volatile compounds noted above consistent with the NJDEP Data of Known Quality Protocols (DKQP) to meet the measurement performance criteria and quality control samples specified for USEPA TO-15. A screening review was performed by a USEPA Region II certified data validator using the criteria specified in NJDEP's Data of Known Quality Protocols Technical Guidance and Data Quality Assessment and Data Usability Evaluation Technical Guidance, in conjunction with Standard Operating Procedure HW-31, Rev. 4, October 2006, and best professional judgment. The data validation report and qualified sample summaries are provided in Appendix E.

A review of the laboratory analytical data report indicates that the VI data quality is acceptable and that all of the data are useable. Precision between field duplicates was evaluated and deemed acceptable if the RPD was below 25% when both sample values were greater than 5 times the reporting limit. All analyses were within limits for laboratory and field precision.

The reporting limits were acceptable to demonstrate compliance with the residential SGSLs and holding times were met. The canister leak test, canister certifications and flow controller evaluations were acceptable.

## 4.2 BUILDING 6

A sub-slab sample as well as its duplicate (CR011117-SS-B6 and DUP011117-VI, respectively) were collected from the sidewall of the elevator pit in Building 6. The sub-slab soil gas results for both samples are presented in Table 4-1. The analytical results indicate that TCE was detected in soil gas at estimated concentrations of 19 ug/m$^3$ and 20 ug/m$^3$ in both the original and duplicate sample, respectively. Both detected concentrations are below the residential SGSL of 27 ug/m$^3$. Both samples were collected simultaneously through the same sub-slab port. No other analytes were detected at concentrations above reporting limits in either the primary or the duplicate sample. Given that the SGSL was not exceeded, the indoor air sample collected at Building 6 (CR0110017-IA-B6) was not analyzed.

# 5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the recommendations of the 2016 VI investigation (Tetra Tech, 2016), a confirmatory investigation was recommended for one of the two buildings at Avalon Watchung investigated in 2016. Sub-slab sampling was recommended for Building 6 to provide a second consecutive round of sampling to confirm that the concentrations of TCE in sub-slab soil gas in Building 6 are below the residential SGSL.

As noted in the VITG (Sections 3.3.1.1 and 3.5.1), sub-slab samples are useful for assessing if a potential VI pathway exists. While concentrations of chemicals in sub-slab are indications of a source, no detected concentrations in indoor air would indicate that the pathway is not complete. Indoor air represents the most direct measurement of exposure and the pathway cannot be considered complete if concentrations are not detected in indoor air.

During the 2017 VI investigation and previous VI investigations at the Site, the conclusions and recommendations for each building within the areas of concern were reached using the multiple lines of evidence approach as described in the VITG, specifically:

- Elevated concentrations of chemicals in indoor air typically associated with household products and furnishings, if present, were evaluated against their concentrations reported in sub-slab samples. Walk-through surveys were reviewed to assess if background sources were present. A review of these lines of evidence provides a method for evaluating whether indoor air concentrations are a consequence of background sources or represent a VI concern.
- The results were evaluated in the context of co-occurrence in indoor air and sub-slab soil gas. Detections in both indoor air and sub-slab soil gas could indicate a complete pathway.
- Co-occurrence of contaminants in groundwater and soil gas or indoor air would be indicative of a complete pathway.

The conclusions of the April 25, 2016 Vapor Intrusion Investigation Report recommended that an additional round of sub-slab soil gas samples be collected from Avalon Watchung Building 6. The conclusions and recommendations of the 2017 VI investigation are as follows:

**Building 6:** The sub-slab soil gas results indicate that reported TCE concentrations did not exceed the residential SGSL of residential SGSL of 27 ug/m$^3$ in either the original or duplicate samples. No other analytes were detected in sub-slab soil gas above their respective SGSLs; therefore, the indoor air sample was not analyzed.

Given that there were no exceedances of the residential SGSL for any chemical related to the Site in 2015 and 2016, no further VI investigation is warranted in Building 6.

No additional VI investigation at the Avalon Watchung complex is anticipated or warranted at this time.

# 6.0 REFERENCES

Tetra Tech, 2016. 2016 Vapor Intrusion Investigation Report - FINAL. Former Lockheed Electronics Company Site, Boroughs of Watchung and North Plainfield, Somerset County, New Jersey. April 25, 2016

Tetra Tech, 2016. 2015 Remedial Action Progress Report – FINAL. Former Lockheed Electronics Company Site, Boroughs of Watchung & North Plainfield, Somerset County, New Jersey. January 18, 2016.

Tetra Tech, 2015. 2015 Vapor Intrusion Investigation Report - FINAL. Former Lockheed Electronics Company Site, Boroughs of Watchung and North Plainfield, Somerset County, New Jersey. June 2, 2015

Tetra Tech, 2014. 2014 Vapor Intrusion Investigation Report - FINAL. Former Lockheed Electronics Company Site, Boroughs of Watchung and North Plainfield, Somerset County, New Jersey. May 30, 2014

NJDEP, 2016. New Jersey Department of Environmental Protection, Site Remediation Program. Vapor Intrusion Technical Guidance. August 2016 (Version 4).

# TABLES

**TABLE 3-1**
**Vapor Intrusion Investigation Field Log**
**Avalon Watchung, New Jersey**

| Location | Type | Sample ID | Size | Canister Number | Flow Controller Number | Calibrated Flow Rate (ml/min) | Confirm FC Calibration (Y/N) | Start Date | Start Time | End Date | End Time | Canister Pressure Start ("Hg) | Canister Pressure End ("Hg) | Temp Start (◦F) | Temp End (◦F) | Atmospheric Pressure Start ("Hg) | Atmospheric Pressure End ("Hg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bldg. 6 | Sub Slab | CR011117-SS-B6 | 6 Liter | 1646 | 289 | 155 | Y | 1/11/2017 | 0959 | 1/11/2017 | 1028 | -29.63 | -5.75 | 64.4 | 65.1 | 30.14 | 30.14 |
| | Sub Slab | DUP011117-VI | 6 Liter | 603 | 324 | 160 | Y | 1/11/2017 | 0959 | 1/11/2017 | 1028 | -28.64 | -3.75 | 64.4 | 65.1 | 30.14 | 30.14 |
| | Indoor Air | CR011017-IA-B6 | 6 Liter | 2106 | 698 | 3 | Y | 1/10/2017 | 1030 | 1/10/2017 | 927 | -31.22 | -11.97 | 53.3 | 60 | 26 | 25.71 |
| Club | Ambient | CR011017-AMB-01 | 6 Liter | 935 | 144 | 3.3 | Y | 1/10/2017 | 1012 | 1/10/2017 | 938 | -29.10 | -21.42 | 30.4 | 49.1 | 26.01 | 25.71 |

**TABLE 4-1**
**Summary of Sub-Slab Soil Gas Sampling Results**
**Avalon Watchung, Watchung, New Jersey**

| **AVALON WATCHUNG** | | | | **BUILDING 6** | |
|---|---|---|---|---|---|
| **Client Sample ID:** | **CAS No.** | **Units** | **Soil Gas Screening Levels Residential** | **CR011117-SS-B6** | **DUP011117-VI** |
| **Lab Sample ID:** | | | | **L1700975-01** | **L1700975-02** |
| **Date Sampled:** | | | | **1/11/2017** | **1/11/2017** |
| **Matrix:** | | | ***µg/m³*** | **Soil Vapor** | **Soil Vapor** |
| **GC/MS Volatiles (TO-15) - ug/m3** | | | | | |
| cis-1,2-Dichloroethene | 156-59-2 | ug/m3 | NS | 0.8 U | 0.8 U |
| trans-1,2-Dichloroethene | 156-60-5 | ug/m3 | 3100 | 0.8 U | 0.8 U |
| Trichloroethene | 79-01-6 | ug/m3 | 27 | 19 | 20 |
| Vinyl chloride | 75-01-4 | ug/m3 | 13 | 0.5 U | 0.5 U |

NS - No screening level available

U - Not detected at the reported detection limit for the sample.

J - The analyte was positively identified. The associated value is an estimated quantity.

# FIGURES

SOURCE: USGS 7.5 MINUTE QUADRANGLE (CHATHAM, NJ).

FIGURE 1-1

SITE LOCATION MAP

FORMER LOCKHEED ELECTRONICS COMPANY, INC.
WATCHUNG, NEW JERSEY

TETRA TECH GEO

| | |
|---|---|
| DRWN: S.F.H. | CHK'D: S.F. |
| SCALE: AS SHOWN | DATE: 07/25/12 |

QUADRANGLE LOCATION

SCALE: 1" = 2000'

DWG: FIGURE_1-1 07/25/12

SOURCE: THIS FIGURE BASED UPON INFORMATION PROVIDED BY CDM SMITH, EDISON, NJ, AS CONTAINED IN THEIR JANUARY 2012 VAPOR INTRUSION INVESTIGATION REPORT ADDENDUM PREPARED FOR FORMER LOCKHEED ELECTRONICS COMPANY, INC.

SCALE

400 200 0 400 FEET

LEGEND

- PROPERTY LINE
- 50 BUILDING NUMBER
- 6 BUILDING SAMPLED FOR POTENTIAL VAPOR INTRUSION

FIGURE 2-1

SITE PLAN WITH SELECTED BUILDINGS FOR 2017 VAPOR INTRUSION INVESTIGATION

FORMER LOCKHEED ELECTRONICS COMPANY, INC.
WATCHUNG, NEW JERSEY

TETRA TECH

| | |
|---|---|
| DRWN: S.F.H. | CHK'D: S.F. |
| SCALE: AS SHOWN | DATE: 03/02/17 |

DWG: FIGURE_2-1 03/02/17

SHALLOW ZONE - OVERBURDEN AND SHALLOW BEDROCK GROUNDWATER FROM THE GROUNDWATER TABLE TO APPROXIMATELY 50 FEET ABOVE MEAN SEA LEVEL (MSL).

INTERMEDIATE ZONE - BEDROCK GROUNDWATER FROM APPROXIMATELY 50 FT ABOVE MSL TO APPROXIMATELY 50 FEET BELOW MSL.

DEEP ZONE - BEDROCK GROUNDWATER DEEPER THAN APPROXIMATELY 50 FT BELOW MSL.

NOTE: THIS FIGURE WAS DEVELOPED USING NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION GEOGRAPHIC INFORMATION SYSTEM DIGITAL DATA, BUT THIS SECONDARY PRODUCT HAS NOT BEEN VERIFIED BY NJDEP AND IS NOT STATE-AUTHORIZED.

SCALE

1000 500 0 1000 FEET

LEGEND

- PROPERTY LINE
- ACTIVE MONITORING WELL OR PIEZOMETER
- 1 TCE ISOCONCENTRATION CONTOUR
- 1 TCE ISOCONCENTRATION CONTOUR (INFERRED)
- 1.1 TCE CONCENTRATION (ug/L)
- U NOT DETECTED
- J ESTIMATED CONCENTRATION

FIGURE 2-2

SHALLOW TCE ISOCONCENTRATION MAP (SEPTEMBER 2016)

FORMER LOCKHEED ELECTRONICS COMPANY, INC.
WATCHUNG, NEW JERSEY

TETRA TECH

| | |
|---|---|
| DRWN: S.F.H. | CHK'D: S.F. |
| SCALE: AS SHOWN | DATE: 02/03/17 |

DWG: FIGURE_2-2 02/03/17

*Not to Scale*

*Type D*

**FIGURE 2-3:** **Avalon Watchung, Building 6 First Floor Locations of Sub-Slab and Indoor Samples**

Sub Slab Sampling Location

Indoor Air Sampling Location

TETRA TECH

**FIGURE 2-4:** **Avalon Watchung, Clubhouse Ground Floor Location of Ambient Sample**

Sub Slab Sampling Location

Indoor Air Sampling Location

TETRA TECH

# APPENDIX A

# Weather Station Data

**FIGURE A-1**
**Outdoor Atmospheric Pressure and Temperature Readings Recorded from Weather Underground (www.wunderground.com) Recorded for 1/10/2017 through 1/11/2017 for the January Sampling Event - Avalon Watchung**

# APPENDIX B

# NJDEP Building Walk-Through Survey Forms

*New Jersey Department of Environmental Protection*

# INDOOR AIR BUILDING SURVEY and SAMPLING FORM

Preparer's name: Keith McDermott Date: 1/9/17

Preparer's affiliation: Tetra Tech Phone #: 908-534-2303

Site Name: Former LEC Facility Case #: E90038

## Part I - Occupants

Building Address: Avalon Watchung Apartments complex – Building 6

Property Contact: Maintenance Supervisor Owner/ Renter / other: _____

Contact's Phone: home ( )_____ work ( )_____ cell ( )_____

# of Building occupants: Children under age 13 _____ Children age 13-18 _____ Adults _____

## Part II – Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: _____ Year constructed: 2002 – 2003

Sensitive population: day care / nursing home / hospital / school / other (specify): _____

Number of floors below grade: _____ (full basement / crawl space / slab on grade)

Number of floors at or above grade: 3

Depth of basement below grade surface: NA ft. Basement size: _____ $ft^2$

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____

Basement sump present? *Yes* / *No* Sump pump? *Yes* / *No* Water in sump? *Yes* */ *No* *(small amount)*

** Sump is in elevator pit, inspected on 1/11/17 during sub-slab soil gas sampling*

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): Ground floor storage room not heated/cooled

Type of ventilation system (circle all that apply):

central air conditioning mechanical fans bathroom ventilation fans individual air conditioning units kitchen range hood fan outside air intake
other (specify): Ground floor storage room not heated/cooled

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? *Yes / No*

Is there a whole house fan? *Yes / No*

Septic system? *Yes / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / No*

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? *Yes / No* *active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / No*
Type of barrier: _____

## Part III - Outside Contaminant Sources

NJDEP contaminated site (1000-ft. radius): Former Lockheed Electronics Company Facility

Other stationary sources nearby (gas stations, emission stacks, etc.): NA

Heavy vehicular traffic nearby (or other mobile sources): US Route 22

## Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| **Potential Sources** | **Location(s) (Storage Room Only – Locked storage units not accessible)** | **Removed** (Yes / No / NA) |
|---|---|---|
| Gasoline storage cans | No | |
| Gas-powered equipment | No | |
| Kerosene storage cans | No | |
| Paints / thinners / strippers | No | |
| Cleaning solvents | No | |
| Oven cleaners | No | |
| Carpet / upholstery cleaners | No | |
| Other house cleaning products | No | |
| Moth balls | No | |
| Polishes / waxes | No | |
| Insecticides | No | |
| Furniture / floor polish | No | |
| Nail polish / polish remover | No | |
| Hairspray | No | |
| Cologne / perfume | No | |
| Air fresheners | No | |
| Fuel tank (inside building) | No | |
| Wood stove or fireplace | No | |
| New furniture / upholstery | No | |
| New carpeting / flooring | No | |
| Hobbies - glues, paints, etc. | No | |

## Part V – Miscellaneous Items

Do any occupants of the building smoke? *Yes / No* How often? Public Space

Last time someone smoked in the building? _____ hours / *days ago*

Does the building have an attached garage directly connected to living space? *Yes / No*

If so, is a car usually parked in the garage? *Yes / No*

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? *Yes / No / Unknown*

Do the occupants of the building have their clothes dry cleaned? *Yes / No*

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? *Yes / No*

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? *Yes / No*

Have any pesticides/herbicides been applied around the building or in the yard? *Yes* / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? *Yes / No* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes / No*

If yes, when _____ and where? _____

## Part VI – Sampling Information

Sample Technician: Jon Byk Phone number: (908) 534 – 2303

Company: Tetra Tech

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Were "Instructions for Occupants" followed? Y*es / No*

If not, describe modifications: _____

Sample locations (floor, room):

SAMPLING DATA

| Sample # | Location | Analytical Method | Sample Volume | Sample Time | Sample Date | Sampler Type | Ambient Temp (°F) |
|---|---|---|---|---|---|---|---|
| CR011017-IA-B6 | Bldg 6, Indoor Air | TO-15 | 6 Liter | 10:30 | 1/10/17 | Stainless Steel Canister | 60 |
| CR011117-SS-B6 | Bldg 6, Sub Slab | TO-15 | 6 Liter | 9:59 | 1/11/17 | Stainless Steel Canister | 65.1 |
| DUP011117-VI | Bldg 6, Sub Slab (Duplicate) | TO-15 | 6 Liter | 9:59 | 1/11/17 | Stainless Steel Canister | 65.1 |
| | | | | | | | |

*Provide Drawing of Sample Location(s) in Building*

SEE ATTACHED FIGURE

Type of field instrument used (include summary of results): _____

## Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? *Yes* / *No*

Describe the general weather conditions: _____Overcast, 20s degrees F, light breeze_____

_____

## Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Walk-through conducted in 1st floor public areas proposed for indoor sampling only. One locked storage cabinet was not accessible (resident's private space).

(NJDEP 1997; NHDES 1998; VDOH 1993; MassDEP 2002; NYSDOH 2005; CalEPA 2005)

*Not to Scale*

*Type D*

**FIGURE 2-3:** **Avalon Watchung, Building 6 First Floor Locations of Sub-Slab and Indoor Samples**

Sub Slab Sampling Location

Indoor Air Sampling Location

TETRA TECH

# APPENDIX C

# Photolog of Sampling Locations

# PHOTOLOG

| | | |
|---|---|---|
| **Photo 1** | Building 6 Elevator Equipment Room adjacent to elevator shaft. Elevator equipment includes oil feed lines. | 1/10/17 |

# PHOTOLOG

| | | |
|---|---|---|
| **Photo 2** | Building 6 Storage Room – Resident storage units on the left that were locked were not inspected. | 1/9/17 |

# PHOTOLOG

| | | |
|---|---|---|
| **Photo 3** | Building 6 Electrical Supply Room – Evidence of former hydraulic oil spill from 2016 that was cleaned. | 1/9/17 |

# PHOTOLOG

| | | |
|---|---|---|
| **Photo 4** | Ambient sample CR011017-AMB-01 installed on balcony of Clubhouse | 1/10/17 |

# PHOTOLOG

| | | |
|---|---|---|
| **Photo 5** | Building 6 indoor air sample CR011017-IA-B6 | 1/10/17 |

# PHOTOLOG

| | | |
|---|---|---|
| **Photo 6** | Building 6 Elevator Pit – Technician purging sample train and sample point. | 1/11/17 |

# PHOTOLOG

| | | |
|---|---|---|
| **Photo 7** | Building 6 Elevator Pit – Example of the sub-slab soil gas sample port | 1/11/17 |

# PHOTOLOG

| | | |
|---|---|---|
| **Photo 8** | Building 6 Elevator Pit – Collection of sub-slab soil gas samples CR011117-SS-B6 and DUP011117-VI | 1/11/17 |

# PHOTOLOG

| | | |
|---|---|---|
| **Photo 9** | Building 6 Elevator Pit – Small amount of water in sump pit | 1/11/17 |

# APPENDIX D

# Laboratory Data Deliverables

ALPHA ANALYTICAL

World Class Chemistry

www.alphalab.com

Lab Number: L1700975

Client: Tetra Tech GEO

ATTN: Steve Feldmann

Project Name: FORMER LEC

Project Number: 117-0507641

*The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.*

**Title Page - NJDEP Form A-1A**

**ANALYTICAL DATA PACKAGE FOR THE**
**NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION**
**TRENTON NEW JERSEY 08625**

| | |
|---|---|
| **Agency/Division:** | **Bureau/Office:** |
| **Project No:** 117-0507641 | **Contract No:** |
| **Laboratory:** Alpha Analytical | **Laboratory Location:** Mansfield, Ma |
| **SDG No:** L1700975 | **NJDEP Certification #:** MA015 |
| **Date of First Sample Receipt:** 01/11/2017 | **Date of Last Sample Receipt:** 01/11/2017 |

| Agency Sample Number | Laboratory Sample Number | Sample Location | Date/Time of Collection |
|---|---|---|---|
| CR011117-SS-B6 | L1700975-01 | FORMER LEC | 01/11/2017 10:28 |
| DUP011117-VI | L1700975-02 | FORMER LEC | 01/11/2017 10:28 |

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

| | | |
|---|---|---|
| **Laboratory Manager (Typed)** | Arin Jones | 01/16/17 |
| **Laboratory Manager (Signature)** | Arin Jones | |
| **Quality Assurance Officer (Typed)** | James Todaro | 01/16/17 |
| **Quality Assurance Officer (Signature)** | James C. Todaro | |

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Alpha Analytical
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Mansfield, MA 02048-1806
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Fax: 508-822-3288

# AIR Chain-of-Custody - NJ

Date Rec'd in Lab 1/12/17 | ALPHA Job# L1700975

1 of 1 COCs

**Client Contact Information**

Company: TETRA TECH
Address: 295 RT 22E, SUITE 104E
City/State/Zip WHITEHOUSE STATION, NJ, 08889
Phone: (908) 534-2303
FAX:
Email:
Site Contact:
Site Contact Phone:

**Project Information**

Project Name: FORMER LEC
Project No: 117-0507641
Site/Location: N. PLAINFIELD, NJ
Project Manager: STEVE FELDMANN

**Analysis Turn-Around Time**

Standard (Specify)
Rush (Specify) 24 HR

**NJ DEP Information**

Bureau: Division: Contract No:

**Report Information - Data Deliverables:**

☐ FAX:
☐ ADEx ☐ Criteria Checker:
☐ EMail (standard pdf report)

**Billing Information**

☐ Same as Client Info PO #:

| ALPHA LAB ID (Lab Use Only) | Sample Identification | Sample Date(s) | Time Start (24 hr clock) | Time Stop (24 hr clock) | Canister Pressure in Field (Hg) (Start) | Canister Pressure in Field (Hg) (Stop) | Interior Temp. (F) (Start) | Interior Temp. (F) (Stop) | Outgoing Canister Pressure (Hg) (Note1) | Incoming Canister Pressure (Hg) (Note 2) | Flow Reg. ID | Can ID | Can Size (L) | Flow Controller Readout (ml/min) (Note1) | Batch Cert ID (Note 1) | TO-15 * | EPA 3C | | | | Indoor/Ambient Air | Soil Gas | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0975.01 | CR011117-SS-B6 | 1/11/17 | 0959 | 1028 | -29.63 | -5.75 | 64.4 | 65.1 | -29.4 | | 0289 | 1646 | 6 | 155 | L1700424-02 | X | | | | | | | | |
| .02 | DUP011117-VI | 1/11/17 | 0959 | 1028 | -28.64 | -3.75 | 64.4 | 65.1 | -28.8 | | 0324 | 603 | 6 | 160 | L1700424-01 | X | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |

Custody Seals:
Outgoing Seal No: 269-270 (refer to crate seal)
Incoming Seal No: (if applicable)

| Temperature (Fahrenheit) | Ambient | Maximum | Minimum | |
|---|---|---|---|---|
| Start | | | | |
| Stop | | | | |

| Pressure (inches of Hg) | Ambient | Maximum | Minimum | |
|---|---|---|---|---|
| Start | | | | |
| Stop | | | | |

Individual Preparing Canister/Containers and Laboratory Canister Certification
Name: Lisa Barrett
Signature:

Footnotes:
(1) Refer to equipment tags for these readings.
(2) Readings provided in data deliverable package.

Special Instructions/QC Requirements & Comments:
*: TCE, VINYL CHLORIDE, 1,2-DICHLOROETHENE (CIS AND TRANS) ONLY

| Canisters Shipped by: | Date/Time: | Canisters Received by: | Date/Time: |
|---|---|---|---|
| Samples Relinquished by: (TT) | Date/Time: 01/11/17, 1512 | Received by: AAL | Date/Time: 1/11/17 15:12 |
| Relinquished by: AAL | Date/Time: 1/11/17 17:40 | Received by: | Date/Time: 1-11-17 2100 |
| | 1-12-17 0200 | | 1/12/17 0200 |

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until all ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

Note: Combined External Chain of Custody and NJDEP Field Test Data Sheet

# ALPHA ANALYTICAL LABORATORIES
## Container Tracking Report

| Container ID | Type | Status | Transaction Date | From Response | From Location | From Operator | To Response | To Location | To Operator |
|---|---|---|---|---|---|---|---|---|---|
| L1700975-01A | Can-1 | INTACT | 13-JAN-17 | A2-VOA-ANALYSIS | A2-VOA-ANALYSIS | Michael Boyd | A2-CUSTODY | A2-AIR-CUSTODY | Michael Boyd |
| L1700975-01A | Can-1 | INTACT | 12-JAN-17 | CUSTODY | A2-CUSTODY-REFRIDGE | Robert Young | A2-VOA-ANALYSIS | A2-VOA-ANALYSIS | Robert Young |
| L1700975-01A | Can-1 | INTACT | 11-JAN-17 | A2-LOGIN | A2-LOGIN | Chris Anderson | A2-CUSTODY-REFRIDGE | A2-CUSTODY-REFRIDGE | Chris Anderson |
| L1700975-02A | Can-1 | INTACT | 13-JAN-17 | A2-VOA-ANALYSIS | A2-VOA-ANALYSIS | Michael Boyd | A2-CUSTODY | A2-AIR-CUSTODY | Michael Boyd |
| L1700975-02A | Can-1 | INTACT | 12-JAN-17 | CUSTODY | A2-CUSTODY-REFRIDGE | Robert Young | A2-VOA-ANALYSIS | A2-VOA-ANALYSIS | Robert Young |
| L1700975-02A | Can-1 | INTACT | 11-JAN-17 | A2-LOGIN | A2-LOGIN | Chris Anderson | A2-CUSTODY-REFRIDGE | A2-CUSTODY-REFRIDGE | Chris Anderson |

# Shipping Documentation

# Sample Delivery Group Form

**Laboratory Job number:** L1700975
**Project Manager:** Chris Anderson **Review Date:** 01/13/2017
**Project Number:** 117-0507641
**Project Name:** FORMER LEC **Received:** 01/11/2017 15:12
**Client Account:** Tetra Tech GEO **Received by:** KB

**Samples Delivered by:** COURIER **Call Tracker #**
**Bill Of Laden** N/A **Trackingnum**
**Coc Present** Present

**Container Status** Intact **Sample IDs**

**All Containers Accounted For?** Yes

**Were Extra Samples Received?** No

**Do Sample Labels and COC agree?** Yes

**Are Samples in Appropriate Containers?** Yes

**Are Samples Received within Holding time?** Yes

**pH of Samples upon Receipt** **Are samples Properly Preserved?** Yes
**Initial pH** **preserved in house with** **Final pH**
**Other Issues**
**Chlorine Check** N/A

**Are VOA/VPH Vials Present?** No
**Aqueous: Do Vials Contain Head Space?** N/A
**Soils: Is MeOHCovering the Soil?** N/A
**Reagent H2O Preserved vials Frozen on** N/A
**Frozen by Client** N/A

| Cooler | Seal | Ice Present | Blue Ice Present | Temp. (Celsius) | Frozen upon Receipt | Delivered Direct from Site |
|---|---|---|---|---|---|---|
| N/A | Present/Intact | No | No | - | No | No |

| | | | | | |
|---|---|---|---|---|---|
| **STANDARD NAME:** | TO15 ICAL STD | **Primary Standard ID#s :** | **1)** | **CSS16-008** | **Conc. 1.0 ppmV** |
| **ROOT STANDARD ID#** | SS16-037 | | **2)** | **CSS16-009** | **Conc. 1.0 ppmV** |
| **Prepared by:** | RY | | **3)** | **CSS16-013** | **Conc. 1.0 ppmV** |
| **Date Prepared:** | 11/11/2016 | | **4)** | **PS16-013** | **Conc. 25.0 ppmV** |
| **Expiration Date:** | 2/11/2016 | | **5)** | | **Conc.** |

| Standard Letter ID | Canister Serial # or Tedlar Bag Size | Volume of Primary Standards Added | Flow Rate and Transer Time of Standard Gas * | Canister Volume, L | Final Canister Pressure, ATM ** | Final Volume of Secondary Standard, L | Final Concentration |
|---|---|---|---|---|---|---|---|
| A | 894 | 3000 mL | 50 mL/ min for 60 min | 15 | 2 | 30 | 100 ppbV |
| B1 & B2 | 1686/ 1681 | 300 mL | 50 mL/ min for 6 min | 15 | 2 | 30 | 10 ppbV |
| C | 1682 | 300 mL of can A | NA | 15 | 2 | 30 | 1.0 ppbV |
| D | 1803 | 30 mL of can A | NA | 15 | 2 | 30 | 0.1 ppbV |
| E (NJ CC) | 592 | 300 mL | 50 mL/ min for 6 min | 15 | 2 | 30 | 10 ppbV |
| F (NJ CC) | 1683 | 300 mL | 50 mL/ min for 6 min | 15 | 2 | 30 | 10 ppbV |
| | | | | | | | |

Notes: (PS16-013) A=120mL B, E, + F=12mL SOLID PHASE INJECTIONS -- SEE TABLE 3B IN SOP page 30

* - Not applicable when using gas-tight syringe

** - To convert PSIA to ATM; Divide PSIA by 14.696

Diluent Gas: HUM N2

Lot #: BULK TANK

| | | | | | |
|---|---|---|---|---|---|
| **STANDARD NAME:** | TO15-LCS STD | **Primary Standard ID#s :** | **1)** | **CSS16-001** | **Conc. 1.0 ppmV** |
| **ROOT STANDARD ID#** | SS16-028 | | **2)** | **CSS16-005** | **Conc. 1.0 ppmV** |
| **Prepared by:** | RY | | **3)** | **CSS16-006** | **Conc. 1.0 ppmV** |
| **Date Prepared:** | 09/29/16 | | **4)** | **PS16-012** | **Conc. 50.0 ppmV** |
| **Expiration Date:** | 12/29/16 | | **5)** | | **Conc.** |

| Standard Letter ID | Canister Serial # or Tedlar Bag Size | Volume of Primary Standards Added | Flow Rate and Transer Time of Standard Gas * | Canister Volume, L | Final Canister Pressure, ATM ** | Final Volume of Secondary Standard, L | Final Concentration |
|---|---|---|---|---|---|---|---|
| A | 912 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| B | 914 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| C | 917 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| D | 703 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| E | 895 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| F | 916 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| | | | | | | | |

Notes: 12mLs OF (PS16-012) ADDED VIA DIRECT INJECTION

* - Not applicable when using gas-tight syringe

** - To convert PSIA to ATM; Divide PSIA by 14.696

Diluent Gas: HUM. N2

Lot #: BULK TANK

**STANDARD NAME:** TO15-LCS STD

**ROOT STANDARD ID#** SS16-039

**Prepared by:** RY

**Date Prepared:** 11/22/16

**Expiration Date:** 02/22/16

**Primary Standard ID#s :**

| | | |
|---|---|---|
| 1) | CSS16-001 | Conc. 1.0 ppmV |
| 2) | CSS16-005 | Conc. 1.0 ppmV |
| 3) | CSS16-006 | Conc. 1.0 ppmV |
| 4) | PS16-012 | Conc. 50.0 ppmV |
| 5) | | Conc. |

| Standard Letter ID | Canister Serial # or Tedlar Bag Size | Volume of Primary Standards Added | Flow Rate and Transer Time of Standard Gas * | Canister Volume, L | Final Canister Pressure, ATM ** | Final Volume of Secondary Standard, L | Final Concentration |
|---|---|---|---|---|---|---|---|
| A | 591 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| B | 917 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| C | 914 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| D | 2359 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| E | 2360 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| F | 606 | 300 mL | 50mL/ MIN FOR 6 MINS. | 15.0 | 2.0 | 30.0 | 10 ppbV |
| | | | | | | | |

Notes: 12mLs OF (PS16-012) ADDED VIA DIRECT INJECTION

* - Not applicable when using gas-tight syringe

** - To convert PSIA to ATM; Divide PSIA by 14.696

Diluent Gas: HUM. N2

Lot #: BULK TANK

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Mansfield, MA 02048

**PAGE:** 1 of 2

TO15 ICAL MIX
CS516-008
PARENT OF CS515-021

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 114466114 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3068210 | **Cylinder # :** | CC-256101 |
| **Certification Date:** | Oct-20-2016 | **Cylinder Pressure:** | 1000 psig |
| **P.O.# :** | R10837 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 2000 Liters |
| **Expiration Date:** | Oct-20-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| Propylene | 115-07-1 | 1.00 ppm | 0.97 ppm |
| 1,3-Butadiene | 106-99-0 | 1.00 ppm | 0.95 ppm |
| Vinyl Bromide | 593-60-2 | 1.00 ppm | 1.04 ppm |
| Acetone | 67-64-1 | 1.00 ppm | 1.02 ppm |
| Isopropyl Alcohol | 67-63-0 | 1.00 ppm | 0.96 ppm |
| Carbon Disulfide (Analytical Accuracy ± 10%) | 75-15-0 | 1.00 ppm | 1.05 ppm |
| Allyl Chloride | 107-05-1 | 1.00 ppm | 0.99 ppm |
| Trans-1,2-Dichloroethene | 156-60-5 | 1.00 ppm | 1.09 ppm |
| Methyl Tert-Butyl Ether | 1634-04-4 | 1.00 ppm | 0.99 ppm |
| Vinyl Acetate | 108-05-4 | 1.00 ppm | 0.95 ppm |
| Methyl Ethyl Ketone | 78-93-3 | 1.00 ppm | 1.02 ppm |
| n-Hexane | 110-54-3 | 1.00 ppm | 1.02 ppm |
| Ethyl Acetate | 141-78-6 | 1.00 ppm | 1.02 ppm |
| Tetrahydrofuran | 109-99-9 | 1.00 ppm | 1.02 ppm |
| Cyclohexane | 110-82-7 | 1.00 ppm | 1.02 ppm |
| Bromodichloromethane | 75-27-4 | 1.00 ppm | 1.01 ppm |
| 1,4-Dioxane | 123-91-1 | 1.00 ppm | 1.01 ppm |
| 2,2,4-Trimethylpentane | 540-84-1 | 1.00 ppm | 1.03 ppm |
| n-Heptane | 142-82-5 | 1.00 ppm | 1.03 ppm |
| Methyl Isobutyl Ketone | 108-10-1 | 1.00 ppm | 1.01 ppm |
| Methyl Butyl Ketone | 591-78-6 | 1.00 ppm | 1.00 ppm |
| Dibromochloromethane | 124-48-1 | 1.00 ppm | 1.03 ppm |
| Bromoform | 75-25-2 | 1.00 ppm | 1.03 ppm |

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

THE LINDE GROUP

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320 Forbes Blvd
Mansfield, MA 02048

**PAGE:** 2 of 2

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 114466114 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3068210 | **Cylinder # :** | CC-256101 |
| **Certification Date:** | Oct-20-2016 | **Cylinder Pressure:** | 1000 psig |
| **P.O.# :** | R10837 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 2000 Liters |
| **Expiration Date:** | Oct-20-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| 4-Ethyltoluene | 622-96-8 | 1.00 ppm | 1.03 ppm |
| Benzyl Chloride (Analytical Accuracy ± 10%) | 100-44-7 | 1.00 ppm | 1.01 ppm |
| Nitrogen | 7727-37-9 | Balance | Balance |

**ANALYST:** Lou Lorenzetti

**DATE:** Oct-20-2016

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

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**PAGE:** 1 of 2

TO-15 Custom ICAL

## CERTIFICATE OF ANALYSIS

CS516-009

| | | | |
|---|---|---|---|
| **Sales#:** | 114466114 | **Cylinder Size:** | 152 (8" X 47.5") RECEIPT OF CS514-014 |
| **Production#:** | 3068210 | **Cylinder #:** | CC-197190 |
| **Certification Date:** | Oct-20-2016 | **Cylinder Pressure:** | 1000 psig |
| **P.O.#:** | R10837 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 2000 Liters |
| **Expiration Date:** | Oct-20-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| Propane | 74-98-6 | 1.00 ppm | 1.03 ppm |
| Chlorodifluoromethane | 75-45-6 | 1.00 ppm | 1.07 ppm |
| Methanol (No Stability Guarantee) | 67-56-1 | 5.00 ppm | 4.87 ppm |
| n-Butane | 106-97-8 | 1.00 ppm | 1.11 ppm |
| Dichlorofluoromethane | 75-43-4 | 1.00 ppm | 1.08 ppm |
| Ethanol (Analytical Accuracy +/- 10%) | 64-17-5 | 5.00 ppm | 4.63 ppm |
| Acetonitrile (No Stability Guarantee) | 75-05-8 | 1.00 ppm | 1.02 ppm |
| Acrolein | 107-02-8 | 1.00 ppm | 1.12 ppm |
| n-Pentane | 109-66-0 | 1.00 ppm | 1.01 ppm |
| Acrylonitrile | 107-13-1 | 1.00 ppm | 1.01 ppm |
| Ethyl Ether | 60-29-7 | 1.00 ppm | 1.09 ppm |
| Tert Butyl Alcohol | 75-65-0 | 1.00 ppm | 1.10 ppm |
| 2,2-Dichloropropane | 594-20-7 | 1.00 ppm | 1.07 ppm |
| Di-isopropyl Ether | 108-20-3 | 1.00 ppm | 1.07 ppm |
| Ethyl Tert-Butyl Ether | 637-92-3 | 1.00 ppm | 1.06 ppm |
| 1,1-Dichloropropene | 563-58-6 | 1.00 ppm | 1.06 ppm |
| Tert Amyl Methyl Ether | 994-05-8 | 1.00 ppm | 1.07 ppm |
| Dibromomethane | 74-95-3 | 1.00 ppm | 1.05 ppm |
| 1,3-Dichloropropane | 142-28-9 | 1.00 ppm | 1.07 ppm |
| n-Butyl Acetate | 123-86-4 | 1.00 ppm | 1.09 ppm |
| n-Octane | 111-65-9 | 1.00 ppm | 1.06 ppm |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1.00 ppm | 1.07 ppm |
| 1,2,3-Trichloropropane | 96-18-4 | 1.00 ppm | 1.03 ppm |
| Nonane | 111-84-2 | 1.00 ppm | 1.06 ppm |
| Isopropylbenzene | 98-82-8 | 1.00 ppm | 1.00 ppm |
| Bromobenzene | 108-86-1 | 1.00 ppm | 1.01 ppm |
| o-Chlorotoluene | 95-49-8 | 1.00 ppm | 1.07 ppm |
| n-Propylbenzene | 103-65-1 | 1.00 ppm | 1.02 ppm |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 114466114 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3068210 | **Cylinder # :** | CC-197190 |
| **Certification Date:** | Oct-20-2016 | **Cylinder Pressure:** | 1000 psig |
| **P.O.# :** | R10837 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 2000 Liters |
| **Expiration Date:** | Oct-20-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| 4-Chlorotoluene | 106-43-4 | 1.00 ppm | 1.02 ppm |
| Tert-Butyl Benzene | 98-06-6 | 1.00 ppm | 1.05 ppm |
| n-Decane | 124-18-5 | 1.00 ppm | 1.04 ppm |
| Sec-Butyl Benzene | 135-98-8 | 1.00 ppm | 1.04 ppm |
| p-Cymene | 99-87-6 | 1.00 ppm | 1.02 ppm |
| n-Butyl Benzene | 104-51-8 | 1.00 ppm | 1.06 ppm |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.00 ppm | 0.96 ppm |
| n-Undecane | 1120-21-4 | 1.00 ppm | 1.00 ppm |
| Naphthalene (No Stability Guarantee) | 91-20-3 | 1.00 ppm | 0.87 ppm |
| n-Dodecane | 112-40-3 | 1.00 ppm | 0.97 ppm |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1.00 ppm | 1.01 ppm |
| Nitrogen | 7727-37-9 | Balance | Balance |

**ANALYST:** Lou Lorenzetti

**DATE:** Oct-20-2016

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CSS16-~~007~~ 013 10/28/16

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 114466114 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3068210 | **Cylinder # :** | CC-256057 |
| **Certification Date:** | Oct-20-2016 | **Cylinder Pressure:** | 1000 psig |
| **P.O.# :** | R10837 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 2000 Liters |
| **Expiration Date:** | Oct-20-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| Freon-12 | 75-71-8 | 1.00 ppm | 1.05 ppm |
| Chloromethane | 74-87-3 | 1.00 ppm | 1.07 ppm |
| Freon-114 | 76-14-2 | 1.00 ppm | 1.04 ppm |
| Vinyl Chloride | 75-01-4 | 1.00 ppm | 1.06 ppm |
| Bromomethane | 74-83-9 | 1.00 ppm | 1.07 ppm |
| Chloroethane | 75-00-3 | 1.00 ppm | 1.07 ppm |
| Freon-11 | 75-69-4 | 1.00 ppm | 1.00 ppm |
| 1,1-Dichloroethene | 75-35-4 | 1.00 ppm | 1.06 ppm |
| Methylene Chloride | 75-09-2 | 1.00 ppm | 1.03 ppm |
| Freon-113 | 76-13-1 | 1.00 ppm | 1.03 ppm |
| 1,1-Dichloroethane | 75-34-3 | 1.00 ppm | 1.02 ppm |
| Cis-1,2-Dichloroethylene | 156-59-2 | 1.00 ppm | 1.05 ppm |
| Chloroform | 67-66-3 | 1.00 ppm | 1.04 ppm |
| 1,2-Dichloroethane | 107-06-2 | 1.00 ppm | 1.03 ppm |
| 1,1,1-Trichloroethane | 71-55-6 | 1.00 ppm | 1.06 ppm |
| Benzene | 71-43-2 | 1.00 ppm | 1.04 ppm |
| Carbon Tetrachloride | 56-23-5 | 1.00 ppm | 1.02 ppm |
| 1,2-Dichloropropane | 78-87-5 | 1.00 ppm | 1.03 ppm |
| Trichloroethylene | 79-01-6 | 1.00 ppm | 1.09 ppm |
| Cis-1,3-Dichloropropene | 10061-01-5 | 1.00 ppm | 0.98 ppm |
| Trans-1,3-Dichloropropene | 10061-02-6 | 1.00 ppm | 1.02 ppm |
| 1,1,2-Trichloroethane | 79-00-5 | 1.00 ppm | 1.04 ppm |
| Toluene | 108-88-3 | 1.00 ppm | 1.03 ppm |
| 1,2-Dibromoethane | 106-93-4 | 1.00 ppm | 1.04 ppm |
| Tetrachloroethylene | 127-18-4 | 1.00 ppm | 1.03 ppm |
| Chlorobenzene | 108-90-7 | 1.00 ppm | 1.03 ppm |
| Ethylbenzene | 100-41-4 | 1.00 ppm | 1.03 ppm |
| P-Xylene | 106-42-3 | 1.00 ppm | 1.03 ppm |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 114466114 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3068210 | **Cylinder # :** | CC-256057 |
| **Certification Date:** | Oct-20-2016 | **Cylinder Pressure:** | 1000 psig |
| **P.O.# :** | R10837 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 2000 Liters |
| **Expiration Date:** | Oct-20-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| M-Xylene | 108-38-3 | 1.00 ppm | 1.03 ppm |
| Styrene | 100-42-5 | 1.00 ppm | 1.00 ppm |
| O-Xylene | 95-47-6 | 1.00 ppm | 1.03 ppm |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1.00 ppm | 1.02 ppm |
| 4-Ethyltoluene | 622-96-8 | 1.00 ppm | 1.03 ppm |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1.00 ppm | 1.00 ppm |
| 1,3-Dichlorobenzene | 541-73-1 | 1.00 ppm | 1.00 ppm |
| 1,4-Dichlorobenzene | 106-46-7 | 1.00 ppm | 1.01 ppm |
| 1,2-Dichlorobenzene | 95-50-1 | 1.00 ppm | 0.98 ppm |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1.00 ppm | 0.90 ppm |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1.00 ppm | 0.93 ppm |
| Nitrogen | 7727-37-9 | Balance | Balance |

**ANALYST:** Justin Kutz

**DATE:** Oct-20-2016

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REC 2/3/16

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 113561616 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3030220 | **Cylinder # :** | CC-349592 |
| **Certification Date:** | Jan-16-2016 | **Cylinder Pressure:** | 350 psig |
| **P.O.# :** | R10079 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 700 Liters |
| **Expiration Date:** | Jan-16-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| Propylene | 115-07-1 | 1.00 ppm | 1.04 ppm |
| 1,3-Butadiene | 106-99-0 | 1.00 ppm | 1.01 ppm |
| Vinyl Bromide | 593-60-2 | 1.00 ppm | 1.05 ppm |
| Acetone | 67-64-1 | 1.00 ppm | 1.06 ppm |
| Isopropyl Alcohol | 67-63-0 | 1.00 ppm | 1.10 ppm |
| Carbon Disulfide (Analytical Accuracy ± 10%) | 75-15-0 | 1.00 ppm | 1.03 ppm |
| Allyl Chloride | 107-05-1 | 1.00 ppm | 1.07 ppm |
| Trans-1,2-Dichloroethene | 156-60-5 | 1.00 ppm | 1.00 ppm |
| Methyl Tert-Butyl Ether | 1634-04-4 | 1.00 ppm | 1.05 ppm |
| Vinyl Acetate | 108-05-4 | 1.00 ppm | 1.10 ppm |
| Methyl Ethyl Ketone | 78-93-3 | 1.00 ppm | 1.05 ppm |
| n-Hexane | 110-54-3 | 1.00 ppm | 1.03 ppm |
| Ethyl Acetate | 141-78-6 | 1.00 ppm | 1.04 ppm |
| Tetrahydrofuran | 109-99-9 | 1.00 ppm | 1.02 ppm |
| Cyclohexane | 110-82-7 | 1.00 ppm | 1.05 ppm |
| Bromodichloromethane | 75-27-4 | 1.00 ppm | 1.01 ppm |
| 1,4-Dioxane | 123-91-1 | 1.00 ppm | 1.03 ppm |
| 2,2,4-Trimethylpentane | 540-84-1 | 1.00 ppm | 1.04 ppm |
| n-Heptane | 142-82-5 | 1.00 ppm | 1.05 ppm |
| Methyl Isobutyl Ketone | 108-10-1 | 1.00 ppm | 1.04 ppm |
| Methyl Butyl Ketone | 591-78-6 | 1.00 ppm | 1.05 ppm |
| Dibromochloromethane | 124-48-1 | 1.00 ppm | 1.02 ppm |
| Bromoform | 75-25-2 | 1.00 ppm | 1.01 ppm |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 113561616 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3030220 | **Cylinder # :** | CC-349592 |
| **Certification Date:** | Jan-16-2016 | **Cylinder Pressure:** | 350 psig |
| **P.O.# :** | R10079 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 700 Liters |
| **Expiration Date:** | Jan-16-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| 4-Ethyltoluene | 622-96-8 | 1.00 ppm | 1.02 ppm |
| Benzyl Chloride (Analytical Accuracy ± 10%) | 100-44-7 | 1.00 ppm | 1.08 ppm |
| Nitrogen | 7727-37-9 | Balance | Balance |

**ANALYST:** Lou Lorenzetti

**DATE:** Jan-16-2016

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 113561616 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3030220 | **Cylinder # :** | CC-270519 |
| **Certification Date:** | Jan-16-2016 | **Cylinder Pressure:** | 1600 psig |
| **P.O.# :** | R10079 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 3200 Liters |
| **Expiration Date:** | Jan-16-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| Propane | 74-98-6 | 1.00 ppm | 0.93 ppm |
| Chlorodifluoromethane | 75-45-6 | 1.00 ppm | 0.96 ppm |
| Methanol (No Stability Guarantee) | 67-56-1 | 5.00 ppm | 4.83 ppm |
| n-Butane | 106-97-8 | 1.00 ppm | 0.98 ppm |
| Dichlorofluoromethane | 75-43-4 | 1.00 ppm | 0.95 ppm |
| Ethanol (No Stability Guarantee) | 64-17-5 | 5.00 ppm | 4.98 ppm |
| Acetonitrile (No Stability Guarantee) | 75-05-8 | 1.00 ppm | 0.99 ppm |
| Acrolein (No Stability Guarantee) | 107-02-8 | 1.00 ppm | 1.07 ppm |
| n-Pentane | 109-66-0 | 1.00 ppm | 0.96 ppm |
| Acrylonitrile | 107-13-1 | 1.00 ppm | 0.96 ppm |
| Ethyl Ether | 60-29-7 | 1.00 ppm | 0.98 ppm |
| Tert-Butanol | 75-65-0 | 1.00 ppm | 1.03 ppm |
| 2,2-Dichloropropane | 594-20-7 | 1.00 ppm | 0.97 ppm |
| Di-isopropyl Ether | 108-20-3 | 1.00 ppm | 0.97 ppm |
| Ethyl Tert-Butyl Ether | 637-92-3 | 1.00 ppm | 0.96 ppm |
| 1,1-Dichloropropene | 563-58-6 | 1.00 ppm | 1.04 ppm |
| Tert Amyl Methyl Ether | 994-05-8 | 1.00 ppm | 0.99 ppm |
| Dibromomethane | 74-95-3 | 1.00 ppm | 1.01 ppm |
| Methyl Methacrylate | 80-62-6 | 1.00 ppm | 0.97 ppm |
| 1,3-Dichloropropane | 142-28-9 | 1.00 ppm | 1.02 ppm |
| n-Butyl Acetate | 123-86-4 | 1.00 ppm | 1.05 ppm |
| n-Octane | 111-65-9 | 1.00 ppm | 1.00 ppm |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1.00 ppm | 0.98 ppm |
| 1,2,3-Trichloropropane | 96-18-4 | 1.00 ppm | 0.98 ppm |
| Nonane | 111-84-2 | 1.00 ppm | 0.99 ppm |
| Isopropylbenzene | 98-82-8 | 1.00 ppm | 1.01 ppm |
| Bromobenzene | 108-86-1 | 1.00 ppm | 0.94 ppm |
| 2-Chlorotoluene | 95-49-8 | 1.00 ppm | 1.01 ppm |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 113561616 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3030220 | **Cylinder # :** | CC-270519 |
| **Certification Date:** | Jan-16-2016 | **Cylinder Pressure:** | 1600 psig |
| **P.O.# :** | R10079 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 3200 Liters |
| **Expiration Date:** | Jan-16-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| n-Propylbenzene | 103-65-1 | 1.00 ppm | 0.98 ppm |
| 4-Chlorotoluene | 106-43-4 | 1.00 ppm | 0.98 ppm |
| Tert-Butyl Benzene | 98-06-6 | 1.00 ppm | 0.98 ppm |
| n-Decane | 124-18-5 | 1.00 ppm | 0.98 ppm |
| Sec-Butyl Benzene | 135-98-8 | 1.00 ppm | 0.97 ppm |
| p-Cymene | 99-87-6 | 1.00 ppm | 0.97 ppm |
| n-Butyl Benzene | 104-51-8 | 1.00 ppm | 1.03 ppm |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.00 ppm | 0.95 ppm |
| n-Undecane | 1120-21-4 | 1.00 ppm | 0.94 ppm |
| Naphthalene (No Stability Guarantee) | 91-20-3 | 1.00 ppm | 1.03 ppm |
| n-Dodecane | 112-40-3 | 1.00 ppm | 0.92 ppm |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1.00 ppm | 1.11 ppm |
| Nitrogen | 7727-37-9 | Balance | Balance |

**ANALYST:** Lou Lorenzetti

**DATE:** Jan-16-2016

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 113561616 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3030220 | **Cylinder # :** | CC-318022 |
| **Certification Date:** | Jan-16-2016 | **Cylinder Pressure:** | 1700 psig |
| **P.O.# :** | R10079 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 3400 Liters |
| **Expiration Date:** | Jan-16-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| Freon-12 | 75-71-8 | 1.00 ppm | 1.01 ppm |
| Chloromethane | 74-87-3 | 1.00 ppm | 1.04 ppm |
| Freon-114 | 76-14-2 | 1.00 ppm | 0.99 ppm |
| Vinyl Chloride | 75-01-4 | 1.00 ppm | 1.03 ppm |
| Bromomethane | 74-83-9 | 1.00 ppm | 1.02 ppm |
| Chloroethane | 75-00-3 | 1.00 ppm | 1.02 ppm |
| Freon-11 | 75-69-4 | 1.00 ppm | 1.02 ppm |
| 1,1-Dichloroethene (No Stability Guarantee) | 75-35-4 | 1.00 ppm | 1.15 ppm |
| Methylene Chloride | 75-09-2 | 1.00 ppm | 0.99 ppm |
| Freon-113 | 76-13-1 | 1.00 ppm | 1.00 ppm |
| 1,1-Dichloroethane | 75-34-3 | 1.00 ppm | 0.98 ppm |
| Cis-1,2-Dichloroethylene | 156-59-2 | 1.00 ppm | 1.03 ppm |
| Chloroform | 67-66-3 | 1.00 ppm | 1.02 ppm |
| 1,2-Dichloroethane | 107-06-2 | 1.00 ppm | 0.99 ppm |
| 1,1,1-Trichloroethane (No Stability Guarantee) | 71-55-6 | 1.00 ppm | 0.86 ppm |
| Benzene | 71-43-2 | 1.00 ppm | 1.01 ppm |
| Carbon Tetrachloride | 56-23-5 | 1.00 ppm | 0.99 ppm |
| 1,2-Dichloropropane | 78-87-5 | 1.00 ppm | 1.01 ppm |
| Trichloroethylene | 79-01-6 | 1.00 ppm | 1.05 ppm |
| Cis-1,3-Dichloropropene | 10061-01-5 | 1.00 ppm | 1.00 ppm |
| Trans-1,3-Dichloropropene (No Stability Guarantee) | 624-64-6 | 1.00 ppm | 0.78 ppm |
| 1,1,2-Trichloroethane | 79-00-5 | 1.00 ppm | 1.04 ppm |
| Toluene | 108-88-3 | 1.00 ppm | 1.01 ppm |
| 1,2-Dibromoethane | 106-93-4 | 1.00 ppm | 1.03 ppm |
| Tetrachloroethylene | 127-18-4 | 1.00 ppm | 1.01 ppm |
| Chlorobenzene | 108-90-7 | 1.00 ppm | 1.02 ppm |
| Ethylbenzene | 100-41-4 | 1.00 ppm | 1.02 ppm |
| P-Xylene | 106-42-3 | 1.00 ppm | 1.02 ppm |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Sales#:** | 113561616 | **Cylinder Size:** | 152 (8" X 47.5") |
| **Production#:** | 3030220 | **Cylinder # :** | CC-318022 |
| **Certification Date:** | Jan-16-2016 | **Cylinder Pressure:** | 1700 psig |
| **P.O.# :** | R10079 | **Cylinder Valve:** | CGA 350 / Steel |
| **Blend Type:** | CERTIFIED | **Cylinder Volume:** | 29.5 Liter |
| **Material#:** | 14004551 | **Cylinder Material:** | Aluminum |
| **Traceability:** | NIST by weight | **Gas Volume:** | 3400 Liters |
| **Expiration Date:** | Jan-16-2017 | **Blend Tolerance:** | 10% Relative |
| **Do NOT use under:** | 150 psig | **Analytical Accuracy:** | 5% Relative |

| COMPONENT | CAS NUMBER | REQUESTED CONC | CERTIFIED CONC |
|---|---|---|---|
| M-Xylene | 108-38-3 | 1.00 ppm | 1.02 ppm |
| Styrene | 100-42-5 | 1.00 ppm | 1.00 ppm |
| O-Xylene | 95-47-6 | 1.00 ppm | 1.03 ppm |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1.00 ppm | 1.02 ppm |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1.00 ppm | 1.03 ppm |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1.00 ppm | 1.02 ppm |
| 1,3-Dichlorobenzene | 541-73-1 | 1.00 ppm | 1.02 ppm |
| 1,4-Dichlorobenzene | 106-46-7 | 1.00 ppm | 1.03 ppm |
| 1,2-Dichlorobenzene | 95-50-1 | 1.00 ppm | 1.01 ppm |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1.00 ppm | 1.02 ppm |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1.00 ppm | 1.01 ppm |
| Nitrogen | 7727-37-9 | Balance | Balance |

**ANALYST:** Lou Lorenzetti

**DATE:** Jan-16-2016

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**Methodology Summary NJDEP Form A-4**

| | | | |
|---|---|---|---|
| **Laboratory:** | Alpha Analytical | **Project No:** | 117-0507641 |
| **Location:** | FORMER LEC | **SDG No:** | L1700975 |

| Name | Required Methodology | Indicate Method |
|---|---|---|
| Volatile Organics | EPATO-15 | EPATO-15 |

# NJ DEP
# Data of Known Quality Protocols Conformance/Non-Conformance Summary Questionnaire

**NJ DEP Data of Known Quality Protocols**
**Conformance/Non-Conformance**
**Summary Questionnaire**

| | | |
|---|---|---|
| 1 | For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP Data of Known Quality performance standards? | YES |
| 1a | Were the method specified handling, preservation, and holding time requirements met? | YES |
| 1b | EPH Method: Was the EPH Method conducted without significant modifications (see Section 11.3 of respective DKQ methods)? | N/A |
| 2 | Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)? | YES |
| 3 | Were all samples received at an appropriate temperature (4 ± 2° C)? | N/A |
| 4 | Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved? | YES |
| 5a | Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt? | NO |
| 5b | Were these reporting limits met? | N/A |
| 6 | For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP? | NO |
| 7 | Are project-specific matrix spikes and/or laboratory duplicates included in this data set? | NO |

**Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1a or #1b is "No", the data package does not meet the requirements for "Data of Known Quality".**

# Case Narrative Documentation

## Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted.

Results contained within this Data Deliverables Package relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this Data Deliverables Package is organized by parameter (i.e. VOC, SVOC, etc.). Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted.

The performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

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NJDEP Volatile Organics in Air

Canisters were released from the laboratory on January 9, 2017. The canister certification results are provided as an addendum.

**Case Narrative (continued)**

Any Manual integrations that were performed on L1700975 as well as its associated quality control samples and are noted on the individual quantitation reports. A listing of all manual integrations performed and the integration code definitions are provided in manual integration documentation section of the data package.

Please note, dilution analysis due to exceedance of the calibration range is not required for Ethanol or Isopropyl Alcohol.

GC column and trap information utilized for the analysis of this sample delivery group is detailed below:
Column Type: Restek RTX-1
Column Length: 60 Meters
Internal diameter: 0.52 mm
Film thickness: 1.00 um
Trap 1: Entech Cold Trap - no packing material
Trap 2: Entech Tenax - 20 cm packing material

Gaseous calibration standards were utilized for system calibration and quality control standards associated with this sample delivery group. These standards were purchased from Linde (formerly Spectra Gases).

Laboratory standard procedure for QC (i.e. method blanks, LCS) and sample analysis is to withdraw a 250 mL aliquot from the canister as the "1X" analysis. For some calibration levels and samples, subsequent dilutions will be performed as needed by decreasing aliquot volumes via the instrumentation, or performing a dilution using a second canister. Make-up air is not routinely added to canisters prior to sample analysis.

DKQP Related Narratives
In reference to question 6:
At the client's request, all submitted samples were not analyzed for the full DKQP list of constituents identified in the method specific analyte list presented in the DKQP documents.

**Case Narrative (continued)**

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

Authorized Signature: Christopher J Anderson

Title: Technical Director/Representative Date: 01/16/17

Manual Integration Summary

| Sample Type | Lab Id | Analyte | Manual Integration Code |
|---|---|---|---|
| Field Sample | WG969058-2 | propylene | M6 |
| Field Sample | WG969058-2 | ethanol | M6 |
| Field Sample | WG969058-2 | acrylonitrile | M6 |
| Field Sample | WG969058-2 | Tetrahydrofuran | M6 |
| Field Sample | WG969058-2 | 2-hexanone | M6 |
| Field Sample | WG969058-2 | 2-chlorotoluene | M3 |
| Field Sample | WG969058-2 | 1,3-dichlorobenzene | M3 |
| Field Sample | WG969058-3 | propylene | M6 |
| Field Sample | WG969058-3 | ethanol | M4 |
| Field Sample | WG969058-3 | acrylonitrile | M4 |
| Field Sample | WG969058-3 | Tetrahydrofuran | M6 |
| Field Sample | WG969058-3 | 2-chlorotoluene | M3 |
| Field Sample | WG969058-3 | 1,3-dichlorobenzene | M3 |
| Field Sample | WG969058-4 | 4-methyl-2-pentanone | M3 |
| Field Sample | WG969058-4 | 1,3-dichlorobenzene | M3 |
| Field Sample | L1700429-07D | chloromethane | M6 |
| Field Sample | L1700429-07D | 1,3-butadiene | M6 |
| Field Sample | L1700429-07D | Tetrahydrofuran | M6 |
| Field Sample | L1700429-07D | cyclohexane | M6 |
| Field Sample | L1700429-07D | heptane | M6 |
| Field Sample | L1700429-07D | 4-methyl-2-pentanone | M6 |
| Field Sample | L1700429-07D | ethylbenzene | M6 |
| Field Sample | L1700429-07D | o-xylene | M4 |
| Field Sample | L1700429-07D | 4-ethyl toluene | M6 |
| Field Sample | L1700429-07D | 1,2,4-trimethylbenzene | M6 |
| Field Sample | L1700429-13 | chloromethane | M4 |
| Field Sample | L1700429-13 | 1,3-butadiene | M6 |
| Field Sample | L1700429-13 | acetone | M6 |
| Field Sample | L1700429-13 | chloroform | M6 |
| Field Sample | L1700429-13 | Tetrahydrofuran | M6 |
| Field Sample | L1700429-13 | cyclohexane | M6 |
| Field Sample | L1700429-13 | heptane | M6 |
| Field Sample | L1700429-13 | 4-methyl-2-pentanone | M6 |
| Field Sample | L1700429-13 | toluene | M6 |
| Field Sample | L1700429-13 | ethylbenzene | M6 |
| Field Sample | L1700429-13 | m+p-xylene | M4 |
| Field Sample | L1700429-13 | o-xylene | M4 |
| Field Sample | L1700429-13 | 4-ethyl toluene | M6 |
| Field Sample | L1700429-13 | 1,3,5-trimethylbenzene | M4 |
| Field Sample | L1700429-13 | 1,2,4-trimethylbenzene | M6 |
| Field Sample | L1700429-14D | chloromethane | M6 |

| Sample Type | Lab Id | Analyte | Manual Integration Code |
|---|---|---|---|
| Field Sample | L1700429-14D | 1,3-butadiene | M6 |
| Field Sample | L1700429-14D | chloroform | M6 |
| Field Sample | L1700429-14D | cyclohexane | M6 |
| Field Sample | L1700429-14D | heptane | M6 |
| Field Sample | L1700429-14D | 4-methyl-2-pentanone | M6 |
| Field Sample | L1700429-14D | toluene | M6 |
| Field Sample | L1700429-14D | ethylbenzene | M6 |
| Field Sample | L1700429-14D | m+p-xylene | M6 |
| Field Sample | L1700429-14D | o-xylene | M6 |
| Field Sample | L1700429-14D | 4-ethyl toluene | M6 |
| Field Sample | L1700429-14D | 1,2,4-trimethylbenzene | M6 |
| Field Sample | L1700429-15 | 1,3-butadiene | M6 |
| Field Sample | L1700429-15 | ethanol | M3 |
| Field Sample | L1700429-15 | acetone | M6 |
| Field Sample | L1700429-15 | isopropyl alcohol | M4 |
| Field Sample | L1700429-15 | cyclohexane | M6 |
| Field Sample | L1700429-15 | heptane | M6 |
| Field Sample | L1700429-15 | 4-methyl-2-pentanone | M6 |
| Field Sample | L1700429-15 | toluene | M4 |
| Field Sample | L1700429-15 | ethylbenzene | M6 |
| Field Sample | L1700429-15 | m+p-xylene | M6 |
| Field Sample | L1700429-15 | o-xylene | M6 |
| Field Sample | L1700429-15 | 4-ethyl toluene | M6 |
| Field Sample | L1700429-15 | 1,3,5-trimethylbenzene | M4 |
| Field Sample | L1700429-15 | 1,2,4-trimethylbenzene | M6 |
| Field Sample | L1700429-16D | 1,3-butadiene | M6 |
| Field Sample | L1700429-16D | cyclohexane | M6 |
| Field Sample | L1700429-16D | heptane | M6 |
| Field Sample | L1700429-16D | 4-methyl-2-pentanone | M6 |
| Field Sample | L1700429-16D | ethylbenzene | M6 |
| Field Sample | L1700429-16D | m+p-xylene | M4 |
| Field Sample | L1700429-16D | o-xylene | M6 |
| Field Sample | L1700429-16D | 4-ethyl toluene | M6 |
| Field Sample | L1700429-16D | 1,2,4-trimethylbenzene | M6 |
| Field Sample | L1700429-17D | chloromethane | M4 |
| Field Sample | L1700429-17D | 1,3-butadiene | M6 |
| Field Sample | L1700429-17D | ethanol | M3 |
| Field Sample | L1700429-17D | cyclohexane | M6 |
| Field Sample | L1700429-17D | 4-methyl-2-pentanone | M6 |
| Field Sample | L1700429-17D | ethylbenzene | M4 |
| Field Sample | L1700429-17D | m+p-xylene | M6 |
| Field Sample | L1700429-17D | o-xylene | M6 |

| Sample Type | Lab Id | Analyte | Manual Integration Code |
|---|---|---|---|
| Field Sample | L1700429-17D | 4-ethyl toluene | M6 |
| Field Sample | L1700429-18D | chloromethane | M6 |
| Field Sample | L1700429-18D | 1,3-butadiene | M6 |
| Field Sample | L1700429-18D | benzene | M4 |
| Field Sample | L1700429-18D | cyclohexane | M6 |
| Field Sample | L1700429-18D | 4-methyl-2-pentanone | M6 |
| Field Sample | L1700429-18D | m+p-xylene | M6 |
| Field Sample | L1700429-18D | o-xylene | M6 |
| Field Sample | L1700429-18D | 4-ethyl toluene | M3 |

M1 - Split or tailing peak, auto integration stopped early resulting in false low area count.
M2 - Peak not found by automatic integration algorithm.
M3 - Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.
M4 - Poor automated baseline construction.
M5 - Manual integration over a retention time range required, i.e. for hydrocarbon range methods.
M6 - Misassignment of peak valley by automated integration (poor split of 2 peaks).
M7 - A qualifier ion was manually integrated (only for GC/MS data).
M8 - Integration of individual analyte eluting on top of an unresolved complex.
M9 - Other- Explain on chromatogram

# Manual Integration Codes

| Flag | Reason |
|---|---|
| **M1** | Split or tailing peak, auto integration stopped early resulting in false low area count. |
| **M2** | Peak not found by automatic integration algorithm. |
| **M3** | Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split. |
| **M4** | Poor automated baseline construction. |
| **M5** | Manual integration over a retention time range required, i.e. for hydrocarbon range methods. |
| **M6** | Misassignment of peak valley by automated integration (poor split of 2 peaks). |
| **M7** | A qualifier ion was manually integrated (only for GC/MS data). |
| **M8** | Integration of individual analyte eluting on top of an unresolved complex. |
| **M9** | Other- Explain on chromatogram |

Project: 117-0507641
Field ID Number: CR011117-SS-B6
Laboratory ID Number: L1700975-01

TARGET ANALYTES
AIR RESULTS

Sampling Date: 01/11/17
Analysis Date: 01/12/17

| Chemical | CAS Number | Molecular Weight | Lab Results | Q | Corrected Results | Retention Time NT Only | QAS Decision | Foot-notes |
|---|---|---|---|---|---|---|---|---|
| **NJDEP TO-15** | | | **ppbv** | | **ug/m3** | | | |
| Vinyl chloride | 75-01-4 | 62.5 | 0.20 | U | 0.5 | | | |
| trans-1,2-Dichloroethene | 156-60-5 | 96.9 | 0.20 | U | 0.8 | | | |
| cis-1,2-Dichloroethene | 156-59-2 | 96.9 | 0.20 | U | 0.8 | | | |
| Trichloroethene | 79-01-6 | 131.4 | 3.5 | | 19 | | | |

Laboratory Name: Alpha Analytical
Laboratory City: Mansfield, Ma

Project: 117-0507641
Field ID Number: DUP011117-VI
Laboratory ID Number: L1700975-02

TARGET ANALYTES
AIR RESULTS

Sampling Date: 01/11/17
Analysis Date: 01/12/17

| Chemical | CAS Number | Molecular Weight | Lab Results | Q | Corrected Results | Retention Time NT Only | QAS Decision | Foot-notes |
|---|---|---|---|---|---|---|---|---|
| **NJDEP TO-15** | | | **ppbv** | | **ug/m3** | | | |
| Vinyl chloride | 75-01-4 | 62.5 | 0.20 | U | 0.5 | | | |
| trans-1,2-Dichloroethene | 156-60-5 | 96.9 | 0.20 | U | 0.8 | | | |
| cis-1,2-Dichloroethene | 156-59-2 | 96.9 | 0.20 | U | 0.8 | | | |
| Trichloroethene | 79-01-6 | 131.4 | 3.7 | | 20 | | | |

Laboratory Name: Alpha Analytical
Laboratory City: Mansfield, Ma

TARGET ANALYTES
AIR RESULTS



| Chemical | CAS Number | Molecular Weight | Lab Results | Q | Corrected Results | Retention Time NT Only | QAS Decision | Foot-notes |
|---|---|---|---|---|---|---|---|---|
| **NJDEP TO-15** | | | **ppbv** | | **ug/m3** | | | |
| Vinyl chloride | 75-01-4 | 62.5 | 0.20 | U | 0.5 | | | |
| trans-1,2-Dichloroethene | 156-60-5 | 96.9 | 0.20 | U | 0.8 | | | |
| cis-1,2-Dichloroethene | 156-59-2 | 96.9 | 0.20 | U | 0.8 | | | |
| Trichloroethene | 79-01-6 | 131.4 | 0.20 | U | 1 | | | |
| **Volatile Tentatively Identified Compounds** | | | | | | | | |
| No Tentatively Identified Compounds | NONE | | | U | | | | |

## DATA QUALIFIERS

| CODE | DESCRIPTION |
|---|---|
| A | Spectra identified as "Aldol Condensation Product". |
| B | The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone). |
| C | Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses. |
| D | Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte. |
| DL | Sample was re-analyzed at a dilution. Qualifier applied to sample number. |
| E | Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument. |
| G | The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated. |
| H | The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection. |
| I | The lower value for the two columns has been reported due to obvious interference. |
| J | Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs). |
| M | Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte. |
| ND | Not detected at the reporting limit (RL) for the sample. |
| NJ | Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search. |
| P | The RPD between the results for the two columns exceeds the method-specified criteria. |
| Q | The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.) |
| R | Analytical results are from sample re-analysis. |
| RE | Analytical results are from sample re-extraction. |

v.091814

# Method Detection Limit Studies

# Approved

## Determination of Method Detection Limits

Alpha Analytical Inc.
Mansfield, MA

| | |
|---|---|
| Page 1 of 4 | |
| Analyst: | AR |
| Date: | 4/6, 4/19, 4/23/2012 |
| Instrument ID: | Airlab 11 |
| Column ID: | RTX-1 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

**Method: EPA TO-15** **2012**

GC/MS Volatile Organic Compounds Air

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | T value used for calculating MDL: 3.143 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 1 | acetone | 0.50 | 0.661 | 0.643 | 0.602 | 0.658 | 0.518 | 0.645 | 0.579 | 0.615 | 123% | 0.0525 | 0.1649 | 1.0 | |
| 2 | methylene chloride | 0.50 | 0.646 | 0.633 | 0.598 | 0.638 | 0.380 | 0.843 | 0.581 | 0.588 | 118% | 0.0952 | 0.2991 | 1.0 | |
| 3 | 1,1-dichloropropene | 0.10 | 0.095 | 0.094 | 0.102 | 0.100 | 0.094 | 0.094 | 0.099 | 0.097 | 97% | 0.0034 | 0.0106 | 0.20 | |
| 4 | benzene | 0.10 | 0.115 | 0.107 | 0.112 | 0.108 | 0.112 | 0.114 | 0.107 | 0.111 | 111% | 0.0034 | 0.0105 | 0.20 | |
| 5 | cyclohexane | 0.10 | 0.108 | 0.107 | 0.109 | 0.096 | 0.109 | 0.096 | 0.099 | 0.103 | 103% | 0.0061 | 0.0193 | 0.20 | |
| 6 | tert-amyl methyl ether | 0.10 | 0.104 | 0.106 | 0.103 | 0.100 | 0.094 | 0.099 | 0.104 | 0.101 | 101% | 0.0041 | 0.0128 | 0.20 | |
| 7 | 1,2-dichloropropane | 0.10 | 0.106 | 0.113 | 0.111 | 0.112 | 0.111 | 0.099 | 0.104 | 0.108 | 108% | 0.0052 | 0.0162 | 0.20 | |
| 8 | heptane | 0.10 | 0.102 | 0.107 | 0.105 | 0.100 | 0.097 | 0.100 | 0.108 | 0.103 | 103% | 0.0041 | 0.0128 | 0.20 | |
| 9 | 2,4,4-trimethyl-1-pentene | 0.10 | 0.109 | 0.108 | 0.106 | 0.101 | 0.101 | 0.100 | 0.108 | 0.105 | 105% | 0.0039 | 0.0123 | 0.50 | |
| 10 | cis-1,3-dichloropropene | 0.10 | 0.096 | 0.095 | 0.096 | 0.092 | 0.090 | 0.099 | 0.089 | 0.094 | 94% | 0.0036 | 0.0114 | 0.20 | |
| 11 | 2,4,4-trimethyl-2-pentene | 0.10 | 0.104 | 0.094 | 0.102 | 0.101 | 0.100 | 0.105 | 0.103 | 0.101 | 101% | 0.0036 | 0.0114 | 0.50 | |
| 12 | trans-1,3-dichloropropene | 0.10 | 0.093 | 0.086 | 0.093 | 0.086 | 0.086 | 0.094 | 0.082 | 0.089 | 89% | 0.0047 | 0.0147 | 0.20 | |
| 13 | toluene | 0.10 | 0.133 | 0.127 | 0.122 | 0.130 | 0.131 | 0.131 | 0.124 | 0.128 | 128% | 0.0041 | 0.0128 | 0.20 | |
| 14 | 2-methylthiophene | 0.10 | 0.108 | 0.099 | 0.104 | 0.107 | 0.098 | 0.095 | 0.097 | 0.101 | 101% | 0.0047 | 0.0149 | 0.20 | |
| 15 | 2-hexanone | 0.10 | 0.098 | 0.090 | 0.085 | 0.089 | 0.090 | 0.087 | 0.085 | 0.089 | 89% | 0.0045 | 0.0140 | 0.20 | |
| 16 | octane | 0.10 | 0.089 | 0.099 | 0.088 | 0.103 | 0.102 | 0.098 | 0.089 | 0.095 | 95% | 0.0066 | 0.0206 | 0.20 | |
| 17 | 1,1,1,2-tetrachloroethane | 0.10 | 0.093 | 0.095 | 0.089 | 0.099 | 0.091 | 0.088 | 0.090 | 0.082 | 92% | 0.0038 | 0.0121 | 0.20 | |
| 18 | chlorobenzene | 0.10 | 0.108 | 0.111 | 0.109 | 0.106 | 0.108 | 0.107 | 0.096 | 0.106 | 108% | 0.0049 | 0.0153 | 0.20 | |
| 19 | 2-ethylthiophene | 0.10 | 0.100 | 0.097 | 0.092 | 0.094 | 0.101 | 0.087 | 0.093 | 0.095 | 95% | 0.0049 | 0.0153 | 0.20 | |
| 20 | 1,2,3-trichloropropane | 0.10 | 0.106 | 0.104 | 0.098 | 0.110 | 0.108 | 0.107 | 0.113 | 0.107 | 107% | 0.0048 | 0.0149 | 0.20 | |
| 21 | nonane | 0.10 | 0.116 | 0.115 | 0.109 | 0.118 | 0.121 | 0.121 | 0.121 | 0.117 | 117% | 0.0044 | 0.0139 | 0.20 | |
| 22 | isopropylbenzene | 0.10 | 0.084 | 0.093 | 0.106 | 0.085 | 0.098 | 0.106 | 0.105 | 0.097 | 97% | 0.0098 | 0.0302 | 0.20 | |
| 23 | 2-chlorotoluene | 0.10 | 0.074 | 0.096 | 0.100 | 0.100 | 0.093 | 0.093 | 0.096 | 0.093 | 93% | 0.0089 | 0.0280 | 0.20 | |
| 24 | n-propylbenzene | 0.10 | 0.071 | 0.096 | 0.097 | 0.097 | 0.093 | 0.097 | 0.098 | 0.093 | 93% | 0.0097 | 0.0305 | 0.20 | |
| 25 | decane | 0.10 | 0.106 | 0.097 | 0.103 | 0.097 | 0.099 | 0.098 | 0.098 | 0.100 | 100% | 0.0035 | 0.0108 | 0.20 | |
| 26 | 1,3-dichlorobenzene | 0.10 | 0.105 | 0.091 | 0.096 | 0.098 | 0.095 | 0.092 | 0.095 | 0.098 | 96% | 0.0046 | 0.0145 | 0.20 | |
| 27 | 1,4-dichlorobenzene | 0.10 | 0.102 | 0.091 | 0.098 | 0.095 | 0.091 | 0.090 | 0.090 | 0.094 | 94% | 0.0047 | 0.0147 | 0.20 | |
| 28 | n-butylbenzene | 0.10 | 0.102 | 0.091 | 0.091 | 0.089 | 0.091 | 0.087 | 0.088 | 0.091 | 91% | 0.0050 | 0.0157 | 0.20 | |
| 29 | indan | 0.10 | 0.098 | 0.090 | 0.094 | 0.095 | 0.086 | 0.091 | 0.089 | 0.092 | 92% | 0.0036 | 0.0113 | 0.20 | |
| 30 | indene | 0.10 | 0.093 | 0.088 | 0.088 | 0.086 | 0.089 | 0.083 | 0.083 | 0.087 | 87% | 0.0035 | 0.0111 | 0.20 | |
| 31 | 1,2-dibromo-3-chloropropane | 0.10 | 0.088 | 0.073 | 0.070 | 0.077 | 0.073 | 0.075 | 0.074 | 0.076 | 76% | 0.0058 | 0.0183 | 0.20 | |
| 32 | dodecane | 0.10 | 0.088 | 0.073 | 0.074 | 0.077 | 0.076 | 0.071 | 0.071 | 0.076 | 76% | 0.0059 | 0.0185 | 0.20 | |

Comments: _____

Form No.: 08-66 3/30/2009



Technical Director: _____ Date Effective: 4-27-12

# Determination of Method Detection Limits

Alpha Analytical Inc.
Mansfield, MA

| | |
|---|---|
| Page 2 of 4 | |
| Analyst: | AR |
| Date: | 4/6, 4/19, 4/23/2012 |
| Instrument ID: | Airlab 11 |
| Column ID: | RTX-1 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2012

GC/MS Volatile Organic Compounds Air

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | | T value used for calculating MDL: 3.143 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 33 | propane | 0.20 | 0.278 | 0.317 | 0.308 | 0.306 | 0.324 | 0.316 | 0.287 | 0.305 | 153% | 0.0168 | 0.0527 | 0.20 | |
| 34 | isopropyl alcohol | 0.20 | 0.313 | 0.353 | 0.350 | 0.343 | 0.316 | 0.351 | 0.340 | 0.336 | 169% | 0.0167 | 0.0525 | 0.50 | |
| 35 | acrylonitrile | 0.20 | 0.243 | 0.276 | 0.247 | 0.243 | 0.227 | 0.260 | 0.248 | 0.249 | 125% | 0.0153 | 0.0482 | 0.20 | |
| 36 | tertiary butyl alcohol | 0.20 | 0.230 | 0.264 | 0.257 | 0.242 | 0.223 | 0.257 | 0.251 | 0.248 | 123% | 0.0152 | 0.0479 | 0.20 | |
| 37 | 2-butanone | 0.20 | 0.298 | 0.337 | 0.320 | 0.319 | 0.294 | 0.324 | 0.320 | 0.316 | 158% | 0.0150 | 0.0472 | 0.20 | |
| 38 | Tetrahydrofuran | 0.20 | 0.241 | 0.239 | 0.227 | 0.252 | 0.242 | 0.267 | 0.284 | 0.250 | 125% | 0.0193 | 0.0606 | 0.20 | |
| 39 | diisopropyl ether | 0.20 | 0.243 | 0.252 | 0.236 | 0.249 | 0.244 | 0.230 | 0.231 | 0.241 | 120% | 0.0086 | 0.0270 | 0.20 | |
| 40 | m+p-xylene | 0.40 | 0.455 | 0.445 | 0.440 | 0.432 | 0.420 | 0.434 | 0.436 | 0.437 | 109% | 0.0110 | 0.0344 | 0.40 | |
| 41 | 4-chlorotoluene | 0.20 | 0.219 | 0.210 | 0.221 | 0.162 | 0.207 | 0.208 | 0.188 | 0.202 | 101% | 0.0207 | 0.0651 | 0.20 | |

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 08 | T value used for calculating MDL: 2.998 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 42 | chlorodifluoromethane | 0.20 | 0.240 | 0.275 | 0.275 | 0.277 | 0.254 | 0.232 | 0.265 | 0.263 | 0.260 | 130% | 0.0169 | 0.0508 | 0.20 | |
| 43 | propylene | 0.20 | 0.274 | 0.283 | 0.318 | 0.248 | 0.314 | 0.254 | 0.306 | 0.293 | 0.286 | 143% | 0.0268 | 0.0804 | 0.50 | |
| 44 | dichlorodifluoromethane | 0.20 | 0.247 | 0.225 | 0.249 | 0.225 | 0.212 | 0.238 | 0.214 | 0.214 | 0.228 | 114% | 0.0150 | 0.0449 | 0.20 | |
| 45 | chloromethane | 0.20 | 0.246 | 0.279 | 0.278 | 0.254 | 0.258 | 0.243 | 0.257 | 0.256 | 0.259 | 129% | 0.0128 | 0.0385 | 0.20 | |
| 46 | Freon-114 | 0.20 | 0.247 | 0.267 | 0.260 | 0.273 | 0.268 | 0.231 | 0.269 | 0.259 | 0.259 | 130% | 0.0140 | 0.0419 | 0.20 | |
| 47 | methanol | 1.00 | 1.537 | 1.837 | 1.742 | 1.797 | 1.744 | 1.616 | 1.770 | 1.795 | 1.730 | 173% | 0.1017 | 0.3048 | 5.0 | |
| 48 | vinyl chloride | 0.20 | 0.222 | 0.247 | 0.246 | 0.264 | 0.237 | 0.231 | 0.240 | 0.234 | 0.240 | 120% | 0.0126 | 0.0378 | 0.20 | |
| 49 | 1,3-butadiene | 0.20 | 0.237 | 0.264 | 0.251 | 0.237 | 0.227 | 0.209 | 0.239 | 0.247 | 0.239 | 119% | 0.0164 | 0.0492 | 0.20 | |
| 50 | butane | 0.20 | 0.258 | 0.281 | 0.271 | 0.289 | 0.280 | 0.244 | 0.282 | 0.275 | 0.273 | 136% | 0.0147 | 0.0442 | 0.20 | |
| 51 | acetaldehyde | 1.00 | 1.606 | 1.833 | 1.715 | 1.858 | 1.696 | 1.515 | 1.770 | 1.813 | 1.726 | 173% | 0.1184 | 0.3551 | 2.5 | |
| 52 | bromomethane | 0.20 | 0.245 | 0.254 | 0.253 | 0.254 | 0.252 | 0.222 | 0.256 | 0.247 | 0.248 | 124% | 0.0111 | 0.0333 | 0.20 | |
| 53 | chloroethane | 0.20 | 0.223 | 0.252 | 0.251 | 0.231 | 0.252 | 0.204 | 0.232 | 0.256 | 0.238 | 119% | 0.0183 | 0.0549 | 0.20 | |
| 54 | ethanol | 1.00 | 1.276 | 1.358 | 1.363 | 1.405 | 1.360 | 1.259 | 1.360 | 1.372 | 1.344 | 134% | 0.0499 | 0.1496 | 1.0 | |
| 56 | dichlorofluoromethane | 0.20 | 0.250 | 0.268 | 0.271 | 0.261 | 0.270 | 0.233 | 0.262 | 0.262 | 0.260 | 130% | 0.0127 | 0.0380 | 0.20 | |
| 56 | vinyl bromide | 0.20 | 0.215 | 0.246 | 0.243 | 0.261 | 0.243 | 0.218 | 0.239 | 0.243 | 0.239 | 119% | 0.0151 | 0.0453 | 0.20 | |
| 57 | acrolein | 0.20 | 0.236 | 0.260 | 0.235 | 0.248 | 0.251 | 0.211 | 0.242 | 0.225 | 0.239 | 119% | 0.0155 | 0.0484 | 0.50 | |
| 58 | acetonitrile | 0.20 | 0.249 | 0.286 | 0.263 | 0.286 | 0.269 | 0.231 | 0.280 | 0.273 | 0.267 | 134% | 0.0194 | 0.0583 | 0.20 | |
| 59 | trichlorofluoromethane | 0.20 | 0.246 | 0.260 | 0.261 | 0.258 | 0.266 | 0.226 | 0.266 | 0.266 | 0.256 | 128% | 0.0139 | 0.0416 | 0.20 | |
| 60 | pentane | 0.20 | 0.255 | 0.286 | 0.274 | 0.287 | 0.276 | 0.242 | 0.280 | 0.274 | 0.272 | 136% | 0.0158 | 0.0475 | 0.20 | |
| 61 | ethyl ether | 0.20 | 0.259 | 0.246 | 0.249 | 0.275 | 0.251 | 0.214 | 0.242 | 0.259 | 0.249 | 125% | 0.0176 | 0.0527 | 0.20 | |
| 62 | 1,1-dichloroethene | 0.20 | 0.250 | 0.260 | 0.252 | 0.249 | 0.252 | 0.226 | 0.267 | 0.258 | 0.252 | 126% | 0.0120 | 0.0361 | 0.20 | |
| 63 | 3-chloropropene | 0.20 | 0.277 | 0.317 | 0.313 | 0.322 | 0.318 | 0.282 | 0.297 | 0.285 | 0.301 | 151% | 0.0183 | 0.0548 | 0.20 | |
| 64 | carbon disulfide | 0.20 | 0.248 | 0.264 | 0.261 | 0.256 | 0.257 | 0.227 | 0.257 | 0.253 | 0.253 | 126% | 0.0115 | 0.0345 | 0.20 | |

Comments: _____



Technical Director: AR Date Effective: 4-23-12

# Determination of Method Detection Limits

Alpha Analytical Inc.
Mansfield, MA

| | |
|---|---|
| Page 3 of 4 | |
| Analyst: | AR |
| Date: | 4/6, 4/19, 4/23/2012 |
| Instrument ID: | Airlab 11 |
| Column ID: | RTX-1 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2012

GC/MS Volatile Organic Compounds Air

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 08 | T value used for calculating MDL: 2.988 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 65 | Freon 113 | 0.20 | 0.252 | 0.289 | 0.263 | 0.270 | 0.263 | 0.233 | 0.258 | 0.264 | 0.259 | 130% | 0.0120 | 0.0359 | 0.20 | |
| 66 | trans-1,2-dichloroethene | 0.20 | 0.233 | 0.261 | 0.255 | 0.237 | 0.250 | 0.222 | 0.247 | 0.245 | 0.244 | 122% | 0.0126 | 0.0377 | 0.20 | |
| 67 | 1,1-dichloroethane | 0.20 | 0.241 | 0.262 | 0.259 | 0.249 | 0.255 | 0.234 | 0.268 | 0.271 | 0.255 | 127% | 0.0129 | 0.0386 | 0.20 | |
| 68 | MTBE | 0.20 | 0.241 | 0.265 | 0.257 | 0.247 | 0.257 | 0.229 | 0.256 | 0.249 | 0.250 | 125% | 0.0113 | 0.0338 | 0.20 | |
| 69 | vinyl acetate | 0.20 | 0.256 | 0.298 | 0.266 | 0.274 | 0.261 | 0.238 | 0.278 | 0.261 | 0.274 | 137% | 0.0189 | 0.0567 | 0.20 | |
| 70 | cis-1,2-dichloroethene | 0.20 | 0.229 | 0.257 | 0.254 | 0.258 | 0.242 | 0.215 | 0.242 | 0.239 | 0.242 | 121% | 0.0148 | 0.0444 | 0.20 | |
| 71 | Ethyl Acetate | 0.20 | 0.263 | 0.222 | 0.258 | 0.249 | 0.170 | 0.234 | 0.283 | 0.300 | 0.247 | 124% | 0.0400 | 0.1200 | 0.50 | |
| 72 | chloroform | 0.20 | 0.250 | 0.272 | 0.254 | 0.264 | 0.269 | 0.224 | 0.259 | 0.262 | 0.257 | 128% | 0.0151 | 0.0452 | 0.20 | |
| 73 | 2,2-dichloropropane | 0.20 | 0.236 | 0.266 | 0.258 | 0.255 | 0.254 | 0.217 | 0.242 | 0.249 | 0.247 | 124% | 0.0153 | 0.0460 | 0.20 | |
| 74 | 1,2-dichloroethane | 0.20 | 0.247 | 0.276 | 0.269 | 0.253 | 0.259 | 0.222 | 0.260 | 0.259 | 0.256 | 128% | 0.0162 | 0.0487 | 0.20 | |
| 75 | hexane | 0.20 | 0.226 | 0.202 | 0.212 | 0.206 | 0.212 | 0.224 | 0.213 | 0.210 | 0.213 | 107% | 0.0082 | 0.0246 | 0.20 | |
| 76 | dibromomethane | 0.20 | 0.231 | 0.223 | 0.217 | 0.205 | 0.224 | 0.220 | 0.227 | 0.230 | 0.222 | 111% | 0.0084 | 0.0252 | 0.20 | |
| 77 | 1,4-dioxane | 0.20 | 0.188 | 0.213 | 0.195 | 0.204 | 0.196 | 0.166 | 0.185 | 0.174 | 0.190 | 95% | 0.0153 | 0.0460 | 0.20 | |
| 78 | trichloroethene | 0.20 | 0.228 | 0.218 | 0.225 | 0.219 | 0.215 | 0.220 | 0.220 | 0.201 | 0.218 | 109% | 0.0081 | 0.0242 | 0.20 | |
| 79 | 1,1,2-trichloroethane | 0.20 | 0.203 | 0.210 | 0.203 | 0.208 | 0.210 | 0.215 | 0.220 | 0.228 | 0.212 | 106% | 0.0086 | 0.0257 | 0.20 | |
| 80 | 3-methylthiophene | 0.20 | 0.182 | 0.234 | 0.228 | 0.220 | 0.223 | 0.171 | 0.213 | 0.219 | 0.211 | 106% | 0.0223 | 0.0669 | 0.20 | |
| 81 | 1,2-dibromoethane | 0.20 | 0.225 | 0.223 | 0.218 | 0.211 | 0.205 | 0.212 | 0.214 | 0.211 | 0.215 | 107% | 0.0067 | 0.0201 | 0.20 | |
| 82 | butyl acetate | 0.20 | 0.193 | 0.199 | 0.202 | 0.185 | 0.092 | 0.184 | 0.197 | 0.213 | 0.183 | 92% | 0.0380 | 0.1139 | 0.50 | |
| 83 | bromoform | 0.20 | 0.170 | 0.167 | 0.159 | 0.166 | 0.161 | 0.149 | 0.156 | 0.156 | 0.159 | 80% | 0.0067 | 0.0201 | 0.20 | |
| 84 | styrene | 0.20 | 0.210 | 0.208 | 0.207 | 0.198 | 0.197 | 0.190 | 0.204 | 0.201 | 0.202 | 101% | 0.0067 | 0.0201 | 0.20 | |
| 85 | o-xylene | 0.20 | 0.234 | 0.221 | 0.236 | 0.219 | 0.221 | 0.227 | 0.217 | 0.222 | 0.225 | 112% | 0.0070 | 0.0211 | 0.20 | |
| 86 | bromobenzene | 0.20 | 0.183 | 0.165 | 0.163 | 0.153 | 0.159 | 0.155 | 0.156 | 0.154 | 0.161 | 81% | 0.0099 | 0.0296 | 0.20 | |
| 87 | 4-ethyl toluene | 0.20 | 0.219 | 0.213 | 0.213 | 0.201 | 0.204 | 0.203 | 0.202 | 0.157 | 0.202 | 101% | 0.0191 | 0.0573 | 0.20 | |
| 88 | 1,3,5-trimethylbenzene | 0.20 | 0.220 | 0.214 | 0.208 | 0.207 | 0.205 | 0.206 | 0.209 | 0.186 | 0.207 | 103% | 0.0098 | 0.0293 | 0.20 | |
| 89 | 1,2,4-trimethylbenzene | 0.20 | 0.230 | 0.225 | 0.222 | 0.213 | 0.215 | 0.217 | 0.214 | 0.210 | 0.218 | 109% | 0.0068 | 0.0204 | 0.20 | |
| 90 | Benzyl Chloride | 0.20 | 0.185 | 0.167 | 0.163 | 0.159 | 0.155 | 0.149 | 0.151 | 0.150 | 0.157 | 79% | 0.0071 | 0.0214 | 0.20 | |
| 91 | 1,2,4,5-tetramethylbenzene | 0.20 | 0.194 | 0.194 | 0.187 | 0.181 | 0.182 | 0.177 | 0.178 | 0.180 | 0.184 | 92% | 0.0068 | 0.0204 | 0.20 | |
| 92 | 1,2,4-trichlorobenzene | 0.20 | 0.178 | 0.189 | 0.169 | 0.169 | 0.176 | 0.160 | 0.169 | 0.167 | 0.172 | 86% | 0.0088 | 0.0263 | 0.20 | |
| 93 | naphthalene | 0.20 | 0.190 | 0.185 | 0.179 | 0.170 | 0.161 | 0.162 | 0.164 | 0.166 | 0.172 | 86% | 0.0111 | 0.0334 | 0.20 | |
| 94 | 1,2,3-trichlorobenzene | 0.20 | 0.200 | 0.182 | 0.177 | 0.172 | 0.178 | 0.162 | 0.164 | 0.169 | 0.176 | 88% | 0.0121 | 0.0382 | 0.20 | |
| 95 | benzothiophene | 0.20 | 0.211 | 0.224 | 0.211 | 0.213 | 0.204 | 0.183 | 0.208 | 0.188 | 0.205 | 103% | 0.0139 | 0.0417 | 0.50 | |
| 96 | hexachlorobutadiene | 0.20 | 0.228 | 0.214 | 0.216 | 0.191 | 0.195 | 0.196 | 0.194 | 0.194 | 0.204 | 102% | 0.0137 | 0.0409 | 0.20 | |
| 97 | 2-methylnaphthalene | 0.20 | 0.118 | 0.119 | 0.115 | 0.123 | 0.102 | 0.106 | 0.099 | 0.110 | 0.112 | 56% | 0.0086 | 0.0259 | 1.0 | |
| 98 | 1-methylnaphthalene | 0.20 | 0.166 | 0.173 | 0.156 | 0.155 | 0.146 | 0.137 | 0.136 | 0.142 | 0.151 | 76% | 0.0135 | 0.0405 | 1.0 | |
| | | | | | | | | | | | | | | | | |
| 1 | 1,2-dichloroethane-D4 | 10.00 | 9.690 | 9.756 | 9.650 | 9.565 | 9.631 | 9.467 | 9.467 | 9.529 | 9.59 | 96% | | | | |
| 2 | toluene-D8 | 10.00 | 9.693 | 9.574 | 9.622 | 9.394 | 9.434 | 9.338 | 9.355 | 9.297 | 9.46 | 95% | | | | |
| 3 | bromofluorobenzene | 10.00 | 8.069 | 7.956 | 7.862 | 7.854 | 7.824 | 7.750 | 7.802 | 7.650 | 7.85 | 78% | | | | |

Comments: _____

Form No.: 08-66 3/30/2009



Technical Director: R Date Effective: 4-23-12

# Determination of Method Detection Limits

**Alpha Analytical Inc.**
**Mansfield, MA**

| | |
|---|---|
| Page 4 of 4 | |
| Analyst: | AR |
| Date: | 4/6, 4/19, 4/23/2012 |
| Instrument ID: | Airlab 11 |
| Column ID: | RTX-1 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2012

**GC/MS** **Volatile Organic Compounds** **Air**

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 08 | MDL 09 | MDL 10 | T value used for calculating | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/19/2012 | 4/19/2012 | 4/19/2012 | MDL: 2.821 | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 99 | tert-butyl ethyl ether | 0.10 | 0.099 | 0.101 | 0.099 | 0.102 | 0.098 | 0.100 | 0.098 | 0.089 | 0.091 | 0.087 | 0.096 | 96% | 0.0053 | 0.0151 | 0.20 | |
| 100 | thiophene | 0.10 | 0.095 | 0.100 | 0.093 | 0.098 | 0.096 | 0.098 | 0.097 | 0.083 | 0.087 | 0.085 | 0.093 | 93% | 0.0080 | 0.0170 | 0.20 | |
| 101 | carbon tetrachloride | 0.10 | 0.098 | 0.092 | 0.094 | 0.098 | 0.091 | 0.093 | 0.092 | 0.083 | 0.083 | 0.008 | 0.091 | 91% | 0.0050 | 0.0141 | 0.20 | |
| 102 | bromodichloromethane | 0.10 | 0.091 | 0.099 | 0.093 | 0.092 | 0.098 | 0.094 | 0.095 | 0.095 | 0.086 | 0.090 | 0.093 | 93% | 0.0036 | 0.0102 | 0.20 | |
| 103 | 2,2,4-trimethylpentane | 0.10 | 0.108 | 0.104 | 0.108 | 0.104 | 0.108 | 0.109 | 0.103 | 0.091 | 0.091 | 0.093 | 0.102 | 102% | 0.0072 | 0.0203 | 0.20 | |
| 104 | 4-methyl-2-pentanone | 0.10 | 0.103 | 0.107 | 0.100 | 0.107 | 0.104 | 0.101 | 0.101 | 0.075 | 0.084 | 0.078 | 0.096 | 96% | 0.0122 | 0.0343 | 0.20 | |
| 105 | 1,3-dichloropropane | 0.10 | 0.109 | 0.103 | 0.100 | 0.105 | 0.104 | 0.104 | 0.101 | 0.108 | 0.095 | 0.107 | 0.104 | 104% | 0.0042 | 0.0118 | 0.20 | |
| 106 | dibromochloromethane | 0.10 | 0.088 | 0.082 | 0.086 | 0.081 | 0.082 | 0.086 | 0.081 | 0.090 | 0.090 | 0.085 | 0.085 | 85% | 0.0035 | 0.0099 | 0.20 | |
| 107 | tetrachloroethene | 0.10 | 0.105 | 0.103 | 0.101 | 0.099 | 0.104 | 0.101 | 0.107 | 0.115 | 0.113 | 0.114 | 0.106 | 106% | 0.0058 | 0.0165 | 0.20 | |
| 108 | 1,1,2,2-tetrachloroethane | 0.10 | 0.105 | 0.112 | 0.108 | 0.111 | 0.114 | 0.110 | 0.108 | 0.106 | 0.108 | 0.128 | 0.111 | 111% | 0.0060 | 0.0169 | 0.20 | |
| 109 | 1,2-dichlorobenzene | 0.10 | 0.100 | 0.093 | 0.092 | 0.092 | 0.095 | 0.092 | 0.093 | 0.095 | 0.097 | 0.106 | 0.096 | 96% | 0.0045 | 0.0127 | 0.20 | |
| 110 | undecane | 0.10 | 0.091 | 0.086 | 0.088 | 0.085 | 0.087 | 0.087 | 0.082 | 0.074 | 0.070 | 0.069 | 0.082 | 82% | 0.0080 | 0.0224 | 0.20 | |

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 08 | MDL 09 | MDL 10 | MDL 11 | MDL 12 | T value used for calculating | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/6/2012 | 4/19/2012 | 4/19/2012 | 4/19/2012 | 4/23/2012 | 4/23/2012 | MDL: 2.718 | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 111 | 1,1,1-trichloroethane | 0.10 | 0.104 | 0.103 | 0.103 | 0.104 | 0.103 | 0.098 | 0.102 | 0.097 | 0.096 | 0.097 | 0.114 | 0.110 | 0.103 | 103% | 0.0054 | 0.0146 | 0.20 | |
| 112 | ethylbenzene | 0.10 | 0.107 | 0.102 | 0.103 | 0.099 | 0.101 | 0.103 | 0.103 | 0.106 | 0.098 | 0.103 | 0.105 | 0.101 | 0.103 | 103% | 0.0026 | 0.0072 | 0.20 | |
| 113 | tert-butylbenzene | 0.10 | 0.104 | 0.098 | 0.100 | 0.099 | 0.100 | 0.096 | 0.100 | 0.105 | 0.104 | 0.106 | 0.109 | 0.105 | 0.102 | 102% | 0.0039 | 0.0105 | 0.20 | |
| 114 | sec-butylbenzene | 0.10 | 0.104 | 0.097 | 0.097 | 0.100 | 0.097 | 0.098 | 0.098 | 0.103 | 0.099 | 0.103 | 0.103 | 0.099 | 0.100 | 100% | 0.0029 | 0.0078 | 0.20 | |
| 115 | 1,2,3-trimethylbenzene | 0.10 | 0.103 | 0.097 | 0.098 | 0.096 | 0.099 | 0.096 | 0.097 | 0.097 | 0.101 | 0.102 | 0.101 | 0.105 | 0.099 | 99% | 0.0030 | 0.0081 | 0.20 | |
| 116 | p-isopropyltoluene | 0.10 | 0.099 | 0.095 | 0.095 | 0.094 | 0.095 | 0.092 | 0.094 | 0.097 | 0.095 | 0.097 | 0.103 | 0.100 | 0.096 | 96% | 0.0031 | 0.0083 | 0.20 | |

Comments: _____



Technical Director: AR Date Effective: 4-23-12

Approved

# Limit of Detection Study

**Alpha Analytical, Inc.**
**Mansfield, MA**

| | |
|---|---|
| Analyst: | AR, MB |
| Date: | 2/10/2016 |
| Instrument ID: | Airlab 11 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC Toxic Organic Air Pollutants Air**

| | Compounds | DL* | Bottom of LOD Range | Top of LOD Range | Concentration Run at | Results Verified | RL | Comments |
|---|---|---|---|---|---|---|---|---|
| | | ppbV | ppbV | ppbV | ppbV | | ppbV | |
| 1 | carbon disulfide | 0.0345 | 0.065 | 0.130 | 0.1 | Verified - RB | 0.2 | |
| 2 | tert-butlybenzene | 0.0402 | 0.069 | 0.138 | 0.1 | Verified - RB | 0.2 | |
| 3 | trichlorofluoromethane | 0.0416 | 0.076 | 0.151 | 0.1 | Verified - RB | 0.2 | |
| 4 | 1,4-dichlorobenzene | 0.0418 | 0.076 | 0.152 | 0.1 | Verified - RB | 0.2 | |
| 5 | Freon-114 | 0.0419 | 0.078 | 0.156 | 0.1 | Verified - RB | 0.2 | |
| 6 | octane | 0.0421 | 0.083 | 0.166 | 0.1 | Verified - RB | 0.2 | |
| 7 | isopropylbenzene | 0.0430 | 0.084 | 0.168 | 0.1 | Verified - RB | 0.2 | |
| 8 | 1,2,3-trichlorobenzene | 0.0431 | 0.084 | 0.168 | 0.1 | Verified - RB | 0.2 | |
| 9 | naphthalene | 0.0432 | 0.088 | 0.177 | 0.1 | Verified - RB | 0.2 | |
| 10 | MTBE | 0.0452 | 0.090 | 0.181 | 0.1 | Verified - RB | 0.2 | |
| 11 | chloroform | 0.0452 | 0.093 | 0.185 | 0.1 | Verified - RB | 0.2 | |
| 12 | dichlorodifluoromethane | 0.0466 | 0.093 | 0.186 | 0.1 | Verified - RB | 0.2 | |
| 13 | benzothiophene | 0.0468 | 0.094 | 0.187 | 0.1 | Verified - RB | 0.2 | |
| 14 | carbon tetrachloride | 0.0471 | 0.094 | 0.188 | 0.1 | Verified - RB | 0.2 | |
| 15 | pentane | 0.0475 | 0.095 | 0.190 | 0.1 | Verified - RB | 0.2 | |
| 16 | dibromomethane | 0.0476 | 0.097 | 0.193 | 0.1 | Verified - RB | 0.2 | |
| 17 | 2-chlorotoluene | 0.0487 | 0.097 | 0.195 | 0.1 | Verified - RB | 0.2 | |
| 18 | Freon 113 | 0.0511 | 0.101 | 0.200 | 0.1 | Verified - RB | 0.2 | |
| 19 | tert-butyl ethyl ether | 0.0515 | 0.102 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 20 | hexane | 0.0518 | 0.103 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 21 | 2-butanone | 0.0522 | 0.104 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 22 | bromoform | 0.0523 | 0.105 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 23 | thiophene | 0.0528 | 0.106 | 0.211 | 0.2 | Verified - RB | 0.2 | |
| 24 | vinyl chloride | 0.0533 | 0.107 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 25 | benzene | 0.0537 | 0.107 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 26 | 1,1,1,2-tetrachloroethane | 0.0547 | 0.108 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 27 | 1,1,2,2-tetrachloroethane | 0.0548 | 0.109 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 28 | 1,2-dichloroethane | 0.0552 | 0.109 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 29 | heptane | 0.0553 | 0.110 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 30 | ethylbenzene | 0.0555 | 0.110 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 31 | n-propylbenzene | 0.0559 | 0.111 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 32 | 1,1-dichloroethene | 0.0566 | 0.111 | 0.200 | 0.2 | Verified - RB | 0.2 | |

**Comments:** * Airpiano 1 '09, Airpiano2 '09, Airlab11 '12, Airlab7 '13, Airlab14 '14 - Highest MDL

# Limit of Detection Study

**Alpha Analytical, Inc.**
**Mansfield, MA**

| | |
|---|---|
| Analyst: | AR, MB |
| Date: | 2/10/2016 |
| Instrument ID: | Airlab 11 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC Toxic Organic Air Pollutants Air**

| | Compounds | DL* | Bottom of LOD Range | Top of LOD Range | Concentration Run at | Results Verified | RL | Comments |
|---|---|---|---|---|---|---|---|---|
| | | ppbV | ppbV | ppbV | ppbV | | ppbV | |
| 33 | vinyl acetate | 0.0567 | 0.113 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 34 | 1,1,1-trichloroethane | 0.0570 | 0.113 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 35 | 2-Ethylthiophene | 0.0571 | 0.114 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 36 | dichlorofluoromethane | 0.0572 | 0.114 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 37 | 2,2-dichloropropane | 0.0581 | 0.114 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 38 | 1,3,5-trimethylbenzene | 0.0584 | 0.116 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 39 | cis-1,2-dichloroethene | 0.0587 | 0.117 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 40 | ethyl ether | 0.0591 | 0.117 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 41 | 2-hexanone | 0.0604 | 0.121 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 42 | 4-methyl-2-pentanone | 0.0607 | 0.122 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 43 | p-isopropyltoluene | 0.0608 | 0.122 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 44 | indene | 0.0608 | 0.122 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 45 | 1,2,4-trichlorobenzene | 0.0611 | 0.122 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 46 | 1,2-dichlorobenzene | 0.0614 | 0.123 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 47 | tetrahydrofuran | 0.0622 | 0.125 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 48 | chlorodifluoromethane | 0.0626 | 0.126 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 49 | toluene | 0.0628 | 0.126 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 50 | o-xylene | 0.0631 | 0.127 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 51 | 1,3-dichlorobenzene | 0.0637 | 0.127 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 52 | n-butylbenzene | 0.0639 | 0.128 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 53 | benzyl chloride | 0.0645 | 0.129 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 54 | bromodichloromethane | 0.0656 | 0.131 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 55 | cyclohexane | 0.0656 | 0.131 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 56 | diisopropyl ether | 0.0656 | 0.131 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 57 | 2,2,4-trimethylpentane | 0.0659 | 0.132 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 58 | 1,1,2-trichloroethane | 0.0667 | 0.133 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 59 | 3-methylthiophene | 0.0669 | 0.133 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 60 | trans-1,3-dichloropropene | 0.0693 | 0.134 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 61 | 1,2,4-trimethylbenzene | 0.0694 | 0.139 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 62 | bromomethane | 0.0696 | 0.139 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 63 | 1,2-dichloropropane | 0.0697 | 0.139 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 64 | vinyl bromide | 0.0699 | 0.139 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 65 | trichloroethene | 0.0710 | 0.140 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 66 | 1,1-dichloropropene | 0.0715 | 0.142 | 0.200 | 0.2 | Verified - RB | 0.2 | |

**Comments:** * Airpiano 1 '09, Airpiano2 '09, Airlab11 '12, Airlab7 '13, Airlab14 '14 - Highest MDL

# Limit of Detection Study

**Alpha Analytical, Inc.**
**Mansfield, MA**

| | |
|---|---|
| Analyst: | AR, MB |
| Date: | 2/10/2016 |
| Instrument ID: | Airlab 11 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC Toxic Organic Air Pollutants Air**

| | Compounds | DL* | Bottom of LOD Range | Top of LOD Range | Concentration Run at | Results Verified | RL | Comments |
|---|---|---|---|---|---|---|---|---|
| | | ppbV | ppbV | ppbV | ppbV | | ppbV | |
| 67 | sec-butylbenzene | 0.0731 | 0.143 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 68 | hexachlorobutadiene | 0.0732 | 0.146 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 69 | trans-1,2-dichloroethene | 0.0740 | 0.146 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 70 | 1,2-dibromo-3-chloropropane | 0.0744 | 0.148 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 71 | cis-1,3-dichloropropene | 0.0745 | 0.149 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 72 | dibromochloromethane | 0.0747 | 0.149 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 73 | 1,2,3-Trimethylbenzene | 0.0751 | 0.149 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 74 | tetrachloroethene | 0.0758 | 0.150 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 75 | acetonitrile | 0.0761 | 0.152 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 76 | 4-chlorotoluene | 0.0764 | 0.152 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 77 | 1,2,3-trichloropropane | 0.0767 | 0.153 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 78 | chloroethane | 0.0767 | 0.153 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 79 | 1,1-dichloroethane | 0.0771 | 0.153 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 80 | 1,3-dichloropropane | 0.0776 | 0.154 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 81 | 4-ethyl toluene | 0.0776 | 0.155 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 82 | 1,2-dibromoethane | 0.0779 | 0.155 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 83 | 1,4-dioxane | 0.0780 | 0.156 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 84 | chlorobenzene | 0.0789 | 0.156 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 85 | 2-methylthiophene | 0.0789 | 0.158 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 86 | acrylonitrile | 0.0790 | 0.158 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 87 | bromobenzene | 0.0790 | 0.158 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 88 | 1,2,4,5-Tetramethylbenzene | 0.0795 | 0.158 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 89 | tert-amyl methyl ether | 0.0795 | 0.159 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 90 | indan | 0.0795 | 0.159 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 91 | styrene | 0.0799 | 0.159 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 92 | 1,3-butadiene | 0.0799 | 0.160 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 93 | 3-chloropropene | 0.0812 | 0.160 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 94 | propylene | 0.0929 | 0.162 | 0.372 | 0.2 | Verified - RB | 0.5 | |
| 95 | chloromethane | 0.0958 | 0.186 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 96 | propane | 0.1137 | 0.192 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 97 | acrolein | 0.1138 | 0.227 | 0.455 | 0.5 | Verified - RB | 0.5 | |
| 98 | isopropyl alcohol | 0.1140 | 0.228 | 0.456 | 0.5 | Verified - RB | 0.5 | |
| 99 | ethyl acetate | 0.1310 | 0.262 | 0.500 | 0.5 | Verified - RB | 0.5 | |
| 100 | m+p-xylene | 0.1388 | 0.278 | 0.400 | 0.4 | Verified - RB | 0.4 | |

**Comments:** * Airpiano 1 '09, Airpiano2 '09, Airlab11 '12, Airlab7 '13, Airlab14 '14 - Highest MDL

# Limit of Detection Study

**Alpha Analytical, Inc.**
**Mansfield, MA**

| | |
|---|---|
| Analyst: | AR, MB |
| Date: | 2/10/2016 |
| Instrument ID: | Airlab 11 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC Toxic Organic Air Pollutants Air**

| | Compounds | DL* | Bottom of LOD Range | Top of LOD Range | Concentration Run at | Results Verified | RL | Comments |
|---|---|---|---|---|---|---|---|---|
| | | ppbV | ppbV | ppbV | ppbV | | ppbV | |
| 101 | methyl methacrylate | 0.1475 | 0.295 | 0.500 | 0.5 | Verified - RB | 0.5 | |
| 102 | methylene chloride | 0.1884 | 0.330 | 0.500 | 0.5 | Verified - RB | 0.5 | |
| 103 | acetone | 0.2694 | 0.499 | 1.000 | 0.5 | Verified - RB | 1 | |
| 104 | 2-methylnaphthalene | 0.2725 | 0.545 | 1.000 | 1.0 | Verified - RB | 1 | |
| 105 | 1-methylnaphthalene | 0.2862 | 0.598 | 1.000 | 1.0 | Verified - RB | 1 | |
| 106 | ethanol | 0.5416 | 1.08 | 1.00 | 1.0 | Verified - RB | 1 | |
| 107 | acetaldehyde | 0.5466 | 1.09 | 2.19 | 2.5 | Verified - RB | 2.5 | |
| 108 | methanol | 0.7359 | 1.47 | 2.94 | 5.0 | Verified - RB | 5 | |
| | **Additional Analytes** | | | | | | | |
| 1 | undecane | 0.0528 | 0.106 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 2 | dodecane | 0.0564 | 0.127 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 3 | decane | 0.0484 | 0.097 | 0.194 | 0.2 | Verified - RB | 0.2 | |
| 4 | nonane | 0.0644 | 0.075 | 0.150 | 0.2 | Verified - RB | 0.2 | |
| 5 | butane | 0.0442 | 0.088 | 0.177 | 0.2 | Verified - RB | 0.2 | |
| 6 | Tertiary butyl Alcohol | 0.0599 | 0.120 | 0.200 | 0.2 | Verified - RB | 0.2 | |
| 7 | butyl acetate | 0.1139 | 0.228 | 0.455 | 0.5 | Verified - RB | 0.5 | |

**Comments:** * Airpiano 1 '09, Airpiano2 '09, Airlab11 '12, Airlab7 '13, Airlab14 '14 - Highest MDL

# Determination of Method Detection Limits

**Alpha Analytical Inc.**
**Mansfield, MA**

Approved

| | |
|---|---|
| Page 1 of 4 | |
| Analyst: | AR |
| Date: | 6/21, 6/23/16 |
| Instrument ID: | Airlab 15 |
| Column ID: | RTX-1 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

**Method: EPA TO-15** **2016**

**GC/MS** **Volatile Organic Compounds** **Air**

Initial Weight/Volume: N/A
Final Volume: N/A

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 08 | MDL 09 | T value used for calculating MDL: 2.896 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/23/2016 | 6/23/2016 | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 1 | chlorodifluoromethane | 0.100 | 0.098 | 0.106 | 0.094 | 0.097 | 0.103 | 0.107 | 0.100 | 0.112 | 0.119 | 0.104 | 104% | 0.0079 | 0.023 | 0.20 | |
| 2 | propane | 0.100 | 0.141 | 0.126 | 0.140 | 0.126 | 0.125 | 0.141 | 0.145 | 0.120 | 0.124 | 0.132 | 132% | 0.0095 | 0.028 | 0.50 | |
| 3 | dichlorodifluoromethane | 0.100 | 0.098 | 0.106 | 0.107 | 0.104 | 0.101 | 0.099 | 0.103 | 0.117 | 0.118 | 0.106 | 106% | 0.0072 | 0.021 | 0.20 | |
| 4 | chloromethane | 0.100 | 0.129 | 0.135 | 0.116 | 0.125 | 0.120 | 0.124 | 0.120 | 0.127 | 0.116 | 0.124 | 124% | 0.0063 | 0.018 | 0.20 | |
| 5 | Freon-114 | 0.100 | 0.100 | 0.103 | 0.104 | 0.103 | 0.104 | 0.106 | 0.100 | 0.114 | 0.114 | 0.105 | 105% | 0.0053 | 0.015 | 0.20 | |
| 6 | vinyl chloride | 0.100 | 0.099 | 0.105 | 0.105 | 0.104 | 0.100 | 0.108 | 0.097 | 0.111 | 0.110 | 0.104 | 104% | 0.0049 | 0.014 | 0.20 | |
| 7 | 1,3-butadiene | 0.100 | 0.107 | 0.096 | 0.100 | 0.112 | 0.103 | 0.117 | 0.115 | 0.110 | 0.116 | 0.108 | 108% | 0.0075 | 0.022 | 0.20 | |
| 8 | butane | 0.100 | 0.103 | 0.094 | 0.108 | 0.102 | 0.111 | 0.078 | 0.110 | 0.132 | 0.102 | 0.104 | 104% | 0.0144 | 0.042 | 0.20 | |
| 9 | acetaldehyde | 0.500 | 0.739 | 0.727 | 0.671 | 0.692 | 0.734 | 0.777 | 0.703 | 0.572 | 0.577 | 0.688 | 138% | 0.0711 | 0.206 | 2.5 | |
| 10 | bromomethane | 0.100 | 0.106 | 0.132 | 0.111 | 0.113 | 0.108 | 0.117 | 0.112 | 0.121 | 0.117 | 0.115 | 115% | 0.0078 | 0.023 | 0.20 | |
| 11 | chloroethane | 0.100 | 0.132 | 0.167 | 0.122 | 0.136 | 0.130 | 0.127 | 0.119 | 0.123 | 0.118 | 0.130 | 130% | 0.0150 | 0.043 | 0.20 | |
| 12 | ethanol | 0.500 | 0.610 | 0.544 | 0.613 | 0.582 | 0.573 | 0.627 | 0.624 | 0.676 | 0.610 | 0.607 | 121% | 0.0375 | 0.109 | 1.0 | |
| 13 | dichlorofluoromethane | 0.100 | 0.113 | 0.114 | 0.106 | 0.110 | 0.109 | 0.109 | 0.106 | 0.120 | 0.114 | 0.111 | 111% | 0.0045 | 0.013 | 0.20 | |
| 14 | vinyl bromide | 0.100 | 0.105 | 0.113 | 0.108 | 0.111 | 0.108 | 0.105 | 0.101 | 0.117 | 0.117 | 0.109 | 109% | 0.0055 | 0.016 | 0.20 | |
| 15 | acrolein | 0.100 | 0.177 | 0.120 | 0.164 | 0.126 | 0.188 | 0.181 | 0.165 | 0.158 | 0.153 | 0.159 | 159% | 0.0233 | 0.068 | 0.50 | |
| 16 | acetone | 0.500 | 0.620 | 0.622 | 0.612 | 0.618 | 0.634 | 0.614 | 0.643 | 0.570 | 0.588 | 0.613 | 123% | 0.0223 | 0.065 | 1.0 | |
| 17 | acetonitrile | 0.100 | 0.110 | 0.108 | 0.098 | 0.098 | 0.106 | 0.119 | 0.109 | 0.113 | 0.126 | 0.110 | 110% | 0.0090 | 0.026 | 0.20 | |
| 18 | trichlorofluoromethane | 0.100 | 0.111 | 0.107 | 0.102 | 0.105 | 0.102 | 0.103 | 0.108 | 0.115 | 0.110 | 0.107 | 107% | 0.0045 | 0.013 | 0.20 | |
| 19 | isopropyl alcohol | 0.250 | 0.374 | 0.364 | 0.380 | 0.357 | 0.367 | 0.388 | 0.348 | 0.338 | 0.346 | 0.362 | 145% | 0.0167 | 0.048 | 0.50 | |
| 20 | acrylonitrile | 0.100 | 0.100 | 0.114 | 0.096 | 0.103 | 0.089 | 0.101 | 0.097 | 0.108 | 0.112 | 0.102 | 102% | 0.0080 | 0.023 | 0.20 | |
| 21 | pentane | 0.100 | 0.102 | 0.090 | 0.106 | 0.104 | 0.113 | 0.097 | 0.106 | 0.109 | 0.109 | 0.104 | 104% | 0.0070 | 0.020 | 0.20 | |
| 22 | ethyl ether | 0.100 | 0.103 | 0.111 | 0.109 | 0.093 | 0.089 | 0.109 | 0.106 | 0.117 | 0.101 | 0.104 | 104% | 0.0089 | 0.026 | 0.20 | |
| 23 | 1,1-dichloroethene | 0.100 | 0.094 | 0.103 | 0.099 | 0.100 | 0.099 | 0.095 | 0.101 | 0.104 | 0.105 | 0.100 | 100% | 0.0038 | 0.011 | 0.20 | |
| 24 | tertiary butyl alcohol | 0.100 | 0.115 | 0.124 | 0.121 | 0.112 | 0.118 | 0.121 | 0.114 | 0.097 | 0.099 | 0.113 | 113% | 0.0096 | 0.028 | 0.20 | |
| 25 | methylene chloride | 0.100 | 0.122 | 0.131 | 0.129 | 0.127 | 0.125 | 0.131 | 0.131 | 0.144 | 0.139 | 0.131 | 131% | 0.0068 | 0.020 | 0.5 | |
| 26 | 3-chloropropene | 0.100 | 0.097 | 0.096 | 0.093 | 0.094 | 0.100 | 0.101 | 0.093 | 0.102 | 0.105 | 0.098 | 98% | 0.0043 | 0.012 | 0.20 | |
| 27 | carbon disulfide | 0.100 | 0.111 | 0.114 | 0.114 | 0.116 | 0.110 | 0.112 | 0.108 | 0.122 | 0.118 | 0.114 | 114% | 0.0043 | 0.012 | 0.20 | |
| 28 | Freon 113 | 0.100 | 0.099 | 0.106 | 0.097 | 0.096 | 0.094 | 0.110 | 0.098 | 0.111 | 0.118 | 0.103 | 103% | 0.0083 | 0.024 | 0.20 | |
| 29 | trans-1,2-dichloroethene | 0.100 | 0.098 | 0.100 | 0.091 | 0.095 | 0.093 | 0.092 | 0.093 | 0.107 | 0.109 | 0.098 | 98% | 0.0066 | 0.019 | 0.20 | |
| 30 | 1,1-dichloroethane | 0.100 | 0.101 | 0.103 | 0.098 | 0.103 | 0.098 | 0.102 | 0.095 | 0.113 | 0.111 | 0.103 | 103% | 0.0059 | 0.017 | 0.20 | |
| 31 | MTBE | 0.100 | 0.085 | 0.088 | 0.085 | 0.090 | 0.087 | 0.091 | 0.084 | 0.100 | 0.094 | 0.089 | 89% | 0.0051 | 0.015 | 0.20 | |
| 32 | 2-butanone | 0.100 | 0.106 | 0.109 | 0.107 | 0.109 | 0.108 | 0.123 | 0.104 | 0.108 | 0.108 | 0.109 | 109% | 0.0054 | 0.016 | 0.20 | |
| 33 | cis-1,2-dichloroethene | 0.100 | 0.095 | 0.101 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.102 | 0.107 | 0.098 | 98% | 0.0045 | 0.013 | 0.20 | |

**Comments:**

Technical Director: R Date Effective: 7/6/16

# Determination of Method Detection Limits

**Alpha Analytical Inc.**
**Mansfield, MA**

| | |
|---|---|
| Page 2 of 4 | |
| Analyst: | AR |
| Date: | 6/21, 6/23/16 |
| Instrument ID: | Airlab 15 |
| Column ID: | RTX-1 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC/MS** **Volatile Organic Compounds** **Air**

Initial Weight/Volume: N/A
Final Volume: N/A

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 08 | MDL 09 | T value used for calculating MDL: 2.896 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/23/2016 | 6/23/2016 | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 34 | Ethyl Acetate | 0.100 | 0.108 | 0.107 | 0.078 | 0.112 | 0.088 | 0.075 | 0.094 | 0.086 | 0.098 | 0.094 | 94% | 0.0133 | 0.039 | 0.50 | |
| 35 | chloroform | 0.100 | 0.102 | 0.104 | 0.103 | 0.105 | 0.098 | 0.096 | 0.098 | 0.113 | 0.112 | 0.103 | 103% | 0.0060 | 0.017 | 0.20 | |
| 36 | Tetrahydrofuran | 0.100 | 0.086 | 0.097 | 0.087 | 0.092 | 0.091 | 0.094 | 0.090 | 0.095 | 0.099 | 0.092 | 92% | 0.0044 | 0.013 | 0.20 | |
| 37 | 2,2-dichloropropane | 0.100 | 0.093 | 0.100 | 0.094 | 0.106 | 0.101 | 0.100 | 0.094 | 0.111 | 0.123 | 0.102 | 102% | 0.0097 | 0.028 | 0.20 | |
| 38 | 1,2-dichloroethane | 0.100 | 0.109 | 0.115 | 0.101 | 0.117 | 0.098 | 0.108 | 0.121 | 0.122 | 0.113 | 0.112 | 112% | 0.0083 | 0.024 | 0.20 | |
| 39 | hexane | 0.100 | 0.087 | 0.098 | 0.089 | 0.096 | 0.094 | 0.088 | 0.093 | 0.100 | 0.101 | 0.094 | 94% | 0.0052 | 0.015 | 0.20 | |
| 40 | diisopropyl ether | 0.100 | 0.080 | 0.124 | 0.081 | 0.084 | 0.086 | 0.087 | 0.086 | 0.090 | 0.097 | 0.091 | 91% | 0.0135 | 0.039 | 0.20 | |
| 41 | tert-butyl ethyl ether | 0.100 | 0.079 | 0.087 | 0.081 | 0.082 | 0.082 | 0.089 | 0.084 | 0.092 | 0.095 | 0.086 | 86% | 0.0054 | 0.016 | 0.20 | |
| 42 | 1,1,1-trichloroethane | 0.100 | 0.096 | 0.104 | 0.091 | 0.105 | 0.098 | 0.085 | 0.104 | 0.112 | 0.115 | 0.101 | 101% | 0.0096 | 0.028 | 0.20 | |
| 43 | 1,1-dichloropropene | 0.100 | 0.084 | 0.092 | 0.081 | 0.091 | 0.084 | 0.090 | 0.094 | 0.100 | 0.094 | 0.090 | 90% | 0.0060 | 0.017 | 0.20 | |
| 44 | benzene | 0.100 | 0.103 | 0.105 | 0.100 | 0.107 | 0.099 | 0.106 | 0.102 | 0.116 | 0.115 | 0.106 | 106% | 0.0061 | 0.018 | 0.20 | |
| 45 | thiophene | 0.100 | 0.092 | 0.089 | 0.088 | 0.091 | 0.090 | 0.091 | 0.089 | 0.098 | 0.104 | 0.092 | 92% | 0.0052 | 0.015 | 0.20 | |
| 46 | carbon tetrachloride | 0.100 | 0.103 | 0.107 | 0.100 | 0.103 | 0.103 | 0.098 | 0.099 | 0.110 | 0.122 | 0.105 | 105% | 0.0074 | 0.021 | 0.20 | |
| 47 | cyclohexane | 0.100 | 0.085 | 0.087 | 0.082 | 0.086 | 0.085 | 0.083 | 0.086 | 0.094 | 0.096 | 0.087 | 87% | 0.0048 | 0.014 | 0.20 | |
| 48 | tert-amyl methyl ether | 0.100 | 0.086 | 0.091 | 0.087 | 0.088 | 0.087 | 0.088 | 0.088 | 0.103 | 0.101 | 0.091 | 91% | 0.0064 | 0.019 | 0.20 | |
| 49 | dibromomethane | 0.100 | 0.105 | 0.110 | 0.101 | 0.111 | 0.101 | 0.104 | 0.105 | 0.123 | 0.116 | 0.108 | 108% | 0.0074 | 0.021 | 0.20 | |
| 50 | 1,2-dichloropropane | 0.100 | 0.093 | 0.116 | 0.096 | 0.100 | 0.093 | 0.100 | 0.101 | 0.121 | 0.110 | 0.103 | 103% | 0.0101 | 0.029 | 0.20 | |
| 51 | bromodichloromethane | 0.100 | 0.094 | 0.108 | 0.095 | 0.101 | 0.095 | 0.100 | 0.101 | 0.109 | 0.107 | 0.101 | 101% | 0.0058 | 0.017 | 0.20 | |
| 52 | 1,4-dioxane | 0.100 | 0.088 | 0.096 | 0.077 | 0.080 | 0.086 | 0.091 | 0.081 | 0.093 | 0.096 | 0.088 | 88% | 0.0071 | 0.020 | 0.20 | |
| 53 | trichloroethene | 0.100 | 0.091 | 0.087 | 0.086 | 0.095 | 0.087 | 0.097 | 0.095 | 0.114 | 0.104 | 0.095 | 95% | 0.0092 | 0.027 | 0.20 | |
| 54 | 2,2,4-trimethylpentane | 0.100 | 0.084 | 0.086 | 0.084 | 0.086 | 0.086 | 0.084 | 0.087 | 0.093 | 0.096 | 0.087 | 87% | 0.0043 | 0.012 | 0.20 | |
| 55 | methyl methacrylate | 0.100 | 0.080 | 0.097 | 0.079 | 0.084 | 0.082 | 0.091 | 0.087 | 0.096 | 0.093 | 0.088 | 88% | 0.0069 | 0.020 | 0.20 | |
| 56 | heptane | 0.100 | 0.084 | 0.088 | 0.080 | 0.090 | 0.085 | 0.085 | 0.088 | 0.097 | 0.095 | 0.088 | 88% | 0.0054 | 0.016 | 0.50 | |
| 57 | cis-1,3-dichloropropene | 0.100 | 0.083 | 0.089 | 0.089 | 0.089 | 0.082 | 0.088 | 0.080 | 0.091 | 0.093 | 0.087 | 87% | 0.0044 | 0.013 | 0.20 | |
| 58 | 4-methyl-2-pentanone | 0.100 | 0.080 | 0.090 | 0.082 | 0.087 | 0.084 | 0.083 | 0.080 | 0.091 | 0.091 | 0.085 | 85% | 0.0045 | 0.013 | 0.20 | |
| 59 | trans-1,3-dichloropropene | 0.100 | 0.083 | 0.094 | 0.082 | 0.082 | 0.080 | 0.086 | 0.080 | 0.098 | 0.104 | 0.088 | 88% | 0.0088 | 0.025 | 0.50 | |
| 60 | 1,1,2-trichloroethane | 0.100 | 0.093 | 0.099 | 0.095 | 0.100 | 0.093 | 0.097 | 0.092 | 0.107 | 0.115 | 0.099 | 99% | 0.0076 | 0.022 | 0.20 | |
| 61 | toluene | 0.100 | 0.096 | 0.095 | 0.097 | 0.097 | 0.095 | 0.097 | 0.096 | 0.107 | 0.110 | 0.099 | 99% | 0.0056 | 0.016 | 0.20 | |
| 62 | 2-methylthiophene | 0.100 | 0.085 | 0.083 | 0.084 | 0.084 | 0.083 | 0.085 | 0.091 | 0.097 | 0.097 | 0.088 | 88% | 0.0058 | 0.017 | 0.20 | |
| 63 | 1,3-dichloropropane | 0.100 | 0.091 | 0.096 | 0.093 | 0.095 | 0.092 | 0.090 | 0.090 | 0.113 | 0.103 | 0.096 | 96% | 0.0076 | 0.022 | 0.20 | |
| 64 | 3-methylthiophene | 0.100 | 0.078 | 0.080 | 0.080 | 0.081 | 0.084 | 0.083 | 0.086 | 0.097 | 0.093 | 0.085 | 85% | 0.0064 | 0.019 | 0.20 | |
| 65 | dibromochloromethane | 0.100 | 0.086 | 0.093 | 0.086 | 0.092 | 0.089 | 0.091 | 0.084 | 0.103 | 0.103 | 0.092 | 92% | 0.0070 | 0.020 | 0.20 | |
| 66 | 1,2-dibromoethane | 0.100 | 0.086 | 0.090 | 0.093 | 0.093 | 0.089 | 0.091 | 0.091 | 0.110 | 0.101 | 0.094 | 94% | 0.0073 | 0.021 | 0.20 | |

**Comments:**

Technical Director: Date Effective: 7-6-16

# Determination of Method Detection Limits

**Alpha Analytical Inc.**
**Mansfield, MA**

| | |
|---|---|
| Page 3 of 4 | |
| Analyst: | AR |
| Date: | 6/21, 6/23/16 |
| Instrument ID: | Airlab 15 |
| Column ID: | RTX-1 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC/MS** **Volatile Organic Compounds** **Air**

Initial Weight/Volume: N/A
Final Volume: N/A

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 08 | MDL 09 | T value used for calculating MDL: 2.896 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/23/2016 | 6/23/2016 | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 67 | butyl acetate | 0.100 | 0.072 | 0.104 | 0.065 | 0.077 | 0.070 | 0.085 | 0.087 | 0.083 | 0.083 | 0.081 | 81% | 0.0115 | 0.033 | 0.50 | |
| 68 | octane | 0.100 | 0.074 | 0.077 | 0.074 | 0.076 | 0.079 | 0.076 | 0.074 | 0.084 | 0.086 | 0.078 | 78% | 0.0044 | 0.013 | 0.20 | |
| 69 | tetrachloroethene | 0.100 | 0.090 | 0.102 | 0.089 | 0.094 | 0.090 | 0.089 | 0.087 | 0.104 | 0.103 | 0.094 | 94% | 0.0069 | 0.020 | 0.20 | |
| 70 | 1,1,1,2-tetrachloroethane | 0.100 | 0.095 | 0.102 | 0.085 | 0.097 | 0.099 | 0.094 | 0.091 | 0.107 | 0.114 | 0.098 | 98% | 0.0086 | 0.025 | 0.20 | |
| 71 | chlorobenzene | 0.100 | 0.094 | 0.096 | 0.095 | 0.092 | 0.094 | 0.092 | 0.095 | 0.107 | 0.106 | 0.097 | 97% | 0.0057 | 0.016 | 0.20 | |
| 72 | ethylbenzene | 0.100 | 0.080 | 0.082 | 0.079 | 0.081 | 0.083 | 0.082 | 0.081 | 0.088 | 0.089 | 0.083 | 83% | 0.0035 | 0.010 | 0.20 | |
| 73 | 2-ethylthiophene | 0.100 | 0.075 | 0.075 | 0.076 | 0.076 | 0.078 | 0.072 | 0.076 | 0.086 | 0.082 | 0.077 | 77% | 0.0042 | 0.012 | 0.20 | |
| 74 | m+p-xylene | 0.200 | 0.155 | 0.152 | 0.154 | 0.155 | 0.153 | 0.162 | 0.155 | 0.186 | 0.175 | 0.161 | 80% | 0.0119 | 0.034 | 0.40 | |
| 75 | bromoform | 0.100 | 0.085 | 0.090 | 0.087 | 0.085 | 0.083 | 0.084 | 0.086 | 0.098 | 0.094 | 0.088 | 88% | 0.0050 | 0.015 | 0.20 | |
| 76 | styrene | 0.100 | 0.074 | 0.075 | 0.070 | 0.069 | 0.072 | 0.067 | 0.077 | 0.079 | 0.081 | 0.074 | 74% | 0.0047 | 0.014 | 0.20 | |
| 77 | 1,1,2,2-tetrachloroethane | 0.100 | 0.086 | 0.089 | 0.090 | 0.089 | 0.091 | 0.089 | 0.095 | 0.107 | 0.102 | 0.093 | 93% | 0.0070 | 0.020 | 0.20 | |
| 78 | o-xylene | 0.100 | 0.077 | 0.076 | 0.076 | 0.075 | 0.075 | 0.076 | 0.075 | 0.088 | 0.088 | 0.078 | 78% | 0.0055 | 0.016 | 0.20 | |
| 79 | 1,2,3-trichloropropane | 0.100 | 0.088 | 0.086 | 0.091 | 0.092 | 0.091 | 0.086 | 0.092 | 0.097 | 0.101 | 0.092 | 92% | 0.0049 | 0.014 | 0.20 | |
| 80 | nonane | 0.100 | 0.073 | 0.078 | 0.075 | 0.074 | 0.074 | 0.076 | 0.078 | 0.083 | 0.084 | 0.077 | 77% | 0.0040 | 0.011 | 0.20 | |
| 81 | isopropylbenzene | 0.100 | 0.085 | 0.084 | 0.088 | 0.083 | 0.083 | 0.087 | 0.085 | 0.098 | 0.096 | 0.088 | 88% | 0.0056 | 0.016 | 0.20 | |
| 82 | bromobenzene | 0.100 | 0.087 | 0.088 | 0.089 | 0.092 | 0.092 | 0.086 | 0.087 | 0.104 | 0.101 | 0.092 | 92% | 0.0065 | 0.019 | 0.20 | |
| 83 | 2-chlorotoluene | 0.100 | 0.077 | 0.090 | 0.074 | 0.077 | 0.076 | 0.071 | 0.082 | 0.098 | 0.089 | 0.082 | 82% | 0.0089 | 0.026 | 0.20 | |
| 84 | n-propylbenzene | 0.100 | 0.066 | 0.079 | 0.068 | 0.072 | 0.074 | 0.073 | 0.072 | 0.083 | 0.081 | 0.074 | 74% | 0.0057 | 0.017 | 0.20 | |
| 85 | 4-chlorotoluene | 0.100 | 0.076 | 0.080 | 0.078 | 0.077 | 0.079 | 0.083 | 0.081 | 0.080 | 0.087 | 0.080 | 80% | 0.0033 | 0.010 | 0.20 | |
| 86 | 4-ethyl toluene | 0.100 | 0.072 | 0.071 | 0.071 | 0.070 | 0.073 | 0.072 | 0.072 | 0.082 | 0.081 | 0.074 | 74% | 0.0045 | 0.013 | 0.20 | |
| 87 | 1,3,5-trimethylbenzene | 0.100 | 0.073 | 0.086 | 0.072 | 0.072 | 0.071 | 0.069 | 0.073 | 0.080 | 0.080 | 0.075 | 75% | 0.0056 | 0.016 | 0.20 | |
| 88 | tert-butylbenzene | 0.100 | 0.073 | 0.073 | 0.079 | 0.085 | 0.081 | 0.076 | 0.076 | 0.094 | 0.089 | 0.081 | 81% | 0.0073 | 0.021 | 0.20 | |
| 89 | 1,2,4-trimethylbenzene | 0.100 | 0.072 | 0.076 | 0.074 | 0.072 | 0.074 | 0.068 | 0.074 | 0.078 | 0.079 | 0.074 | 74% | 0.0033 | 0.010 | 0.20 | |
| 90 | Benzyl Chloride | 0.100 | 0.065 | 0.070 | 0.064 | 0.065 | 0.067 | 0.064 | 0.065 | 0.080 | 0.074 | 0.068 | 68% | 0.0055 | 0.016 | 0.20 | |
| 91 | 1,3-dichlorobenzene | 0.100 | 0.086 | 0.082 | 0.080 | 0.079 | 0.083 | 0.079 | 0.082 | 0.095 | 0.091 | 0.084 | 84% | 0.0056 | 0.016 | 0.20 | |
| 92 | 1,4-dichlorobenzene | 0.100 | 0.084 | 0.080 | 0.081 | 0.082 | 0.085 | 0.077 | 0.080 | 0.089 | 0.090 | 0.083 | 83% | 0.0043 | 0.012 | 0.20 | |
| 93 | sec-butylbenzene | 0.100 | 0.073 | 0.073 | 0.075 | 0.078 | 0.076 | 0.074 | 0.079 | 0.085 | 0.083 | 0.077 | 77% | 0.0043 | 0.013 | 0.20 | |
| 94 | 1,2,3-trimethylbenzene | 0.100 | 0.074 | 0.073 | 0.074 | 0.070 | 0.074 | 0.072 | 0.075 | 0.086 | 0.086 | 0.076 | 76% | 0.0059 | 0.017 | 0.20 | |
| 95 | p-isopropyltoluene | 0.100 | 0.080 | 0.071 | 0.070 | 0.068 | 0.069 | 0.066 | 0.069 | 0.082 | 0.080 | 0.073 | 73% | 0.0061 | 0.018 | 0.20 | |
| 96 | 1,2-dichlorobenzene | 0.100 | 0.083 | 0.085 | 0.081 | 0.078 | 0.081 | 0.074 | 0.078 | 0.086 | 0.088 | 0.082 | 82% | 0.0044 | 0.013 | 0.20 | |
| 97 | n-butylbenzene | 0.100 | 0.069 | 0.066 | 0.069 | 0.068 | 0.070 | 0.066 | 0.071 | 0.081 | 0.082 | 0.071 | 71% | 0.0060 | 0.017 | 0.20 | |
| 98 | indan | 0.100 | 0.078 | 0.071 | 0.076 | 0.073 | 0.075 | 0.072 | 0.075 | 0.086 | 0.085 | 0.077 | 77% | 0.0054 | 0.016 | 0.20 | |
| 99 | indene | 0.100 | 0.067 | 0.069 | 0.067 | 0.070 | 0.071 | 0.066 | 0.072 | 0.084 | 0.083 | 0.072 | 72% | 0.0068 | 0.020 | 0.20 | |

**Comments:**



Technical Director: [signature] Date Effective: 7-6-16

# Determination of Method Detection Limits

**Alpha Analytical Inc.**
**Mansfield, MA**

| | |
|---|---|
| Page 4 of 4 | |
| Analyst: | AR |
| Date: | 6/21, 6/23, 7/1/16 |
| Instrument ID: | Airlab 15 |
| Column ID: | RTX-1 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC/MS** **Volatile Organic Compounds** **Air**

Initial Weight/Vplume: N/A
Final Vplume: N/A

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 08 | MDL 09 | T value used for calculating MDL: 2.896 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/23/2016 | 6/23/2016 | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 100 | 1,2-dibrpmp-3-chlprpprppane | 0.100 | 0.100 | 0.089 | 0.092 | 0.090 | 0.093 | 0.086 | 0.084 | 0.102 | 0.107 | 0.094 | 94% | 0.0077 | 0.022 | 0.20 | |
| 101 | 1,2,4,5-tetramethylbenzene | 0.100 | 0.059 | 0.056 | 0.060 | 0.055 | 0.059 | 0.056 | 0.054 | 0.068 | 0.066 | 0.059 | 59% | 0.0049 | 0.014 | 0.20 | |
| 102 | 1,2,4-trichlprpbenzene | 0.100 | 0.060 | 0.062 | 0.062 | 0.061 | 0.061 | 0.054 | 0.056 | 0.075 | 0.069 | 0.062 | 62% | 0.0064 | 0.018 | 0.20 | |
| 103 | naphthalene | 0.100 | 0.058 | 0.057 | 0.059 | 0.057 | 0.056 | 0.053 | 0.051 | 0.062 | 0.060 | 0.057 | 57% | 0.0034 | 0.010 | 0.20 | |
| 104 | 1,2,3-trichlorpbenzene | 0.100 | 0.059 | 0.070 | 0.056 | 0.058 | 0.064 | 0.059 | 0.059 | 0.072 | 0.069 | 0.063 | 63% | 0.0060 | 0.017 | 0.20 | |
| 105 | benzpthipphene | 0.100 | 0.054 | 0.051 | 0.048 | 0.051 | 0.048 | 0.049 | 0.049 | 0.057 | 0.057 | 0.052 | 52% | 0.0036 | 0.010 | 0.20 | |
| 106 | hexachlprpbutadiene | 0.100 | 0.070 | 0.073 | 0.073 | 0.073 | 0.070 | 0.068 | 0.074 | 0.089 | 0.090 | 0.076 | 76% | 0.0081 | 0.024 | 0.20 | |

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 06 | MDL 07 | T value used for calculating MDL: 2.896 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/23/2016 | 6/23/2016 | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 107 | methanol | 1.00 | 1.58 | 1.51 | 1.50 | 1.46 | 1.63 | 1.62 | 1.50 | 1.51 | 1.45 | 1.53 | 153% | 0.0653 | 0.189 | 5.0 | |
| 108 | prppylene | 0.200 | 0.267 | 0.288 | 0.274 | 0.263 | 0.276 | 0.276 | 0.259 | 0.290 | 0.268 | 0.273 | 137% | 0.0105 | 0.031 | 0.50 | |

| Table (MDL) | | Data File | MDL 01 | MDL 02 | MDL 03 | MDL 04 | MDL 05 | MDL 06 | MDL 07 | MDL 08 | MDL 09 | MDL 10 | T value used for calculating MDL: 2.821 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Analyzed | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/21/2016 | 6/23/2016 | 6/23/2016 | 7/1/2016 | | | | | | |
| No. | Analytes | Target conc. (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | (ppbV) | Mean (ppbV) | Mean Accuracy | Standard Deviation | Calc. MDL (ppbV) | Current RL (ppbV) | Comment |
| 109 | vinyl acetate | 0.20 | 0.212 | 0.211 | 0.202 | 0.207 | 0.201 | 0.211 | 0.209 | 0.199 | 0.197 | 0.185 | 0.203 | 102% | 0.0084 | 0.024 | 0.20 | |
| 110 | 2-hexanpne | 0.20 | 0.176 | 0.180 | 0.182 | 0.180 | 0.179 | 0.181 | 0.178 | 0.171 | 0.176 | 0.161 | 0.176 | 88% | 0.0063 | 0.018 | 0.20 | |
| 111 | decane | 0.20 | 0.169 | 0.163 | 0.163 | 0.161 | 0.162 | 0.158 | 0.167 | 0.157 | 0.159 | 0.146 | 0.161 | 80% | 0.0063 | 0.018 | 0.20 | |
| 112 | undecane | 0.20 | 0.142 | 0.139 | 0.144 | 0.138 | 0.140 | 0.139 | 0.142 | 0.139 | 0.136 | 0.114 | 0.137 | 69% | 0.0085 | 0.024 | 0.20 | |
| 113 | dpdecane | 0.20 | 0.100 | 0.100 | 0.105 | 0.106 | 0.101 | 0.104 | 0.106 | 0.099 | 0.103 | 0.084 | 0.101 | 50% | 0.0064 | 0.018 | 0.20 | |

**Comments:**

Approved



# Limit of Detection Study

**Alpha Analytical, Inc.**
**Mansfield, MA**

| | |
|---|---|
| Analyst: | MB |
| Date: | 7/18/2016 |
| Instrument ID: | Airlab 15 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC Toxic Organic Air Pollutants Air**

| | Compounds | DL* | Bottom of LOD Range | Top of LOD Range | Concentration Run at | Results Verified | RL | Comments |
|---|---|---|---|---|---|---|---|---|
| | | ppbV | ppbV | ppbV | ppbV | | ppbV | |
| 1 | carbon disulfide | 0.0345 | 0.0345 | 0.138 | 0.1 | Verified - JRH | 0.2 | |
| 2 | tert-butlybenzene | 0.0402 | 0.0402 | 0.161 | 0.1 | Verified - JRH | 0.2 | |
| 3 | trichlorofluoromethane | 0.0416 | 0.0416 | 0.166 | 0.1 | Verified - JRH | 0.2 | |
| 4 | 1,4-dichlorobenzene | 0.0418 | 0.0418 | 0.167 | 0.1 | Verified - JRH | 0.2 | |
| 5 | Freon-114 | 0.0419 | 0.0419 | 0.168 | 0.1 | Verified - JRH | 0.2 | |
| 6 | octane | 0.0421 | 0.0421 | 0.168 | 0.1 | Verified - JRH | 0.2 | |
| 7 | isopropylbenzene | 0.0430 | 0.0430 | 0.172 | 0.1 | Verified - JRH | 0.2 | |
| 8 | 1,2,3-trichlorobenzene | 0.0431 | 0.0431 | 0.172 | 0.1 | Verified - JRH | 0.2 | |
| 9 | naphthalene | 0.0432 | 0.0432 | 0.173 | 0.1 | Verified - JRH | 0.2 | |
| 10 | MTBE | 0.0452 | 0.0452 | 0.181 | 0.1 | Verified - JRH | 0.2 | |
| 11 | chloroform | 0.0452 | 0.0452 | 0.181 | 0.1 | Verified - JRH | 0.2 | |
| 12 | dichlorodifluoromethane | 0.0466 | 0.0466 | 0.186 | 0.1 | Verified - JRH | 0.2 | |
| 13 | benzothiophene | 0.0468 | 0.0468 | 0.187 | 0.1 | Verified - JRH | 0.2 | |
| 14 | carbon tetrachloride | 0.0471 | 0.0471 | 0.188 | 0.1 | Verified - JRH | 0.2 | |
| 15 | pentane | 0.0475 | 0.0475 | 0.190 | 0.1 | Verified - JRH | 0.2 | |
| 16 | dibromomethane | 0.0476 | 0.0476 | 0.190 | 0.1 | Verified - JRH | 0.2 | |
| 17 | 2-chlorotoluene | 0.0487 | 0.0487 | 0.195 | 0.1 | Verified - JRH | 0.2 | |
| 18 | Freon 113 | 0.0511 | 0.0511 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 19 | tert-butyl ethyl ether | 0.0515 | 0.0515 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 20 | hexane | 0.0518 | 0.0518 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 21 | 2-butanone | 0.0522 | 0.0522 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 22 | bromoform | 0.0523 | 0.0523 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 23 | thiophene | 0.0528 | 0.0528 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 24 | vinyl chloride | 0.0533 | 0.0533 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 25 | benzene | 0.0537 | 0.0537 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 26 | 1,1,1,2-tetrachloroethane | 0.0547 | 0.0547 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 27 | 1,1,2,2-tetrachloroethane | 0.0548 | 0.0548 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 28 | 1,2-dichloroethane | 0.0552 | 0.0552 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 29 | heptane | 0.0553 | 0.0553 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 30 | ethylbenzene | 0.0555 | 0.0555 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 31 | n-propylbenzene | 0.0559 | 0.0559 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 32 | 1,1-dichloroethene | 0.0566 | 0.0566 | 0.200 | 0.1 | Verified - JRH | 0.2 | |

**Comments:** * Airpiano 1 '09, Airpiano2 '09, Airlab11 '12, Airlab7 '13, Airlab14 '14, Airlab15 '16 - Highest MDL

# Limit of Detection Study

**Alpha Analytical, Inc.**
**Mansfield, MA**

| | |
|---|---|
| Analyst: | MB |
| Date: | 7/18/2016 |
| Instrument ID: | Airlab 15 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC Toxic Organic Air Pollutants Air**

| | Compounds | DL* | Bottom of LOD Range | Top of LOD Range | Concentration Run at | Results Verified | RL | Comments |
|---|---|---|---|---|---|---|---|---|
| | | ppbV | ppbV | ppbV | ppbV | | ppbV | |
| 33 | vinyl acetate | 0.0567 | 0.0567 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 34 | 1,1,1-trichloroethane | 0.0570 | 0.0570 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 35 | 2-Ethylthiophene | 0.0571 | 0.0571 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 36 | dichlorofluoromethane | 0.0572 | 0.0572 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 37 | 2,2-dichloropropane | 0.0581 | 0.0581 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 38 | 1,3,5-trimethylbenzene | 0.0584 | 0.0584 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 39 | cis-1,2-dichloroethene | 0.0587 | 0.0587 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 40 | ethyl ether | 0.0591 | 0.0591 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 41 | 2-hexanone | 0.0604 | 0.0604 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 42 | 4-methyl-2-pentanone | 0.0607 | 0.0607 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 43 | p-isopropyltoluene | 0.0608 | 0.0608 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 44 | indene | 0.0608 | 0.0608 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 45 | 1,2,4-trichlorobenzene | 0.0611 | 0.0611 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 46 | 1,2-dichlorobenzene | 0.0614 | 0.0614 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 47 | tetrahydrofuran | 0.0622 | 0.0622 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 48 | chlorodifluoromethane | 0.0626 | 0.0626 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 49 | toluene | 0.0628 | 0.0628 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 50 | o-xylene | 0.0631 | 0.0631 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 51 | 1,3-dichlorobenzene | 0.0637 | 0.0637 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 52 | n-butylbenzene | 0.0639 | 0.0639 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 53 | benzyl chloride | 0.0645 | 0.0645 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 54 | bromodichloromethane | 0.0656 | 0.0656 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 55 | cyclohexane | 0.0656 | 0.0656 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 56 | diisopropyl ether | 0.0656 | 0.0656 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 57 | 2,2,4-trimethylpentane | 0.0659 | 0.0659 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 58 | 1,1,2-trichloroethane | 0.0667 | 0.0667 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 59 | 3-methylthiophene | 0.0669 | 0.0669 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 60 | trans-1,3-dichloropropene | 0.0693 | 0.0693 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 61 | 1,2,4-trimethylbenzene | 0.0694 | 0.0694 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 62 | bromomethane | 0.0696 | 0.0696 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 63 | 1,2-dichloropropane | 0.0697 | 0.0697 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 64 | vinyl bromide | 0.0699 | 0.0699 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 65 | trichloroethene | 0.0710 | 0.0710 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 66 | 1,1-dichloropropene | 0.0715 | 0.0715 | 0.200 | 0.1 | Verified - JRH | 0.2 | |

**Comments:** * Airpiano 1 '09, Airpiano2 '09, Airlab11 '12, Airlab7 '13, Airlab14 '14, Airlab15 '16 - Highest MDL

Approved



# Limit of Detection Study

**Alpha Analytical, Inc.**
**Mansfield, MA**

| | |
|---|---|
| Analyst: | MB |
| Date: | 7/18/2016 |
| Instrument ID: | Airlab 15 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC Toxic Organic Air Pollutants Air**

| | Compounds | DL* | Bottom of LOD Range | Top of LOD Range | Concentration Run at | Results Verified | RL | Comments |
|---|---|---|---|---|---|---|---|---|
| | | ppbV | ppbV | ppbV | ppbV | | ppbV | |
| 67 | sec-butylbenzene | 0.0731 | 0.0731 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 68 | hexachlorobutadiene | 0.0732 | 0.0732 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 69 | trans-1,2-dichloroethene | 0.0740 | 0.0740 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 70 | 1,2-dibromo-3-chloropropane | 0.0744 | 0.0744 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 71 | cis-1,3-dichloropropene | 0.0745 | 0.0745 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 72 | dibromochloromethane | 0.0747 | 0.0747 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 73 | 1,2,3-Trimethylbenzene | 0.0751 | 0.0751 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 74 | tetrachloroethene | 0.0758 | 0.0758 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 75 | acetonitrile | 0.0761 | 0.0761 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 76 | 4-chlorotoluene | 0.0764 | 0.0764 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 77 | 1,2,3-trichloropropane | 0.0767 | 0.0767 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 78 | chloroethane | 0.0767 | 0.0767 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 79 | 1,1-dichloroethane | 0.0771 | 0.0771 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 80 | 1,3-dichloropropane | 0.0776 | 0.0776 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 81 | 4-ethyl toluene | 0.0776 | 0.0776 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 82 | 1,2-dibromoethane | 0.0779 | 0.0779 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 83 | 1,4-dioxane | 0.0780 | 0.0780 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 84 | chlorobenzene | 0.0789 | 0.0789 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 85 | 2-methylthiophene | 0.0789 | 0.0789 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 86 | acrylonitrile | 0.0790 | 0.0790 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 87 | bromobenzene | 0.0790 | 0.0790 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 88 | 1,2,4,5-Tetramethylbenzene | 0.0795 | 0.0795 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 89 | tert-amyl methyl ether | 0.0795 | 0.0795 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 90 | indan | 0.0795 | 0.0795 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 91 | styrene | 0.0799 | 0.0799 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 92 | 1,3-butadiene | 0.0799 | 0.0799 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 93 | 3-chloropropene | 0.0812 | 0.0812 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 94 | propylene | 0.0929 | 0.0929 | 0.372 | 0.1 | Verified - JRH | 0.5 | |
| 95 | chloromethane | 0.0958 | 0.0958 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 96 | propane | 0.114 | 0.114 | 0.200 | 0.2 | Verified - JRH | 0.2 | |
| 97 | acrolein | 0.114 | 0.114 | 0.455 | 0.2 | Verified - JRH | 0.5 | |
| 98 | isopropyl alcohol | 0.114 | 0.114 | 0.456 | 0.2 | Verified - JRH | 0.5 | |
| 99 | ethyl acetate | 0.131 | 0.131 | 0.500 | 0.2 | Verified - JRH | 0.5 | |
| 100 | m+p-xylene | 0.139 | 0.139 | 0.400 | 0.2 | Verified - JRH | 0.4 | |

**Comments:** * Airpiano 1 '09, Airpiano2 '09, Airlab11 '12, Airlab7 '13, Airlab14 '14, Airlab15 '16 - Highest MDL

Approved



# Limit of Detection Study

**Alpha Analytical, Inc.**
**Mansfield, MA**

| | |
|---|---|
| Analyst: | MB |
| Date: | 7/18/2016 |
| Instrument ID: | Airlab 15 |
| Prep Method: | N/A |
| Prep Chemist: | N/A |

## Method: EPA TO-15 2016

**GC Toxic Organic Air Pollutants Air**

| | Compounds | DL* | Bottom of LOD Range | Top of LOD Range | Concentration Run at | Results Verified | RL | Comments |
|---|---|---|---|---|---|---|---|---|
| | | ppbV | ppbV | ppbV | ppbV | | ppbV | |
| 101 | methyl methacrylate | 0.147 | 0.295 | 0.500 | 0.2 | Verified - JRH | 0.5 | |
| 102 | methylene chloride | 0.188 | 0.330 | 0.500 | 0.2 | Verified - JRH | 0.5 | |
| 103 | acetone | 0.269 | 0.499 | 1.00 | 0.5 | Verified - JRH | 1 | |
| 104 | 2-methylnaphthalene | 0.272 | 0.545 | 1.00 | 0.5 | Verified - JRH | 1 | |
| 105 | 1-methylnaphthalene | 0.286 | 0.598 | 1.00 | 0.5 | Verified - JRH | 1 | |
| 106 | ethanol | 0.542 | 1.08 | 1.00 | 1.0 | Verified - JRH | 1 | |
| 107 | acetaldehyde | 0.547 | 1.09 | 2.19 | 2.5 | Verified - JRH | 2.5 | |
| 108 | methanol | 0.736 | 1.47 | 2.94 | 5.0 | Verified - JRH | 5 | |
| | **Additional Analytes** | | | | | | | |
| 1 | undecane | 0.0528 | 0.106 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 2 | dodecane | 0.0564 | 0.127 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 3 | decane | 0.0484 | 0.097 | 0.194 | 0.1 | Verified - JRH | 0.2 | |
| 4 | nonane | 0.0644 | 0.075 | 0.150 | 0.1 | Verified - JRH | 0.2 | |
| 5 | butane | 0.0442 | 0.088 | 0.177 | 0.1 | Verified - JRH | 0.2 | |
| 6 | Tertiary butyl Alcohol | 0.0599 | 0.120 | 0.200 | 0.1 | Verified - JRH | 0.2 | |
| 7 | butyl acetate | 0.114 | 0.228 | 0.455 | 0.2 | Verified - JRH | 0.5 | |

**Comments:** * Airpiano 1 '09, Airpiano2 '09, Airlab11 '12, Airlab7 '13, Airlab14 '14, Airlab15 '16 - Highest MDL

# Organics

# New Jersey TO-15 Methods

# Quality Control Data Summary

# Lab Duplicates
# Form 3

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Client Sample ID | : CR011117-SS-B6 | Matrix | : SOIL_VAPOR |
| Lab Sample ID | : L1700975-01 | Analysis Date | : 01/12/17 16:33 |
| Lab File ID | : R152088 | DUP File ID | : r152089 |
| Dup Sample ID | : WG969058-5 | DUP Analysis Date | : 01/12/17 17:17 |

| Parameter | Sample Concentration (ppbV) | Duplicate Concentration (ppbV) | RPD | RPD Limit |
|---|---|---|---|---|
| Vinyl chloride | ND | ND | NC | 25 |
| trans-1,2-Dichloroethene | ND | ND | NC | 25 |
| cis-1,2-Dichloroethene | ND | ND | NC | 25 |
| Trichloroethene | 3.5 | 3.6 | 3 | 25 |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Matrix | : SOIL_VAPOR | | |
| LCS Sample ID | : WG969058-3 | Analysis Date : 01/12/17 12:41 | File ID : r152086 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| Chlorodifluoromethane | 10 | 8.2 | 82 | | | | - | 70-130 | - |
| Propylene | 10 | 8.9 | 89 | | | | - | 70-130 | - |
| Dichlorodifluoromethane | 10 | 9.3 | 93 | | | | - | 40-160 | - |
| Chloromethane | 10 | 9.0 | 90 | | | | - | 70-130 | - |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane | 10 | 9.4 | 94 | | | | - | 70-130 | - |
| Methanol | 50 | 46. | 92 | | | | - | 70-130 | - |
| Vinyl chloride | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,3-Butadiene | 10 | 9.4 | 94 | | | | - | 70-130 | - |
| Butane | 10 | 8.8 | 88 | | | | - | 70-130 | - |
| Bromomethane | 10 | 9.4 | 94 | | | | - | 70-130 | - |
| Chloroethane | 10 | 9.5 | 95 | | | | - | 70-130 | - |
| Ethyl Alcohol | 50 | 43. | 86 | | | | - | 70-130 | - |
| Dichlorofluoromethane | 10 | 8.7 | 87 | | | | - | 70-130 | - |
| Vinyl bromide | 10 | 8.7 | 87 | | | | - | 70-130 | - |
| Acrolein | 10 | 9.1 | 91 | | | | - | 70-130 | - |
| Acetone | 50 | 44. | 88 | | | | - | 40-160 | - |
| Acetonitrile | 10 | 7.4 | 74 | | | | - | 70-130 | - |
| Trichlorofluoromethane | 10 | 9.5 | 95 | | | | - | 70-130 | - |
| iso-Propyl Alcohol | 25 | 25. | 100 | | | | - | 70-130 | - |
| Acrylonitrile | 10 | 12. | 120 | | | | - | 70-130 | - |
| Pentane | 10 | 8.1 | 81 | | | | - | 70-130 | - |
| Ethyl ether | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| 1,1-Dichloroethene | 10 | 9.6 | 96 | | | | - | 70-130 | - |
| tert-Butyl Alcohol | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| Methylene chloride | 10 | 9.5 | 95 | | | | - | 70-130 | - |
| 3-Chloropropene | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| Carbon disulfide | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 10 | 9.6 | 96 | | | | - | 70-130 | - |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Matrix | : SOIL_VAPOR | | |
| LCS Sample ID | : WG969058-3 | Analysis Date : 01/12/17 12:41 | File ID : r152086 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| trans-1,2-Dichloroethene | 10 | 8.7 | 87 | | | | - | 70-130 | - |
| 1,1-Dichloroethane | 10 | 9.4 | 94 | | | | - | 70-130 | - |
| Methyl tert butyl ether | 10 | 9.6 | 96 | | | | - | 70-130 | - |
| Vinyl acetate | 10 | 11. | 110 | | | | - | 70-130 | - |
| 2-Butanone | 10 | 8.5 | 85 | | | | - | 70-130 | - |
| cis-1,2-Dichloroethene | 10 | 11. | 110 | | | | - | 70-130 | - |
| Ethyl Acetate | 10 | 9.6 | 96 | | | | - | 70-130 | - |
| Chloroform | 10 | 9.6 | 96 | | | | - | 70-130 | - |
| Tetrahydrofuran | 10 | 9.1 | 91 | | | | - | 70-130 | - |
| 2,2-Dichloropropane | 10 | 8.7 | 87 | | | | - | 70-130 | - |
| 1,2-Dichloroethane | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| n-Hexane | 10 | 8.5 | 85 | | | | - | 70-130 | - |
| Isopropyl Ether | 10 | 8.2 | 82 | | | | - | 70-130 | - |
| Ethyl-Tert-Butyl-Ether | 10 | 8.1 | 81 | | | | - | 70-130 | - |
| 1,1,1-Trichloroethane | 10 | 8.7 | 87 | | | | - | 70-130 | - |
| 1,1-Dichloropropene | 10 | 8.2 | 82 | | | | - | 70-130 | - |
| Benzene | 10 | 8.5 | 85 | | | | - | 70-130 | - |
| Carbon tetrachloride | 10 | 9.1 | 91 | | | | - | 70-130 | - |
| Cyclohexane | 10 | 8.5 | 85 | | | | - | 70-130 | - |
| Tertiary-Amyl Methyl Ether | 10 | 8.1 | 81 | | | | - | 70-130 | - |
| Dibromomethane | 10 | 7.8 | 78 | | | | - | 70-130 | - |
| 1,2-Dichloropropane | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| Bromodichloromethane | 10 | 8.8 | 88 | | | | - | 70-130 | - |
| 1,4-Dioxane | 10 | 8.6 | 86 | | | | - | 40-160 | - |
| Trichloroethene | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| 2,2,4-Trimethylpentane | 10 | 8.5 | 85 | | | | - | 70-130 | - |
| Methyl Methacrylate | 10 | 8.3 | 83 | | | | - | 70-130 | - |
| Heptane | 10 | 8.2 | 82 | | | | - | 70-130 | - |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Matrix | : SOIL_VAPOR | | |
| LCS Sample ID | : WG969058-3 | Analysis Date : 01/12/17 12:41 | File ID : r152086 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| cis-1,3-Dichloropropene | 10 | 8.1 | 81 | | | | - | 70-130 | - |
| 4-Methyl-2-pentanone | 10 | 8.3 | 83 | | | | - | 70-130 | - |
| trans-1,3-Dichloropropene | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| 1,1,2-Trichloroethane | 10 | 8.8 | 88 | | | | - | 70-130 | - |
| Toluene | 10 | 9.0 | 90 | | | | - | 70-130 | - |
| 1,3-Dichloropropane | 10 | 8.2 | 82 | | | | - | 70-130 | - |
| 2-Hexanone | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| Dibromochloromethane | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| 1,2-Dibromoethane | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| Butyl Acetate | 10 | 8.9 | 89 | | | | - | 70-130 | - |
| Octane | 10 | 7.5 | 75 | | | | - | 70-130 | - |
| Tetrachloroethene | 10 | 9.0 | 90 | | | | - | 70-130 | - |
| 1,1,1,2-Tetrachloroethane | 10 | 8.4 | 84 | | | | - | 70-130 | - |
| Chlorobenzene | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| Ethylbenzene | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| p/m-Xylene | 20 | 18. | 90 | | | | - | 70-130 | - |
| Bromoform | 10 | 9.4 | 94 | | | | - | 70-130 | - |
| Styrene | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| 1,1,2,2-Tetrachloroethane | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| o-Xylene | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| 1,2,3-Trichloropropane | 10 | 8.2 | 82 | | | | - | 70-130 | - |
| Nonane (C9) | 10 | 7.9 | 79 | | | | - | 70-130 | - |
| Isopropylbenzene | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| Bromobenzene | 10 | 8.4 | 84 | | | | - | 70-130 | - |
| o-Chlorotoluene | 10 | 9.4 | 94 | | | | - | 70-130 | - |
| n-Propylbenzene | 10 | 9.8 | 98 | | | | - | 70-130 | - |
| p-Chlorotoluene | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| 4-Ethyltoluene | 10 | 8.9 | 89 | | | | - | 70-130 | - |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Matrix | : SOIL_VAPOR | | |
| LCS Sample ID | : WG969058-3 | Analysis Date : 01/12/17 12:41 | File ID : r152086 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| 1,3,5-Trimethylbenzene | 10 | 8.9 | 89 | | | | - | 70-130 | - |
| tert-Butylbenzene | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| 1,2,4-Trimethylbenzene | 10 | 9.4 | 94 | | | | - | 70-130 | - |
| Decane (C10) | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| Benzyl chloride | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,3-Dichlorobenzene | 10 | 9.6 | 96 | | | | - | 70-130 | - |
| 1,4-Dichlorobenzene | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| sec-Butylbenzene | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| p-Isopropyltoluene | 10 | 8.3 | 83 | | | | - | 70-130 | - |
| 1,2-Dichlorobenzene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| n-Butylbenzene | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| 1,2-Dibromo-3-chloropropane | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| Undecane | 10 | 9.2 | 92 | | | | - | 70-130 | - |
| Dodecane (C12) | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,2,4-Trichlorobenzene | 10 | 11. | 110 | | | | - | 40-160 | - |
| Naphthalene | 10 | 10. | 100 | | | | - | 40-160 | - |
| 1,2,3-Trichlorobenzene | 10 | 10. | 100 | | | | - | 70-130 | - |
| Hexachlorobutadiene | 10 | 11. | 110 | | | | - | 40-160 | - |

# Method Blank Summary
# Form 4

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Lab Sample ID | : WG969058-4 | Lab File ID | : r152087 |
| Instrument ID | : AIRLAB15 | | |
| Matrix | : SOIL_VAPOR | Analysis Date | : 01/12/17 14:00 |

| Client Sample No. | Lab Sample ID | Analysis Date |
|---|---|---|
| WG969058-3LCS | WG969058-3 | 01/12/17 12:41 |
| CR011117-SS-B6 | L1700975-01 | 01/12/17 16:33 |
| CR011117-SS-B6DUP | WG969058-5 | 01/12/17 17:17 |
| DUP011117-VI | L1700975-02 | 01/12/17 17:59 |

# Instrument Performance Check
# Bromofluorobenzene (BFB)
# Form 5

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Instrument ID | : AIRLAB15 | Analysis Date | : 01/09/17 14:47 |
| Tune Standard | : WG968048-1 | Tune File ID | : r152068_tune |

| m/e | Ion Abundance Criteria | %Relative Abundance |
|---|---|---|
| 50 | 8.0 - 40.0% of mass 95 | 14.6 |
| 75 | 30.0 - 66.0% of mass 95 | 39.1 |
| 95 | Base Peak, 100% relative abundance | 100 |
| 96 | 5.0 - 9.0% of mass 95 | 6.6 |
| 173 | Less than 2.0% of mass 174 | 0.4 (.6 )1 |
| 174 | 50.0 - 120.0% of mass 95 | 69 |
| 175 | 4.0 - 9.0% of mass 174 | 4.9 (7.1 )1 |
| 176 | 93.0 - 101% of mass 174 | 66.8 (96.8)1 |
| 177 | 5.0 - 9.0% of mass 176 | 4.3 (6.4 )2 |

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

| Client Sample ID | Lab Sample ID | File ID | Analysis Date/Time |
|---|---|---|---|
| STD0.2 | R934633-1 | R152072 | 01/09/17 19:05 |
| STD0.5 | R934633-2 | R152073 | 01/09/17 19:47 |
| STD1.0 | R934633-3 | R152074 | 01/09/17 20:31 |
| STD5.0 | R934633-4 | R152075 | 01/09/17 21:13 |
| STD010 | R934633-5 | R152076 | 01/09/17 21:57 |
| STD020 | R934633-6 | R152077 | 01/09/17 22:38 |
| STD050 | R934633-7 | R152078 | 01/09/17 23:20 |
| STD100 | R934633-8 | R152079 | 01/10/17 00:04 |
| ICV Quant | R934633-9 | R152082 | 01/10/17 12:51 |

# Instrument Performance Check
# Bromofluorobenzene (BFB)
# Form 5

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Instrument ID | : AIRLAB15 | Analysis Date | : 01/12/17 10:57 |
| Tune Standard | : WG969058-1 | Tune File ID | : r152084_tune |

| m/e | Ion Abundance Criteria | %Relative Abundance |
|---|---|---|
| 50 | 8.0 - 40.0% of mass 95 | 13.6 |
| 75 | 30.0 - 66.0% of mass 95 | 38.3 |
| 95 | Base Peak, 100% relative abundance | 100 |
| 96 | 5.0 - 9.0% of mass 95 | 6.5 |
| 173 | Less than 2.0% of mass 174 | 0.3 (.5 )1 |
| 174 | 50.0 - 120.0% of mass 95 | 68.2 |
| 175 | 4.0 - 9.0% of mass 174 | 4.8 (7 )1 |
| 176 | 93.0 - 101% of mass 174 | 66.4 (97.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 4.1 (6.2 )2 |

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

| Client Sample ID | Lab Sample ID | File ID | Analysis Date/Time |
|---|---|---|---|
| WG969058-2CCAL | WG969058-2 | R152085 | 01/12/17 11:41 |
| WG969058-3LCS | WG969058-3 | R152086 | 01/12/17 12:41 |
| WG969058-4BLANK | WG969058-4 | R152087 | 01/12/17 14:00 |
| CR011117-SS-B6 | L1700975-01 | R152088 | 01/12/17 16:33 |
| WG969058-5DUP | WG969058-5 | R152089 | 01/12/17 17:17 |
| DUP011117-VI | L1700975-02 | R152090 | 01/12/17 17:59 |

# Internal Standard Area and RT Summary
# Form 8

| | | | |
|---|---|---|---|
| **Client** | : Tetra Tech GEO | **Lab Number** | : L1700975 |
| **Project Name** | : FORMER LEC | **Project Number** | : 117-0507641 |
| **Instrument ID** | : AIRLAB15 | **Analysis Date** | : 01/12/17 11:41 |
| **Sample No** | : WG969058-2 | **Lab File ID** | : R152085 |

| | Bromochloromethane | | 1,4-Difluorobenzene | | Chlorobenzene-d5 | |
|---|---|---|---|---|---|---|
| | Area | RT | Area | RT | Area | RT |
| WG969058-2 | 206158 | 9.29 | 628014 | 11.61 | 100216 | 16.32 |
| Upper Limit | 288621 | 9.62 | 879220 | 11.94 | 140302 | 16.65 |
| Lower Limit | 123695 | 8.96 | 376808 | 11.28 | 60130 | 15.99 |
| Sample ID | | | | | | |
| WG969058-3 LCS | 201523 | 9.30 | 614099 | 11.61 | 94774 | 16.32 |
| WG969058-4 BLANK | 189388 | 9.31 | 570725 | 11.63 | 88361 | 16.33 |
| CR011117-SS-B6 | 216000 | 9.30 | 623319 | 11.63 | 99373 | 16.35 |
| CR011117-SS-B6 DUP | 212933 | 9.29 | 577138 | 11.61 | 92217 | 16.33 |
| DUP011117-VI | 209994 | 9.30 | 566898 | 11.63 | 90499 | 16.35 |

Area Upper Limit = +40% of internal standard area
Area Lower Limit = - 40% of internal standard area

RT Upper Limit = +0.33 minutes of internal standard RT
RT Lower Limit = -0.33 minutes of internal standard RT

* Values outside of QC limits

# Sample Data Summary

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Lab ID | : L1700975-01 | Date Collected | : 01/11/17 10:28 |
| Client ID | : CR011117-SS-B6 | Date Received | : 01/11/17 |
| Sample Location | : N. PLAINFIELD, NJ | Date Analyzed | : 01/12/17 16:33 |
| Sample Matrix | : SOIL_VAPOR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : MB |
| Lab File ID | : R152088 | Instrument ID | : AIRLAB15 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 79-01-6 | Trichloroethene | 3.5 | 0.20 | -- | 19 | 1.1 | -- | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152088.D
Acq On : 12 Jan 2017 4:33 PM
Operator : AIRLAB15:MB
Sample : L1700975-01,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 23:16:21 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170112T\r152085.D
Sub List : 5_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.300 | 49 | 216000 | 10.000 | ppbV | 0.05 |
| Standard Area = 206158 | | | Recovery = 104.77% | | | |
| 43) 1,4-difluorobenzene | 11.627 | 114 | 623319 | 10.000 | ppbV | 0.05 |
| Standard Area = 628014 | | | Recovery = 99.25% | | | |
| 67) chlorobenzene-D5 | 16.347 | 54 | 99373 | 10.000 | ppbV | 0.04 |
| Standard Area = 100216 | | | Recovery = 99.16% | | | |
| System Monitoring Compounds | | | | | | |
| Target Compounds | | | | | | Qvalue |
| 9) vinyl chloride | 4.320 | | 0 | N.D. | | |
| 32) trans-1,2-dichloroethene | 7.687 | | 0 | N.D. | | |
| 37) cis-1,2-dichloroethene | 0.000 | | 0 | N.D. | | |
| 59) trichloroethene | 12.453 | 130 | 91664 | 3.471 | ppbV | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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Sub List : 5_Chlorinateds - .Airlab15\2017\170112T\r152085.D

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152088.D
Acq On : 12 Jan 2017 4:33 PM
Operator : AIRLAB15:MB
Sample : L1700975-01,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 23:16:21 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

TALL170109.M Fri Jan 13 08:18:01 2017

Page 2

#59
trichloroethene
Concen: 3.47 ppbV
RT: 12.453 min Scan# 916
Delta R.T. 0.053 min
Lab File: r152088.D
Acq: 12 Jan 2017 4:33 PM

Tgt Ion:130 Resp: 91664

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 130 | 100 | | |
| 132 | 94.4 | 76.5 | 114.7 |
| 97 | 59.4 | 47.0 | 70.6 |

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab15\ | QMethod | : TALL170109.M |
| Data File | : r152088.D | Operator | : AIRLAB15:MB |
| Date Inj'd | : 1/12/2017 4:33 PM | Instrument | : |
| Sample | : L1700975-01,3,250,250 | Quant Date | : 1/12/2017 11:16 pm |

There are no manual integrations or false positives in this file.

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Lab ID | : L1700975-02 | Date Collected | : 01/11/17 10:28 |
| Client ID | : DUP011117-VI | Date Received | : 01/11/17 |
| Sample Location | : N. PLAINFIELD, NJ | Date Analyzed | : 01/12/17 17:59 |
| Sample Matrix | : SOIL_VAPOR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : MB |
| Lab File ID | : R152090 | Instrument ID | : AIRLAB15 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 79-01-6 | Trichloroethene | 3.7 | 0.20 | -- | 20 | 1.1 | -- | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152090.D
Acq On : 12 Jan 2017 5:59 PM
Operator : AIRLAB15:MB
Sample : L1700975-02,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 23:16:59 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170112T\r152085.D
Sub List : 5_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.300 | 49 | 209994 | 10.000 | ppbV | 0.05 |
| Standard Area = 206158 | | | Recovery = 101.86% | | | |
| 43) 1,4-difluorobenzene | 11.627 | 114 | 566898 | 10.000 | ppbV | 0.05 |
| Standard Area = 628014 | | | Recovery = 90.27% | | | |
| 67) chlorobenzene-D5 | 16.347 | 54 | 90499 | 10.000 | ppbV | 0.04 |
| Standard Area = 100216 | | | Recovery = 90.30% | | | |
| System Monitoring Compounds | | | | | | |
| Target Compounds | | | | | | Qvalue |
| 9) vinyl chloride | 0.000 | | 0 | N.D. | | |
| 32) trans-1,2-dichloroethene | 0.000 | | 0 | N.D. | | |
| 37) cis-1,2-dichloroethene | 9.100 | | 0 | N.D. | | |
| 59) trichloroethene | 12.453 | 130 | 88517 | 3.686 | ppbV | 98 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

TALL170109.M Fri Jan 13 08:18:41 2017 Page: 1

Sub List : 5_Chlorinateds - .Airlab15\2017\170112T\r152085.D

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152090.D
Acq On : 12 Jan 2017 5:59 PM
Operator : AIRLAB15:MB
Sample : L1700975-02,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 23:16:59 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

TALL170109.M Fri Jan 13 08:18:41 2017

Page 2

#59
trichloroethene
Concen: 3.69 ppbV
RT: 12.453 min Scan# 916
Delta R.T. 0.053 min
Lab File: r152090.D
Acq: 12 Jan 2017 5:59 PM

Tgt Ion:130 Resp: 88517

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 130 | 100 | | |
| 132 | 94.4 | 76.5 | 114.7 |
| 97 | 56.1 | 47.0 | 70.6 |

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab15\ | QMethod | : TALL170109.M |
| Data File | : r152090.D | Operator | : AIRLAB15:MB |
| Date Inj'd | : 1/12/2017 5:59 PM | Instrument | : |
| Sample | : L1700975-02,3,250,250 | Quant Date | : 1/12/2017 11:16 pm |

There are no manual integrations or false positives in this file.

# Standards Data Summary

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | **: Tetra Tech GEO** | **Lab Number** | **: L1700975** |
| **Project Name** | **: FORMER LEC** | **Project Number** | **: 117-0507641** |
| **Instrument ID** | **: AIRLAB15** | **Ical Ref** | **: ICAL13292** |
| **Calibration dates** | **: 01/09/17 19:05 01/10/17 00:04** | | |

Calibration Files
0.2 =r152072.D 0.5 =r152073.D 1.0 =r152074.D 5.0 =r152075.D 10 =r152076.D 20 =r152077.D
50 =r152078.D 100 =r152079.D

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) | I | bromochloromethane | ----------ISTD---------- | | | | | | | | | |
| 2) | | chlorodifluoromethane | 1.218 | 1.187 | 1.130 | 1.074 | 1.032 | 0.979 | 0.948 | 0.917 | 1.0605 | 10.49 |
| 3) | | propylene | 0.822 | 0.718 | 0.742 | 0.664 | 0.664 | 0.602 | 0.587 | 0.568 | 0.6708 | 12.92 |
| 4) | | propane | 0.935 | 0.868 | 0.878 | 0.795 | 0.761 | 0.721 | 0.688 | 0.652 | 0.7872 | 12.69 |
| 5) | | dichlorodifluoromethane | 1.582 | 1.458 | 1.451 | 1.379 | 1.328 | 1.291 | 1.268 | 1.239 | 1.3746 | 8.47 |
| 6) | C | chloromethane | 0.769 | 0.678 | 0.673 | 0.631 | 0.611 | 0.582 | 0.562 | 0.536 | 0.6303 | 11.95 |
| 7) | | Freon-114 | 1.941 | 1.904 | 1.802 | 1.718 | 1.700 | 1.642 | 1.589 | 1.507 | 1.7254 | 8.71 |
| 8) | C | methanol | | | 0.358 | 0.302 | 0.288 | 0.258 | 0.274 | 0.255 | 0.2890 | 13.23 |
| 9) | C | vinyl chloride | 0.845 | 0.799 | 0.769 | 0.737 | 0.734 | 0.725 | 0.786 | 0.797 | 0.7741 | 5.30 |
| 10) | C | 1,3-butadiene | 0.950 | 0.857 | 0.842 | 0.821 | 0.779 | 0.622 | 0.783 | 0.735 | 0.7986 | 12.03 |
| 11) | | butane | 1.220 | 1.124 | 1.082 | 1.005 | 1.007 | 0.973 | 0.955 | 0.933 | 1.0373 | 9.40 |
| 12) | C | acetaldehyde | | 0.390 | 0.365 | 0.310 | 0.305 | 0.307 | 0.288 | 0.265 | 0.3186 | 13.72 |
| 13) | C | bromomethane | 0.840 | 0.700 | 0.694 | 0.637 | 0.634 | 0.634 | 0.634 | 0.627 | 0.6750 | 10.78 |
| 14) | C | chloroethane | 0.460 | 0.440 | 0.408 | 0.372 | 0.370 | 0.365 | 0.368 | 0.373 | 0.3944 | 9.39 |
| 15) | | ethanol | | | 0.506 | 0.515 | 0.474 | 0.572 | 0.581 | 0.501 | 0.5249 | 8.10 |
| 16) | | dichlorofluoromethane | 1.416 | 1.397 | 1.262 | 1.193 | 1.185 | 1.183 | 1.239 | 1.163 | 1.2547 | 7.90 |
| 17) | C | vinyl bromide | 0.837 | 0.804 | 0.776 | 0.744 | 0.747 | 0.733 | 0.709 | 0.687 | 0.7547 | 6.49 |
| 18) | C | acrolein | | 0.414 | 0.385 | 0.371 | 0.369 | 0.369 | 0.370 | 0.361 | 0.3770 | 4.69 |
| 19) | | acetone | 1.391 | 1.143 | 1.053 | 0.909 | 0.901 | 0.909 | 0.836 | 0.768 | 0.9887 | 20.32 |
| 20) | C | acetonitrile | 0.883 | 0.798 | 0.781 | 0.744 | 0.742 | 0.729 | 0.689 | 0.653 | 0.7525 | 9.32 |
| 21) | | trichlorofluoromethane | 1.465 | 1.398 | 1.360 | 1.279 | 1.269 | 1.228 | 1.189 | 1.145 | 1.2916 | 8.42 |
| 22) | | isopropyl alcohol | 1.508 | 1.343 | 1.255 | 1.149 | 1.139 | 1.167 | 1.090 | 1.007 | 1.2072 | 13.07 |
| 23) | C | acrylonitrile | 0.540 | 0.589 | 0.488 | 0.538 | 0.497 | 0.539 | 0.462 | 0.490 | 0.5176 | 7.86 |
| 24) | | pentane | 1.896 | 1.799 | 1.827 | 1.672 | 1.669 | 1.607 | 1.462 | 1.388 | 1.6650 | 10.62 |
| 25) | | ethyl ether | 1.490 | 1.352 | 1.258 | 1.245 | 1.270 | 1.230 | 1.167 | 1.165 | 1.2721 | 8.34 |
| 26) | C | 1,1-dichloroethene | 1.232 | 1.166 | 1.126 | 1.087 | 1.086 | 1.064 | 1.046 | 1.032 | 1.1048 | 6.06 |
| 27) | | tertiary butyl alcohol | | 1.523 | 1.467 | 1.376 | 1.379 | 1.391 | 1.392 | 1.397 | 1.4178 | 3.92 |
| 28) | C | methylene chloride | | 1.069 | 1.032 | 0.970 | 0.946 | 0.921 | 0.868 | 0.806 | 0.9444 | 9.61 |
| 29) | C | 3-chloropropene | 1.499 | 1.379 | 1.282 | 1.265 | 1.293 | 1.239 | 1.206 | 1.139 | 1.2877 | 8.55 |
| 30) | C | carbon disulfide | 2.914 | 2.739 | 2.671 | 2.552 | 2.534 | 2.473 | 2.348 | 2.195 | 2.5532 | 8.84 |
| 31) | | Freon 113 | 1.611 | 1.533 | 1.475 | 1.422 | 1.413 | 1.433 | 1.366 | 1.278 | 1.4413 | 7.02 |
| 32) | | trans-1,2-dichloroethene | 1.362 | 1.293 | 1.247 | 1.193 | 1.194 | 1.164 | 1.147 | 1.126 | 1.2156 | 6.57 |
| 33) | C | 1,1-dichloroethane | 1.606 | 1.538 | 1.480 | 1.388 | 1.382 | 1.355 | 1.312 | 1.289 | 1.4185 | 7.89 |
| 34) | C | MTBE | 2.218 | 2.161 | 2.104 | 2.080 | 2.100 | 2.047 | 1.953 | 1.877 | 2.0674 | 5.30 |
| 35) | C | vinyl acetate | 2.014 | 1.938 | 1.878 | 1.957 | 1.979 | 1.933 | 1.833 | 1.737 | 1.9085 | 4.69 |
| 36) | C | 2-butanone | 2.428 | 2.217 | 1.990 | 1.915 | 1.938 | 1.700 | 1.731 | 1.634 | 1.9440 | 13.92 |
| 37) | | cis-1,2-dichloroethene | 1.098 | 1.111 | 1.064 | 1.025 | 1.025 | 1.004 | 0.984 | 0.971 | 1.0354 | 4.94 |
| 38) | | Ethyl Acetate | 0.337 | 0.295 | 0.304 | 0.302 | 0.295 | 0.296 | 0.286 | 0.280 | 0.2994 | 5.69 |

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | **: Tetra Tech GEO** | **Lab Number** | **: L1700975** |
| **Project Name** | **: FORMER LEC** | **Project Number** | **: 117-0507641** |
| **Instrument ID** | **: AIRLAB15** | **Ical Ref** | **: ICAL13292** |
| **Calibration dates** | **: 01/09/17 19:05 01/10/17 00:04** | | |

Calibration Files
0.2 =r152072.D 0.5 =r152073.D 1.0 =r152074.D 5.0 =r152075.D 10 =r152076.D 20 =r152077.D
50 =r152078.D 100 =r152079.D

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 39) | C | chloroform | 1.564 | 1.468 | 1.440 | 1.376 | 1.358 | 1.339 | 1.296 | 1.247 | 1.3859 | 7.31 |
| 40) | | Tetrahydrofuran | 1.265 | 1.176 | 1.059 | 1.129 | 1.144 | 1.101 | 1.033 | 0.976 | 1.1104 | 8.09 |
| 41) | | 2,2-dichloropropane | 1.335 | 1.207 | 1.148 | 1.100 | 1.103 | 1.086 | 1.047 | 0.989 | 1.1268 | 9.39 |
| 42) | C | 1,2-dichloroethane | 0.957 | 0.892 | 0.847 | 0.897 | 0.882 | 0.868 | 0.829 | 0.823 | 0.8744 | 4.96 |
| 43) | I | 1,4-difluorobenzene | ----------ISTD---------- | | | | | | | | | |
| 44) | C | hexane | 0.625 | 0.575 | 0.571 | 0.568 | 0.563 | 0.550 | 0.525 | 0.495 | 0.5590 | 6.84 |
| 45) | | diisopropyl ether | 0.308 | 0.283 | 0.277 | 0.274 | 0.281 | 0.275 | 0.268 | 0.256 | 0.2778 | 5.42 |
| 46) | | tert-butyl ethyl ether | 0.985 | 0.920 | 0.892 | 0.893 | 0.898 | 0.892 | 0.857 | 0.838 | 0.8970 | 4.90 |
| 47) | s | 1,2-dichloroethane-D4 | 0.222 | 0.220 | 0.220 | 0.227 | 0.223 | 0.224 | 0.209 | 0.212 | 0.2196 | 2.77 |
| 48) | C | 1,1,1-trichloroethane | 0.470 | 0.441 | 0.427 | 0.415 | 0.419 | 0.412 | 0.394 | 0.381 | 0.4199 | 6.50 |
| 49) | | 1,1-dichloropropene | 0.499 | 0.458 | 0.454 | 0.445 | 0.444 | 0.443 | 0.411 | 0.386 | 0.4425 | 7.53 |
| 50) | C | benzene | 1.138 | 1.106 | 1.059 | 1.032 | 1.026 | 1.019 | 0.954 | 0.902 | 1.0294 | 7.40 |
| 51) | | thiophene | 0.630 | 0.601 | 0.582 | 0.530 | 0.531 | 0.566 | 0.544 | 0.519 | 0.5628 | 6.94 |
| 52) | C | carbon tetrachloride | 0.429 | 0.380 | 0.384 | 0.380 | 0.385 | 0.391 | 0.384 | 0.371 | 0.3881 | 4.52 |
| 53) | | cyclohexane | 0.661 | 0.614 | 0.595 | 0.600 | 0.600 | 0.589 | 0.562 | 0.542 | 0.5954 | 5.93 |
| 54) | | tert-amyl methyl ether | 0.906 | 0.886 | 0.866 | 0.862 | 0.869 | 0.856 | 0.800 | 0.756 | 0.8502 | 5.70 |
| 55) | | dibromomethane | 0.381 | 0.328 | 0.310 | 0.305 | 0.298 | 0.292 | 0.279 | 0.269 | 0.3078 | 11.29 |
| 56) | C | 1,2-dichloropropane | 0.391 | 0.379 | 0.355 | 0.346 | 0.345 | 0.346 | 0.324 | 0.311 | 0.3496 | 7.53 |
| 57) | | bromodichloromethane | 0.604 | 0.552 | 0.538 | 0.545 | 0.551 | 0.548 | 0.528 | 0.505 | 0.5463 | 5.14 |
| 58) | C | 1,4-dioxane | 0.256 | 0.245 | 0.223 | 0.243 | 0.231 | 0.237 | 0.230 | 0.219 | 0.2354 | 5.17 |
| 59) | C | trichloroethene | 0.476 | 0.447 | 0.439 | 0.423 | 0.418 | 0.416 | 0.390 | 0.379 | 0.4236 | 7.37 |
| 60) | C | 2,2,4-trimethylpentane | 2.032 | 1.904 | 1.852 | 1.863 | 1.860 | 1.806 | 1.713 | 1.636 | 1.8332 | 6.53 |
| 61) | | methyl methacrylate | 0.438 | 0.410 | 0.401 | 0.373 | 0.377 | 0.401 | 0.367 | 0.348 | 0.3893 | 7.32 |
| 62) | | heptane | 0.815 | 0.736 | 0.715 | 0.721 | 0.726 | 0.689 | 0.617 | 0.568 | 0.6984 | 10.88 |
| 63) | C | cis-1,3-dichloropropene | 0.429 | 0.429 | 0.419 | 0.439 | 0.450 | 0.457 | 0.434 | 0.417 | 0.4342 | 3.22 |
| 64) | C | 4-methyl-2-pentanone | 0.882 | 0.826 | 0.820 | 0.829 | 0.830 | 0.786 | 0.708 | 0.661 | 0.7930 | 9.20 |
| 65) | | trans-1,3-dichloropropene | 0.509 | 0.468 | 0.474 | 0.474 | 0.485 | 0.493 | 0.465 | 0.438 | 0.4757 | 4.43 |
| 66) | C | 1,1,2-trichloroethane | 0.404 | 0.404 | 0.384 | 0.376 | 0.371 | 0.367 | 0.345 | 0.335 | 0.3730 | 6.63 |
| 67) | I | chlorobenzene-D5 | ----------ISTD---------- | | | | | | | | | |
| 68) | C | toluene | 8.137 | 7.723 | 7.555 | 7.347 | 7.336 | 7.273 | 6.929 | 6.596 | 7.3620 | 6.39 |
| 69) | s | toluene-D8 | 5.320 | 5.285 | 5.237 | 5.582 | 5.434 | 5.464 | 5.116 | 5.394 | 5.3538 | 2.72 |
| 70) | | 2-methylthiophene | 5.792 | 5.639 | 5.358 | 5.012 | 5.044 | 5.261 | 5.059 | 4.807 | 5.2463 | 6.40 |
| 71) | | 1,3-dichloropropane | 4.052 | 3.721 | 3.569 | 3.532 | 3.529 | 3.453 | 3.206 | 2.961 | 3.5028 | 9.28 |
| 72) | | 2-hexanone | 4.455 | 4.397 | 4.500 | 4.831 | 4.908 | 4.565 | 4.131 | 3.791 | 4.4473 | 8.10 |
| 73) | | 3-methylthiophene | 5.837 | 5.371 | 5.400 | 4.992 | 5.050 | 5.170 | 4.970 | 4.721 | 5.1889 | 6.61 |
| 74) | | dibromochloromethane | 3.348 | 3.172 | 3.100 | 3.267 | 3.353 | 3.266 | 3.239 | 3.089 | 3.2291 | 3.14 |
| 75) | C | 1,2-dibromoethane | 3.790 | 3.632 | 3.581 | 3.481 | 3.481 | 3.393 | 3.277 | 3.078 | 3.4641 | 6.34 |
| 76) | | butyl acetate | 0.978 | 0.862 | 0.908 | 0.893 | 0.978 | 0.890 | 0.850 | 0.799 | 0.8950 | 6.86 |

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | **: Tetra Tech GEO** | **Lab Number** | **: L1700975** |
| **Project Name** | **: FORMER LEC** | **Project Number** | **: 117-0507641** |
| **Instrument ID** | **: AIRLAB15** | **Ical Ref** | **: ICAL13292** |
| **Calibration dates** | **: 01/09/17 19:05 01/10/17 00:04** | | |

Calibration Files
0.2 =r152072.D 0.5 =r152073.D 1.0 =r152074.D 5.0 =r152075.D 10 =r152076.D 20 =r152077.D
50 =r152078.D 100 =r152079.D

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 77) | | octane | 2.876 | 3.055 | 2.664 | 3.161 | 2.703 | 3.018 | 2.407 | 1.945 | 2.7286 | 14.67 |
| 78) | C | tetrachloroethene | 3.707 | 3.397 | 3.311 | 3.170 | 3.159 | 3.076 | 2.996 | 2.816 | 3.2039 | 8.46 |
| 79) | | 1,1,1,2-tetrachloroethane | 2.865 | 2.575 | 2.462 | 2.495 | 2.560 | 2.520 | 2.423 | 2.309 | 2.5262 | 6.37 |
| 80) | C | chlorobenzene | 6.719 | 6.453 | 6.152 | 6.067 | 6.076 | 5.920 | 5.632 | 5.194 | 6.0267 | 7.79 |
| 81) | C | ethylbenzene | 9.858 | 9.281 | 9.209 | 9.253 | 9.341 | 9.159 | 8.748 | 8.246 | 9.1368 | 5.14 |
| 82) | | 2-ethylthiophene | 6.037 | 6.028 | 5.897 | 5.694 | 5.719 | 5.809 | 5.611 | 5.338 | 5.7667 | 4.02 |
| 83) | C | m+p-xylene | 7.904 | 7.515 | 7.614 | 7.527 | 7.544 | 7.351 | 7.040 | 6.611 | 7.3884 | 5.37 |
| 84) | C | bromoform | 2.933 | 2.585 | 2.653 | 2.876 | 2.986 | 2.944 | 3.025 | 2.888 | 2.8611 | 5.53 |
| 85) | C | styrene | 6.316 | 5.918 | 6.085 | 6.081 | 6.226 | 6.107 | 5.885 | 5.583 | 6.0250 | 3.79 |
| 86) | C | 1,1,2,2-tetrachloroethane | 5.698 | 5.542 | 5.411 | 5.394 | 5.352 | 5.235 | 4.896 | 4.541 | 5.2588 | 7.08 |
| 87) | C | o-xylene | 8.067 | 7.765 | 7.789 | 7.649 | 7.577 | 7.346 | 6.934 | 6.510 | 7.4546 | 6.82 |
| 88) | | 1,2,3-trichloropropane | 4.763 | 4.452 | 4.282 | 4.241 | 4.194 | 4.094 | 3.834 | 3.588 | 4.1810 | 8.61 |
| 89) | | nonane | 7.010 | 6.618 | 6.579 | 6.525 | 6.425 | 5.991 | 5.390 | 4.871 | 6.1761 | 11.60 |
| 90) | s | bromofluorobenzene | 3.321 | 3.341 | 3.235 | 3.364 | 3.664 | 3.205 | 3.287 | 3.365 | 3.3477 | 4.20 |
| 91) | C | isopropylbenzene | 1.120 | 1.076 | 1.044 | 1.040 | 1.048 | 1.006 | 0.955 | 0.883 | 1.0213 | 7.23 |
| 92) | | bromobenzene | 6.104 | 5.719 | 5.668 | 5.513 | 5.585 | 5.390 | 5.098 | 4.798 | 5.4845 | 7.27 |
| 93) | | 2-chlorotoluene | 3.237 | 3.006 | 3.137 | 3.676 | 3.133 | 2.906 | 3.421 | 3.183 | 3.2123 | 7.52 |
| 94) | | n-propylbenzene | 3.548 | 3.462 | 3.509 | 3.926 | 3.471 | 3.361 | 3.248 | 3.094 | 3.4525 | 7.06 |
| 95) | | 4-chlorotoluene | 3.041 | 2.961 | 2.798 | 2.905 | 2.770 | 2.814 | 2.673 | 2.609 | 2.8214 | 5.10 |
| 96) | | 4-ethyl toluene | 1.190 | 1.161 | 1.203 | 1.191 | 1.235 | 1.138 | 1.091 | 1.005 | 1.1517 | 6.40 |
| 97) | | 1,3,5-trimethylbenzene | 9.369 | 9.399 | 9.058 | 9.157 | 8.926 | 8.873 | 8.273 | 7.869 | 8.8656 | 6.04 |
| 98) | | tert-butylbenzene | 1.019 | 1.006 | 0.978 | 0.995 | 0.990 | 0.944 | 0.889 | 0.805 | 0.9533 | 7.66 |
| 99) | | 1,2,4-trimethylbenzene | 9.335 | 9.218 | 9.163 | 9.096 | 9.104 | 8.770 | 8.074 | 7.414 | 8.7718 | 7.73 |
| 100) | | decane | 7.061 | 7.228 | 7.264 | 7.387 | 7.297 | 6.941 | 6.589 | 6.325 | 7.0114 | 5.36 |
| 101) | C | Benzyl Chloride | 4.758 | 5.097 | 5.213 | 6.419 | 6.833 | 7.010 | 6.883 | 6.926 | 6.1424 | 15.50 |
| 102) | | 1,3-dichlorobenzene | 6.695 | 6.545 | 6.792 | 6.436 | 6.805 | 6.307 | 6.046 | 5.619 | 6.4056 | 6.38 |
| 103) | C | 1,4-dichlorobenzene | 6.567 | 6.719 | 6.114 | 6.344 | 6.015 | 6.215 | 5.662 | 5.507 | 6.1429 | 6.77 |
| 104) | | sec-butylbenzene | 1.355 | 1.358 | 1.336 | 1.340 | 1.318 | 1.263 | 1.173 | 1.111 | 1.2819 | 7.22 |
| 105) | | 1,2,3-trimethylbenzene | 7.767 | 7.295 | 7.304 | 7.152 | 7.027 | 6.944 | 6.269 | 6.068 | 6.9781 | 8.02 |
| 106) | | p-isopropyltoluene | 1.174 | 1.164 | 1.166 | 1.205 | 1.190 | 1.144 | 1.050 | 0.998 | 1.1364 | 6.42 |
| 107) | | 1,2-dichlorobenzene | 5.967 | 6.244 | 6.125 | 5.879 | 5.794 | 5.736 | 5.270 | 5.288 | 5.7878 | 6.14 |
| 108) | | n-butylbenzene | 0.954 | 0.967 | 0.984 | 1.003 | 0.999 | 0.962 | 0.899 | 0.882 | 0.9564 | 4.63 |
| 109) | | indan | 8.412 | 8.587 | 8.373 | 8.096 | 8.096 | 7.946 | 7.488 | 7.338 | 8.0422 | 5.48 |
| 110) | | indene | 4.822 | 4.951 | 5.035 | 5.110 | 5.158 | 5.091 | 4.835 | 4.881 | 4.9856 | 2.63 |
| 111) | C | 1,2-dibromo-3-chloropropane | 1.984 | 1.936 | 2.006 | 2.144 | 2.213 | 2.161 | 2.063 | 2.039 | 2.0680 | 4.65 |
| 112) | | undecane | 6.707 | 7.255 | 7.398 | 7.894 | 7.993 | 7.509 | 7.033 | 6.769 | 7.3196 | 6.51 |
| 113) | | 1,2,4,5-tetramethylbenzene | 1.391 | 1.613 | 1.638 | 1.581 | 1.577 | 1.624 | 1.537 | 1.309 | 1.5336 | 7.81 |
| 114) | | dodecane | 4.512 | 5.413 | 6.207 | 7.513 | 7.534 | 7.092 | 6.765 | 6.464 | 6.4376 | 16.30 |

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | **: Tetra Tech GEO** | **Lab Number** | **: L1700975** |
| **Project Name** | **: FORMER LEC** | **Project Number** | **: 117-0507641** |
| **Instrument ID** | **: AIRLAB15** | **Ical Ref** | **: ICAL13292** |
| **Calibration dates** | **: 01/09/17 19:05 01/10/17 00:04** | | |

Calibration Files
0.2 =r152072.D 0.5 =r152073.D 1.0 =r152074.D 5.0 =r152075.D 10 =r152076.D 20 =r152077.D
50 =r152078.D 100 =r152079.D

| | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 115) C | 1,2,4-trichlorobenzene | 3.384 | 3.671 | 3.742 | 4.394 | 4.476 | 4.181 | 4.015 | 3.909 | 3.9715 | 9.37 |
| 116) | naphthalene | 0.773 | 0.911 | 1.013 | 1.146 | 1.189 | 1.156 | 1.130 | 1.099 | 1.0522 | 13.72 |
| 117) | 1,2,3-trichlorobenzene | 3.238 | 3.675 | 3.733 | 4.143 | 4.138 | 4.131 | 4.025 | 3.915 | 3.8749 | 8.14 |
| 118) | benzothiophene | 0.653 | 0.802 | 0.879 | 0.881 | 0.932 | 1.152 | 1.148 | 1.118 | 0.9456 | 19.09 |
| 119) C | hexachlorobutadiene | 3.297 | 3.382 | 3.409 | 3.719 | 3.630 | 3.330 | 3.271 | 3.113 | 3.3938 | 5.78 |
| 120) | 2-methylnaphthalene | | | 2.500 | 2.858 | 3.435 | 4.893 | 5.461 | 5.543 | 4.1149 | 32.79# |
| 121) | 1-methylnaphthalene | | | 3.834 | 4.052 | 4.580 | 5.888 | 6.302 | 6.408 | 5.1775 | 22.38 |

Response Factor Report

Method Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Method File : TALL170109.M
Title : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update : Tue Jan 10 10:27:32 2017
Response Via : Initial Calibration

Calibration Files
0.2 =r152072.D 0.5 =r152073.D 1.0 =r152074.D 5.0 =r152075.D 10 =r152076.D 20 =r152077.D
50 =r152078.D 100 =r152079.D

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) | I | bromochloromethane | ----------ISTD---------- | | | | | | | | | |
| 2) | | chlorodifluoromethane | 1.218 | 1.187 | 1.130 | 1.074 | 1.032 | 0.979 | 0.948 | 0.917 | 1.0605 | 10.49 |
| 3) | | propylene | 0.822 | 0.718 | 0.742 | 0.664 | 0.664 | 0.602 | 0.587 | 0.568 | 0.6708 | 12.92 |
| 4) | | propane | 0.935 | 0.868 | 0.878 | 0.795 | 0.761 | 0.721 | 0.688 | 0.652 | 0.7872 | 12.69 |
| 5) | | dichlorodifluoromethane | 1.582 | 1.458 | 1.451 | 1.379 | 1.328 | 1.291 | 1.268 | 1.239 | 1.3746 | 8.47 |
| 6) | C | chloromethane | 0.769 | 0.678 | 0.673 | 0.631 | 0.611 | 0.582 | 0.562 | 0.536 | 0.6303 | 11.95 |
| 7) | | Freon-114 | 1.941 | 1.904 | 1.802 | 1.718 | 1.700 | 1.642 | 1.589 | 1.507 | 1.7254 | 8.71 |
| 8) | C | methanol | | | 0.358 | 0.302 | 0.288 | 0.258 | 0.274 | 0.255 | 0.2890 | 13.23 |
| 9) | C | vinyl chloride | 0.845 | 0.799 | 0.769 | 0.737 | 0.734 | 0.725 | 0.786 | 0.797 | 0.7741 | 5.30 |
| 10) | C | 1,3-butadiene | 0.950 | 0.857 | 0.842 | 0.821 | 0.779 | 0.622 | 0.783 | 0.735 | 0.7986 | 12.03 |
| 11) | | butane | 1.220 | 1.124 | 1.082 | 1.005 | 1.007 | 0.973 | 0.955 | 0.933 | 1.0373 | 9.40 |
| 12) | C | acetaldehyde | | 0.390 | 0.365 | 0.310 | 0.305 | 0.307 | 0.288 | 0.265 | 0.3186 | 13.72 |
| 13) | C | bromomethane | 0.840 | 0.700 | 0.694 | 0.637 | 0.634 | 0.634 | 0.634 | 0.627 | 0.6750 | 10.78 |
| 14) | C | chloroethane | 0.460 | 0.440 | 0.408 | 0.372 | 0.370 | 0.365 | 0.368 | 0.373 | 0.3944 | 9.39 |
| 15) | | ethanol | | | 0.506 | 0.515 | 0.474 | 0.572 | 0.581 | 0.501 | 0.5249 | 8.10 |
| 16) | | dichlorofluoromethane | 1.416 | 1.397 | 1.262 | 1.193 | 1.185 | 1.183 | 1.239 | 1.163 | 1.2547 | 7.90 |
| 17) | C | vinyl bromide | 0.837 | 0.804 | 0.776 | 0.744 | 0.747 | 0.733 | 0.709 | 0.687 | 0.7547 | 6.49 |
| 18) | C | acrolein | | 0.414 | 0.385 | 0.371 | 0.369 | 0.369 | 0.370 | 0.361 | 0.3770 | 4.69 |
| 19) | | acetone | 1.391 | 1.143 | 1.053 | 0.909 | 0.901 | 0.909 | 0.836 | 0.768 | 0.9887 | 20.32 |
| 20) | C | acetonitrile | 0.883 | 0.798 | 0.781 | 0.744 | 0.742 | 0.729 | 0.689 | 0.653 | 0.7525 | 9.32 |
| 21) | | trichlorofluoromethane | 1.465 | 1.398 | 1.360 | 1.279 | 1.269 | 1.228 | 1.189 | 1.145 | 1.2916 | 8.42 |
| 22) | | isopropyl alcohol | 1.508 | 1.343 | 1.255 | 1.149 | 1.139 | 1.167 | 1.090 | 1.007 | 1.2072 | 13.07 |
| 23) | C | acrylonitrile | 0.540 | 0.589 | 0.488 | 0.538 | 0.497 | 0.539 | 0.462 | 0.490 | 0.5176 | 7.86 |
| 24) | | pentane | 1.896 | 1.799 | 1.827 | 1.672 | 1.669 | 1.607 | 1.462 | 1.388 | 1.6650 | 10.62 |
| 25) | | ethyl ether | 1.490 | 1.352 | 1.258 | 1.245 | 1.270 | 1.230 | 1.167 | 1.165 | 1.2721 | 8.34 |
| 26) | C | 1,1-dichloroethene | 1.232 | 1.166 | 1.126 | 1.087 | 1.086 | 1.064 | 1.046 | 1.032 | 1.1048 | 6.06 |
| 27) | | tertiary butyl alcohol | | 1.523 | 1.467 | 1.376 | 1.379 | 1.391 | 1.392 | 1.397 | 1.4178 | 3.92 |
| 28) | C | methylene chloride | | 1.069 | 1.032 | 0.970 | 0.946 | 0.921 | 0.868 | 0.806 | 0.9444 | 9.61 |
| 29) | C | 3-chloropropene | 1.499 | 1.379 | 1.282 | 1.265 | 1.293 | 1.239 | 1.206 | 1.139 | 1.2877 | 8.55 |
| 30) | C | carbon disulfide | 2.914 | 2.739 | 2.671 | 2.552 | 2.534 | 2.473 | 2.348 | 2.195 | 2.5532 | 8.84 |
| 31) | | Freon 113 | 1.611 | 1.533 | 1.475 | 1.422 | 1.413 | 1.433 | 1.366 | 1.278 | 1.4413 | 7.02 |

Response Factor Report

Method Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Method File : TALL170109.M
Title : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update : Tue Jan 10 10:27:32 2017
Response Via : Initial Calibration

Calibration Files
0.2 =r152072.D 0.5 =r152073.D 1.0 =r152074.D 5.0 =r152075.D 10 =r152076.D 20 =r152077.D
50 =r152078.D 100 =r152079.D

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32) | | trans-1,2-dichloroethene | 1.362 | 1.293 | 1.247 | 1.193 | 1.194 | 1.164 | 1.147 | 1.126 | 1.2156 | 6.57 |
| 33) | C | 1,1-dichloroethane | 1.606 | 1.538 | 1.480 | 1.388 | 1.382 | 1.355 | 1.312 | 1.289 | 1.4185 | 7.89 |
| 34) | C | MTBE | 2.218 | 2.161 | 2.104 | 2.080 | 2.100 | 2.047 | 1.953 | 1.877 | 2.0674 | 5.30 |
| 35) | C | vinyl acetate | 2.014 | 1.938 | 1.878 | 1.957 | 1.979 | 1.933 | 1.833 | 1.737 | 1.9085 | 4.69 |
| 36) | C | 2-butanone | 2.428 | 2.217 | 1.990 | 1.915 | 1.938 | 1.700 | 1.731 | 1.634 | 1.9440 | 13.92 |
| 37) | | cis-1,2-dichloroethene | 1.098 | 1.111 | 1.064 | 1.025 | 1.025 | 1.004 | 0.984 | 0.971 | 1.0354 | 4.94 |
| 38) | | Ethyl Acetate | 0.337 | 0.295 | 0.304 | 0.302 | 0.295 | 0.296 | 0.286 | 0.280 | 0.2994 | 5.69 |
| 39) | C | chloroform | 1.564 | 1.468 | 1.440 | 1.376 | 1.358 | 1.339 | 1.296 | 1.247 | 1.3859 | 7.31 |
| 40) | | Tetrahydrofuran | 1.265 | 1.176 | 1.059 | 1.129 | 1.144 | 1.101 | 1.033 | 0.976 | 1.1104 | 8.09 |
| 41) | | 2,2-dichloropropane | 1.335 | 1.207 | 1.148 | 1.100 | 1.103 | 1.086 | 1.047 | 0.989 | 1.1268 | 9.39 |
| 42) | C | 1,2-dichloroethane | 0.957 | 0.892 | 0.847 | 0.897 | 0.882 | 0.868 | 0.829 | 0.823 | 0.8744 | 4.96 |
| 43) | I | 1,4-difluorobenzene | ----------ISTD---------- | | | | | | | | | |
| 44) | C | hexane | 0.625 | 0.575 | 0.571 | 0.568 | 0.563 | 0.550 | 0.525 | 0.495 | 0.5590 | 6.84 |
| 45) | | diisopropyl ether | 0.308 | 0.283 | 0.277 | 0.274 | 0.281 | 0.275 | 0.268 | 0.256 | 0.2778 | 5.42 |
| 46) | | tert-butyl ethyl ether | 0.985 | 0.920 | 0.892 | 0.893 | 0.898 | 0.892 | 0.857 | 0.838 | 0.8970 | 4.90 |
| 47) | s | 1,2-dichloroethane-D4 | 0.222 | 0.220 | 0.220 | 0.227 | 0.223 | 0.224 | 0.209 | 0.212 | 0.2196 | 2.77 |
| 48) | C | 1,1,1-trichloroethane | 0.470 | 0.441 | 0.427 | 0.415 | 0.419 | 0.412 | 0.394 | 0.381 | 0.4199 | 6.50 |
| 49) | | 1,1-dichloropropene | 0.499 | 0.458 | 0.454 | 0.445 | 0.444 | 0.443 | 0.411 | 0.386 | 0.4425 | 7.53 |
| 50) | C | benzene | 1.138 | 1.106 | 1.059 | 1.032 | 1.026 | 1.019 | 0.954 | 0.902 | 1.0294 | 7.40 |
| 51) | | thiophene | 0.630 | 0.601 | 0.582 | 0.530 | 0.531 | 0.566 | 0.544 | 0.519 | 0.5628 | 6.94 |
| 52) | C | carbon tetrachloride | 0.429 | 0.380 | 0.384 | 0.380 | 0.385 | 0.391 | 0.384 | 0.371 | 0.3881 | 4.52 |
| 53) | | cyclohexane | 0.661 | 0.614 | 0.595 | 0.600 | 0.600 | 0.589 | 0.562 | 0.542 | 0.5954 | 5.93 |
| 54) | | tert-amyl methyl ether | 0.906 | 0.886 | 0.866 | 0.862 | 0.869 | 0.856 | 0.800 | 0.756 | 0.8502 | 5.70 |
| 55) | | dibromomethane | 0.381 | 0.328 | 0.310 | 0.305 | 0.298 | 0.292 | 0.279 | 0.269 | 0.3078 | 11.29 |
| 56) | C | 1,2-dichloropropane | 0.391 | 0.379 | 0.355 | 0.346 | 0.345 | 0.346 | 0.324 | 0.311 | 0.3496 | 7.53 |
| 57) | | bromodichloromethane | 0.604 | 0.552 | 0.538 | 0.545 | 0.551 | 0.548 | 0.528 | 0.505 | 0.5463 | 5.14 |
| 58) | C | 1,4-dioxane | 0.256 | 0.245 | 0.223 | 0.243 | 0.231 | 0.237 | 0.230 | 0.219 | 0.2354 | 5.17 |
| 59) | C | trichloroethene | 0.476 | 0.447 | 0.439 | 0.423 | 0.418 | 0.416 | 0.390 | 0.379 | 0.4236 | 7.37 |
| 60) | C | 2,2,4-trimethylpentane | 2.032 | 1.904 | 1.852 | 1.863 | 1.860 | 1.806 | 1.713 | 1.636 | 1.8332 | 6.53 |
| 61) | | methyl methacrylate | 0.438 | 0.410 | 0.401 | 0.373 | 0.377 | 0.401 | 0.367 | 0.348 | 0.3893 | 7.32 |
| 62) | | heptane | 0.815 | 0.736 | 0.715 | 0.721 | 0.726 | 0.689 | 0.617 | 0.568 | 0.6984 | 10.88 |

Response Factor Report

Method Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Method File : TALL170109.M
Title : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update : Tue Jan 10 10:27:32 2017
Response Via : Initial Calibration

Calibration Files
0.2 =r152072.D 0.5 =r152073.D 1.0 =r152074.D 5.0 =r152075.D 10 =r152076.D 20 =r152077.D
50 =r152078.D 100 =r152079.D

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 63) | C | cis-1,3-dichloropropene | 0.429 | 0.429 | 0.419 | 0.439 | 0.450 | 0.457 | 0.434 | 0.417 | 0.4342 | 3.22 |
| 64) | C | 4-methyl-2-pentanone | 0.882 | 0.826 | 0.820 | 0.829 | 0.830 | 0.786 | 0.708 | 0.661 | 0.7930 | 9.20 |
| 65) | | trans-1,3-dichloropropene | 0.509 | 0.468 | 0.474 | 0.474 | 0.485 | 0.493 | 0.465 | 0.438 | 0.4757 | 4.43 |
| 66) | C | 1,1,2-trichloroethane | 0.404 | 0.404 | 0.384 | 0.376 | 0.371 | 0.367 | 0.345 | 0.335 | 0.3730 | 6.63 |
| 67) | I | chlorobenzene-D5 | ----------ISTD---------- | | | | | | | | | |
| 68) | C | toluene | 8.137 | 7.723 | 7.555 | 7.347 | 7.336 | 7.273 | 6.929 | 6.596 | 7.3620 | 6.39 |
| 69) | s | toluene-D8 | 5.320 | 5.285 | 5.237 | 5.582 | 5.434 | 5.464 | 5.116 | 5.394 | 5.3538 | 2.72 |
| 70) | | 2-methylthiophene | 5.792 | 5.639 | 5.358 | 5.012 | 5.044 | 5.261 | 5.059 | 4.807 | 5.2463 | 6.40 |
| 71) | | 1,3-dichloropropane | 4.052 | 3.721 | 3.569 | 3.532 | 3.529 | 3.453 | 3.206 | 2.961 | 3.5028 | 9.28 |
| 72) | | 2-hexanone | 4.455 | 4.397 | 4.500 | 4.831 | 4.908 | 4.565 | 4.131 | 3.791 | 4.4473 | 8.10 |
| 73) | | 3-methylthiophene | 5.837 | 5.371 | 5.400 | 4.992 | 5.050 | 5.170 | 4.970 | 4.721 | 5.1889 | 6.61 |
| 74) | | dibromochloromethane | 3.348 | 3.172 | 3.100 | 3.267 | 3.353 | 3.266 | 3.239 | 3.089 | 3.2291 | 3.14 |
| 75) | C | 1,2-dibromoethane | 3.790 | 3.632 | 3.581 | 3.481 | 3.481 | 3.393 | 3.277 | 3.078 | 3.4641 | 6.34 |
| 76) | | butyl acetate | 0.978 | 0.862 | 0.908 | 0.893 | 0.978 | 0.890 | 0.850 | 0.799 | 0.8950 | 6.86 |
| 77) | | octane | 2.876 | 3.055 | 2.664 | 3.161 | 2.703 | 3.018 | 2.407 | 1.945 | 2.7286 | 14.67 |
| 78) | C | tetrachloroethene | 3.707 | 3.397 | 3.311 | 3.170 | 3.159 | 3.076 | 2.996 | 2.816 | 3.2039 | 8.46 |
| 79) | | 1,1,1,2-tetrachloroethane | 2.865 | 2.575 | 2.462 | 2.495 | 2.560 | 2.520 | 2.423 | 2.309 | 2.5262 | 6.37 |
| 80) | C | chlorobenzene | 6.719 | 6.453 | 6.152 | 6.067 | 6.076 | 5.920 | 5.632 | 5.194 | 6.0267 | 7.79 |
| 81) | C | ethylbenzene | 9.858 | 9.281 | 9.209 | 9.253 | 9.341 | 9.159 | 8.748 | 8.246 | 9.1368 | 5.14 |
| 82) | | 2-ethylthiophene | 6.037 | 6.028 | 5.897 | 5.694 | 5.719 | 5.809 | 5.611 | 5.338 | 5.7667 | 4.02 |
| 83) | C | m+p-xylene | 7.904 | 7.515 | 7.614 | 7.527 | 7.544 | 7.351 | 7.040 | 6.611 | 7.3884 | 5.37 |
| 84) | C | bromoform | 2.933 | 2.585 | 2.653 | 2.876 | 2.986 | 2.944 | 3.025 | 2.888 | 2.8611 | 5.53 |
| 85) | C | styrene | 6.316 | 5.918 | 6.085 | 6.081 | 6.226 | 6.107 | 5.885 | 5.583 | 6.0250 | 3.79 |
| 86) | C | 1,1,2,2-tetrachloroethane | 5.698 | 5.542 | 5.411 | 5.394 | 5.352 | 5.235 | 4.896 | 4.541 | 5.2588 | 7.08 |
| 87) | C | o-xylene | 8.067 | 7.765 | 7.789 | 7.649 | 7.577 | 7.346 | 6.934 | 6.510 | 7.4546 | 6.82 |
| 88) | | 1,2,3-trichloropropane | 4.763 | 4.452 | 4.282 | 4.241 | 4.194 | 4.094 | 3.834 | 3.588 | 4.1810 | 8.61 |
| 89) | | nonane | 7.010 | 6.618 | 6.579 | 6.525 | 6.425 | 5.991 | 5.390 | 4.871 | 6.1761 | 11.60 |
| 90) | s | bromofluorobenzene | 3.321 | 3.341 | 3.235 | 3.364 | 3.664 | 3.205 | 3.287 | 3.365 | 3.3477 | 4.20 |
| 91) | C | isopropylbenzene | 1.120 | 1.076 | 1.044 | 1.040 | 1.048 | 1.006 | 0.955 | 0.883 | 1.0213 | 7.23 |
| 92) | | bromobenzene | 6.104 | 5.719 | 5.668 | 5.513 | 5.585 | 5.390 | 5.098 | 4.798 | 5.4845 | 7.27 |
| 93) | | 2-chlorotoluene | 3.237 | 3.006 | 3.137 | 3.676 | 3.133 | 2.906 | 3.421 | 3.183 | 3.2123 | 7.52 |

Response Factor Report

Method Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Method File : TALL170109.M
Title : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update : Tue Jan 10 10:27:32 2017
Response Via : Initial Calibration

Calibration Files
0.2 =r152072.D 0.5 =r152073.D 1.0 =r152074.D 5.0 =r152075.D 10 =r152076.D 20 =r152077.D
50 =r152078.D 100 =r152079.D

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 94) | | n-propylbenzene | 3.548 | 3.462 | 3.509 | 3.926 | 3.471 | 3.361 | 3.248 | 3.094 | 3.4525 | 7.06 |
| 95) | | 4-chlorotoluene | 3.041 | 2.961 | 2.798 | 2.905 | 2.770 | 2.814 | 2.673 | 2.609 | 2.8214 | 5.10 |
| 96) | | 4-ethyl toluene | 1.190 | 1.161 | 1.203 | 1.191 | 1.235 | 1.138 | 1.091 | 1.005 | 1.1517 | 6.40 |
| 97) | | 1,3,5-trimethylbenzene | 9.369 | 9.399 | 9.058 | 9.157 | 8.926 | 8.873 | 8.273 | 7.869 | 8.8656 | 6.04 |
| 98) | | tert-butylbenzene | 1.019 | 1.006 | 0.978 | 0.995 | 0.990 | 0.944 | 0.889 | 0.805 | 0.9533 | 7.66 |
| 99) | | 1,2,4-trimethylbenzene | 9.335 | 9.218 | 9.163 | 9.096 | 9.104 | 8.770 | 8.074 | 7.414 | 8.7718 | 7.73 |
| 100) | | decane | 7.061 | 7.228 | 7.264 | 7.387 | 7.297 | 6.941 | 6.589 | 6.325 | 7.0114 | 5.36 |
| 101) | C | Benzyl Chloride | 4.758 | 5.097 | 5.213 | 6.419 | 6.833 | 7.010 | 6.883 | 6.926 | 6.1424 | 15.50 |
| 102) | | 1,3-dichlorobenzene | 6.695 | 6.545 | 6.792 | 6.436 | 6.805 | 6.307 | 6.046 | 5.619 | 6.4056 | 6.38 |
| 103) | C | 1,4-dichlorobenzene | 6.567 | 6.719 | 6.114 | 6.344 | 6.015 | 6.215 | 5.662 | 5.507 | 6.1429 | 6.77 |
| 104) | | sec-butylbenzene | 1.355 | 1.358 | 1.336 | 1.340 | 1.318 | 1.263 | 1.173 | 1.111 | 1.2819 | 7.22 |
| 105) | | 1,2,3-trimethylbenzene | 7.767 | 7.295 | 7.304 | 7.152 | 7.027 | 6.944 | 6.269 | 6.068 | 6.9781 | 8.02 |
| 106) | | p-isopropyltoluene | 1.174 | 1.164 | 1.166 | 1.205 | 1.190 | 1.144 | 1.050 | 0.998 | 1.1364 | 6.42 |
| 107) | | 1,2-dichlorobenzene | 5.967 | 6.244 | 6.125 | 5.879 | 5.794 | 5.736 | 5.270 | 5.288 | 5.7878 | 6.14 |
| 108) | | n-butylbenzene | 0.954 | 0.967 | 0.984 | 1.003 | 0.999 | 0.962 | 0.899 | 0.882 | 0.9564 | 4.63 |
| 109) | | indan | 8.412 | 8.587 | 8.373 | 8.096 | 8.096 | 7.946 | 7.488 | 7.338 | 8.0422 | 5.48 |
| 110) | | indene | 4.822 | 4.951 | 5.035 | 5.110 | 5.158 | 5.091 | 4.835 | 4.881 | 4.9856 | 2.63 |
| 111) | C | 1,2-dibromo-3-chloropropane | 1.984 | 1.936 | 2.006 | 2.144 | 2.213 | 2.161 | 2.063 | 2.039 | 2.0680 | 4.65 |
| 112) | | undecane | 6.707 | 7.255 | 7.398 | 7.894 | 7.993 | 7.509 | 7.033 | 6.769 | 7.3196 | 6.51 |
| 113) | | 1,2,4,5-tetramethylbenzene | 1.391 | 1.613 | 1.638 | 1.581 | 1.577 | 1.624 | 1.537 | 1.309 | 1.5336 | 7.81 |
| 114) | | dodecane | 4.512 | 5.413 | 6.207 | 7.513 | 7.534 | 7.092 | 6.765 | 6.464 | 6.4376 | 16.30 |
| 115) | C | 1,2,4-trichlorobenzene | 3.384 | 3.671 | 3.742 | 4.394 | 4.476 | 4.181 | 4.015 | 3.909 | 3.9715 | 9.37 |
| 116) | | naphthalene | 0.773 | 0.911 | 1.013 | 1.146 | 1.189 | 1.156 | 1.130 | 1.099 | 1.0522 | 13.72 |
| 117) | | 1,2,3-trichlorobenzene | 3.238 | 3.675 | 3.733 | 4.143 | 4.138 | 4.131 | 4.025 | 3.915 | 3.8749 | 8.14 |
| 118) | | benzothiophene | 0.653 | 0.802 | 0.879 | 0.881 | 0.932 | 1.152 | 1.148 | 1.118 | 0.9456 | 19.09 |
| 119) | C | hexachlorobutadiene | 3.297 | 3.382 | 3.409 | 3.719 | 3.630 | 3.330 | 3.271 | 3.113 | 3.3938 | 5.78 |
| 120) | | 2-methylnaphthalene | | | 2.500 | 2.858 | 3.435 | 4.893 | 5.461 | 5.543 | 4.1149 | 32.79# |
| 121) | | 1-methylnaphthalene | | | 3.834 | 4.052 | 4.580 | 5.888 | 6.302 | 6.408 | 5.1775 | 22.38 |

(#) = Out of Range

BFB

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152068.D
Acq On : 9 Jan 2017 2:47 PM
Operator : AIRLAB15:MB
Sample : WG968048-1
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Integration File: rteint.p

Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Title : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update : Tue Jan 10 10:27:32 2017

AutoFind: Scans 1299, 1300, 1301; Background Corrected with Scan 1294

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 8 | 40 | 14.6 | 13409 | PASS |
| 75 | 95 | 30 | 66 | 39.1 | 35884 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 91730 | PASS |
| 96 | 95 | 5 | 9 | 6.6 | 6013 | PASS |
| 173 | 174 | 0.00 | 2 | 0.6 | 361 | PASS |
| 174 | 95 | 50 | 120 | 69.0 | 63339 | PASS |
| 175 | 174 | 4 | 9 | 7.1 | 4512 | PASS |
| 176 | 174 | 93 | 101 | 96.8 | 61303 | PASS |
| 177 | 176 | 5 | 9 | 6.4 | 3953 | PASS |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152072.D
Acq On : 9 Jan 2017 7:05 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.2
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:13:23 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:54:17 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.233 | 49 | 214817 | 10.000 | ppbV | -0.01 |
| Standard Area = 217214 | | | Recovery = 98.90% | | | |
| 43) 1,4-difluorobenzene | 11.560 | 114 | 582029 | 10.000 | ppbV | -0.01 |
| Standard Area = 586326 | | | Recovery = 99.27% | | | |
| 67) chlorobenzene-D5 | 16.307 | 54 | 93720 | 10.000 | ppbV | 0.00 |
| Standard Area = 92710 | | | Recovery = 101.09% | | | |
| System Monitoring Compounds | | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.153 | 65 | 129055 | 9.952 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 99.52% | | | |
| 69) toluene-D8 | 14.453 | 98 | 498563 | 9.790 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 97.90% | | | |
| 90) bromofluorobenzene | 17.653 | 95 | 311263 | 9.064 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 90.64% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.682 | 51 | 5232 | 0.236 | ppbV | 95 |
| 3) propylene | 3.715 | 41 | 3532M6 | 0.248 | ppbV | |
| 4) propane | 3.737 | 29 | 4019 | 0.246 | ppbV | 94 |
| 5) dichlorodifluoromethane | 3.792 | 85 | 6798 | 0.238 | ppbV | 95 |
| 6) chloromethane | 3.968 | 50 | 3305M4 | 0.252 | ppbV | |
| 7) Freon-114 | 4.078 | 85 | 8338 | 0.228 | ppbV | 97 |
| 8) methanol | 4.199 | 31 | 13128 | 2.125 | ppbV # | 1 |
| 9) vinyl chloride | 4.210 | 62 | 3632 | 0.230 | ppbV | 97 |
| 10) 1,3-butadiene | 4.366 | 54 | 4082 | 0.244 | ppbV # | 82 |
| 11) butane | 4.422 | 43 | 5242M6 | 0.242 | ppbV | |
| 12) acetaldehyde | 4.133 | 29 | 10005 | 1.529 | ppbV # | 1 |
| 13) bromomethane | 4.662 | 94 | 3610M4 | 0.265 | ppbV | |
| 14) chloroethane | 4.862 | 64 | 1975 | 0.248 | ppbV # | 89 |
| 15) ethanol | 5.054 | 31 | 13881 | 1.363 | ppbV # | 85 |
| 16) dichlorofluoromethane | 4.982 | 67 | 6084 | 0.239 | ppbV # | 76 |
| 17) vinyl bromide | 5.270 | 106 | 3594 | 0.224 | ppbV | 92 |
| 18) acrolein | 5.446 | 56 | 1888 | 0.238 | ppbV # | 80 |
| 19) acetone | 5.606 | 43 | 29890 | 1.544 | ppbV # | 99 |
| 20) acetonitrile | 5.302 | 41 | 3793 | 0.238 | ppbV # | 79 |
| 21) trichlorofluoromethane | 5.758 | 101 | 6293 | 0.231 | ppbV | 95 |
| 22) isopropyl alcohol | 5.910 | 45 | 16196 | 0.662 | ppbV | 98 |
| 23) acrylonitrile | 6.150 | 53 | 2318M6 | 0.217 | ppbV | |
| 24) pentane | 6.194 | 43 | 8145 | 0.227 | ppbV | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152072.D
Acq On : 9 Jan 2017 7:05 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.2
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:13:23 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:54:17 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 25) ethyl ether | 6.249 | 31 | 6401 | 0.235 ppbV | 93 |
| 26) 1,1-dichloroethene | 6.513 | 61 | 5291 | 0.227 ppbV | 99 |
| 27) tertiary butyl alcohol | 6.623 | 59 | 6960 | 0.235 ppbV # | 86 |
| 28) methylene chloride | 6.667 | 49 | 4932 | 0.243 ppbV | 100 |
| 29) 3-chloropropene | 6.810 | 41 | 6440 | 0.232 ppbV | 93 |
| 30) carbon disulfide | 6.993 | 76 | 12521 | 0.230 ppbV # | 43 |
| 31) Freon 113 | 6.993 | 101 | 6920 | 0.228 ppbV | 98 |
| 32) trans-1,2-dichloroethene | 7.793 | 61 | 5850 | 0.228 ppbV | 95 |
| 33) 1,1-dichloroethane | 8.033 | 63 | 6899 | 0.232 ppbV | 98 |
| 34) MTBE | 8.140 | 73 | 9528 | 0.211 ppbV # | 93 |
| 35) vinyl acetate | 8.247 | 43 | 8654M4 | 0.204 ppbV | |
| 36) 2-butanone | 8.553 | 43 | 10430M4 | 0.251 ppbV | |
| 37) cis-1,2-dichloroethene | 9.047 | 61 | 4719 | 0.214 ppbV | 98 |
| 38) Ethyl Acetate | 9.353 | 61 | 1448 | 0.228 ppbV | 62 |
| 39) chloroform | 9.393 | 83 | 6718 | 0.230 ppbV | 96 |
| 40) Tetrahydrofuran | 9.927 | 42 | 5437 | 0.221 ppbV # | 93 |
| 41) 2,2-dichloropropane | 9.420 | 77 | 5734 | 0.242 ppbV | 98 |
| 42) 1,2-dichloroethane | 10.273 | 62 | 4111 | 0.217 ppbV # | 93 |
| 44) hexane | 9.313 | 57 | 7280 | 0.222 ppbV | 82 |
| 45) diisopropyl ether | 9.313 | 87 | 3591 | 0.219 ppbV | 88 |
| 46) tert-butyl ethyl ether | 9.967 | 59 | 11470 | 0.219 ppbV | 97 |
| 48) 1,1,1-trichloroethane | 10.573 | 97 | 5468 | 0.224 ppbV # | 96 |
| 49) 1,1-dichloropropene | 10.960 | 75 | 5808 | 0.225 ppbV | 95 |
| 50) benzene | 11.133 | 78 | 13250 | 0.222 ppbV | 95 |
| 51) thiophene | 11.280 | 84 | 7335 | 0.237 ppbV | 99 |
| 52) carbon tetrachloride | 11.307 | 117 | 4993 | 0.223 ppbV | 88 |
| 53) cyclohexane | 11.453 | 56 | 7698 | 0.221 ppbV | 96 |
| 54) tert-amyl methyl ether | 11.867 | 73 | 10542 | 0.208 ppbV | 92 |
| 55) dibromomethane | 12.080 | 93 | 4434 | 0.255 ppbV | 94 |
| 56) 1,2-dichloropropane | 12.107 | 63 | 4554 | 0.227 ppbV | 91 |
| 57) bromodichloromethane | 12.347 | 83 | 7033 | 0.219 ppbV | 97 |
| 58) 1,4-dioxane | 12.440 | 88 | 2976 | 0.222 ppbV # | 50 |
| 59) trichloroethene | 12.387 | 130 | 5544 | 0.228 ppbV | 98 |
| 60) 2,2,4-trimethylpentane | 12.440 | 57 | 23651 | 0.218 ppbV | 99 |
| 61) methyl methacrylate | 12.653 | 41 | 5094 | 0.232 ppbV # | 93 |
| 62) heptane | 12.773 | 43 | 9492 | 0.225 ppbV | 98 |
| 63) cis-1,3-dichloropropene | 14.067 | 75 | 4990 | 0.191 ppbV | 97 |
| 64) 4-methyl-2-pentanone | 13.493 | 43 | 10270 | 0.212 ppbV | 94 |
| 65) trans-1,3-dichloropropene | 13.440 | 75 | 5924 | 0.210 ppbV | 97 |
| 66) 1,1,2-trichloroethane | 14.267 | 97 | 4697 | 0.218 ppbV | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152072.D
Acq On : 9 Jan 2017 7:05 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.2
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:13:23 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:54:17 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|---|
| 68) | toluene | 14.560 | 91 | 15252 | 0.222 | ppbV | | 100 |
| 70) | 2-methylthiophene | 14.627 | 97 | 10856 | 0.230 | ppbV | | 95 |
| 71) | 1,3-dichloropropane | 14.600 | 76 | 7596 | 0.230 | ppbV | # | 98 |
| 72) | 2-hexanone | 14.853 | 43 | 8350M4 | 0.182 | ppbV | | |
| 73) | 3-methylthiophene | 14.827 | 97 | 10941 | 0.231 | ppbV | | 99 |
| 74) | dibromochloromethane | 15.000 | 129 | 6275 | 0.200 | ppbV | # | 96 |
| 75) | 1,2-dibromoethane | 15.253 | 107 | 7104 | 0.218 | ppbV | | 100 |
| 76) | butyl acetate | 15.493 | 73 | 1834 | 0.200 | ppbV | | 83 |
| 77) | octane | 15.573 | 85 | 5391 | 0.213 | ppbV | # | 99 |
| 78) | tetrachloroethene | 15.707 | 166 | 6948 | 0.235 | ppbV | | 96 |
| 79) | 1,1,1,2-tetrachloroethane | 16.333 | 131 | 5370 | 0.224 | ppbV | | 94 |
| 80) | chlorobenzene | 16.347 | 112 | 12595 | 0.221 | ppbV | | 98 |
| 81) | ethylbenzene | 16.680 | 91 | 18477 | 0.211 | ppbV | | 98 |
| 82) | 2-ethylthiophene | 16.720 | 97 | 11316 | 0.211 | ppbV | | 94 |
| 83) | m+p-xylene | 16.840 | 91 | 29630M4 | 0.419 | ppbV | | |
| 84) | bromoform | 16.920 | 173 | 5497 | 0.196 | ppbV | | 98 |
| 85) | styrene | 17.160 | 104 | 11838 | 0.203 | ppbV | | 99 |
| 86) | 1,1,2,2-tetrachloroethane | 17.253 | 83 | 10681 | 0.213 | ppbV | | 97 |
| 87) | o-xylene | 17.253 | 91 | 15120 | 0.213 | ppbV | | 100 |
| 88) | 1,2,3-trichloropropane | 17.373 | 75 | 8928 | 0.227 | ppbV | | 95 |
| 89) | nonane | 17.440 | 43 | 13140M4 | 0.218 | ppbV | | |
| 91) | isopropylbenzene | 17.760 | 105 | 20988 | 0.214 | ppbV | | 97 |
| 92) | bromobenzene | 17.840 | 77 | 11441 | 0.219 | ppbV | | 97 |
| 93) | 2-chlorotoluene | 18.167 | 126 | 6068M3 | 0.207 | ppbV | | |
| 94) | n-propylbenzene | 18.193 | 120 | 6651 | 0.204 | ppbV | | 93 |
| 95) | 4-chlorotoluene | 18.220 | 126 | 5700 | 0.220 | ppbV | | 98 |
| 96) | 4-ethyl toluene | 18.300 | 105 | 22312 | 0.193 | ppbV | | 98 |
| 97) | 1,3,5-trimethylbenzene | 18.367 | 105 | 17562 | 0.210 | ppbV | # | 99 |
| 98) | tert-butylbenzene | 18.700 | 119 | 19108 | 0.206 | ppbV | | 97 |
| 99) | 1,2,4-trimethylbenzene | 18.713 | 105 | 17498 | 0.205 | ppbV | | 96 |
| 100) | decane | 18.780 | 57 | 13235M4 | 0.194 | ppbV | | |
| 101) | Benzyl Chloride | 18.833 | 91 | 8918 | 0.139 | ppbV | | 97 |
| 102) | 1,3-dichlorobenzene | 18.847 | 146 | 12549M3 | 0.197 | ppbV | | |
| 103) | 1,4-dichlorobenzene | 18.900 | 146 | 12310 | 0.218 | ppbV | | 99 |
| 104) | sec-butylbenzene | 18.927 | 105 | 25402 | 0.206 | ppbV | | 97 |
| 105) | 1,2,3-trimethylbenzene | 19.060 | 105 | 14558M4 | 0.221 | ppbV | | |
| 106) | p-isopropyltoluene | 19.060 | 119 | 22014M4 | 0.197 | ppbV | | |
| 107) | 1,2-dichlorobenzene | 19.193 | 146 | 11185 | 0.206 | ppbV | # | 92 |
| 108) | n-butylbenzene | 19.407 | 91 | 17879M4 | 0.191 | ppbV | | |
| 109) | indan | 19.233 | 117 | 15768 | 0.208 | ppbV | | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152072.D
Acq On : 9 Jan 2017 7:05 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.2
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:13:23 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:54:17 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 110) indene | 19.313 | 115 | 9039M4 | 0.187 ppbV | |
| 111) 1,2-dibromo-3-chloropr... | 19.567 | 75 | 3718M4 | 0.179 ppbV | |
| 112) undecane | 19.820 | 57 | 12572 | 0.168 ppbV | 92 |
| 113) 1,2,4,5-tetramethylben... | 20.053 | 119 | 26069M4 | 0.176 ppbV | |
| 114) dodecane | 20.747 | 57 | 8458 | 0.120 ppbV | 92 |
| 115) 1,2,4-trichlorobenzene | 20.720 | 180 | 6343 | 0.151 ppbV | 96 |
| 116) naphthalene | 20.840 | 128 | 14490 | 0.130 ppbV # | 96 |
| 117) 1,2,3-trichlorobenzene | 21.093 | 180 | 6070 | 0.157 ppbV | 96 |
| 118) benzothiophene | 20.907 | 134 | 12238M4 | 0.140 ppbV | |
| 119) hexachlorobutadiene | 21.160 | 225 | 6179 | 0.182 ppbV # | 94 |
| 120) 2-methylnaphthalene | 22.027 | 142 | 2793 | 0.087 ppbV # | 92 |
| 121) 1-methylnaphthalene | 22.227 | 142 | 5214 | 0.121 ppbV # | 84 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed7\170109T_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152072.D
Acq On : 9 Jan 2017 7:05 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.2
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:13:23 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:54:17 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #3: propylene

Original Peak Response = 3919

Manual Peak Response = 3532 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #6: chloromethane

Original Peak Response = 3659

Manual Peak Response = 3305 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #11: butane

Original Peak Response = 5520

Manual Peak Response = 5242 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #13: bromomethane

Original Peak Response = 3956

Manual Peak Response = 3610 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #23: acrylonitrile

Original Peak Response = 2718

Manual Peak Response = 2318 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #35: vinyl acetate

Original Peak Response = 8410

Manual Peak Response = 8654 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #36: 2-butanone

Original Peak Response = 11770

Manual Peak Response = 10430 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #72: 2-hexanone

Original Peak Response = 8654

Manual Peak Response = 8350 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #83: m+p-xylene

Original Peak Response = 30890

Manual Peak Response = 29630 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #89: nonane

Original Peak Response = 13296

Manual Peak Response = 13140 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #93: 2-chlorotoluene

Original Peak Response = 5700 Manual Peak Response = 6068 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #100: decane

Original Peak Response = 13873

Manual Peak Response = 13235 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #102: 1,3-dichlorobenzene

Original Peak Response = 11627 Manual Peak Response = 12549 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #105: 1,2,3-trimethylbenzene

Original Peak Response = 14974

Manual Peak Response = 14558 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #106: p-isopropyltoluene

Original Peak Response = 22199

Manual Peak Response = 22014 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #108: n-butylbenzene

Original Peak Response = 18032

Manual Peak Response = 17879 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #110: indene

Original Peak Response = 8838

Manual Peak Response = 9039 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #111: 1,2-dibromo-3-chloropropane

Original Peak Response = 3822

Manual Peak Response = 3718 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #113: 1,2,4,5-tetramethylbenzene

Original Peak Response = 29305

Manual Peak Response = 26069 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152072.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:05 PM Instrument :
Sample : ITO15-SIMSTD0.2 Quant Date : 1/10/2017 10:09 am

Compound #118: benzothiophene

Original Peak Response = 12722

Manual Peak Response = 12238 M4

M4 = Poor automated baseline construction.

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152073.D
Acq On : 9 Jan 2017 7:47 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.5
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:16:17 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.233 | 49 | 212211 | 10.000 | ppbV | -0.01 |
| Standard Area = 217214 | | | Recovery = 97.70% | | | |
| 43) 1,4-difluorobenzene | 11.560 | 114 | 579793 | 10.000 | ppbV | -0.01 |
| Standard Area = 586326 | | | Recovery = 98.89% | | | |
| 67) chlorobenzene-D5 | 16.293 | 54 | 93139 | 10.000 | ppbV | -0.01 |
| Standard Area = 92710 | | | Recovery = 100.46% | | | |
| System Monitoring Compounds | | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.140 | 65 | 127468 | 9.868 | ppbV | -0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 98.68% | | | |
| 69) toluene-D8 | 14.453 | 98 | 492226 | 9.726 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 97.26% | | | |
| 90) bromofluorobenzene | 17.640 | 95 | 311168 | 9.117 | ppbV | -0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 91.17% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.682 | 51 | 12592M4 | 0.575 | ppbV | |
| 3) propylene | 3.715 | 41 | 7619M6 | 0.541 | ppbV | |
| 4) propane | 3.737 | 29 | 9207 | 0.570 | ppbV | 98 |
| 5) dichlorodifluoromethane | 3.792 | 85 | 15470 | 0.549 | ppbV | 94 |
| 6) chloromethane | 3.968 | 50 | 7195M4 | 0.555 | ppbV | |
| 7) Freon-114 | 4.078 | 85 | 20204 | 0.560 | ppbV | 97 |
| 8) methanol | 4.188 | 31 | 22720 | 3.723 | ppbV # | 49 |
| 9) vinyl chloride | 4.199 | 62 | 8479 | 0.544 | ppbV | 93 |
| 10) 1,3-butadiene | 4.358 | 54 | 9095M4 | 0.550 | ppbV | |
| 11) butane | 4.414 | 43 | 11923 | 0.558 | ppbV | 94 |
| 12) acetaldehyde | 4.122 | 29 | 20697 | 3.203 | ppbV # | 48 |
| 13) bromomethane | 4.654 | 94 | 7429 | 0.552 | ppbV | 98 |
| 14) chloroethane | 4.854 | 64 | 4665 | 0.594 | ppbV | 90 |
| 15) ethanol | 5.038 | 31 | 34612 | 3.441 | ppbV | 95 |
| 16) dichlorofluoromethane | 4.974 | 67 | 14820 | 0.589 | ppbV # | 89 |
| 17) vinyl bromide | 5.262 | 106 | 8527 | 0.538 | ppbV | 98 |
| 18) acrolein | 5.430 | 56 | 4390 | 0.560 | ppbV # | 87 |
| 19) acetone | 5.590 | 43 | 60614 | 3.170 | ppbV | 98 |
| 20) acetonitrile | 5.286 | 41 | 8467 | 0.537 | ppbV | 94 |
| 21) trichlorofluoromethane | 5.758 | 101 | 14836 | 0.551 | ppbV | 97 |
| 22) isopropyl alcohol | 5.894 | 45 | 35615 | 1.473 | ppbV | 98 |
| 23) acrylonitrile | 6.126 | 53 | 6245M6 | 0.593 | ppbV | |
| 24) pentane | 6.183 | 43 | 19084M6 | 0.539 | ppbV | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152073.D
Acq On : 9 Jan 2017 7:47 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.5
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:16:17 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 25) ethyl ether | 6.238 | 31 | 14341 | 0.532 ppbV | 98 |
| 26) 1,1-dichloroethene | 6.513 | 61 | 12373 | 0.537 ppbV | 99 |
| 27) tertiary butyl alcohol | 6.601 | 59 | 16160 | 0.552 ppbV # | 91 |
| 28) methylene chloride | 6.656 | 49 | 11339 | 0.565 ppbV | 98 |
| 29) 3-chloropropene | 6.799 | 41 | 14635 | 0.534 ppbV | 98 |
| 30) carbon disulfide | 6.980 | 76 | 29061 | 0.540 ppbV # | 72 |
| 31) Freon 113 | 6.980 | 101 | 16262 | 0.542 ppbV | 98 |
| 32) trans-1,2-dichloroethene | 7.780 | 61 | 13717 | 0.541 ppbV | 97 |
| 33) 1,1-dichloroethane | 8.020 | 63 | 16315 | 0.556 ppbV | 97 |
| 34) MTBE | 8.113 | 73 | 22934 | 0.515 ppbV | 99 |
| 35) vinyl acetate | 8.233 | 43 | 20563M4 | 0.490 ppbV | |
| 36) 2-butanone | 8.540 | 43 | 23527 | 0.572 ppbV | 96 |
| 37) cis-1,2-dichloroethene | 9.033 | 61 | 11784 | 0.541 ppbV | 97 |
| 38) Ethyl Acetate | 9.340 | 61 | 3132 | 0.500 ppbV | 80 |
| 39) chloroform | 9.393 | 83 | 15573 | 0.541 ppbV | 96 |
| 40) Tetrahydrofuran | 9.900 | 42 | 12474M6 | 0.514 ppbV | |
| 41) 2,2-dichloropropane | 9.420 | 77 | 12808 | 0.547 ppbV | 95 |
| 42) 1,2-dichloroethane | 10.273 | 62 | 9462 | 0.506 ppbV | 95 |
| 44) hexane | 9.300 | 57 | 16673 | 0.511 ppbV | 82 |
| 45) diisopropyl ether | 9.300 | 87 | 8201 | 0.503 ppbV | 87 |
| 46) tert-butyl ethyl ether | 9.953 | 59 | 26684 | 0.512 ppbV | 95 |
| 48) 1,1,1-trichloroethane | 10.573 | 97 | 12785 | 0.526 ppbV | 97 |
| 49) 1,1-dichloropropene | 10.947 | 75 | 13273 | 0.515 ppbV | 95 |
| 50) benzene | 11.120 | 78 | 32054 | 0.539 ppbV | 98 |
| 51) thiophene | 11.267 | 84 | 17411 | 0.565 ppbV | 98 |
| 52) carbon tetrachloride | 11.293 | 117 | 11010 | 0.493 ppbV # | 89 |
| 53) cyclohexane | 11.440 | 56 | 17799 | 0.512 ppbV | 97 |
| 54) tert-amyl methyl ether | 11.840 | 73 | 25671 | 0.509 ppbV | 94 |
| 55) dibromomethane | 12.067 | 93 | 9517 | 0.550 ppbV | 97 |
| 56) 1,2-dichloropropane | 12.107 | 63 | 10997 | 0.551 ppbV | 94 |
| 57) bromodichloromethane | 12.333 | 83 | 15998 | 0.501 ppbV | 99 |
| 58) 1,4-dioxane | 12.413 | 88 | 7114 | 0.532 ppbV # | 77 |
| 59) trichloroethene | 12.387 | 130 | 12970 | 0.535 ppbV | 92 |
| 60) 2,2,4-trimethylpentane | 12.440 | 57 | 55185 | 0.512 ppbV | 98 |
| 61) methyl methacrylate | 12.640 | 41 | 11888 | 0.544 ppbV # | 91 |
| 62) heptane | 12.760 | 43 | 21342 | 0.507 ppbV | 95 |
| 63) cis-1,3-dichloropropene | 14.053 | 75 | 12435 | 0.477 ppbV | 98 |
| 64) 4-methyl-2-pentanone | 13.480 | 43 | 23953M4 | 0.498 ppbV | |
| 65) trans-1,3-dichloropropene | 13.427 | 75 | 13572 | 0.482 ppbV | 96 |
| 66) 1,1,2-trichloroethane | 14.253 | 97 | 11699 | 0.544 ppbV | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152073.D
Acq On : 9 Jan 2017 7:47 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.5
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:16:17 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|---|
| 68) | toluene | 14.560 | 91 | 35965 | 0.526 | ppbV | | 96 |
| 70) | 2-methylthiophene | 14.627 | 97 | 26260 | 0.559 | ppbV | | 98 |
| 71) | 1,3-dichloropropane | 14.587 | 76 | 17327 | 0.527 | ppbV | | 98 |
| 72) | 2-hexanone | 14.840 | 43 | 20478 | 0.448 | ppbV | | 99 |
| 73) | 3-methylthiophene | 14.813 | 97 | 25013 | 0.532 | ppbV | | 95 |
| 74) | dibromochloromethane | 15.000 | 129 | 14774 | 0.473 | ppbV | | 96 |
| 75) | 1,2-dibromoethane | 15.240 | 107 | 16914 | 0.522 | ppbV | | 100 |
| 76) | butyl acetate | 15.480 | 73 | 4016 | 0.441 | ppbV | | 98 |
| 77) | octane | 15.560 | 85 | 14229 | 0.565 | ppbV | | 94 |
| 78) | tetrachloroethene | 15.693 | 166 | 15818 | 0.538 | ppbV | | 96 |
| 79) | 1,1,1,2-tetrachloroethane | 16.320 | 131 | 11993M4 | 0.503 | ppbV | | |
| 80) | chlorobenzene | 16.333 | 112 | 30050 | 0.531 | ppbV | | 98 |
| 81) | ethylbenzene | 16.680 | 91 | 43223 | 0.497 | ppbV | | 100 |
| 82) | 2-ethylthiophene | 16.720 | 97 | 28074 | 0.527 | ppbV | | 97 |
| 83) | m+p-xylene | 16.840 | 91 | 69990M4 | 0.996 | ppbV | | |
| 84) | bromoform | 16.907 | 173 | 12038 | 0.433 | ppbV | | 98 |
| 85) | styrene | 17.160 | 104 | 27558 | 0.475 | ppbV | | 94 |
| 86) | 1,1,2,2-tetrachloroethane | 17.253 | 83 | 25811 | 0.518 | ppbV | | 99 |
| 87) | o-xylene | 17.253 | 91 | 36161 | 0.512 | ppbV | | 100 |
| 88) | 1,2,3-trichloropropane | 17.360 | 75 | 20731 | 0.531 | ppbV | | 95 |
| 89) | nonane | 17.440 | 43 | 30822 | 0.515 | ppbV | | 95 |
| 91) | isopropylbenzene | 17.747 | 105 | 50114 | 0.514 | ppbV | | 98 |
| 92) | bromobenzene | 17.827 | 77 | 26633 | 0.512 | ppbV | | 88 |
| 93) | 2-chlorotoluene | 18.153 | 126 | 13998 | 0.480 | ppbV | | 81 |
| 94) | n-propylbenzene | 18.180 | 120 | 16124 | 0.499 | ppbV | | 95 |
| 95) | 4-chlorotoluene | 18.207 | 126 | 13787 | 0.534 | ppbV | | 94 |
| 96) | 4-ethyl toluene | 18.300 | 105 | 54064 | 0.470 | ppbV | | 99 |
| 97) | 1,3,5-trimethylbenzene | 18.353 | 105 | 43770 | 0.526 | ppbV | | 96 |
| 98) | tert-butylbenzene | 18.700 | 119 | 46865M4 | 0.508 | ppbV | | |
| 99) | 1,2,4-trimethylbenzene | 18.700 | 105 | 42929M4 | 0.506 | ppbV | | |
| 100) | decane | 18.767 | 57 | 33659 | 0.495 | ppbV | # | 99 |
| 101) | Benzyl Chloride | 18.820 | 91 | 23738 | 0.373 | ppbV | | 95 |
| 102) | 1,3-dichlorobenzene | 18.833 | 146 | 30478 | 0.481 | ppbV | | 97 |
| 103) | 1,4-dichlorobenzene | 18.887 | 146 | 31292 | 0.559 | ppbV | | 96 |
| 104) | sec-butylbenzene | 18.927 | 105 | 63230 | 0.515 | ppbV | | 98 |
| 105) | 1,2,3-trimethylbenzene | 19.060 | 105 | 33973 | 0.519 | ppbV | | 95 |
| 106) | p-isopropyltoluene | 19.047 | 119 | 54224 | 0.489 | ppbV | | 98 |
| 107) | 1,2-dichlorobenzene | 19.180 | 146 | 29077 | 0.539 | ppbV | | 98 |
| 108) | n-butylbenzene | 19.407 | 91 | 45045 | 0.484 | ppbV | | 94 |
| 109) | indan | 19.233 | 117 | 39989 | 0.530 | ppbV | | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152073.D
Acq On : 9 Jan 2017 7:47 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.5
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:16:17 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 110) indene | 19.313 | 115 | 23058 | 0.480 ppbV | 99 |
| 111) 1,2-dibromo-3-chloropr... | 19.567 | 75 | 9014 | 0.437 ppbV | 87 |
| 112) undecane | 19.807 | 57 | 33784 | 0.454 ppbV | 96 |
| 113) 1,2,4,5-tetramethylben... | 20.040 | 119 | 75111 | 0.512 ppbV | 96 |
| 114) dodecane | 20.747 | 57 | 25209 | 0.359 ppbV | 92 |
| 115) 1,2,4-trichlorobenzene | 20.707 | 180 | 17094 | 0.410 ppbV | 97 |
| 116) naphthalene | 20.827 | 128 | 42430 | 0.383 ppbV | 97 |
| 117) 1,2,3-trichlorobenzene | 21.093 | 180 | 17115 | 0.444 ppbV | 98 |
| 118) benzothiophene | 20.893 | 134 | 37343 | 0.430 ppbV | 99 |
| 119) hexachlorobutadiene | 21.160 | 225 | 15750 | 0.466 ppbV | 95 |
| 120) 2-methylnaphthalene | 22.000 | 142 | 9531 | 0.298 ppbV | 90 |
| 121) 1-methylnaphthalene | 22.213 | 142 | 15922 | 0.373 ppbV | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed7\170109T_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152073.D
Acq On : 9 Jan 2017 7:47 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD0.5
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:16:17 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #2: chlorodifluoromethane

Original Peak Response = 12649

Manual Peak Response = 12592 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #3: propylene

Original Peak Response = 9074

Manual Peak Response = 7619 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #6: chloromethane

Original Peak Response = 7317

Manual Peak Response = 7195 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #10: 1,3-butadiene

Original Peak Response = 8583

Manual Peak Response = 9095 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #23: acrylonitrile

Original Peak Response = 7140

Manual Peak Response = 6245 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #24: pentane

Original Peak Response = 18903

Manual Peak Response = 19084 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #35: vinyl acetate

Original Peak Response = 20357

Manual Peak Response = 20563 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #40: Tetrahydrofuran

Original Peak Response = 13489

Manual Peak Response = 12474 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #64: 4-methyl-2-pentanone

Original Peak Response = 24428

Manual Peak Response = 23953 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #79: 1,1,1,2-tetrachloroethane

Original Peak Response = 11945

Manual Peak Response = 11993 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #83: m+p-xylene

Original Peak Response = 70656

Manual Peak Response = 69990 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #98: tert-butylbenzene

Original Peak Response = 47560

Manual Peak Response = 46865 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152073.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 7:47 PM Instrument :
Sample : ITO15-SIMSTD0.5 Quant Date : 1/10/2017 10:09 am

Compound #99: 1,2,4-trimethylbenzene

Original Peak Response = 43761

Manual Peak Response = 42929 M4

M4 = Poor automated baseline construction.

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152074.D
Acq On : 9 Jan 2017 8:31 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD1.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:18:45 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 9.247 | 49 | 219609 | 10.000 ppbV | 0.00 |
| Standard Area = 217214 | | | Recovery | = 101.10% | |
| 43) 1,4-difluorobenzene | 11.573 | 114 | 597261 | 10.000 ppbV | 0.00 |
| Standard Area = 586326 | | | Recovery | = 101.87% | |
| 67) chlorobenzene-D5 | 16.307 | 54 | 96145 | 10.000 ppbV | 0.00 |
| Standard Area = 92710 | | | Recovery | = 103.71% | |
| System Monitoring Compounds | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.153 | 65 | 131570 | 9.887 ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery | = 98.87% | |
| 69) toluene-D8 | 14.453 | 98 | 503482 | 9.637 ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery | = 96.37% | |
| 90) bromofluorobenzene | 17.653 | 95 | 311006 | 8.828 ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery | = 88.28% | |
| Target Compounds | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.693 | 51 | 24816 | 1.095 ppbV | 100 |
| 3) propylene | 3.726 | 41 | 16289M6 | 1.117 ppbV | |
| 4) propane | 3.748 | 29 | 19277M4 | 1.154 ppbV | |
| 5) dichlorodifluoromethane | 3.803 | 85 | 31867 | 1.093 ppbV | 98 |
| 6) chloromethane | 3.979 | 50 | 14790M4 | 1.102 ppbV | |
| 7) Freon-114 | 4.089 | 85 | 39566M4 | 1.060 ppbV | |
| 8) methanol | 4.188 | 31 | 39326 | 6.228 ppbV # | 67 |
| 9) vinyl chloride | 4.221 | 62 | 16885 | 1.047 ppbV | 97 |
| 10) 1,3-butadiene | 4.374 | 54 | 18500M4 | 1.082 ppbV | |
| 11) butane | 4.430 | 43 | 23759M4 | 1.075 ppbV | |
| 12) acetaldehyde | 4.122 | 29 | 40057M4 | 5.989 ppbV | |
| 13) bromomethane | 4.670 | 94 | 15238 | 1.094 ppbV | 97 |
| 14) chloroethane | 4.870 | 64 | 8958 | 1.102 ppbV | 98 |
| 15) ethanol | 5.046 | 31 | 55525 | 5.335 ppbV | 97 |
| 16) dichlorofluoromethane | 4.990 | 67 | 27711 | 1.065 ppbV | 93 |
| 17) vinyl bromide | 5.278 | 106 | 17040 | 1.038 ppbV | 98 |
| 18) acrolein | 5.438 | 56 | 8459 | 1.043 ppbV | 95 |
| 19) acetone | 5.598 | 43 | 115645 | 5.844 ppbV | 99 |
| 20) acetonitrile | 5.294 | 41 | 17153 | 1.052 ppbV | 97 |
| 21) trichlorofluoromethane | 5.774 | 101 | 29868 | 1.072 ppbV | 99 |
| 22) isopropyl alcohol | 5.902 | 45 | 68885 | 2.753 ppbV | 100 |
| 23) acrylonitrile | 6.150 | 53 | 10706M6 | 0.982 ppbV | |
| 24) pentane | 6.205 | 43 | 40127M6 | 1.095 ppbV | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152074.D
Acq On : 9 Jan 2017 8:31 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD1.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:18:45 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 25) ethyl ether | 6.249 | 31 | 27626 | 0.990 ppbV | 100 |
| 26) 1,1-dichloroethene | 6.524 | 61 | 24726 | 1.036 ppbV | 97 |
| 27) tertiary butyl alcohol | 6.612 | 59 | 32211 | 1.064 ppbV | 95 |
| 28) methylene chloride | 6.678 | 49 | 22670 | 1.091 ppbV | 97 |
| 29) 3-chloropropene | 6.821 | 41 | 28150 | 0.992 ppbV | 98 |
| 30) carbon disulfide | 6.993 | 76 | 58653 | 1.054 ppbV # | 89 |
| 31) Freon 113 | 7.007 | 101 | 32390 | 1.043 ppbV | 97 |
| 32) trans-1,2-dichloroethene | 7.793 | 61 | 27377 | 1.044 ppbV | 97 |
| 33) 1,1-dichloroethane | 8.033 | 63 | 32497 | 1.071 ppbV | 99 |
| 34) MTBE | 8.127 | 73 | 46208 | 1.002 ppbV | 100 |
| 35) vinyl acetate | 8.247 | 43 | 41246M4 | 0.949 ppbV | |
| 36) 2-butanone | 8.540 | 43 | 43699 | 1.027 ppbV | 98 |
| 37) cis-1,2-dichloroethene | 9.047 | 61 | 23357 | 1.037 ppbV | 95 |
| 38) Ethyl Acetate | 9.353 | 61 | 6674 | 1.030 ppbV | 77 |
| 39) chloroform | 9.407 | 83 | 31634 | 1.061 ppbV | 98 |
| 40) Tetrahydrofuran | 9.900 | 42 | 23258M6 | 0.926 ppbV | |
| 41) 2,2-dichloropropane | 9.433 | 77 | 25204 | 1.041 ppbV | 96 |
| 42) 1,2-dichloroethane | 10.287 | 62 | 18598 | 0.960 ppbV | 99 |
| 44) hexane | 9.313 | 57 | 34101 | 1.014 ppbV | 84 |
| 45) diisopropyl ether | 9.313 | 87 | 16529 | 0.983 ppbV | 96 |
| 46) tert-butyl ethyl ether | 9.953 | 59 | 53294 | 0.994 ppbV | 99 |
| 48) 1,1,1-trichloroethane | 10.587 | 97 | 25507 | 1.019 ppbV | 98 |
| 49) 1,1-dichloropropene | 10.960 | 75 | 27131M4 | 1.023 ppbV | |
| 50) benzene | 11.133 | 78 | 63245 | 1.032 ppbV | 100 |
| 51) thiophene | 11.280 | 84 | 34754 | 1.095 ppbV | 98 |
| 52) carbon tetrachloride | 11.307 | 117 | 22960 | 0.998 ppbV | 93 |
| 53) cyclohexane | 11.453 | 56 | 35522 | 0.992 ppbV | 97 |
| 54) tert-amyl methyl ether | 11.853 | 73 | 51751 | 0.997 ppbV | 97 |
| 55) dibromomethane | 12.080 | 93 | 18534 | 1.040 ppbV | 95 |
| 56) 1,2-dichloropropane | 12.107 | 63 | 21222 | 1.031 ppbV | 97 |
| 57) bromodichloromethane | 12.347 | 83 | 32136 | 0.977 ppbV | 99 |
| 58) 1,4-dioxane | 12.413 | 88 | 13302 | 0.966 ppbV | 99 |
| 59) trichloroethene | 12.400 | 130 | 26237 | 1.051 ppbV | 98 |
| 60) 2,2,4-trimethylpentane | 12.440 | 57 | 110619 | 0.996 ppbV | 99 |
| 61) methyl methacrylate | 12.653 | 41 | 23968 | 1.065 ppbV | 99 |
| 62) heptane | 12.773 | 43 | 42694 | 0.985 ppbV | 100 |
| 63) cis-1,3-dichloropropene | 14.067 | 75 | 24998 | 0.931 ppbV | 99 |
| 64) 4-methyl-2-pentanone | 13.480 | 43 | 49004 | 0.988 ppbV | 97 |
| 65) trans-1,3-dichloropropene | 13.440 | 75 | 28293 | 0.976 ppbV | 98 |
| 66) 1,1,2-trichloroethane | 14.267 | 97 | 22926 | 1.035 ppbV | 98 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152074.D
Acq On : 9 Jan 2017 8:31 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD1.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:18:45 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|---|
| 68) | toluene | 14.560 | 91 | 72639 | 1.030 | ppbV | | 97 |
| 70) | 2-methylthiophene | 14.627 | 97 | 51510 | 1.062 | ppbV | | 99 |
| 71) | 1,3-dichloropropane | 14.587 | 76 | 34310 | 1.011 | ppbV | | 100 |
| 72) | 2-hexanone | 14.840 | 43 | 43266 | 0.917 | ppbV | | 97 |
| 73) | 3-methylthiophene | 14.827 | 97 | 51922 | 1.069 | ppbV | | 98 |
| 74) | dibromochloromethane | 15.000 | 129 | 29801 | 0.925 | ppbV | | 98 |
| 75) | 1,2-dibromoethane | 15.253 | 107 | 34425 | 1.029 | ppbV | | 99 |
| 76) | butyl acetate | 15.480 | 73 | 8732 | 0.928 | ppbV | | 80 |
| 77) | octane | 15.573 | 85 | 25614 | 0.986 | ppbV | | 97 |
| 78) | tetrachloroethene | 15.707 | 166 | 31834 | 1.048 | ppbV | | 99 |
| 79) | 1,1,1,2-tetrachloroethane | 16.320 | 131 | 23675 | 0.962 | ppbV | | 94 |
| 80) | chlorobenzene | 16.347 | 112 | 59152 | 1.013 | ppbV | | 100 |
| 81) | ethylbenzene | 16.680 | 91 | 88537 | 0.986 | ppbV | | 99 |
| 82) | 2-ethylthiophene | 16.720 | 97 | 56699 | 1.031 | ppbV | | 99 |
| 83) | m+p-xylene | 16.840 | 91 | 146416 | 2.019 | ppbV | | 100 |
| 84) | bromoform | 16.920 | 173 | 25503 | 0.888 | ppbV | | 99 |
| 85) | styrene | 17.160 | 104 | 58503 | 0.977 | ppbV | | 99 |
| 86) | 1,1,2,2-tetrachloroethane | 17.253 | 83 | 52026 | 1.011 | ppbV | | 99 |
| 87) | o-xylene | 17.253 | 91 | 74889M4 | 1.028 | ppbV | | |
| 88) | 1,2,3-trichloropropane | 17.373 | 75 | 41173 | 1.021 | ppbV | | 93 |
| 89) | nonane | 17.440 | 43 | 63250 | 1.024 | ppbV | | 98 |
| 91) | isopropylbenzene | 17.760 | 105 | 100382 | 0.997 | ppbV | | 100 |
| 92) | bromobenzene | 17.840 | 77 | 54497 | 1.015 | ppbV | | 99 |
| 93) | 2-chlorotoluene | 18.153 | 126 | 30158 | 1.001 | ppbV | | 92 |
| 94) | n-propylbenzene | 18.180 | 120 | 33738 | 1.011 | ppbV | | 98 |
| 95) | 4-chlorotoluene | 18.220 | 126 | 26902 | 1.010 | ppbV | | 91 |
| 96) | 4-ethyl toluene | 18.300 | 105 | 115645 | 0.974 | ppbV | | 99 |
| 97) | 1,3,5-trimethylbenzene | 18.367 | 105 | 87084 | 1.015 | ppbV | | 99 |
| 98) | tert-butylbenzene | 18.700 | 119 | 94071M4 | 0.989 | ppbV | | |
| 99) | 1,2,4-trimethylbenzene | 18.700 | 105 | 88095M4 | 1.006 | ppbV | | |
| 100) | decane | 18.780 | 57 | 69838 | 0.996 | ppbV | | 97 |
| 101) | Benzyl Chloride | 18.833 | 91 | 50118 | 0.763 | ppbV | | 94 |
| 102) | 1,3-dichlorobenzene | 18.847 | 146 | 65303 | 0.998 | ppbV | # | 91 |
| 103) | 1,4-dichlorobenzene | 18.900 | 146 | 58782 | 1.016 | ppbV | | 99 |
| 104) | sec-butylbenzene | 18.927 | 105 | 128442 | 1.014 | ppbV | | 99 |
| 105) | 1,2,3-trimethylbenzene | 19.060 | 105 | 70228 | 1.040 | ppbV | | 98 |
| 106) | p-isopropyltoluene | 19.060 | 119 | 112102 | 0.980 | ppbV | | 97 |
| 107) | 1,2-dichlorobenzene | 19.180 | 146 | 58890 | 1.057 | ppbV | | 98 |
| 108) | n-butylbenzene | 19.407 | 91 | 94586 | 0.984 | ppbV | | 99 |
| 109) | indan | 19.233 | 117 | 80506 | 1.034 | ppbV | | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152074.D
Acq On : 9 Jan 2017 8:31 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD1.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:18:45 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 110) indene | 19.313 | 115 | 48409 | 0.976 ppbV | 99 |
| 111) 1,2-dibromo-3-chloropr... | 19.567 | 75 | 19289 | 0.907 ppbV | 95 |
| 112) undecane | 19.807 | 57 | 71128 | 0.926 ppbV | 96 |
| 113) 1,2,4,5-tetramethylben... | 20.053 | 119 | 157511 | 1.039 ppbV | 99 |
| 114) dodecane | 20.747 | 57 | 59681 | 0.824 ppbV | 97 |
| 115) 1,2,4-trichlorobenzene | 20.707 | 180 | 35978 | 0.836 ppbV | 99 |
| 116) naphthalene | 20.840 | 128 | 97430 | 0.852 ppbV | 100 |
| 117) 1,2,3-trichlorobenzene | 21.093 | 180 | 35894 | 0.902 ppbV | 99 |
| 118) benzothiophene | 20.893 | 134 | 84548 | 0.944 ppbV | 100 |
| 119) hexachlorobutadiene | 21.160 | 225 | 32774 | 0.939 ppbV | 99 |
| 120) 2-methylnaphthalene | 22.013 | 142 | 24034 | 0.728 ppbV | 94 |
| 121) 1-methylnaphthalene | 22.213 | 142 | 36859 | 0.837 ppbV | 98 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed7\170109T_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152074.D
Acq On : 9 Jan 2017 8:31 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD1.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:18:45 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #3: propylene

Original Peak Response = 17270

Manual Peak Response = 16289 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #4: propane

Original Peak Response = 18670

Manual Peak Response = 19277 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #6: chloromethane

Original Peak Response = 15064

Manual Peak Response = 14790 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #7: Freon-114

Original Peak Response = 39620

Manual Peak Response = 39566 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #10: 1,3-butadiene

Original Peak Response = 18736

Manual Peak Response = 18500 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #11: butane

Original Peak Response = 27595

Manual Peak Response = 23759 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #12: acetaldehyde

Original Peak Response = 41180

Manual Peak Response = 40057 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #23: acrylonitrile

Original Peak Response = 11956

Manual Peak Response = 10706 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #24: pentane

Original Peak Response = 39339

Manual Peak Response = 40127 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #35: vinyl acetate

Original Peak Response = 40396

Manual Peak Response = 41246 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #40: Tetrahydrofuran

Original Peak Response = 26772

Manual Peak Response = 23258 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #49: 1,1-dichloropropene

Original Peak Response = 27254

Manual Peak Response = 27131 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #87: o-xylene

Original Peak Response = 75493

Manual Peak Response = 74889 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #98: tert-butylbenzene

Original Peak Response = 94407

Manual Peak Response = 94071 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152074.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 8:31 PM Instrument :
Sample : ITO15-SIMSTD1.0 Quant Date : 1/10/2017 10:09 am

Compound #99: 1,2,4-trimethylbenzene

Original Peak Response = 88258

Manual Peak Response = 88095 M4

M4 = Poor automated baseline construction.

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152075.D
Acq On : 9 Jan 2017 9:13 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD5.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:20:12 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.233 | 49 | 214184 | 10.000 | ppbV | -0.01 |
| Standard Area = 217214 | | | Recovery = 98.61% | | | |
| 43) 1,4-difluorobenzene | 11.560 | 114 | 578682 | 10.000 | ppbV | -0.01 |
| Standard Area = 586326 | | | Recovery = 98.70% | | | |
| 67) chlorobenzene-D5 | 16.293 | 54 | 92349 | 10.000 | ppbV | -0.01 |
| Standard Area = 92710 | | | Recovery = 99.61% | | | |
| System Monitoring Compounds | | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.140 | 65 | 131440 | 10.195 | ppbV | -0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 101.95% | | | |
| 69) toluene-D8 | 14.453 | 98 | 515456 | 10.272 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 102.72% | | | |
| 90) bromofluorobenzene | 17.640 | 95 | 310631 | 9.180 | ppbV | -0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 91.80% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.693 | 51 | 115068 | 5.206 | ppbV | 99 |
| 3) propylene | 3.715 | 41 | 71060M6 | 4.997 | ppbV | |
| 4) propane | 3.748 | 29 | 85124 | 5.225 | ppbV | 96 |
| 5) dichlorodifluoromethane | 3.792 | 85 | 147701 | 5.193 | ppbV | 99 |
| 6) chloromethane | 3.968 | 50 | 67598 | 5.166 | ppbV | 99 |
| 7) Freon-114 | 4.089 | 85 | 184036 | 5.053 | ppbV | 97 |
| 8) methanol | 4.177 | 31 | 161647 | 26.247 | ppbV | 95 |
| 9) vinyl chloride | 4.210 | 62 | 78902 | 5.017 | ppbV | 99 |
| 10) 1,3-butadiene | 4.366 | 54 | 87914 | 5.272 | ppbV | 98 |
| 11) butane | 4.422 | 43 | 107613 | 4.991 | ppbV | 100 |
| 12) acetaldehyde | 4.111 | 29 | 166087 | 25.462 | ppbV | 96 |
| 13) bromomethane | 4.662 | 94 | 68210 | 5.021 | ppbV | 98 |
| 14) chloroethane | 4.862 | 64 | 39831 | 5.025 | ppbV | 97 |
| 15) ethanol | 5.030 | 31 | 275881 | 27.176 | ppbV | 100 |
| 16) dichlorofluoromethane | 4.990 | 67 | 127783 | 5.035 | ppbV | 99 |
| 17) vinyl bromide | 5.270 | 106 | 79720 | 4.981 | ppbV | 96 |
| 18) acrolein | 5.422 | 56 | 39713 | 5.019 | ppbV | 97 |
| 19) acetone | 5.574 | 43 | 486518 | 25.206 | ppbV | 100 |
| 20) acetonitrile | 5.278 | 41 | 79692 | 5.012 | ppbV | 100 |
| 21) trichlorofluoromethane | 5.766 | 101 | 136918 | 5.037 | ppbV | 96 |
| 22) isopropyl alcohol | 5.878 | 45 | 307741 | 12.612 | ppbV | 100 |
| 23) acrylonitrile | 6.126 | 53 | 57603M6 | 5.416 | ppbV | |
| 24) pentane | 6.194 | 43 | 179087 | 5.009 | ppbV | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152075.D
Acq On : 9 Jan 2017 9:13 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD5.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:20:12 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 25) ethyl ether | 6.227 | 31 | 133287 | 4.899 | ppbV | 99 |
| 26) 1,1-dichloroethene | 6.513 | 61 | 116404 | 5.002 | ppbV | 96 |
| 27) tertiary butyl alcohol | 6.579 | 59 | 147377 | 4.990 | ppbV | 98 |
| 28) methylene chloride | 6.667 | 49 | 103842 | 5.126 | ppbV | 99 |
| 29) 3-chloropropene | 6.810 | 41 | 135480 | 4.893 | ppbV | 99 |
| 30) carbon disulfide | 6.993 | 76 | 273293 | 5.035 | ppbV | 99 |
| 31) Freon 113 | 6.993 | 101 | 152252 | 5.029 | ppbV | 98 |
| 32) trans-1,2-dichloroethene | 7.793 | 61 | 127772 | 4.997 | ppbV | 99 |
| 33) 1,1-dichloroethane | 8.033 | 63 | 148600 | 5.020 | ppbV | 100 |
| 34) MTBE | 8.113 | 73 | 222780 | 4.954 | ppbV | 100 |
| 35) vinyl acetate | 8.233 | 43 | 209528 | 4.944 | ppbV | 99 |
| 36) 2-butanone | 8.513 | 43 | 205061 | 4.940 | ppbV | 99 |
| 37) cis-1,2-dichloroethene | 9.033 | 61 | 109782 | 4.998 | ppbV | 99 |
| 38) Ethyl Acetate | 9.327 | 61 | 32298 | 5.111 | ppbV | 84 |
| 39) chloroform | 9.393 | 83 | 147387 | 5.069 | ppbV | 99 |
| 40) Tetrahydrofuran | 9.873 | 42 | 120854M6 | 4.932 | ppbV | |
| 41) 2,2-dichloropropane | 9.420 | 77 | 117841 | 4.988 | ppbV | 99 |
| 42) 1,2-dichloroethane | 10.273 | 62 | 96062 | 5.085 | ppbV | 98 |
| 44) hexane | 9.300 | 57 | 164274 | 5.044 | ppbV | 90 |
| 45) diisopropyl ether | 9.300 | 87 | 79286 | 4.868 | ppbV | 99 |
| 46) tert-butyl ethyl ether | 9.940 | 59 | 258397 | 4.972 | ppbV | 99 |
| 48) 1,1,1-trichloroethane | 10.573 | 97 | 119964 | 4.947 | ppbV | 99 |
| 49) 1,1-dichloropropene | 10.947 | 75 | 128818 | 5.013 | ppbV | 99 |
| 50) benzene | 11.120 | 78 | 298478 | 5.028 | ppbV | 99 |
| 51) thiophene | 11.280 | 84 | 153234 | 4.983 | ppbV | 99 |
| 52) carbon tetrachloride | 11.293 | 117 | 110070 | 4.939 | ppbV | 98 |
| 53) cyclohexane | 11.453 | 56 | 173554 | 5.003 | ppbV | 98 |
| 54) tert-amyl methyl ether | 11.840 | 73 | 249553 | 4.961 | ppbV | 98 |
| 55) dibromomethane | 12.067 | 93 | 88252 | 5.112 | ppbV | 97 |
| 56) 1,2-dichloropropane | 12.107 | 63 | 100106 | 5.021 | ppbV | 99 |
| 57) bromodichloromethane | 12.333 | 83 | 157556 | 4.942 | ppbV | 100 |
| 58) 1,4-dioxane | 12.387 | 88 | 70239 | 5.262 | ppbV | 97 |
| 59) trichloroethene | 12.387 | 130 | 122497 | 5.063 | ppbV | 100 |
| 60) 2,2,4-trimethylpentane | 12.440 | 57 | 538913 | 5.006 | ppbV | 99 |
| 61) methyl methacrylate | 12.640 | 41 | 107838 | 4.944 | ppbV | 99 |
| 62) heptane | 12.760 | 43 | 208616 | 4.965 | ppbV | 99 |
| 63) cis-1,3-dichloropropene | 14.053 | 75 | 127132 | 4.886 | ppbV | 99 |
| 64) 4-methyl-2-pentanone | 13.467 | 43 | 239976 | 4.994 | ppbV | 98 |
| 65) trans-1,3-dichloropropene | 13.427 | 75 | 137271 | 4.887 | ppbV | 99 |
| 66) 1,1,2-trichloroethane | 14.253 | 97 | 108788 | 5.068 | ppbV | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152075.D
Acq On : 9 Jan 2017 9:13 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD5.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:20:12 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 68) | toluene | 14.560 | 91 | 339230 | 5.007 | ppbV | 98 |
| 70) | 2-methylthiophene | 14.627 | 97 | 231434 | 4.969 | ppbV | 98 |
| 71) | 1,3-dichloropropane | 14.587 | 76 | 163072 | 5.004 | ppbV | 95 |
| 72) | 2-hexanone | 14.827 | 43 | 223050M6 | 4.921 | ppbV | |
| 73) | 3-methylthiophene | 14.813 | 97 | 230496 | 4.943 | ppbV | 98 |
| 74) | dibromochloromethane | 14.987 | 129 | 150866 | 4.873 | ppbV | 100 |
| 75) | 1,2-dibromoethane | 15.240 | 107 | 160743 | 5.001 | ppbV | 100 |
| 76) | butyl acetate | 15.467 | 73 | 41229 | 4.563 | ppbV | 87 |
| 77) | octane | 15.560 | 85 | 145958 | 5.848 | ppbV | 93 |
| 78) | tetrachloroethene | 15.693 | 166 | 146361 | 5.017 | ppbV | 98 |
| 79) | 1,1,1,2-tetrachloroethane | 16.320 | 131 | 115210 | 4.873 | ppbV | 98 |
| 80) | chlorobenzene | 16.333 | 112 | 280142 | 4.992 | ppbV | 98 |
| 81) | ethylbenzene | 16.680 | 91 | 427266 | 4.953 | ppbV | 98 |
| 82) | 2-ethylthiophene | 16.707 | 97 | 262926 | 4.978 | ppbV | 98 |
| 83) | m+p-xylene | 16.827 | 91 | 695156M4 | 9.978 | ppbV | |
| 84) | bromoform | 16.907 | 173 | 132814 | 4.817 | ppbV | 97 |
| 85) | styrene | 17.160 | 104 | 280772 | 4.883 | ppbV | 97 |
| 86) | 1,1,2,2-tetrachloroethane | 17.240 | 83 | 249046 | 5.039 | ppbV | 100 |
| 87) | o-xylene | 17.253 | 91 | 353209 | 5.048 | ppbV | 96 |
| 88) | 1,2,3-trichloropropane | 17.360 | 75 | 195838 | 5.056 | ppbV | 96 |
| 89) | nonane | 17.427 | 43 | 301286 | 5.078 | ppbV | 99 |
| 91) | isopropylbenzene | 17.747 | 105 | 480164 | 4.963 | ppbV | 98 |
| 92) | bromobenzene | 17.827 | 77 | 254578 | 4.936 | ppbV | 91 |
| 93) | 2-chlorotoluene | 18.153 | 126 | 169744 | 5.866 | ppbV | 72 |
| 94) | n-propylbenzene | 18.180 | 120 | 181281 | 5.655 | ppbV | 92 |
| 95) | 4-chlorotoluene | 18.207 | 126 | 134153 | 5.244 | ppbV | 99 |
| 96) | 4-ethyl toluene | 18.300 | 105 | 549982 | 4.823 | ppbV | 100 |
| 97) | 1,3,5-trimethylbenzene | 18.353 | 105 | 422818 | 5.129 | ppbV | 97 |
| 98) | tert-butylbenzene | 18.700 | 119 | 459630 | 5.030 | ppbV | 97 |
| 99) | 1,2,4-trimethylbenzene | 18.700 | 105 | 420023 | 4.996 | ppbV | 97 |
| 100) | decane | 18.767 | 57 | 341068 | 5.062 | ppbV | 97 |
| 101) | Benzyl Chloride | 18.820 | 91 | 296375 | 4.696 | ppbV | 97 |
| 102) | 1,3-dichlorobenzene | 18.833 | 146 | 297160 | 4.728 | ppbV | 94 |
| 103) | 1,4-dichlorobenzene | 18.887 | 146 | 292936 | 5.274 | ppbV | 95 |
| 104) | sec-butylbenzene | 18.913 | 105 | 618883 | 5.086 | ppbV | 97 |
| 105) | 1,2,3-trimethylbenzene | 19.047 | 105 | 330227 | 5.089 | ppbV | 91 |
| 106) | p-isopropyltoluene | 19.047 | 119 | 556198 | 5.061 | ppbV | 96 |
| 107) | 1,2-dichlorobenzene | 19.180 | 146 | 271441 | 5.073 | ppbV | 94 |
| 108) | n-butylbenzene | 19.393 | 91 | 463174 | 5.019 | ppbV | 95 |
| 109) | indan | 19.233 | 117 | 373843 | 5.000 | ppbV | 100 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152075.D
Acq On : 9 Jan 2017 9:13 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD5.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:20:12 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 110) indene | 19.313 | 115 | 235971 | 4.953 | ppbV | 98 |
| 111) 1,2-dibromo-3-chloropr... | 19.553 | 75 | 99009 | 4.845 | ppbV | 93 |
| 112) undecane | 19.807 | 57 | 364495 | 4.938 | ppbV # | 96 |
| 113) 1,2,4,5-tetramethylben... | 20.040 | 119 | 729904 | 5.013 | ppbV | 99 |
| 114) dodecane | 20.733 | 57 | 346898 | 4.986 | ppbV | 99 |
| 115) 1,2,4-trichlorobenzene | 20.707 | 180 | 202869 | 4.908 | ppbV | 98 |
| 116) naphthalene | 20.827 | 128 | 528988 | 4.816 | ppbV | 99 |
| 117) 1,2,3-trichlorobenzene | 21.080 | 180 | 191309 | 5.006 | ppbV | 96 |
| 118) benzothiophene | 20.893 | 134 | 407026 | 4.731 | ppbV | 98 |
| 119) hexachlorobutadiene | 21.147 | 225 | 171717 | 5.122 | ppbV | 96 |
| 120) 2-methylnaphthalene | 22.000 | 142 | 131974 | 4.160 | ppbV | 96 |
| 121) 1-methylnaphthalene | 22.213 | 142 | 187109 | 4.423 | ppbV | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed7\170109T_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152075.D
Acq On : 9 Jan 2017 9:13 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD5.0
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:20:12 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152075.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:13 PM Instrument :
Sample : ITO15-SIMSTD5.0 Quant Date : 1/10/2017 10:09 am

Compound #3: propylene

Original Peak Response = 79312

Manual Peak Response = 71060 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152075.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:13 PM Instrument :
Sample : ITO15-SIMSTD5.0 Quant Date : 1/10/2017 10:09 am

Compound #23: acrylonitrile

Original Peak Response = 62689

Manual Peak Response = 57603 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152075.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:13 PM Instrument :
Sample : ITO15-SIMSTD5.0 Quant Date : 1/10/2017 10:09 am

Compound #40: Tetrahydrofuran

Original Peak Response = 128435 Manual Peak Response = 120854 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152075.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:13 PM Instrument :
Sample : ITO15-SIMSTD5.0 Quant Date : 1/10/2017 10:09 am

Compound #72: 2-hexanone

Original Peak Response = 224268

Manual Peak Response = 223050 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152075.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:13 PM Instrument :
Sample : ITO15-SIMSTD5.0 Quant Date : 1/10/2017 10:09 am

Compound #83: m+p-xylene

Original Peak Response = 701003 Manual Peak Response = 695156 M4
M4 = Poor automated baseline construction.

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152076.D
Acq On : 9 Jan 2017 9:57 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 09:53:33 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:49:20 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 9.247 | 49 | 217214 | 10.000 ppbV | 0.00 |
| Standard Area = 217214 | | | Recovery = 100.00% | | |
| 43) 1,4-difluorobenzene | 11.573 | 114 | 586326 | 10.000 ppbV | 0.00 |
| Standard Area = 586326 | | | Recovery = 100.00% | | |
| 67) chlorobenzene-D5 | 16.307 | 54 | 92710 | 10.000 ppbV | 0.00 |
| Standard Area = 92710 | | | Recovery = 100.00% | | |
| System Monitoring Compounds | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.153 | 65 | 130635 | 10.084 ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 100.84% | | |
| 69) toluene-D8 | 14.453 | 98 | 503781 | 10.021 ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 100.21% | | |
| 90) bromofluorobenzene | 17.653 | 95 | 339715 | 10.015 ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 100.15% | | |
| Target Compounds | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.682 | 51 | 224176 | 9.970 ppbV | 99 |
| 3) propylene | 3.715 | 41 | 144224M6 | 9.958 ppbV | |
| 4) propane | 3.737 | 29 | 165219 | 9.937 ppbV | 97 |
| 5) dichlorodifluoromethane | 3.792 | 85 | 288429 | 9.958 ppbV | 100 |
| 6) chloromethane | 3.968 | 50 | 132697 | 9.958 ppbV | 98 |
| 7) Freon-114 | 4.078 | 85 | 369330 | 9.970 ppbV | 95 |
| 8) methanol | 4.177 | 31 | 312296 | 49.827 ppbV | 92 |
| 9) vinyl chloride | 4.210 | 62 | 159497 | 9.972 ppbV | 99 |
| 10) 1,3-butadiene | 4.358 | 54 | 169117 | 9.706 ppbV | 94 |
| 11) butane | 4.422 | 43 | 218643 | 10.059 ppbV | 96 |
| 12) acetaldehyde | 4.111 | 29 | 330756 | 49.323 ppbV | 90 |
| 13) bromomethane | 4.654 | 94 | 137782 | 9.993 ppbV | 100 |
| 14) chloroethane | 4.862 | 64 | 80389 | 9.970 ppbV | 100 |
| 15) ethanol | 5.038 | 31 | 514754M6 | 50.064 ppbV | |
| 16) dichlorofluoromethane | 4.982 | 67 | 257377 | 9.966 ppbV # | 98 |
| 17) vinyl bromide | 5.270 | 106 | 162328 | 9.958 ppbV | 96 |
| 18) acrolein | 5.422 | 56 | 80249 | 9.958 ppbV | 91 |
| 19) acetone | 5.574 | 43 | 978720 | 49.736 ppbV | 96 |
| 20) acetonitrile | 5.278 | 41 | 161240 | 9.978 ppbV | 99 |
| 21) trichlorofluoromethane | 5.766 | 101 | 275675 | 9.958 ppbV | 96 |
| 22) isopropyl alcohol | 5.886 | 45 | 618670 | 24.816 ppbV | 99 |
| 23) acrylonitrile | 6.126 | 53 | 107858M6 | 9.243 ppbV | |
| 24) pentane | 6.194 | 43 | 362588 | 9.958 ppbV # | 94 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152076.D
Acq On : 9 Jan 2017 9:57 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 09:53:33 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:49:20 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 25) ethyl ether | 6.227 | 31 | 275934 | 9.744 | ppbV | 94 |
| 26) 1,1-dichloroethene | 6.524 | 61 | 236000 | 9.958 | ppbV | 98 |
| 27) tertiary butyl alcohol | 6.590 | 59 | 299523 | 9.933 | ppbV | 94 |
| 28) methylene chloride | 6.678 | 49 | 205432 | 9.948 | ppbV | 91 |
| 29) 3-chloropropene | 6.821 | 41 | 280783 | 9.817 | ppbV # | 95 |
| 30) carbon disulfide | 6.993 | 76 | 550515 | 9.953 | ppbV # | 93 |
| 31) Freon 113 | 6.993 | 101 | 307016 | 9.958 | ppbV | 93 |
| 32) trans-1,2-dichloroethene | 7.807 | 61 | 259290 | 9.955 | ppbV | 96 |
| 33) 1,1-dichloroethane | 8.033 | 63 | 300187 | 9.958 | ppbV | 100 |
| 34) MTBE | 8.113 | 73 | 456077 | 9.954 | ppbV | 97 |
| 35) vinyl acetate | 8.247 | 43 | 429781 | 9.933 | ppbV # | 93 |
| 36) 2-butanone | 8.527 | 43 | 420946 | 10.024 | ppbV # | 93 |
| 37) cis-1,2-dichloroethene | 9.047 | 61 | 222752 | 9.958 | ppbV | 92 |
| 38) Ethyl Acetate | 9.340 | 61 | 64086 | 9.958 | ppbV | 96 |
| 39) chloroform | 9.407 | 83 | 294874 | 9.958 | ppbV | 96 |
| 40) Tetrahydrofuran | 9.873 | 42 | 248510M6 | 9.526 | ppbV | |
| 41) 2,2-dichloropropane | 9.433 | 77 | 239578 | 9.958 | ppbV | 90 |
| 42) 1,2-dichloroethane | 10.287 | 62 | 191583 | 9.958 | ppbV | 98 |
| 44) hexane | 9.313 | 57 | 330006 | 10.003 | ppbV | 94 |
| 45) diisopropyl ether | 9.313 | 87 | 165025 | 10.000 | ppbV # | 58 |
| 46) tert-butyl ethyl ether | 9.953 | 59 | 526568 | 10.012 | ppbV | 97 |
| 48) 1,1,1-trichloroethane | 10.587 | 97 | 245726 | 10.119 | ppbV | 99 |
| 49) 1,1-dichloropropene | 10.960 | 75 | 260383 | 10.095 | ppbV | 90 |
| 50) benzene | 11.133 | 78 | 601457 | 10.195 | ppbV | 98 |
| 51) thiophene | 11.293 | 84 | 311586 | 10.246 | ppbV | 93 |
| 52) carbon tetrachloride | 11.307 | 117 | 225820 | 10.304 | ppbV | 95 |
| 53) cyclohexane | 11.453 | 56 | 351506 | 10.471 | ppbV | 90 |
| 54) tert-amyl methyl ether | 11.840 | 73 | 509650 | 10.134 | ppbV | 92 |
| 55) dibromomethane | 12.080 | 93 | 174934 | 11.011 | ppbV | 95 |
| 56) 1,2-dichloropropane | 12.107 | 63 | 202001 | 10.398 | ppbV | 96 |
| 57) bromodichloromethane | 12.347 | 83 | 323052 | 10.262 | ppbV | 99 |
| 58) 1,4-dioxane | 12.400 | 88 | 135247 | 10.018 | ppbV | 96 |
| 59) trichloroethene | 12.400 | 130 | 245142 | 10.006 | ppbV | 98 |
| 60) 2,2,4-trimethylpentane | 12.440 | 57 | 1090814 | 10.003 | ppbV | 93 |
| 61) methyl methacrylate | 12.653 | 41 | 221020 | 9.903 | ppbV # | 89 |
| 62) heptane | 12.773 | 43 | 425717 | 9.988 | ppbV # | 91 |
| 63) cis-1,3-dichloropropene | 14.067 | 75 | 263646 | 10.027 | ppbV | 93 |
| 64) 4-methyl-2-pentanone | 13.480 | 43 | 486863 | 10.016 | ppbV # | 91 |
| 65) trans-1,3-dichloropropene | 13.440 | 75 | 284598 | 10.028 | ppbV | 92 |
| 66) 1,1,2-trichloroethane | 14.267 | 97 | 217510 | 10.000 | ppbV | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152076.D
Acq On : 9 Jan 2017 9:57 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 09:53:33 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:49:20 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 68) | toluene | 14.560 | 91 | 680104 | 10.015 | ppbV | 96 |
| 70) | 2-methylthiophene | 14.627 | 97 | 467609 | 10.013 | ppbV # | 98 |
| 71) | 1,3-dichloropropane | 14.587 | 76 | 327156 | 10.028 | ppbV # | 83 |
| 72) | 2-hexanone | 14.840 | 43 | 454990M6 | 9.987 | ppbV | |
| 73) | 3-methylthiophene | 14.827 | 97 | 468178 | 10.022 | ppbV | 98 |
| 74) | dibromochloromethane | 15.000 | 129 | 310830 | 10.007 | ppbV | 100 |
| 75) | 1,2-dibromoethane | 15.253 | 107 | 322703 | 10.023 | ppbV | 99 |
| 76) | butyl acetate | 15.480 | 73 | 90708 | 10.717 | ppbV | 82 |
| 77) | octane | 15.573 | 85 | 250559 | 10.000 | ppbV | 83 |
| 78) | tetrachloroethene | 15.707 | 166 | 292844 | 10.000 | ppbV | 94 |
| 79) | 1,1,1,2-tetrachloroethane | 16.320 | 131 | 237344 | 10.001 | ppbV | 96 |
| 80) | chlorobenzene | 16.347 | 112 | 563342 | 10.010 | ppbV | 96 |
| 81) | ethylbenzene | 16.680 | 91 | 865974 | 10.000 | ppbV | 96 |
| 82) | 2-ethylthiophene | 16.720 | 97 | 530224 | 10.003 | ppbV | 99 |
| 83) | m+p-xylene | 16.840 | 91 | 1398842 | 20.000 | ppbV | 100 |
| 84) | bromoform | 16.907 | 173 | 276799 | 10.000 | ppbV | 98 |
| 85) | styrene | 17.160 | 104 | 577212 | 10.000 | ppbV | 98 |
| 86) | 1,1,2,2-tetrachloroethane | 17.253 | 83 | 496194 | 10.000 | ppbV | 100 |
| 87) | o-xylene | 17.253 | 91 | 702440 | 10.000 | ppbV | 96 |
| 88) | 1,2,3-trichloropropane | 17.360 | 75 | 388830 | 10.006 | ppbV | 94 |
| 89) | nonane | 17.440 | 43 | 595680 | 10.005 | ppbV | 87 |
| 91) | isopropylbenzene | 17.760 | 105 | 971190 | 10.004 | ppbV | 99 |
| 92) | bromobenzene | 17.840 | 77 | 517784 | 10.015 | ppbV | 95 |
| 93) | 2-chlorotoluene | 18.153 | 126 | 290481 | 10.000 | ppbV | 88 |
| 94) | n-propylbenzene | 18.180 | 120 | 321822 | 10.000 | ppbV | 97 |
| 95) | 4-chlorotoluene | 18.220 | 126 | 256801M3 | 8.841 | ppbV | |
| 96) | 4-ethyl toluene | 18.300 | 105 | 1144806 | 10.001 | ppbV | 99 |
| 97) | 1,3,5-trimethylbenzene | 18.367 | 105 | 827533 | 9.999 | ppbV | 98 |
| 98) | tert-butylbenzene | 18.700 | 119 | 917426M6 | 9.987 | ppbV | |
| 99) | 1,2,4-trimethylbenzene | 18.700 | 105 | 843998 | 10.000 | ppbV | 97 |
| 100) | decane | 18.780 | 57 | 676459 | 10.000 | ppbV | 88 |
| 101) | Benzyl Chloride | 18.820 | 91 | 633526 | 10.000 | ppbV | 93 |
| 102) | 1,3-dichlorobenzene | 18.833 | 146 | 630915M3 | 10.000 | ppbV | |
| 103) | 1,4-dichlorobenzene | 18.900 | 146 | 557639 | 10.032 | ppbV | 97 |
| 104) | sec-butylbenzene | 18.927 | 105 | 1221648 | 10.000 | ppbV | 100 |
| 105) | 1,2,3-trimethylbenzene | 19.060 | 105 | 651453 | 10.006 | ppbV | 94 |
| 106) | p-isopropyltoluene | 19.047 | 119 | 1103218 | 10.000 | ppbV | 96 |
| 107) | 1,2-dichlorobenzene | 19.180 | 146 | 537126 | 10.009 | ppbV | 97 |
| 108) | n-butylbenzene | 19.407 | 91 | 926474 | 10.001 | ppbV | 100 |
| 109) | indan | 19.233 | 117 | 750602 | 10.000 | ppbV | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152076.D
Acq On : 9 Jan 2017 9:57 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 09:53:33 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:49:20 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 110) indene | 19.313 | 115 | 478242 | 10.033 | ppbV | 100 |
| 111) 1,2-dibromo-3-chloropr... | 19.567 | 75 | 205139 | 10.018 | ppbV # | 80 |
| 112) undecane | 19.807 | 57 | 741027 | 10.007 | ppbV # | 88 |
| 113) 1,2,4,5-tetramethylben... | 20.053 | 119 | 1461639 | 9.690 | ppbV | 100 |
| 114) dodecane | 20.747 | 57 | 698502 | 10.022 | ppbV | 84 |
| 115) 1,2,4-trichlorobenzene | 20.707 | 180 | 414943 | 10.027 | ppbV | 96 |
| 116) naphthalene | 20.827 | 128 | 1102622 | 10.027 | ppbV | 98 |
| 117) 1,2,3-trichlorobenzene | 21.093 | 180 | 383616 | 10.091 | ppbV | 96 |
| 118) benzothiophene | 20.893 | 134 | 863737 | 10.075 | ppbV | 99 |
| 119) hexachlorobutadiene | 21.160 | 225 | 336564 | 10.005 | ppbV # | 92 |
| 120) 2-methylnaphthalene | 22.000 | 142 | 318486 | 10.057 | ppbV | 98 |
| 121) 1-methylnaphthalene | 22.213 | 142 | 424653 | 9.879 | ppbV | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed7\170109T_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152076.D
Acq On : 9 Jan 2017 9:57 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 09:53:33 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 09:49:20 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152076.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:57 PM Instrument :
Sample : ITO15-SIMSTD010 Quant Date : 1/10/2017 9:49 am

Compound #3: propylene

Original Peak Response = 154189

Manual Peak Response = 144224 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\ QMethod : TALL170109.M
Data File : r152076.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:57 PM Instrument :
Sample : ITO15-SIMSTD010 Quant Date : 1/10/2017 9:49 am

Compound #15: ethanol

Original Peak Response = 521959

Manual Peak Response = 514754 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152076.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:57 PM Instrument :
Sample : ITO15-SIMSTD010 Quant Date : 1/10/2017 9:49 am

Compound #23: acrylonitrile

Original Peak Response = 114330

Manual Peak Response = 107858 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152076.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:57 PM Instrument :
Sample : ITO15-SIMSTD010 Quant Date : 1/10/2017 9:49 am

Compound #40: Tetrahydrofuran

Original Peak Response = 259580

Manual Peak Response = 248510 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152076.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:57 PM Instrument :
Sample : ITO15-SIMSTD010 Quant Date : 1/10/2017 9:49 am

Compound #72: 2-hexanone

Original Peak Response = 457423

Manual Peak Response = 454990 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152076.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:57 PM Instrument :
Sample : ITO15-SIMSTD010 Quant Date : 1/10/2017 9:49 am

Compound #95: 4-chlorotoluene

Original Peak Response = 290481 Manual Peak Response = 256801 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152076.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:57 PM Instrument :
Sample : ITO15-SIMSTD010 Quant Date : 1/10/2017 9:49 am

Compound #98: tert-butylbenzene

Original Peak Response = 918641 Manual Peak Response = 917426 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152076.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 9:57 PM Instrument :
Sample : ITO15-SIMSTD010 Quant Date : 1/10/2017 9:49 am

Compound #102: 1,3-dichlorobenzene

Original Peak Response = 555847 Manual Peak Response = 630915 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152077.D
Acq On : 9 Jan 2017 10:38 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD020
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:22:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.233 | 49 | 213805 | 10.000 | ppbV | -0.01 |
| Standard Area = 217214 | | | Recovery = 98.43% | | | |
| 43) 1,4-difluorobenzene | 11.560 | 114 | 575125 | 10.000 | ppbV | -0.01 |
| Standard Area = 586326 | | | Recovery = 98.09% | | | |
| 67) chlorobenzene-D5 | 16.293 | 54 | 92441 | 10.000 | ppbV | -0.01 |
| Standard Area = 92710 | | | Recovery = 99.71% | | | |
| System Monitoring Compounds | | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.140 | 65 | 128666 | 10.041 | ppbV | -0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 100.41% | | | |
| 69) toluene-D8 | 14.453 | 98 | 505074 | 10.055 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 100.55% | | | |
| 90) bromofluorobenzene | 17.640 | 95 | 296234 | 8.745 | ppbV | -0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 87.45% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.671 | 51 | 418521 | 18.967 | ppbV | 99 |
| 3) propylene | 3.704 | 41 | 257312M6 | 18.126 | ppbV | |
| 4) propane | 3.737 | 29 | 308358 | 18.961 | ppbV | 97 |
| 5) dichlorodifluoromethane | 3.781 | 85 | 551980 | 19.443 | ppbV | 100 |
| 6) chloromethane | 3.957 | 50 | 248739 | 19.044 | ppbV | 99 |
| 7) Freon-114 | 4.078 | 85 | 702072 | 19.312 | ppbV | 100 |
| 8) methanol | 4.177 | 31 | 552458 | 89.861 | ppbV | 99 |
| 9) vinyl chloride | 4.199 | 62 | 310054 | 19.749 | ppbV | 99 |
| 10) 1,3-butadiene | 4.358 | 54 | 266164 | 15.989 | ppbV | 96 |
| 11) butane | 4.414 | 43 | 415968M4 | 19.328 | ppbV | |
| 12) acetaldehyde | 4.111 | 29 | 657087 | 100.915 | ppbV | 99 |
| 13) bromomethane | 4.654 | 94 | 270946 | 19.978 | ppbV | 98 |
| 14) chloroethane | 4.862 | 64 | 156143 | 19.733 | ppbV | 100 |
| 15) ethanol | 5.038 | 31 | 1222921 | 120.681 | ppbV | 98 |
| 16) dichlorofluoromethane | 4.982 | 67 | 505865 | 19.968 | ppbV | 99 |
| 17) vinyl bromide | 5.262 | 106 | 313400 | 19.614 | ppbV | 98 |
| 18) acrolein | 5.414 | 56 | 157647 | 19.958 | ppbV | 99 |
| 19) acetone | 5.566 | 43 | 1943200 | 100.855 | ppbV | 98 |
| 20) acetonitrile | 5.270 | 41 | 311928 | 19.654 | ppbV | 100 |
| 21) trichlorofluoromethane | 5.758 | 101 | 525107 | 19.352 | ppbV | 98 |
| 22) isopropyl alcohol | 5.878 | 45 | 1247298 | 51.206 | ppbV | 100 |
| 23) acrylonitrile | 6.126 | 53 | 230568M6 | 21.718 | ppbV | |
| 24) pentane | 6.183 | 43 | 687131 | 19.253 | ppbV | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152077.D
Acq On : 9 Jan 2017 10:38 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD020
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:22:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 25) ethyl ether | 6.216 | 31 | 526107 | 19.370 | ppbV | 99 |
| 26) 1,1-dichloroethene | 6.513 | 61 | 454782 | 19.578 | ppbV | 96 |
| 27) tertiary butyl alcohol | 6.579 | 59 | 594871M4 | 20.177 | ppbV | |
| 28) methylene chloride | 6.678 | 49 | 393854 | 19.478 | ppbV | 98 |
| 29) 3-chloropropene | 6.810 | 41 | 529864 | 19.172 | ppbV | 98 |
| 30) carbon disulfide | 6.980 | 76 | 1057475 | 19.515 | ppbV | 98 |
| 31) Freon 113 | 6.993 | 101 | 612719 | 20.275 | ppbV | 98 |
| 32) trans-1,2-dichloroethene | 7.793 | 61 | 497807 | 19.505 | ppbV | 98 |
| 33) 1,1-dichloroethane | 8.033 | 63 | 579298 | 19.606 | ppbV | 99 |
| 34) MTBE | 8.100 | 73 | 875240 | 19.497 | ppbV | 99 |
| 35) vinyl acetate | 8.233 | 43 | 826500 | 19.537 | ppbV | 98 |
| 36) 2-butanone | 8.513 | 43 | 727124 | 17.549 | ppbV | 99 |
| 37) cis-1,2-dichloroethene | 9.047 | 61 | 429383 | 19.584 | ppbV | 98 |
| 38) Ethyl Acetate | 9.327 | 61 | 126461 | 20.048 | ppbV | 95 |
| 39) chloroform | 9.393 | 83 | 572474 | 19.724 | ppbV | 100 |
| 40) Tetrahydrofuran | 9.860 | 42 | 470765M6 | 19.246 | ppbV | |
| 41) 2,2-dichloropropane | 9.420 | 77 | 464316 | 19.690 | ppbV | 99 |
| 42) 1,2-dichloroethane | 10.273 | 62 | 371286 | 19.689 | ppbV | 99 |
| 44) hexane | 9.300 | 57 | 633010 | 19.555 | ppbV | 96 |
| 45) diisopropyl ether | 9.300 | 87 | 316228 | 19.536 | ppbV | 95 |
| 46) tert-butyl ethyl ether | 9.940 | 59 | 1026050 | 19.865 | ppbV | 99 |
| 48) 1,1,1-trichloroethane | 10.573 | 97 | 474124 | 19.671 | ppbV | 99 |
| 49) 1,1-dichloropropene | 10.947 | 75 | 509178 | 19.936 | ppbV | 97 |
| 50) benzene | 11.120 | 78 | 1172452 | 19.873 | ppbV | 100 |
| 51) thiophene | 11.280 | 84 | 650973 | 21.299 | ppbV | 99 |
| 52) carbon tetrachloride | 11.293 | 117 | 449701 | 20.302 | ppbV | 96 |
| 53) cyclohexane | 11.453 | 56 | 677979 | 19.663 | ppbV | 98 |
| 54) tert-amyl methyl ether | 11.840 | 73 | 984291 | 19.689 | ppbV | 99 |
| 55) dibromomethane | 12.067 | 93 | 335410 | 19.547 | ppbV | 97 |
| 56) 1,2-dichloropropane | 12.107 | 63 | 397538 | 20.063 | ppbV | 99 |
| 57) bromodichloromethane | 12.333 | 83 | 630068 | 19.883 | ppbV | 99 |
| 58) 1,4-dioxane | 12.373 | 88 | 272641 | 20.551 | ppbV | 92 |
| 59) trichloroethene | 12.387 | 130 | 478342 | 19.893 | ppbV | 98 |
| 60) 2,2,4-trimethylpentane | 12.440 | 57 | 2076986 | 19.412 | ppbV | 100 |
| 61) methyl methacrylate | 12.640 | 41 | 461221 | 21.274 | ppbV | 98 |
| 62) heptane | 12.760 | 43 | 792603 | 18.981 | ppbV | 97 |
| 63) cis-1,3-dichloropropene | 14.053 | 75 | 525542 | 20.322 | ppbV | 99 |
| 64) 4-methyl-2-pentanone | 13.467 | 43 | 903750 | 18.924 | ppbV | 97 |
| 65) trans-1,3-dichloropropene | 13.427 | 75 | 566714 | 20.301 | ppbV | 98 |
| 66) 1,1,2-trichloroethane | 14.253 | 97 | 421946 | 19.777 | ppbV | 98 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152077.D
Acq On : 9 Jan 2017 10:38 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD020
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:22:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 68) | toluene | 14.560 | 91 | 1344699 | 19.829 | ppbV | 97 |
| 70) | 2-methylthiophene | 14.627 | 97 | 972581 | 20.860 | ppbV | 98 |
| 71) | 1,3-dichloropropane | 14.587 | 76 | 638415 | 19.571 | ppbV | 97 |
| 72) | 2-hexanone | 14.827 | 43 | 843970M6 | 18.603 | ppbV | |
| 73) | 3-methylthiophene | 14.813 | 97 | 955841 | 20.476 | ppbV | 99 |
| 74) | dibromochloromethane | 14.987 | 129 | 603802 | 19.482 | ppbV | 100 |
| 75) | 1,2-dibromoethane | 15.240 | 107 | 627349 | 19.497 | ppbV | 98 |
| 76) | butyl acetate | 15.467 | 73 | 164635 | 18.203 | ppbV | 91 |
| 77) | octane | 15.560 | 85 | 557971 | 22.334 | ppbV | 90 |
| 78) | tetrachloroethene | 15.693 | 166 | 568695 | 19.476 | ppbV | 95 |
| 79) | 1,1,1,2-tetrachloroethane | 16.320 | 131 | 465826 | 19.684 | ppbV | 99 |
| 80) | chlorobenzene | 16.333 | 112 | 1094520 | 19.486 | ppbV | 98 |
| 81) | ethylbenzene | 16.680 | 91 | 1693350 | 19.611 | ppbV | 99 |
| 82) | 2-ethylthiophene | 16.707 | 97 | 1073967 | 20.314 | ppbV | 99 |
| 83) | m+p-xylene | 16.840 | 91 | 2718286M6 | 38.978 | ppbV | |
| 84) | bromoform | 16.907 | 173 | 544261 | 19.720 | ppbV | 98 |
| 85) | styrene | 17.147 | 104 | 1129140 | 19.619 | ppbV | 99 |
| 86) | 1,1,2,2-tetrachloroethane | 17.240 | 83 | 967861 | 19.562 | ppbV | 100 |
| 87) | o-xylene | 17.240 | 91 | 1358214 | 19.392 | ppbV | 98 |
| 88) | 1,2,3-trichloropropane | 17.360 | 75 | 756989 | 19.525 | ppbV | 96 |
| 89) | nonane | 17.427 | 43 | 1107538 | 18.647 | ppbV | 96 |
| 91) | isopropylbenzene | 17.747 | 105 | 1859521 | 19.203 | ppbV | 98 |
| 92) | bromobenzene | 17.827 | 77 | 996516 | 19.302 | ppbV | 92 |
| 93) | 2-chlorotoluene | 18.153 | 126 | 537182M3 | 18.547 | ppbV | |
| 94) | n-propylbenzene | 18.180 | 120 | 621428 | 19.366 | ppbV | 98 |
| 95) | 4-chlorotoluene | 18.207 | 126 | 520250 | 20.318 | ppbV | 99 |
| 96) | 4-ethyl toluene | 18.300 | 105 | 2103901 | 18.431 | ppbV | 99 |
| 97) | 1,3,5-trimethylbenzene | 18.353 | 105 | 1640546 | 19.882 | ppbV | 98 |
| 98) | tert-butylbenzene | 18.700 | 119 | 1745816M6 | 19.085 | ppbV | |
| 99) | 1,2,4-trimethylbenzene | 18.700 | 105 | 1621398M6 | 19.267 | ppbV | |
| 100) | decane | 18.767 | 57 | 1283312 | 19.026 | ppbV | 94 |
| 101) | Benzyl Chloride | 18.820 | 91 | 1296049 | 20.517 | ppbV | 96 |
| 102) | 1,3-dichlorobenzene | 18.833 | 146 | 1166117 | 18.537 | ppbV | 94 |
| 103) | 1,4-dichlorobenzene | 18.887 | 146 | 1148986 | 20.664 | ppbV | 96 |
| 104) | sec-butylbenzene | 18.913 | 105 | 2335200 | 19.171 | ppbV | 97 |
| 105) | 1,2,3-trimethylbenzene | 19.047 | 105 | 1283768 | 19.764 | ppbV | 91 |
| 106) | p-isopropyltoluene | 19.047 | 119 | 2115420 | 19.231 | ppbV | 97 |
| 107) | 1,2-dichlorobenzene | 19.180 | 146 | 1060408 | 19.800 | ppbV | 96 |
| 108) | n-butylbenzene | 19.393 | 91 | 1779264 | 19.261 | ppbV | 96 |
| 109) | indan | 19.233 | 117 | 1469112 | 19.629 | ppbV | 98 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152077.D
Acq On : 9 Jan 2017 10:38 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD020
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:22:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 110) indene | 19.300 | 115 | 941264 | 19.739 | ppbV | 98 |
| 111) 1,2-dibromo-3-chloropr... | 19.553 | 75 | 399448 | 19.529 | ppbV | 91 |
| 112) undecane | 19.807 | 57 | 1388280 | 18.789 | ppbV # | 98 |
| 113) 1,2,4,5-tetramethylben... | 20.040 | 119 | 3001744 | 20.597 | ppbV | 99 |
| 114) dodecane | 20.733 | 57 | 1311270 | 18.827 | ppbV | 94 |
| 115) 1,2,4-trichlorobenzene | 20.693 | 180 | 773035 | 18.684 | ppbV | 96 |
| 116) naphthalene | 20.827 | 128 | 2136750 | 19.435 | ppbV | 99 |
| 117) 1,2,3-trichlorobenzene | 21.080 | 180 | 763780 | 19.968 | ppbV | 97 |
| 118) benzothiophene | 20.893 | 134 | 2129386 | 24.725 | ppbV | 97 |
| 119) hexachlorobutadiene | 21.147 | 225 | 615735 | 18.348 | ppbV | 96 |
| 120) 2-methylnaphthalene | 21.987 | 142 | 904554 | 28.484 | ppbV | 98 |
| 121) 1-methylnaphthalene | 22.200 | 142 | 1088662 | 25.711 | ppbV | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed7\170109T_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152077.D
Acq On : 9 Jan 2017 10:38 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD020
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:22:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #3: propylene

Original Peak Response = 288751

Manual Peak Response = 257312 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\ QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #11: butane

Original Peak Response = 486177

Manual Peak Response = 415968 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #23: acrylonitrile

Original Peak Response = 252212

Manual Peak Response = 230568 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #27: tertiary butyl alcohol

Original Peak Response = 591640 Manual Peak Response = 594871 M4
M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #40: Tetrahydrofuran

Original Peak Response = 491056

Manual Peak Response = 470765 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #72: 2-hexanone

Original Peak Response = 846488

Manual Peak Response = 843970 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #83: m+p-xylene

Original Peak Response = 2744453

Manual Peak Response = 2718286 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #93: 2-chlorotoluene

Original Peak Response = 519445 Manual Peak Response = 537182 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #98: tert-butylbenzene

Original Peak Response = 1748751

Manual Peak Response = 1745816 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152077.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 10:38 PM Instrument :
Sample : ITO15-SIMSTD020 Quant Date : 1/10/2017 10:09 am

Compound #99: 1,2,4-trimethylbenzene

Original Peak Response = 1621402

Manual Peak Response = 1621398 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152078.D
Acq On : 9 Jan 2017 11:20 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD050
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:24:34 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.260 | 49 | 204039 | 10.000 | ppbV | 0.01 |
| Standard Area = 217214 | | | Recovery = | | 93.93% | |
| 43) 1,4-difluorobenzene | 11.573 | 114 | 560810 | 10.000 | ppbV | 0.00 |
| Standard Area = 586326 | | | Recovery = | | 95.65% | |
| 67) chlorobenzene-D5 | 16.307 | 54 | 89070 | 10.000 | ppbV | # 0.00 |
| Standard Area = 92710 | | | Recovery = | | 96.07% | |
| System Monitoring Compounds | | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.167 | 65 | 117246 | 9.383 | ppbV | 0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = | | 93.83% | |
| 69) toluene-D8 | 14.467 | 98 | 455714 | 9.416 | ppbV | 0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = | | 94.16% | |
| 90) bromofluorobenzene | 17.653 | 95 | 292780 | 8.971 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = | | 89.71% | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.682 | 51 | 966868 | 45.915 | ppbV | 99 |
| 3) propylene | 3.715 | 41 | 598780M6 | 44.198 | ppbV | |
| 4) propane | 3.748 | 29 | 702246 | 45.248 | ppbV | 98 |
| 5) dichlorodifluoromethane | 3.792 | 85 | 1293428 | 47.740 | ppbV | 100 |
| 6) chloromethane | 3.968 | 50 | 573584 | 46.016 | ppbV | 99 |
| 7) Freon-114 | 4.089 | 85 | 1621568 | 46.741 | ppbV | 99 |
| 8) methanol | 4.188 | 31 | 1396185 | 237.969 | ppbV | 98 |
| 9) vinyl chloride | 4.210 | 62 | 801972 | 53.528 | ppbV | 100 |
| 10) 1,3-butadiene | 4.366 | 54 | 798666M6 | 50.275 | ppbV | |
| 11) butane | 4.430 | 43 | 974263 | 47.437 | ppbV | 99 |
| 12) acetaldehyde | 4.122 | 29 | 1469607 | 236.504 | ppbV | 98 |
| 13) bromomethane | 4.670 | 94 | 646759 | 49.972 | ppbV | 100 |
| 14) chloroethane | 4.878 | 64 | 375842 | 49.772 | ppbV | 100 |
| 15) ethanol | 5.062 | 31 | 2965798M6 | 306.681 | ppbV | |
| 16) dichlorofluoromethane | 5.006 | 67 | 1263856 | 52.276 | ppbV | 99 |
| 17) vinyl bromide | 5.286 | 106 | 723391 | 47.441 | ppbV | 98 |
| 18) acrolein | 5.430 | 56 | 377349 | 50.059 | ppbV | 98 |
| 19) acetone | 5.590 | 43 | 4263134 | 231.854 | ppbV | 94 |
| 20) acetonitrile | 5.294 | 41 | 703334 | 46.437 | ppbV | 99 |
| 21) trichlorofluoromethane | 5.782 | 101 | 1212806 | 46.835 | ppbV | 99 |
| 22) isopropyl alcohol | 5.902 | 45 | 2780951 | 119.632 | ppbV | 99 |
| 23) acrylonitrile | 6.150 | 53 | 471737M6 | 46.561 | ppbV | |
| 24) pentane | 6.205 | 43 | 1491981 | 43.805 | ppbV | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152078.D
Acq On : 9 Jan 2017 11:20 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD050
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:24:34 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 25) ethyl ether | 6.238 | 31 | 1190878 | 45.945 | ppbV | 97 |
| 26) 1,1-dichloroethene | 6.535 | 61 | 1067579 | 48.157 | ppbV | 96 |
| 27) tertiary butyl alcohol | 6.601 | 59 | 1419643 | 50.457 | ppbV | 97 |
| 28) methylene chloride | 6.689 | 49 | 885121 | 45.868 | ppbV | 93 |
| 29) 3-chloropropene | 6.832 | 41 | 1230052 | 46.637 | ppbV | 98 |
| 30) carbon disulfide | 7.007 | 76 | 2395438 | 46.322 | ppbV | 98 |
| 31) Freon 113 | 7.007 | 101 | 1393549 | 48.321 | ppbV | 98 |
| 32) trans-1,2-dichloroethene | 7.820 | 61 | 1169898 | 48.033 | ppbV | 99 |
| 33) 1,1-dichloroethane | 8.060 | 63 | 1338202 | 47.457 | ppbV | 99 |
| 34) MTBE | 8.113 | 73 | 1992201 | 46.502 | ppbV | 98 |
| 35) vinyl acetate | 8.260 | 43 | 1870249 | 46.326 | ppbV | 97 |
| 36) 2-butanone | 8.527 | 43 | 1765564 | 44.651 | ppbV | 97 |
| 37) cis-1,2-dichloroethene | 9.060 | 61 | 1003976 | 47.982 | ppbV | 99 |
| 38) Ethyl Acetate | 9.340 | 61 | 291809 | 48.474 | ppbV | 87 |
| 39) chloroform | 9.420 | 83 | 1322672 | 47.752 | ppbV | 98 |
| 40) Tetrahydrofuran | 9.873 | 42 | 1053871M6 | 45.146 | ppbV | |
| 41) 2,2-dichloropropane | 9.433 | 77 | 1068472 | 47.478 | ppbV | 95 |
| 42) 1,2-dichloroethane | 10.287 | 62 | 845690 | 46.993 | ppbV | 99 |
| 44) hexane | 9.327 | 57 | 1471986 | 46.634 | ppbV | 87 |
| 45) diisopropyl ether | 9.313 | 87 | 750933 | 47.575 | ppbV | 74 |
| 46) tert-butyl ethyl ether | 9.953 | 59 | 2402130 | 47.694 | ppbV | 99 |
| 48) 1,1,1-trichloroethane | 10.587 | 97 | 1105836 | 47.050 | ppbV | 97 |
| 49) 1,1-dichloropropene | 10.973 | 75 | 1151625 | 46.240 | ppbV | 99 |
| 50) benzene | 11.147 | 78 | 2674998 | 46.499 | ppbV | 99 |
| 51) thiophene | 11.293 | 84 | 1524268 | 51.145 | ppbV | 97 |
| 52) carbon tetrachloride | 11.320 | 117 | 1077586 | 49.890 | ppbV | 98 |
| 53) cyclohexane | 11.467 | 56 | 1576962 | 46.904 | ppbV | 99 |
| 54) tert-amyl methyl ether | 11.853 | 73 | 2242938 | 46.012 | ppbV | 99 |
| 55) dibromomethane | 12.093 | 93 | 783125 | 46.804 | ppbV | 98 |
| 56) 1,2-dichloropropane | 12.120 | 63 | 907538 | 46.972 | ppbV | 99 |
| 57) bromodichloromethane | 12.360 | 83 | 1480793 | 47.923 | ppbV | 98 |
| 58) 1,4-dioxane | 12.387 | 88 | 644788 | 49.844 | ppbV | 91 |
| 59) trichloroethene | 12.400 | 130 | 1093622 | 46.642 | ppbV | 97 |
| 60) 2,2,4-trimethylpentane | 12.453 | 57 | 4804188 | 46.046 | ppbV | 98 |
| 61) methyl methacrylate | 12.653 | 41 | 1030289 | 48.736 | ppbV | 97 |
| 62) heptane | 12.773 | 43 | 1729551 | 42.475 | ppbV | 92 |
| 63) cis-1,3-dichloropropene | 14.067 | 75 | 1216480 | 48.240 | ppbV | 98 |
| 64) 4-methyl-2-pentanone | 13.480 | 43 | 1986467 | 42.658 | ppbV | 94 |
| 65) trans-1,3-dichloropropene | 13.440 | 75 | 1303105 | 47.871 | ppbV | 98 |
| 66) 1,1,2-trichloroethane | 14.267 | 97 | 967841 | 46.521 | ppbV | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152078.D
Acq On : 9 Jan 2017 11:20 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD050
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:24:34 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|---|
| 68) | toluene | 14.573 | 91 | 3085976 | 47.229 | ppbV | | 98 |
| 70) | 2-methylthiophene | 14.640 | 97 | 2253042 | 50.151 | ppbV | | 97 |
| 71) | 1,3-dichloropropane | 14.600 | 76 | 1427655 | 45.422 | ppbV | | 99 |
| 72) | 2-hexanone | 14.840 | 43 | 1839942M6 | 42.092 | ppbV | | |
| 73) | 3-methylthiophene | 14.827 | 97 | 2213431 | 49.210 | ppbV | | 98 |
| 74) | dibromochloromethane | 15.000 | 129 | 1442278 | 48.297 | ppbV | | 99 |
| 75) | 1,2-dibromoethane | 15.253 | 107 | 1459508 | 47.076 | ppbV | | 100 |
| 76) | butyl acetate | 15.480 | 73 | 378504 | 43.433 | ppbV | | 87 |
| 77) | octane | 15.573 | 85 | 1072062 | 44.535 | ppbV | | 84 |
| 78) | tetrachloroethene | 15.707 | 166 | 1334202 | 47.422 | ppbV | | 95 |
| 79) | 1,1,1,2-tetrachloroethane | 16.333 | 131 | 1078962 | 47.318 | ppbV | | 99 |
| 80) | chlorobenzene | 16.347 | 112 | 2508048 | 46.340 | ppbV | | 99 |
| 81) | ethylbenzene | 16.680 | 91 | 3896011 | 46.829 | ppbV | | 99 |
| 82) | 2-ethylthiophene | 16.720 | 97 | 2498806 | 49.053 | ppbV | | 98 |
| 83) | m+p-xylene | 16.840 | 91 | 6270847 | 93.322 | ppbV | | 100 |
| 84) | bromoform | 16.920 | 173 | 1347017 | 50.653 | ppbV | | 98 |
| 85) | styrene | 17.160 | 104 | 2620874 | 47.261 | ppbV | | 99 |
| 86) | 1,1,2,2-tetrachloroethane | 17.253 | 83 | 2180478 | 45.740 | ppbV | | 100 |
| 87) | o-xylene | 17.253 | 91 | 3088005 | 45.758 | ppbV | | 100 |
| 88) | 1,2,3-trichloropropane | 17.373 | 75 | 1707394 | 45.706 | ppbV | | 96 |
| 89) | nonane | 17.440 | 43 | 2400506 | 41.945 | ppbV | # | 90 |
| 91) | isopropylbenzene | 17.760 | 105 | 4253242 | 45.584 | ppbV | | 98 |
| 92) | bromobenzene | 17.840 | 77 | 2270319 | 45.639 | ppbV | | 94 |
| 93) | 2-chlorotoluene | 18.153 | 126 | 1523492 | 54.591 | ppbV | | 96 |
| 94) | n-propylbenzene | 18.180 | 120 | 1446364 | 46.780 | ppbV | | 99 |
| 95) | 4-chlorotoluene | 18.220 | 126 | 1190236 | 48.243 | ppbV | | 97 |
| 96) | 4-ethyl toluene | 18.300 | 105 | 4857088 | 44.161 | ppbV | | 98 |
| 97) | 1,3,5-trimethylbenzene | 18.367 | 105 | 3684564 | 46.344 | ppbV | | 98 |
| 98) | tert-butylbenzene | 18.700 | 119 | 3958227M6 | 44.908 | ppbV | | |
| 99) | 1,2,4-trimethylbenzene | 18.700 | 105 | 3595701M6 | 44.344 | ppbV | | |
| 100) | decane | 18.780 | 57 | 2934479 | 45.153 | ppbV | | 90 |
| 101) | Benzyl Chloride | 18.833 | 91 | 3065382 | 50.363 | ppbV | | 95 |
| 102) | 1,3-dichlorobenzene | 18.847 | 146 | 2692574M3 | 44.421 | ppbV | | |
| 103) | 1,4-dichlorobenzene | 18.900 | 146 | 2521494 | 47.065 | ppbV | | 99 |
| 104) | sec-butylbenzene | 18.927 | 105 | 5225746 | 44.524 | ppbV | | 98 |
| 105) | 1,2,3-trimethylbenzene | 19.060 | 105 | 2791683 | 44.604 | ppbV | | 95 |
| 106) | p-isopropyltoluene | 19.060 | 119 | 4674504 | 44.103 | ppbV | | 95 |
| 107) | 1,2-dichlorobenzene | 19.180 | 146 | 2346942 | 45.480 | ppbV | | 99 |
| 108) | n-butylbenzene | 19.407 | 91 | 4003102 | 44.974 | ppbV | | 100 |
| 109) | indan | 19.233 | 117 | 3334738 | 46.243 | ppbV | | 100 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152078.D
Acq On : 9 Jan 2017 11:20 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD050
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:24:34 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 110) indene | 19.313 | 115 | 2153146 | 46.862 | ppbV | 99 |
| 111) 1,2-dibromo-3-chloropr... | 19.567 | 75 | 918562 | 46.607 | ppbV | 97 |
| 112) undecane | 19.807 | 57 | 3131958 | 43.992 | ppbV | 95 |
| 113) 1,2,4,5-tetramethylben... | 20.053 | 119 | 6845385 | 48.748 | ppbV | 100 |
| 114) dodecane | 20.747 | 57 | 3012582 | 44.892 | ppbV | 93 |
| 115) 1,2,4-trichlorobenzene | 20.707 | 180 | 1788134 | 44.855 | ppbV | 98 |
| 116) naphthalene | 20.840 | 128 | 5034365 | 47.524 | ppbV | 98 |
| 117) 1,2,3-trichlorobenzene | 21.093 | 180 | 1792697 | 48.641 | ppbV | 99 |
| 118) benzothiophene | 20.893 | 134 | 5112081 | 61.604 | ppbV | 99 |
| 119) hexachlorobutadiene | 21.160 | 225 | 1456547 | 45.046 | ppbV | 97 |
| 120) 2-methylnaphthalene | 22.000 | 142 | 2432142 | 79.487 | ppbV | 97 |
| 121) 1-methylnaphthalene | 22.213 | 142 | 2806543 | 68.791 | ppbV | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed7\170109T_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152078.D
Acq On : 9 Jan 2017 11:20 PM
Operator : AIRLAB15:MB
Sample : ITO15-SIMSTD050
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:24:34 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152078.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 11:20 PM Instrument :
Sample : ITO15-SIMSTD050 Quant Date : 1/10/2017 10:09 am

Compound #3: propylene

Original Peak Response = 669589

Manual Peak Response = 598780 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152078.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 11:20 PM Instrument :
Sample : ITO15-SIMSTD050 Quant Date : 1/10/2017 10:09 am

Compound #10: 1,3-butadiene

Original Peak Response = 764258

Manual Peak Response = 798666 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152078.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 11:20 PM Instrument :
Sample : ITO15-SIMSTD050 Quant Date : 1/10/2017 10:09 am

Compound #15: ethanol

Original Peak Response = 3004476

Manual Peak Response = 2965798 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152078.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 11:20 PM Instrument :
Sample : ITO15-SIMSTD050 Quant Date : 1/10/2017 10:09 am

Compound #23: acrylonitrile

Original Peak Response = 502962

Manual Peak Response = 471737 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152078.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 11:20 PM Instrument :
Sample : ITO15-SIMSTD050 Quant Date : 1/10/2017 10:09 am

Compound #40: Tetrahydrofuran

Original Peak Response = 1097646

Manual Peak Response = 1053871 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152078.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 11:20 PM Instrument :
Sample : ITO15-SIMSTD050 Quant Date : 1/10/2017 10:09 am

Compound #72: 2-hexanone

Original Peak Response = 1847539

Manual Peak Response = 1839942 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152078.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 11:20 PM Instrument :
Sample : ITO15-SIMSTD050 Quant Date : 1/10/2017 10:09 am

Compound #98: tert-butylbenzene

Original Peak Response = 3966056

Manual Peak Response = 3958227 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152078.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 11:20 PM Instrument :
Sample : ITO15-SIMSTD050 Quant Date : 1/10/2017 10:09 am

Compound #99: 1,2,4-trimethylbenzene

Original Peak Response = 3595396

Manual Peak Response = 3595701 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152078.D Operator : AIRLAB15:MB
Date Inj'd : 1/9/2017 11:20 PM Instrument :
Sample : ITO15-SIMSTD050 Quant Date : 1/10/2017 10:09 am

Compound #102: 1,3-dichlorobenzene

Original Peak Response = 2517486 Manual Peak Response = 2692574 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152079.D
Acq On : 10 Jan 2017 12:04 AM
Operator : AIRLAB15:MB
Sample : ITO15-LLSTD100
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:27:16 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.260 | 49 | 193247 | 10.000 | ppbV | 0.01 |
| Standard Area = 217214 | | | Recovery = | | 88.97% | |
| 43) 1,4-difluorobenzene | 11.587 | 114 | 536814 | 10.000 | ppbV | 0.01 |
| Standard Area = 586326 | | | Recovery = | | 91.56% | |
| 67) chlorobenzene-D5 | 16.307 | 54 | 86691 | 10.000 | ppbV | # 0.00 |
| Standard Area = 92710 | | | Recovery = | | 93.51% | |
| System Monitoring Compounds | | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.167 | 65 | 113786 | 9.514 | ppbV | 0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = | | 95.14% | |
| 69) toluene-D8 | 14.467 | 98 | 467593 | 9.926 | ppbV | 0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = | | 99.26% | |
| 90) bromofluorobenzene | 17.653 | 95 | 291743 | 9.184 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = | | 91.84% | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.682 | 51 | 1771577 | 88.827 | ppbV | 97 |
| 3) propylene | 3.726 | 41 | 1098035M6 | 85.576 | ppbV | |
| 4) propane | 3.748 | 29 | 1260040 | 85.723 | ppbV | 100 |
| 5) dichlorodifluoromethane | 3.803 | 85 | 2395166 | 93.341 | ppbV | 99 |
| 6) chloromethane | 3.979 | 50 | 1035556 | 87.718 | ppbV | 99 |
| 7) Freon-114 | 4.100 | 85 | 2911382 | 88.605 | ppbV | 96 |
| 8) methanol | 4.199 | 31 | 2459523 | 442.618 | ppbV | 98 |
| 9) vinyl chloride | 4.221 | 62 | 1540627 | 108.573 | ppbV | 100 |
| 10) 1,3-butadiene | 4.374 | 54 | 1419791M6 | 94.365 | ppbV | |
| 11) butane | 4.438 | 43 | 1803919 | 92.738 | ppbV | 98 |
| 12) acetaldehyde | 4.133 | 29 | 2558933 | 434.807 | ppbV | 95 |
| 13) bromomethane | 4.678 | 94 | 1211729 | 98.853 | ppbV | 99 |
| 14) chloroethane | 4.886 | 64 | 719867 | 100.654 | ppbV | 100 |
| 15) ethanol | 5.070 | 31 | 4842381M6 | 528.694 | ppbV | |
| 16) dichlorofluoromethane | 5.014 | 67 | 2246861 | 98.125 | ppbV | 99 |
| 17) vinyl bromide | 5.294 | 106 | 1328549 | 91.994 | ppbV | 98 |
| 18) acrolein | 5.438 | 56 | 698502 | 97.837 | ppbV | 98 |
| 19) acetone | 5.590 | 43 | 7421122 | 426.144 | ppbV | 89 |
| 20) acetonitrile | 5.302 | 41 | 1261884 | 87.967 | ppbV | 98 |
| 21) trichlorofluoromethane | 5.782 | 101 | 2213016 | 90.232 | ppbV | 98 |
| 22) isopropyl alcohol | 5.902 | 45 | 4864236 | 220.938 | ppbV | 98 |
| 23) acrylonitrile | 6.150 | 53 | 946030M6 | 98.589 | ppbV | |
| 24) pentane | 6.216 | 43 | 2681402 | 83.123 | ppbV | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152079.D
Acq On : 10 Jan 2017 12:04 AM
Operator : AIRLAB15:MB
Sample : ITO15-LLSTD100
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:27:16 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 25) ethyl ether | 6.238 | 31 | 2251696 | 91.723 | ppbV | | 94 |
| 26) 1,1-dichloroethene | 6.546 | 61 | 1993680 | 94.955 | ppbV | | 98 |
| 27) tertiary butyl alcohol | 6.601 | 59 | 2699727M6 | 101.313 | ppbV | | |
| 28) methylene chloride | 6.700 | 49 | 1557193 | 85.202 | ppbV | | 90 |
| 29) 3-chloropropene | 6.843 | 41 | 2200301 | 88.082 | ppbV | | 97 |
| 30) carbon disulfide | 7.020 | 76 | 4240878 | 86.589 | ppbV | | 98 |
| 31) Freon 113 | 7.020 | 101 | 2469764 | 90.421 | ppbV | | 98 |
| 32) trans-1,2-dichloroethene | 7.820 | 61 | 2176326 | 94.344 | ppbV | | 99 |
| 33) 1,1-dichloroethane | 8.060 | 63 | 2490067 | 93.238 | ppbV | | 98 |
| 34) MTBE | 8.127 | 73 | 3626298 | 89.372 | ppbV | | 97 |
| 35) vinyl acetate | 8.260 | 43 | 3356013 | 87.771 | ppbV | # | 94 |
| 36) 2-butanone | 8.527 | 43 | 3156852 | 84.295 | ppbV | | 96 |
| 37) cis-1,2-dichloroethene | 9.060 | 61 | 1877350 | 94.732 | ppbV | | 98 |
| 38) Ethyl Acetate | 9.353 | 61 | 541734 | 95.016 | ppbV | | 74 |
| 39) chloroform | 9.420 | 83 | 2408949 | 91.826 | ppbV | | 98 |
| 40) Tetrahydrofuran | 9.873 | 42 | 1886434M6 | 85.324 | ppbV | | |
| 41) 2,2-dichloropropane | 9.447 | 77 | 1910767 | 89.647 | ppbV | | 96 |
| 42) 1,2-dichloroethane | 10.300 | 62 | 1590936 | 93.341 | ppbV | | 97 |
| 44) hexane | 9.327 | 57 | 2657023 | 87.940 | ppbV | | 94 |
| 45) diisopropyl ether | 9.327 | 87 | 1373544 | 90.909 | ppbV | | 73 |
| 46) tert-butyl ethyl ether | 9.967 | 59 | 4498963 | 93.320 | ppbV | | 99 |
| 48) 1,1,1-trichloroethane | 10.600 | 97 | 2046576 | 90.969 | ppbV | | 99 |
| 49) 1,1-dichloropropene | 10.973 | 75 | 2072528 | 86.937 | ppbV | | 98 |
| 50) benzene | 11.147 | 78 | 4841698 | 87.924 | ppbV | | 99 |
| 51) thiophene | 11.307 | 84 | 2787339 | 97.707 | ppbV | | 97 |
| 52) carbon tetrachloride | 11.320 | 117 | 1988975 | 96.202 | ppbV | | 99 |
| 53) cyclohexane | 11.467 | 56 | 2907959 | 90.359 | ppbV | | 98 |
| 54) tert-amyl methyl ether | 11.853 | 73 | 4060190 | 87.014 | ppbV | | 98 |
| 55) dibromomethane | 12.093 | 93 | 1443889 | 90.152 | ppbV | | 99 |
| 56) 1,2-dichloropropane | 12.120 | 63 | 1670736 | 90.338 | ppbV | | 99 |
| 57) bromodichloromethane | 12.360 | 83 | 2711191 | 91.665 | ppbV | | 98 |
| 58) 1,4-dioxane | 12.387 | 88 | 1177430 | 95.087 | ppbV | | 91 |
| 59) trichloroethene | 12.413 | 130 | 2032776 | 90.571 | ppbV | | 99 |
| 60) 2,2,4-trimethylpentane | 12.453 | 57 | 8781283 | 87.927 | ppbV | | 97 |
| 61) methyl methacrylate | 12.653 | 41 | 1865982 | 92.213 | ppbV | | 94 |
| 62) heptane | 12.787 | 43 | 3049166 | 78.230 | ppbV | | 90 |
| 63) cis-1,3-dichloropropene | 14.080 | 75 | 2240067 | 92.802 | ppbV | | 100 |
| 64) 4-methyl-2-pentanone | 13.480 | 43 | 3547376 | 79.582 | ppbV | | 89 |
| 65) trans-1,3-dichloropropene | 13.453 | 75 | 2349482 | 90.169 | ppbV | | 96 |
| 66) 1,1,2-trichloroethane | 14.267 | 97 | 1795829 | 90.178 | ppbV | | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152079.D
Acq On : 10 Jan 2017 12:04 AM
Operator : AIRLAB15:MB
Sample : ITO15-LLSTD100
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:27:16 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|---|
| 68) | toluene | 14.573 | 91 | 5717778 | 89.909 | ppbV | | 98 |
| 70) | 2-methylthiophene | 14.640 | 97 | 4167103 | 95.302 | ppbV | | 98 |
| 71) | 1,3-dichloropropane | 14.600 | 76 | 2567155 | 83.917 | ppbV | | 98 |
| 72) | 2-hexanone | 14.840 | 43 | 3286807M6 | 77.255 | ppbV | | |
| 73) | 3-methylthiophene | 14.827 | 97 | 4092448 | 93.481 | ppbV | # | 98 |
| 74) | dibromochloromethane | 15.013 | 129 | 2677647 | 92.126 | ppbV | | 96 |
| 75) | 1,2-dibromoethane | 15.253 | 107 | 2668256 | 88.425 | ppbV | | 100 |
| 76) | butyl acetate | 15.480 | 73 | 692716 | 81.670 | ppbV | | 80 |
| 77) | octane | 15.573 | 85 | 1685858 | 71.955 | ppbV | # | 76 |
| 78) | tetrachloroethene | 15.707 | 166 | 2441418 | 89.158 | ppbV | | 92 |
| 79) | 1,1,1,2-tetrachloroethane | 16.333 | 131 | 2002038 | 90.208 | ppbV | | 98 |
| 80) | chlorobenzene | 16.347 | 112 | 4502318 | 85.471 | ppbV | | 97 |
| 81) | ethylbenzene | 16.693 | 91 | 7148389 | 88.279 | ppbV | | 99 |
| 82) | 2-ethylthiophene | 16.733 | 97 | 4627175 | 93.327 | ppbV | | 100 |
| 83) | m+p-xylene | 16.853 | 91 | 11462397M6 | 175.263 | ppbV | | |
| 84) | bromoform | 16.920 | 173 | 2503572 | 96.727 | ppbV | | 98 |
| 85) | styrene | 17.173 | 104 | 4839974 | 89.673 | ppbV | | 96 |
| 86) | 1,1,2,2-tetrachloroethane | 17.267 | 83 | 3936999M6 | 84.853 | ppbV | | |
| 87) | o-xylene | 17.267 | 91 | 5643497 | 85.919 | ppbV | | 98 |
| 88) | 1,2,3-trichloropropane | 17.373 | 75 | 3110182 | 85.542 | ppbV | | 98 |
| 89) | nonane | 17.453 | 43 | 4222345 | 75.804 | ppbV | | 90 |
| 91) | isopropylbenzene | 17.760 | 105 | 7651155 | 84.251 | ppbV | | 94 |
| 92) | bromobenzene | 17.840 | 77 | 4159810 | 85.917 | ppbV | # | 84 |
| 93) | 2-chlorotoluene | 18.167 | 126 | 2759385 | 101.589 | ppbV | | 80 |
| 94) | n-propylbenzene | 18.193 | 120 | 2682442 | 89.139 | ppbV | | 90 |
| 95) | 4-chlorotoluene | 18.220 | 126 | 2262200 | 94.208 | ppbV | | 94 |
| 96) | 4-ethyl toluene | 18.313 | 105 | 8715430 | 81.416 | ppbV | | 97 |
| 97) | 1,3,5-trimethylbenzene | 18.367 | 105 | 6822057 | 88.162 | ppbV | | 96 |
| 98) | tert-butylbenzene | 18.713 | 119 | 6974368M6 | 81.299 | ppbV | | |
| 99) | 1,2,4-trimethylbenzene | 18.713 | 105 | 6427630M6 | 81.445 | ppbV | | |
| 100) | decane | 18.780 | 57 | 5483425 | 86.689 | ppbV | # | 85 |
| 101) | Benzyl Chloride | 18.833 | 91 | 6004227 | 101.355 | ppbV | | 99 |
| 102) | 1,3-dichlorobenzene | 18.847 | 146 | 4871268 | 82.570 | ppbV | | 95 |
| 103) | 1,4-dichlorobenzene | 18.900 | 146 | 4774075 | 91.556 | ppbV | | 97 |
| 104) | sec-butylbenzene | 18.927 | 105 | 9635002 | 84.345 | ppbV | | 95 |
| 105) | 1,2,3-trimethylbenzene | 19.073 | 105 | 5260347 | 86.354 | ppbV | | 95 |
| 106) | p-isopropyltoluene | 19.060 | 119 | 8654227 | 83.892 | ppbV | | 99 |
| 107) | 1,2-dichlorobenzene | 19.193 | 146 | 4584466 | 91.278 | ppbV | | 96 |
| 108) | n-butylbenzene | 19.407 | 91 | 7649922 | 88.303 | ppbV | | 94 |
| 109) | indan | 19.247 | 117 | 6361807 | 90.641 | ppbV | | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152079.D
Acq On : 10 Jan 2017 12:04 AM
Operator : AIRLAB15:MB
Sample : ITO15-LLSTD100
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:27:16 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 110) indene | 19.327 | 115 | 4231509 | 94.624 | ppbV | 98 |
| 111) 1,2-dibromo-3-chloropr... | 19.567 | 75 | 1767398 | 92.138 | ppbV | 86 |
| 112) undecane | 19.820 | 57 | 5868014 | 84.686 | ppbV | 95 |
| 113) 1,2,4,5-tetramethylben... | 20.053 | 119 | 11345482M6 | 83.011 | ppbV | |
| 114) dodecane | 20.747 | 57 | 5603473M6 | 85.791 | ppbV | |
| 115) 1,2,4-trichlorobenzene | 20.720 | 180 | 3389175 | 87.349 | ppbV | 97 |
| 116) naphthalene | 20.840 | 128 | 9526600 | 92.398 | ppbV | 98 |
| 117) 1,2,3-trichlorobenzene | 21.093 | 180 | 3393529 | 94.604 | ppbV | 97 |
| 118) benzothiophene | 20.907 | 134 | 9694145 | 120.027 | ppbV | 96 |
| 119) hexachlorobutadiene | 21.160 | 225 | 2698928 | 85.758 | ppbV | 94 |
| 120) 2-methylnaphthalene | 22.013 | 142 | 4804935 | 161.343 | ppbV | 94 |
| 121) 1-methylnaphthalene | 22.227 | 142 | 5555452 | 139.906 | ppbV | 98 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed7\170109T_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152079.D
Acq On : 10 Jan 2017 12:04 AM
Operator : AIRLAB15:MB
Sample : ITO15-LLSTD100
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 10:27:16 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:09:16 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #3: propylene

Original Peak Response = 1246942

Manual Peak Response = 1098035 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #10: 1,3-butadiene

Original Peak Response = 1314910

Manual Peak Response = 1419791 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\ QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #15: ethanol

Original Peak Response = 4908504

Manual Peak Response = 4842381 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #23: acrylonitrile

Original Peak Response = 995648

Manual Peak Response = 946030 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #27: tertiary butyl alcohol

Original Peak Response = 2748645

Manual Peak Response = 2699727 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #40: Tetrahydrofuran

Original Peak Response = 1967945

Manual Peak Response = 1886434 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #72: 2-hexanone

Original Peak Response = 3300804

Manual Peak Response = 3286807 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #83: m+p-xylene

Original Peak Response = 11546058

Manual Peak Response = 11462397 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #86: 1,1,2,2-tetrachloroethane

Original Peak Response = 3937920

Manual Peak Response = 3936999 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #98: tert-butylbenzene

Original Peak Response = 6989843

Manual Peak Response = 6974368 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #99: 1,2,4-trimethylbenzene

Original Peak Response = 6430718

Manual Peak Response = 6427630 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #113: 1,2,4,5-tetramethylbenzene

Original Peak Response = 12202591

Manual Peak Response = 11345482 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152079.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:04 AM Instrument :
Sample : ITO15-LLSTD100 Quant Date : 1/10/2017 10:09 am

Compound #114: dodecane

Original Peak Response = 5603790

Manual Peak Response = 5603473 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

# Initial Calibration Verification

# Evaluate Continuing Calibration Report

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 140%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | bromochloromethane | 1.000 | 1.000 | 0.0 | 83 | 0.00 |
| 2 | | chlorodifluoromethane | 1.061 | 0.930 | 12.3 | 75 | 0.00 |
| 3 | | propylene | 0.671 | 0.699 | -4.2 | 88 | 0.00 |
| 4 | | propane | 0.787 | 0.693 | 11.9 | 76 | 0.01 |
| 5 | | dichlorodifluoromethane | 1.375 | 1.444 | -5.0 | 91 | 0.00 |
| 6 | C | chloromethane | 0.630 | 0.618 | 1.9 | 84 | 0.00 |
| 7 | | Freon-114 | 1.725 | 1.800 | -4.3 | 88 | 0.01 |
| 8 | C | methanol | 0.289 | 0.262 | 9.3 | 76 | 0.01 |
| 9 | C | vinyl chloride | 0.774 | 0.824 | -6.5 | 94 | 0.00 |
| 10 | C | 1,3-butadiene | 0.799 | 0.874 | -9.4 | 94 | 0.00 |
| 11 | | butane | 1.037 | 1.022 | 1.4 | 85 | 0.00 |
| 13 | C | bromomethane | 0.675 | 0.723 | -7.1 | 95 | 0.00 |
| 14 | C | chloroethane | 0.394 | 0.424 | -7.6 | 96 | 0.00 |
| 15 | | ethanol | 0.525 | 0.507 | 3.4 | 89 | 0.00 |
| 16 | | dichlorofluoromethane | 1.255 | 1.234 | 1.7 | 87 | 0.00 |
| 17 | C | vinyl bromide | 0.755 | 0.773 | -2.4 | 86 | 0.00 |
| 18 | C | acrolein | 0.377 | 0.366 | 2.9 | 83 | 0.00 |
| 19 | | acetone | 0.989 | 0.910 | 8.0 | 84 | 0.00 |
| 20 | C | acetonitrile | 0.753 | 0.723 | 4.0 | 81 | 0.00 |
| 21 | | trichlorofluoromethane | 1.292 | 1.319 | -2.1 | 87 | 0.00 |
| 22 | | isopropyl alcohol | 1.207 | 1.241 | -2.8 | 91 | 0.00 |
| 23 | C | acrylonitrile | 0.518 | 0.468 | 9.7 | 79 | 0.02 |
| 24 | | pentane | 1.665 | 1.467 | 11.9 | 73 | 0.01 |
| 25 | | ethyl ether | 1.272 | 1.177 | 7.5 | 77 | 0.01 |
| 26 | C | 1,1-dichloroethene | 1.105 | 1.179 | -6.7 | 91 | 0.00 |
| 27 | | tertiary butyl alcohol | 1.418 | 1.435 | -1.2 | 87 | 0.01 |
| 28 | C | methylene chloride | 0.944 | 0.938 | 0.6 | 83 | 0.00 |
| 29 | C | 3-chloropropene | 1.288 | 1.376 | -6.8 | 89 | 0.00 |
| 30 | C | carbon disulfide | 2.553 | 2.529 | 0.9 | 83 | 0.00 |
| 31 | | Freon 113 | 1.441 | 1.478 | -2.6 | 87 | 0.01 |
| 32 | | trans-1,2-dichloroethene | 1.216 | 1.176 | 3.3 | 82 | 0.00 |
| 33 | C | 1,1-dichloroethane | 1.418 | 1.462 | -3.1 | 88 | 0.01 |
| 34 | C | MTBE | 2.067 | 2.134 | -3.2 | 85 | 0.00 |
| 35 | C | vinyl acetate | 1.909 | 2.209 | -15.7 | 93 | 0.00 |
| 36 | C | 2-butanone | 1.944 | 1.838 | 5.5 | 79 | 0.00 |
| 37 | | cis-1,2-dichloroethene | 1.035 | 1.219 | -17.8 | 99 | 0.00 |
| 38 | | Ethyl Acetate | 0.299 | 0.316 | -5.7 | 89 | 0.00 |
| 39 | C | chloroform | 1.386 | 1.458 | -5.2 | 90 | 0.00 |
| 40 | | Tetrahydrofuran | 1.110 | 1.070 | 3.6 | 78 | 0.01 |

Evaluate Continuing Calibration Report

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 140%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 41 | | 2,2-dichloropropane | 1.127 | 1.042 | 7.5 | 79 | 0.00 |
| 42 | C | 1,2-dichloroethane | 0.874 | 0.960 | -9.8 | 91 | 0.00 |
| 43 | I | 1,4-difluorobenzene | 1.000 | 1.000 | 0.0 | 94 | 0.00 |
| 44 | C | hexane | 0.559 | 0.527 | 5.7 | 88 | 0.00 |
| 45 | | diisopropyl ether | 0.278 | 0.250 | 10.1 | 84 | 0.00 |
| 46 | | tert-butyl ethyl ether | 0.897 | 0.803 | 10.5 | 85 | 0.00 |
| 47 | s | 1,2-dichloroethane-D4 | 0.220 | 0.216 | 1.8 | 92 | 0.00 |
| 48 | C | 1,1,1-trichloroethane | 0.420 | 0.397 | 5.5 | 89 | 0.00 |
| 49 | | 1,1-dichloropropene | 0.442 | 0.390 | 11.8 | 83 | 0.01 |
| 50 | C | benzene | 1.029 | 0.934 | 9.2 | 86 | 0.00 |
| 52 | C | carbon tetrachloride | 0.388 | 0.384 | 1.0 | 94 | 0.01 |
| 53 | | cyclohexane | 0.595 | 0.560 | 5.9 | 88 | 0.01 |
| 54 | | tert-amyl methyl ether | 0.850 | 0.738 | 13.2 | 80 | 0.01 |
| 55 | | dibromomethane | 0.308 | 0.263 | 14.6 | 83 | 0.00 |
| 56 | C | 1,2-dichloropropane | 0.350 | 0.328 | 6.3 | 90 | 0.01 |
| 57 | | bromodichloromethane | 0.546 | 0.527 | 3.5 | 90 | 0.00 |
| 58 | C | 1,4-dioxane | 0.235 | 0.223 | 5.1 | 91 | 0.00 |
| 59 | C | trichloroethene | 0.424 | 0.401 | 5.4 | 91 | 0.00 |
| 60 | C | 2,2,4-trimethylpentane | 1.833 | 1.739 | 5.1 | 88 | 0.01 |
| 61 | | methyl methacrylate | 0.389 | 0.382 | 1.8 | 96 | 0.00 |
| 62 | | heptane | 0.698 | 0.602 | 13.8 | 78 | 0.00 |
| 63 | C | cis-1,3-dichloropropene | 0.434 | 0.372 | 14.3 | 78 | 0.00 |
| 64 | C | 4-methyl-2-pentanone | 0.793 | 0.695 | 12.4 | 79 | 0.00 |
| 65 | | trans-1,3-dichloropropene | 0.476 | 0.469 | 1.5 | 91 | 0.00 |
| 66 | C | 1,1,2-trichloroethane | 0.373 | 0.360 | 3.5 | 92 | 0.00 |
| 67 | I | chlorobenzene-D5 | 1.000 | 1.000 | 0.0 | 97 | 0.00 |
| 68 | C | toluene | 7.362 | 6.984 | 5.1 | 93 | 0.01 |
| 69 | s | toluene-D8 | 5.354 | 5.747 | -7.3 | 103 | 0.01 |
| 71 | | 1,3-dichloropropane | 3.503 | 2.882 | 17.7 | 80 | 0.01 |
| 72 | | 2-hexanone | 4.447 | 4.046 | 9.0 | 80 | 0.00 |
| 74 | | dibromochloromethane | 3.229 | 3.131 | 3.0 | 91 | 0.00 |
| 75 | C | 1,2-dibromoethane | 3.464 | 3.197 | 7.7 | 90 | 0.00 |
| 76 | | butyl acetate | 0.895 | 0.732 | 18.2 | 73 | 0.00 |
| 77 | | octane | 2.729 | 2.182 | 20.0 | 79 | 0.00 |
| 78 | C | tetrachloroethene | 3.204 | 3.020 | 5.7 | 93 | 0.00 |
| 79 | | 1,1,1,2-tetrachloroethane | 2.526 | 2.224 | 12.0 | 85 | 0.01 |
| 80 | C | chlorobenzene | 6.027 | 5.748 | 4.6 | 92 | 0.00 |

Evaluate Continuing Calibration Report

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 140%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 81 | C | ethylbenzene | 9.137 | 8.833 | 3.3 | 92 | 0.00 |
| 83 | C | m+p-xylene | 7.388 | 7.142 | 3.3 | 92 | 0.00 |
| 84 | C | bromoform | 2.861 | 2.776 | 3.0 | 91 | 0.01 |
| 85 | C | styrene | 6.025 | 5.763 | 4.3 | 90 | 0.00 |
| 86 | C | 1,1,2,2-tetrachloroethane | 5.259 | 5.133 | 2.4 | 94 | 0.00 |
| 87 | C | o-xylene | 7.455 | 7.297 | 2.1 | 94 | 0.00 |
| 88 | | 1,2,3-trichloropropane | 4.181 | 3.543 | 15.3 | 82 | 0.01 |
| 89 | | nonane | 6.176 | 4.923 | 20.3 | 75 | 0.00 |
| 90 | s | bromofluorobenzene | 3.348 | 2.811 | 16.0 | 75 | 0.00 |
| 91 | C | isopropylbenzene | 10.213 | 9.135 | 10.6 | 85 | 0.00 |
| 92 | | bromobenzene | 5.484 | 4.807 | 12.3 | 84 | 0.00 |
| 93 | | 2-chlorotoluene | 3.212 | 2.644 | 17.7 | 82 | 0.01 |
| 94 | | n-propylbenzene | 3.453 | 3.462 | -0.3 | 97 | 0.00 |
| 95 | | 4-chlorotoluene | 2.821 | 2.499 | 11.4 | 88 | 0.00 |
| 96 | | 4-ethyl toluene | 11.517 | 10.626 | 7.7 | 84 | 0.00 |
| 97 | | 1,3,5-trimethylbenzene | 8.866 | 8.384 | 5.4 | 92 | 0.00 |
| 98 | | tert-butylbenzene | 9.533 | 8.796 | 7.7 | 87 | 0.00 |
| 99 | | 1,2,4-trimethylbenzene | 8.772 | 8.684 | 1.0 | 93 | 0.00 |
| 100 | | decane | 7.011 | 6.296 | 10.2 | 84 | 0.00 |
| 101 | C | Benzyl Chloride | 6.142 | 6.670 | -8.6 | 95 | 0.01 |
| 102 | | 1,3-dichlorobenzene | 6.406 | 6.471 | -1.0 | 93 | 0.01 |
| 103 | C | 1,4-dichlorobenzene | 6.143 | 5.834 | 5.0 | 95 | 0.00 |
| 104 | | sec-butylbenzene | 12.819 | 11.517 | 10.2 | 85 | 0.00 |
| 106 | | p-isopropyltoluene | 11.364 | 10.077 | 11.3 | 83 | 0.01 |
| 107 | | 1,2-dichlorobenzene | 5.788 | 5.818 | -0.5 | 98 | 0.00 |
| 108 | | n-butylbenzene | 9.564 | 9.178 | 4.0 | 90 | 0.00 |
| 111 | C | 1,2-dibromo-3-chloropropane | 2.068 | 2.000 | 3.3 | 88 | 0.00 |
| 112 | | undecane | 7.320 | 7.057 | 3.6 | 86 | 0.00 |
| 114 | | dodecane | 6.438 | 7.027 | -9.1 | 91 | 0.00 |
| 115 | C | 1,2,4-trichlorobenzene | 3.971 | 4.634 | -16.7 | 101 | 0.00 |
| 116 | | naphthalene | 10.522 | 11.380 | -8.2 | 93 | 0.01 |
| 117 | | 1,2,3-trichlorobenzene | 3.875 | 4.112 | -6.1 | 97 | 0.00 |
| 119 | C | hexachlorobutadiene | 3.394 | 3.683 | -8.5 | 99 | 0.00 |

* Evaluation of CC level amount vs concentration.
(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default-ICV-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.247 | 49 | 181340 | 10.000 | ppbV | 0.00 |
| Standard Area = 217214 | | | Recovery = 83.48% | | | |
| 43) 1,4-difluorobenzene | 11.573 | 114 | 553870 | 10.000 | ppbV | 0.00 |
| Standard Area = 586326 | | | Recovery = 94.46% | | | |
| 67) chlorobenzene-D5 | 16.307 | 54 | 90382 | 10.000 | ppbV | 0.00 |
| Standard Area = 92710 | | | Recovery = 97.49% | | | |
| System Monitoring Compounds | | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.153 | 65 | 119893 | 9.859 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 98.59% | | | |
| 69) toluene-D8 | 14.467 | 98 | 519438 | 10.735 | ppbV | 0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 107.35% | | | |
| 90) bromofluorobenzene | 17.653 | 95 | 254076 | 8.397 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 83.97% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.682 | 51 | 168685 | 8.771 | ppbV | 98 |
| 3) propylene | 3.715 | 41 | 126787M6 | 10.423 | ppbV | |
| 4) propane | 3.748 | 29 | 125651 | 8.802 | ppbV | 99 |
| 5) dichlorodifluoromethane | 3.792 | 85 | 261783 | 10.502 | ppbV | 100 |
| 6) chloromethane | 3.968 | 50 | 111987 | 9.797 | ppbV | 100 |
| 7) Freon-114 | 4.089 | 85 | 326322 | 10.429 | ppbV | 98 |
| 8) methanol | 4.188 | 31 | 237631 | 45.337 | ppbV | 98 |
| 9) vinyl chloride | 4.210 | 62 | 149424 | 10.645 | ppbV | 98 |
| 10) 1,3-butadiene | 4.366 | 54 | 158564 | 10.949 | ppbV | 87 |
| 11) butane | 4.422 | 43 | 185330 | 9.853 | ppbV | 98 |
| 13) bromomethane | 4.662 | 94 | 131089 | 10.709 | ppbV | 99 |
| 14) chloroethane | 4.870 | 64 | 76877 | 10.748 | ppbV | 99 |
| 15) ethanol | 5.046 | 31 | 460111M6 | 48.338 | ppbV | |
| 16) dichlorofluoromethane | 4.982 | 67 | 223727 | 9.833 | ppbV | 98 |
| 17) vinyl bromide | 5.270 | 106 | 140210 | 10.246 | ppbV | 95 |
| 18) acrolein | 5.430 | 56 | 66326 | 9.701 | ppbV | 98 |
| 19) acetone | 5.582 | 43 | 824916 | 46.010 | ppbV | 92 |
| 20) acetonitrile | 5.286 | 41 | 131162 | 9.612 | ppbV | 98 |
| 21) trichlorofluoromethane | 5.766 | 101 | 239181 | 10.212 | ppbV | 97 |
| 22) isopropyl alcohol | 5.894 | 45 | 562423 | 25.691 | ppbV | 98 |
| 23) acrylonitrile | 6.150 | 53 | 84909M6 | 9.045 | ppbV | |
| 24) pentane | 6.205 | 43 | 266088 | 8.813 | ppbV | 98 |
| 25) ethyl ether | 6.238 | 31 | 213509M6 | 9.255 | ppbV | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default-ICV-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 26) 1,1-dichloroethene | 6.524 | 61 | 213808 | 10.672 | ppbV | 97 |
| 27) tertiary butyl alcohol | 6.601 | 59 | 260290 | 10.124 | ppbV | 98 |
| 28) methylene chloride | 6.678 | 49 | 170021 | 9.928 | ppbV | 88 |
| 29) 3-chloropropene | 6.821 | 41 | 249537 | 10.687 | ppbV | 96 |
| 30) carbon disulfide | 6.993 | 76 | 458634 | 9.906 | ppbV | 97 |
| 31) Freon 113 | 7.007 | 101 | 268035 | 10.255 | ppbV | 98 |
| 32) trans-1,2-dichloroethene | 7.807 | 61 | 213234 | 9.673 | ppbV | 100 |
| 33) 1,1-dichloroethane | 8.047 | 63 | 265084 | 10.306 | ppbV | 98 |
| 34) MTBE | 8.113 | 73 | 386898 | 10.320 | ppbV | 97 |
| 35) vinyl acetate | 8.247 | 43 | 400666 | 11.577 | ppbV # | 95 |
| 36) 2-butanone | 8.527 | 43 | 333222 | 9.452 | ppbV | 98 |
| 37) cis-1,2-dichloroethene | 9.047 | 61 | 221017 | 11.772 | ppbV | 99 |
| 38) Ethyl Acetate | 9.340 | 61 | 57285 | 10.553 | ppbV | 88 |
| 39) chloroform | 9.407 | 83 | 264457 | 10.523 | ppbV | 97 |
| 40) Tetrahydrofuran | 9.887 | 42 | 194066M6 | 9.638 | ppbV | |
| 41) 2,2-dichloropropane | 9.433 | 77 | 188920 | 9.245 | ppbV | 97 |
| 42) 1,2-dichloroethane | 10.287 | 62 | 174153 | 10.983 | ppbV | 97 |
| 44) hexane | 9.313 | 57 | 291831 | 9.425 | ppbV | 80 |
| 45) diisopropyl ether | 9.313 | 87 | 138385 | 8.995 | ppbV | 76 |
| 46) tert-butyl ethyl ether | 9.953 | 59 | 445034 | 8.958 | ppbV | 100 |
| 48) 1,1,1-trichloroethane | 10.587 | 97 | 219618 | 9.443 | ppbV | 99 |
| 49) 1,1-dichloropropene | 10.973 | 75 | 215772 | 8.804 | ppbV | 98 |
| 50) benzene | 11.133 | 78 | 517249 | 9.072 | ppbV | 99 |
| 52) carbon tetrachloride | 11.320 | 117 | 212922 | 9.906 | ppbV | 97 |
| 53) cyclohexane | 11.467 | 56 | 310338 | 9.411 | ppbV | 98 |
| 54) tert-amyl methyl ether | 11.853 | 73 | 408505 | 8.675 | ppbV | 99 |
| 55) dibromomethane | 12.080 | 93 | 145624 | 8.541 | ppbV | 97 |
| 56) 1,2-dichloropropane | 12.120 | 63 | 181776 | 9.387 | ppbV | 99 |
| 57) bromodichloromethane | 12.347 | 83 | 292016 | 9.651 | ppbV | 100 |
| 58) 1,4-dioxane | 12.400 | 88 | 123285 | 9.454 | ppbV | 94 |
| 59) trichloroethene | 12.400 | 130 | 222355 | 9.477 | ppbV | 97 |
| 60) 2,2,4-trimethylpentane | 12.453 | 57 | 963451 | 9.489 | ppbV | 97 |
| 61) methyl methacrylate | 12.653 | 41 | 211372 | 9.802 | ppbV | 97 |
| 62) heptane | 12.773 | 43 | 333466 | 8.620 | ppbV | 91 |
| 63) cis-1,3-dichloropropene | 14.067 | 75 | 206068 | 8.570 | ppbV | 98 |
| 64) 4-methyl-2-pentanone | 13.480 | 43 | 384812 | 8.762 | ppbV | 91 |
| 65) trans-1,3-dichloropropene | 13.440 | 75 | 259496 | 9.849 | ppbV | 99 |
| 66) 1,1,2-trichloroethane | 14.267 | 97 | 199302 | 9.646 | ppbV | 96 |
| 68) toluene | 14.573 | 91 | 631234 | 9.487 | ppbV | 96 |
| 71) 1,3-dichloropropane | 14.600 | 76 | 260517 | 8.229 | ppbV | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default-ICV-AP2 - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|---|
| 72) | 2-hexanone | 14.840 | 43 | 365655 | 9.097 | ppbV | | 96 |
| 74) | dibromochloromethane | 15.000 | 129 | 282956 | 9.695 | ppbV | | 99 |
| 75) | 1,2-dibromoethane | 15.253 | 107 | 288979 | 9.230 | ppbV | | 98 |
| 76) | butyl acetate | 15.480 | 73 | 66196 | 8.184 | ppbV | | 86 |
| 77) | octane | 15.573 | 85 | 197172 | 7.995 | ppbV | | 84 |
| 78) | tetrachloroethene | 15.707 | 166 | 272938 | 9.426 | ppbV | | 96 |
| 79) | 1,1,1,2-tetrachloroethane | 16.333 | 131 | 201032 | 8.805 | ppbV | | 98 |
| 80) | chlorobenzene | 16.347 | 112 | 519538 | 9.538 | ppbV | | 97 |
| 81) | ethylbenzene | 16.680 | 91 | 798362 | 9.668 | ppbV | | 100 |
| 83) | m+p-xylene | 16.840 | 91 | 1291022 | 19.333 | ppbV | | 99 |
| 84) | bromoform | 16.920 | 173 | 250870 | 9.701 | ppbV | | 97 |
| 85) | styrene | 17.160 | 104 | 520869 | 9.565 | ppbV | | 99 |
| 86) | 1,1,2,2-tetrachloroethane | 17.253 | 83 | 463952 | 9.761 | ppbV | | 100 |
| 87) | o-xylene | 17.253 | 91 | 659482 | 9.788 | ppbV | | 97 |
| 88) | 1,2,3-trichloropropane | 17.373 | 75 | 320221 | 8.474 | ppbV | | 97 |
| 89) | nonane | 17.440 | 43 | 444968 | 7.971 | ppbV | # | 90 |
| 91) | isopropylbenzene | 17.760 | 105 | 825658 | 8.944 | ppbV | | 98 |
| 92) | bromobenzene | 17.840 | 77 | 434508 | 8.766 | ppbV | | 94 |
| 93) | 2-chlorotoluene | 18.167 | 126 | 238975M3 | 8.231 | ppbV | | |
| 94) | n-propylbenzene | 18.180 | 120 | 312939 | 10.029 | ppbV | | 93 |
| 95) | 4-chlorotoluene | 18.220 | 126 | 225851 | 8.857 | ppbV | | 99 |
| 96) | 4-ethyl toluene | 18.300 | 105 | 960394 | 9.226 | ppbV | | 98 |
| 97) | 1,3,5-trimethylbenzene | 18.367 | 105 | 757776 | 9.457 | ppbV | | 98 |
| 98) | tert-butylbenzene | 18.700 | 119 | 794973 | 9.226 | ppbV | | 98 |
| 99) | 1,2,4-trimethylbenzene | 18.700 | 105 | 784908 | 9.900 | ppbV | | 96 |
| 100) | decane | 18.780 | 57 | 569054 | 8.980 | ppbV | | 92 |
| 101) | Benzyl Chloride | 18.833 | 91 | 602886 | 10.860 | ppbV | | 94 |
| 102) | 1,3-dichlorobenzene | 18.847 | 146 | 584899 | 10.103 | ppbV | | 95 |
| 103) | 1,4-dichlorobenzene | 18.900 | 146 | 527275 | 9.497 | ppbV | | 98 |
| 104) | sec-butylbenzene | 18.927 | 105 | 1040940 | 8.985 | ppbV | | 99 |
| 106) | p-isopropyltoluene | 19.060 | 119 | 910820 | 8.868 | ppbV | | 96 |
| 107) | 1,2-dichlorobenzene | 19.180 | 146 | 525875 | 10.053 | ppbV | | 96 |
| 108) | n-butylbenzene | 19.407 | 91 | 829566 | 9.597 | ppbV | | 99 |
| 111) | 1,2-dibromo-3-chloropr... | 19.567 | 75 | 180755 | 9.671 | ppbV | | 95 |
| 112) | undecane | 19.807 | 57 | 637781 | 9.641 | ppbV | | 96 |
| 114) | dodecane | 20.747 | 57 | 635130 | 10.916 | ppbV | | 92 |
| 115) | 1,2,4-trichlorobenzene | 20.707 | 180 | 418792 | 11.667 | ppbV | | 98 |
| 116) | naphthalene | 20.840 | 128 | 1028543 | 10.815 | ppbV | | 98 |
| 117) | 1,2,3-trichlorobenzene | 21.093 | 180 | 371642 | 10.612 | ppbV | | 99 |
| 119) | hexachlorobutadiene | 21.160 | 225 | 332859 | 10.851 | ppbV | | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default-ICV-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default-ICV-AP2 - All compounds listedT_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #3: propylene

Original Peak Response = 138694

Manual Peak Response = 126787 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #15: ethanol

Original Peak Response = 467385

Manual Peak Response = 460111 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #23: acrylonitrile

Original Peak Response = 89512

Manual Peak Response = 84909 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #25: ethyl ether

Original Peak Response = 222637 Manual Peak Response = 213509 M6
M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #40: Tetrahydrofuran

Original Peak Response = 203848

Manual Peak Response = 194066 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #93: 2-chlorotoluene

Original Peak Response = 225098 Manual Peak Response = 238975 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 | | |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 | | |
| Instrument ID | : AIRLAB15 | Calibration Date | : 01/10/17 12:51 | | |
| Lab File ID | : R152082 | Init. Calib. Date(s) | : 01/09/17 | 01/10/17 | |
| Sample No | : R934633-9 | Init. Calib. Times | : 19:05 | 00:04 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| bromochloromethane | 1 | 1 | - | 0 | 30 | 83 | 0 |
| chlorodifluoromethane | 1.061 | 0.93 | - | 12.3 | 30 | 75 | 0 |
| propylene | 0.671 | 0.699 | - | -4.2 | 30 | 88 | 0 |
| propane | 0.787 | 0.693 | - | 11.9 | 30 | 76 | .01 |
| dichlorodifluoromethane | 1.375 | 1.444 | - | -5 | 30 | 91 | 0 |
| chloromethane | 0.63 | 0.618 | - | 1.9 | 30 | 84 | 0 |
| Freon-114 | 1.725 | 1.8 | - | -4.3 | 30 | 88 | .01 |
| methanol | 0.289 | 0.262 | - | 9.3 | 30 | 76 | .01 |
| vinyl chloride | 0.774 | 0.824 | - | -6.5 | 30 | 94 | 0 |
| 1,3-butadiene | 0.799 | 0.874 | - | -9.4 | 30 | 94 | 0 |
| butane | 1.037 | 1.022 | - | 1.4 | 30 | 85 | 0 |
| bromomethane | 0.675 | 0.723 | - | -7.1 | 30 | 95 | 0 |
| chloroethane | 0.394 | 0.424 | - | -7.6 | 30 | 96 | 0 |
| ethanol | 0.525 | 0.507 | - | 3.4 | 30 | 89 | 0 |
| dichlorofluoromethane | 1.255 | 1.234 | - | 1.7 | 30 | 87 | 0 |
| vinyl bromide | 0.755 | 0.773 | - | -2.4 | 30 | 86 | 0 |
| acrolein | 0.377 | 0.366 | - | 2.9 | 30 | 83 | 0 |
| acetone | 0.989 | 0.91 | - | 8 | 30 | 84 | 0 |
| acetonitrile | 0.753 | 0.723 | - | 4 | 30 | 81 | 0 |
| trichlorofluoromethane | 1.292 | 1.319 | - | -2.1 | 30 | 87 | 0 |
| isopropyl alcohol | 1.207 | 1.241 | - | -2.8 | 30 | 91 | 0 |
| acrylonitrile | 0.518 | 0.468 | - | 9.7 | 30 | 79 | .02 |
| pentane | 1.665 | 1.467 | - | 11.9 | 30 | 73 | .01 |
| ethyl ether | 1.272 | 1.177 | - | 7.5 | 30 | 77 | .01 |
| 1,1-dichloroethene | 1.105 | 1.179 | - | -6.7 | 30 | 91 | 0 |
| tertiary butyl alcohol | 1.418 | 1.435 | - | -1.2 | 30 | 87 | .01 |
| methylene chloride | 0.944 | 0.938 | - | 0.6 | 30 | 83 | 0 |
| 3-chloropropene | 1.288 | 1.376 | - | -6.8 | 30 | 89 | 0 |
| carbon disulfide | 2.553 | 2.529 | - | 0.9 | 30 | 83 | 0 |
| Freon 113 | 1.441 | 1.478 | - | -2.6 | 30 | 87 | .01 |
| trans-1,2-dichloroethene | 1.216 | 1.176 | - | 3.3 | 30 | 82 | 0 |
| 1,1-dichloroethane | 1.418 | 1.462 | - | -3.1 | 30 | 88 | .01 |
| MTBE | 2.067 | 2.134 | - | -3.2 | 30 | 85 | 0 |
| vinyl acetate | 1.909 | 2.209 | - | -15.7 | 30 | 93 | 0 |
| 2-butanone | 1.944 | 1.838 | - | 5.5 | 30 | 79 | 0 |
| cis-1,2-dichloroethene | 1.035 | 1.219 | - | -17.8 | 30 | 99 | 0 |
| Ethyl Acetate | 0.299 | 0.316 | - | -5.7 | 30 | 89 | 0 |
| chloroform | 1.386 | 1.458 | - | -5.2 | 30 | 90 | 0 |
| Tetrahydrofuran | 1.11 | 1.07 | - | 3.6 | 30 | 78 | .01 |
| 2,2-dichloropropane | 1.127 | 1.042 | - | 7.5 | 30 | 79 | 0 |
| 1,2-dichloroethane | 0.874 | 0.96 | - | -9.8 | 30 | 91 | 0 |
| 1,4-difluorobenzene | 1 | 1 | - | 0 | 30 | 94 | 0 |
| hexane | 0.559 | 0.527 | - | 5.7 | 30 | 88 | 0 |
| diisopropyl ether | 0.278 | 0.25 | - | 10.1 | 30 | 84 | 0 |
| tert-butyl ethyl ether | 0.897 | 0.803 | - | 10.5 | 30 | 85 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 | | |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 | | |
| Instrument ID | : AIRLAB15 | Calibration Date | : 01/10/17 12:51 | | |
| Lab File ID | : R152082 | Init. Calib. Date(s) | : 01/09/17 | 01/10/17 | |
| Sample No | : R934633-9 | Init. Calib. Times | : 19:05 | 00:04 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1,2-dichloroethane-D4 | 0.22 | 0.216 | - | 1.8 | 30 | 92 | 0 |
| 1,1,1-trichloroethane | 0.42 | 0.397 | - | 5.5 | 30 | 89 | 0 |
| 1,1-dichloropropene | 0.442 | 0.39 | - | 11.8 | 30 | 83 | .01 |
| benzene | 1.029 | 0.934 | - | 9.2 | 30 | 86 | 0 |
| carbon tetrachloride | 0.388 | 0.384 | - | 1 | 30 | 94 | .01 |
| cyclohexane | 0.595 | 0.56 | - | 5.9 | 30 | 88 | .01 |
| tert-amyl methyl ether | 0.85 | 0.738 | - | 13.2 | 30 | 80 | .01 |
| dibromomethane | 0.308 | 0.263 | - | 14.6 | 30 | 83 | 0 |
| 1,2-dichloropropane | 0.35 | 0.328 | - | 6.3 | 30 | 90 | .01 |
| bromodichloromethane | 0.546 | 0.527 | - | 3.5 | 30 | 90 | 0 |
| 1,4-dioxane | 0.235 | 0.223 | - | 5.1 | 30 | 91 | 0 |
| trichloroethene | 0.424 | 0.401 | - | 5.4 | 30 | 91 | 0 |
| 2,2,4-trimethylpentane | 1.833 | 1.739 | - | 5.1 | 30 | 88 | .01 |
| methyl methacrylate | 0.389 | 0.382 | - | 1.8 | 30 | 96 | 0 |
| heptane | 0.698 | 0.602 | - | 13.8 | 30 | 78 | 0 |
| cis-1,3-dichloropropene | 0.434 | 0.372 | - | 14.3 | 30 | 78 | 0 |
| 4-methyl-2-pentanone | 0.793 | 0.695 | - | 12.4 | 30 | 79 | 0 |
| trans-1,3-dichloropropene | 0.476 | 0.469 | - | 1.5 | 30 | 91 | 0 |
| 1,1,2-trichloroethane | 0.373 | 0.36 | - | 3.5 | 30 | 92 | 0 |
| chlorobenzene-D5 | 1 | 1 | - | 0 | 30 | 97 | 0 |
| toluene | 7.362 | 6.984 | - | 5.1 | 30 | 93 | .01 |
| toluene-D8 | 5.354 | 5.747 | - | -7.3 | 30 | 103 | .01 |
| 1,3-dichloropropane | 3.503 | 2.882 | - | 17.7 | 30 | 80 | .01 |
| 2-hexanone | 4.447 | 4.046 | - | 9 | 30 | 80 | 0 |
| dibromochloromethane | 3.229 | 3.131 | - | 3 | 30 | 91 | 0 |
| 1,2-dibromoethane | 3.464 | 3.197 | - | 7.7 | 30 | 90 | 0 |
| butyl acetate | 0.895 | 0.732 | - | 18.2 | 30 | 73 | 0 |
| octane | 2.729 | 2.182 | - | 20 | 30 | 79 | 0 |
| tetrachloroethene | 3.204 | 3.02 | - | 5.7 | 30 | 93 | 0 |
| 1,1,1,2-tetrachloroethane | 2.526 | 2.224 | - | 12 | 30 | 85 | .01 |
| chlorobenzene | 6.027 | 5.748 | - | 4.6 | 30 | 92 | 0 |
| ethylbenzene | 9.137 | 8.833 | - | 3.3 | 30 | 92 | 0 |
| m+p-xylene | 7.388 | 7.142 | - | 3.3 | 30 | 92 | 0 |
| bromoform | 2.861 | 2.776 | - | 3 | 30 | 91 | .01 |
| styrene | 6.025 | 5.763 | - | 4.3 | 30 | 90 | 0 |
| 1,1,2,2-tetrachloroethane | 5.259 | 5.133 | - | 2.4 | 30 | 94 | 0 |
| o-xylene | 7.455 | 7.297 | - | 2.1 | 30 | 94 | 0 |
| 1,2,3-trichloropropane | 4.181 | 3.543 | - | 15.3 | 30 | 82 | .01 |
| nonane | 6.176 | 4.923 | - | 20.3 | 30 | 75 | 0 |
| bromofluorobenzene | 3.348 | 2.811 | - | 16 | 30 | 75 | 0 |
| isopropylbenzene | 10.213 | 9.135 | - | 10.6 | 30 | 85 | 0 |
| bromobenzene | 5.484 | 4.807 | - | 12.3 | 30 | 84 | 0 |
| 2-chlorotoluene | 3.212 | 2.644 | - | 17.7 | 30 | 82 | .01 |
| n-propylbenzene | 3.453 | 3.462 | - | -0.3 | 30 | 97 | 0 |
| 4-chlorotoluene | 2.821 | 2.499 | - | 11.4 | 30 | 88 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Tetra Tech GEO | | Lab Number | : L1700975 | |
| Project Name | : FORMER LEC | | Project Number | : 117-0507641 | |
| Instrument ID | : AIRLAB15 | | Calibration Date | : 01/10/17 12:51 | |
| Lab File ID | : R152082 | | Init. Calib. Date(s) | : 01/09/17 | 01/10/17 |
| Sample No | : R934633-9 | | Init. Calib. Times | : 19:05 | 00:04 |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 4-ethyl toluene | 11.517 | 10.626 | - | 7.7 | 30 | 84 | 0 |
| 1,3,5-trimethylbenzene | 8.866 | 8.384 | - | 5.4 | 30 | 92 | 0 |
| tert-butylbenzene | 9.533 | 8.796 | - | 7.7 | 30 | 87 | 0 |
| 1,2,4-trimethylbenzene | 8.772 | 8.684 | - | 1 | 30 | 93 | 0 |
| decane | 7.011 | 6.296 | - | 10.2 | 30 | 84 | 0 |
| Benzyl Chloride | 6.142 | 6.67 | - | -8.6 | 30 | 95 | .01 |
| 1,3-dichlorobenzene | 6.406 | 6.471 | - | -1 | 30 | 93 | .01 |
| 1,4-dichlorobenzene | 6.143 | 5.834 | - | 5 | 30 | 95 | 0 |
| sec-butylbenzene | 12.819 | 11.517 | - | 10.2 | 30 | 85 | 0 |
| p-isopropyltoluene | 11.364 | 10.077 | - | 11.3 | 30 | 83 | .01 |
| 1,2-dichlorobenzene | 5.788 | 5.818 | - | -0.5 | 30 | 98 | 0 |
| n-butylbenzene | 9.564 | 9.178 | - | 4 | 30 | 90 | 0 |
| 1,2-dibromo-3-chloropropan | 2.068 | 2 | - | 3.3 | 30 | 88 | 0 |
| undecane | 7.32 | 7.057 | - | 3.6 | 30 | 86 | 0 |
| dodecane | 6.438 | 7.027 | - | -9.1 | 30 | 91 | 0 |
| 1,2,4-trichlorobenzene | 3.971 | 4.634 | - | -16.7 | 30 | 101 | 0 |
| naphthalene | 10.522 | 11.38 | - | -8.2 | 30 | 93 | .01 |
| 1,2,3-trichlorobenzene | 3.875 | 4.112 | - | -6.1 | 30 | 97 | 0 |
| hexachlorobutadiene | 3.394 | 3.683 | - | -8.5 | 30 | 99 | 0 |

* Value outside of QC limits.

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default-ICV-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.247 | 49 | 181340 | 10.000 | ppbV | 0.00 |
| Standard Area = 217214 | | | Recovery = 83.48% | | | |
| 43) 1,4-difluorobenzene | 11.573 | 114 | 553870 | 10.000 | ppbV | 0.00 |
| Standard Area = 586326 | | | Recovery = 94.46% | | | |
| 67) chlorobenzene-D5 | 16.307 | 54 | 90382 | 10.000 | ppbV | 0.00 |
| Standard Area = 92710 | | | Recovery = 97.49% | | | |
| System Monitoring Compounds | | | | | | |
| 47) 1,2-dichloroethane-D4 | 10.153 | 65 | 119893 | 9.859 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 98.59% | | | |
| 69) toluene-D8 | 14.467 | 98 | 519438 | 10.735 | ppbV | 0.01 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 107.35% | | | |
| 90) bromofluorobenzene | 17.653 | 95 | 254076 | 8.397 | ppbV | 0.00 |
| Spiked Amount 10.000 | Range 70 - 130 | | Recovery = 83.97% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.682 | 51 | 168685 | 8.771 | ppbV | 98 |
| 3) propylene | 3.715 | 41 | 126787M6 | 10.423 | ppbV | |
| 4) propane | 3.748 | 29 | 125651 | 8.802 | ppbV | 99 |
| 5) dichlorodifluoromethane | 3.792 | 85 | 261783 | 10.502 | ppbV | 100 |
| 6) chloromethane | 3.968 | 50 | 111987 | 9.797 | ppbV | 100 |
| 7) Freon-114 | 4.089 | 85 | 326322 | 10.429 | ppbV | 98 |
| 8) methanol | 4.188 | 31 | 237631 | 45.337 | ppbV | 98 |
| 9) vinyl chloride | 4.210 | 62 | 149424 | 10.645 | ppbV | 98 |
| 10) 1,3-butadiene | 4.366 | 54 | 158564 | 10.949 | ppbV | 87 |
| 11) butane | 4.422 | 43 | 185330 | 9.853 | ppbV | 98 |
| 13) bromomethane | 4.662 | 94 | 131089 | 10.709 | ppbV | 99 |
| 14) chloroethane | 4.870 | 64 | 76877 | 10.748 | ppbV | 99 |
| 15) ethanol | 5.046 | 31 | 460111M6 | 48.338 | ppbV | |
| 16) dichlorofluoromethane | 4.982 | 67 | 223727 | 9.833 | ppbV | 98 |
| 17) vinyl bromide | 5.270 | 106 | 140210 | 10.246 | ppbV | 95 |
| 18) acrolein | 5.430 | 56 | 66326 | 9.701 | ppbV | 98 |
| 19) acetone | 5.582 | 43 | 824916 | 46.010 | ppbV | 92 |
| 20) acetonitrile | 5.286 | 41 | 131162 | 9.612 | ppbV | 98 |
| 21) trichlorofluoromethane | 5.766 | 101 | 239181 | 10.212 | ppbV | 97 |
| 22) isopropyl alcohol | 5.894 | 45 | 562423 | 25.691 | ppbV | 98 |
| 23) acrylonitrile | 6.150 | 53 | 84909M6 | 9.045 | ppbV | |
| 24) pentane | 6.205 | 43 | 266088 | 8.813 | ppbV | 98 |
| 25) ethyl ether | 6.238 | 31 | 213509M6 | 9.255 | ppbV | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default-ICV-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 26) 1,1-dichloroethene | 6.524 | 61 | 213808 | 10.672 | ppbV | 97 |
| 27) tertiary butyl alcohol | 6.601 | 59 | 260290 | 10.124 | ppbV | 98 |
| 28) methylene chloride | 6.678 | 49 | 170021 | 9.928 | ppbV | 88 |
| 29) 3-chloropropene | 6.821 | 41 | 249537 | 10.687 | ppbV | 96 |
| 30) carbon disulfide | 6.993 | 76 | 458634 | 9.906 | ppbV | 97 |
| 31) Freon 113 | 7.007 | 101 | 268035 | 10.255 | ppbV | 98 |
| 32) trans-1,2-dichloroethene | 7.807 | 61 | 213234 | 9.673 | ppbV | 100 |
| 33) 1,1-dichloroethane | 8.047 | 63 | 265084 | 10.306 | ppbV | 98 |
| 34) MTBE | 8.113 | 73 | 386898 | 10.320 | ppbV | 97 |
| 35) vinyl acetate | 8.247 | 43 | 400666 | 11.577 | ppbV # | 95 |
| 36) 2-butanone | 8.527 | 43 | 333222 | 9.452 | ppbV | 98 |
| 37) cis-1,2-dichloroethene | 9.047 | 61 | 221017 | 11.772 | ppbV | 99 |
| 38) Ethyl Acetate | 9.340 | 61 | 57285 | 10.553 | ppbV | 88 |
| 39) chloroform | 9.407 | 83 | 264457 | 10.523 | ppbV | 97 |
| 40) Tetrahydrofuran | 9.887 | 42 | 194066M6 | 9.638 | ppbV | |
| 41) 2,2-dichloropropane | 9.433 | 77 | 188920 | 9.245 | ppbV | 97 |
| 42) 1,2-dichloroethane | 10.287 | 62 | 174153 | 10.983 | ppbV | 97 |
| 44) hexane | 9.313 | 57 | 291831 | 9.425 | ppbV | 80 |
| 45) diisopropyl ether | 9.313 | 87 | 138385 | 8.995 | ppbV | 76 |
| 46) tert-butyl ethyl ether | 9.953 | 59 | 445034 | 8.958 | ppbV | 100 |
| 48) 1,1,1-trichloroethane | 10.587 | 97 | 219618 | 9.443 | ppbV | 99 |
| 49) 1,1-dichloropropene | 10.973 | 75 | 215772 | 8.804 | ppbV | 98 |
| 50) benzene | 11.133 | 78 | 517249 | 9.072 | ppbV | 99 |
| 52) carbon tetrachloride | 11.320 | 117 | 212922 | 9.906 | ppbV | 97 |
| 53) cyclohexane | 11.467 | 56 | 310338 | 9.411 | ppbV | 98 |
| 54) tert-amyl methyl ether | 11.853 | 73 | 408505 | 8.675 | ppbV | 99 |
| 55) dibromomethane | 12.080 | 93 | 145624 | 8.541 | ppbV | 97 |
| 56) 1,2-dichloropropane | 12.120 | 63 | 181776 | 9.387 | ppbV | 99 |
| 57) bromodichloromethane | 12.347 | 83 | 292016 | 9.651 | ppbV | 100 |
| 58) 1,4-dioxane | 12.400 | 88 | 123285 | 9.454 | ppbV | 94 |
| 59) trichloroethene | 12.400 | 130 | 222355 | 9.477 | ppbV | 97 |
| 60) 2,2,4-trimethylpentane | 12.453 | 57 | 963451 | 9.489 | ppbV | 97 |
| 61) methyl methacrylate | 12.653 | 41 | 211372 | 9.802 | ppbV | 97 |
| 62) heptane | 12.773 | 43 | 333466 | 8.620 | ppbV | 91 |
| 63) cis-1,3-dichloropropene | 14.067 | 75 | 206068 | 8.570 | ppbV | 98 |
| 64) 4-methyl-2-pentanone | 13.480 | 43 | 384812 | 8.762 | ppbV | 91 |
| 65) trans-1,3-dichloropropene | 13.440 | 75 | 259496 | 9.849 | ppbV | 99 |
| 66) 1,1,2-trichloroethane | 14.267 | 97 | 199302 | 9.646 | ppbV | 96 |
| 68) toluene | 14.573 | 91 | 631234 | 9.487 | ppbV | 96 |
| 71) 1,3-dichloropropane | 14.600 | 76 | 260517 | 8.229 | ppbV | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default-ICV-AP2 - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|---|
| 72) | 2-hexanone | 14.840 | 43 | 365655 | 9.097 | ppbV | | 96 |
| 74) | dibromochloromethane | 15.000 | 129 | 282956 | 9.695 | ppbV | | 99 |
| 75) | 1,2-dibromoethane | 15.253 | 107 | 288979 | 9.230 | ppbV | | 98 |
| 76) | butyl acetate | 15.480 | 73 | 66196 | 8.184 | ppbV | | 86 |
| 77) | octane | 15.573 | 85 | 197172 | 7.995 | ppbV | | 84 |
| 78) | tetrachloroethene | 15.707 | 166 | 272938 | 9.426 | ppbV | | 96 |
| 79) | 1,1,1,2-tetrachloroethane | 16.333 | 131 | 201032 | 8.805 | ppbV | | 98 |
| 80) | chlorobenzene | 16.347 | 112 | 519538 | 9.538 | ppbV | | 97 |
| 81) | ethylbenzene | 16.680 | 91 | 798362 | 9.668 | ppbV | | 100 |
| 83) | m+p-xylene | 16.840 | 91 | 1291022 | 19.333 | ppbV | | 99 |
| 84) | bromoform | 16.920 | 173 | 250870 | 9.701 | ppbV | | 97 |
| 85) | styrene | 17.160 | 104 | 520869 | 9.565 | ppbV | | 99 |
| 86) | 1,1,2,2-tetrachloroethane | 17.253 | 83 | 463952 | 9.761 | ppbV | | 100 |
| 87) | o-xylene | 17.253 | 91 | 659482 | 9.788 | ppbV | | 97 |
| 88) | 1,2,3-trichloropropane | 17.373 | 75 | 320221 | 8.474 | ppbV | | 97 |
| 89) | nonane | 17.440 | 43 | 444968 | 7.971 | ppbV | # | 90 |
| 91) | isopropylbenzene | 17.760 | 105 | 825658 | 8.944 | ppbV | | 98 |
| 92) | bromobenzene | 17.840 | 77 | 434508 | 8.766 | ppbV | | 94 |
| 93) | 2-chlorotoluene | 18.167 | 126 | 238975M3 | 8.231 | ppbV | | |
| 94) | n-propylbenzene | 18.180 | 120 | 312939 | 10.029 | ppbV | | 93 |
| 95) | 4-chlorotoluene | 18.220 | 126 | 225851 | 8.857 | ppbV | | 99 |
| 96) | 4-ethyl toluene | 18.300 | 105 | 960394 | 9.226 | ppbV | | 98 |
| 97) | 1,3,5-trimethylbenzene | 18.367 | 105 | 757776 | 9.457 | ppbV | | 98 |
| 98) | tert-butylbenzene | 18.700 | 119 | 794973 | 9.226 | ppbV | | 98 |
| 99) | 1,2,4-trimethylbenzene | 18.700 | 105 | 784908 | 9.900 | ppbV | | 96 |
| 100) | decane | 18.780 | 57 | 569054 | 8.980 | ppbV | | 92 |
| 101) | Benzyl Chloride | 18.833 | 91 | 602886 | 10.860 | ppbV | | 94 |
| 102) | 1,3-dichlorobenzene | 18.847 | 146 | 584899 | 10.103 | ppbV | | 95 |
| 103) | 1,4-dichlorobenzene | 18.900 | 146 | 527275 | 9.497 | ppbV | | 98 |
| 104) | sec-butylbenzene | 18.927 | 105 | 1040940 | 8.985 | ppbV | | 99 |
| 106) | p-isopropyltoluene | 19.060 | 119 | 910820 | 8.868 | ppbV | | 96 |
| 107) | 1,2-dichlorobenzene | 19.180 | 146 | 525875 | 10.053 | ppbV | | 96 |
| 108) | n-butylbenzene | 19.407 | 91 | 829566 | 9.597 | ppbV | | 99 |
| 111) | 1,2-dibromo-3-chloropr... | 19.567 | 75 | 180755 | 9.671 | ppbV | | 95 |
| 112) | undecane | 19.807 | 57 | 637781 | 9.641 | ppbV | | 96 |
| 114) | dodecane | 20.747 | 57 | 635130 | 10.916 | ppbV | | 92 |
| 115) | 1,2,4-trichlorobenzene | 20.707 | 180 | 418792 | 11.667 | ppbV | | 98 |
| 116) | naphthalene | 20.840 | 128 | 1028543 | 10.815 | ppbV | | 98 |
| 117) | 1,2,3-trichlorobenzene | 21.093 | 180 | 371642 | 10.612 | ppbV | | 99 |
| 119) | hexachlorobutadiene | 21.160 | 225 | 332859 | 10.851 | ppbV | | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\r152076.D
Sub List : Default-ICV-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default-ICV-AP2 - All compounds listedT_ICAL\r152076.D

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152082.D
Acq On : 10 Jan 2017 12:51 PM
Operator : AIRLAB15:MB
Sample : CTO15-LLSTD010
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 10 13:40:20 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #3: propylene

Original Peak Response = 138694

Manual Peak Response = 126787 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #15: ethanol

Original Peak Response = 467385

Manual Peak Response = 460111 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #23: acrylonitrile

Original Peak Response = 89512

Manual Peak Response = 84909 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #25: ethyl ether

Original Peak Response = 222637

Manual Peak Response = 213509 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #40: Tetrahydrofuran

Original Peak Response = 203848

Manual Peak Response = 194066 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152082.D Operator : AIRLAB15:MB
Date Inj'd : 1/10/2017 12:51 PM Instrument :
Sample : CTO15-LLSTD010 Quant Date : 1/10/2017 1:39 pm

Compound #93: 2-chlorotoluene

Original Peak Response = 225098 Manual Peak Response = 238975 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 | | |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 | | |
| Instrument ID | : AIRLAB15 | Calibration Date | : 01/12/17 11:41 | | |
| Lab File ID | : R152085 | Init. Calib. Date(s) | : 01/09/17 | 01/10/17 | |
| Sample No | : WG969058-2 | Init. Calib. Times | : 19:05 | 00:04 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| bromochloromethane | 1 | 1 | - | 0 | 30 | 95 | .04 |
| chlorodifluoromethane | 1.061 | 0.956 | - | 9.9 | 30 | 88 | .03 |
| propylene | 0.671 | 0.588 | - | 12.4 | 30 | 84 | .03 |
| propane | 0.787 | 0.692 | - | 12.1 | 30 | 86 | .03 |
| dichlorodifluoromethane | 1.375 | 1.308 | - | 4.9 | 30 | 93 | .03 |
| chloromethane | 0.63 | 0.576 | - | 8.6 | 30 | 89 | .03 |
| Freon-114 | 1.725 | 1.627 | - | 5.7 | 30 | 91 | .03 |
| methanol | 0.289 | 0.262 | - | 9.3 | 30 | 87 | .03 |
| vinyl chloride | 0.774 | 0.805 | - | -4 | 30 | 104 | .03 |
| 1,3-butadiene | 0.799 | 0.721 | - | 9.8 | 30 | 88 | .03 |
| butane | 1.037 | 0.958 | - | 7.6 | 30 | 90 | .03 |
| bromomethane | 0.675 | 0.637 | - | 5.6 | 30 | 95 | .04 |
| chloroethane | 0.394 | 0.374 | - | 5.1 | 30 | 96 | .04 |
| ethanol | 0.525 | 0.435 | - | 17.1 | 30 | 87 | .04 |
| dichlorofluoromethane | 1.255 | 1.173 | - | 6.5 | 30 | 94 | .04 |
| vinyl bromide | 0.755 | 0.722 | - | 4.4 | 30 | 92 | .04 |
| acrolein | 0.377 | 0.359 | - | 4.8 | 30 | 92 | .04 |
| acetone | 0.989 | 0.814 | - | 17.7 | 30 | 86 | .04 |
| acetonitrile | 0.753 | 0.664 | - | 11.8 | 30 | 85 | .04 |
| trichlorofluoromethane | 1.292 | 1.207 | - | 6.6 | 30 | 90 | .04 |
| isopropyl alcohol | 1.207 | 1.029 | - | 14.7 | 30 | 86 | .04 |
| acrylonitrile | 0.518 | 0.634 | - | -22.4 | 30 | 121 | .05 |
| pentane | 1.665 | 1.43 | - | 14.1 | 30 | 81 | .04 |
| ethyl ether | 1.272 | 1.169 | - | 8.1 | 30 | 87 | .04 |
| 1,1-dichloroethene | 1.105 | 1.051 | - | 4.9 | 30 | 92 | .03 |
| tertiary butyl alcohol | 1.418 | 1.31 | - | 7.6 | 30 | 90 | .04 |
| methylene chloride | 0.944 | 0.874 | - | 7.4 | 30 | 88 | .04 |
| 3-chloropropene | 1.288 | 1.175 | - | 8.8 | 30 | 86 | .03 |
| carbon disulfide | 2.553 | 2.4 | - | 6 | 30 | 90 | .04 |
| Freon 113 | 1.441 | 1.339 | - | 7.1 | 30 | 90 | .04 |
| trans-1,2-dichloroethene | 1.216 | 1.168 | - | 3.9 | 30 | 93 | .04 |
| 1,1-dichloroethane | 1.418 | 1.309 | - | 7.7 | 30 | 90 | .05 |
| MTBE | 2.067 | 1.998 | - | 3.3 | 30 | 90 | .04 |
| vinyl acetate | 1.909 | 1.788 | - | 6.3 | 30 | 86 | .04 |
| 2-butanone | 1.944 | 1.634 | - | 15.9 | 30 | 80 | .04 |
| cis-1,2-dichloroethene | 1.035 | 0.987 | - | 4.6 | 30 | 91 | .04 |
| Ethyl Acetate | 0.299 | 0.287 | - | 4 | 30 | 92 | .04 |
| chloroform | 1.386 | 1.304 | - | 5.9 | 30 | 91 | .04 |
| Tetrahydrofuran | 1.11 | 1.034 | - | 6.8 | 30 | 86 | .05 |
| 2,2-dichloropropane | 1.127 | 1.033 | - | 8.3 | 30 | 89 | .04 |
| 1,2-dichloroethane | 0.874 | 0.859 | - | 1.7 | 30 | 92 | .04 |
| 1,4-difluorobenzene | 1 | 1 | - | 0 | 30 | 107 | .04 |
| hexane | 0.559 | 0.489 | - | 12.5 | 30 | 93 | .04 |
| diisopropyl ether | 0.278 | 0.24 | - | 13.7 | 30 | 91 | .04 |
| tert-butyl ethyl ether | 0.897 | 0.775 | - | 13.6 | 30 | 92 | .04 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 | | |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 | | |
| Instrument ID | : AIRLAB15 | Calibration Date | : 01/12/17 11:41 | | |
| Lab File ID | : R152085 | Init. Calib. Date(s) | : 01/09/17 | 01/10/17 | |
| Sample No | : WG969058-2 | Init. Calib. Times | : 19:05 | 00:04 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1,1,1-trichloroethane | 0.42 | 0.358 | - | 14.8 | 30 | 92 | .04 |
| 1,1-dichloropropene | 0.442 | 0.37 | - | 16.3 | 30 | 89 | .04 |
| benzene | 1.029 | 0.858 | - | 16.6 | 30 | 90 | .04 |
| carbon tetrachloride | 0.388 | 0.338 | - | 12.9 | 30 | 94 | .04 |
| cyclohexane | 0.595 | 0.513 | - | 13.8 | 30 | 92 | .05 |
| tert-amyl methyl ether | 0.85 | 0.718 | - | 15.5 | 30 | 88 | .05 |
| dibromomethane | 0.308 | 0.254 | - | 17.5 | 30 | 91 | .04 |
| 1,2-dichloropropane | 0.35 | 0.288 | - | 17.7 | 30 | 89 | .04 |
| bromodichloromethane | 0.546 | 0.483 | - | 11.5 | 30 | 94 | .04 |
| 1,4-dioxane | 0.235 | 0.201 | - | 14.5 | 30 | 93 | .04 |
| trichloroethene | 0.424 | 0.348 | - | 17.9 | 30 | 89 | .04 |
| 2,2,4-trimethylpentane | 1.833 | 1.589 | - | 13.3 | 30 | 92 | .05 |
| methyl methacrylate | 0.389 | 0.28 | - | 28 | 30 | 80 | .04 |
| heptane | 0.698 | 0.573 | - | 17.9 | 30 | 85 | .04 |
| cis-1,3-dichloropropene | 0.434 | 0.372 | - | 14.3 | 30 | 89 | .04 |
| 4-methyl-2-pentanone | 0.793 | 0.652 | - | 17.8 | 30 | 84 | .04 |
| trans-1,3-dichloropropene | 0.476 | 0.401 | - | 15.8 | 30 | 88 | .04 |
| 1,1,2-trichloroethane | 0.373 | 0.307 | - | 17.7 | 30 | 89 | .03 |
| chlorobenzene-D5 | 1 | 1 | - | 0 | 30 | 108 | .01 |
| toluene | 7.362 | 6.199 | - | 15.8 | 30 | 91 | .04 |
| 1,3-dichloropropane | 3.503 | 2.887 | - | 17.6 | 30 | 88 | .04 |
| 2-hexanone | 4.447 | 3.762 | - | 15.4 | 30 | 83 | .03 |
| dibromochloromethane | 3.229 | 2.937 | - | 9 | 30 | 95 | .04 |
| 1,2-dibromoethane | 3.464 | 2.854 | - | 17.6 | 30 | 89 | .03 |
| butyl acetate | 0.895 | 0.768 | - | 14.2 | 30 | 85 | .03 |
| octane | 2.729 | 2.007 | - | 26.5 | 30 | 80 | .03 |
| tetrachloroethene | 3.204 | 2.649 | - | 17.3 | 30 | 91 | .03 |
| 1,1,1,2-tetrachloroethane | 2.526 | 2.179 | - | 13.7 | 30 | 92 | .03 |
| chlorobenzene | 6.027 | 4.982 | - | 17.3 | 30 | 89 | .01 |
| ethylbenzene | 9.137 | 7.643 | - | 16.4 | 30 | 88 | .01 |
| m+p-xylene | 7.388 | 6.219 | - | 15.8 | 30 | 89 | 0 |
| bromoform | 2.861 | 2.664 | - | 6.9 | 30 | 96 | 0 |
| styrene | 6.025 | 5.015 | - | 16.8 | 30 | 87 | -.01 |
| 1,1,2,2-tetrachloroethane | 5.259 | 4.302 | - | 18.2 | 30 | 87 | -.01 |
| o-xylene | 7.455 | 6.237 | - | 16.3 | 30 | 89 | -.01 |
| 1,2,3-trichloropropane | 4.181 | 3.415 | - | 18.3 | 30 | 88 | -.01 |
| nonane | 6.176 | 4.945 | - | 19.9 | 30 | 83 | -.03 |
| isopropylbenzene | 10.213 | 8.566 | - | 16.1 | 30 | 88 | -.04 |
| bromobenzene | 5.484 | 4.543 | - | 17.2 | 30 | 88 | -.04 |
| 2-chlorotoluene | 3.212 | 3.154 | - | 1.8 | 30 | 109 | -.04 |
| n-propylbenzene | 3.453 | 3.367 | - | 2.5 | 30 | 105 | -.04 |
| 4-chlorotoluene | 2.821 | 2.392 | - | 15.2 | 30 | 93 | -.05 |
| 4-ethyl toluene | 11.517 | 10.056 | - | 12.7 | 30 | 88 | -.05 |
| 1,3,5-trimethylbenzene | 8.866 | 7.107 | - | 19.8 | 30 | 86 | -.05 |
| tert-butylbenzene | 9.533 | 8.304 | - | 12.9 | 30 | 91 | -.05 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Tetra Tech GEO | | Lab Number | : L1700975 | |
| Project Name | : FORMER LEC | | Project Number | : 117-0507641 | |
| Instrument ID | : AIRLAB15 | | Calibration Date | : 01/12/17 11:41 | |
| Lab File ID | : R152085 | | Init. Calib. Date(s) | : 01/09/17 | 01/10/17 |
| Sample No | : WG969058-2 | | Init. Calib. Times | : 19:05 | 00:04 |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1,2,4-trimethylbenzene | 8.772 | 7.077 | - | 19.3 | 30 | 84 | -.05 |
| decane | 7.011 | 6.059 | - | 13.6 | 30 | 90 | -.07 |
| Benzyl Chloride | 6.142 | 5.883 | - | 4.2 | 30 | 93 | -.05 |
| 1,3-dichlorobenzene | 6.406 | 5.169 | - | 19.3 | 30 | 82 | -.05 |
| 1,4-dichlorobenzene | 6.143 | 4.729 | - | 23 | 30 | 85 | -.07 |
| sec-butylbenzene | 12.819 | 10.917 | - | 14.8 | 30 | 90 | -.07 |
| p-isopropyltoluene | 11.364 | 10.019 | - | 11.8 | 30 | 91 | -.07 |
| 1,2-dichlorobenzene | 5.788 | 4.659 | - | 19.5 | 30 | 87 | -.07 |
| n-butylbenzene | 9.564 | 8.362 | - | 12.6 | 30 | 90 | -.07 |
| 1,2-dibromo-3-chloropropan | 2.068 | 1.835 | - | 11.3 | 30 | 90 | -.07 |
| undecane | 7.32 | 6.701 | - | 8.5 | 30 | 91 | -.07 |
| dodecane | 6.438 | 6.58 | - | -2.2 | 30 | 94 | -.05 |
| 1,2,4-trichlorobenzene | 3.971 | 3.418 | - | 13.9 | 30 | 83 | -.05 |
| naphthalene | 10.522 | 9.882 | - | 6.1 | 30 | 90 | -.04 |
| 1,2,3-trichlorobenzene | 3.875 | 3.622 | - | 6.5 | 30 | 95 | -.05 |
| hexachlorobutadiene | 3.394 | 2.968 | - | 12.6 | 30 | 88 | -.04 |

* Value outside of QC limits.

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152085.D
Acq On : 12 Jan 2017 11:41 AM
Operator : AIRLAB15:MB
Sample : WG969058-2,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 12:28:14 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

Sub List : Default-LCS-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.287 | 49 | 206158 | 10.000 | ppbV | 0.04 |
| 43) 1,4-difluorobenzene | 11.613 | 114 | 628014 | 10.000 | ppbV | 0.04 |
| 67) chlorobenzene-D5 | 16.320 | 54 | 100216 | 10.000 | ppbV | 0.01 |
| System Monitoring Compounds | | | | | | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.715 | 51 | 197186 | 9.019 | ppbV | 99 |
| 3) propylene | 3.748 | 41 | 121141M6 | 8.760 | ppbV | |
| 4) propane | 3.770 | 29 | 142568 | 8.784 | ppbV | 98 |
| 5) dichlorodifluoromethane | 3.825 | 85 | 269611 | 9.514 | ppbV | 99 |
| 6) chloromethane | 4.001 | 50 | 118736 | 9.137 | ppbV | 100 |
| 7) Freon-114 | 4.111 | 85 | 335351 | 9.428 | ppbV | 97 |
| 8) methanol | 4.210 | 31 | 270278 | 45.358 | ppbV | 99 |
| 9) vinyl chloride | 4.243 | 62 | 165900 | 10.396 | ppbV | 100 |
| 10) 1,3-butadiene | 4.390 | 54 | 148537 | 9.022 | ppbV | 96 |
| 11) butane | 4.454 | 43 | 197525 | 9.237 | ppbV | 97 |
| 13) bromomethane | 4.694 | 94 | 131353 | 9.439 | ppbV | 99 |
| 14) chloroethane | 4.902 | 64 | 77125 | 9.485 | ppbV | 99 |
| 15) ethanol | 5.078 | 31 | 448742M6 | 41.469 | ppbV | |
| 16) dichlorofluoromethane | 5.022 | 67 | 241807 | 9.349 | ppbV | 98 |
| 17) vinyl bromide | 5.310 | 106 | 148867 | 9.569 | ppbV | 97 |
| 18) acrolein | 5.462 | 56 | 73992 | 9.519 | ppbV | 100 |
| 19) acetone | 5.614 | 43 | 839286 | 41.176 | ppbV | 96 |
| 20) acetonitrile | 5.318 | 41 | 136873 | 8.823 | ppbV | 98 |
| 21) trichlorofluoromethane | 5.806 | 101 | 248779 | 9.343 | ppbV | 97 |
| 22) isopropyl alcohol | 5.926 | 45 | 530518 | 21.316 | ppbV | 99 |
| 23) acrylonitrile | 6.172 | 53 | 130647M6 | 12.242 | ppbV | |
| 24) pentane | 6.238 | 43 | 294836 | 8.589 | ppbV | 98 |
| 25) ethyl ether | 6.271 | 31 | 240922 | 9.186 | ppbV | 98 |
| 26) 1,1-dichloroethene | 6.557 | 61 | 216656 | 9.512 | ppbV | 96 |
| 27) tertiary butyl alcohol | 6.634 | 59 | 270024 | 9.238 | ppbV | 98 |
| 28) methylene chloride | 6.722 | 49 | 180257 | 9.258 | ppbV | 97 |
| 29) 3-chloropropene | 6.854 | 41 | 242224 | 9.125 | ppbV | 97 |
| 30) carbon disulfide | 7.033 | 76 | 494842 | 9.401 | ppbV | 99 |
| 31) Freon 113 | 7.033 | 101 | 276038 | 9.290 | ppbV | 99 |
| 32) trans-1,2-dichloroethene | 7.847 | 61 | 240798 | 9.609 | ppbV | 99 |
| 33) 1,1-dichloroethane | 8.087 | 63 | 269862 | 9.228 | ppbV | 99 |
| 34) MTBE | 8.153 | 73 | 411952 | 9.665 | ppbV | 98 |
| 35) vinyl acetate | 8.287 | 43 | 368684 | 9.370 | ppbV | 97 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152085.D
Acq On : 12 Jan 2017 11:41 AM
Operator : AIRLAB15:MB
Sample : WG969058-2,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 12:28:14 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

Sub List : Default-LCS-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 36) 2-butanone | 8.567 | 43 | 336805 | 8.404 | ppbV | 98 |
| 37) cis-1,2-dichloroethene | 9.087 | 61 | 203438 | 9.531 | ppbV | 99 |
| 38) Ethyl Acetate | 9.380 | 61 | 59149 | 9.584 | ppbV | 94 |
| 39) chloroform | 9.447 | 83 | 268750 | 9.406 | ppbV | 99 |
| 40) Tetrahydrofuran | 9.927 | 42 | 213110M6 | 9.310 | ppbV | |
| 41) 2,2-dichloropropane | 9.473 | 77 | 212944 | 9.167 | ppbV | 98 |
| 42) 1,2-dichloroethane | 10.327 | 62 | 177139 | 9.827 | ppbV | 98 |
| 44) hexane | 9.353 | 57 | 306785 | 8.738 | ppbV | 89 |
| 45) diisopropyl ether | 9.353 | 87 | 150930 | 8.652 | ppbV | 89 |
| 46) tert-butyl ethyl ether | 9.993 | 59 | 486593 | 8.638 | ppbV | 100 |
| 48) 1,1,1-trichloroethane | 10.627 | 97 | 224845 | 8.526 | ppbV | 99 |
| 49) 1,1-dichloropropene | 11.000 | 75 | 232301 | 8.360 | ppbV | 98 |
| 50) benzene | 11.173 | 78 | 539038 | 8.338 | ppbV | 100 |
| 52) carbon tetrachloride | 11.347 | 117 | 212573 | 8.722 | ppbV | 95 |
| 53) cyclohexane | 11.507 | 56 | 322353 | 8.622 | ppbV | 97 |
| 54) tert-amyl methyl ether | 11.893 | 73 | 450744 | 8.442 | ppbV | 100 |
| 55) dibromomethane | 12.120 | 93 | 159293 | 8.239 | ppbV | 99 |
| 56) 1,2-dichloropropane | 12.147 | 63 | 180741 | 8.232 | ppbV | 99 |
| 57) bromodichloromethane | 12.387 | 83 | 303082 | 8.834 | ppbV | 100 |
| 58) 1,4-dioxane | 12.440 | 88 | 126409 | 8.549 | ppbV | 97 |
| 59) trichloroethene | 12.440 | 130 | 218242 | 8.203 | ppbV | 98 |
| 60) 2,2,4-trimethylpentane | 12.493 | 57 | 998190 | 8.670 | ppbV | 98 |
| 61) methyl methacrylate | 12.693 | 41 | 175822 | 7.191 | ppbV | 89 |
| 62) heptane | 12.813 | 43 | 359919 | 8.206 | ppbV | 94 |
| 63) cis-1,3-dichloropropene | 14.107 | 75 | 233933 | 8.580 | ppbV | 99 |
| 64) 4-methyl-2-pentanone | 13.520 | 43 | 409556 | 8.224 | ppbV | 95 |
| 65) trans-1,3-dichloropropene | 13.480 | 75 | 251555 | 8.420 | ppbV | 98 |
| 66) 1,1,2-trichloroethane | 14.293 | 97 | 192510 | 8.217 | ppbV | 97 |
| 68) toluene | 14.600 | 91 | 621278 | 8.421 | ppbV | 98 |
| 71) 1,3-dichloropropane | 14.627 | 76 | 289369 | 8.243 | ppbV | 100 |
| 72) 2-hexanone | 14.867 | 43 | 377044M6 | 8.460 | ppbV | |
| 74) dibromochloromethane | 15.040 | 129 | 294312 | 9.095 | ppbV | 100 |
| 75) 1,2-dibromoethane | 15.280 | 107 | 285972 | 8.237 | ppbV | 98 |
| 76) butyl acetate | 15.507 | 73 | 76933 | 8.578 | ppbV | 90 |
| 77) octane | 15.600 | 85 | 201094 | 7.354 | ppbV | 87 |
| 78) tetrachloroethene | 15.733 | 166 | 265471 | 8.268 | ppbV | 95 |
| 79) 1,1,1,2-tetrachloroethane | 16.347 | 131 | 218366 | 8.625 | ppbV | 98 |
| 80) chlorobenzene | 16.360 | 112 | 499325 | 8.267 | ppbV | 99 |
| 81) ethylbenzene | 16.693 | 91 | 765930 | 8.365 | ppbV | 100 |
| 83) m+p-xylene | 16.840 | 91 | 1246406 | 16.833 | ppbV | 99 |
| 84) bromoform | 16.907 | 173 | 267001 | 9.312 | ppbV | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152085.D
Acq On : 12 Jan 2017 11:41 AM
Operator : AIRLAB15:MB
Sample : WG969058-2,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 12:28:14 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

Sub List : Default-LCS-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 85) styrene | 17.147 | 104 | 502582 | 8.324 | ppbV | 99 |
| 86) 1,1,2,2-tetrachloroethane | 17.240 | 83 | 431105 | 8.180 | ppbV | 99 |
| 87) o-xylene | 17.240 | 91 | 625008 | 8.366 | ppbV | 97 |
| 88) 1,2,3-trichloropropane | 17.347 | 75 | 342194 | 8.167 | ppbV | 99 |
| 89) nonane | 17.413 | 43 | 495595 | 8.007 | ppbV # | 90 |
| 91) isopropylbenzene | 17.720 | 105 | 858453 | 8.387 | ppbV | 97 |
| 92) bromobenzene | 17.800 | 77 | 455269 | 8.283 | ppbV | 91 |
| 93) 2-chlorotoluene | 18.113 | 126 | 316038M3 | 9.817 | ppbV | |
| 94) n-propylbenzene | 18.140 | 120 | 337472 | 9.754 | ppbV | 97 |
| 95) 4-chlorotoluene | 18.167 | 126 | 239729 | 8.479 | ppbV | 99 |
| 96) 4-ethyl toluene | 18.247 | 105 | 1007821 | 8.732 | ppbV | 98 |
| 97) 1,3,5-trimethylbenzene | 18.313 | 105 | 712220 | 8.016 | ppbV | 100 |
| 98) tert-butylbenzene | 18.647 | 119 | 832146 | 8.710 | ppbV | 96 |
| 99) 1,2,4-trimethylbenzene | 18.647 | 105 | 709226 | 8.068 | ppbV | 98 |
| 100) decane | 18.713 | 57 | 607167 | 8.641 | ppbV | 93 |
| 101) Benzyl Chloride | 18.767 | 91 | 589542 | 9.577 | ppbV | 94 |
| 102) 1,3-dichlorobenzene | 18.780 | 146 | 518018M3 | 8.069 | ppbV | |
| 103) 1,4-dichlorobenzene | 18.833 | 146 | 473883 | 7.698 | ppbV | 99 |
| 104) sec-butylbenzene | 18.860 | 105 | 1094044 | 8.516 | ppbV | 99 |
| 106) p-isopropyltoluene | 18.980 | 119 | 1004049 | 8.816 | ppbV | 99 |
| 107) 1,2-dichlorobenzene | 19.113 | 146 | 466880 | 8.049 | ppbV | 98 |
| 108) n-butylbenzene | 19.340 | 91 | 838015 | 8.744 | ppbV | 98 |
| 111) 1,2-dibromo-3-chloropr... | 19.500 | 75 | 183891 | 8.873 | ppbV | 98 |
| 112) undecane | 19.740 | 57 | 671576 | 9.155 | ppbV | 97 |
| 114) dodecane | 20.693 | 57 | 659439 | 10.221 | ppbV | 95 |
| 115) 1,2,4-trichlorobenzene | 20.653 | 180 | 342587 | 8.608 | ppbV | 99 |
| 116) naphthalene | 20.787 | 128 | 990290 | 9.391 | ppbV | 99 |
| 117) 1,2,3-trichlorobenzene | 21.040 | 180 | 363024 | 9.349 | ppbV | 95 |
| 119) hexachlorobutadiene | 21.120 | 225 | 297391 | 8.744 | ppbV | 97 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default-LCS-AP2 - All compounds listedd)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152085.D
Acq On : 12 Jan 2017 11:41 AM
Operator : AIRLAB15:MB
Sample : WG969058-2,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 12:28:14 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152085.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 11:41 AM Instrument :
Sample : WG969058-2,3,250,250 Quant Date : 1/12/2017 12:13 pm

Compound #3: propylene

Original Peak Response = 138323

Manual Peak Response = 121141 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152085.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 11:41 AM Instrument :
Sample : WG969058-2,3,250,250 Quant Date : 1/12/2017 12:13 pm

Compound #15: ethanol

Original Peak Response = 455971

Manual Peak Response = 448742 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152085.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 11:41 AM Instrument :
Sample : WG969058-2,3,250,250 Quant Date : 1/12/2017 12:13 pm

Compound #23: acrylonitrile

Original Peak Response = 133392

Manual Peak Response = 130647 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152085.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 11:41 AM Instrument :
Sample : WG969058-2,3,250,250 Quant Date : 1/12/2017 12:13 pm

Compound #40: Tetrahydrofuran

Original Peak Response = 223316

Manual Peak Response = 213110 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152085.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 11:41 AM Instrument :
Sample : WG969058-2,3,250,250 Quant Date : 1/12/2017 12:13 pm

Compound #72: 2-hexanone

Original Peak Response = 378852

Manual Peak Response = 377044 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152085.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 11:41 AM Instrument :
Sample : WG969058-2,3,250,250 Quant Date : 1/12/2017 12:13 pm

Compound #93: 2-chlorotoluene

Original Peak Response = 239000 Manual Peak Response = 316038 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152085.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 11:41 AM Instrument :
Sample : WG969058-2,3,250,250 Quant Date : 1/12/2017 12:13 pm

Compound #102: 1,3-dichlorobenzene

Original Peak Response = 473300 Manual Peak Response = 518018 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

# Raw Quality Control Data

BFB

Data Path : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\
Data File : r152068.D
Acq On : 9 Jan 2017 2:47 PM
Operator : AIRLAB15:MB
Sample : WG968048-1
Misc : WG968048
ALS Vial : 0 Sample Multiplier: 1

Integration File: rteint.p

Method : O:\Forensics\Data\Airlab15\2017\170109T_ICAL\TALL170109.M
Title : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update : Tue Jan 10 10:27:32 2017

AutoFind: Scans 1299, 1300, 1301; Background Corrected with Scan 1294

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 8 | 40 | 14.6 | 13409 | PASS |
| 75 | 95 | 30 | 66 | 39.1 | 35884 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 91730 | PASS |
| 96 | 95 | 5 | 9 | 6.6 | 6013 | PASS |
| 173 | 174 | 0.00 | 2 | 0.6 | 361 | PASS |
| 174 | 95 | 50 | 120 | 69.0 | 63339 | PASS |
| 175 | 174 | 4 | 9 | 7.1 | 4512 | PASS |
| 176 | 174 | 93 | 101 | 96.8 | 61303 | PASS |
| 177 | 176 | 5 | 9 | 6.4 | 3953 | PASS |

# BFB

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152084.D
Acq On : 12 Jan 2017 10:57 AM
Operator : AIRLAB15:MB
Sample : WG969058-1
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Integration File: rteint.p

Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Title : TO-14A/TO-15 SIM/Full Scan Analysis
Last Update : Tue Jan 10 10:27:32 2017

AutoFind: Scans 1305, 1306, 1307; Background Corrected with Scan 1300

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 8 | 40 | 13.6 | 15797 | PASS |
| 75 | 95 | 30 | 66 | 38.3 | 44687 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 116576 | PASS |
| 96 | 95 | 5 | 9 | 6.5 | 7612 | PASS |
| 173 | 174 | 0.00 | 2 | 0.5 | 400 | PASS |
| 174 | 95 | 50 | 120 | 68.2 | 79527 | PASS |
| 175 | 174 | 4 | 9 | 7.0 | 5601 | PASS |
| 176 | 174 | 93 | 101 | 97.3 | 77355 | PASS |
| 177 | 176 | 5 | 9 | 6.2 | 4790 | PASS |

# Blank Data

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Lab ID | : WG969058-4 | Date Collected | : NA |
| Client ID | : WG969058-4BLANK | Date Received | : NA |
| Sample Location | : | Date Analyzed | : 01/12/17 14:00 |
| Sample Matrix | : SOIL_VAPOR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : MB |
| Lab File ID | : R152087 | Instrument ID | : AIRLAB15 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152087.D
Acq On : 12 Jan 2017 2:00 PM
Operator : AIRLAB15:MB
Sample : WG969058-4,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 14:38:22 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170112T\r152085.D
Sub List : Default-LCS-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.313 | 49 | 189388 | 10.000 | ppbV | 0.07 |
| Standard Area = 206158 | | | Recovery = | | 91.87% | |
| 43) 1,4-difluorobenzene | 11.627 | 114 | 570725 | 10.000 | ppbV | 0.05 |
| Standard Area = 628014 | | | Recovery = | | 90.88% | |
| 67) chlorobenzene-D5 | 16.333 | 54 | 88361 | 10.000 | ppbV | 0.03 |
| Standard Area = 100216 | | | Recovery = | | 88.17% | |

System Monitoring Compounds

| Target Compounds | | | Qvalue |
|---|---|---|---|
| 9) vinyl chloride | 4.122 | 0 | N.D. |
| 32) trans-1,2-dichloroethene | 0.000 | 0 | N.D. |
| 37) cis-1,2-dichloroethene | 0.000 | 0 | N.D. |
| 59) trichloroethene | 0.000 | 0 | N.D. |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default-LCS-AP2 - All compounds listedT\r152085.D

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152087.D
Acq On : 12 Jan 2017 2:00 PM
Operator : AIRLAB15:MB
Sample : WG969058-4,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 14:38:22 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

TALL170109.M Fri Jan 13 08:17:11 2017

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Lab ID | : WG969058-3 | Date Collected | : |
| Client ID | : WG969058-3LCS | Date Received | : |
| Sample Location | : | Date Analyzed | : 01/12/17 12:41 |
| Sample Matrix | : SOIL_VAPOR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : MB |
| Lab File ID | : R152086 | Instrument ID | : AIRLAB15 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-45-6 | Chlorodifluoromethane | 8.2 | 0.20 | -- | 29. | 0.71 | -- | |
| 115-07-1 | Propylene | 8.9 | 0.50 | -- | 15. | 0.86 | -- | |
| 74-98-6 | Propane | 8.2 | 0.50 | -- | 15. | 0.90 | -- | |
| 75-71-8 | Dichlorodifluoromethane | 9.3 | 0.20 | -- | 46. | 0.99 | -- | |
| 74-87-3 | Chloromethane | 9.0 | 0.20 | -- | 19. | 0.41 | -- | |
| 76-14-2 | Freon-114 | 9.4 | 0.20 | -- | 66. | 1.4 | -- | |
| 67-56-1 | Methanol | 46. | 5.0 | -- | 60. | 6.6 | -- | |
| 75-01-4 | Vinyl chloride | 10. | 0.20 | -- | 26. | 0.51 | -- | |
| 106-99-0 | 1,3-Butadiene | 9.4 | 0.20 | -- | 21. | 0.44 | -- | |
| 106-97-8 | Butane | 8.8 | 0.20 | -- | 21. | 0.48 | -- | |
| 74-83-9 | Bromomethane | 9.4 | 0.20 | -- | 37. | 0.78 | -- | |
| 75-00-3 | Chloroethane | 9.5 | 0.20 | -- | 25. | 0.53 | -- | |
| 64-17-5 | Ethanol | 43. | 5.0 | -- | 81. | 9.4 | -- | |
| 75-43-4 | Dichlorofluoromethane | 8.7 | 0.20 | -- | 37. | 0.84 | -- | |
| 593-60-2 | Vinyl bromide | 8.7 | 0.20 | -- | 38. | 0.87 | -- | |
| 107-02-8 | Acrolein | 9.1 | 0.50 | -- | 21. | 1.1 | -- | |
| 67-64-1 | Acetone | 44. | 1.0 | -- | 100 | 2.4 | -- | |
| 75-05-8 | Acetonitrile | 7.4 | 0.20 | -- | 12. | 0.34 | -- | |
| 75-69-4 | Trichlorofluoromethane | 9.5 | 0.20 | -- | 53. | 1.1 | -- | |
| 67-63-0 | Isopropanol | 25. | 0.50 | -- | 61. | 1.2 | -- | |
| 107-13-1 | Acrylonitrile | 12. | 0.50 | -- | 26. | 1.1 | -- | |
| 109-66-0 | Pentane | 8.1 | 0.20 | -- | 24. | 0.59 | -- | |
| 60-29-7 | Ethyl ether | 8.6 | 0.20 | -- | 26. | 0.61 | -- | |
| 75-35-4 | 1,1-Dichloroethene | 9.6 | 0.20 | -- | 38. | 0.79 | -- | |
| 75-65-0 | Tertiary butyl Alcohol | 9.2 | 0.50 | -- | 28. | 1.5 | -- | |
| 75-09-2 | Methylene chloride | 9.5 | 0.50 | -- | 33. | 1.7 | -- | |
| 107-05-1 | 3-Chloropropene | 9.3 | 0.20 | -- | 29. | 0.63 | -- | |
| 75-15-0 | Carbon disulfide | 9.2 | 0.20 | -- | 29. | 0.62 | -- | |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Lab ID | : WG969058-3 | Date Collected | : |
| Client ID | : WG969058-3LCS | Date Received | : |
| Sample Location | : | Date Analyzed | : 01/12/17 12:41 |
| Sample Matrix | : SOIL_VAPOR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : MB |
| Lab File ID | : R152086 | Instrument ID | : AIRLAB15 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 76-13-1 | Freon-113 | 9.6 | 0.20 | -- | 74. | 1.5 | -- | |
| 156-60-5 | trans-1,2-Dichloroethene | 8.7 | 0.20 | -- | 34. | 0.79 | -- | |
| 75-34-3 | 1,1-Dichloroethane | 9.4 | 0.20 | -- | 38. | 0.81 | -- | |
| 1634-04-4 | Methyl tert butyl ether | 9.6 | 0.20 | -- | 35. | 0.72 | -- | |
| 108-05-4 | Vinyl acetate | 11. | 1.0 | -- | 39. | 3.5 | -- | |
| 78-93-3 | 2-Butanone | 8.5 | 0.50 | -- | 25. | 1.5 | -- | |
| 156-59-2 | cis-1,2-Dichloroethene | 11. | 0.20 | -- | 44. | 0.79 | -- | |
| 141-78-6 | Ethyl Acetate | 9.6 | 0.50 | -- | 35. | 1.8 | -- | |
| 67-66-3 | Chloroform | 9.6 | 0.20 | -- | 47. | 0.98 | -- | |
| 109-99-9 | Tetrahydrofuran | 9.1 | 0.50 | -- | 27. | 1.5 | -- | |
| 594-20-7 | 2,2-Dichloropropane | 8.7 | 0.20 | -- | 40. | 0.92 | -- | |
| 107-06-2 | 1,2-Dichloroethane | 9.7 | 0.20 | -- | 39. | 0.81 | -- | |
| 110-54-3 | n-Hexane | 8.5 | 0.20 | -- | 30. | 0.70 | -- | |
| 108-20-3 | Diisopropyl ether | 8.2 | 0.20 | -- | 34. | 0.84 | -- | |
| 637-92-3 | tert-Butyl Ethyl Ether | 8.1 | 0.20 | -- | 34. | 0.84 | -- | |
| 71-55-6 | 1,1,1-Trichloroethane | 8.7 | 0.20 | -- | 47. | 1.1 | -- | |
| 563-58-6 | 1,1-Dichloropropene | 8.2 | 0.20 | -- | 37. | 0.91 | -- | |
| 71-43-2 | Benzene | 8.5 | 0.20 | -- | 27. | 0.64 | -- | |
| 56-23-5 | Carbon tetrachloride | 9.1 | 0.20 | -- | 57. | 1.3 | -- | |
| 110-82-7 | Cyclohexane | 8.5 | 0.20 | -- | 29. | 0.69 | -- | |
| 994-05-8 | tert-Amyl Methyl Ether | 8.1 | 0.20 | -- | 34. | 0.84 | -- | |
| 74-95-3 | Dibromomethane | 7.8 | 0.20 | -- | 55. | 1.4 | -- | |
| 78-87-5 | 1,2-Dichloropropane | 8.6 | 0.20 | -- | 40. | 0.92 | -- | |
| 75-27-4 | Bromodichloromethane | 8.8 | 0.20 | -- | 59. | 1.3 | -- | |
| 123-91-1 | 1,4-Dioxane | 8.6 | 0.20 | -- | 31. | 0.72 | -- | |
| 79-01-6 | Trichloroethene | 8.6 | 0.20 | -- | 46. | 1.1 | -- | |
| 540-84-1 | 2,2,4-Trimethylpentane | 8.5 | 0.20 | -- | 40. | 0.93 | -- | |
| 80-62-6 | Methyl Methacrylate | 8.3 | 0.50 | -- | 34. | 2.0 | -- | |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Lab ID | : WG969058-3 | Date Collected | : |
| Client ID | : WG969058-3LCS | Date Received | : |
| Sample Location | : | Date Analyzed | : 01/12/17 12:41 |
| Sample Matrix | : SOIL_VAPOR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : MB |
| Lab File ID | : R152086 | Instrument ID | : AIRLAB15 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 142-82-5 | Heptane | 8.2 | 0.20 | -- | 34. | 0.82 | -- | |
| 10061-01-5 | cis-1,3-Dichloropropene | 8.1 | 0.20 | -- | 37. | 0.91 | -- | |
| 108-10-1 | 4-Methyl-2-pentanone | 8.3 | 0.50 | -- | 34. | 2.0 | -- | |
| 10061-02-6 | trans-1,3-Dichloropropene | 9.2 | 0.20 | -- | 42. | 0.91 | -- | |
| 79-00-5 | 1,1,2-Trichloroethane | 8.8 | 0.20 | -- | 48. | 1.1 | -- | |
| 108-88-3 | Toluene | 9.0 | 0.20 | -- | 34. | 0.75 | -- | |
| 142-28-9 | 1,3-Dichloropropane | 8.2 | 0.20 | -- | 38. | 0.92 | -- | |
| 591-78-6 | 2-Hexanone | 9.2 | 0.20 | -- | 38. | 0.82 | -- | |
| 124-48-1 | Dibromochloromethane | 9.3 | 0.20 | -- | 79. | 1.7 | -- | |
| 106-93-4 | 1,2-Dibromoethane | 9.2 | 0.20 | -- | 71. | 1.5 | -- | |
| 123-86-4 | Butyl acetate | 8.9 | 0.50 | -- | 42. | 2.4 | -- | |
| 111-65-9 | Octane | 7.5 | 0.20 | -- | 35. | 0.93 | -- | |
| 127-18-4 | Tetrachloroethene | 9.0 | 0.20 | -- | 61. | 1.4 | -- | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 8.4 | 0.20 | -- | 58. | 1.4 | -- | |
| 108-90-7 | Chlorobenzene | 9.2 | 0.20 | -- | 42. | 0.92 | -- | |
| 100-41-4 | Ethylbenzene | 9.2 | 0.20 | -- | 40. | 0.87 | -- | |
| 179601-23-1 | p/m-Xylene | 18. | 0.40 | -- | 78. | 1.7 | -- | |
| 75-25-2 | Bromoform | 9.4 | 0.20 | -- | 97. | 2.1 | -- | |
| 100-42-5 | Styrene | 9.3 | 0.20 | -- | 40. | 0.85 | -- | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 9.3 | 0.20 | -- | 64. | 1.4 | -- | |
| 95-47-6 | o-Xylene | 9.2 | 0.20 | -- | 40. | 0.87 | -- | |
| 96-18-4 | 1,2,3-Trichloropropane | 8.2 | 0.20 | -- | 49. | 1.2 | -- | |
| 111-84-2 | Nonane | 7.9 | 0.20 | -- | 41. | 1.0 | -- | |
| 98-82-8 | Isopropylbenzene | 8.6 | 0.20 | -- | 42. | 0.98 | -- | |
| 108-86-1 | Bromobenzene | 8.4 | 0.20 | -- | 33. | 0.79 | -- | |
| 95-49-8 | 2-Chlorotoluene | 9.4 | 0.20 | -- | 49. | 1.0 | -- | |
| 103-65-1 | n-Propylbenzene | 9.8 | 0.20 | -- | 48. | 0.98 | -- | |
| 106-43-4 | 4-Chlorotoluene | 8.6 | 0.20 | -- | 45. | 1.0 | -- | |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Lab ID | : WG969058-3 | Date Collected | : |
| Client ID | : WG969058-3LCS | Date Received | : |
| Sample Location | : | Date Analyzed | : 01/12/17 12:41 |
| Sample Matrix | : SOIL_VAPOR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : MB |
| Lab File ID | : R152086 | Instrument ID | : AIRLAB15 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 622-96-8 | 4-Ethyltoluene | 8.9 | 0.20 | -- | 44. | 0.98 | -- | |
| 108-67-8 | 1,3,5-Trimethybenzene | 8.9 | 0.20 | -- | 44. | 0.98 | -- | |
| 98-06-6 | tert-Butylbenzene | 8.6 | 0.20 | -- | 47. | 1.1 | -- | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 9.4 | 0.20 | -- | 46. | 0.98 | -- | |
| 124-18-5 | Decane | 8.6 | 0.20 | -- | 50. | 1.2 | -- | |
| 100-44-7 | Benzyl chloride | 10. | 0.20 | -- | 52. | 1.0 | -- | |
| 541-73-1 | 1,3-Dichlorobenzene | 9.6 | 0.20 | -- | 58. | 1.2 | -- | |
| 106-46-7 | 1,4-Dichlorobenzene | 9.3 | 0.20 | -- | 56. | 1.2 | -- | |
| 135-98-8 | sec-Butylbenzene | 8.6 | 0.20 | -- | 47. | 1.1 | -- | |
| 99-87-6 | p-Isopropyltoluene | 8.3 | 0.20 | -- | 46. | 1.1 | -- | |
| 95-50-1 | 1,2-Dichlorobenzene | 9.7 | 0.20 | -- | 58. | 1.2 | -- | |
| 104-51-8 | n-Butylbenzene | 9.2 | 0.20 | -- | 50. | 1.1 | -- | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 9.3 | 0.20 | -- | 90. | 1.9 | -- | |
| 1120-21-4 | Undecane | 9.2 | 0.20 | -- | 59. | 1.3 | -- | |
| 112-40-3 | Dodecane | 10. | 0.20 | -- | 70. | 1.4 | -- | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 11. | 0.20 | -- | 82. | 1.5 | -- | |
| 91-20-3 | Naphthalene | 10. | 0.20 | -- | 52. | 1.0 | -- | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 10. | 0.20 | -- | 74. | 1.5 | -- | |
| 87-68-3 | Hexachlorobutadiene | 11. | 0.20 | -- | 120 | 2.1 | -- | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152086.D
Acq On : 12 Jan 2017 12:41 PM
Operator : AIRLAB15:MB
Sample : WG969058-3,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 13:15:06 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170112T\r152085.D
Sub List : Default-LCS-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.300 | 49 | 201523 | 10.000 | ppbV | 0.05 |
| Standard Area = 206158 | | | Recovery | = | 97.75% | |
| 43) 1,4-difluorobenzene | 11.613 | 114 | 614099 | 10.000 | ppbV | 0.04 |
| Standard Area = 628014 | | | Recovery | = | 97.78% | |
| 67) chlorobenzene-D5 | 16.320 | 54 | 94774 | 10.000 | ppbV | 0.01 |
| Standard Area = 100216 | | | Recovery | = | 94.57% | |
| System Monitoring Compounds | | | | | | |
| Target Compounds | | | | | | Qvalue |
| 2) chlorodifluoromethane | 3.715 | 51 | 175175 | 8.196 | ppbV | 100 |
| 3) propylene | 3.748 | 41 | 120801M6 | 8.936 | ppbV | |
| 4) propane | 3.770 | 29 | 129376 | 8.155 | ppbV | 99 |
| 5) dichlorodifluoromethane | 3.825 | 85 | 256854 | 9.273 | ppbV | 100 |
| 6) chloromethane | 4.001 | 50 | 114246 | 8.994 | ppbV | 99 |
| 7) Freon-114 | 4.122 | 85 | 328200 | 9.439 | ppbV | 99 |
| 8) methanol | 4.210 | 31 | 268509 | 46.098 | ppbV | 98 |
| 9) vinyl chloride | 4.243 | 62 | 159121 | 10.200 | ppbV | 99 |
| 10) 1,3-butadiene | 4.398 | 54 | 151346 | 9.404 | ppbV | 95 |
| 11) butane | 4.462 | 43 | 183641 | 8.785 | ppbV | 99 |
| 13) bromomethane | 4.702 | 94 | 128479 | 9.445 | ppbV | 99 |
| 14) chloroethane | 4.910 | 64 | 75192 | 9.460 | ppbV | 99 |
| 15) ethanol | 5.078 | 31 | 454972M4 | 43.011 | ppbV | |
| 16) dichlorofluoromethane | 5.022 | 67 | 219527 | 8.682 | ppbV | 99 |
| 17) vinyl bromide | 5.310 | 106 | 131717 | 8.661 | ppbV | 96 |
| 18) acrolein | 5.462 | 56 | 69134 | 9.099 | ppbV | 98 |
| 19) acetone | 5.622 | 43 | 885409 | 44.438 | ppbV | 96 |
| 20) acetonitrile | 5.318 | 41 | 112519 | 7.420 | ppbV | 97 |
| 21) trichlorofluoromethane | 5.806 | 101 | 246794 | 9.482 | ppbV | 99 |
| 22) isopropyl alcohol | 5.926 | 45 | 613524 | 25.218 | ppbV | 99 |
| 23) acrylonitrile | 6.183 | 53 | 129507M4 | 12.415 | ppbV | |
| 24) pentane | 6.238 | 43 | 273225 | 8.143 | ppbV | 98 |
| 25) ethyl ether | 6.271 | 31 | 219213 | 8.551 | ppbV | 97 |
| 26) 1,1-dichloroethene | 6.568 | 61 | 213709 | 9.598 | ppbV | 96 |
| 27) tertiary butyl alcohol | 6.634 | 59 | 261955 | 9.168 | ppbV | 99 |
| 28) methylene chloride | 6.722 | 49 | 180325 | 9.475 | ppbV | 94 |
| 29) 3-chloropropene | 6.865 | 41 | 242059 | 9.328 | ppbV | 97 |
| 30) carbon disulfide | 7.047 | 76 | 475062 | 9.233 | ppbV | 100 |
| 31) Freon 113 | 7.047 | 101 | 278701 | 9.595 | ppbV | 99 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152086.D
Acq On : 12 Jan 2017 12:41 PM
Operator : AIRLAB15:MB
Sample : WG969058-3,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 13:15:06 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170112T\r152085.D
Sub List : Default-LCS-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 32) trans-1,2-dichloroethene | 7.847 | 61 | 213726 | 8.724 | ppbV | 99 |
| 33) 1,1-dichloroethane | 8.087 | 63 | 267659 | 9.363 | ppbV | 99 |
| 34) MTBE | 8.167 | 73 | 399561 | 9.590 | ppbV | 99 |
| 35) vinyl acetate | 8.287 | 43 | 422424 | 10.983 | ppbV | 96 |
| 36) 2-butanone | 8.567 | 43 | 333918 | 8.523 | ppbV | 98 |
| 37) cis-1,2-dichloroethene | 9.100 | 61 | 222146 | 10.647 | ppbV | 96 |
| 38) Ethyl Acetate | 9.380 | 61 | 57690 | 9.563 | ppbV | 95 |
| 39) chloroform | 9.460 | 83 | 269222 | 9.639 | ppbV | 98 |
| 40) Tetrahydrofuran | 9.927 | 42 | 204010M6 | 9.117 | ppbV | |
| 41) 2,2-dichloropropane | 9.473 | 77 | 196810 | 8.667 | ppbV | 97 |
| 42) 1,2-dichloroethane | 10.327 | 62 | 171647 | 9.741 | ppbV | 99 |
| 44) hexane | 9.353 | 57 | 292265 | 8.513 | ppbV | 83 |
| 45) diisopropyl ether | 9.353 | 87 | 139158 | 8.158 | ppbV | 85 |
| 46) tert-butyl ethyl ether | 9.993 | 59 | 444383 | 8.067 | ppbV | 99 |
| 48) 1,1,1-trichloroethane | 10.627 | 97 | 224673 | 8.713 | ppbV | 98 |
| 49) 1,1-dichloropropene | 11.013 | 75 | 223477 | 8.224 | ppbV | 99 |
| 50) benzene | 11.173 | 78 | 535127 | 8.465 | ppbV | 100 |
| 52) carbon tetrachloride | 11.360 | 117 | 216189 | 9.072 | ppbV | 98 |
| 53) cyclohexane | 11.507 | 56 | 311282 | 8.514 | ppbV | 98 |
| 54) tert-amyl methyl ether | 11.893 | 73 | 423430 | 8.110 | ppbV | 100 |
| 55) dibromomethane | 12.120 | 93 | 147802 | 7.818 | ppbV | 96 |
| 56) 1,2-dichloropropane | 12.160 | 63 | 184042 | 8.572 | ppbV | 99 |
| 57) bromodichloromethane | 12.387 | 83 | 297067 | 8.855 | ppbV | 99 |
| 58) 1,4-dioxane | 12.440 | 88 | 124931 | 8.641 | ppbV | 96 |
| 59) trichloroethene | 12.440 | 130 | 223437 | 8.589 | ppbV | 98 |
| 60) 2,2,4-trimethylpentane | 12.493 | 57 | 961890 | 8.545 | ppbV | 98 |
| 61) methyl methacrylate | 12.693 | 41 | 199512 | 8.345 | ppbV | 95 |
| 62) heptane | 12.813 | 43 | 351729 | 8.201 | ppbV | 94 |
| 63) cis-1,3-dichloropropene | 14.107 | 75 | 216522 | 8.121 | ppbV | 99 |
| 64) 4-methyl-2-pentanone | 13.520 | 43 | 404442 | 8.305 | ppbV | 94 |
| 65) trans-1,3-dichloropropene | 13.480 | 75 | 269239 | 9.216 | ppbV | 98 |
| 66) 1,1,2-trichloroethane | 14.293 | 97 | 200949 | 8.772 | ppbV | 97 |
| 68) toluene | 14.600 | 91 | 630437 | 9.036 | ppbV | 97 |
| 71) 1,3-dichloropropane | 14.627 | 76 | 272234 | 8.200 | ppbV | 99 |
| 72) 2-hexanone | 14.867 | 43 | 387093 | 9.184 | ppbV | 95 |
| 74) dibromochloromethane | 15.040 | 129 | 285329 | 9.323 | ppbV | 99 |
| 75) 1,2-dibromoethane | 15.280 | 107 | 301639 | 9.188 | ppbV | 99 |
| 76) butyl acetate | 15.507 | 73 | 75703 | 8.925 | ppbV | 86 |
| 77) octane | 15.600 | 85 | 193190 | 7.470 | ppbV | 86 |
| 78) tetrachloroethene | 15.733 | 166 | 273938 | 9.022 | ppbV | 93 |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152086.D
Acq On : 12 Jan 2017 12:41 PM
Operator : AIRLAB15:MB
Sample : WG969058-3,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 13:15:06 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170112T\r152085.D
Sub List : Default-LCS-AP2 - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | | Dev(Min) |
|---|---|---|---|---|---|---|---|---|
| 79) | 1,1,1,2-tetrachloroethane | 16.347 | 131 | 202159 | 8.444 | ppbV | | 99 |
| 80) | chlorobenzene | 16.360 | 112 | 527631 | 9.238 | ppbV | | 98 |
| 81) | ethylbenzene | 16.693 | 91 | 793014 | 9.158 | ppbV | | 98 |
| 83) | m+p-xylene | 16.840 | 91 | 1298279 | 18.541 | ppbV | | 100 |
| 84) | bromoform | 16.907 | 173 | 254074 | 9.370 | ppbV | | 99 |
| 85) | styrene | 17.147 | 104 | 532161 | 9.320 | ppbV | | 100 |
| 86) | 1,1,2,2-tetrachloroethane | 17.240 | 83 | 464876 | 9.327 | ppbV | | 100 |
| 87) | o-xylene | 17.240 | 91 | 653356 | 9.248 | ppbV | | 98 |
| 88) | 1,2,3-trichloropropane | 17.347 | 75 | 323988 | 8.176 | ppbV | | 99 |
| 89) | nonane | 17.413 | 43 | 461037 | 7.876 | ppbV | # | 91 |
| 91) | isopropylbenzene | 17.720 | 105 | 831773 | 8.593 | ppbV | | 97 |
| 92) | bromobenzene | 17.800 | 77 | 434250 | 8.354 | ppbV | | 92 |
| 93) | 2-chlorotoluene | 18.113 | 126 | 286696M3 | 9.417 | ppbV | | |
| 94) | n-propylbenzene | 18.140 | 120 | 319277 | 9.758 | ppbV | | 94 |
| 95) | 4-chlorotoluene | 18.167 | 126 | 228856 | 8.559 | ppbV | | 99 |
| 96) | 4-ethyl toluene | 18.247 | 105 | 967414 | 8.863 | ppbV | | 98 |
| 97) | 1,3,5-trimethylbenzene | 18.313 | 105 | 745150 | 8.868 | ppbV | | 99 |
| 98) | tert-butylbenzene | 18.633 | 119 | 777806 | 8.609 | ppbV | | 99 |
| 99) | 1,2,4-trimethylbenzene | 18.647 | 105 | 782909 | 9.417 | ppbV | | 91 |
| 100) | decane | 18.713 | 57 | 569796 | 8.575 | ppbV | | 93 |
| 101) | Benzyl Chloride | 18.767 | 91 | 590442 | 10.143 | ppbV | | 94 |
| 102) | 1,3-dichlorobenzene | 18.780 | 146 | 585278M3 | 9.641 | ppbV | | |
| 103) | 1,4-dichlorobenzene | 18.833 | 146 | 540909 | 9.291 | ppbV | | 99 |
| 104) | sec-butylbenzene | 18.860 | 105 | 1047787 | 8.625 | ppbV | | 98 |
| 106) | p-isopropyltoluene | 18.980 | 119 | 898149 | 8.339 | ppbV | | 99 |
| 107) | 1,2-dichlorobenzene | 19.113 | 146 | 531150 | 9.683 | ppbV | | 97 |
| 108) | n-butylbenzene | 19.340 | 91 | 830687 | 9.165 | ppbV | | 97 |
| 111) | 1,2-dibromo-3-chloropr... | 19.500 | 75 | 183102 | 9.342 | ppbV | | 98 |
| 112) | undecane | 19.740 | 57 | 640274 | 9.230 | ppbV | | 97 |
| 114) | dodecane | 20.693 | 57 | 640832 | 10.503 | ppbV | | 95 |
| 115) | 1,2,4-trichlorobenzene | 20.653 | 180 | 417376 | 11.089 | ppbV | | 97 |
| 116) | naphthalene | 20.787 | 128 | 1043331 | 10.463 | ppbV | | 99 |
| 117) | 1,2,3-trichlorobenzene | 21.053 | 180 | 368614 | 10.038 | ppbV | | 98 |
| 119) | hexachlorobutadiene | 21.120 | 225 | 343322 | 10.674 | ppbV | | 97 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default-LCS-AP2 - All compounds listedT\r152085.D

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152086.D
Acq On : 12 Jan 2017 12:41 PM
Operator : AIRLAB15:MB
Sample : WG969058-3,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 13:15:06 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

#2
chlorodifluoromethane
Concen: 8.20 ppbV
RT: 3.715 min Scan# 156
Delta R.T. 0.033 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 51 Resp: 175175

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 51 | 100 | | |
| 67 | 10.1 | 8.1 | 12.1 |

#3
propylene
Concen: 8.94 ppbV m
RT: 3.748 min Scan# 159
Delta R.T. 0.033 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 41 Resp: 120801

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 41 | 100 | | |
| 42 | 69.7 | 56.6 | 84.8 |
| 39 | 66.3 | 51.8 | 77.8 |

#4
propane
Concen: 8.15 ppbV
RT: 3.770 min Scan# 161
Delta R.T. 0.033 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 29 Resp: 129376

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 29 | 100 | | |
| 43 | 33.8 | 27.3 | 40.9 |
| 39 | 18.7 | 15.6 | 23.4 |

#5
dichlorodifluoromethane
Concen: 9.27 ppbV
RT: 3.825 min Scan# 166
Delta R.T. 0.033 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 85 Resp: 256854

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 85 | 100 | | |
| 87 | 32.3 | 25.7 | 38.5 |

#6
chloromethane
Concen: 8.99 ppbV
RT: 4.001 min Scan# 182
Delta R.T. 0.033 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 50 Resp: 114246

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 50 | 100 | | |
| 52 | 33.9 | 26.6 | 40.0 |

#7
Freon-114
Concen: 9.44 ppbV
RT: 4.122 min Scan# 193
Delta R.T. 0.044 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 85 Resp: 328200

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 85 | 100 | | |
| 87 | 33.0 | 26.1 | 39.1 |
| 135 | 62.1 | 50.8 | 76.2 |

#8
methanol
Concen: 46.10 ppbV
RT: 4.210 min Scan# 201
Delta R.T. 0.033 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 31 Resp: 268509

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 31 | 100 | | |
| 32 | 78.6 | 62.2 | 93.4 |
| 29 | 43.7 | 36.5 | 54.7 |

#9
vinyl chloride
Concen: 10.20 ppbV
RT: 4.243 min Scan# 204
Delta R.T. 0.033 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 62 Resp: 159121

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 62 | 100 | | |
| 64 | 30.8 | 25.0 | 37.4 |

#10
1,3-butadiene
Concen: 9.40 ppbV
RT: 4.398 min Scan# 218
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 54 Resp: 151346

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 54 | 100 | | |
| 39 | 85.5 | 65.0 | 97.6 |

#11
butane
Concen: 8.79 ppbV
RT: 4.462 min Scan# 226
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 43 Resp: 183641

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 58 | 15.7 | 12.2 | 18.4 |
| 41 | 30.4 | 24.1 | 36.1 |

#13
bromomethane
Concen: 9.44 ppbV
RT: 4.702 min Scan# 256
Delta R.T. 0.048 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 94 Resp: 128479

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 94 | 100 | | |
| 96 | 93.7 | 75.4 | 113.2 |

#14
chloroethane
Concen: 9.46 ppbV
RT: 4.910 min Scan# 282
Delta R.T. 0.048 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 64 Resp: 75192

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 64 | 100 | | |
| 66 | 30.9 | 25.0 | 37.4 |

#15
ethanol
Concen: 43.01 ppbV m
RT: 5.078 min Scan# 303
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 31 Resp: 454972

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 31 | 100 | | |
| 45 | 50.1 | 40.5 | 60.7 |

#16
dichlorofluoromethane
Concen: 8.68 ppbV
RT: 5.022 min Scan# 296
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 67 Resp: 219527

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 67 | 100 | | |
| 69 | 33.0 | 26.2 | 39.2 |
| 47 | 6.9 | 5.6 | 8.4 |

#17
vinyl bromide
Concen: 8.66 ppbV
RT: 5.310 min Scan# 332
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:106 Resp: 131717

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 106 | 100 | | |
| 108 | 96.3 | 74.2 | 111.2 |

#18
acrolein
Concen: 9.10 ppbV
RT: 5.462 min Scan# 351
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 56 Resp: 69134

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 56 | 100 | | |
| 55 | 68.3 | 54.6 | 82.0 |
| 29 | 40.1 | 34.1 | 51.1 |

#19
acetone
Concen: 44.44 ppbV
RT: 5.622 min Scan# 371
Delta R.T. 0.048 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 43 Resp: 885409

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 58 | 41.0 | 31.0 | 46.6 |
| 57 | 1.1 | 0.8 | 1.2 |

#20
acetonitrile
Concen: 7.42 ppbV
RT: 5.318 min Scan# 333
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 41 Resp: 112519

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 41 | 100 | | |
| 40 | 50.9 | 39.2 | 58.8 |

#21
trichlorofluoromethane
Concen: 9.48 ppbV
RT: 5.806 min Scan# 394
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:101 Resp: 246794

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 101 | 100 | | |
| 103 | 64.4 | 50.8 | 76.2 |

#22
isopropyl alcohol
Concen: 25.22 ppbV
RT: 5.926 min Scan# 409
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 45 Resp: 613524

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 45 | 100 | | |
| 59 | 4.4 | 3.2 | 4.8 |

#23
acrylonitrile
Concen: 12.41 ppbV m
RT: 6.183 min Scan# 438
Delta R.T. 0.057 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 53 Resp: 129507

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 53 | 100 | | |
| 52 | 77.3 | 62.7 | 94.1 |
| 51 | 32.2 | 26.4 | 39.6 |

#24
pentane
Concen: 8.14 ppbV
RT: 6.238 min Scan# 443
Delta R.T. 0.044 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 43 Resp: 273225

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 57 | 16.2 | 12.0 | 18.0 |
| 72 | 11.4 | 8.6 | 12.8 |

#25
ethyl ether
Concen: 8.55 ppbV
RT: 6.271 min Scan# 446
Delta R.T. 0.044 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 31 Resp: 219213

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 31 | 100 | | |
| 59 | 49.2 | 38.2 | 57.2 |
| 45 | 36.9 | 31.0 | 46.6 |

#26
1,1-dichloroethene
Concen: 9.60 ppbV
RT: 6.568 min Scan# 473
Delta R.T. 0.044 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 61 Resp: 213709

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 61 | 100 | | |
| 96 | 70.3 | 53.8 | 80.8 |
| 63 | 32.9 | 24.9 | 37.3 |

#27
tertiary butyl alcohol
Concen: 9.17 ppbV
RT: 6.634 min Scan# 479
Delta R.T. 0.044 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 59 Resp: 261955

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 59 | 100 | | |
| 41 | 25.1 | 20.7 | 31.1 |
| 43 | 10.7 | 8.9 | 13.3 |

#28
methylene chloride
Concen: 9.47 ppbV
RT: 6.722 min Scan# 487
Delta R.T. 0.044 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 49 Resp: 180325

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 49 | 100 | | |
| 84 | 78.5 | 58.6 | 88.0 |

#29
3-chloropropene
Concen: 9.33 ppbV
RT: 6.865 min Scan# 500
Delta R.T. 0.044 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 41 Resp: 242059

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 41 | 100 | | |
| 39 | 48.5 | 37.3 | 55.9 |
| 76 | 34.4 | 26.4 | 39.6 |

#30
carbon disulfide
Concen: 9.23 ppbV
RT: 7.047 min Scan# 513
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 76 Resp: 475062

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 76 | 100 | | |
| 44 | 10.1 | 8.0 | 12.0 |

#31
Freon 113
Concen: 9.60 ppbV
RT: 7.047 min Scan# 513
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:101 Resp: 278701

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 101 | 100 | | |
| 85 | 37.6 | 29.8 | 44.6 |
| 151 | 77.8 | 63.4 | 95.0 |

#32
trans-1,2-dichloroethene
Concen: 8.72 ppbV
RT: 7.847 min Scan# 573
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 61 Resp: 213726

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 61 | 100 | | |
| 96 | 73.7 | 57.8 | 86.6 |
| 98 | 45.8 | 36.6 | 54.8 |

#33
1,1-dichloroethane
Concen: 9.36 ppbV
RT: 8.087 min Scan# 591
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 63 Resp: 267659

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 63 | 100 | | |
| 65 | 31.6 | 25.7 | 38.5 |

#34
MTBE
Concen: 9.59 ppbV
RT: 8.167 min Scan# 597
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 73 Resp: 399561

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 73 | 100 | | |
| 57 | 25.0 | 19.5 | 29.3 |
| 43 | 18.3 | 15.2 | 22.8 |

#35
vinyl acetate
Concen: 10.98 ppbV
RT: 8.287 min Scan# 606
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 43 Resp: 422424

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 86 | 10.4 | 7.3 | 10.9 |

#36
2-butanone
Concen: 8.52 ppbV
RT: 8.567 min Scan# 626
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 43 Resp: 333918

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 72 | 26.7 | 20.5 | 30.7 |
| 57 | 7.8 | 5.9 | 8.9 |

#37
cis-1,2-dichloroethene
Concen: 10.65 ppbV
RT: 9.100 min Scan# 666
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 61 Resp: 222146

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 61 | 100 | | |
| 96 | 79.4 | 66.3 | 99.5 |
| 98 | 50.7 | 42.6 | 64.0 |

#38
Ethyl Acetate
Concen: 9.56 ppbV
RT: 9.380 min Scan# 687
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 61 Resp: 57690

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 61 | 100 | | |
| 70 | 96.1 | 79.4 | 119.0 |
| 43 | 851.7 | 665.9 | 998.9 |

#39
chloroform
Concen: 9.64 ppbV
RT: 9.460 min Scan# 693
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 83 Resp: 269222

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 83 | 100 | | |
| 85 | 65.4 | 51.2 | 76.8 |
| 47 | 21.6 | 17.6 | 26.4 |

#40
Tetrahydrofuran
Concen: 9.12 ppbV m
RT: 9.927 min Scan# 728
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 42 Resp: 204010

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 42 | 100 | | |
| 71 | 38.6 | 30.5 | 45.7 |
| 72 | 42.3 | 33.1 | 49.7 |

#41
2,2-dichloropropane
Concen: 8.67 ppbV
RT: 9.473 min Scan# 694
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 77 Resp: 196810

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 77 | 100 | | |
| 41 | 56.5 | 47.0 | 70.4 |
| 97 | 23.0 | 17.7 | 26.5 |

#42
1,2-dichloroethane
Concen: 9.74 ppbV
RT: 10.327 min Scan# 758
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 62 Resp: 171647

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 62 | 100 | | |
| 64 | 31.7 | 26.2 | 39.4 |
| 49 | 38.4 | 31.4 | 47.2 |
| 63 | 20.1 | 16.4 | 24.6 |

#44
hexane
Concen: 8.51 ppbV
RT: 9.353 min Scan# 685
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 57 Resp: 292265

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 57 | 100 | | |
| 43 | 141.6 | 133.6 | 200.4 |
| 86 | 17.8 | 13.1 | 19.7 |

#45
diisopropyl ether
Concen: 8.16 ppbV
RT: 9.353 min Scan# 685
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 87 Resp: 139158

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 87 | 100 | | |
| 59 | 42.9 | 33.8 | 50.8 |
| 45 | 380.2 | 337.4 | 506.2 |

#46
tert-butyl ethyl ether
Concen: 8.07 ppbV
RT: 9.993 min Scan# 733
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 59 Resp: 444383

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 59 | 100 | | |
| 87 | 41.6 | 33.0 | 49.4 |
| 57 | 32.7 | 26.5 | 39.7 |

#48
1,1,1-trichloroethane
Concen: 8.71 ppbV
RT: 10.627 min Scan# 779
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 97 Resp: 224673

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 97 | 100 | | |
| 61 | 43.6 | 36.1 | 54.1 |
| 119 | 15.6 | 11.5 | 17.3 |

#49
1,1-dichloropropene
Concen: 8.22 ppbV
RT: 11.013 min Scan# 808
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 75 Resp: 223477

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 75 | 100 | | |
| 110 | 40.4 | 31.8 | 47.6 |
| 39 | 50.6 | 40.4 | 60.6 |

#50
benzene
Concen: 8.46 ppbV
RT: 11.173 min Scan# 820
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 78 Resp: 535127

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 78 | 100 | | |
| 52 | 15.3 | 12.4 | 18.6 |

#52
carbon tetrachloride
Concen: 9.07 ppbV
RT: 11.360 min Scan# 834
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:117 Resp: 216189

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 117 | 100 | | |
| 119 | 94.8 | 74.6 | 111.8 |
| 82 | 20.7 | 17.3 | 25.9 |

#53
cyclohexane
Concen: 8.51 ppbV
RT: 11.507 min Scan# 845
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 56 Resp: 311282

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 56 | 100 | | |
| 84 | 81.7 | 66.0 | 99.0 |
| 41 | 45.9 | 38.4 | 57.6 |

#54
tert-amyl methyl ether
Concen: 8.11 ppbV
RT: 11.893 min Scan# 874
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 73 Resp: 423430

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 73 | 100 | | |
| 43 | 32.3 | 25.8 | 38.8 |
| 87 | 22.0 | 17.3 | 25.9 |

#55
dibromomethane
Concen: 7.82 ppbV
RT: 12.120 min Scan# 891
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 93 Resp: 147802

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 93 | 100 | | |
| 174 | 104.8 | 78.1 | 117.1 |
| 95 | 84.8 | 67.3 | 100.9 |

#56
1,2-dichloropropane
Concen: 8.57 ppbV
RT: 12.160 min Scan# 894
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 63 Resp: 184042

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 63 | 100 | | |
| 62 | 73.9 | 59.5 | 89.3 |
| 39 | 29.3 | 23.2 | 34.8 |

#57
bromodichloromethane
Concen: 8.85 ppbV
RT: 12.387 min Scan# 911
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 83 Resp: 297067

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 83 | 100 | | |
| 85 | 64.1 | 50.6 | 76.0 |
| 129 | 10.1 | 8.2 | 12.4 |

#58
1,4-dioxane
Concen: 8.64 ppbV
RT: 12.440 min Scan# 915
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 88 Resp: 124931

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 88 | 100 | | |
| 58 | 72.2 | 60.8 | 91.2 |

#59
trichloroethene
Concen: 8.59 ppbV
RT: 12.440 min Scan# 915
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:130 Resp: 223437

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 130 | 100 | | |
| 132 | 95.4 | 76.5 | 114.7 |
| 97 | 55.8 | 47.0 | 70.6 |

#60
2,2,4-trimethylpentane
Concen: 8.54 ppbV
RT: 12.493 min Scan# 919
Delta R.T. 0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 57 Resp: 961890

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 57 | 100 | | |
| 99 | 5.5 | 4.7 | 7.1 |
| 41 | 21.6 | 18.1 | 27.1 |

#61
methyl methacrylate
Concen: 8.34 ppbV
RT: 12.693 min Scan# 933
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 41 Resp: 199512

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 41 | 100 | | |
| 69 | 81.9 | 62.1 | 93.1 |
| 100 | 34.3 | 25.3 | 37.9 |

#62
heptane
Concen: 8.20 ppbV
RT: 12.813 min Scan# 942
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 43 Resp: 351729

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 57 | 52.8 | 38.1 | 57.1 |
| 100 | 18.0 | 13.4 | 20.2 |

#63
cis-1,3-dichloropropene
Concen: 8.12 ppbV
RT: 14.107 min Scan# 1039
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 75 Resp: 216522

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 75 | 100 | | |
| 39 | 43.2 | 35.4 | 53.0 |
| 77 | 32.0 | 25.4 | 38.0 |

#64
4-methyl-2-pentanone
Concen: 8.31 ppbV
RT: 13.520 min Scan# 995
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 43 Resp: 404442

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 58 | 44.1 | 31.9 | 47.9 |
| 100 | 16.0 | 11.6 | 17.4 |

#65
trans-1,3-dichloropropene
Concen: 9.22 ppbV
RT: 13.480 min Scan# 992
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 75 Resp: 269239

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 75 | 100 | | |
| 77 | 31.5 | 25.0 | 37.6 |
| 39 | 41.3 | 34.6 | 51.8 |

#66
1,1,2-trichloroethane
Concen: 8.77 ppbV
RT: 14.293 min Scan# 1053
Delta R.T. 0.027 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 97 Resp: 200949

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 97 | 100 | | |
| 83 | 85.3 | 69.4 | 104.0 |
| 61 | 46.6 | 40.0 | 60.0 |

#68
toluene
Concen: 9.04 ppbV
RT: 14.600 min Scan# 1076
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 91 Resp: 630437

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 92 | 63.0 | 52.2 | 78.2 |

#71
1,3-dichloropropane
Concen: 8.20 ppbV
RT: 14.627 min Scan# 1078
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 76 Resp: 272234

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 76 | 100 | | |
| 41 | 60.4 | 49.2 | 73.8 |
| 49 | 11.9 | 9.4 | 14.2 |

#72
2-hexanone
Concen: 9.18 ppbV
RT: 14.867 min Scan# 1096
Delta R.T. 0.027 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 43 Resp: 387093

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 58 | 63.6 | 47.8 | 71.6 |
| 100 | 13.5 | 10.1 | 15.1 |

#74
dibromochloromethane
Concen: 9.32 ppbV
RT: 15.040 min Scan# 1109
Delta R.T. 0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:129 Resp: 285329

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 129 | 100 | | |
| 127 | 77.6 | 61.4 | 92.2 |
| 131 | 24.4 | 19.5 | 29.3 |

#75
1,2-dibromoethane
Concen: 9.19 ppbV
RT: 15.280 min Scan# 1127
Delta R.T. 0.027 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:107 Resp: 301639

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 107 | 100 | | |
| 109 | 93.9 | 74.6 | 111.8 |

#76
butyl acetate
Concen: 8.93 ppbV
RT: 15.507 min Scan# 1144
Delta R.T. 0.027 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 73 Resp: 75703

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 73 | 100 | | |
| 56 | 318.2 | 257.8 | 386.6 |
| 43 | 649.1 | 572.3 | 858.5 |

#77
octane
Concen: 7.47 ppbV
RT: 15.600 min Scan# 1150
Delta R.T. 0.027 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 85 Resp: 193190

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 85 | 100 | | |
| 57 | 80.4 | 67.4 | 101.2 |
| 114 | 13.9 | 10.8 | 16.2 |
| 43 | 192.2 | 177.4 | 266.0 |

#78
tetrachloroethene
Concen: 9.02 ppbV
RT: 15.733 min Scan# 1160
Delta R.T. 0.027 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:166 Resp: 273938

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 166 | 100 | | |
| 131 | 67.7 | 59.7 | 89.5 |
| 94 | 29.9 | 26.1 | 39.1 |

#79
1,1,1,2-tetrachloroethane
Concen: 8.44 ppbV
RT: 16.347 min Scan# 1206
Delta R.T. 0.027 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:131 Resp: 202159

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 131 | 100 | | |
| 133 | 96.6 | 76.6 | 115.0 |
| 95 | 32.8 | 24.7 | 37.1 |

#80
chlorobenzene
Concen: 9.24 ppbV
RT: 16.360 min Scan# 1207
Delta R.T. 0.013 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:112 Resp: 527631

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 112 | 100 | | |
| 114 | 31.3 | 25.8 | 38.8 |
| 77 | 57.8 | 47.5 | 71.3 |

#81
ethylbenzene
Concen: 9.16 ppbV
RT: 16.693 min Scan# 1232
Delta R.T. 0.013 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 91 Resp: 793014

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 34.5 | 28.6 | 42.8 |

#83
m+p-xylene
Concen: 18.54 ppbV
RT: 16.840 min Scan# 1243
Delta R.T. 0.000 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 91 Resp: 1298279

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 54.7 | 43.8 | 65.8 |

#84
bromoform
Concen: 9.37 ppbV
RT: 16.907 min Scan# 1248
Delta R.T. 0.000 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:173 Resp: 254074

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 173 | 100 | | |
| 175 | 47.9 | 38.7 | 58.1 |
| 171 | 50.8 | 40.8 | 61.2 |

#85
styrene
Concen: 9.32 ppbV
RT: 17.147 min Scan# 1266
Delta R.T. -0.013 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:104 Resp: 532161

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 104 | 100 | | |
| 103 | 43.4 | 34.6 | 52.0 |
| 78 | 41.1 | 32.9 | 49.3 |

#86
1,1,2,2-tetrachloroethane
Concen: 9.33 ppbV
RT: 17.240 min Scan# 1273
Delta R.T. -0.013 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 83 Resp: 464876

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 83 | 100 | | |
| 85 | 63.9 | 51.4 | 77.0 |

#87
o-xylene
Concen: 9.25 ppbV
RT: 17.240 min Scan# 1273
Delta R.T. -0.013 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 91 Resp: 653356

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 52.4 | 43.0 | 64.4 |

#88
1,2,3-trichloropropane
Concen: 8.18 ppbV
RT: 17.347 min Scan# 1281
Delta R.T. -0.013 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 75 Resp: 323988

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 75 | 100 | | |
| 110 | 34.3 | 28.2 | 42.4 |
| 39 | 18.1 | 14.3 | 21.5 |

#89
nonane
Concen: 7.88 ppbV
RT: 17.413 min Scan# 1286
Delta R.T. -0.027 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 43 Resp: 461037

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 57 | 100.3 | 73.4 | 110.0 |
| 128 | 7.9 | 5.1 | 7.7# |

#91
isopropylbenzene
Concen: 8.59 ppbV
RT: 17.720 min Scan# 1309
Delta R.T. -0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:105 Resp: 831773

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 31.2 | 23.7 | 35.5 |

#92
bromobenzene
Concen: 8.35 ppbV
RT: 17.800 min Scan# 1315
Delta R.T. -0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 77 Resp: 434250

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 77 | 100 | | |
| 156 | 62.6 | 45.3 | 67.9 |

#93
2-chlorotoluene
Concen: 9.42 ppbV m
RT: 18.113 min Scan# 1337
Delta R.T. -0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:126 Resp: 286696

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 126 | 100 | | |
| 91 | 308.7 | 217.4 | 326.2 |

#94
n-propylbenzene
Concen: 9.76 ppbV
RT: 18.140 min Scan# 1339
Delta R.T. -0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:120 Resp: 319277

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 120 | 100 | | |
| 91 | 412.2 | 318.6 | 478.0 |

#95
4-chlorotoluene
Concen: 8.56 ppbV
RT: 18.167 min Scan# 1341
Delta R.T. -0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:126 Resp: 228856

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 126 | 100 | | |
| 91 | 278.9 | 224.2 | 336.4 |

#96
4-ethyl toluene
Concen: 8.86 ppbV
RT: 18.247 min Scan# 1347
Delta R.T. -0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:105 Resp: 967414

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 35.2 | 27.1 | 40.7 |
| 91 | 9.4 | 7.4 | 11.2 |

#97
1,3,5-trimethylbenzene
Concen: 8.87 ppbV
RT: 18.313 min Scan# 1352
Delta R.T. -0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:105 Resp: 745150

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 54.8 | 43.0 | 64.6 |
| 91 | 9.2 | 7.1 | 10.7 |

#98
tert-butylbenzene
Concen: 8.61 ppbV
RT: 18.633 min Scan# 1376
Delta R.T. -0.067 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:119 Resp: 777806

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 119 | 100 | | |
| 134 | 25.7 | 20.2 | 30.4 |

#99
1,2,4-trimethylbenzene
Concen: 9.42 ppbV
RT: 18.647 min Scan# 1377
Delta R.T. -0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:105 Resp: 782909

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 57.6 | 48.9 | 73.3 |
| 91 | 61.4 | 57.2 | 85.8 |

#100
decane
Concen: 8.57 ppbV
RT: 18.713 min Scan# 1382
Delta R.T. -0.067 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 57 Resp: 569796

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 57 | 100 | | |
| 43 | 84.3 | 73.2 | 109.8 |
| 142 | 5.3 | 4.1 | 6.1 |

#101
Benzyl Chloride
Concen: 10.14 ppbV
RT: 18.767 min Scan# 1386
Delta R.T. -0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 91 Resp: 590442

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 126 | 22.8 | 20.6 | 31.0 |

#102
1,3-dichlorobenzene
Concen: 9.64 ppbV m
RT: 18.780 min Scan# 1387
Delta R.T. -0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:146 Resp: 585278

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 146 | 100 | | |
| 111 | 40.2 | 28.9 | 43.3 |
| 75 | 26.0 | 17.9 | 26.9 |

#103
1,4-dichlorobenzene
Concen: 9.29 ppbV
RT: 18.833 min Scan# 1391
Delta R.T. -0.067 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:146 Resp: 540909

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 146 | 100 | | |
| 111 | 38.2 | 30.6 | 46.0 |
| 75 | 26.0 | 21.8 | 32.6 |

#104
sec-butylbenzene
Concen: 8.62 ppbV
RT: 18.860 min Scan# 1393
Delta R.T. -0.067 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:105 Resp: 1047787

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 134 | 21.5 | 18.0 | 27.0 |

#106
p-isopropyltoluene
Concen: 8.34 ppbV
RT: 18.980 min Scan# 1402
Delta R.T. -0.067 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:119 Resp: 898149

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 119 | 100 | | |
| 134 | 29.7 | 24.2 | 36.2 |

#107
1,2-dichlorobenzene
Concen: 9.68 ppbV
RT: 19.113 min Scan# 1412
Delta R.T. -0.067 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:146 Resp: 531150

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 146 | 100 | | |
| 111 | 37.0 | 31.2 | 46.8 |
| 75 | 23.0 | 19.4 | 29.2 |

#108
n-butylbenzene
Concen: 9.16 ppbV
RT: 19.340 min Scan# 1429
Delta R.T. -0.067 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 91 Resp: 830687

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 134 | 29.6 | 25.0 | 37.4 |

#111
1,2-dibromo-3-chloropropane
Concen: 9.34 ppbV
RT: 19.500 min Scan# 1441
Delta R.T. -0.067 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 75 Resp: 183102

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 75 | 100 | | |
| 157 | 113.2 | 91.8 | 137.8 |
| 39 | 61.1 | 50.5 | 75.7 |

#112
undecane
Concen: 9.23 ppbV
RT: 19.740 min Scan# 1459
Delta R.T. -0.067 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 57 Resp: 640274

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 57 | 100 | | |
| 43 | 73.0 | 61.5 | 92.3 |
| 71 | 49.0 | 39.8 | 59.8 |
| 156 | 6.0 | 4.3 | 6.5 |

#114
dodecane
Concen: 10.50 ppbV
RT: 20.693 min Scan# 1529
Delta R.T. -0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion: 57 Resp: 640832

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 57 | 100 | | |
| 43 | 70.8 | 60.2 | 90.2 |

#115
1,2,4-trichlorobenzene
Concen: 11.09 ppbV
RT: 20.653 min Scan# 1526
Delta R.T. -0.053 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:180 Resp: 417376

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 180 | 100 | | |
| 145 | 31.3 | 26.6 | 39.8 |
| 109 | 21.6 | 17.8 | 26.6 |

#116
naphthalene
Concen: 10.46 ppbV
RT: 20.787 min Scan# 1536
Delta R.T. -0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:128 Resp: 1043331

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 102 | 7.5 | 5.7 | 8.5 |

#117
1,2,3-trichlorobenzene
Concen: 10.04 ppbV
RT: 21.053 min Scan# 1556
Delta R.T. -0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:180 Resp: 368614

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 180 | 100 | | |
| 145 | 37.0 | 28.7 | 43.1 |
| 109 | 25.8 | 19.6 | 29.4 |

#119
hexachlorobutadiene
Concen: 10.67 ppbV
RT: 21.120 min Scan# 1561
Delta R.T. -0.040 min
Lab File: r152086.D
Acq: 12 Jan 2017 12:41 PM

Tgt Ion:225 Resp: 343322

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 225 | 100 | | |
| 260 | 37.3 | 31.6 | 47.4 |
| 118 | 31.6 | 24.0 | 36.0 |

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152086.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 12:41 PM Instrument :
Sample : WG969058-3,3,250,250 Quant Date : 1/12/2017 1:12 pm

Compound #3: propylene

Original Peak Response = 137330

Manual Peak Response = 120801 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152086.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 12:41 PM Instrument :
Sample : WG969058-3,3,250,250 Quant Date : 1/12/2017 1:12 pm

Compound #15: ethanol

Original Peak Response = 462217

Manual Peak Response = 454972 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152086.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 12:41 PM Instrument :
Sample : WG969058-3,3,250,250 Quant Date : 1/12/2017 1:12 pm

Compound #23: acrylonitrile

Original Peak Response = 134933

Manual Peak Response = 129507 M4

M4 = Poor automated baseline construction.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152086.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 12:41 PM Instrument :
Sample : WG969058-3,3,250,250 Quant Date : 1/12/2017 1:12 pm

Compound #40: Tetrahydrofuran

Original Peak Response = 214702

Manual Peak Response = 204010 M6

M6 = Misassignment of peak valley by automated integration (poor split of 2 peaks).

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152086.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 12:41 PM Instrument :
Sample : WG969058-3,3,250,250 Quant Date : 1/12/2017 1:12 pm

Compound #93: 2-chlorotoluene

Original Peak Response = 228838 Manual Peak Response = 286696 M3
M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

Manual Integration/Negative Proof Report

Data Path : O:\Forensics\Data\Airlab15\QMethod : TALL170109.M
Data File : r152086.D Operator : AIRLAB15:MB
Date Inj'd : 1/12/2017 12:41 PM Instrument :
Sample : WG969058-3,3,250,250 Quant Date : 1/12/2017 1:12 pm

Compound #102: 1,3-dichlorobenzene

Original Peak Response = 540452 Manual Peak Response = 585278 M3

M3 = Misidentification of the peak (i.e. 1,4-dichlorobenzene identified as 1,3-dichlorobenzene), or misidentification from 2 partially resolved peaks not being split.

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Tetra Tech GEO | Lab Number | : L1700975 |
| Project Name | : FORMER LEC | Project Number | : 117-0507641 |
| Lab ID | : WG969058-5 | Date Collected | : 01/11/17 10:28 |
| Client ID | : CR011117-SS-B6DUP | Date Received | : 01/11/17 |
| Sample Location | : | Date Analyzed | : 01/12/17 17:17 |
| Sample Matrix | : SOIL_VAPOR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : MB |
| Lab File ID | : R152089 | Instrument ID | : AIRLAB15 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 79-01-6 | Trichloroethene | 3.6 | 0.20 | -- | 19. | 1.1 | -- | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152089.D
Acq On : 12 Jan 2017 5:17 PM
Operator : AIRLAB15:MB
Sample : WG969058-5,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 23:16:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab15\2017\170112T\r152085.D
Sub List : 5_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) bromochloromethane | 9.287 | 49 | 212933 | 10.000 | ppbV | 0.04 |
| Standard Area = 206158 | | | Recovery = 103.29% | | | |
| 43) 1,4-difluorobenzene | 11.613 | 114 | 577138 | 10.000 | ppbV | 0.04 |
| Standard Area = 628014 | | | Recovery = 91.90% | | | |
| 67) chlorobenzene-D5 | 16.333 | 54 | 92217 | 10.000 | ppbV | 0.03 |
| Standard Area = 100216 | | | Recovery = 92.02% | | | |
| System Monitoring Compounds | | | | | | |
| Target Compounds | | | | | | Qvalue |
| 9) vinyl chloride | 0.000 | | 0 | N.D. | | |
| 32) trans-1,2-dichloroethene | 0.000 | | 0 | N.D. | | |
| 37) cis-1,2-dichloroethene | 0.000 | | 0 | N.D. | | |
| 59) trichloroethene | 12.440 | 130 | 89466 | 3.659 | ppbV | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

TALL170109.M Fri Jan 13 08:18:25 2017 Page: 1

Sub List : 5_Chlorinateds - .Airlab15\2017\170112T\r152085.D

Data Path : O:\Forensics\Data\Airlab15\2017\170112T\
Data File : r152089.D
Acq On : 12 Jan 2017 5:17 PM
Operator : AIRLAB15:MB
Sample : WG969058-5,3,250,250
Misc : WG969058,ICAL13292
ALS Vial : 0 Sample Multiplier: 1

Quant Time: Jan 12 23:16:37 2017
Quant Method : O:\Forensics\Data\Airlab15\2017\170112T\TALL170109.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Tue Jan 10 10:27:32 2017
Response via : Initial Calibration

TALL170109.M Fri Jan 13 08:18:25 2017

#59
trichloroethene
Concen: 3.66 ppbV
RT: 12.440 min Scan# 915
Delta R.T. 0.040 min
Lab File: r152089.D
Acq: 12 Jan 2017 5:17 PM

Tgt Ion:130 Resp: 89466

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 130 | 100 | | |
| 132 | 94.6 | 76.5 | 114.7 |
| 97 | 59.3 | 47.0 | 70.6 |

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab15\ | QMethod | : TALL170109.M |
| Data File | : r152089.D | Operator | : AIRLAB15:MB |
| Date Inj'd | : 1/12/2017 5:17 PM | Instrument | : |
| Sample | : WG969058-5,3,250,250 | Quant Date | : 1/12/2017 11:16 pm |

There are no manual integrations or false positives in this file.

# Clean Canister Certification Data

# Quality Control Data Summary

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Matrix | : AIR | | |
| LCS Sample ID | : WG967318-3 | Analysis Date : 01/05/17 12:58 | File ID : R1117829 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| Chlorodifluoromethane | 10 | 8.8 | 88 | | | | - | 70-130 | - |
| Propylene | 10 | 11. | 110 | | | | - | 70-130 | - |
| Dichlorodifluoromethane | 10 | 8.9 | 89 | | | | - | 40-160 | - |
| Chloromethane | 10 | 11. | 110 | | | | - | 70-130 | - |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane | 10 | 10. | 100 | | | | - | 70-130 | - |
| Methanol | 50 | 58. | 116 | | | | - | 70-130 | - |
| Vinyl chloride | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,3-Butadiene | 10 | 11. | 110 | | | | - | 70-130 | - |
| Butane | 10 | 10. | 100 | | | | - | 70-130 | - |
| Bromomethane | 10 | 9.6 | 96 | | | | - | 70-130 | - |
| Chloroethane | 10 | 10. | 100 | | | | - | 70-130 | - |
| Ethyl Alcohol | 50 | 50. | 100 | | | | - | 70-130 | - |
| Dichlorofluoromethane | 10 | 8.9 | 89 | | | | - | 70-130 | - |
| Vinyl bromide | 10 | 8.7 | 87 | | | | - | 70-130 | - |
| Acrolein | 10 | 8.9 | 89 | | | | - | 70-130 | - |
| Acetone | 50 | 50. | 100 | | | | - | 40-160 | - |
| Acetonitrile | 10 | 9.8 | 98 | | | | - | 70-130 | - |
| Trichlorofluoromethane | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| iso-Propyl Alcohol | 25 | 26. | 104 | | | | - | 70-130 | - |
| Acrylonitrile | 10 | 11. | 110 | | | | - | 70-130 | - |
| Pentane | 10 | 10. | 100 | | | | - | 70-130 | - |
| Ethyl ether | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,1-Dichloroethene | 10 | 10. | 100 | | | | - | 70-130 | - |
| tert-Butyl Alcohol | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| Methylene chloride | 10 | 12. | 120 | | | | - | 70-130 | - |
| 3-Chloropropene | 10 | 9.6 | 96 | | | | - | 70-130 | - |
| Carbon disulfide | 10 | 8.5 | 85 | | | | - | 70-130 | - |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 10 | 8.0 | 80 | | | | - | 70-130 | - |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Matrix | : AIR | | |
| LCS Sample ID | : WG967318-3 | Analysis Date : 01/05/17 12:58 | File ID : R1117829 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| trans-1,2-Dichloroethene | 10 | 7.8 | 78 | | | | | - | 70-130 | - |
| 1,1-Dichloroethane | 10 | 8.6 | 86 | | | | | - | 70-130 | - |
| Methyl tert butyl ether | 10 | 7.2 | 72 | | | | | - | 70-130 | - |
| Vinyl acetate | 10 | 11. | 110 | | | | | - | 70-130 | - |
| 2-Butanone | 10 | 8.8 | 88 | | | | | - | 70-130 | - |
| cis-1,2-Dichloroethene | 10 | 9.2 | 92 | | | | | - | 70-130 | - |
| Ethyl Acetate | 10 | 8.6 | 86 | | | | | - | 70-130 | - |
| Chloroform | 10 | 8.1 | 81 | | | | | - | 70-130 | - |
| Tetrahydrofuran | 10 | 8.7 | 87 | | | | | - | 70-130 | - |
| 2,2-Dichloropropane | 10 | 6.6 | 66 | Q | | | | - | 70-130 | - |
| 1,2-Dichloroethane | 10 | 7.9 | 79 | | | | | - | 70-130 | - |
| n-Hexane | 10 | 11. | 110 | | | | | - | 70-130 | - |
| Isopropyl Ether | 10 | 9.3 | 93 | | | | | - | 70-130 | - |
| Ethyl-Tert-Butyl-Ether | 10 | 9.4 | 94 | | | | | - | 70-130 | - |
| 1,1,1-Trichloroethane | 10 | 9.2 | 92 | | | | | - | 70-130 | - |
| 1,1-Dichloropropene | 10 | 9.9 | 99 | | | | | - | 70-130 | - |
| Benzene | 10 | 10. | 100 | | | | | - | 70-130 | - |
| Carbon tetrachloride | 10 | 9.0 | 90 | | | | | - | 70-130 | - |
| Cyclohexane | 10 | 11. | 110 | | | | | - | 70-130 | - |
| Tertiary-Amyl Methyl Ether | 10 | 8.4 | 84 | | | | | - | 70-130 | - |
| Dibromomethane | 10 | 9.6 | 96 | | | | | - | 70-130 | - |
| 1,2-Dichloropropane | 10 | 12. | 120 | | | | | - | 70-130 | - |
| Bromodichloromethane | 10 | 10. | 100 | | | | | - | 70-130 | - |
| 1,4-Dioxane | 10 | 9.8 | 98 | | | | | - | 40-160 | - |
| Trichloroethene | 10 | 9.5 | 95 | | | | | - | 70-130 | - |
| 2,2,4-Trimethylpentane | 10 | 12. | 120 | | | | | - | 70-130 | - |
| Methyl Methacrylate | 10 | 8.5 | 85 | | | | | - | 70-130 | - |
| Heptane | 10 | 12. | 120 | | | | | - | 70-130 | - |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Matrix | : AIR | | |
| LCS Sample ID | : WG967318-3 | Analysis Date : 01/05/17 12:58 | File ID : R1117829 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| cis-1,3-Dichloropropene | 10 | 11. | 110 | | | | - | 70-130 | - |
| 4-Methyl-2-pentanone | 10 | 12. | 120 | | | | - | 70-130 | - |
| trans-1,3-Dichloropropene | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| 1,1,2-Trichloroethane | 10 | 11. | 110 | | | | - | 70-130 | - |
| Toluene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| 1,3-Dichloropropane | 10 | 9.5 | 95 | | | | - | 70-130 | - |
| 2-Hexanone | 10 | 11. | 110 | | | | - | 70-130 | - |
| Dibromochloromethane | 10 | 8.8 | 88 | | | | - | 70-130 | - |
| 1,2-Dibromoethane | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| Butyl Acetate | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| Octane | 10 | 9.0 | 90 | | | | - | 70-130 | - |
| Tetrachloroethene | 10 | 8.4 | 84 | | | | - | 70-130 | - |
| 1,1,1,2-Tetrachloroethane | 10 | 8.1 | 81 | | | | - | 70-130 | - |
| Chlorobenzene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| Ethylbenzene | 10 | 9.9 | 99 | | | | - | 70-130 | - |
| p/m-Xylene | 20 | 20. | 100 | | | | - | 70-130 | - |
| Bromoform | 10 | 8.4 | 84 | | | | - | 70-130 | - |
| Styrene | 10 | 9.8 | 98 | | | | - | 70-130 | - |
| 1,1,2,2-Tetrachloroethane | 10 | 12. | 120 | | | | - | 70-130 | - |
| o-Xylene | 10 | 11. | 110 | | | | - | 70-130 | - |
| 1,2,3-Trichloropropane | 10 | 9.8 | 98 | | | | - | 70-130 | - |
| Nonane (C9) | 10 | 11. | 110 | | | | - | 70-130 | - |
| Isopropylbenzene | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| Bromobenzene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| o-Chlorotoluene | 10 | 10. | 100 | | | | - | 70-130 | - |
| n-Propylbenzene | 10 | 7.6 | 76 | | | | - | 70-130 | - |
| p-Chlorotoluene | 10 | 9.4 | 94 | | | | - | 70-130 | - |
| 4-Ethyltoluene | 10 | 9.8 | 98 | | | | - | 70-130 | - |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Matrix | : AIR | | |
| LCS Sample ID | : WG967318-3 | Analysis Date : 01/05/17 12:58 | File ID : R1117829 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| 1,3,5-Trimethylbenzene | 10 | 10. | 100 | | | | - | 70-130 | - |
| tert-Butylbenzene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| 1,2,4-Trimethylbenzene | 10 | 11. | 110 | | | | - | 70-130 | - |
| Decane (C10) | 10 | 11. | 110 | | | | - | 70-130 | - |
| Benzyl chloride | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,3-Dichlorobenzene | 10 | 9.9 | 99 | | | | - | 70-130 | - |
| 1,4-Dichlorobenzene | 10 | 9.9 | 99 | | | | - | 70-130 | - |
| sec-Butylbenzene | 10 | 9.8 | 98 | | | | - | 70-130 | - |
| p-Isopropyltoluene | 10 | 8.7 | 87 | | | | - | 70-130 | - |
| 1,2-Dichlorobenzene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| n-Butylbenzene | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,2-Dibromo-3-chloropropane | 10 | 9.1 | 91 | | | | - | 70-130 | - |
| Undecane | 10 | 11. | 110 | | | | - | 70-130 | - |
| Dodecane (C12) | 10 | 13. | 130 | | | | - | 70-130 | - |
| 1,2,4-Trichlorobenzene | 10 | 11. | 110 | | | | - | 40-160 | - |
| Naphthalene | 10 | 9.4 | 94 | | | | - | 40-160 | - |
| 1,2,3-Trichlorobenzene | 10 | 9.0 | 90 | | | | - | 70-130 | - |
| Hexachlorobutadiene | 10 | 9.3 | 93 | | | | - | 40-160 | - |

# Method Blank Summary
# Form 4

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab Sample ID | : WG967318-4 | Lab File ID | : R1117831 |
| Instrument ID | : AIRLAB11 | | |
| Matrix | : AIR | Analysis Date | : 01/05/17 14:31 |

| Client Sample No. | Lab Sample ID | Analysis Date |
|---|---|---|
| WG967318-3LCS | WG967318-3 | 01/05/17 12:58 |
| CAN 1586 FC 289 | L1700424-01 | 01/05/17 18:51 |
| CAN 1646 FC 324 | L1700424-02 | 01/05/17 19:25 |
| CAN 2106 FC 316 | L1700424-03 | 01/05/17 20:00 |
| CAN 637 FC 182 | L1700424-04 | 01/05/17 20:34 |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : WG967318-4 | Date Collected | : NA |
| Client ID | : WG967318-4BLANK | Date Received | : NA |
| Sample Location | : | Date Analyzed | : 01/05/17 14:31 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117831 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-45-6 | Chlorodifluoromethane | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 115-07-1 | Propylene | ND | 0.50 | -- | ND | 0.9 | -- | U |
| 74-98-6 | Propane | ND | 0.50 | -- | ND | 0.9 | -- | U |
| 75-71-8 | Dichlorodifluoromethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 74-87-3 | Chloromethane | ND | 0.20 | -- | ND | 0.4 | -- | U |
| 76-14-2 | 1,2-Dichloro-1,1,2,2-tetrafluoroethan | ND | 0.20 | -- | ND | 1. | -- | U |
| 67-56-1 | Methanol | ND | 5.0 | -- | ND | 7 | -- | U |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 106-99-0 | 1,3-Butadiene | ND | 0.20 | -- | ND | 0.4 | -- | U |
| 106-97-8 | Butane | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 74-83-9 | Bromomethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-00-3 | Chloroethane | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 64-17-5 | Ethyl Alcohol | ND | 5.0 | -- | ND | 9 | -- | U |
| 75-43-4 | Dichlorofluoromethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 593-60-2 | Vinyl bromide | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 107-02-8 | Acrolein | ND | 0.50 | -- | ND | 1. | -- | U |
| 67-64-1 | Acetone | ND | 1.0 | -- | ND | 2 | -- | U |
| 75-05-8 | Acetonitrile | ND | 0.20 | -- | ND | 0.3 | -- | U |
| 75-69-4 | Trichlorofluoromethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 67-63-0 | iso-Propyl Alcohol | ND | 0.50 | -- | ND | 1. | -- | U |
| 107-13-1 | Acrylonitrile | ND | 0.50 | -- | ND | 1. | -- | U |
| 109-66-0 | Pentane | ND | 0.20 | -- | ND | 0.6 | -- | U |
| 60-29-7 | Ethyl ether | ND | 0.20 | -- | ND | 0.6 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-65-0 | tert-Butyl Alcohol | ND | 0.50 | -- | ND | 2. | -- | U |
| 75-09-2 | Methylene chloride | ND | 0.50 | -- | ND | 2 | -- | U |
| 107-05-1 | 3-Chloropropene | ND | 0.20 | -- | ND | 0.6 | -- | U |
| 75-15-0 | Carbon disulfide | ND | 0.20 | -- | ND | 0.6 | -- | U |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : WG967318-4 | Date Collected | : NA |
| Client ID | : WG967318-4BLANK | Date Received | : NA |
| Sample Location | : | Date Analyzed | : 01/05/17 14:31 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117831 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 76-13-1 | 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | -- | ND | 2. | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 1634-04-4 | Methyl tert butyl ether | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 108-05-4 | Vinyl acetate | ND | 1.0 | -- | ND | 4. | -- | U |
| 78-93-3 | 2-Butanone | ND | 0.50 | -- | ND | 1. | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 141-78-6 | Ethyl Acetate | ND | 0.50 | -- | ND | 2. | -- | U |
| 67-66-3 | Chloroform | ND | 0.20 | -- | ND | 1. | -- | U |
| 109-99-9 | Tetrahydrofuran | ND | 0.50 | -- | ND | 1. | -- | U |
| 594-20-7 | 2,2-Dichloropropane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 110-54-3 | n-Hexane | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 108-20-3 | Isopropyl Ether | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 637-92-3 | Ethyl-Tert-Butyl-Ether | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 563-58-6 | 1,1-Dichloropropene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 71-43-2 | Benzene | ND | 0.20 | -- | ND | 0.6 | -- | U |
| 56-23-5 | Carbon tetrachloride | ND | 0.20 | -- | ND | 1. | -- | U |
| 110-82-7 | Cyclohexane | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 994-05-8 | Tertiary-Amyl Methyl Ether | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 74-95-3 | Dibromomethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 78-87-5 | 1,2-Dichloropropane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 75-27-4 | Bromodichloromethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 123-91-1 | 1,4-Dioxane | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 540-84-1 | 2,2,4-Trimethylpentane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 80-62-6 | Methyl Methacrylate | ND | 0.50 | -- | ND | 2. | -- | U |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : WG967318-4 | Date Collected | : NA |
| Client ID | : WG967318-4BLANK | Date Received | : NA |
| Sample Location | : | Date Analyzed | : 01/05/17 14:31 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117831 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 142-82-5 | Heptane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 108-10-1 | 4-Methyl-2-pentanone | ND | 0.50 | -- | ND | 2. | -- | U |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 108-88-3 | Toluene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 142-28-9 | 1,3-Dichloropropane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 591-78-6 | 2-Hexanone | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 124-48-1 | Dibromochloromethane | ND | 0.20 | -- | ND | 2. | -- | U |
| 106-93-4 | 1,2-Dibromoethane | ND | 0.20 | -- | ND | 2. | -- | U |
| 123-86-4 | Butyl Acetate | ND | 0.50 | -- | ND | 2. | -- | U |
| 111-65-9 | Octane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 108-90-7 | Chlorobenzene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 100-41-4 | Ethylbenzene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 179601-23-1 | p/m-Xylene | ND | 0.40 | -- | ND | 2. | -- | U |
| 75-25-2 | Bromoform | ND | 0.20 | -- | ND | 2. | -- | U |
| 100-42-5 | Styrene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 95-47-6 | o-Xylene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 96-18-4 | 1,2,3-Trichloropropane | ND | 0.20 | -- | ND | 1. | -- | U |
| 111-84-2 | Nonane (C9) | ND | 0.20 | -- | ND | 1. | -- | U |
| 98-82-8 | Isopropylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 108-86-1 | Bromobenzene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 95-49-8 | o-Chlorotoluene | ND | 0.20 | -- | ND | 1. | -- | U |
| 103-65-1 | n-Propylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 106-43-4 | p-Chlorotoluene | ND | 0.20 | -- | ND | 1. | -- | U |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : WG967318-4 | Date Collected | : NA |
| Client ID | : WG967318-4BLANK | Date Received | : NA |
| Sample Location | : | Date Analyzed | : 01/05/17 14:31 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117831 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 622-96-8 | 4-Ethyltoluene | ND | 0.20 | -- | ND | 1. | -- | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 98-06-6 | tert-Butylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 124-18-5 | Decane (C10) | ND | 0.20 | -- | ND | 1. | -- | U |
| 100-44-7 | Benzyl chloride | ND | 0.20 | -- | ND | 1. | -- | U |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 135-98-8 | sec-Butylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 99-87-6 | p-Isopropyltoluene | ND | 0.20 | -- | ND | 1. | -- | U |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 104-51-8 | n-Butylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 0.20 | -- | ND | 2. | -- | U |
| 1120-21-4 | Undecane | ND | 0.20 | -- | ND | 1. | -- | U |
| 112-40-3 | Dodecane (C12) | ND | 0.20 | -- | ND | 1. | -- | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 91-20-3 | Naphthalene | ND | 0.20 | -- | ND | 1. | -- | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 87-68-3 | Hexachlorobutadiene | ND | 0.20 | -- | ND | 2. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117831.d
Acq On : 5 Jan 2017 2:31 pm
Operator : AIRLAB11:RY
Sample : WG967318-4,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 05 14:57:17 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : Default-LCS-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.38 | 49 | 150788 | 10.000 ppbV | -0.01 |
| Standard Area = 131031 | | | Recovery | = 115.08% | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 439544 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery | = 124.24% | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 86069 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery | = 110.78% | |
| System Monitoring Compounds | | | | | |
| Target Compounds | | | | | Qvalue |
| 2) chlorodifluoromethane | 0.00 | | 0 | N.D. | |
| 3) propylene | 0.00 | | 0 | N.D. | |
| 4) propane | 0.00 | | 0 | N.D. d | |
| 5) dichlorodifluoromethane | 0.00 | | 0 | N.D. | |
| 6) chloromethane | 0.00 | | 0 | N.D. | |
| 7) Freon-114 | 0.00 | | 0 | N.D. | |
| 8) methanol | 4.77 | 31 | 1502 | 0.441 ppbV # | 1 |
| 9) vinyl chloride | 0.00 | | 0 | N.D. | |
| 10) 1,3-butadiene | 0.00 | | 0 | N.D. | |
| 11) butane | 0.00 | | 0 | N.D. | |
| 13) bromomethane | 0.00 | | 0 | N.D. | |
| 14) chloroethane | 0.00 | | 0 | N.D. | |
| 15) ethanol | 5.94 | 31 | 1362 | 0.180 ppbV # | 82 |
| 16) dichlorofluoromethane | 0.00 | | 0 | N.D. | |
| 17) vinyl bromide | 0.00 | | 0 | N.D. | |
| 18) acrolein | 0.00 | | 0 | N.D. | |
| 19) acetone | 6.63 | 43 | 1942 | 0.099 ppbV # | 88 |
| 20) acetonitrile | 0.00 | | 0 | N.D. | |
| 21) trichlorofluoromethane | 0.00 | | 0 | N.D. | |
| 22) isopropyl alcohol | 7.03 | | 0 | N.D. | |
| 23) acrylonitrile | 0.00 | | 0 | N.D. | |
| 24) pentane | 7.23 | | 0 | N.D. | |
| 25) ethyl ether | 0.00 | | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | | 0 | N.D. | |
| 27) tertiary butyl alcohol | 0.00 | | 0 | N.D. | |
| 28) methylene chloride | 7.76 | 49 | 1520 | 0.097 ppbV | 93 |
| 29) 3-chloropropene | 0.00 | | 0 | N.D. | |
| 30) carbon disulfide | 0.00 | | 0 | N.D. | |
| 31) Freon 113 | 0.00 | | 0 | N.D. | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117831.d
Acq On : 5 Jan 2017 2:31 pm
Operator : AIRLAB11:RY
Sample : WG967318-4,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 05 14:57:17 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : Default-LCS-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 32) trans-1,2-dichloroethene | 0.00 | | 0 | N.D. | | |
| 33) 1,1-dichloroethane | 0.00 | | 0 | N.D. | | |
| 34) MTBE | 0.00 | | 0 | N.D. | | |
| 35) vinyl acetate | 0.00 | | 0 | N.D. | | |
| 36) 2-butanone | 0.00 | | 0 | N.D. | | |
| 37) cis-1,2-dichloroethene | 0.00 | | 0 | N.D. | | |
| 38) Ethyl Acetate | 0.00 | | 0 | N.D. | | |
| 39) chloroform | 0.00 | | 0 | N.D. | | |
| 40) Tetrahydrofuran | 0.00 | | 0 | N.D. | | |
| 41) 2,2-dichloropropane | 0.00 | | 0 | N.D. | | |
| 42) 1,2-dichloroethane | 0.00 | | 0 | N.D. | | |
| 44) hexane | 0.00 | | 0 | N.D. | | |
| 45) diisopropyl ether | 0.00 | | 0 | N.D. | | |
| 46) tert-butyl ethyl ether | 0.00 | | 0 | N.D. | | |
| 48) 1,1,1-trichloroethane | 0.00 | | 0 | N.D. | | |
| 49) 1,1-dichloropropene | 0.00 | | 0 | N.D. | | |
| 50) benzene | 0.00 | | 0 | N.D. | | |
| 52) carbon tetrachloride | 0.00 | | 0 | N.D. | | |
| 53) cyclohexane | 0.00 | | 0 | N.D. | d | |
| 54) tert-amyl methyl ether | 0.00 | | 0 | N.D. | | |
| 55) dibromomethane | 0.00 | | 0 | N.D. | | |
| 56) 1,2-dichloropropane | 0.00 | | 0 | N.D. | | |
| 57) bromodichloromethane | 0.00 | | 0 | N.D. | | |
| 58) 1,4-dioxane | 0.00 | | 0 | N.D. | | |
| 59) trichloroethene | 0.00 | | 0 | N.D. | | |
| 60) 2,2,4-trimethylpentane | 0.00 | | 0 | N.D. | | |
| 61) methyl methacrylate | 0.00 | | 0 | N.D. | | |
| 62) heptane | 0.00 | | 0 | N.D. | | |
| 63) cis-1,3-dichloropropene | 0.00 | | 0 | N.D. | | |
| 64) 4-methyl-2-pentanone | 0.00 | | 0 | N.D. | | |
| 65) trans-1,3-dichloropropene | 0.00 | | 0 | N.D. | | |
| 66) 1,1,2-trichloroethane | 0.00 | | 0 | N.D. | | |
| 68) toluene | 0.00 | | 0 | N.D. | | |
| 71) 1,3-dichloropropane | 0.00 | | 0 | N.D. | | |
| 72) 2-hexanone | 0.00 | | 0 | N.D. | | |
| 74) dibromochloromethane | 0.00 | | 0 | N.D. | | |
| 75) 1,2-dibromoethane | 0.00 | | 0 | N.D. | | |
| 76) butyl acetate | 0.00 | | 0 | N.D. | | |
| 77) octane | 0.00 | | 0 | N.D. | | |
| 78) tetrachloroethene | 0.00 | | 0 | N.D. | | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117831.d
Acq On : 5 Jan 2017 2:31 pm
Operator : AIRLAB11:RY
Sample : WG967318-4,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 05 14:57:17 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : Default-LCS-AP2 - All compounds listed

| | Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 79) | 1,1,1,2-tetrachloroethane | 0.00 | | 0 | N.D. | |
| 80) | chlorobenzene | 0.00 | | 0 | N.D. | |
| 81) | ethylbenzene | 0.00 | | 0 | N.D. | |
| 83) | m+p-xylene | 0.00 | | 0 | N.D. | |
| 84) | bromoform | 0.00 | | 0 | N.D. | |
| 85) | styrene | 0.00 | | 0 | N.D. | |
| 86) | 1,1,2,2-tetrachloroethane | 0.00 | | 0 | N.D. | |
| 87) | o-xylene | 0.00 | | 0 | N.D. | |
| 88) | 1,2,3-trichloropropane | 0.00 | | 0 | N.D. | |
| 89) | nonane | 0.00 | | 0 | N.D. | |
| 91) | isopropylbenzene | 0.00 | | 0 | N.D. | |
| 92) | bromobenzene | 0.00 | | 0 | N.D. | |
| 93) | 2-chlorotoluene | 0.00 | | 0 | N.D. | |
| 94) | n-propylbenzene | 0.00 | | 0 | N.D. | |
| 95) | 4-chlorotoluene | 18.66 | | 0 | N.D. | |
| 96) | 4-ethyl toluene | 0.00 | | 0 | N.D. | |
| 97) | 1,3,5-trimethylbenzene | 0.00 | | 0 | N.D. | |
| 98) | tert-butylbenzene | 0.00 | | 0 | N.D. | |
| 99) | 1,2,4-trimethylbenzene | 0.00 | | 0 | N.D. | |
| 100) | decane | 0.00 | | 0 | N.D. | |
| 101) | Benzyl Chloride | 0.00 | | 0 | N.D. | |
| 102) | 1,3-dichlorobenzene | 19.21 | | 0 | N.D. | |
| 103) | 1,4-dichlorobenzene | 19.26 | | 0 | N.D. | |
| 104) | sec-butylbenzene | 0.00 | | 0 | N.D. | |
| 106) | p-isopropyltoluene | 0.00 | | 0 | N.D. | |
| 107) | 1,2-dichlorobenzene | 19.52 | | 0 | N.D. | |
| 108) | n-butylbenzene | 0.00 | | 0 | N.D. | |
| 111) | 1,2-dibromo-3-chloropr... | 0.00 | | 0 | N.D. | |
| 112) | undecane | 0.00 | | 0 | N.D. | |
| 114) | dodecane | 0.00 | | 0 | N.D. | |
| 115) | 1,2,4-trichlorobenzene | 0.00 | | 0 | N.D. | |
| 116) | naphthalene | 21.13 | | 0 | N.D. | |
| 117) | 1,2,3-trichlorobenzene | 21.39 | | 0 | N.D. | |
| 119) | hexachlorobutadiene | 0.00 | | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117831.d
Acq On : 5 Jan 2017 2:31 pm
Operator : AIRLAB11:RY
Sample : WG967318-4,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 05 14:57:17 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : Default-LCS-AP2 - All compounds listedT\R1117828.d

#8
methanol
Concen: 0.44 ppbV
RT: 4.77 min Scan# 151
Delta R.T. 0.045 min
Lab File: R1117831.d
Acq: 5 Jan 2017 2:31 pm

Tgt Ion: 31 Resp: 1502

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 31 | 100 | | |
| 32 | 289.4 | 56.6 | 84.8# |
| 29 | 76.1 | 53.6 | 80.4 |

#15
ethanol
Concen: 0.18 ppbV
RT: 5.94 min Scan# 265
Delta R.T. 0.065 min
Lab File: R1117831.d
Acq: 5 Jan 2017 2:31 pm

Tgt Ion: 31 Resp: 1362

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 31 | 100 | | |
| 45 | 49.1 | 50.3 | 75.5# |

#19
acetone
Concen: 0.10 ppbV
RT: 6.63 min Scan# 340
Delta R.T. 0.121 min
Lab File: R1117831.d
Acq: 5 Jan 2017 2:31 pm

Tgt Ion: 43 Resp: 1942

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 58 | 37.9 | 25.0 | 37.6# |
| 57 | 0.0 | 0.7 | 1.1# |

#28
methylene chloride
Concen: 0.10 ppbV
RT: 7.76 min Scan# 461
Delta R.T. -0.009 min
Lab File: R1117831.d
Acq: 5 Jan 2017 2:31 pm

Tgt Ion: 49 Resp: 1520

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 49 | 100 | | |
| 84 | 78.1 | 67.8 | 101.6 |

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117831.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/5/2017 2:31 pm | Instrument | : Airlab 11 |
| Sample | : WG967318-4,3,250,250 | Quant Date | : 1/5/2017 2:56 pm |

There are no manual integrations or false positives in this file.

# Instrument Performance Check
# Bromofluorobenzene (BFB)
# Form 5

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Instrument ID | : AIRLAB11 | Analysis Date | : 12/06/16 14:58 |
| Tune Standard | : WG958917-1 | Tune File ID | : R1117341_tune |

| m/e | Ion Abundance Criteria | %Relative Abundance |
|---|---|---|
| 50 | 8.0 - 40.0% of mass 95 | 18.1 |
| 75 | 30.0 - 66.0% of mass 95 | 48.8 |
| 95 | Base Peak, 100% relative abundance | 100 |
| 96 | 5.0 - 9.0% of mass 95 | 6.8 |
| 173 | Less than 2.0% of mass 174 | 0.7 (.8 )1 |
| 174 | 50.0 - 120.0% of mass 95 | 94.8 |
| 175 | 4.0 - 9.0% of mass 174 | 6.7 (7 )1 |
| 176 | 93.0 - 101% of mass 174 | 92.7 (97.8)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.1 (6.6 )2 |

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

| Client Sample ID | Lab Sample ID | File ID | Analysis Date/Time |
|---|---|---|---|
| STD0.2 | R925400-1 | R1117345 | 12/06/16 17:13 |
| STD0.5 | R925400-2 | R1117346 | 12/06/16 17:46 |
| STD1.0 | R925400-4 | R1117347 | 12/06/16 18:22 |
| STD5.0 | R925400-3 | R1117348 | 12/06/16 18:56 |
| STD10.0 | R925400-5 | R1117349 | 12/06/16 19:32 |
| STD20.0 | R925400-6 | R1117350 | 12/06/16 20:04 |
| STD50.0 | R925400-7 | R1117351 | 12/06/16 20:38 |
| STD100.0 | R925400-8 | R1117352 | 12/06/16 21:14 |
| ICV Quant | R925400-9 | R1117355 | 12/07/16 10:01 |

# Instrument Performance Check
# Bromofluorobenzene (BFB)
# Form 5

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Instrument ID | : AIRLAB11 | Analysis Date | : 01/05/17 11:45 |
| Tune Standard | : WG967318-1 | Tune File ID | : R1117827_tune |

| m/e | Ion Abundance Criteria | %Relative Abundance |
|---|---|---|
| 50 | 8.0 - 40.0% of mass 95 | 18.6 |
| 75 | 30.0 - 66.0% of mass 95 | 47.9 |
| 95 | Base Peak, 100% relative abundance | 100 |
| 96 | 5.0 - 9.0% of mass 95 | 6.4 |
| 173 | Less than 2.0% of mass 174 | 0.8 (.9 )1 |
| 174 | 50.0 - 120.0% of mass 95 | 86.1 |
| 175 | 4.0 - 9.0% of mass 174 | 6.2 (7.2 )1 |
| 176 | 93.0 - 101% of mass 174 | 83.7 (97.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.4 (6.4 )2 |

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

| Client Sample ID | Lab Sample ID | File ID | Analysis Date/Time |
|---|---|---|---|
| WG967318-2CCAL | WG967318-2 | R1117828 | 01/05/17 12:22 |
| WG967318-3LCS | WG967318-3 | R1117829 | 01/05/17 12:58 |
| WG967318-4BLANK | WG967318-4 | R1117831 | 01/05/17 14:31 |
| CAN 1586 FC 289 | L1700424-01 | R1117838 | 01/05/17 18:51 |
| CAN 1646 FC 324 | L1700424-02 | R1117839 | 01/05/17 19:25 |
| CAN 2106 FC 316 | L1700424-03 | R1117840 | 01/05/17 20:00 |
| CAN 637 FC 182 | L1700424-04 | R1117841 | 01/05/17 20:34 |

# Internal Standard Area and RT Summary
# Form 8

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Instrument ID | : AIRLAB11 | Analysis Date | : 01/05/17 12:22 |
| Sample No | : WG967318-2 | Lab File ID | : R1117828 |

| | Bromochloromethane | | 1,4-Difluorobenzene | | Chlorobenzene-d5 | |
|---|---|---|---|---|---|---|
| | Area | RT | Area | RT | Area | RT |
| WG967318-2 | 131031 | 10.39 | 353775 | 12.61 | 77696 | 16.97 |
| Upper Limit | 183443 | 10.72 | 495285 | 12.94 | 108774 | 17.30 |
| Lower Limit | 78619 | 10.06 | 212265 | 12.28 | 46618 | 16.64 |
| Sample ID | | | | | | |
| WG967318-3 LCS | 142868 | 10.39 | 380550 | 12.61 | 77439 | 16.97 |
| WG967318-4 BLANK | 150788 | 10.38 | 439544 | 12.61 | 86069 | 16.97 |
| CAN 1586 FC 289 | 148544 | 10.39 | 410566 | 12.61 | 82965 | 16.97 |
| CAN 1646 FC 324 | 145417 | 10.39 | 416226 | 12.61 | 82408 | 16.97 |
| CAN 2106 FC 316 | 144635 | 10.39 | 402050 | 12.61 | 80280 | 16.97 |
| CAN 637 FC 182 | 143953 | 10.39 | 395979 | 12.61 | 81123 | 16.97 |

Area Upper Limit = +40% of internal standard area
Area Lower Limit = - 40% of internal standard area

RT Upper Limit = +0.33 minutes of internal standard RT
RT Lower Limit = -0.33 minutes of internal standard RT

* Values outside of QC limits

# Sample Data Summary

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : L1700424-01 | Date Collected | : 01/05/17 16:49 |
| Client ID | : CAN 1586 FC 289 | Date Received | : 01/05/17 |
| Sample Location | : | Date Analyzed | : 01/05/17 18:51 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117838 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117838.d
Acq On : 5 Jan 2017 6:51 pm
Operator : AIRLAB11:RY
Sample : L1700424-01,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 05 22:38:23 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : 9_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.39 | 49 | 148544 | 10.000 ppbV | # 0.00 |
| Standard Area = 131031 | | | Recovery | = 113.37% | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 410566 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery | = 116.05% | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 82965 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery | = 106.78% | |
| System Monitoring Compounds | | | | | |
| Target Compounds | | | | | Qvalue |
| 9) vinyl chloride | 0.00 | | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | | 0 | N.D. | |
| 32) trans-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 33) 1,1-dichloroethane | 0.00 | | 0 | N.D. | |
| 37) cis-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 42) 1,2-dichloroethane | 0.00 | | 0 | N.D. | |
| 48) 1,1,1-trichloroethane | 0.00 | | 0 | N.D. | |
| 59) trichloroethene | 0.00 | | 0 | N.D. | |
| 78) tetrachloroethene | 0.00 | | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117838.d
Acq On : 5 Jan 2017 6:51 pm
Operator : AIRLAB11:RY
Sample : L1700424-01,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 05 22:38:23 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : 9_Chlorinateds - .Airlab11\2017\170105T\R1117828.d

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117838.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/5/2017 6:51 pm | Instrument | : Airlab 11 |
| Sample | : L1700424-01,3,250,250 | Quant Date | : 1/5/2017 10:38 pm |

There are no manual integrations or false positives in this file.

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : L1700424-02 | Date Collected | : 01/05/17 16:49 |
| Client ID | : CAN 1646 FC 324 | Date Received | : 01/05/17 |
| Sample Location | : | Date Analyzed | : 01/05/17 19:25 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117839 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117839.d
Acq On : 5 Jan 2017 7:25 pm
Operator : AIRLAB11:RY
Sample : L1700424-02,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 05 22:38:37 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : 9_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.39 | 49 | 145417 | 10.000 ppbV | 0.00 |
| Standard Area = 131031 | | | Recovery | = 110.98% | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 416226 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery | = 117.65% | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 82408 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery | = 106.06% | |
| System Monitoring Compounds | | | | | |
| Target Compounds | | | | | Qvalue |
| 9) vinyl chloride | 0.00 | | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | | 0 | N.D. | |
| 32) trans-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 33) 1,1-dichloroethane | 0.00 | | 0 | N.D. | |
| 37) cis-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 42) 1,2-dichloroethane | 0.00 | | 0 | N.D. | |
| 48) 1,1,1-trichloroethane | 0.00 | | 0 | N.D. | |
| 59) trichloroethene | 0.00 | | 0 | N.D. | |
| 78) tetrachloroethene | 0.00 | | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117839.d
Acq On : 5 Jan 2017 7:25 pm
Operator : AIRLAB11:RY
Sample : L1700424-02,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 05 22:38:37 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : 9_Chlorinateds - .Airlab11\2017\170105T\R1117828.d

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117839.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/5/2017 7:25 pm | Instrument | : Airlab 11 |
| Sample | : L1700424-02,3,250,250 | Quant Date | : 1/5/2017 10:38 pm |

There are no manual integrations or false positives in this file.

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : L1700424-03 | Date Collected | : 01/05/17 16:49 |
| Client ID | : CAN 2106 FC 316 | Date Received | : 01/05/17 |
| Sample Location | : | Date Analyzed | : 01/05/17 20:00 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117840 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117840.d
Acq On : 5 Jan 2017 8:00 pm
Operator : AIRLAB11:RY
Sample : L1700424-03,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 05 22:38:52 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : 9_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.39 | 49 | 144635 | 10.000 ppbV | # 0.00 |
| Standard Area = 131031 | | | Recovery | = 110.38% | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 402050 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery | = 113.65% | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 80280 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery | = 103.33% | |
| System Monitoring Compounds | | | | | |
| Target Compounds | | | | | Qvalue |
| 9) vinyl chloride | 0.00 | | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | | 0 | N.D. | |
| 32) trans-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 33) 1,1-dichloroethane | 0.00 | | 0 | N.D. | |
| 37) cis-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 42) 1,2-dichloroethane | 0.00 | | 0 | N.D. | |
| 48) 1,1,1-trichloroethane | 0.00 | | 0 | N.D. | |
| 59) trichloroethene | 0.00 | | 0 | N.D. | |
| 78) tetrachloroethene | 0.00 | | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117840.d
Acq On : 5 Jan 2017 8:00 pm
Operator : AIRLAB11:RY
Sample : L1700424-03,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 05 22:38:52 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : 9_Chlorinateds - .Airlab11\2017\170105T\R1117828.d

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117840.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/5/2017 8:00 pm | Instrument | : Airlab 11 |
| Sample | : L1700424-03,3,250,250 | Quant Date | : 1/5/2017 10:38 pm |

There are no manual integrations or false positives in this file.

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : L1700424-04 | Date Collected | : 01/05/17 16:49 |
| Client ID | : CAN 637 FC 182 | Date Received | : 01/05/17 |
| Sample Location | : | Date Analyzed | : 01/05/17 20:34 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117841 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117841.d
Acq On : 5 Jan 2017 8:34 pm
Operator : AIRLAB11:RY
Sample : L1700424-04,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 05 22:39:05 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : 9_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.39 | 49 | 143953 | 10.000 ppbV | # 0.00 |
| Standard Area = 131031 | | | Recovery | = 109.86% | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 395979 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery | = 111.93% | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 81123 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery | = 104.41% | |
| System Monitoring Compounds | | | | | |
| Target Compounds | | | | | Qvalue |
| 9) vinyl chloride | 0.00 | | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | | 0 | N.D. | |
| 32) trans-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 33) 1,1-dichloroethane | 0.00 | | 0 | N.D. | |
| 37) cis-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 42) 1,2-dichloroethane | 0.00 | | 0 | N.D. | |
| 48) 1,1,1-trichloroethane | 0.00 | | 0 | N.D. | |
| 59) trichloroethene | 0.00 | | 0 | N.D. | |
| 78) tetrachloroethene | 0.00 | | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117841.d
Acq On : 5 Jan 2017 8:34 pm
Operator : AIRLAB11:RY
Sample : L1700424-04,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 05 22:39:05 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : 9_Chlorinateds - .Airlab11\2017\170105T\R1117828.d

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117841.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/5/2017 8:34 pm | Instrument | : Airlab 11 |
| Sample | : L1700424-04,3,250,250 | Quant Date | : 1/5/2017 10:39 pm |

There are no manual integrations or false positives in this file.

# Standards Data Summary

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | : **Alpha Analytical** | **Lab Number** | : **L1700424** |
| **Project Name** | : **INDIV. CANISTER CERTIFICATION** | **Project Number** | : **CANISTER QC INDIV** |
| **Instrument ID** | : **AIRLAB11** | **Ical Ref** | : **ICAL13187** |
| **Calibration dates** | : **12/06/16 17:13 12/06/16 21:14** | | |

Calibration Files
0.2 =R1117345.d 0.5 =R1117346.d 1.0 =R1117347.d 5.0 =R1117348.d 10 =R1117349.d 20 =R1117350.d
50 =R1117351.d 100 =R1117352.d

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) | I | bromochloromethane | ----------ISTD---------- | | | | | | | | | |
| 2) | | chlorodifluoromethane | 1.663 | 1.513 | 1.410 | 1.399 | 1.355 | 1.467 | 1.356 | 1.261 | 1.4282 | 8.51 |
| 3) | | propylene | 0.699 | 0.577 | 0.558 | 0.551 | 0.533 | 0.563 | 0.507 | 0.463 | 0.5563 | 12.22 |
| 4) | | propane | 0.628 | 0.496 | 0.482 | 0.472 | 0.442 | 0.463 | 0.407 | 0.367 | 0.4697 | 16.34 |
| 5) | | dichlorodifluoromethane | 1.981 | 1.601 | 1.756 | 1.878 | 1.662 | 1.650 | 1.267 | 1.226 | 1.6278 | 16.39 |
| 6) | C | chloromethane | 0.855 | 0.802 | 0.807 | 0.796 | 0.768 | 0.800 | 0.715 | 0.645 | 0.7737 | 8.44 |
| 7) | | Freon-114 | 3.613 | 3.312 | 3.147 | 3.138 | 2.914 | 2.899 | 2.247 | 1.918 | 2.8986 | 19.28 |
| 8) | C | methanol | | | 0.271 | 0.250 | 0.234 | 0.231 | 0.198 | 0.171 | 0.2259 | 15.93 |
| 9) | C | vinyl chloride | 1.176 | 1.104 | 1.025 | 0.983 | 0.930 | 0.939 | 0.810 | 0.718 | 0.9607 | 15.47 |
| 10) | C | 1,3-butadiene | 0.834 | 0.742 | 0.717 | 0.705 | 0.679 | 0.690 | 0.605 | 0.547 | 0.6900 | 12.51 |
| 11) | | butane | 1.634 | 1.437 | 1.372 | 1.289 | 1.209 | 1.260 | 1.085 | 0.959 | 1.2807 | 16.31 |
| 12) | C | acetaldehyde | | 0.540 | 0.485 | 0.417 | 0.385 | 0.398 | 0.319 | 0.257 | 0.4000 | 23.78 |
| 13) | C | bromomethane | 1.195 | 1.100 | 1.087 | 1.049 | 1.006 | 1.038 | 0.919 | 0.831 | 1.0281 | 10.93 |
| 14) | C | chloroethane | 0.635 | 0.583 | 0.550 | 0.544 | 0.519 | 0.546 | 0.483 | 0.444 | 0.5381 | 10.83 |
| 15) | | ethanol | | 0.616 | 0.529 | 0.523 | 0.477 | 0.530 | 0.454 | 0.383 | 0.5017 | 14.60 |
| 16) | | dichlorofluoromethane | 2.847 | 2.495 | 2.425 | 2.368 | 2.260 | 2.359 | 2.083 | 1.844 | 2.3352 | 12.61 |
| 17) | C | vinyl bromide | 1.285 | 1.196 | 1.147 | 1.142 | 1.094 | 1.130 | 0.995 | 0.883 | 1.1090 | 11.08 |
| 18) | C | acrolein | 0.471 | 0.394 | 0.382 | 0.379 | 0.370 | 0.398 | 0.366 | 0.333 | 0.3866 | 10.27 |
| 19) | | acetone | 1.783 | 1.499 | 1.433 | 1.241 | 1.184 | 1.279 | 1.079 | 0.902 | 1.2999 | 20.87 |
| 20) | C | acetonitrile | 1.353 | 0.853 | 0.783 | 0.740 | 0.695 | 0.739 | 0.651 | 0.582 | 0.7994 | 29.80 |
| 21) | | trichlorofluoromethane | 3.642 | 3.349 | 3.200 | 3.126 | 2.966 | 3.066 | 2.625 | 2.260 | 3.0292 | 14.10 |
| 22) | | isopropyl alcohol | 1.798 | 1.644 | 1.449 | 1.385 | 1.289 | 1.417 | 1.217 | 1.042 | 1.4051 | 16.88 |
| 23) | C | acrylonitrile | 0.716 | 0.653 | 0.539 | 0.660 | 0.652 | 0.603 | 0.636 | 0.577 | 0.6294 | 8.73 |
| 24) | | pentane | 2.144 | 1.683 | 1.337 | 1.517 | 1.455 | 1.291 | 1.303 | 1.078 | 1.4759 | 21.92 |
| 25) | | ethyl ether | 0.948 | 1.026 | 0.848 | 0.958 | 0.913 | 0.815 | 0.802 | 0.651 | 0.8701 | 13.45 |
| 26) | C | 1,1-dichloroethene | 1.791 | 1.872 | 1.565 | 1.774 | 1.580 | 1.576 | 1.536 | 1.300 | 1.6244 | 11.21 |
| 27) | | tertiary butyl alcohol | | 2.402 | 1.885 | 1.919 | 1.815 | 1.903 | 1.961 | 1.570 | 1.9222 | 12.91 |
| 28) | C | methylene chloride | | 1.438 | 1.119 | 1.030 | 0.972 | 1.001 | 0.949 | 0.794 | 1.0432 | 19.15 |
| 29) | C | 3-chloropropene | 1.191 | 1.099 | 1.004 | 1.004 | 0.967 | 1.001 | 0.899 | 0.827 | 0.9989 | 11.20 |
| 30) | C | carbon disulfide | 2.959 | 2.969 | 2.649 | 2.876 | 2.750 | 2.904 | 2.628 | 2.355 | 2.7612 | 7.64 |
| 31) | | Freon 113 | 2.427 | 2.337 | 2.188 | 2.163 | 2.063 | 2.177 | 1.923 | 1.689 | 2.1207 | 10.97 |
| 32) | | trans-1,2-dichloroethene | 1.536 | 1.414 | 1.369 | 1.417 | 1.389 | 1.421 | 1.256 | 1.128 | 1.3662 | 9.01 |
| 33) | C | 1,1-dichloroethane | 1.968 | 1.809 | 1.748 | 1.668 | 1.598 | 1.667 | 1.457 | 1.309 | 1.6532 | 12.37 |
| 34) | C | MTBE | 3.106 | 2.990 | 2.826 | 2.776 | 2.620 | 2.655 | 2.322 | 2.071 | 2.6706 | 12.75 |
| 35) | C | vinyl acetate | 0.945 | 0.765 | 0.694 | 0.827 | 0.997 | 1.225 | 1.278 | 1.262 | 0.9991 | 23.28 |
| 36) | C | 2-butanone | 2.675 | 2.276 | 2.059 | 1.971 | 1.886 | 1.953 | 1.709 | 1.547 | 2.0094 | 17.25 |
| 37) | | cis-1,2-dichloroethene | 1.443 | 1.322 | 1.322 | 1.277 | 1.219 | 1.297 | 1.168 | 1.066 | 1.2641 | 8.99 |
| 38) | | Ethyl Acetate | 0.327 | 0.359 | 0.295 | 0.296 | 0.278 | 0.284 | 0.244 | 0.216 | 0.2874 | 15.45 |

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | **: Alpha Analytical** | **Lab Number** | **: L1700424** |
| **Project Name** | **: INDIV. CANISTER CERTIFICATION** | **Project Number** | **: CANISTER QC INDIV** |
| **Instrument ID** | **: AIRLAB11** | **Ical Ref** | **: ICAL13187** |
| **Calibration dates** | **: 12/06/16 17:13 12/06/16 21:14** | | |

Calibration Files
0.2 =R1117345.d 0.5 =R1117346.d 1.0 =R1117347.d 5.0 =R1117348.d 10 =R1117349.d 20 =R1117350.d
50 =R1117351.d 100 =R1117352.d

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 39) | C | chloroform | 2.541 | 2.263 | 2.101 | 2.029 | 1.916 | 1.977 | 1.724 | 1.524 | 2.0095 | 15.54 |
| 40) | | Tetrahydrofuran | 1.139 | 1.066 | 0.908 | 0.960 | 0.910 | 0.956 | 0.861 | 0.789 | 0.9488 | 11.72 |
| 41) | | 2,2-dichloropropane | 2.077 | 1.955 | 1.805 | 1.751 | 1.657 | 1.710 | 1.494 | 1.337 | 1.7232 | 13.76 |
| 42) | C | 1,2-dichloroethane | 1.583 | 1.481 | 1.399 | 1.362 | 1.322 | 1.397 | 1.245 | 1.129 | 1.3648 | 10.17 |
| 43) | I | 1,4-difluorobenzene | ----------ISTD---------- | | | | | | | | | |
| 44) | C | hexane | 0.433 | 0.417 | 0.399 | 0.407 | 0.390 | 0.405 | 0.381 | 0.357 | 0.3986 | 5.79 |
| 45) | | diisopropyl ether | 0.255 | 0.272 | 0.241 | 0.242 | 0.236 | 0.250 | 0.231 | 0.215 | 0.2427 | 6.93 |
| 46) | | tert-butyl ethyl ether | 0.886 | 0.814 | 0.795 | 0.818 | 0.789 | 0.841 | 0.776 | 0.743 | 0.8077 | 5.36 |
| 47) | s | 1,2-dichloroethane-D4 | 0.198 | 0.191 | 0.187 | 0.207 | 0.197 | 0.191 | 0.204 | 0.209 | 0.1981 | 4.07 |
| 48) | C | 1,1,1-trichloroethane | 0.674 | 0.652 | 0.623 | 0.630 | 0.613 | 0.664 | 0.626 | 0.609 | 0.6362 | 3.77 |
| 49) | | 1,1-dichloropropene | 0.478 | 0.442 | 0.443 | 0.443 | 0.432 | 0.468 | 0.444 | 0.435 | 0.4482 | 3.66 |
| 50) | C | benzene | 0.990 | 0.882 | 0.859 | 0.833 | 0.805 | 0.877 | 0.817 | 0.794 | 0.8570 | 7.36 |
| 51) | | thiophene | 0.583 | 0.552 | 0.548 | 0.513 | 0.497 | 0.575 | 0.543 | 0.517 | 0.5411 | 5.62 |
| 52) | C | carbon tetrachloride | 0.689 | 0.664 | 0.658 | 0.676 | 0.669 | 0.723 | 0.677 | 0.637 | 0.6740 | 3.72 |
| 53) | | cyclohexane | 0.482 | 0.433 | 0.417 | 0.410 | 0.399 | 0.416 | 0.387 | 0.374 | 0.4150 | 7.93 |
| 54) | | tert-amyl methyl ether | 0.831 | 0.789 | 0.755 | 0.784 | 0.772 | 0.842 | 0.806 | 0.789 | 0.7960 | 3.67 |
| 55) | | dibromomethane | 0.404 | 0.364 | 0.366 | 0.371 | 0.365 | 0.400 | 0.379 | 0.365 | 0.3767 | 4.33 |
| 56) | C | 1,2-dichloropropane | 0.330 | 0.301 | 0.301 | 0.293 | 0.285 | 0.307 | 0.286 | 0.273 | 0.2972 | 5.77 |
| 57) | | bromodichloromethane | 0.699 | 0.662 | 0.664 | 0.699 | 0.687 | 0.744 | 0.709 | 0.684 | 0.6935 | 3.81 |
| 58) | C | 1,4-dioxane | 0.224 | 0.207 | 0.189 | 0.213 | 0.201 | 0.224 | 0.211 | 0.195 | 0.2080 | 6.12 |
| 59) | C | trichloroethene | 0.496 | 0.453 | 0.438 | 0.442 | 0.442 | 0.484 | 0.444 | 0.391 | 0.4487 | 7.12 |
| 60) | C | 2,2,4-trimethylpentane | 1.457 | 1.381 | 1.307 | 1.321 | 1.261 | 1.286 | 1.169 | 1.055 | 1.2798 | 9.66 |
| 61) | | methyl methacrylate | | 0.352 | 0.308 | 0.195 | 0.168 | 0.178 | 0.200 | 0.231 | 0.2330 | 30.13# |
| 62) | | heptane | 0.518 | 0.448 | 0.436 | 0.443 | 0.431 | 0.451 | 0.420 | 0.405 | 0.4440 | 7.58 |
| 63) | C | cis-1,3-dichloropropene | 0.463 | 0.442 | 0.438 | 0.457 | 0.463 | 0.514 | 0.496 | 0.489 | 0.4702 | 5.71 |
| 64) | C | 4-methyl-2-pentanone | 0.648 | 0.633 | 0.603 | 0.628 | 0.610 | 0.640 | 0.594 | 0.559 | 0.6143 | 4.78 |
| 65) | | trans-1,3-dichloropropene | 0.456 | 0.443 | 0.445 | 0.474 | 0.482 | 0.543 | 0.524 | 0.514 | 0.4851 | 7.83 |
| 66) | C | 1,1,2-trichloroethane | 0.386 | 0.371 | 0.360 | 0.367 | 0.357 | 0.394 | 0.373 | 0.362 | 0.3713 | 3.55 |
| 67) | I | chlorobenzene-D5 | ----------ISTD---------- | | | | | | | | | |
| 68) | C | toluene | 6.615 | 6.169 | 5.897 | 5.729 | 5.640 | 6.144 | 5.354 | 4.965 | 5.8143 | 8.85 |
| 69) | s | toluene-D8 | 3.862 | 3.917 | 3.742 | 3.904 | 3.961 | 3.890 | 3.732 | 3.706 | 3.8392 | 2.55 |
| 70) | | 2-methylthiophene | 4.834 | 4.678 | 4.407 | 4.082 | 3.968 | 4.473 | 3.839 | 3.535 | 4.2269 | 10.51 |
| 71) | | 1,3-dichloropropane | 3.077 | 2.862 | 2.764 | 2.710 | 2.636 | 2.777 | 2.421 | 2.226 | 2.6841 | 9.79 |
| 72) | | 2-hexanone | 3.541 | 3.244 | 3.185 | 3.262 | 3.196 | 3.359 | 2.905 | 2.668 | 3.1701 | 8.52 |
| 73) | | 3-methylthiophene | 4.929 | 4.629 | 4.511 | 4.072 | 3.990 | 4.503 | 3.834 | 3.393 | 4.2325 | 11.79 |
| 74) | | dibromochloromethane | 3.885 | 3.828 | 3.735 | 4.151 | 4.148 | 4.428 | 3.912 | 3.496 | 3.9479 | 7.30 |
| 75) | C | 1,2-dibromoethane | 3.524 | 3.374 | 3.178 | 3.240 | 3.197 | 3.471 | 3.092 | 2.895 | 3.2464 | 6.36 |
| 76) | | butyl acetate | | 0.696 | 0.694 | 0.716 | 0.710 | 0.783 | 0.688 | 0.657 | 0.7062 | 5.49 |

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | : **Alpha Analytical** | **Lab Number** | : **L1700424** |
| **Project Name** | : **INDIV. CANISTER CERTIFICATION** | **Project Number** | : **CANISTER QC INDIV** |
| **Instrument ID** | : **AIRLAB11** | **Ical Ref** | : **ICAL13187** |
| **Calibration dates** | : **12/06/16 17:13 12/06/16 21:14** | | |

Calibration Files
0.2 =R1117345.d 0.5 =R1117346.d 1.0 =R1117347.d 5.0 =R1117348.d 10 =R1117349.d 20 =R1117350.d
50 =R1117351.d 100 =R1117352.d

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 77) | | octane | 1.881 | 1.934 | 1.813 | 1.856 | 1.791 | 1.889 | 1.653 | 1.530 | 1.7932 | 7.60 |
| 78) | C | tetrachloroethene | 3.556 | 3.434 | 3.245 | 3.221 | 3.150 | 3.427 | 2.933 | 2.521 | 3.1861 | 10.40 |
| 79) | | 1,1,1,2-tetrachloroethane | 2.813 | 2.740 | 2.577 | 2.732 | 2.747 | 3.026 | 2.694 | 2.319 | 2.7058 | 7.44 |
| 80) | C | chlorobenzene | 5.376 | 4.886 | 4.739 | 4.660 | 4.589 | 5.055 | 4.388 | 3.829 | 4.6904 | 9.83 |
| 81) | C | ethylbenzene | 8.260 | 7.754 | 7.428 | 7.329 | 7.246 | 8.022 | 7.048 | 6.428 | 7.4393 | 7.77 |
| 82) | | 2-ethylthiophene | 5.886 | 5.416 | 5.222 | 4.952 | 4.839 | 5.573 | 4.816 | 4.329 | 5.1292 | 9.65 |
| 83) | C | m+p-xylene | 6.588 | 6.033 | 5.861 | 5.716 | 5.641 | 6.267 | 5.361 | 4.526 | 5.7493 | 10.85 |
| 84) | C | bromoform | 4.140 | 3.791 | 3.774 | 4.313 | 4.402 | 4.718 | 3.984 | 3.252 | 4.0466 | 11.17 |
| 85) | C | styrene | 4.734 | 4.503 | 4.391 | 4.414 | 4.374 | 4.935 | 4.353 | 3.961 | 4.4581 | 6.44 |
| 86) | C | 1,1,2,2-tetrachloroethane | 4.758 | 4.462 | 4.262 | 4.217 | 4.052 | 4.413 | 3.684 | 2.954 | 4.1002 | 13.64 |
| 87) | C | o-xylene | 6.673 | 6.171 | 5.922 | 5.899 | 5.796 | 6.383 | 5.304 | 4.153 | 5.7876 | 13.42 |
| 88) | | 1,2,3-trichloropropane | 3.675 | 3.486 | 3.345 | 3.321 | 3.206 | 3.456 | 3.018 | 2.799 | 3.2882 | 8.45 |
| 89) | | nonane | 3.659 | 3.472 | 3.293 | 3.354 | 3.267 | 3.470 | 3.002 | 2.696 | 3.2767 | 9.23 |
| 90) | s | bromofluorobenzene | 1.768 | 1.761 | 1.719 | 1.725 | 1.755 | 1.671 | 1.634 | 1.684 | 1.7146 | 2.79 |
| 91) | C | isopropylbenzene | 9.207 | 8.644 | 8.201 | 8.393 | 8.224 | 8.876 | 7.714 | 6.531 | 8.2240 | 9.99 |
| 92) | | bromobenzene | 4.621 | 4.272 | 4.005 | 4.058 | 4.019 | 4.419 | 3.929 | 3.571 | 4.1117 | 7.84 |
| 93) | | 2-chlorotoluene | 1.994 | 1.921 | 1.878 | 1.926 | 1.891 | 2.057 | 1.590 | 1.191 | 1.8058 | 15.70 |
| 94) | | n-propylbenzene | 1.815 | 1.655 | 1.607 | 1.532 | 1.542 | 1.695 | 1.659 | 1.621 | 1.6406 | 5.49 |
| 95) | | 4-chlorotoluene | 6.846 | 6.425 | 6.087 | 6.066 | 5.931 | 6.434 | 5.362 | 4.802 | 5.9942 | 10.82 |
| 96) | | 4-ethyl toluene | 9.949 | 9.385 | 9.025 | 9.268 | 9.077 | 9.479 | 7.852 | 6.370 | 8.8005 | 13.08 |
| 97) | | 1,3,5-trimethylbenzene | 7.825 | 7.349 | 7.094 | 6.862 | 6.719 | 7.427 | 6.195 | 5.142 | 6.8265 | 12.32 |
| 98) | | tert-butylbenzene | 8.712 | 8.229 | 7.944 | 7.992 | 7.919 | 8.488 | 6.329 | 4.561 | 7.5217 | 18.53 |
| 99) | | 1,2,4-trimethylbenzene | 7.580 | 7.205 | 6.987 | 6.902 | 6.913 | 7.765 | 5.858 | 4.115 | 6.6657 | 17.67 |
| 100) | | decane | 4.157 | 3.905 | 3.841 | 3.932 | 3.838 | 4.078 | 3.506 | 2.970 | 3.7784 | 10.05 |
| 101) | C | Benzyl Chloride | 5.182 | 5.335 | 5.334 | 6.214 | 6.410 | 7.106 | 6.250 | 5.205 | 5.8793 | 12.15 |
| 102) | | 1,3-dichlorobenzene | 5.560 | 5.443 | 5.215 | 4.864 | 4.768 | 5.449 | 4.457 | 3.460 | 4.9020 | 14.26 |
| 103) | C | 1,4-dichlorobenzene | 5.553 | 5.479 | 5.243 | 4.887 | 4.787 | 5.500 | 4.404 | 3.224 | 4.8847 | 16.06 |
| 104) | | sec-butylbenzene | 1.133 | 1.072 | 1.020 | 1.017 | 0.991 | 1.043 | 0.821 | 0.599 | 0.9621 | 17.86 |
| 105) | | 1,2,3-trimethylbenzene | 7.580 | 7.205 | 6.987 | 6.902 | 6.913 | 7.765 | 5.858 | 4.115 | 6.6657 | 17.67 |
| 106) | | p-isopropyltoluene | 1.022 | 0.980 | 0.947 | 0.944 | 0.926 | 0.993 | 0.791 | 0.581 | 0.8981 | 16.25 |
| 107) | | 1,2-dichlorobenzene | 5.539 | 5.082 | 4.840 | 4.584 | 4.509 | 5.105 | 4.455 | 3.752 | 4.7333 | 11.39 |
| 108) | | n-butylbenzene | 8.469 | 8.446 | 8.088 | 8.094 | 8.046 | 8.724 | 7.236 | 5.871 | 7.8718 | 11.71 |
| 109) | | indan | 6.871 | 6.702 | 6.415 | 6.039 | 5.911 | 6.570 | 5.575 | 4.640 | 6.0904 | 11.97 |
| 110) | | indene | 4.322 | 4.214 | 4.059 | 3.942 | 3.867 | 4.344 | 3.838 | 3.438 | 4.0028 | 7.52 |
| 111) | C | 1,2-dibromo-3-chloropropane | 2.052 | 2.107 | 2.077 | 2.179 | 2.211 | 2.486 | 2.246 | 1.989 | 2.1683 | 7.12 |
| 112) | | undecane | 4.159 | 4.330 | 4.213 | 4.378 | 4.478 | 4.904 | 4.346 | 3.610 | 4.3024 | 8.38 |
| 113) | | 1,2,4,5-tetramethylbenzene | 1.252 | 1.270 | 1.249 | 1.171 | 1.200 | 1.417 | 1.091 | 0.800 | 1.1812 | 15.24 |
| 114) | | dodecane | 3.519 | 3.998 | 4.150 | 4.474 | 4.827 | 5.365 | 4.313 | 3.048 | 4.2118 | 17.19 |

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | : **Alpha Analytical** | **Lab Number** | : **L1700424** |
| **Project Name** | : **INDIV. CANISTER CERTIFICATION** | **Project Number** | : **CANISTER QC INDIV** |
| **Instrument ID** | : **AIRLAB11** | **Ical Ref** | : **ICAL13187** |
| **Calibration dates** | : **12/06/16 17:13 12/06/16 21:14** | | |

Calibration Files
0.2 =R1117345.d 0.5 =R1117346.d 1.0 =R1117347.d 5.0 =R1117348.d 10 =R1117349.d 20 =R1117350.d
50 =R1117351.d 100 =R1117352.d

| | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 115) C | 1,2,4-trichlorobenzene | 3.880 | 4.395 | 4.239 | 4.345 | 4.450 | 4.785 | 3.544 | 2.485 | 4.0155 | 18.02 |
| 116) | naphthalene | 1.064 | 1.026 | 0.965 | 0.890 | 0.899 | 1.029 | 0.883 | 0.747 | 0.9379 | 11.10 |
| 117) | 1,2,3-trichlorobenzene | 4.179 | 4.252 | 4.320 | 4.193 | 4.283 | 4.825 | 4.174 | 3.462 | 4.2109 | 8.79 |
| 118) | benzothiophene | 0.904 | 0.994 | 1.008 | 0.812 | 0.828 | 1.092 | 0.901 | 0.726 | 0.9083 | 13.15 |
| 119) C | hexachlorobutadiene | 3.949 | 3.955 | 3.759 | 3.850 | 3.980 | 4.122 | 3.354 | 2.520 | 3.6860 | 14.21 |
| 120) | 2-methylnaphthalene | | | 3.705 | 2.571 | 2.909 | 5.411 | 5.076 | 4.594 | 4.0443 | 28.86 |
| 121) | 1-methylnaphthalene | | | 4.833 | 3.355 | 3.729 | 6.235 | 5.637 | 4.889 | 4.7797 | 22.92 |

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 12/07/16 10:01 | | |
| Lab File ID | : R1117355 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : R925400-9 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| bromochloromethane | 1 | 1 | - | 0 | 30 | 96 | 0 |
| chlorodifluoromethane | 1.428 | 1.308 | - | 8.4 | 30 | 92 | 0 |
| propylene | 0.556 | 0.598 | - | -7.6 | 30 | 107 | 0 |
| propane | 0.47 | 0.43 | - | 8.5 | 30 | 93 | 0 |
| dichlorodifluoromethane | 1.628 | 1.532 | - | 5.9 | 30 | 88 | 0 |
| chloromethane | 0.774 | 0.805 | - | -4 | 30 | 100 | 0 |
| Freon-114 | 2.899 | 2.987 | - | -3 | 30 | 98 | 0 |
| methanol | 0.226 | 0.236 | - | -4.4 | 30 | 96 | 0 |
| vinyl chloride | 0.961 | 0.979 | - | -1.9 | 30 | 101 | 0 |
| 1,3-butadiene | 0.69 | 0.732 | - | -6.1 | 30 | 103 | 0 |
| butane | 1.281 | 1.22 | - | 4.8 | 30 | 97 | 0 |
| bromomethane | 1.028 | 1.061 | - | -3.2 | 30 | 101 | 0 |
| chloroethane | 0.538 | 0.546 | - | -1.5 | 30 | 101 | 0 |
| ethanol | 0.502 | 0.49 | - | 2.4 | 30 | 99 | 0 |
| dichlorofluoromethane | 2.335 | 2.194 | - | 6 | 30 | 93 | 0 |
| vinyl bromide | 1.109 | 1.139 | - | -2.7 | 30 | 100 | 0 |
| acrolein | 0.387 | 0.343 | - | 11.4 | 30 | 89 | 0 |
| acetone | 1.3 | 1.262 | - | 2.9 | 30 | 102 | 0 |
| acetonitrile | 0.799 | 0.708 | - | 11.4 | 30 | 98 | 0 |
| trichlorofluoromethane | 3.029 | 3.157 | - | -4.2 | 30 | 102 | 0 |
| isopropyl alcohol | 1.405 | 1.499 | - | -6.7 | 30 | 111 | 0 |
| acrylonitrile | 0.629 | 0.649 | - | -3.2 | 30 | 95 | 0 |
| pentane | 1.476 | 1.402 | - | 5 | 30 | 92 | 0 |
| ethyl ether | 0.87 | 0.863 | - | 0.8 | 30 | 91 | 0 |
| 1,1-dichloroethene | 1.624 | 1.592 | - | 2 | 30 | 97 | 0 |
| tertiary butyl alcohol | 1.922 | 1.834 | - | 4.6 | 30 | 97 | 0 |
| methylene chloride | 1.043 | 1.032 | - | 1.1 | 30 | 102 | 0 |
| 3-chloropropene | 0.999 | 1.094 | - | -9.5 | 30 | 108 | 0 |
| carbon disulfide | 2.761 | 2.848 | - | -3.2 | 30 | 99 | 0 |
| Freon 113 | 2.121 | 2.24 | - | -5.6 | 30 | 104 | 0 |
| trans-1,2-dichloroethene | 1.366 | 1.313 | - | 3.9 | 30 | 91 | 0 |
| 1,1-dichloroethane | 1.653 | 1.699 | - | -2.8 | 30 | 102 | 0 |
| MTBE | 2.671 | 2.757 | - | -3.2 | 30 | 101 | 0 |
| vinyl acetate | 0.999 | 1.379 | - | -38* | 30 | 132 | 0 |
| 2-butanone | 2.009 | 1.959 | - | 2.5 | 30 | 99 | 0 |
| cis-1,2-dichloroethene | 1.264 | 1.427 | - | -12.9 | 30 | 112 | 0 |
| Ethyl Acetate | 0.287 | 0.288 | - | -0.3 | 30 | 99 | 0 |
| chloroform | 2.009 | 2.053 | - | -2.2 | 30 | 103 | 0 |
| Tetrahydrofuran | 0.949 | 0.912 | - | 3.9 | 30 | 96 | 0 |
| 2,2-dichloropropane | 1.723 | 1.623 | - | 5.8 | 30 | 94 | 0 |
| 1,2-dichloroethane | 1.365 | 1.401 | - | -2.6 | 30 | 102 | 0 |
| 1,4-difluorobenzene | 1 | 1 | - | 0 | 30 | 99 | 0 |
| hexane | 0.399 | 0.385 | - | 3.5 | 30 | 98 | 0 |
| diisopropyl ether | 0.243 | 0.222 | - | 8.6 | 30 | 93 | 0 |
| tert-butyl ethyl ether | 0.808 | 0.747 | - | 7.5 | 30 | 94 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 12/07/16 10:01 | | |
| Lab File ID | : R1117355 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : R925400-9 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1,2-dichloroethane-D4 | 0.198 | 0.185 | - | 6.6 | 30 | 93 | 0 |
| 1,1,1-trichloroethane | 0.636 | 0.643 | - | -1.1 | 30 | 104 | 0 |
| 1,1-dichloropropene | 0.448 | 0.428 | - | 4.5 | 30 | 98 | 0 |
| benzene | 0.857 | 0.822 | - | 4.1 | 30 | 101 | 0 |
| carbon tetrachloride | 0.674 | 0.706 | - | -4.7 | 30 | 105 | -.01 |
| cyclohexane | 0.415 | 0.399 | - | 3.9 | 30 | 99 | 0 |
| tert-amyl methyl ether | 0.796 | 0.748 | - | 6 | 30 | 96 | 0 |
| dibromomethane | 0.377 | 0.356 | - | 5.6 | 30 | 97 | 0 |
| 1,2-dichloropropane | 0.297 | 0.295 | - | 0.7 | 30 | 103 | 0 |
| bromodichloromethane | 0.694 | 0.702 | - | -1.2 | 30 | 101 | 0 |
| 1,4-dioxane | 0.208 | 0.201 | - | 3.4 | 30 | 99 | 0 |
| trichloroethene | 0.449 | 0.479 | - | -6.7 | 30 | 108 | 0 |
| 2,2,4-trimethylpentane | 1.28 | 1.249 | - | 2.4 | 30 | 98 | 0 |
| methyl methacrylate | 0.233 | 0.194 | - | 16.7 | 30 | 115 | 0 |
| heptane | 0.444 | 0.423 | - | 4.7 | 30 | 98 | 0 |
| cis-1,3-dichloropropene | 0.47 | 0.506 | - | -7.7 | 30 | 108 | 0 |
| 4-methyl-2-pentanone | 0.614 | 0.598 | - | 2.6 | 30 | 97 | 0 |
| trans-1,3-dichloropropene | 0.485 | 0.458 | - | 5.6 | 30 | 94 | 0 |
| 1,1,2-trichloroethane | 0.371 | 0.385 | - | -3.8 | 30 | 107 | 0 |
| chlorobenzene-D5 | 1 | 1 | - | 0 | 30 | 99 | 0 |
| toluene | 5.814 | 5.908 | - | -1.6 | 30 | 104 | 0 |
| toluene-D8 | 3.839 | 3.837 | - | 0.1 | 30 | 96 | 0 |
| 1,3-dichloropropane | 2.684 | 2.476 | - | 7.7 | 30 | 93 | 0 |
| 2-hexanone | 3.17 | 3.177 | - | -0.2 | 30 | 99 | 0 |
| dibromochloromethane | 3.948 | 4.283 | - | -8.5 | 30 | 103 | 0 |
| 1,2-dibromoethane | 3.246 | 3.44 | - | -6 | 30 | 107 | 0 |
| butyl acetate | 0.706 | 0.673 | - | 4.7 | 30 | 94 | 0 |
| octane | 1.793 | 1.683 | - | 6.1 | 30 | 93 | 0 |
| tetrachloroethene | 3.186 | 3.339 | - | -4.8 | 30 | 105 | 0 |
| 1,1,1,2-tetrachloroethane | 2.706 | 2.626 | - | 3 | 30 | 95 | 0 |
| chlorobenzene | 4.69 | 4.917 | - | -4.8 | 30 | 106 | 0 |
| ethylbenzene | 7.439 | 7.677 | - | -3.2 | 30 | 105 | 0 |
| m+p-xylene | 5.749 | 6.025 | - | -4.8 | 30 | 106 | 0 |
| bromoform | 4.047 | 4.453 | - | -10 | 30 | 100 | 0 |
| styrene | 4.458 | 4.686 | - | -5.1 | 30 | 106 | 0 |
| 1,1,2,2-tetrachloroethane | 4.1 | 4.211 | - | -2.7 | 30 | 103 | 0 |
| o-xylene | 5.788 | 6.184 | - | -6.8 | 30 | 106 | 0 |
| 1,2,3-trichloropropane | 3.288 | 3.062 | - | 6.9 | 30 | 95 | 0 |
| nonane | 3.277 | 2.996 | - | 8.6 | 30 | 91 | 0 |
| bromofluorobenzene | 1.715 | 1.653 | - | 3.6 | 30 | 94 | 0 |
| isopropylbenzene | 8.224 | 8.128 | - | 1.2 | 30 | 98 | 0 |
| bromobenzene | 4.112 | 3.895 | - | 5.3 | 30 | 96 | 0 |
| 2-chlorotoluene | 1.806 | 1.851 | - | -2.5 | 30 | 97 | 0 |
| n-propylbenzene | 1.641 | 1.43 | - | 12.9 | 30 | 92 | 0 |
| 4-chlorotoluene | 5.994 | 5.682 | - | 5.2 | 30 | 95 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 12/07/16 10:01 | | |
| Lab File ID | : R1117355 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : R925400-9 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 4-ethyl toluene | 8.801 | 8.704 | - | 1.1 | 30 | 95 | 0 |
| 1,3,5-trimethylbenzene | 6.827 | 7.17 | - | -5 | 30 | 106 | 0 |
| tert-butylbenzene | 7.522 | 7.582 | - | -0.8 | 30 | 95 | 0 |
| 1,2,4-trimethylbenzene | 6.666 | 7.553 | - | -13.3 | 30 | 109 | 0 |
| decane | 3.778 | 3.585 | - | 5.1 | 30 | 93 | 0 |
| Benzyl Chloride | 5.879 | 6.694 | - | -13.9 | 30 | 104 | 0 |
| 1,3-dichlorobenzene | 4.902 | 5.386 | - | -9.9 | 30 | 112 | 0 |
| 1,4-dichlorobenzene | 4.885 | 5.339 | - | -9.3 | 30 | 111 | 0 |
| sec-butylbenzene | 9.621 | 9.397 | - | 2.3 | 30 | 94 | 0 |
| p-isopropyltoluene | 8.981 | 8.311 | - | 7.5 | 30 | 89 | 0 |
| 1,2-dichlorobenzene | 4.733 | 5.112 | - | -8 | 30 | 113 | 0 |
| n-butylbenzene | 7.872 | 8.017 | - | -1.8 | 30 | 99 | 0 |
| 1,2-dibromo-3-chloropropan | 2.168 | 2.162 | - | 0.3 | 30 | 97 | 0 |
| undecane | 4.302 | 4.249 | - | 1.2 | 30 | 94 | 0 |
| dodecane | 4.212 | 4.801 | - | -14 | 30 | 99 | 0 |
| 1,2,4-trichlorobenzene | 4.016 | 5.364 | - | -33.6* | 30 | 120 | 0 |
| naphthalene | 9.379 | 9.693 | - | -3.3 | 30 | 107 | 0 |
| 1,2,3-trichlorobenzene | 4.211 | 4.7 | - | -11.6 | 30 | 109 | 0 |
| hexachlorobutadiene | 3.686 | 4.496 | - | -22 | 30 | 112 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 01/05/17 12:22 | | |
| Lab File ID | : R1117828 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : WG967318-2 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| bromochloromethane | 1 | 1 | - | 0 | 30 | 100 | 0 |
| chlorodifluoromethane | 1.428 | 1.48 | - | -3.6 | 30 | 109 | 0 |
| propylene | 0.556 | 0.631 | - | -13.5 | 30 | 118 | 0 |
| propane | 0.47 | 0.494 | - | -5.1 | 30 | 111 | 0 |
| dichlorodifluoromethane | 1.628 | 1.333 | - | 18.1 | 30 | 80 | 0 |
| chloromethane | 0.774 | 1.003 | - | -29.6 | 30 | 130 | 0 |
| Freon-114 | 2.899 | 3.084 | - | -6.4 | 30 | 106 | 0 |
| methanol | 0.226 | 0.311 | - | -37.6* | 30 | 132 | 0 |
| vinyl chloride | 0.961 | 1.102 | - | -14.7 | 30 | 118 | 0 |
| 1,3-butadiene | 0.69 | 0.804 | - | -16.5 | 30 | 118 | 0 |
| butane | 1.281 | 1.548 | - | -20.8 | 30 | 128 | 0 |
| bromomethane | 1.028 | 1.091 | - | -6.1 | 30 | 108 | 0 |
| chloroethane | 0.538 | 0.625 | - | -16.2 | 30 | 120 | 0 |
| ethanol | 0.502 | 0.597 | - | -18.9 | 30 | 125 | 0 |
| dichlorofluoromethane | 2.335 | 2.575 | - | -10.3 | 30 | 114 | 0 |
| vinyl bromide | 1.109 | 1.107 | - | 0.2 | 30 | 101 | 0 |
| acrolein | 0.387 | 0.437 | - | -12.9 | 30 | 118 | 0 |
| acetone | 1.3 | 1.44 | - | -10.8 | 30 | 122 | 0 |
| acetonitrile | 0.799 | 0.93 | - | -16.4 | 30 | 134 | 0 |
| trichlorofluoromethane | 3.029 | 2.919 | - | 3.6 | 30 | 98 | 0 |
| isopropyl alcohol | 1.405 | 1.483 | - | -5.6 | 30 | 115 | 0 |
| acrylonitrile | 0.629 | 0.794 | - | -26.2 | 30 | 122 | 0 |
| pentane | 1.476 | 1.802 | - | -22.1 | 30 | 124 | 0 |
| ethyl ether | 0.87 | 1.142 | - | -31.3* | 30 | 125 | 0 |
| 1,1-dichloroethene | 1.624 | 1.888 | - | -16.3 | 30 | 119 | 0 |
| tertiary butyl alcohol | 1.922 | 1.963 | - | -2.1 | 30 | 108 | 0 |
| methylene chloride | 1.043 | 1.367 | - | -31.1* | 30 | 141 | 0 |
| 3-chloropropene | 0.999 | 1.343 | - | -34.4* | 30 | 139 | 0 |
| carbon disulfide | 2.761 | 3.423 | - | -24 | 30 | 124 | 0 |
| Freon 113 | 2.121 | 2.317 | - | -9.2 | 30 | 112 | 0 |
| trans-1,2-dichloroethene | 1.366 | 1.324 | - | 3.1 | 30 | 95 | 0 |
| 1,1-dichloroethane | 1.653 | 1.602 | - | 3.1 | 30 | 100 | 0 |
| MTBE | 2.671 | 2.137 | - | 20 | 30 | 81 | 0 |
| vinyl acetate | 0.999 | 1.085 | - | -8.6 | 30 | 109 | 0 |
| 2-butanone | 2.009 | 2.022 | - | -0.6 | 30 | 107 | 0 |
| cis-1,2-dichloroethene | 1.264 | 1.167 | - | 7.7 | 30 | 96 | 0 |
| Ethyl Acetate | 0.287 | 0.284 | - | 1 | 30 | 102 | 0 |
| chloroform | 2.009 | 1.779 | - | 11.4 | 30 | 93 | 0 |
| Tetrahydrofuran | 0.949 | 0.94 | - | 0.9 | 30 | 103 | 0 |
| 2,2-dichloropropane | 1.723 | 1.359 | - | 21.1 | 30 | 82 | 0 |
| 1,2-dichloroethane | 1.365 | 1.188 | - | 13 | 30 | 90 | 0 |
| 1,4-difluorobenzene | 1 | 1 | - | 0 | 30 | 80 | 0 |
| hexane | 0.399 | 0.51 | - | -27.8 | 30 | 104 | 0 |
| diisopropyl ether | 0.243 | 0.265 | - | -9.1 | 30 | 89 | 0 |
| tert-butyl ethyl ether | 0.808 | 0.893 | - | -10.5 | 30 | 90 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 01/05/17 12:22 | | |
| Lab File ID | : R1117828 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : WG967318-2 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1,1,1-trichloroethane | 0.636 | 0.631 | - | 0.8 | 30 | 82 | 0 |
| 1,1-dichloropropene | 0.448 | 0.503 | - | -12.3 | 30 | 93 | 0 |
| benzene | 0.857 | 1.008 | - | -17.6 | 30 | 100 | 0 |
| carbon tetrachloride | 0.674 | 0.664 | - | 1.5 | 30 | 79 | -.01 |
| cyclohexane | 0.415 | 0.515 | - | -24.1 | 30 | 103 | 0 |
| tert-amyl methyl ether | 0.796 | 0.778 | - | 2.3 | 30 | 80 | 0 |
| dibromomethane | 0.377 | 0.423 | - | -12.2 | 30 | 92 | 0 |
| 1,2-dichloropropane | 0.297 | 0.374 | - | -25.9 | 30 | 104 | 0 |
| bromodichloromethane | 0.694 | 0.787 | - | -13.4 | 30 | 91 | 0 |
| 1,4-dioxane | 0.208 | 0.235 | - | -13 | 30 | 93 | 0 |
| trichloroethene | 0.449 | 0.481 | - | -7.1 | 30 | 87 | 0 |
| 2,2,4-trimethylpentane | 1.28 | 1.654 | - | -29.2 | 30 | 104 | -.01 |
| methyl methacrylate | 0.233 | 0.201 | - | 13.7 | 30 | 95 | 0 |
| heptane | 0.444 | 0.574 | - | -29.3 | 30 | 106 | 0 |
| cis-1,3-dichloropropene | 0.47 | 0.523 | - | -11.3 | 30 | 90 | 0 |
| 4-methyl-2-pentanone | 0.614 | 0.803 | - | -30.8* | 30 | 105 | 0 |
| trans-1,3-dichloropropene | 0.485 | 0.535 | - | -10.3 | 30 | 88 | 0 |
| 1,1,2-trichloroethane | 0.371 | 0.423 | - | -14 | 30 | 94 | -.01 |
| chlorobenzene-D5 | 1 | 1 | - | 0 | 30 | 95 | 0 |
| toluene | 5.814 | 5.609 | - | 3.5 | 30 | 95 | -.01 |
| 1,3-dichloropropane | 2.684 | 2.767 | - | -3.1 | 30 | 100 | 0 |
| 2-hexanone | 3.17 | 3.614 | - | -14 | 30 | 108 | -.01 |
| dibromochloromethane | 3.948 | 3.572 | - | 9.5 | 30 | 82 | 0 |
| 1,2-dibromoethane | 3.246 | 3.077 | - | 5.2 | 30 | 91 | 0 |
| butyl acetate | 0.706 | 0.711 | - | -0.7 | 30 | 95 | 0 |
| octane | 1.793 | 1.766 | - | 1.5 | 30 | 94 | 0 |
| tetrachloroethene | 3.186 | 2.673 | - | 16.1 | 30 | 81 | 0 |
| 1,1,1,2-tetrachloroethane | 2.706 | 2.416 | - | 10.7 | 30 | 84 | 0 |
| chlorobenzene | 4.69 | 4.419 | - | 5.8 | 30 | 92 | 0 |
| ethylbenzene | 7.439 | 7.158 | - | 3.8 | 30 | 94 | 0 |
| m+p-xylene | 5.749 | 5.751 | - | -0 | 30 | 97 | 0 |
| bromoform | 4.047 | 3.639 | - | 10.1 | 30 | 79 | 0 |
| styrene | 4.458 | 4.29 | - | 3.8 | 30 | 93 | 0 |
| 1,1,2,2-tetrachloroethane | 4.1 | 4.457 | - | -8.7 | 30 | 105 | 0 |
| o-xylene | 5.788 | 5.956 | - | -2.9 | 30 | 98 | 0 |
| 1,2,3-trichloropropane | 3.288 | 3.453 | - | -5 | 30 | 102 | 0 |
| nonane | 3.277 | 3.917 | - | -19.5 | 30 | 114 | 0 |
| isopropylbenzene | 8.224 | 8.028 | - | 2.4 | 30 | 93 | 0 |
| bromobenzene | 4.112 | 4.269 | - | -3.8 | 30 | 101 | 0 |
| 2-chlorotoluene | 1.806 | 1.982 | - | -9.7 | 30 | 100 | 0 |
| n-propylbenzene | 1.641 | 1.396 | - | 14.9 | 30 | 86 | 0 |
| 4-chlorotoluene | 5.994 | 6.052 | - | -1 | 30 | 97 | 0 |
| 4-ethyl toluene | 8.801 | 9.32 | - | -5.9 | 30 | 98 | 0 |
| 1,3,5-trimethylbenzene | 6.827 | 6.751 | - | 1.1 | 30 | 96 | 0 |
| tert-butylbenzene | 7.522 | 7.845 | - | -4.3 | 30 | 94 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700424 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 01/05/17 12:22 | | |
| Lab File ID | : R1117828 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : WG967318-2 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1,2,4-trimethylbenzene | 6.666 | 6.994 | - | -4.9 | 30 | 96 | 0 |
| decane | 3.778 | 4.629 | - | -22.5 | 30 | 115 | 0 |
| Benzyl Chloride | 5.879 | 5.866 | - | 0.2 | 30 | 87 | 0 |
| 1,3-dichlorobenzene | 4.902 | 4.525 | - | 7.7 | 30 | 90 | 0 |
| 1,4-dichlorobenzene | 4.885 | 4.51 | - | 7.7 | 30 | 90 | 0 |
| sec-butylbenzene | 9.621 | 10.3 | - | -7.1 | 30 | 99 | 0 |
| p-isopropyltoluene | 8.981 | 9.183 | - | -2.2 | 30 | 94 | 0 |
| 1,2-dichlorobenzene | 4.733 | 4.239 | - | 10.4 | 30 | 89 | 0 |
| n-butylbenzene | 7.872 | 8.74 | - | -11 | 30 | 103 | 0 |
| 1,2-dibromo-3-chloropropan | 2.168 | 2.168 | - | 0 | 30 | 93 | 0 |
| undecane | 4.302 | 5.206 | - | -21 | 30 | 111 | 0 |
| dodecane | 4.212 | 5.369 | - | -27.5 | 30 | 106 | 0 |
| 1,2,4-trichlorobenzene | 4.016 | 3.83 | - | 4.6 | 30 | 82 | 0 |
| naphthalene | 9.379 | 8.307 | - | 11.4 | 30 | 88 | 0 |
| 1,2,3-trichlorobenzene | 4.211 | 3.671 | - | 12.8 | 30 | 81 | 0 |
| hexachlorobutadiene | 3.686 | 3.185 | - | 13.6 | 30 | 76 | 0 |

* Value outside of QC limits.

# Quality Control Data Summary

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Matrix | : AIR | | |
| LCS Sample ID | : WG967318-3 | Analysis Date : 01/05/17 12:58 | File ID : R1117829 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| Chlorodifluoromethane | 10 | 8.8 | 88 | | | | - | 70-130 | - |
| Propylene | 10 | 11. | 110 | | | | - | 70-130 | - |
| Dichlorodifluoromethane | 10 | 8.9 | 89 | | | | - | 40-160 | - |
| Chloromethane | 10 | 11. | 110 | | | | - | 70-130 | - |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane | 10 | 10. | 100 | | | | - | 70-130 | - |
| Methanol | 50 | 58. | 116 | | | | - | 70-130 | - |
| Vinyl chloride | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,3-Butadiene | 10 | 11. | 110 | | | | - | 70-130 | - |
| Butane | 10 | 10. | 100 | | | | - | 70-130 | - |
| Bromomethane | 10 | 9.6 | 96 | | | | - | 70-130 | - |
| Chloroethane | 10 | 10. | 100 | | | | - | 70-130 | - |
| Ethyl Alcohol | 50 | 50. | 100 | | | | - | 70-130 | - |
| Dichlorofluoromethane | 10 | 8.9 | 89 | | | | - | 70-130 | - |
| Vinyl bromide | 10 | 8.7 | 87 | | | | - | 70-130 | - |
| Acrolein | 10 | 8.9 | 89 | | | | - | 70-130 | - |
| Acetone | 50 | 50. | 100 | | | | - | 40-160 | - |
| Acetonitrile | 10 | 9.8 | 98 | | | | - | 70-130 | - |
| Trichlorofluoromethane | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| iso-Propyl Alcohol | 25 | 26. | 104 | | | | - | 70-130 | - |
| Acrylonitrile | 10 | 11. | 110 | | | | - | 70-130 | - |
| Pentane | 10 | 10. | 100 | | | | - | 70-130 | - |
| Ethyl ether | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,1-Dichloroethene | 10 | 10. | 100 | | | | - | 70-130 | - |
| tert-Butyl Alcohol | 10 | 8.6 | 86 | | | | - | 70-130 | - |
| Methylene chloride | 10 | 12. | 120 | | | | - | 70-130 | - |
| 3-Chloropropene | 10 | 9.6 | 96 | | | | - | 70-130 | - |
| Carbon disulfide | 10 | 8.5 | 85 | | | | - | 70-130 | - |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 10 | 8.0 | 80 | | | | - | 70-130 | - |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Matrix | : AIR | | |
| LCS Sample ID | : WG967318-3 | Analysis Date : 01/05/17 12:58 | File ID : R1117829 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| trans-1,2-Dichloroethene | 10 | 7.8 | 78 | | | | | - | 70-130 | - |
| 1,1-Dichloroethane | 10 | 8.6 | 86 | | | | | - | 70-130 | - |
| Methyl tert butyl ether | 10 | 7.2 | 72 | | | | | - | 70-130 | - |
| Vinyl acetate | 10 | 11. | 110 | | | | | - | 70-130 | - |
| 2-Butanone | 10 | 8.8 | 88 | | | | | - | 70-130 | - |
| cis-1,2-Dichloroethene | 10 | 9.2 | 92 | | | | | - | 70-130 | - |
| Ethyl Acetate | 10 | 8.6 | 86 | | | | | - | 70-130 | - |
| Chloroform | 10 | 8.1 | 81 | | | | | - | 70-130 | - |
| Tetrahydrofuran | 10 | 8.7 | 87 | | | | | - | 70-130 | - |
| 2,2-Dichloropropane | 10 | 6.6 | 66 | Q | | | | - | 70-130 | - |
| 1,2-Dichloroethane | 10 | 7.9 | 79 | | | | | - | 70-130 | - |
| n-Hexane | 10 | 11. | 110 | | | | | - | 70-130 | - |
| Isopropyl Ether | 10 | 9.3 | 93 | | | | | - | 70-130 | - |
| Ethyl-Tert-Butyl-Ether | 10 | 9.4 | 94 | | | | | - | 70-130 | - |
| 1,1,1-Trichloroethane | 10 | 9.2 | 92 | | | | | - | 70-130 | - |
| 1,1-Dichloropropene | 10 | 9.9 | 99 | | | | | - | 70-130 | - |
| Benzene | 10 | 10. | 100 | | | | | - | 70-130 | - |
| Carbon tetrachloride | 10 | 9.0 | 90 | | | | | - | 70-130 | - |
| Cyclohexane | 10 | 11. | 110 | | | | | - | 70-130 | - |
| Tertiary-Amyl Methyl Ether | 10 | 8.4 | 84 | | | | | - | 70-130 | - |
| Dibromomethane | 10 | 9.6 | 96 | | | | | - | 70-130 | - |
| 1,2-Dichloropropane | 10 | 12. | 120 | | | | | - | 70-130 | - |
| Bromodichloromethane | 10 | 10. | 100 | | | | | - | 70-130 | - |
| 1,4-Dioxane | 10 | 9.8 | 98 | | | | | - | 40-160 | - |
| Trichloroethene | 10 | 9.5 | 95 | | | | | - | 70-130 | - |
| 2,2,4-Trimethylpentane | 10 | 12. | 120 | | | | | - | 70-130 | - |
| Methyl Methacrylate | 10 | 8.5 | 85 | | | | | - | 70-130 | - |
| Heptane | 10 | 12. | 120 | | | | | - | 70-130 | - |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Matrix | : AIR | | |
| LCS Sample ID | : WG967318-3 | Analysis Date : 01/05/17 12:58 | File ID : R1117829 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| cis-1,3-Dichloropropene | 10 | 11. | 110 | | | | - | 70-130 | - |
| 4-Methyl-2-pentanone | 10 | 12. | 120 | | | | - | 70-130 | - |
| trans-1,3-Dichloropropene | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| 1,1,2-Trichloroethane | 10 | 11. | 110 | | | | - | 70-130 | - |
| Toluene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| 1,3-Dichloropropane | 10 | 9.5 | 95 | | | | - | 70-130 | - |
| 2-Hexanone | 10 | 11. | 110 | | | | - | 70-130 | - |
| Dibromochloromethane | 10 | 8.8 | 88 | | | | - | 70-130 | - |
| 1,2-Dibromoethane | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| Butyl Acetate | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| Octane | 10 | 9.0 | 90 | | | | - | 70-130 | - |
| Tetrachloroethene | 10 | 8.4 | 84 | | | | - | 70-130 | - |
| 1,1,1,2-Tetrachloroethane | 10 | 8.1 | 81 | | | | - | 70-130 | - |
| Chlorobenzene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| Ethylbenzene | 10 | 9.9 | 99 | | | | - | 70-130 | - |
| p/m-Xylene | 20 | 20. | 100 | | | | - | 70-130 | - |
| Bromoform | 10 | 8.4 | 84 | | | | - | 70-130 | - |
| Styrene | 10 | 9.8 | 98 | | | | - | 70-130 | - |
| 1,1,2,2-Tetrachloroethane | 10 | 12. | 120 | | | | - | 70-130 | - |
| o-Xylene | 10 | 11. | 110 | | | | - | 70-130 | - |
| 1,2,3-Trichloropropane | 10 | 9.8 | 98 | | | | - | 70-130 | - |
| Nonane (C9) | 10 | 11. | 110 | | | | - | 70-130 | - |
| Isopropylbenzene | 10 | 9.3 | 93 | | | | - | 70-130 | - |
| Bromobenzene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| o-Chlorotoluene | 10 | 10. | 100 | | | | - | 70-130 | - |
| n-Propylbenzene | 10 | 7.6 | 76 | | | | - | 70-130 | - |
| p-Chlorotoluene | 10 | 9.4 | 94 | | | | - | 70-130 | - |
| 4-Ethyltoluene | 10 | 9.8 | 98 | | | | - | 70-130 | - |

# Laboratory Control Sample
# Form 3

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Matrix | : AIR | | |
| LCS Sample ID | : WG967318-3 | Analysis Date : 01/05/17 12:58 | File ID : R1117829 |
| LCSD Sample ID | : | Analysis Date : | File ID : |

| | Laboratory Control Sample | | | Laboratory Control Duplicate | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | True (ppbV) | Found (ppbV) | %R | True (ppbV) | Found (ppbV) | %R | RPD | Recovery Limits | RPD Limit |
| 1,3,5-Trimethylbenzene | 10 | 10. | 100 | | | | - | 70-130 | - |
| tert-Butylbenzene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| 1,2,4-Trimethylbenzene | 10 | 11. | 110 | | | | - | 70-130 | - |
| Decane (C10) | 10 | 11. | 110 | | | | - | 70-130 | - |
| Benzyl chloride | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,3-Dichlorobenzene | 10 | 9.9 | 99 | | | | - | 70-130 | - |
| 1,4-Dichlorobenzene | 10 | 9.9 | 99 | | | | - | 70-130 | - |
| sec-Butylbenzene | 10 | 9.8 | 98 | | | | - | 70-130 | - |
| p-Isopropyltoluene | 10 | 8.7 | 87 | | | | - | 70-130 | - |
| 1,2-Dichlorobenzene | 10 | 9.7 | 97 | | | | - | 70-130 | - |
| n-Butylbenzene | 10 | 10. | 100 | | | | - | 70-130 | - |
| 1,2-Dibromo-3-chloropropane | 10 | 9.1 | 91 | | | | - | 70-130 | - |
| Undecane | 10 | 11. | 110 | | | | - | 70-130 | - |
| Dodecane (C12) | 10 | 13. | 130 | | | | - | 70-130 | - |
| 1,2,4-Trichlorobenzene | 10 | 11. | 110 | | | | - | 40-160 | - |
| Naphthalene | 10 | 9.4 | 94 | | | | - | 40-160 | - |
| 1,2,3-Trichlorobenzene | 10 | 9.0 | 90 | | | | - | 70-130 | - |
| Hexachlorobutadiene | 10 | 9.3 | 93 | | | | - | 40-160 | - |

# Method Blank Summary
# Form 4

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab Sample ID | : WG967318-4 | Lab File ID | : R1117831 |
| Instrument ID | : AIRLAB11 | | |
| Matrix | : AIR | Analysis Date | : 01/05/17 14:31 |

| Client Sample No. | Lab Sample ID | Analysis Date |
|---|---|---|
| WG967318-3LCS | WG967318-3 | 01/05/17 12:58 |
| CAN 603 FC 698 | L1700484-01 | 01/06/17 08:42 |
| CAN 935 FC 144 | L1700484-02 | 01/06/17 09:17 |
| CAN 1589 FC 010 | L1700484-03 | 01/06/17 09:52 |
| CAN 783 FC 352 | L1700484-04 | 01/06/17 10:26 |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : WG967318-4 | Date Collected | : NA |
| Client ID | : WG967318-4BLANK | Date Received | : NA |
| Sample Location | : | Date Analyzed | : 01/05/17 14:31 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117831 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-45-6 | Chlorodifluoromethane | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 115-07-1 | Propylene | ND | 0.50 | -- | ND | 0.9 | -- | U |
| 74-98-6 | Propane | ND | 0.50 | -- | ND | 0.9 | -- | U |
| 75-71-8 | Dichlorodifluoromethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 74-87-3 | Chloromethane | ND | 0.20 | -- | ND | 0.4 | -- | U |
| 76-14-2 | 1,2-Dichloro-1,1,2,2-tetrafluoroethan | ND | 0.20 | -- | ND | 1. | -- | U |
| 67-56-1 | Methanol | ND | 5.0 | -- | ND | 7 | -- | U |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 106-99-0 | 1,3-Butadiene | ND | 0.20 | -- | ND | 0.4 | -- | U |
| 106-97-8 | Butane | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 74-83-9 | Bromomethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-00-3 | Chloroethane | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 64-17-5 | Ethyl Alcohol | ND | 5.0 | -- | ND | 9 | -- | U |
| 75-43-4 | Dichlorofluoromethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 593-60-2 | Vinyl bromide | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 107-02-8 | Acrolein | ND | 0.50 | -- | ND | 1. | -- | U |
| 67-64-1 | Acetone | ND | 1.0 | -- | ND | 2 | -- | U |
| 75-05-8 | Acetonitrile | ND | 0.20 | -- | ND | 0.3 | -- | U |
| 75-69-4 | Trichlorofluoromethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 67-63-0 | iso-Propyl Alcohol | ND | 0.50 | -- | ND | 1. | -- | U |
| 107-13-1 | Acrylonitrile | ND | 0.50 | -- | ND | 1. | -- | U |
| 109-66-0 | Pentane | ND | 0.20 | -- | ND | 0.6 | -- | U |
| 60-29-7 | Ethyl ether | ND | 0.20 | -- | ND | 0.6 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-65-0 | tert-Butyl Alcohol | ND | 0.50 | -- | ND | 2. | -- | U |
| 75-09-2 | Methylene chloride | ND | 0.50 | -- | ND | 2 | -- | U |
| 107-05-1 | 3-Chloropropene | ND | 0.20 | -- | ND | 0.6 | -- | U |
| 75-15-0 | Carbon disulfide | ND | 0.20 | -- | ND | 0.6 | -- | U |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : WG967318-4 | Date Collected | : NA |
| Client ID | : WG967318-4BLANK | Date Received | : NA |
| Sample Location | : | Date Analyzed | : 01/05/17 14:31 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117831 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 76-13-1 | 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | -- | ND | 2. | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 1634-04-4 | Methyl tert butyl ether | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 108-05-4 | Vinyl acetate | ND | 1.0 | -- | ND | 4. | -- | U |
| 78-93-3 | 2-Butanone | ND | 0.50 | -- | ND | 1. | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 141-78-6 | Ethyl Acetate | ND | 0.50 | -- | ND | 2. | -- | U |
| 67-66-3 | Chloroform | ND | 0.20 | -- | ND | 1. | -- | U |
| 109-99-9 | Tetrahydrofuran | ND | 0.50 | -- | ND | 1. | -- | U |
| 594-20-7 | 2,2-Dichloropropane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 110-54-3 | n-Hexane | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 108-20-3 | Isopropyl Ether | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 637-92-3 | Ethyl-Tert-Butyl-Ether | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 563-58-6 | 1,1-Dichloropropene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 71-43-2 | Benzene | ND | 0.20 | -- | ND | 0.6 | -- | U |
| 56-23-5 | Carbon tetrachloride | ND | 0.20 | -- | ND | 1. | -- | U |
| 110-82-7 | Cyclohexane | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 994-05-8 | Tertiary-Amyl Methyl Ether | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 74-95-3 | Dibromomethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 78-87-5 | 1,2-Dichloropropane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 75-27-4 | Bromodichloromethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 123-91-1 | 1,4-Dioxane | ND | 0.20 | -- | ND | 0.7 | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 540-84-1 | 2,2,4-Trimethylpentane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 80-62-6 | Methyl Methacrylate | ND | 0.50 | -- | ND | 2. | -- | U |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : WG967318-4 | Date Collected | : NA |
| Client ID | : WG967318-4BLANK | Date Received | : NA |
| Sample Location | : | Date Analyzed | : 01/05/17 14:31 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117831 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 142-82-5 | Heptane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 108-10-1 | 4-Methyl-2-pentanone | ND | 0.50 | -- | ND | 2. | -- | U |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 108-88-3 | Toluene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 142-28-9 | 1,3-Dichloropropane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 591-78-6 | 2-Hexanone | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 124-48-1 | Dibromochloromethane | ND | 0.20 | -- | ND | 2. | -- | U |
| 106-93-4 | 1,2-Dibromoethane | ND | 0.20 | -- | ND | 2. | -- | U |
| 123-86-4 | Butyl Acetate | ND | 0.50 | -- | ND | 2. | -- | U |
| 111-65-9 | Octane | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 108-90-7 | Chlorobenzene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 100-41-4 | Ethylbenzene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 179601-23-1 | p/m-Xylene | ND | 0.40 | -- | ND | 2. | -- | U |
| 75-25-2 | Bromoform | ND | 0.20 | -- | ND | 2. | -- | U |
| 100-42-5 | Styrene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 95-47-6 | o-Xylene | ND | 0.20 | -- | ND | 0.9 | -- | U |
| 96-18-4 | 1,2,3-Trichloropropane | ND | 0.20 | -- | ND | 1. | -- | U |
| 111-84-2 | Nonane (C9) | ND | 0.20 | -- | ND | 1. | -- | U |
| 98-82-8 | Isopropylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 108-86-1 | Bromobenzene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 95-49-8 | o-Chlorotoluene | ND | 0.20 | -- | ND | 1. | -- | U |
| 103-65-1 | n-Propylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 106-43-4 | p-Chlorotoluene | ND | 0.20 | -- | ND | 1. | -- | U |

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : WG967318-4 | Date Collected | : NA |
| Client ID | : WG967318-4BLANK | Date Received | : NA |
| Sample Location | : | Date Analyzed | : 01/05/17 14:31 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117831 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 622-96-8 | 4-Ethyltoluene | ND | 0.20 | -- | ND | 1. | -- | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 98-06-6 | tert-Butylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 124-18-5 | Decane (C10) | ND | 0.20 | -- | ND | 1. | -- | U |
| 100-44-7 | Benzyl chloride | ND | 0.20 | -- | ND | 1. | -- | U |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 135-98-8 | sec-Butylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 99-87-6 | p-Isopropyltoluene | ND | 0.20 | -- | ND | 1. | -- | U |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 104-51-8 | n-Butylbenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 0.20 | -- | ND | 2. | -- | U |
| 1120-21-4 | Undecane | ND | 0.20 | -- | ND | 1. | -- | U |
| 112-40-3 | Dodecane (C12) | ND | 0.20 | -- | ND | 1. | -- | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 91-20-3 | Naphthalene | ND | 0.20 | -- | ND | 1. | -- | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 0.20 | -- | ND | 1. | -- | U |
| 87-68-3 | Hexachlorobutadiene | ND | 0.20 | -- | ND | 2. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117831.d
Acq On : 5 Jan 2017 2:31 pm
Operator : AIRLAB11:RY
Sample : WG967318-4,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 05 14:57:17 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : Default-LCS-AP2 - All compounds listed

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.38 | 49 | 150788 | 10.000 ppbV | -0.01 |
| Standard Area = 131031 | | | Recovery | = 115.08% | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 439544 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery | = 124.24% | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 86069 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery | = 110.78% | |
| System Monitoring Compounds | | | | | |
| Target Compounds | | | | | Qvalue |
| 2) chlorodifluoromethane | 0.00 | | 0 | N.D. | |
| 3) propylene | 0.00 | | 0 | N.D. | |
| 4) propane | 0.00 | | 0 | N.D. d | |
| 5) dichlorodifluoromethane | 0.00 | | 0 | N.D. | |
| 6) chloromethane | 0.00 | | 0 | N.D. | |
| 7) Freon-114 | 0.00 | | 0 | N.D. | |
| 8) methanol | 4.77 | 31 | 1502 | 0.441 ppbV # | 1 |
| 9) vinyl chloride | 0.00 | | 0 | N.D. | |
| 10) 1,3-butadiene | 0.00 | | 0 | N.D. | |
| 11) butane | 0.00 | | 0 | N.D. | |
| 13) bromomethane | 0.00 | | 0 | N.D. | |
| 14) chloroethane | 0.00 | | 0 | N.D. | |
| 15) ethanol | 5.94 | 31 | 1362 | 0.180 ppbV # | 82 |
| 16) dichlorofluoromethane | 0.00 | | 0 | N.D. | |
| 17) vinyl bromide | 0.00 | | 0 | N.D. | |
| 18) acrolein | 0.00 | | 0 | N.D. | |
| 19) acetone | 6.63 | 43 | 1942 | 0.099 ppbV # | 88 |
| 20) acetonitrile | 0.00 | | 0 | N.D. | |
| 21) trichlorofluoromethane | 0.00 | | 0 | N.D. | |
| 22) isopropyl alcohol | 7.03 | | 0 | N.D. | |
| 23) acrylonitrile | 0.00 | | 0 | N.D. | |
| 24) pentane | 7.23 | | 0 | N.D. | |
| 25) ethyl ether | 0.00 | | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | | 0 | N.D. | |
| 27) tertiary butyl alcohol | 0.00 | | 0 | N.D. | |
| 28) methylene chloride | 7.76 | 49 | 1520 | 0.097 ppbV | 93 |
| 29) 3-chloropropene | 0.00 | | 0 | N.D. | |
| 30) carbon disulfide | 0.00 | | 0 | N.D. | |
| 31) Freon 113 | 0.00 | | 0 | N.D. | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117831.d
Acq On : 5 Jan 2017 2:31 pm
Operator : AIRLAB11:RY
Sample : WG967318-4,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 05 14:57:17 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : Default-LCS-AP2 - All compounds listed

| | Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 32) | trans-1,2-dichloroethene | 0.00 | | 0 | N.D. | | |
| 33) | 1,1-dichloroethane | 0.00 | | 0 | N.D. | | |
| 34) | MTBE | 0.00 | | 0 | N.D. | | |
| 35) | vinyl acetate | 0.00 | | 0 | N.D. | | |
| 36) | 2-butanone | 0.00 | | 0 | N.D. | | |
| 37) | cis-1,2-dichloroethene | 0.00 | | 0 | N.D. | | |
| 38) | Ethyl Acetate | 0.00 | | 0 | N.D. | | |
| 39) | chloroform | 0.00 | | 0 | N.D. | | |
| 40) | Tetrahydrofuran | 0.00 | | 0 | N.D. | | |
| 41) | 2,2-dichloropropane | 0.00 | | 0 | N.D. | | |
| 42) | 1,2-dichloroethane | 0.00 | | 0 | N.D. | | |
| 44) | hexane | 0.00 | | 0 | N.D. | | |
| 45) | diisopropyl ether | 0.00 | | 0 | N.D. | | |
| 46) | tert-butyl ethyl ether | 0.00 | | 0 | N.D. | | |
| 48) | 1,1,1-trichloroethane | 0.00 | | 0 | N.D. | | |
| 49) | 1,1-dichloropropene | 0.00 | | 0 | N.D. | | |
| 50) | benzene | 0.00 | | 0 | N.D. | | |
| 52) | carbon tetrachloride | 0.00 | | 0 | N.D. | | |
| 53) | cyclohexane | 0.00 | | 0 | N.D. | d | |
| 54) | tert-amyl methyl ether | 0.00 | | 0 | N.D. | | |
| 55) | dibromomethane | 0.00 | | 0 | N.D. | | |
| 56) | 1,2-dichloropropane | 0.00 | | 0 | N.D. | | |
| 57) | bromodichloromethane | 0.00 | | 0 | N.D. | | |
| 58) | 1,4-dioxane | 0.00 | | 0 | N.D. | | |
| 59) | trichloroethene | 0.00 | | 0 | N.D. | | |
| 60) | 2,2,4-trimethylpentane | 0.00 | | 0 | N.D. | | |
| 61) | methyl methacrylate | 0.00 | | 0 | N.D. | | |
| 62) | heptane | 0.00 | | 0 | N.D. | | |
| 63) | cis-1,3-dichloropropene | 0.00 | | 0 | N.D. | | |
| 64) | 4-methyl-2-pentanone | 0.00 | | 0 | N.D. | | |
| 65) | trans-1,3-dichloropropene | 0.00 | | 0 | N.D. | | |
| 66) | 1,1,2-trichloroethane | 0.00 | | 0 | N.D. | | |
| 68) | toluene | 0.00 | | 0 | N.D. | | |
| 71) | 1,3-dichloropropane | 0.00 | | 0 | N.D. | | |
| 72) | 2-hexanone | 0.00 | | 0 | N.D. | | |
| 74) | dibromochloromethane | 0.00 | | 0 | N.D. | | |
| 75) | 1,2-dibromoethane | 0.00 | | 0 | N.D. | | |
| 76) | butyl acetate | 0.00 | | 0 | N.D. | | |
| 77) | octane | 0.00 | | 0 | N.D. | | |
| 78) | tetrachloroethene | 0.00 | | 0 | N.D. | | |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117831.d
Acq On : 5 Jan 2017 2:31 pm
Operator : AIRLAB11:RY
Sample : WG967318-4,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 05 14:57:17 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : Default-LCS-AP2 - All compounds listed

| | Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 79) | 1,1,1,2-tetrachloroethane | 0.00 | | 0 | N.D. | |
| 80) | chlorobenzene | 0.00 | | 0 | N.D. | |
| 81) | ethylbenzene | 0.00 | | 0 | N.D. | |
| 83) | m+p-xylene | 0.00 | | 0 | N.D. | |
| 84) | bromoform | 0.00 | | 0 | N.D. | |
| 85) | styrene | 0.00 | | 0 | N.D. | |
| 86) | 1,1,2,2-tetrachloroethane | 0.00 | | 0 | N.D. | |
| 87) | o-xylene | 0.00 | | 0 | N.D. | |
| 88) | 1,2,3-trichloropropane | 0.00 | | 0 | N.D. | |
| 89) | nonane | 0.00 | | 0 | N.D. | |
| 91) | isopropylbenzene | 0.00 | | 0 | N.D. | |
| 92) | bromobenzene | 0.00 | | 0 | N.D. | |
| 93) | 2-chlorotoluene | 0.00 | | 0 | N.D. | |
| 94) | n-propylbenzene | 0.00 | | 0 | N.D. | |
| 95) | 4-chlorotoluene | 18.66 | | 0 | N.D. | |
| 96) | 4-ethyl toluene | 0.00 | | 0 | N.D. | |
| 97) | 1,3,5-trimethylbenzene | 0.00 | | 0 | N.D. | |
| 98) | tert-butylbenzene | 0.00 | | 0 | N.D. | |
| 99) | 1,2,4-trimethylbenzene | 0.00 | | 0 | N.D. | |
| 100) | decane | 0.00 | | 0 | N.D. | |
| 101) | Benzyl Chloride | 0.00 | | 0 | N.D. | |
| 102) | 1,3-dichlorobenzene | 19.21 | | 0 | N.D. | |
| 103) | 1,4-dichlorobenzene | 19.26 | | 0 | N.D. | |
| 104) | sec-butylbenzene | 0.00 | | 0 | N.D. | |
| 106) | p-isopropyltoluene | 0.00 | | 0 | N.D. | |
| 107) | 1,2-dichlorobenzene | 19.52 | | 0 | N.D. | |
| 108) | n-butylbenzene | 0.00 | | 0 | N.D. | |
| 111) | 1,2-dibromo-3-chloropr... | 0.00 | | 0 | N.D. | |
| 112) | undecane | 0.00 | | 0 | N.D. | |
| 114) | dodecane | 0.00 | | 0 | N.D. | |
| 115) | 1,2,4-trichlorobenzene | 0.00 | | 0 | N.D. | |
| 116) | naphthalene | 21.13 | | 0 | N.D. | |
| 117) | 1,2,3-trichlorobenzene | 21.39 | | 0 | N.D. | |
| 119) | hexachlorobutadiene | 0.00 | | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117831.d
Acq On : 5 Jan 2017 2:31 pm
Operator : AIRLAB11:RY
Sample : WG967318-4,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 05 14:57:17 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : Default-LCS-AP2 - All compounds listedT\R1117828.d

#8
methanol
Concen: 0.44 ppbV
RT: 4.77 min Scan# 151
Delta R.T. 0.045 min
Lab File: R1117831.d
Acq: 5 Jan 2017 2:31 pm

Tgt Ion: 31 Resp: 1502

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 31 | 100 | | |
| 32 | 289.4 | 56.6 | 84.8# |
| 29 | 76.1 | 53.6 | 80.4 |

#15
ethanol
Concen: 0.18 ppbV
RT: 5.94 min Scan# 265
Delta R.T. 0.065 min
Lab File: R1117831.d
Acq: 5 Jan 2017 2:31 pm

Tgt Ion: 31 Resp: 1362

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 31 | 100 | | |
| 45 | 49.1 | 50.3 | 75.5# |

#19
acetone
Concen: 0.10 ppbV
RT: 6.63 min Scan# 340
Delta R.T. 0.121 min
Lab File: R1117831.d
Acq: 5 Jan 2017 2:31 pm

Tgt Ion: 43 Resp: 1942

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 58 | 37.9 | 25.0 | 37.6# |
| 57 | 0.0 | 0.7 | 1.1# |

#28
methylene chloride
Concen: 0.10 ppbV
RT: 7.76 min Scan# 461
Delta R.T. -0.009 min
Lab File: R1117831.d
Acq: 5 Jan 2017 2:31 pm

Tgt Ion: 49 Resp: 1520

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 49 | 100 | | |
| 84 | 78.1 | 67.8 | 101.6 |

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117831.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/5/2017 2:31 pm | Instrument | : Airlab 11 |
| Sample | : WG967318-4,3,250,250 | Quant Date | : 1/5/2017 2:56 pm |

There are no manual integrations or false positives in this file.

# Instrument Performance Check
# Bromofluorobenzene (BFB)
# Form 5

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Instrument ID | : AIRLAB11 | Analysis Date | : 12/06/16 14:58 |
| Tune Standard | : WG958917-1 | Tune File ID | : R1117341_tune |

| m/e | Ion Abundance Criteria | %Relative Abundance |
|---|---|---|
| 50 | 8.0 - 40.0% of mass 95 | 18.1 |
| 75 | 30.0 - 66.0% of mass 95 | 48.8 |
| 95 | Base Peak, 100% relative abundance | 100 |
| 96 | 5.0 - 9.0% of mass 95 | 6.8 |
| 173 | Less than 2.0% of mass 174 | 0.7 (.8 )1 |
| 174 | 50.0 - 120.0% of mass 95 | 94.8 |
| 175 | 4.0 - 9.0% of mass 174 | 6.7 (7 )1 |
| 176 | 93.0 - 101% of mass 174 | 92.7 (97.8)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.1 (6.6 )2 |

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

| Client Sample ID | Lab Sample ID | File ID | Analysis Date/Time |
|---|---|---|---|
| STD0.2 | R925400-1 | R1117345 | 12/06/16 17:13 |
| STD0.5 | R925400-2 | R1117346 | 12/06/16 17:46 |
| STD1.0 | R925400-4 | R1117347 | 12/06/16 18:22 |
| STD5.0 | R925400-3 | R1117348 | 12/06/16 18:56 |
| STD10.0 | R925400-5 | R1117349 | 12/06/16 19:32 |
| STD20.0 | R925400-6 | R1117350 | 12/06/16 20:04 |
| STD50.0 | R925400-7 | R1117351 | 12/06/16 20:38 |
| STD100.0 | R925400-8 | R1117352 | 12/06/16 21:14 |
| ICV Quant | R925400-9 | R1117355 | 12/07/16 10:01 |

# Instrument Performance Check
# Bromofluorobenzene (BFB)
# Form 5

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Instrument ID | : AIRLAB11 | Analysis Date | : 01/05/17 11:45 |
| Tune Standard | : WG967318-1 | Tune File ID | : R1117827_tune |

| m/e | Ion Abundance Criteria | %Relative Abundance |
|---|---|---|
| 50 | 8.0 - 40.0% of mass 95 | 18.6 |
| 75 | 30.0 - 66.0% of mass 95 | 47.9 |
| 95 | Base Peak, 100% relative abundance | 100 |
| 96 | 5.0 - 9.0% of mass 95 | 6.4 |
| 173 | Less than 2.0% of mass 174 | 0.8 (.9 )1 |
| 174 | 50.0 - 120.0% of mass 95 | 86.1 |
| 175 | 4.0 - 9.0% of mass 174 | 6.2 (7.2 )1 |
| 176 | 93.0 - 101% of mass 174 | 83.7 (97.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.4 (6.4 )2 |

1-Value is % of mass 174 2-Value is % of mass 176

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

| Client Sample ID | Lab Sample ID | File ID | Analysis Date/Time |
|---|---|---|---|
| WG967318-2CCAL | WG967318-2 | R1117828 | 01/05/17 12:22 |
| WG967318-3LCS | WG967318-3 | R1117829 | 01/05/17 12:58 |
| WG967318-4BLANK | WG967318-4 | R1117831 | 01/05/17 14:31 |
| CAN 603 FC 698 | L1700484-01 | R1117842 | 01/06/17 08:42 |
| CAN 935 FC 144 | L1700484-02 | R1117843 | 01/06/17 09:17 |
| CAN 1589 FC 010 | L1700484-03 | R1117844 | 01/06/17 09:52 |
| CAN 783 FC 352 | L1700484-04 | R1117845 | 01/06/17 10:26 |

# Internal Standard Area and RT Summary
# Form 8

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Instrument ID | : AIRLAB11 | Analysis Date | : 01/05/17 12:22 |
| Sample No | : WG967318-2 | Lab File ID | : R1117828 |

| | Bromochloromethane | | 1,4-Difluorobenzene | | Chlorobenzene-d5 | |
|---|---|---|---|---|---|---|
| | Area | RT | Area | RT | Area | RT |
| WG967318-2 | 131031 | 10.39 | 353775 | 12.61 | 77696 | 16.97 |
| Upper Limit | 183443 | 10.72 | 495285 | 12.94 | 108774 | 17.30 |
| Lower Limit | 78619 | 10.06 | 212265 | 12.28 | 46618 | 16.64 |
| Sample ID | | | | | | |
| WG967318-3 LCS | 142868 | 10.39 | 380550 | 12.61 | 77439 | 16.97 |
| WG967318-4 BLANK | 150788 | 10.38 | 439544 | 12.61 | 86069 | 16.97 |
| CAN 603 FC 698 | 156920 | 10.38 | 430679 | 12.61 | 87723 | 16.97 |
| CAN 935 FC 144 | 151117 | 10.39 | 422883 | 12.61 | 85238 | 16.97 |
| CAN 1589 FC 010 | 152464 | 10.39 | 428430 | 12.61 | 83945 | 16.97 |
| CAN 783 FC 352 | 144823 | 10.39 | 390854 | 12.61 | 79596 | 16.97 |

Area Upper Limit = +40% of internal standard area
Area Lower Limit = - 40% of internal standard area

RT Upper Limit = +0.33 minutes of internal standard RT
RT Lower Limit = -0.33 minutes of internal standard RT

* Values outside of QC limits

# Sample Data Summary

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : L1700484-01 | Date Collected | : 01/05/17 16:00 |
| Client ID | : CAN 603 FC 698 | Date Received | : 01/06/17 |
| Sample Location | : | Date Analyzed | : 01/06/17 08:42 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117842 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117842.d
Acq On : 6 Jan 2017 8:42 am
Operator : AIRLAB11:RY
Sample : L1700484-01,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 06 10:26:34 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : 9_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.38 | 49 | 156920 | 10.000 ppbV | #-0.01 |
| Standard Area = 131031 | | | Recovery | = 119.76% | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 430679 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery | = 121.74% | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 87723 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery | = 112.91% | |
| System Monitoring Compounds | | | | | |
| Target Compounds | | | | | Qvalue |
| 9) vinyl chloride | 0.00 | | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | | 0 | N.D. | |
| 32) trans-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 33) 1,1-dichloroethane | 0.00 | | 0 | N.D. | |
| 37) cis-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 42) 1,2-dichloroethane | 0.00 | | 0 | N.D. | |
| 48) 1,1,1-trichloroethane | 0.00 | | 0 | N.D. | |
| 59) trichloroethene | 0.00 | | 0 | N.D. | |
| 78) tetrachloroethene | 0.00 | | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117842.d
Acq On : 6 Jan 2017 8:42 am
Operator : AIRLAB11:RY
Sample : L1700484-01,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 06 10:26:34 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : 9_Chlorinateds - .Airlab11\2017\170105T\R1117828.d

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117842.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/6/2017 8:42 am | Instrument | : Airlab 11 |
| Sample | : L1700484-01,3,250,250 | Quant Date | : 1/6/2017 10:26 am |

There are no manual integrations or false positives in this file.

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : L1700484-02 | Date Collected | : 01/05/17 16:00 |
| Client ID | : CAN 935 FC 144 | Date Received | : 01/06/17 |
| Sample Location | : | Date Analyzed | : 01/06/17 09:17 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117843 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117843.d
Acq On : 6 Jan 2017 9:17 am
Operator : AIRLAB11:RY
Sample : L1700484-02,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 10:26:45 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : 9_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.39 | 49 | 151117 | 10.000 ppbV | # 0.00 |
| Standard Area = 131031 | | | Recovery = 115.33% | | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 422883 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery = 119.53% | | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 85238 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery = 109.71% | | |

System Monitoring Compounds

| Target Compounds | | | | Qvalue |
|---|---|---|---|---|
| 9) vinyl chloride | 0.00 | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | 0 | N.D. | |
| 32) trans-1,2-dichloroethene | 0.00 | 0 | N.D. | |
| 33) 1,1-dichloroethane | 0.00 | 0 | N.D. | |
| 37) cis-1,2-dichloroethene | 0.00 | 0 | N.D. | |
| 42) 1,2-dichloroethane | 0.00 | 0 | N.D. | |
| 48) 1,1,1-trichloroethane | 0.00 | 0 | N.D. | |
| 59) trichloroethene | 0.00 | 0 | N.D. | |
| 78) tetrachloroethene | 0.00 | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117843.d
Acq On : 6 Jan 2017 9:17 am
Operator : AIRLAB11:RY
Sample : L1700484-02,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 06 10:26:45 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : 9_Chlorinateds - .Airlab11\2017\170105T\R1117828.d

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117843.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/6/2017 9:17 am | Instrument | : Airlab 11 |
| Sample | : L1700484-02,3,250,250 | Quant Date | : 1/6/2017 10:26 am |

There are no manual integrations or false positives in this file.

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : L1700484-03 | Date Collected | : 01/05/17 16:00 |
| Client ID | : CAN 1589 FC 010 | Date Received | : 01/06/17 |
| Sample Location | : | Date Analyzed | : 01/06/17 09:52 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117844 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117844.d
Acq On : 6 Jan 2017 9:52 am
Operator : AIRLAB11:RY
Sample : L1700484-03,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 06 10:26:55 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : 9_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.39 | 49 | 152464 | 10.000 ppbV | # 0.00 |
| Standard Area = 131031 | | | Recovery | = 116.36% | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 428430 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery | = 121.10% | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 83945 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery | = 108.04% | |
| System Monitoring Compounds | | | | | |
| Target Compounds | | | | | Qvalue |
| 9) vinyl chloride | 0.00 | | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | | 0 | N.D. | |
| 32) trans-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 33) 1,1-dichloroethane | 0.00 | | 0 | N.D. | |
| 37) cis-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 42) 1,2-dichloroethane | 0.00 | | 0 | N.D. | |
| 48) 1,1,1-trichloroethane | 0.00 | | 0 | N.D. | |
| 59) trichloroethene | 0.00 | | 0 | N.D. | |
| 78) tetrachloroethene | 0.00 | | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117844.d
Acq On : 6 Jan 2017 9:52 am
Operator : AIRLAB11:RY
Sample : L1700484-03,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 06 10:26:55 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : 9_Chlorinateds - .Airlab11\2017\170105T\R1117828.d

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117844.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/6/2017 9:52 am | Instrument | : Airlab 11 |
| Sample | : L1700484-03,3,250,250 | Quant Date | : 1/6/2017 10:26 am |

There are no manual integrations or false positives in this file.

# Form 1
# Volatile Organics

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Lab ID | : L1700484-04 | Date Collected | : 01/05/17 16:00 |
| Client ID | : CAN 783 FC 352 | Date Received | : 01/06/17 |
| Sample Location | : | Date Analyzed | : 01/06/17 10:26 |
| Sample Matrix | : AIR | Dilution Factor | : 1 |
| Analytical Method | : 48,TO-15 | Analyst | : RY |
| Lab File ID | : R1117845 | Instrument ID | : AIRLAB11 |
| Sample Amount | : 250 ml | GC Column | : RTX-1 |

| | | ppbV | | | ug/m3 | | | |
|---|---|---|---|---|---|---|---|---|
| CAS NO. | Parameter | Results | RL | MDL | Results | RL | MDL | Qualifier |
| 75-01-4 | Vinyl chloride | ND | 0.20 | -- | ND | 0.5 | -- | U |
| 75-35-4 | 1,1-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.20 | -- | ND | 0.8 | -- | U |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.20 | -- | ND | 1. | -- | U |
| 79-01-6 | Trichloroethene | ND | 0.20 | -- | ND | 1. | -- | U |
| 127-18-4 | Tetrachloroethene | ND | 0.20 | -- | ND | 1. | -- | U |

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117845.d
Acq On : 6 Jan 2017 10:26 am
Operator : AIRLAB11:RY
Sample : L1700484-04,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 06 10:56:59 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

CCAL FILE : O:\Forensics\Data\Airlab11\2017\170105T\R1117828.d
Sub List : 9_Chlorinateds - .

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) bromochloromethane | 10.39 | 49 | 144823 | 10.000 ppbV | # 0.00 |
| Standard Area = 131031 | | | Recovery | = 110.53% | |
| 43) 1,4-difluorobenzene | 12.61 | 114 | 390854 | 10.000 ppbV | 0.00 |
| Standard Area = 353775 | | | Recovery | = 110.48% | |
| 67) chlorobenzene-D5 | 16.97 | 54 | 79596 | 10.000 ppbV | 0.00 |
| Standard Area = 77696 | | | Recovery | = 102.45% | |
| System Monitoring Compounds | | | | | |
| Target Compounds | | | | | Qvalue |
| 9) vinyl chloride | 0.00 | | 0 | N.D. | |
| 26) 1,1-dichloroethene | 0.00 | | 0 | N.D. | |
| 32) trans-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 33) 1,1-dichloroethane | 0.00 | | 0 | N.D. | |
| 37) cis-1,2-dichloroethene | 0.00 | | 0 | N.D. | |
| 42) 1,2-dichloroethane | 0.00 | | 0 | N.D. | |
| 48) 1,1,1-trichloroethane | 0.00 | | 0 | N.D. | |
| 59) trichloroethene | 0.00 | | 0 | N.D. | |
| 78) tetrachloroethene | 0.00 | | 0 | N.D. | |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : O:\Forensics\Data\Airlab11\2017\170105T\
Data File : R1117845.d
Acq On : 6 Jan 2017 10:26 am
Operator : AIRLAB11:RY
Sample : L1700484-04,3,250,250
Misc : WG967318,ICAL13187
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 06 10:56:59 2017
Quant Method : O:\Forensics\Data\Airlab11\2017\170105T\TALL161206.M
Quant Title : TO-14A/TO-15 SIM/Full Scan Analysis
QLast Update : Wed Dec 07 16:03:32 2016
Response via : Initial Calibration

Sub List : 9_Chlorinateds - .Airlab11\2017\170105T\R1117828.d

Manual Integration/Negative Proof Report

| | | | |
|---|---|---|---|
| Data Path | : O:\Forensics\Data\Airlab11\ | QMethod | : TALL161206.M |
| Data File | : R1117845.d | Operator | : AIRLAB11:RY |
| Date Inj'd | : 1/6/2017 10:26 am | Instrument | : Airlab 11 |
| Sample | : L1700484-04,3,250,250 | Quant Date | : 1/6/2017 10:56 am |

There are no manual integrations or false positives in this file.

# Standards Data Summary

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | : **Alpha Analytical** | **Lab Number** | : **L1700484** |
| **Project Name** | : **INDIV. CANISTER CERTIFICATION** | **Project Number** | : **CANISTER QC INDIV** |
| **Instrument ID** | : **AIRLAB11** | **Ical Ref** | : **ICAL13187** |
| **Calibration dates** | : **12/06/16 17:13 12/06/16 21:14** | | |

Calibration Files
0.2 =R1117345.d 0.5 =R1117346.d 1.0 =R1117347.d 5.0 =R1117348.d 10 =R1117349.d 20 =R1117350.d
50 =R1117351.d 100 =R1117352.d

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) | I | bromochloromethane | ----------ISTD---------- | | | | | | | | | |
| 2) | | chlorodifluoromethane | 1.663 | 1.513 | 1.410 | 1.399 | 1.355 | 1.467 | 1.356 | 1.261 | 1.4282 | 8.51 |
| 3) | | propylene | 0.699 | 0.577 | 0.558 | 0.551 | 0.533 | 0.563 | 0.507 | 0.463 | 0.5563 | 12.22 |
| 4) | | propane | 0.628 | 0.496 | 0.482 | 0.472 | 0.442 | 0.463 | 0.407 | 0.367 | 0.4697 | 16.34 |
| 5) | | dichlorodifluoromethane | 1.981 | 1.601 | 1.756 | 1.878 | 1.662 | 1.650 | 1.267 | 1.226 | 1.6278 | 16.39 |
| 6) | C | chloromethane | 0.855 | 0.802 | 0.807 | 0.796 | 0.768 | 0.800 | 0.715 | 0.645 | 0.7737 | 8.44 |
| 7) | | Freon-114 | 3.613 | 3.312 | 3.147 | 3.138 | 2.914 | 2.899 | 2.247 | 1.918 | 2.8986 | 19.28 |
| 8) | C | methanol | | | 0.271 | 0.250 | 0.234 | 0.231 | 0.198 | 0.171 | 0.2259 | 15.93 |
| 9) | C | vinyl chloride | 1.176 | 1.104 | 1.025 | 0.983 | 0.930 | 0.939 | 0.810 | 0.718 | 0.9607 | 15.47 |
| 10) | C | 1,3-butadiene | 0.834 | 0.742 | 0.717 | 0.705 | 0.679 | 0.690 | 0.605 | 0.547 | 0.6900 | 12.51 |
| 11) | | butane | 1.634 | 1.437 | 1.372 | 1.289 | 1.209 | 1.260 | 1.085 | 0.959 | 1.2807 | 16.31 |
| 12) | C | acetaldehyde | | 0.540 | 0.485 | 0.417 | 0.385 | 0.398 | 0.319 | 0.257 | 0.4000 | 23.78 |
| 13) | C | bromomethane | 1.195 | 1.100 | 1.087 | 1.049 | 1.006 | 1.038 | 0.919 | 0.831 | 1.0281 | 10.93 |
| 14) | C | chloroethane | 0.635 | 0.583 | 0.550 | 0.544 | 0.519 | 0.546 | 0.483 | 0.444 | 0.5381 | 10.83 |
| 15) | | ethanol | | 0.616 | 0.529 | 0.523 | 0.477 | 0.530 | 0.454 | 0.383 | 0.5017 | 14.60 |
| 16) | | dichlorofluoromethane | 2.847 | 2.495 | 2.425 | 2.368 | 2.260 | 2.359 | 2.083 | 1.844 | 2.3352 | 12.61 |
| 17) | C | vinyl bromide | 1.285 | 1.196 | 1.147 | 1.142 | 1.094 | 1.130 | 0.995 | 0.883 | 1.1090 | 11.08 |
| 18) | C | acrolein | 0.471 | 0.394 | 0.382 | 0.379 | 0.370 | 0.398 | 0.366 | 0.333 | 0.3866 | 10.27 |
| 19) | | acetone | 1.783 | 1.499 | 1.433 | 1.241 | 1.184 | 1.279 | 1.079 | 0.902 | 1.2999 | 20.87 |
| 20) | C | acetonitrile | 1.353 | 0.853 | 0.783 | 0.740 | 0.695 | 0.739 | 0.651 | 0.582 | 0.7994 | 29.80 |
| 21) | | trichlorofluoromethane | 3.642 | 3.349 | 3.200 | 3.126 | 2.966 | 3.066 | 2.625 | 2.260 | 3.0292 | 14.10 |
| 22) | | isopropyl alcohol | 1.798 | 1.644 | 1.449 | 1.385 | 1.289 | 1.417 | 1.217 | 1.042 | 1.4051 | 16.88 |
| 23) | C | acrylonitrile | 0.716 | 0.653 | 0.539 | 0.660 | 0.652 | 0.603 | 0.636 | 0.577 | 0.6294 | 8.73 |
| 24) | | pentane | 2.144 | 1.683 | 1.337 | 1.517 | 1.455 | 1.291 | 1.303 | 1.078 | 1.4759 | 21.92 |
| 25) | | ethyl ether | 0.948 | 1.026 | 0.848 | 0.958 | 0.913 | 0.815 | 0.802 | 0.651 | 0.8701 | 13.45 |
| 26) | C | 1,1-dichloroethene | 1.791 | 1.872 | 1.565 | 1.774 | 1.580 | 1.576 | 1.536 | 1.300 | 1.6244 | 11.21 |
| 27) | | tertiary butyl alcohol | | 2.402 | 1.885 | 1.919 | 1.815 | 1.903 | 1.961 | 1.570 | 1.9222 | 12.91 |
| 28) | C | methylene chloride | | 1.438 | 1.119 | 1.030 | 0.972 | 1.001 | 0.949 | 0.794 | 1.0432 | 19.15 |
| 29) | C | 3-chloropropene | 1.191 | 1.099 | 1.004 | 1.004 | 0.967 | 1.001 | 0.899 | 0.827 | 0.9989 | 11.20 |
| 30) | C | carbon disulfide | 2.959 | 2.969 | 2.649 | 2.876 | 2.750 | 2.904 | 2.628 | 2.355 | 2.7612 | 7.64 |
| 31) | | Freon 113 | 2.427 | 2.337 | 2.188 | 2.163 | 2.063 | 2.177 | 1.923 | 1.689 | 2.1207 | 10.97 |
| 32) | | trans-1,2-dichloroethene | 1.536 | 1.414 | 1.369 | 1.417 | 1.389 | 1.421 | 1.256 | 1.128 | 1.3662 | 9.01 |
| 33) | C | 1,1-dichloroethane | 1.968 | 1.809 | 1.748 | 1.668 | 1.598 | 1.667 | 1.457 | 1.309 | 1.6532 | 12.37 |
| 34) | C | MTBE | 3.106 | 2.990 | 2.826 | 2.776 | 2.620 | 2.655 | 2.322 | 2.071 | 2.6706 | 12.75 |
| 35) | C | vinyl acetate | 0.945 | 0.765 | 0.694 | 0.827 | 0.997 | 1.225 | 1.278 | 1.262 | 0.9991 | 23.28 |
| 36) | C | 2-butanone | 2.675 | 2.276 | 2.059 | 1.971 | 1.886 | 1.953 | 1.709 | 1.547 | 2.0094 | 17.25 |
| 37) | | cis-1,2-dichloroethene | 1.443 | 1.322 | 1.322 | 1.277 | 1.219 | 1.297 | 1.168 | 1.066 | 1.2641 | 8.99 |
| 38) | | Ethyl Acetate | 0.327 | 0.359 | 0.295 | 0.296 | 0.278 | 0.284 | 0.244 | 0.216 | 0.2874 | 15.45 |

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | : **Alpha Analytical** | **Lab Number** | : **L1700484** |
| **Project Name** | : **INDIV. CANISTER CERTIFICATION** | **Project Number** | : **CANISTER QC INDIV** |
| **Instrument ID** | : **AIRLAB11** | **Ical Ref** | : **ICAL13187** |
| **Calibration dates** | : **12/06/16 17:13 12/06/16 21:14** | | |

Calibration Files
0.2 =R1117345.d 0.5 =R1117346.d 1.0 =R1117347.d 5.0 =R1117348.d 10 =R1117349.d 20 =R1117350.d
50 =R1117351.d 100 =R1117352.d

| | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 39) C | chloroform | 2.541 | 2.263 | 2.101 | 2.029 | 1.916 | 1.977 | 1.724 | 1.524 | 2.0095 | 15.54 |
| 40) | Tetrahydrofuran | 1.139 | 1.066 | 0.908 | 0.960 | 0.910 | 0.956 | 0.861 | 0.789 | 0.9488 | 11.72 |
| 41) | 2,2-dichloropropane | 2.077 | 1.955 | 1.805 | 1.751 | 1.657 | 1.710 | 1.494 | 1.337 | 1.7232 | 13.76 |
| 42) C | 1,2-dichloroethane | 1.583 | 1.481 | 1.399 | 1.362 | 1.322 | 1.397 | 1.245 | 1.129 | 1.3648 | 10.17 |
| 43) I | 1,4-difluorobenzene | ----------ISTD---------- | | | | | | | | | |
| 44) C | hexane | 0.433 | 0.417 | 0.399 | 0.407 | 0.390 | 0.405 | 0.381 | 0.357 | 0.3986 | 5.79 |
| 45) | diisopropyl ether | 0.255 | 0.272 | 0.241 | 0.242 | 0.236 | 0.250 | 0.231 | 0.215 | 0.2427 | 6.93 |
| 46) | tert-butyl ethyl ether | 0.886 | 0.814 | 0.795 | 0.818 | 0.789 | 0.841 | 0.776 | 0.743 | 0.8077 | 5.36 |
| 47) s | 1,2-dichloroethane-D4 | 0.198 | 0.191 | 0.187 | 0.207 | 0.197 | 0.191 | 0.204 | 0.209 | 0.1981 | 4.07 |
| 48) C | 1,1,1-trichloroethane | 0.674 | 0.652 | 0.623 | 0.630 | 0.613 | 0.664 | 0.626 | 0.609 | 0.6362 | 3.77 |
| 49) | 1,1-dichloropropene | 0.478 | 0.442 | 0.443 | 0.443 | 0.432 | 0.468 | 0.444 | 0.435 | 0.4482 | 3.66 |
| 50) C | benzene | 0.990 | 0.882 | 0.859 | 0.833 | 0.805 | 0.877 | 0.817 | 0.794 | 0.8570 | 7.36 |
| 51) | thiophene | 0.583 | 0.552 | 0.548 | 0.513 | 0.497 | 0.575 | 0.543 | 0.517 | 0.5411 | 5.62 |
| 52) C | carbon tetrachloride | 0.689 | 0.664 | 0.658 | 0.676 | 0.669 | 0.723 | 0.677 | 0.637 | 0.6740 | 3.72 |
| 53) | cyclohexane | 0.482 | 0.433 | 0.417 | 0.410 | 0.399 | 0.416 | 0.387 | 0.374 | 0.4150 | 7.93 |
| 54) | tert-amyl methyl ether | 0.831 | 0.789 | 0.755 | 0.784 | 0.772 | 0.842 | 0.806 | 0.789 | 0.7960 | 3.67 |
| 55) | dibromomethane | 0.404 | 0.364 | 0.366 | 0.371 | 0.365 | 0.400 | 0.379 | 0.365 | 0.3767 | 4.33 |
| 56) C | 1,2-dichloropropane | 0.330 | 0.301 | 0.301 | 0.293 | 0.285 | 0.307 | 0.286 | 0.273 | 0.2972 | 5.77 |
| 57) | bromodichloromethane | 0.699 | 0.662 | 0.664 | 0.699 | 0.687 | 0.744 | 0.709 | 0.684 | 0.6935 | 3.81 |
| 58) C | 1,4-dioxane | 0.224 | 0.207 | 0.189 | 0.213 | 0.201 | 0.224 | 0.211 | 0.195 | 0.2080 | 6.12 |
| 59) C | trichloroethene | 0.496 | 0.453 | 0.438 | 0.442 | 0.442 | 0.484 | 0.444 | 0.391 | 0.4487 | 7.12 |
| 60) C | 2,2,4-trimethylpentane | 1.457 | 1.381 | 1.307 | 1.321 | 1.261 | 1.286 | 1.169 | 1.055 | 1.2798 | 9.66 |
| 61) | methyl methacrylate | | 0.352 | 0.308 | 0.195 | 0.168 | 0.178 | 0.200 | 0.231 | 0.2330 | 30.13# |
| 62) | heptane | 0.518 | 0.448 | 0.436 | 0.443 | 0.431 | 0.451 | 0.420 | 0.405 | 0.4440 | 7.58 |
| 63) C | cis-1,3-dichloropropene | 0.463 | 0.442 | 0.438 | 0.457 | 0.463 | 0.514 | 0.496 | 0.489 | 0.4702 | 5.71 |
| 64) C | 4-methyl-2-pentanone | 0.648 | 0.633 | 0.603 | 0.628 | 0.610 | 0.640 | 0.594 | 0.559 | 0.6143 | 4.78 |
| 65) | trans-1,3-dichloropropene | 0.456 | 0.443 | 0.445 | 0.474 | 0.482 | 0.543 | 0.524 | 0.514 | 0.4851 | 7.83 |
| 66) C | 1,1,2-trichloroethane | 0.386 | 0.371 | 0.360 | 0.367 | 0.357 | 0.394 | 0.373 | 0.362 | 0.3713 | 3.55 |
| 67) I | chlorobenzene-D5 | ----------ISTD---------- | | | | | | | | | |
| 68) C | toluene | 6.615 | 6.169 | 5.897 | 5.729 | 5.640 | 6.144 | 5.354 | 4.965 | 5.8143 | 8.85 |
| 69) s | toluene-D8 | 3.862 | 3.917 | 3.742 | 3.904 | 3.961 | 3.890 | 3.732 | 3.706 | 3.8392 | 2.55 |
| 70) | 2-methylthiophene | 4.834 | 4.678 | 4.407 | 4.082 | 3.968 | 4.473 | 3.839 | 3.535 | 4.2269 | 10.51 |
| 71) | 1,3-dichloropropane | 3.077 | 2.862 | 2.764 | 2.710 | 2.636 | 2.777 | 2.421 | 2.226 | 2.6841 | 9.79 |
| 72) | 2-hexanone | 3.541 | 3.244 | 3.185 | 3.262 | 3.196 | 3.359 | 2.905 | 2.668 | 3.1701 | 8.52 |
| 73) | 3-methylthiophene | 4.929 | 4.629 | 4.511 | 4.072 | 3.990 | 4.503 | 3.834 | 3.393 | 4.2325 | 11.79 |
| 74) | dibromochloromethane | 3.885 | 3.828 | 3.735 | 4.151 | 4.148 | 4.428 | 3.912 | 3.496 | 3.9479 | 7.30 |
| 75) C | 1,2-dibromoethane | 3.524 | 3.374 | 3.178 | 3.240 | 3.197 | 3.471 | 3.092 | 2.895 | 3.2464 | 6.36 |
| 76) | butyl acetate | | 0.696 | 0.694 | 0.716 | 0.710 | 0.783 | 0.688 | 0.657 | 0.7062 | 5.49 |

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | : **Alpha Analytical** | **Lab Number** | : **L1700484** |
| **Project Name** | : **INDIV. CANISTER CERTIFICATION** | **Project Number** | : **CANISTER QC INDIV** |
| **Instrument ID** | : **AIRLAB11** | **Ical Ref** | : **ICAL13187** |
| **Calibration dates** | : **12/06/16 17:13 12/06/16 21:14** | | |

Calibration Files
0.2 =R1117345.d 0.5 =R1117346.d 1.0 =R1117347.d 5.0 =R1117348.d 10 =R1117349.d 20 =R1117350.d
50 =R1117351.d 100 =R1117352.d

| | | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 77) | | octane | 1.881 | 1.934 | 1.813 | 1.856 | 1.791 | 1.889 | 1.653 | 1.530 | 1.7932 | 7.60 |
| 78) | C | tetrachloroethene | 3.556 | 3.434 | 3.245 | 3.221 | 3.150 | 3.427 | 2.933 | 2.521 | 3.1861 | 10.40 |
| 79) | | 1,1,1,2-tetrachloroethane | 2.813 | 2.740 | 2.577 | 2.732 | 2.747 | 3.026 | 2.694 | 2.319 | 2.7058 | 7.44 |
| 80) | C | chlorobenzene | 5.376 | 4.886 | 4.739 | 4.660 | 4.589 | 5.055 | 4.388 | 3.829 | 4.6904 | 9.83 |
| 81) | C | ethylbenzene | 8.260 | 7.754 | 7.428 | 7.329 | 7.246 | 8.022 | 7.048 | 6.428 | 7.4393 | 7.77 |
| 82) | | 2-ethylthiophene | 5.886 | 5.416 | 5.222 | 4.952 | 4.839 | 5.573 | 4.816 | 4.329 | 5.1292 | 9.65 |
| 83) | C | m+p-xylene | 6.588 | 6.033 | 5.861 | 5.716 | 5.641 | 6.267 | 5.361 | 4.526 | 5.7493 | 10.85 |
| 84) | C | bromoform | 4.140 | 3.791 | 3.774 | 4.313 | 4.402 | 4.718 | 3.984 | 3.252 | 4.0466 | 11.17 |
| 85) | C | styrene | 4.734 | 4.503 | 4.391 | 4.414 | 4.374 | 4.935 | 4.353 | 3.961 | 4.4581 | 6.44 |
| 86) | C | 1,1,2,2-tetrachloroethane | 4.758 | 4.462 | 4.262 | 4.217 | 4.052 | 4.413 | 3.684 | 2.954 | 4.1002 | 13.64 |
| 87) | C | o-xylene | 6.673 | 6.171 | 5.922 | 5.899 | 5.796 | 6.383 | 5.304 | 4.153 | 5.7876 | 13.42 |
| 88) | | 1,2,3-trichloropropane | 3.675 | 3.486 | 3.345 | 3.321 | 3.206 | 3.456 | 3.018 | 2.799 | 3.2882 | 8.45 |
| 89) | | nonane | 3.659 | 3.472 | 3.293 | 3.354 | 3.267 | 3.470 | 3.002 | 2.696 | 3.2767 | 9.23 |
| 90) | s | bromofluorobenzene | 1.768 | 1.761 | 1.719 | 1.725 | 1.755 | 1.671 | 1.634 | 1.684 | 1.7146 | 2.79 |
| 91) | C | isopropylbenzene | 9.207 | 8.644 | 8.201 | 8.393 | 8.224 | 8.876 | 7.714 | 6.531 | 8.2240 | 9.99 |
| 92) | | bromobenzene | 4.621 | 4.272 | 4.005 | 4.058 | 4.019 | 4.419 | 3.929 | 3.571 | 4.1117 | 7.84 |
| 93) | | 2-chlorotoluene | 1.994 | 1.921 | 1.878 | 1.926 | 1.891 | 2.057 | 1.590 | 1.191 | 1.8058 | 15.70 |
| 94) | | n-propylbenzene | 1.815 | 1.655 | 1.607 | 1.532 | 1.542 | 1.695 | 1.659 | 1.621 | 1.6406 | 5.49 |
| 95) | | 4-chlorotoluene | 6.846 | 6.425 | 6.087 | 6.066 | 5.931 | 6.434 | 5.362 | 4.802 | 5.9942 | 10.82 |
| 96) | | 4-ethyl toluene | 9.949 | 9.385 | 9.025 | 9.268 | 9.077 | 9.479 | 7.852 | 6.370 | 8.8005 | 13.08 |
| 97) | | 1,3,5-trimethylbenzene | 7.825 | 7.349 | 7.094 | 6.862 | 6.719 | 7.427 | 6.195 | 5.142 | 6.8265 | 12.32 |
| 98) | | tert-butylbenzene | 8.712 | 8.229 | 7.944 | 7.992 | 7.919 | 8.488 | 6.329 | 4.561 | 7.5217 | 18.53 |
| 99) | | 1,2,4-trimethylbenzene | 7.580 | 7.205 | 6.987 | 6.902 | 6.913 | 7.765 | 5.858 | 4.115 | 6.6657 | 17.67 |
| 100) | | decane | 4.157 | 3.905 | 3.841 | 3.932 | 3.838 | 4.078 | 3.506 | 2.970 | 3.7784 | 10.05 |
| 101) | C | Benzyl Chloride | 5.182 | 5.335 | 5.334 | 6.214 | 6.410 | 7.106 | 6.250 | 5.205 | 5.8793 | 12.15 |
| 102) | | 1,3-dichlorobenzene | 5.560 | 5.443 | 5.215 | 4.864 | 4.768 | 5.449 | 4.457 | 3.460 | 4.9020 | 14.26 |
| 103) | C | 1,4-dichlorobenzene | 5.553 | 5.479 | 5.243 | 4.887 | 4.787 | 5.500 | 4.404 | 3.224 | 4.8847 | 16.06 |
| 104) | | sec-butylbenzene | 1.133 | 1.072 | 1.020 | 1.017 | 0.991 | 1.043 | 0.821 | 0.599 | 0.9621 | 17.86 |
| 105) | | 1,2,3-trimethylbenzene | 7.580 | 7.205 | 6.987 | 6.902 | 6.913 | 7.765 | 5.858 | 4.115 | 6.6657 | 17.67 |
| 106) | | p-isopropyltoluene | 1.022 | 0.980 | 0.947 | 0.944 | 0.926 | 0.993 | 0.791 | 0.581 | 0.8981 | 16.25 |
| 107) | | 1,2-dichlorobenzene | 5.539 | 5.082 | 4.840 | 4.584 | 4.509 | 5.105 | 4.455 | 3.752 | 4.7333 | 11.39 |
| 108) | | n-butylbenzene | 8.469 | 8.446 | 8.088 | 8.094 | 8.046 | 8.724 | 7.236 | 5.871 | 7.8718 | 11.71 |
| 109) | | indan | 6.871 | 6.702 | 6.415 | 6.039 | 5.911 | 6.570 | 5.575 | 4.640 | 6.0904 | 11.97 |
| 110) | | indene | 4.322 | 4.214 | 4.059 | 3.942 | 3.867 | 4.344 | 3.838 | 3.438 | 4.0028 | 7.52 |
| 111) | C | 1,2-dibromo-3-chloropropane | 2.052 | 2.107 | 2.077 | 2.179 | 2.211 | 2.486 | 2.246 | 1.989 | 2.1683 | 7.12 |
| 112) | | undecane | 4.159 | 4.330 | 4.213 | 4.378 | 4.478 | 4.904 | 4.346 | 3.610 | 4.3024 | 8.38 |
| 113) | | 1,2,4,5-tetramethylbenzene | 1.252 | 1.270 | 1.249 | 1.171 | 1.200 | 1.417 | 1.091 | 0.800 | 1.1812 | 15.24 |
| 114) | | dodecane | 3.519 | 3.998 | 4.150 | 4.474 | 4.827 | 5.365 | 4.313 | 3.048 | 4.2118 | 17.19 |

# Initial Calibration Summary
# Form 6

| | | | |
|---|---|---|---|
| **Client** | : **Alpha Analytical** | **Lab Number** | : **L1700484** |
| **Project Name** | : **INDIV. CANISTER CERTIFICATION** | **Project Number** | : **CANISTER QC INDIV** |
| **Instrument ID** | : **AIRLAB11** | **Ical Ref** | : **ICAL13187** |
| **Calibration dates** | : **12/06/16 17:13 12/06/16 21:14** | | |

Calibration Files
0.2 =R1117345.d 0.5 =R1117346.d 1.0 =R1117347.d 5.0 =R1117348.d 10 =R1117349.d 20 =R1117350.d
50 =R1117351.d 100 =R1117352.d

| | Compound | 0.2 | 0.5 | 1.0 | 5.0 | 10 | 20 | 50 | 100 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 115) C | 1,2,4-trichlorobenzene | 3.880 | 4.395 | 4.239 | 4.345 | 4.450 | 4.785 | 3.544 | 2.485 | 4.0155 | 18.02 |
| 116) | naphthalene | 1.064 | 1.026 | 0.965 | 0.890 | 0.899 | 1.029 | 0.883 | 0.747 | 0.9379 | 11.10 |
| 117) | 1,2,3-trichlorobenzene | 4.179 | 4.252 | 4.320 | 4.193 | 4.283 | 4.825 | 4.174 | 3.462 | 4.2109 | 8.79 |
| 118) | benzothiophene | 0.904 | 0.994 | 1.008 | 0.812 | 0.828 | 1.092 | 0.901 | 0.726 | 0.9083 | 13.15 |
| 119) C | hexachlorobutadiene | 3.949 | 3.955 | 3.759 | 3.850 | 3.980 | 4.122 | 3.354 | 2.520 | 3.6860 | 14.21 |
| 120) | 2-methylnaphthalene | | | 3.705 | 2.571 | 2.909 | 5.411 | 5.076 | 4.594 | 4.0443 | 28.86 |
| 121) | 1-methylnaphthalene | | | 4.833 | 3.355 | 3.729 | 6.235 | 5.637 | 4.889 | 4.7797 | 22.92 |

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 12/07/16 10:01 | | |
| Lab File ID | : R1117355 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : R925400-9 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| bromochloromethane | 1 | 1 | - | 0 | 30 | 96 | 0 |
| chlorodifluoromethane | 1.428 | 1.308 | - | 8.4 | 30 | 92 | 0 |
| propylene | 0.556 | 0.598 | - | -7.6 | 30 | 107 | 0 |
| propane | 0.47 | 0.43 | - | 8.5 | 30 | 93 | 0 |
| dichlorodifluoromethane | 1.628 | 1.532 | - | 5.9 | 30 | 88 | 0 |
| chloromethane | 0.774 | 0.805 | - | -4 | 30 | 100 | 0 |
| Freon-114 | 2.899 | 2.987 | - | -3 | 30 | 98 | 0 |
| methanol | 0.226 | 0.236 | - | -4.4 | 30 | 96 | 0 |
| vinyl chloride | 0.961 | 0.979 | - | -1.9 | 30 | 101 | 0 |
| 1,3-butadiene | 0.69 | 0.732 | - | -6.1 | 30 | 103 | 0 |
| butane | 1.281 | 1.22 | - | 4.8 | 30 | 97 | 0 |
| bromomethane | 1.028 | 1.061 | - | -3.2 | 30 | 101 | 0 |
| chloroethane | 0.538 | 0.546 | - | -1.5 | 30 | 101 | 0 |
| ethanol | 0.502 | 0.49 | - | 2.4 | 30 | 99 | 0 |
| dichlorofluoromethane | 2.335 | 2.194 | - | 6 | 30 | 93 | 0 |
| vinyl bromide | 1.109 | 1.139 | - | -2.7 | 30 | 100 | 0 |
| acrolein | 0.387 | 0.343 | - | 11.4 | 30 | 89 | 0 |
| acetone | 1.3 | 1.262 | - | 2.9 | 30 | 102 | 0 |
| acetonitrile | 0.799 | 0.708 | - | 11.4 | 30 | 98 | 0 |
| trichlorofluoromethane | 3.029 | 3.157 | - | -4.2 | 30 | 102 | 0 |
| isopropyl alcohol | 1.405 | 1.499 | - | -6.7 | 30 | 111 | 0 |
| acrylonitrile | 0.629 | 0.649 | - | -3.2 | 30 | 95 | 0 |
| pentane | 1.476 | 1.402 | - | 5 | 30 | 92 | 0 |
| ethyl ether | 0.87 | 0.863 | - | 0.8 | 30 | 91 | 0 |
| 1,1-dichloroethene | 1.624 | 1.592 | - | 2 | 30 | 97 | 0 |
| tertiary butyl alcohol | 1.922 | 1.834 | - | 4.6 | 30 | 97 | 0 |
| methylene chloride | 1.043 | 1.032 | - | 1.1 | 30 | 102 | 0 |
| 3-chloropropene | 0.999 | 1.094 | - | -9.5 | 30 | 108 | 0 |
| carbon disulfide | 2.761 | 2.848 | - | -3.2 | 30 | 99 | 0 |
| Freon 113 | 2.121 | 2.24 | - | -5.6 | 30 | 104 | 0 |
| trans-1,2-dichloroethene | 1.366 | 1.313 | - | 3.9 | 30 | 91 | 0 |
| 1,1-dichloroethane | 1.653 | 1.699 | - | -2.8 | 30 | 102 | 0 |
| MTBE | 2.671 | 2.757 | - | -3.2 | 30 | 101 | 0 |
| vinyl acetate | 0.999 | 1.379 | - | -38* | 30 | 132 | 0 |
| 2-butanone | 2.009 | 1.959 | - | 2.5 | 30 | 99 | 0 |
| cis-1,2-dichloroethene | 1.264 | 1.427 | - | -12.9 | 30 | 112 | 0 |
| Ethyl Acetate | 0.287 | 0.288 | - | -0.3 | 30 | 99 | 0 |
| chloroform | 2.009 | 2.053 | - | -2.2 | 30 | 103 | 0 |
| Tetrahydrofuran | 0.949 | 0.912 | - | 3.9 | 30 | 96 | 0 |
| 2,2-dichloropropane | 1.723 | 1.623 | - | 5.8 | 30 | 94 | 0 |
| 1,2-dichloroethane | 1.365 | 1.401 | - | -2.6 | 30 | 102 | 0 |
| 1,4-difluorobenzene | 1 | 1 | - | 0 | 30 | 99 | 0 |
| hexane | 0.399 | 0.385 | - | 3.5 | 30 | 98 | 0 |
| diisopropyl ether | 0.243 | 0.222 | - | 8.6 | 30 | 93 | 0 |
| tert-butyl ethyl ether | 0.808 | 0.747 | - | 7.5 | 30 | 94 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 12/07/16 10:01 | | |
| Lab File ID | : R1117355 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : R925400-9 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1,2-dichloroethane-D4 | 0.198 | 0.185 | - | 6.6 | 30 | 93 | 0 |
| 1,1,1-trichloroethane | 0.636 | 0.643 | - | -1.1 | 30 | 104 | 0 |
| 1,1-dichloropropene | 0.448 | 0.428 | - | 4.5 | 30 | 98 | 0 |
| benzene | 0.857 | 0.822 | - | 4.1 | 30 | 101 | 0 |
| carbon tetrachloride | 0.674 | 0.706 | - | -4.7 | 30 | 105 | -.01 |
| cyclohexane | 0.415 | 0.399 | - | 3.9 | 30 | 99 | 0 |
| tert-amyl methyl ether | 0.796 | 0.748 | - | 6 | 30 | 96 | 0 |
| dibromomethane | 0.377 | 0.356 | - | 5.6 | 30 | 97 | 0 |
| 1,2-dichloropropane | 0.297 | 0.295 | - | 0.7 | 30 | 103 | 0 |
| bromodichloromethane | 0.694 | 0.702 | - | -1.2 | 30 | 101 | 0 |
| 1,4-dioxane | 0.208 | 0.201 | - | 3.4 | 30 | 99 | 0 |
| trichloroethene | 0.449 | 0.479 | - | -6.7 | 30 | 108 | 0 |
| 2,2,4-trimethylpentane | 1.28 | 1.249 | - | 2.4 | 30 | 98 | 0 |
| methyl methacrylate | 0.233 | 0.194 | - | 16.7 | 30 | 115 | 0 |
| heptane | 0.444 | 0.423 | - | 4.7 | 30 | 98 | 0 |
| cis-1,3-dichloropropene | 0.47 | 0.506 | - | -7.7 | 30 | 108 | 0 |
| 4-methyl-2-pentanone | 0.614 | 0.598 | - | 2.6 | 30 | 97 | 0 |
| trans-1,3-dichloropropene | 0.485 | 0.458 | - | 5.6 | 30 | 94 | 0 |
| 1,1,2-trichloroethane | 0.371 | 0.385 | - | -3.8 | 30 | 107 | 0 |
| chlorobenzene-D5 | 1 | 1 | - | 0 | 30 | 99 | 0 |
| toluene | 5.814 | 5.908 | - | -1.6 | 30 | 104 | 0 |
| toluene-D8 | 3.839 | 3.837 | - | 0.1 | 30 | 96 | 0 |
| 1,3-dichloropropane | 2.684 | 2.476 | - | 7.7 | 30 | 93 | 0 |
| 2-hexanone | 3.17 | 3.177 | - | -0.2 | 30 | 99 | 0 |
| dibromochloromethane | 3.948 | 4.283 | - | -8.5 | 30 | 103 | 0 |
| 1,2-dibromoethane | 3.246 | 3.44 | - | -6 | 30 | 107 | 0 |
| butyl acetate | 0.706 | 0.673 | - | 4.7 | 30 | 94 | 0 |
| octane | 1.793 | 1.683 | - | 6.1 | 30 | 93 | 0 |
| tetrachloroethene | 3.186 | 3.339 | - | -4.8 | 30 | 105 | 0 |
| 1,1,1,2-tetrachloroethane | 2.706 | 2.626 | - | 3 | 30 | 95 | 0 |
| chlorobenzene | 4.69 | 4.917 | - | -4.8 | 30 | 106 | 0 |
| ethylbenzene | 7.439 | 7.677 | - | -3.2 | 30 | 105 | 0 |
| m+p-xylene | 5.749 | 6.025 | - | -4.8 | 30 | 106 | 0 |
| bromoform | 4.047 | 4.453 | - | -10 | 30 | 100 | 0 |
| styrene | 4.458 | 4.686 | - | -5.1 | 30 | 106 | 0 |
| 1,1,2,2-tetrachloroethane | 4.1 | 4.211 | - | -2.7 | 30 | 103 | 0 |
| o-xylene | 5.788 | 6.184 | - | -6.8 | 30 | 106 | 0 |
| 1,2,3-trichloropropane | 3.288 | 3.062 | - | 6.9 | 30 | 95 | 0 |
| nonane | 3.277 | 2.996 | - | 8.6 | 30 | 91 | 0 |
| bromofluorobenzene | 1.715 | 1.653 | - | 3.6 | 30 | 94 | 0 |
| isopropylbenzene | 8.224 | 8.128 | - | 1.2 | 30 | 98 | 0 |
| bromobenzene | 4.112 | 3.895 | - | 5.3 | 30 | 96 | 0 |
| 2-chlorotoluene | 1.806 | 1.851 | - | -2.5 | 30 | 97 | 0 |
| n-propylbenzene | 1.641 | 1.43 | - | 12.9 | 30 | 92 | 0 |
| 4-chlorotoluene | 5.994 | 5.682 | - | 5.2 | 30 | 95 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 12/07/16 10:01 | | |
| Lab File ID | : R1117355 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : R925400-9 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 4-ethyl toluene | 8.801 | 8.704 | - | 1.1 | 30 | 95 | 0 |
| 1,3,5-trimethylbenzene | 6.827 | 7.17 | - | -5 | 30 | 106 | 0 |
| tert-butylbenzene | 7.522 | 7.582 | - | -0.8 | 30 | 95 | 0 |
| 1,2,4-trimethylbenzene | 6.666 | 7.553 | - | -13.3 | 30 | 109 | 0 |
| decane | 3.778 | 3.585 | - | 5.1 | 30 | 93 | 0 |
| Benzyl Chloride | 5.879 | 6.694 | - | -13.9 | 30 | 104 | 0 |
| 1,3-dichlorobenzene | 4.902 | 5.386 | - | -9.9 | 30 | 112 | 0 |
| 1,4-dichlorobenzene | 4.885 | 5.339 | - | -9.3 | 30 | 111 | 0 |
| sec-butylbenzene | 9.621 | 9.397 | - | 2.3 | 30 | 94 | 0 |
| p-isopropyltoluene | 8.981 | 8.311 | - | 7.5 | 30 | 89 | 0 |
| 1,2-dichlorobenzene | 4.733 | 5.112 | - | -8 | 30 | 113 | 0 |
| n-butylbenzene | 7.872 | 8.017 | - | -1.8 | 30 | 99 | 0 |
| 1,2-dibromo-3-chloropropan | 2.168 | 2.162 | - | 0.3 | 30 | 97 | 0 |
| undecane | 4.302 | 4.249 | - | 1.2 | 30 | 94 | 0 |
| dodecane | 4.212 | 4.801 | - | -14 | 30 | 99 | 0 |
| 1,2,4-trichlorobenzene | 4.016 | 5.364 | - | -33.6* | 30 | 120 | 0 |
| naphthalene | 9.379 | 9.693 | - | -3.3 | 30 | 107 | 0 |
| 1,2,3-trichlorobenzene | 4.211 | 4.7 | - | -11.6 | 30 | 109 | 0 |
| hexachlorobutadiene | 3.686 | 4.496 | - | -22 | 30 | 112 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 01/05/17 12:22 | | |
| Lab File ID | : R1117828 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : WG967318-2 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| bromochloromethane | 1 | 1 | - | 0 | 30 | 100 | 0 |
| chlorodifluoromethane | 1.428 | 1.48 | - | -3.6 | 30 | 109 | 0 |
| propylene | 0.556 | 0.631 | - | -13.5 | 30 | 118 | 0 |
| propane | 0.47 | 0.494 | - | -5.1 | 30 | 111 | 0 |
| dichlorodifluoromethane | 1.628 | 1.333 | - | 18.1 | 30 | 80 | 0 |
| chloromethane | 0.774 | 1.003 | - | -29.6 | 30 | 130 | 0 |
| Freon-114 | 2.899 | 3.084 | - | -6.4 | 30 | 106 | 0 |
| methanol | 0.226 | 0.311 | - | -37.6* | 30 | 132 | 0 |
| vinyl chloride | 0.961 | 1.102 | - | -14.7 | 30 | 118 | 0 |
| 1,3-butadiene | 0.69 | 0.804 | - | -16.5 | 30 | 118 | 0 |
| butane | 1.281 | 1.548 | - | -20.8 | 30 | 128 | 0 |
| bromomethane | 1.028 | 1.091 | - | -6.1 | 30 | 108 | 0 |
| chloroethane | 0.538 | 0.625 | - | -16.2 | 30 | 120 | 0 |
| ethanol | 0.502 | 0.597 | - | -18.9 | 30 | 125 | 0 |
| dichlorofluoromethane | 2.335 | 2.575 | - | -10.3 | 30 | 114 | 0 |
| vinyl bromide | 1.109 | 1.107 | - | 0.2 | 30 | 101 | 0 |
| acrolein | 0.387 | 0.437 | - | -12.9 | 30 | 118 | 0 |
| acetone | 1.3 | 1.44 | - | -10.8 | 30 | 122 | 0 |
| acetonitrile | 0.799 | 0.93 | - | -16.4 | 30 | 134 | 0 |
| trichlorofluoromethane | 3.029 | 2.919 | - | 3.6 | 30 | 98 | 0 |
| isopropyl alcohol | 1.405 | 1.483 | - | -5.6 | 30 | 115 | 0 |
| acrylonitrile | 0.629 | 0.794 | - | -26.2 | 30 | 122 | 0 |
| pentane | 1.476 | 1.802 | - | -22.1 | 30 | 124 | 0 |
| ethyl ether | 0.87 | 1.142 | - | -31.3* | 30 | 125 | 0 |
| 1,1-dichloroethene | 1.624 | 1.888 | - | -16.3 | 30 | 119 | 0 |
| tertiary butyl alcohol | 1.922 | 1.963 | - | -2.1 | 30 | 108 | 0 |
| methylene chloride | 1.043 | 1.367 | - | -31.1* | 30 | 141 | 0 |
| 3-chloropropene | 0.999 | 1.343 | - | -34.4* | 30 | 139 | 0 |
| carbon disulfide | 2.761 | 3.423 | - | -24 | 30 | 124 | 0 |
| Freon 113 | 2.121 | 2.317 | - | -9.2 | 30 | 112 | 0 |
| trans-1,2-dichloroethene | 1.366 | 1.324 | - | 3.1 | 30 | 95 | 0 |
| 1,1-dichloroethane | 1.653 | 1.602 | - | 3.1 | 30 | 100 | 0 |
| MTBE | 2.671 | 2.137 | - | 20 | 30 | 81 | 0 |
| vinyl acetate | 0.999 | 1.085 | - | -8.6 | 30 | 109 | 0 |
| 2-butanone | 2.009 | 2.022 | - | -0.6 | 30 | 107 | 0 |
| cis-1,2-dichloroethene | 1.264 | 1.167 | - | 7.7 | 30 | 96 | 0 |
| Ethyl Acetate | 0.287 | 0.284 | - | 1 | 30 | 102 | 0 |
| chloroform | 2.009 | 1.779 | - | 11.4 | 30 | 93 | 0 |
| Tetrahydrofuran | 0.949 | 0.94 | - | 0.9 | 30 | 103 | 0 |
| 2,2-dichloropropane | 1.723 | 1.359 | - | 21.1 | 30 | 82 | 0 |
| 1,2-dichloroethane | 1.365 | 1.188 | - | 13 | 30 | 90 | 0 |
| 1,4-difluorobenzene | 1 | 1 | - | 0 | 30 | 80 | 0 |
| hexane | 0.399 | 0.51 | - | -27.8 | 30 | 104 | 0 |
| diisopropyl ether | 0.243 | 0.265 | - | -9.1 | 30 | 89 | 0 |
| tert-butyl ethyl ether | 0.808 | 0.893 | - | -10.5 | 30 | 90 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | | | |
|---|---|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 | | |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV | | |
| Instrument ID | : AIRLAB11 | Calibration Date | : 01/05/17 12:22 | | |
| Lab File ID | : R1117828 | Init. Calib. Date(s) | : 12/06/16 | 12/06/16 | |
| Sample No | : WG967318-2 | Init. Calib. Times | : 17:13 | 21:14 | |
| Channel | : | | | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1,1,1-trichloroethane | 0.636 | 0.631 | - | 0.8 | 30 | 82 | 0 |
| 1,1-dichloropropene | 0.448 | 0.503 | - | -12.3 | 30 | 93 | 0 |
| benzene | 0.857 | 1.008 | - | -17.6 | 30 | 100 | 0 |
| carbon tetrachloride | 0.674 | 0.664 | - | 1.5 | 30 | 79 | -.01 |
| cyclohexane | 0.415 | 0.515 | - | -24.1 | 30 | 103 | 0 |
| tert-amyl methyl ether | 0.796 | 0.778 | - | 2.3 | 30 | 80 | 0 |
| dibromomethane | 0.377 | 0.423 | - | -12.2 | 30 | 92 | 0 |
| 1,2-dichloropropane | 0.297 | 0.374 | - | -25.9 | 30 | 104 | 0 |
| bromodichloromethane | 0.694 | 0.787 | - | -13.4 | 30 | 91 | 0 |
| 1,4-dioxane | 0.208 | 0.235 | - | -13 | 30 | 93 | 0 |
| trichloroethene | 0.449 | 0.481 | - | -7.1 | 30 | 87 | 0 |
| 2,2,4-trimethylpentane | 1.28 | 1.654 | - | -29.2 | 30 | 104 | -.01 |
| methyl methacrylate | 0.233 | 0.201 | - | 13.7 | 30 | 95 | 0 |
| heptane | 0.444 | 0.574 | - | -29.3 | 30 | 106 | 0 |
| cis-1,3-dichloropropene | 0.47 | 0.523 | - | -11.3 | 30 | 90 | 0 |
| 4-methyl-2-pentanone | 0.614 | 0.803 | - | -30.8* | 30 | 105 | 0 |
| trans-1,3-dichloropropene | 0.485 | 0.535 | - | -10.3 | 30 | 88 | 0 |
| 1,1,2-trichloroethane | 0.371 | 0.423 | - | -14 | 30 | 94 | -.01 |
| chlorobenzene-D5 | 1 | 1 | - | 0 | 30 | 95 | 0 |
| toluene | 5.814 | 5.609 | - | 3.5 | 30 | 95 | -.01 |
| 1,3-dichloropropane | 2.684 | 2.767 | - | -3.1 | 30 | 100 | 0 |
| 2-hexanone | 3.17 | 3.614 | - | -14 | 30 | 108 | -.01 |
| dibromochloromethane | 3.948 | 3.572 | - | 9.5 | 30 | 82 | 0 |
| 1,2-dibromoethane | 3.246 | 3.077 | - | 5.2 | 30 | 91 | 0 |
| butyl acetate | 0.706 | 0.711 | - | -0.7 | 30 | 95 | 0 |
| octane | 1.793 | 1.766 | - | 1.5 | 30 | 94 | 0 |
| tetrachloroethene | 3.186 | 2.673 | - | 16.1 | 30 | 81 | 0 |
| 1,1,1,2-tetrachloroethane | 2.706 | 2.416 | - | 10.7 | 30 | 84 | 0 |
| chlorobenzene | 4.69 | 4.419 | - | 5.8 | 30 | 92 | 0 |
| ethylbenzene | 7.439 | 7.158 | - | 3.8 | 30 | 94 | 0 |
| m+p-xylene | 5.749 | 5.751 | - | -0 | 30 | 97 | 0 |
| bromoform | 4.047 | 3.639 | - | 10.1 | 30 | 79 | 0 |
| styrene | 4.458 | 4.29 | - | 3.8 | 30 | 93 | 0 |
| 1,1,2,2-tetrachloroethane | 4.1 | 4.457 | - | -8.7 | 30 | 105 | 0 |
| o-xylene | 5.788 | 5.956 | - | -2.9 | 30 | 98 | 0 |
| 1,2,3-trichloropropane | 3.288 | 3.453 | - | -5 | 30 | 102 | 0 |
| nonane | 3.277 | 3.917 | - | -19.5 | 30 | 114 | 0 |
| isopropylbenzene | 8.224 | 8.028 | - | 2.4 | 30 | 93 | 0 |
| bromobenzene | 4.112 | 4.269 | - | -3.8 | 30 | 101 | 0 |
| 2-chlorotoluene | 1.806 | 1.982 | - | -9.7 | 30 | 100 | 0 |
| n-propylbenzene | 1.641 | 1.396 | - | 14.9 | 30 | 86 | 0 |
| 4-chlorotoluene | 5.994 | 6.052 | - | -1 | 30 | 97 | 0 |
| 4-ethyl toluene | 8.801 | 9.32 | - | -5.9 | 30 | 98 | 0 |
| 1,3,5-trimethylbenzene | 6.827 | 6.751 | - | 1.1 | 30 | 96 | 0 |
| tert-butylbenzene | 7.522 | 7.845 | - | -4.3 | 30 | 94 | 0 |

* Value outside of QC limits.

# Continuing Calibration
# Form 7

| | | | |
|---|---|---|---|
| Client | : Alpha Analytical | Lab Number | : L1700484 |
| Project Name | : INDIV. CANISTER CERTIFICATION | Project Number | : CANISTER QC INDIV |
| Instrument ID | : AIRLAB11 | Calibration Date | : 01/05/17 12:22 |
| Lab File ID | : R1117828 | Init. Calib. Date(s) | : 12/06/16 12/06/16 |
| Sample No | : WG967318-2 | Init. Calib. Times | : 17:13 21:14 |
| Channel | : | | |

| Compound | Ave. RRF | RRF | Min RRF | %D | Max %D | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1,2,4-trimethylbenzene | 6.666 | 6.994 | - | -4.9 | 30 | 96 | 0 |
| decane | 3.778 | 4.629 | - | -22.5 | 30 | 115 | 0 |
| Benzyl Chloride | 5.879 | 5.866 | - | 0.2 | 30 | 87 | 0 |
| 1,3-dichlorobenzene | 4.902 | 4.525 | - | 7.7 | 30 | 90 | 0 |
| 1,4-dichlorobenzene | 4.885 | 4.51 | - | 7.7 | 30 | 90 | 0 |
| sec-butylbenzene | 9.621 | 10.3 | - | -7.1 | 30 | 99 | 0 |
| p-isopropyltoluene | 8.981 | 9.183 | - | -2.2 | 30 | 94 | 0 |
| 1,2-dichlorobenzene | 4.733 | 4.239 | - | 10.4 | 30 | 89 | 0 |
| n-butylbenzene | 7.872 | 8.74 | - | -11 | 30 | 103 | 0 |
| 1,2-dibromo-3-chloropropan | 2.168 | 2.168 | - | 0 | 30 | 93 | 0 |
| undecane | 4.302 | 5.206 | - | -21 | 30 | 111 | 0 |
| dodecane | 4.212 | 5.369 | - | -27.5 | 30 | 106 | 0 |
| 1,2,4-trichlorobenzene | 4.016 | 3.83 | - | 4.6 | 30 | 82 | 0 |
| naphthalene | 9.379 | 8.307 | - | 11.4 | 30 | 88 | 0 |
| 1,2,3-trichlorobenzene | 4.211 | 3.671 | - | 12.8 | 30 | 81 | 0 |
| hexachlorobutadiene | 3.686 | 3.185 | - | 13.6 | 30 | 76 | 0 |

* Value outside of QC limits.

# Sample Preparation

# Alpha Analytical Air Lab
# Instrument Run Log

Instrument ID: Airlab15

Internal Standard/Surrogate IDs: CSS16-038 / SS16-036

Date: 01/12/17

Internal Standard/Surrogate Volume: 100 ml

Analyst Initials: MB/RY

Sequence File Name: 170112.S

SIM ICAL# Full Scan ICAL# NJ ICAL# 13277 APH ICAL#

| AS Position # | Sample ID | Acquisition Method | Data File ID | Standard ID or Batch ID #, ICAL Ref # | Comment (s) | Product/ sublist | Leak Check Pass ? Y/N |
|---|---|---|---|---|---|---|---|
| 1 | WG969058-1 | TO15_SFS.qgm | R152084.qgd | WG969058,ICAL13292 | TUNE | | NA |
| 2 | WG969058-2,3,250,250 | TO15_SFS.qgm | R152085.qgd | WG969058,ICAL13292 | CC | SS16-037E | NA |
| 3 | WG969058-3,3,250,250 | TO15_SFS.qgm | R152086.qgd | WG969058,ICAL13292 | LCS | SS16-039B | NA |
| 1 | WG969058-4,3,250,250 | TO15_SFS.qgm | R152087.qgd | WG969058,ICAL13292 | BLANK | | NA |
| 2 | L1700975-01,3,250,250 | TO15_SFS.qgm | R152088.qgd | WG969058,ICAL13292 | | 4 CL | Y |
| 2 | WG969058-5,3,250,250 | TO15_SFS.qgm | R152089.qgd | WG969058,ICAL13292 | NJ-TO15 DUP | 4 CL | Y |
| 3 | L1700975-02,3,250,250 | TO15_SFS.qgm | R152090.qgd | WG969058,ICAL13292 | | 4 CL | Y |
| 4 | L1700613-01,3,250,250 | TO15_SFS.qgm | R152091.qgd | WG969148,ICAL13292 | | NY | Y |
| 4 | WG969148-5,3,250,250 | TO15_SFS.qgm | R152092.qgd | WG969148,ICAL13292 | TO15-LL DUP | NY | Y |
| 5 | L1700613-02,3,250,250 | TO15_SFS.qgm | R152093.qgd | WG969148,ICAL13292 | | NY | Y |
| 6 | L1700613-03,3,250,250 | TO15_SFS.qgm | R152094.qgd | WG969148,ICAL13292 | | NY | Y |
| 7 | L1700613-04,3,250,250 | TO15_SFS.qgm | R152095.qgd | WG969148,ICAL13292 | | NY | Y |
| 8 | L1700613-05,3,250,250 | TO15_SFS.qgm | R152096.qgd | WG969148,ICAL13292 | | NY | Y |
| 9 | L1700429-07D,3,200,250 | TO15_SFS.qgm | R152097.qgd | WG969058,ICAL13292 | | NJ-NEW | Y |
| 10 | L1700429-13,3,250,250 | TO15_SFS.qgm | R152098.qgd | WG969058,ICAL13292 | | NJ-NEW | Y |
| 11 | L1700429-14D,3,200,250 | TO15_SFS.qgm | R152099.qgd | WG969058,ICAL13292 | | NJ-NEW | Y |
| 12 | L1700429-15,3,250,250 | TO15_SFS.qgm | R152100.qgd | WG969058,ICAL13292 | | NJ-NEW | Y |
| 13 | L1700429-16D,3,200,250 | TO15_SFS.qgm | R152101.qgd | WG969058,ICAL13292 | | NJ-NEW | Y |
| 14 | L1700429-17D,3,12.45,250 | TO15_SFS.qgm | R152102.qgd | WG969058,ICAL13292 | | NJ-NEW | Y |
| 15 | L1700429-18D,3,25,250 | TO15_SFS.qgm | R152103.qgd | WG969058,ICAL13292 | | NJ-NEW | Y |
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# Alpha Analytical Air Lab
# Instrument Run Log

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**Date(s) of Initial Calibration:** Refer to Initial Calibration Summary Form 6

**Date Acquired:** see Instrument Performance Check Summary and/or quantitation rep

**Sample ID information:** L1301234-01,3,250,250 { Lab sample ID, dept #, actual volume analyzed (mL), nominal volume analyzed (mL) }

**Dilution Factor:** See Form 1 report, or divide nominal volume by actual volume analyzed

# Alpha Analytical Air Lab
# Instrument Run Log

Instrument ID: AIRLAB 11

Internal Standard/Surrogate IDs: SS16-022/CSS15-001

Date: 01/05/17

Internal Standard/Surrogate Volume: 100 ml

Analyst Initials: RY

Sequence File Name: 170105.S

Full Scan ICAL# 13187 SIM ICAL# 13188 TO-15 NJ ICAL # APH ICAL# 13189 CARB#

| AS Position # | Sample ID | Acquisition Method | Data File ID | Standard ID or Batch ID #, ICAL Ref # | Comment (s) | Product/ sublist | Leak Check Pass ? Y/N |
|---|---|---|---|---|---|---|---|
| 1 | TA11010501 | TO15_SFS | R1117827 | 250mL | TUNE | | NA |
| 2 | CA11010501 | TO15_SFS | R1117828 | SS16-037B2 250ML | CC | | NA |
| 3 | CTO15-LLSTD10 | TO15_SFS | R1117829 | SS16-039D 250ML | LL LCS | | NA |
| 3 | CTO15-SIMSTD5.0 | TO15_SFS | R1117830 | SS16-039D 125ML | SIM LCS | | NA |
| 1 | BA11010501 | TO15_SFS | R1117831 | 250mL | LL BLANK | | NA |
| 1 | BA11010502 | TO15_SFS | R1117832 | 250mL | SIM BLANK | | NA |
| 2 | L1700292-01,3,250,250 | TO15_SFS | R1117833 | WG967275,ICAL13187 | FAILED FOR DCM | NY/ 7 SIM | NA |
| 3 | L1700292-02,3,250,250 | TO15_SFS | R1117834 | WG967275,ICAL13187 | | NY/ 7 SIM | NA |
| 4 | L1700292-03,3,250,250 | TO15_SFS | R1117835 | WG967275,ICAL13187 | | NY/ 7 SIM | NA |
| 5 | L1700292-04,3,250,250 | TO15_SFS | R1117836 | WG967275,ICAL13187 | FAILED FOR DCM | NY/ 7 SIM | NA |
| 6 | L1700292-05,3,250,250 | TO15_SFS | R1117837 | WG967275,ICAL13187 | | NY/ 7 SIM | NA |
| 7 | L1700424-01,3,250,250 | TO15_SFS | R1117838 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 8 | L1700424-02,3,250,250 | TO15_SFS | R1117839 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 9 | L1700424-03,3,250,250 | TO15_SFS | R1117840 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 10 | L1700424-04,3,250,250 | TO15_SFS | R1117841 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 11 | L1700484-01,3,250,250 | TO15_SFS | R1117842 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 12 | L1700484-02,3,250,250 | TO15_SFS | R1117843 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 13 | L1700484-03,3,250,250 | TO15_SFS | R1117844 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 14 | L1700484-04,3,250,250 | TO15_SFS | R1117845 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 15 | L1700292-06,3,250,250 | TO15_SFS | R1117846 | WG967275,ICAL13187 | | NY/ 7 SIM | NA |
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# Alpha Analytical Air Lab
# Instrument Run Log

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**Data File Path:** refer to quantitation report header section and/or chromatogram

**Column ID:** Rtx-1 0.25 mm ID

**Date(s) of Initial Calibration:** Refer to Initial Calibration Summary Form 6

**Date Acquired:** see Instrument Performance Check Summary and/or quantitation report.

**Sample ID information:** L1301234-01,3,250,250 { Lab sample ID, dept #, actual volume analyzed (mL), nominal volume analyzed (mL) }

**Dilution Factor:** See Form 1 report, or divide nominal volume by actual volume analyzed

# Alpha Analytical Air Lab
# Instrument Run Log

Instrument ID: AIRLAB 11

Internal Standard/Surrogate IDs: SS16-022/CSS15-001

Date: 01/05/17

Internal Standard/Surrogate Volume: 100 ml

Analyst Initials: RY

Sequence File Name: 170105.S

Full Scan ICAL# 13187 SIM ICAL# 13188 TO-15 NJ ICAL # APH ICAL# 13189 CARB#

| AS Position # | Sample ID | Acquisition Method | Data File ID | Standard ID or Batch ID #, ICAL Ref # | Comment (s) | Product/ sublist | Leak Check Pass ? Y/N |
|---|---|---|---|---|---|---|---|
| 1 | TA11010501 | TO15_SFS | R1117827 | 250mL | TUNE | | NA |
| 2 | CA11010501 | TO15_SFS | R1117828 | SS16-037B2 250ML | CC | | NA |
| 3 | CTO15-LLSTD10 | TO15_SFS | R1117829 | SS16-039D 250ML | LL LCS | | NA |
| 3 | CTO15-SIMSTD5.0 | TO15_SFS | R1117830 | SS16-039D 125ML | SIM LCS | | NA |
| 1 | BA11010501 | TO15_SFS | R1117831 | 250mL | LL BLANK | | NA |
| 1 | BA11010502 | TO15_SFS | R1117832 | 250mL | SIM BLANK | | NA |
| 2 | L1700292-01,3,250,250 | TO15_SFS | R1117833 | WG967275,ICAL13187 | FAILED FOR DCM | NY/ 7 SIM | NA |
| 3 | L1700292-02,3,250,250 | TO15_SFS | R1117834 | WG967275,ICAL13187 | | NY/ 7 SIM | NA |
| 4 | L1700292-03,3,250,250 | TO15_SFS | R1117835 | WG967275,ICAL13187 | | NY/ 7 SIM | NA |
| 5 | L1700292-04,3,250,250 | TO15_SFS | R1117836 | WG967275,ICAL13187 | FAILED FOR DCM | NY/ 7 SIM | NA |
| 6 | L1700292-05,3,250,250 | TO15_SFS | R1117837 | WG967275,ICAL13187 | | NY/ 7 SIM | NA |
| 7 | L1700424-01,3,250,250 | TO15_SFS | R1117838 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 8 | L1700424-02,3,250,250 | TO15_SFS | R1117839 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 9 | L1700424-03,3,250,250 | TO15_SFS | R1117840 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 10 | L1700424-04,3,250,250 | TO15_SFS | R1117841 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 11 | L1700484-01,3,250,250 | TO15_SFS | R1117842 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 12 | L1700484-02,3,250,250 | TO15_SFS | R1117843 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 13 | L1700484-03,3,250,250 | TO15_SFS | R1117844 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 14 | L1700484-04,3,250,250 | TO15_SFS | R1117845 | WG967318,ICAL13187 | | NJ-NEW | NA |
| 15 | L1700292-06,3,250,250 | TO15_SFS | R1117846 | WG967275,ICAL13187 | | NY/ 7 SIM | NA |
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# Alpha Analytical Air Lab
# Instrument Run Log

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**Data File Path:** refer to quantitation report header section and/or chromatogram

**Column ID:** Rtx-1 0.25 mm ID

**Date(s) of Initial Calibration:** Refer to Initial Calibration Summary Form 6

**Date Acquired:** see Instrument Performance Check Summary and/or quantitation report.

**Sample ID information:** L1301234-01,3,250,250 { Lab sample ID, dept #, actual volume analyzed (mL), nominal volume analyzed (mL) }

**Dilution Factor:** See Form 1 report, or divide nominal volume by actual volume analyzed

**Project Name:** FORMER LEC

**Project Number:** 117-0507641

**Lab Number:** L1700975

**Report Date:** 01/13/17

## Canister and Flow Controller Information

| Samplenum | Client ID | Media ID | Media Type | Date Prepared | Bottle Order | Cleaning Batch ID | Can Leak Check | Initial Pressure (in. Hg) | Pressure on Receipt (in. Hg) | Flow Controler Leak Chk | Flow Out mL/min | Flow In mL/min | % RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1700975-01 | CR011117-SS-B6 | 0289 | Flow 1 | 01/09/17 | 234757 | | - | - | - | Pass | 155 | 155 | 0 |
| L1700975-01 | CR011117-SS-B6 | 1646 | 6.0L Can | 01/09/17 | 234757 | L1700424-02 | Pass | -29.4 | -5.1 | - | - | - | - |
| L1700975-02 | DUP011117-VI | 0324 | Flow 1 | 01/09/17 | 234757 | | - | - | - | Pass | 160 | 162 | 1 |
| L1700975-02 | DUP011117-VI | 603 | 6.0L Can | 01/09/17 | 234757 | L1700484-01 | Pass | -28.8 | -3.2 | - | - | - | - |

# APPENDIX E

# Laboratory Data Validation Reports

**Tetra Tech, Inc.**
**Data Validation Report**
**Former LEC**

| Laboratory | SDG | Sample Identification |
|---|---|---|
| Alpha Analytical | L1700975 | CR011117-SS-B6, DUP011117-VI |

Two air samples were collected January 11, 2017 and analyzed by Alpha Analytical for select volatile compounds using Data of Known Quality (DKQ) protocol TO-15. A screening review was performed by a USEPA Region II certified data validator using the criteria specified in Data of Known Quality Protocols Technical Guidance, Data Quality Assessment and Data Usability Evaluation Technical Guidance, in conjunction with Standard Operating Procedure HW-31, Rev. 6, June 2014, and best professional judgment. Data qualifier definitions are as follows:

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

**R** The sample results are rejected (qualified as unusable) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

**J** The analyte was positively identified. The associated value is an estimated quantity.

**J$^-$** The result is an estimated quantity, but the result may be biased low.

**UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Validation consisted of checking and verifying that the criteria listed below were within acceptable QC limits.

- Holding Time
- Laboratory Control Sample (LCS)
- Blank Contamination
- Instrument Tune
- Calibrations
- Internal Standards
- Duplicates
- Canister Integrity

**Holding Times**
All samples were analyzed within specified holding times.

**Blank Contamination**
No qualifications were required.

**Duplicates**
Precision between field duplicates was evaluated and deemed acceptable if the RPD was below 25% when both sample values were greater than 5 times the reporting limit (RL). All analyses were within limits for laboratory and field precision.

**Instrument Tune**
All criteria were met.

**Laboratory Control Sample**
The LCS analysis was acceptable.

**Calibrations**
All calibrations were within limits.

**Internal Standards**
The area responses of all internal standards were within limits.

**Canister Integrity**
The canister leak test, canister certifications and flow controller evaluations were acceptable.

**Miscellaneous**
All reporting limits (RLs) are acceptable to demonstrate compliance with the residential Soil Gas Screening Levels.

**Reviewed by:** Cecelia N. Minch **Date:** 3/7/2017
Cecelia N. Minch