State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 9/15)

Notice: Use this form to request **a written response (on agency letterhead)** from the Department of Natural Resources (DNR) regarding technical assistance, a post-closure change to a site, a specialized agreement or liability clarification for Property with known or suspected environmental contamination. A fee will be required as is authorized by s. 292.55, Wis. Stats., and NR 749, Wis. Adm. Code., unless noted in the instructions below. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

Definitions

"Property" refers to the subject Property that is perceived to have been or has been impacted by the discharge of hazardous substances.

"Liability Clarification" refers to a written determination by the Department provided in response to a request made on this form. The response clarifies whether a person is or may become liable for the environmental contamination of a Property, as provided in s. 292.55, Wis. Stats.

"Technical Assistance" refers to the Department's assistance or comments on the planning and implementation of an environmental investigation or environmental cleanup on a Property in response to a request made on this form as provided in s. 292.55, Wis. Stats.

"Post-closure modification" refers to changes to Property boundaries and/or continuing obligations for Properties or sites that received closure letters for which continuing obligations have been applied or where contamination remains. Many, but not all, of these sites are included on the GIS Registry layer of RR Sites Map to provide public notice of residual contamination and continuing obligations.

Select the Correct Form

This from should be used to request the following from the DNR:

- Technical Assistance
- Liability Clarification
- Post-Closure Modifications
- Specialized Agreements (tax cancellation, negotiated agreements, etc.)

Do not use this form if one of the following applies:

- Request for an **off-site liability exemption or clarification** for Property that has been or is perceived to be contaminated by one or more hazardous substances that originated on another Property containing the source of the contamination. Use DNR's Off-Site Liability Exemption and Liability Clarification Application Form 4400-201.
- Submittal of an Environmental Assessment for the **Lender Liability Exemption**, s 292.21, Wis. Stats., **if no response or review by DNR is requested**. Use the Lender Liability Exemption Environmental Assessment Tracking Form 4400-196.
- Request for an **exemption to develop on a historic fill site** or licensed landfill. Use DNR's Form 4400-226 or 4400-226A.
- **Request for closure** for Property where the investigation and cleanup actions are completed. Use DNR's Case Closure - GIS Registry Form 4400-202.

All forms, publications and additional information are available on the internet at: dnr.wi.gov/topic/Brownfields/Pubs.html.

Instructions

1. Complete sections 1, 2, 6 and 7 for all requests. Be sure to provide adequate and complete information.
2. Select the type of assistance requested: Section 3 for technical assistance or post-closure modifications, Section 4 for a written determination or clarification of environmental liabilities; or Section 5 for a specialized agreement.
3. Include the fee payment that is listed in Section 3, 4, or 5, unless you are a "Voluntary Party" enrolled in the Voluntary Party Liability Exemption Program **and** the questions in Section 2 direct otherwise. Information on to whom and where to send the fee is found in Section 8 of this form.
4. Send the completed request, supporting materials and the fee to the appropriate DNR regional office where the Property is located. See the map on the last page of this form. A paper copy of the signed form and all reports and supporting materials shall be sent with an electronic copy of the form and supporting materials on a compact disk. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf"

The time required for DNR's determination varies depending on the complexity of the site, and the clarity and completeness of the request and supporting documentation.

Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name	First	MI	Organization/ Business Name
Schmutzer	Steve		Brimark Builders

Mailing Address	City	State	ZIP Code
980 American Drive	Neenah	WI	54956

Phone # (include area code)	Fax # (include area code)	Email
(920) 955-3999		sschmutzer@brimarkbuilders.com

The requester listed above: (select all that apply)

- ☐ Is currently the owner
- ☐ Is considering selling the Property
- ☐ Is renting or leasing the Property
- ☐ Is considering acquiring the Property
- ☐ Is a lender with a mortgagee interest in the Property
- ☒ Other. Explain the status of the Property with respect to the applicant:

General contractor for redevelopment on property.

Contact Information (to be contacted with questions about this request) ☐ Select if same as requester

Contact Last Name	First	MI	Organization/ Business Name
Fedorchak	Robert		EnviroForensics LLC

Mailing Address	City	State	ZIP Code
825 N Capitol Avenue	Indianapolis	IN	46204

Phone # (include area code)	Fax # (include area code)	Email
(317) 441-5633		rfedorchack@enviroforensics.com

Property Owner (if different from requester)

Contact Last Name	First	MI	Organization/ Business Name
			Two Rivers Hotel Group LLC

Mailing Address	City	State	ZIP Code
1407 16th St	Two Rivers	WI	54241

Phone # (include area code)	Fax # (include area code)	Email

Section 2. Property Information

Property Name	FID No. (if known)
Two Rivers Hotel Group LLC Property	

BRRTS No. (if known)	Parcel Identification Number
02-36-584382	05300007102100

Street Address	City	State	ZIP Code
1407 16th Street	Two Rivers	WI	54241

County	Municipality where the Property is located	Property is composed of:	Property Size Acres
Manitowoc	◉ City ○ Town ○ Village of Two Rivers	◉ Single tax parcel ○ Multiple tax parcels	

1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

◉ No ○ Yes

Date requested by: _____

Reason:

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

◉ No. **Include the fee that is required for your request in Section 3, 4 or 5.**

○ Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:
Section 3. Technical Assistance or Post-Closure Modifications;
Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: **[Numbers in brackets are for WI DNR Use]**

☐ No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - **Include a fee of $350.** Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.

☐ Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of $700.**

☐ Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of $1050.**

☐ Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of $1050.**

☐ Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of $1050.**

☐ Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of $1050.**

☐ Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of $350**

☐ Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of $425.**

☐ Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of $425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

☐ Schedule a Technical Assistance Meeting - **Include a fee of $700.**

☐ Hazardous Waste Determination - **Include a fee of $700.**

☒ Other Technical Assistance - **Include a fee of $700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

☐ Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of $1050, and:**

☐ Include a fee of $300 for sites with residual soil contamination; and

☐ Include a fee of $350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

Skip Sections 4 and 5 if the technical assistance you are requesting is listed above and complete Sections 6 and 7 of this form.

Section 4. Request for Liability Clarification

Select the type of liability clarification requested. Use the available space given or attach information, explanations, or specific questions that you need answered in DNR's reply. Complete Sections 6 and 7 of this form. **[Numbers in brackets are for DNR Use]**

☐ "Lender" liability exemption clarification - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of $700.**

Provide the following documentation:

(1) ownership status of the real Property, and/or the personal Property and fixtures;

(2) an environmental assessment, in accordance with s. 292.21, Wis. Stats.;

(3) the date the environmental assessment was conducted by the lender;

(4) the date of the Property acquisition; for foreclosure actions, include a copy of the signed and dated court order confirming the sheriff's sale.

(5) documentation showing how the Property was acquired and the steps followed under the appropriate state statutes.

(6) a copy of the Property deed with the correct legal description; and,

(7) the Lender Liability Exemption Environmental Assessment Tracking Form (Form 4400-196).

(8) If no sampling was done, please provide reasoning as to why it was **not** conducted. Include this either in the accompanying environmental assessment or as an attachment to this form, and cite language in s. 292. 21(1)(c)2.,h.-i., Wis. Stats.:

h. The collection and analysis of representative samples of soil or other materials in the ground that are suspected of being contaminated based on observations made during a visual inspection of the real Property or based on aerial photographs, or other information available to the lender, including stained or discolored soil or other materials in the ground and including soil or materials in the ground in areas with dead or distressed vegetation. The collection and analysis shall identify contaminants in the soil or other materials in the ground and shall quantify concentrations.

i. The collection and analysis of representative samples of unknown wastes or potentially hazardous substances found on the real Property and the determination of concentrations of hazardous waste and hazardous substances found in tanks, drums or other containers or in piles or lagoons on the real Property.

☐ "Representative" liability exemption clarification (e.g. trustees, receivers, etc.) - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of $700.**

Provide the following documentation:

(1) ownership status of the Property;

(2) the date of Property acquisition by the representative;

(3) the means by which the Property was acquired;

(4) documentation that the representative has no beneficial interest in any entity that owns, possesses, or controls the Property;

(5) documentation that the representative has not caused any discharge of a hazardous substance on the Property; and

(6) a copy of the Property deed with the correct legal description.

☐ Clarification of local governmental unit (LGU) liability exemption at sites with: (select all that apply)

☐ hazardous substances spills - s. 292.11(9)(e), Wis. Stats. [649];

☐ Perceived environmental contamination - [649];

☐ hazardous waste - s. 292.24 (2), Wis. Stats. [649]; and/or

☐ solid waste - s. 292.23 (2), Wis. Stats. [649].

❖ **Include a fee of $700, a summary of the environmental liability clarification being requested, and the following:**

(1) clear supporting documentation showing the acquisition method used, and the steps followed under the appropriate state statute(s).

(2) current and proposed ownership status of the Property;

(3) date and means by which the Property was acquired by the LGU, where applicable;

(4) a map and the ¼, ¼ section location of the Property;

(5) summary of current uses of the Property;

(6) intended or potential use(s) of the Property;

(7) descriptions of other investigations that have taken place on the Property; and

(8) (for solid waste clarifications) a summary of the license history of the facility.

Section 4. Request for Liability Clarification (cont.)

☐ Lease liability clarification - s. 292.55, Wis. Stats. [646]

- ❖ **Include a fee of $700 for a single Property, or $1400 for multiple Properties and the information listed below:**

(1) a copy of the proposed lease;

(2) the name of the current owner of the Property and the person who will lease the Property;

(3) a description of the lease holder's association with any persons who have possession, control, or caused a discharge of a hazardous substance on the Property;

(4) map(s) showing the Property location and any suspected or known sources of contamination detected on the Property;

(5) a description of the intended use of the Property by the lease holder, with reference to the maps to indicate which areas will be used. Explain how the use will not interfere with any future investigation or cleanup at the Property; and

(6) all reports or investigations (e.g. Phase I and Phase II Environmental Assessments and/or Site Investigation Reports conducted under s. NR 716, Wis. Adm. Code) that identify areas of the Property where a discharge has occurred.

General or other environmental liability clarification - s. 292.55, Wis. Stats. [682] - Explain your request below.

- ❖ **Include a fee of $700 and an adequate summary of relevant environmental work to date.**

☐ No Action Required (NAR) - NR 716.05, [682]

- ❖ **Include a fee of $700.**

Use where an environmental discharge has or has not occurred, and applicant wants a DNR determination that no further assessment or clean-up work is required. Usually this is requested after a Phase I and Phase II environmental assessment has been conducted; the assessment reports should be submitted with this form. This is not a closure letter.

☐ Clarify the liability associated with a "closed" Property - s. 292.55, Wis. Stats. [682]

- ❖ **Include a fee of $700.**

- Include a copy of any closure documents if a state agency other than DNR approved the closure.

Use this space or attach additional sheets to provide necessary information, explanations or specific questions to be answered by the DNR.

A passive vapor mitigation system was installed during construction of a new hotel at the site, and sub-slab vapor sampling was subsequently completed. The requester is seeking written WDNR concurrence with the following conclusions:

1. There is not a current unacceptable risk of exposure to employees or visitors to the Site through the vapor intrusion pathway.

2. An active vapor mitigation system is not necessary at this time.

Section 5. Request for a Specialized Agreement

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: dnr.wi.gov/topic/Brownfields/lgu.html#tabx4.

☐ Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description; and,
(3) a draft 75.105 agreement based on the DNR's model (dnr.wi.gov/topic/brownfields/documents/mod75-105agrmt.pdf).

☐ Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description; and,
(3) a draft 75.105 agreement based on the DNR's model (dnr.wi.gov/topic/brownfields/documents/mod75-106agrmt.pdf).

☐ Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]

- ❖ **Include a fee of $1400, and the information listed below:**

(1) a draft schedule for remediation; and,
(2) the name, mailing address, phone and email for each party to the agreement.

Section 6. Other Information Submitted

Identify all materials that are included with this request.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

☐ Phase I Environmental Site Assessment Report - Date: _____

☐ Phase II Environmental Site Assessment Report - Date: _____

☐ Legal Description of Property (required for all liability requests and specialized agreements)

☐ Map of the Property (required for all liability requests and specialized agreements)

Analytical results of the following sampled media: Select all that apply and include date of collection.

☐ Groundwater ☐ Soil ☐ Sediment ☐ Other medium - Describe: _____

Date of Collection: _____

☐ A copy of the closure letter and submittal materials

☐ Draft tax cancellation agreement

☐ Draft agreement for assignment of tax foreclosure judgment

☒ Other report(s) or information - Describe: Vapor Mitigation System Installation Report and Vapor Sampling Summary

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

◯ Yes - Date (if known): _____
◯ No

Note: The Notification for Hazardous Substance Discharge (non-emergency) form is available at: dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf.

Section 7. Certification by the Person who completed this form

☐ I am the person submitting this request (requester)

☒ I prepared this request for: Steve Schmutzer
Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.

Signature

8/21/2020
Date Signed

Brian Kappen for Robert Fedorchack, Senior engineer.
Title

317-441-5633
Telephone Number (include area code)

Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a DNR regional brownfields specialist with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf.

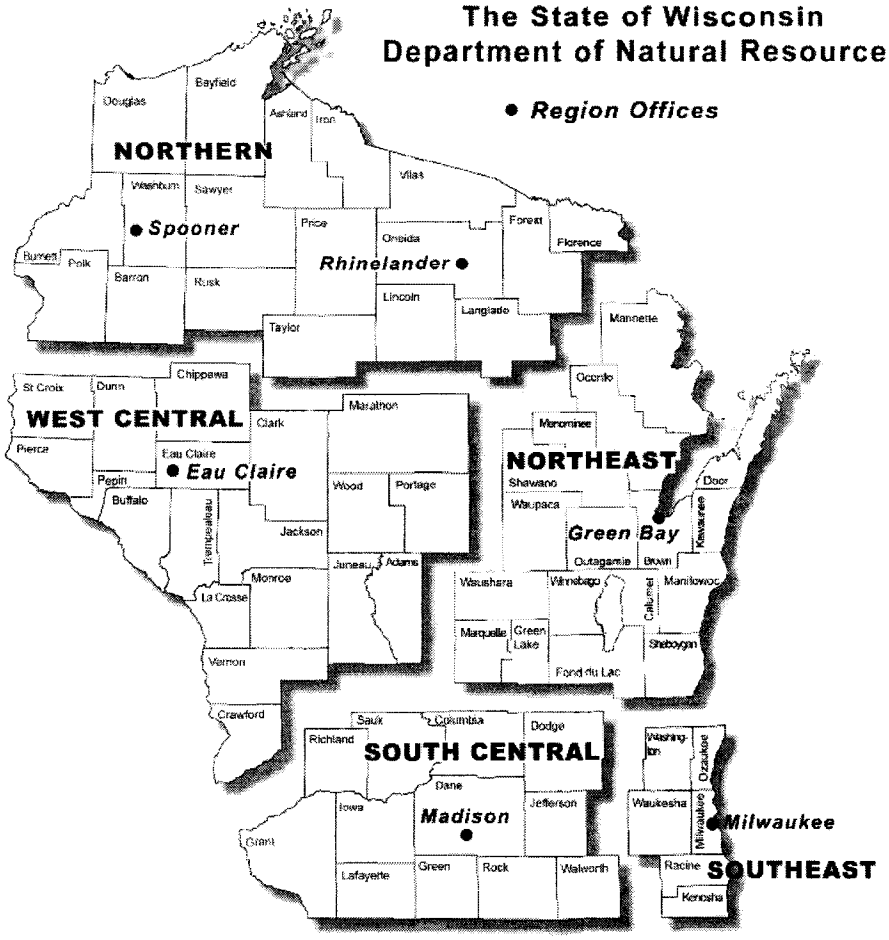
DNR NORTHERN REGION
Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313

DNR SOUTH CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee WI 53212

DNR WEST CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
1300 Clairemont Ave.
Eau Claire WI 54702



Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer	Comments		
Fee Enclosed? ◯ Yes ◯ No	Fee Amount $	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

April 8, 2020

Mr. Steve Schumtzer, Project Manager
BriMark Builders, LLC
980 American Way
Neenah, Wisconsin 54956

Re: **Passive Vapor Mitigation System Installation Report**
Cobblestone Hotel & Suites
1407 16th Street
Two Rivers, Wisconsin 54241

Mr. Schmutzer,

EnviroForensics, LLC (EnviroForensics) has prepared this *Passive Vapor Mitigation System Installation Report* documenting its successful implementation for effective and reliable mitigation of potential vapor intrusion (VI) concerns at the Cobblestone Hotel and Suites building located at 1407 16th Street, Two Rivers, Wisconsin (Site). It is EnviroForensics understanding that the Wisconsin Department of Natural Resources (WDNR) has required the installation of a passive mitigation system that can be converted to an active one based on the presence of Trichloroethene (TCE) contaminated groundwater at the Former Hamilton Industries facility located to the Northeast of the Site. The vapor mitigation system is known as a sub-slab depressurization system (SSDS) and it is effective in the mitigation of radon and vapors from volatile organic compounds (VOCs), such as TCE.

1.0 SCOPE OF WORK

The following scopes of work were completed or are to be completed based on the available known construction layout, details, and materials to be used in the construction of the new Site building:

- Phase 1: Installation of subsurface extraction points and associated ventilation materials, sub-slab vapor barrier, and oversee BriMark Builders, LLC (BriMark) contractor installing concrete floor.
- Phase 2: Complete initial PFE verification testing following concrete floor installation. Determine any required changes to piping system.
- Phase 3: Installation of horizontal piping and valving from the extraction points to 2 common areas and then install combined piping vertically to the roof. Complete report documenting passive system installation activities. **This Report.**
- Phase 4: Complete 2 sub-slab vapor sampling events and install permanent sub-slab vapor monitoring pins. Complete one report documenting sampling activities and results. **The first of the two vapor sampling events is scheduled for April 2020.**

The following sections provide details regarding:

- Permitting
- Health & Safety Plan (HASP)
- Waste Management
- Installation including pressure field extension (PFE) verification testing
- Sub-slab vapor sampling

Work completed was consistent with recommendations by the American National Standards Institute (ANSI) and the American Association of Radon Scientists and Technologists (AARST) from the following document: *Soil Gas Control Systems in New Construction of Buildings* (ANSI/AARST CC-1000 2018), as well as the WDNR Remediation & Redevelopment Programs document: *Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin* (WDNR RR800, 2018). The system was designed and installed under the supervision of a Wisconsin Professional Engineer and National Radon Proficiency Program (NRPP) Certified Radon Mitigator.

2.0 PERMITTING AND INSPECTIONS

BriMark was responsible for all permitting. Permitting was not part of EnviroForensics scope of work.

3.0 HEALTH & SAFETY PLAN

The HASP provided information on the potential hazards and general health and safety guidance for personnel conducting field activities at the Site and vicinity. The SSDS installation activities followed the safe work practices established in the HASP.

4.0 WASTE MANAGEMENT

General wastes were generated during the installation of the SSDS's. These wastes were stored on-Site in a roll-off container supplied by BriMark and as such these wastes were disposed of by the same.

5.0 INSTALLATION AND PFE TESTING

SSDS installation and PFE testing activities were completed by EnviroForensics personnel. Information for each major contractor/subcontractor and their role is provided below:

EnviroForensics
825 N Capitol Ave
Indianapolis, IN 46204
Role: Installer and point of contact with project stakeholders

Barry Company
1145 East Maryland Street
Indianapolis, IN 46202
Role: PVC pipe and fittings supplier

HD Supply
7130 West McCarty Street
Indianapolis, IN 46241
Role: Vapor barrier material supplier

RadonAway
567 Industrial Drive
Carmel, IN 46032
Role: Vapor conveyance material supplier

5.1 Subsurface Installation

EnviroForensics personnel completed subsurface installation activities, in two (2) separate mobilizations, between October 29 and November 1, 2019 (Main area) and on February 27, 2020 (Pool Areas). The initial mobilization occurred following the completion of foundation and utility piping installations activities. The second mobilization occurred once the pool was installed. The following activities were completed:

- Eight (8), 4-inch diameter Schedule 40 PVC Vapor Extraction Points (EP-1 through EP-8) were installed within the existing granular backfill and stubbed approximately 12-inches above the proposed floor elevation. Each point was installed a minimum of 12-inches below existing grade and was comprised of a tee with approximately 5-feet of perforated PVC pipe extending horizontally outward from each end and a solid PVC pipe extended upward.
- Vapormat™ 1-16 (1.1-inches thick by 16-inches wide) Vapor Conveyance Materials manufactured by RadonAway were installed on top of the existing granular backfill throughout the building footprint, in a looped and branched layout, and subsequently staked into the granular backfill. The vapor extraction points were stubbed through the vapor conveyance materials.
- Seven (7), 4-inch diameter Schedule 40 PVC Vapor Conveyance Pipes were installed by BriMark contractor(s), per EnviroForensics specifications, through various footers to connect differing areas to one another to allow for venting. These pipes were subsequently connected to the vapor conveyance materials by digging down through the existing granular backfill and wrapping it around the ends of each pipe.
- VaporBlock® Plus™ (20 mil) Vapor Barrier Materials manufactured by Raven Industries (Raven) were installed over the entire first floor building footprint and fastened to the

foundation walls. Material joints were overlapped a minimum of 12-inches, the overlap was sealed using Raven's 2-sided Butyl Seal Tape and 4-inch VaporSeal™ Tape.

- All plumbing, conduit, support columns and other penetrations through the vapor barrier were fitted with a fabricated pipe boot using excess vapor barrier materials and sealed using a combination of both 4-inch VaporSeal™ Tape and Raven's POUR-N-SEAL™ liquid.
- Oversight was provided during the pouring of the concrete slab by others following EnviroForensics installation to make any repairs to the vapor barrier material if damaged during the pour(s).

Please see **Figure 1**, Sub-Slab Passive Vapor Mitigation Diagram located in **Attachment A** for a layout of all sub-slab mitigation system components. Photographs taken during installation activities are provided in **Attachment B**. Information regarding both RadonAway Vapormat™ and Raven VaporBlock® Plus™ materials are provided in **Attachment C**.

5.2 PFE Verification Testing

EnviroForensics personnel completed PFE testing on March 3 and March 7, 2020. The following activities were completed:

- Previously installed 4-inch diameter Schedule 40 PVC Vapor Extraction Points EP-2, EP-3, EP-4, and EP-6 were used to create a sub-slab vacuum and airflow during testing activities using multiple pilot fans. The effluent air from the fans was vented to the exterior of the building.
- Prior to testing, 11, 3/8-inch diameter temporary testing points were drilled through the existing first floor slab at various distances and directions from the selected EP's.
- During testing activities, the negative pressure field exerted by the pilot fans in the subsurface was then monitored from the temporary testing points using a digital micro-manometer.
- PFE testing results are considered reliable for depressurization of the entire slab foundation to a minimum of -0.020 inches of water column ("wc) per United States Environmental Protection Agency guidelines. PFE testing results indicated greater than -0.020"wc vacuum at the majority of temporary testing points. If active mitigation becomes required, PFE testing results indicate that with an appropriate sized blower(s), the current number of Vapor Extraction Points would be sufficient to provide sub-slab vapor capture.
- Following PFE testing activities, the temporary testing points were epoxied closed.

Please see **Figure 2**, Pressure Field Extension Diagram located in **Attachment A** for results from PFE Verification testing activities. Photographs taken during testing activities are provided in **Attachment B**.

5.3 Building Piping Installation

EnviroForensics personnel completed building piping installation activities between March 4 and March 7, 2020. The following activities were completed:

- 4-inch diameter Schedule 40 PVC Vapor Conveyance Piping was extended vertically from the eight (8) previously installed Vapor Extraction Points (stubs), routed horizontally in the first floor ceiling chase areas, and then joined at two (2) 6-inch diameter Schedule 40 PVC Vapor Conveyance Risers.
- Each Vapor Extraction Point (EP-1 through EP-8) was equipped with a 4-inch diameter PVC butterfly or gate valve.
- Vapor Extraction Points EP-1, EP-2, EP-6, & EP-7 were connected and routed to a Vapor Conveyance Riser located in the building's northern stairwell, while points EP-3, EP-4, EP-5, & EP-8 were connected and routed to a Vapor Conveyance Riser located in the building's southern stairwell.
- Each Vapor Conveyance Riser was extended up through each successive floor and terminated above the 4th floor roof deck. Each piping penetration through the roof was sealed using all weather polyurethane caulk.

Other installation items of note include:

- Hangers/clamps were used to secure horizontal pipe runs at least every six (6) feet and vertical pipe runs at least every eight (8) feet.
- No water traps were created in any pipe.
- All piping was installed to allow in-pipe condensation to run back into an extraction point.
- All hard PVC joined pipes were primed and solvent welded with heavy duty PVC cement.
- All fire rated piping penetrations through walls, floors, and roofing were sealed using fire rated caulk or fire rated expanding foam.
- All roof penetrations were sealed using all weather polyurethane caulk until such time a BriMark contractor can install permanent roof boots around the piping penetrations as discussed with Mr. Brian Seebruck, Site Superintendent for BriMark.
- As also discussed, access panels will need to be installed by BriMark contractor(s) to allow for potential future operation of valving associated with for Vapor Extraction Points EP-1, EP-2, EP-4, EP-7, & EP-8.

Please see **Figure 3**, Above-Grade Passive Vapor Mitigation Diagram located in **Attachment A** for a layout of all above-grade vapor mitigation system components. Photographs taken during installation activities are provided in **Attachment B**.

6.0 SUB-SLAB VAPOR SAMPLING

As stated in the Scope of Work above, EnviroForensics will be completing two (2) separate sub-slab vapor sampling events. The first event will take place in early April 2020 and the second

event in July 2020. Based on the construction schedule, temporary sub-slab vapor points will be emplaced during the first event and permanent points will be installed near the temporary locations during the second event once flooring has been installed. Following the second sampling event a written report documenting both sampling event activities and results will be completed and submitted to BriMark. Results of the first event will be communicated following receipt of analytical results.

Please note that if vapor concentrations during both sampling events are below Wisconsin action levels, then further mitigation activities will not be warranted; however, if results indicate vapor concentrations above action levels, then active mitigation will be required. Active mitigation would be completed by retrofitting the passive mitigation system with blowers and extraction points with appropriate monitoring devices. Results collected from PFE testing completed would then be used to determine the number and size of the blower(s) required to actively mitigate the subsurface.

We trust this submittal is responsive to your needs. Should you have any questions, please contact us.

Sincerely,

Bradley W. Cord, NRPP Certified Radon Mitigator
Vapor Mitigation Specialist

Robert S. Fedorchak, P.E.
Senior Engineer

Attachments:
Attachment A: Figures 1 through 3
Attachment B: Installation Photographs
Attachment C: Vapormat™ and VaporBlock® Plus™ Information

Attachments

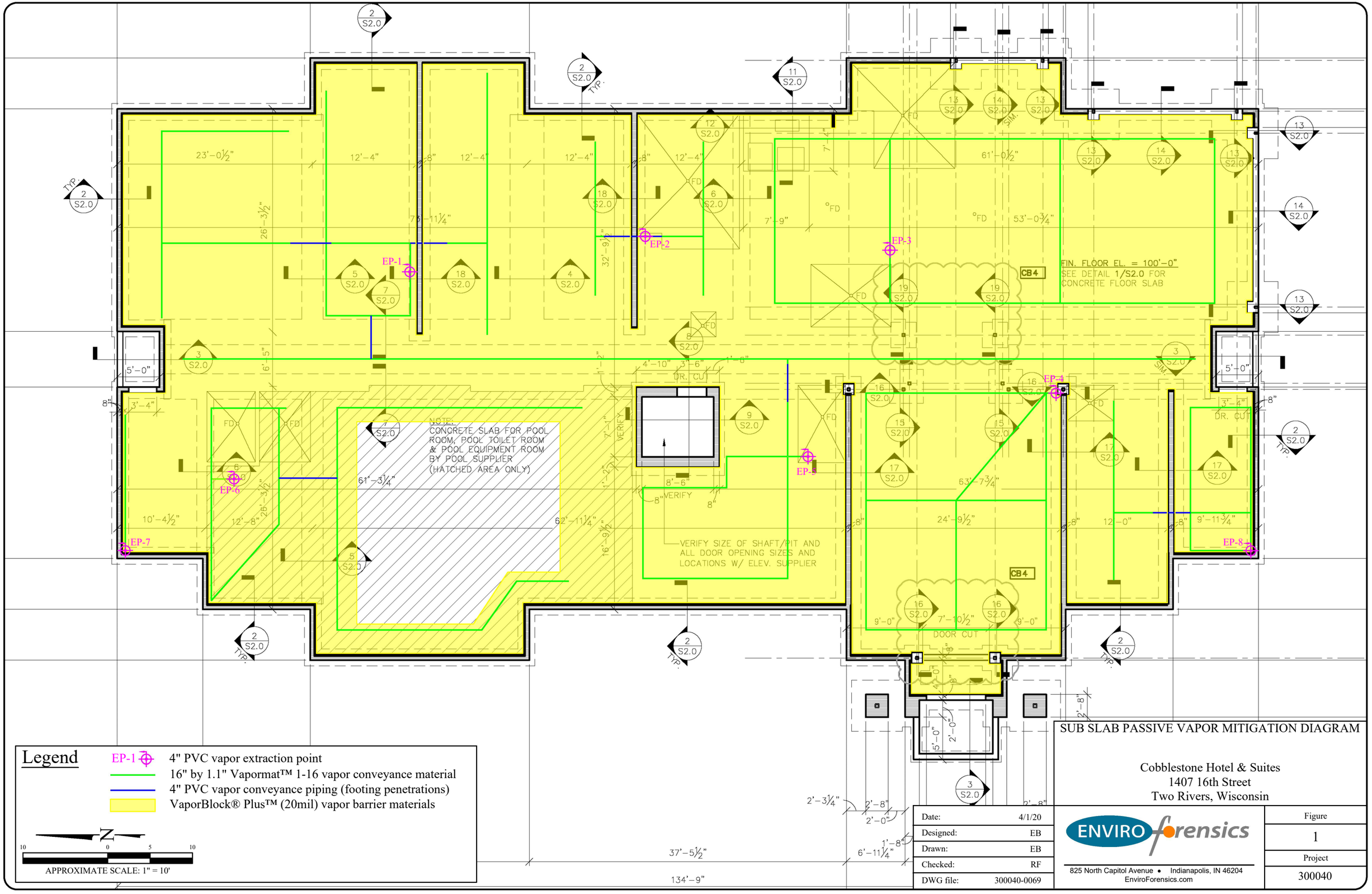
Attachment A: Figures 1 through 3

Attachment B: Installation Photographs

Attachment C: Vapormat™ and VaporBlock® Plus™ Information

Attachment A

Figures 1 through 3



Legend

- EP-1 — 4" PVC vapor extraction point
- 16" by 1.1" Vapormat™ 1-16 vapor conveyance material
- 4" PVC vapor conveyance piping (footing penetrations)
- VaporBlock® Plus™ (20mil) vapor barrier materials

N

10 0 5 10

APPROXIMATE SCALE: 1" = 10'

SUB SLAB PASSIVE VAPOR MITIGATION DIAGRAM

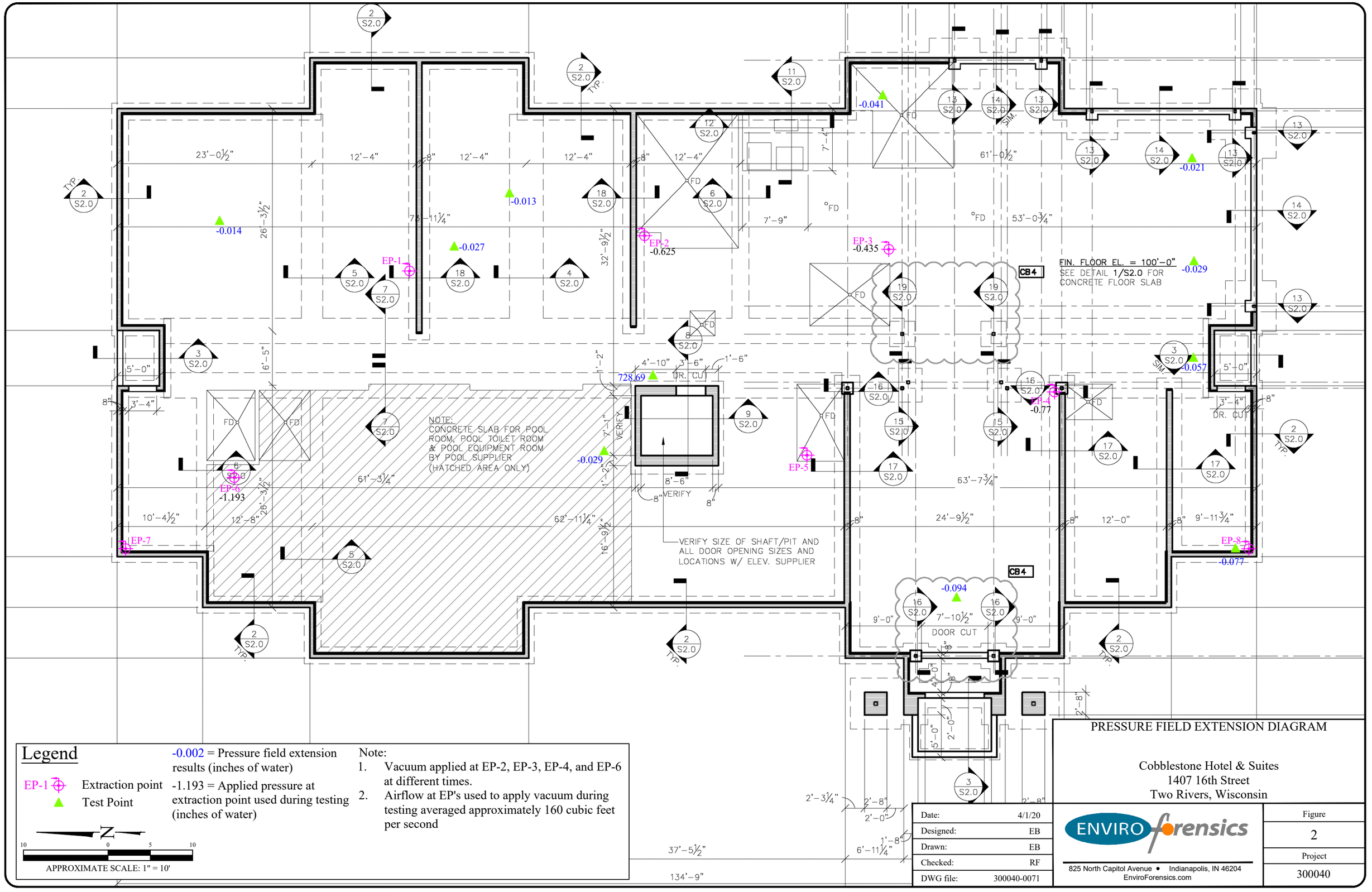
Cobblestone Hotel & Suites
1407 16th Street
Two Rivers, Wisconsin

Date:	4/1/20
Designed:	EB
Drawn:	EB
Checked:	RF
DWG file:	300040-0069

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 1

Project 300040



Legend

EP-1 — Extraction point

▲ Test Point

-0.002 = Pressure field extension results (inches of water)

-1.193 = Applied pressure at extraction point used during testing (inches of water)

Note:

1. Vacuum applied at EP-2, EP-3, EP-4, and EP-6 at different times.
2. Airflow at EP's used to apply vacuum during testing averaged approximately 160 cubic feet per second

N

10 0 5 10

APPROXIMATE SCALE: 1" = 10'

PRESSURE FIELD EXTENSION DIAGRAM

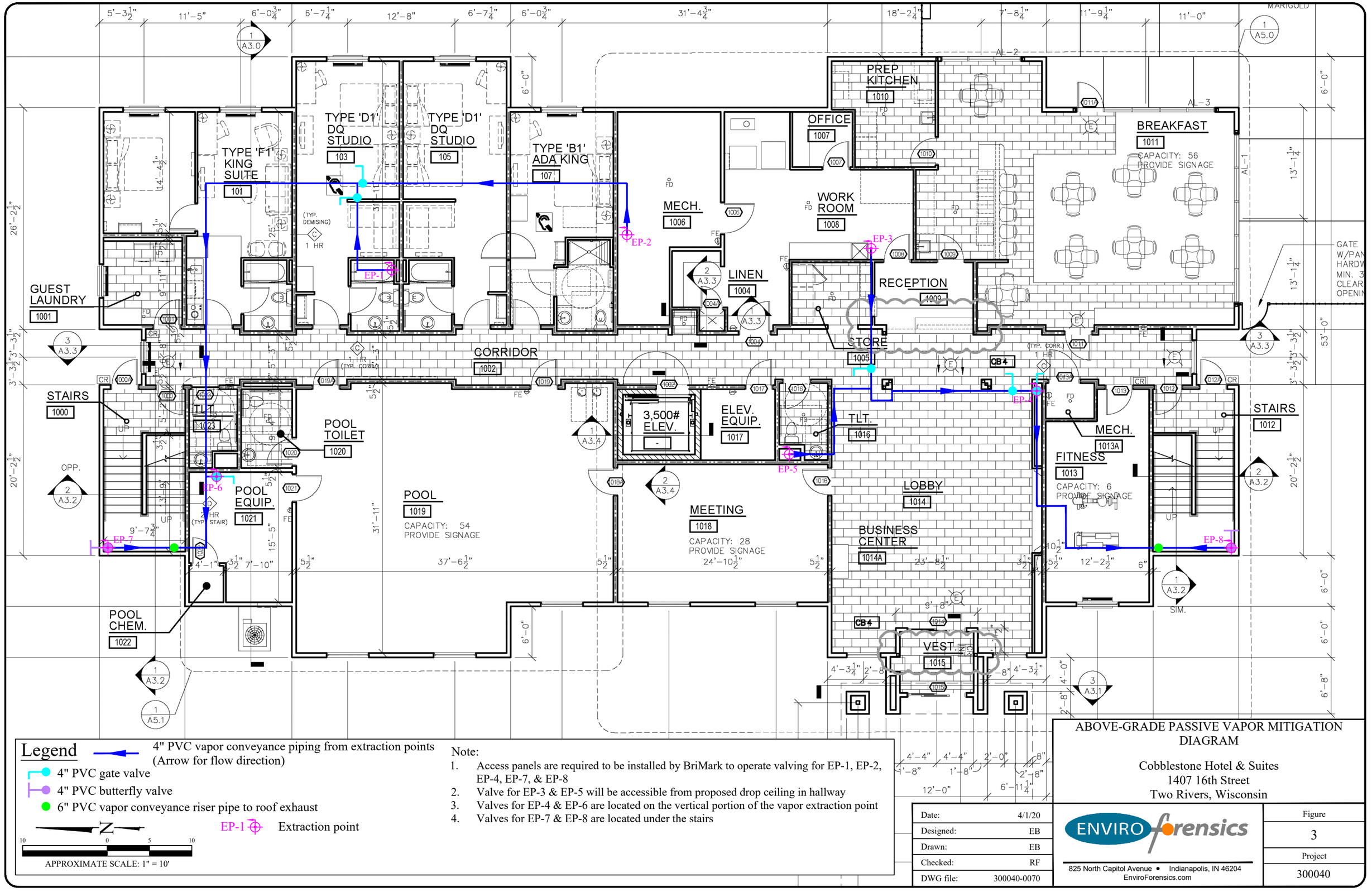
Cobblestone Hotel & Suites
1407 16th Street
Two Rivers, Wisconsin

Date:	4/1/20
Designed:	EB
Drawn:	EB
Checked:	RF
DWG file:	300040-0071

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 2

Project 300040



Legend

- 4" PVC vapor conveyance piping from extraction points (Arrow for flow direction)
- 4" PVC gate valve
- 4" PVC butterfly valve
- 6" PVC vapor conveyance riser pipe to roof exhaust
- EP-1 Extraction point

10 0 5 10

APPROXIMATE SCALE: 1" = 10'

Note:

1. Access panels are required to be installed by BriMark to operate valving for EP-1, EP-2, EP-4, EP-7, & EP-8
2. Valve for EP-3 & EP-5 will be accessible from proposed drop ceiling in hallway
3. Valves for EP-4 & EP-6 are located on the vertical portion of the vapor extraction point
4. Valves for EP-7 & EP-8 are located under the stairs

ABOVE-GRADE PASSIVE VAPOR MITIGATION DIAGRAM

Cobblestone Hotel & Suites
1407 16th Street
Two Rivers, Wisconsin

Date:	4/1/20
Designed:	EB
Drawn:	EB
Checked:	RF
DWG file:	300040-0070

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 3

Project 300040

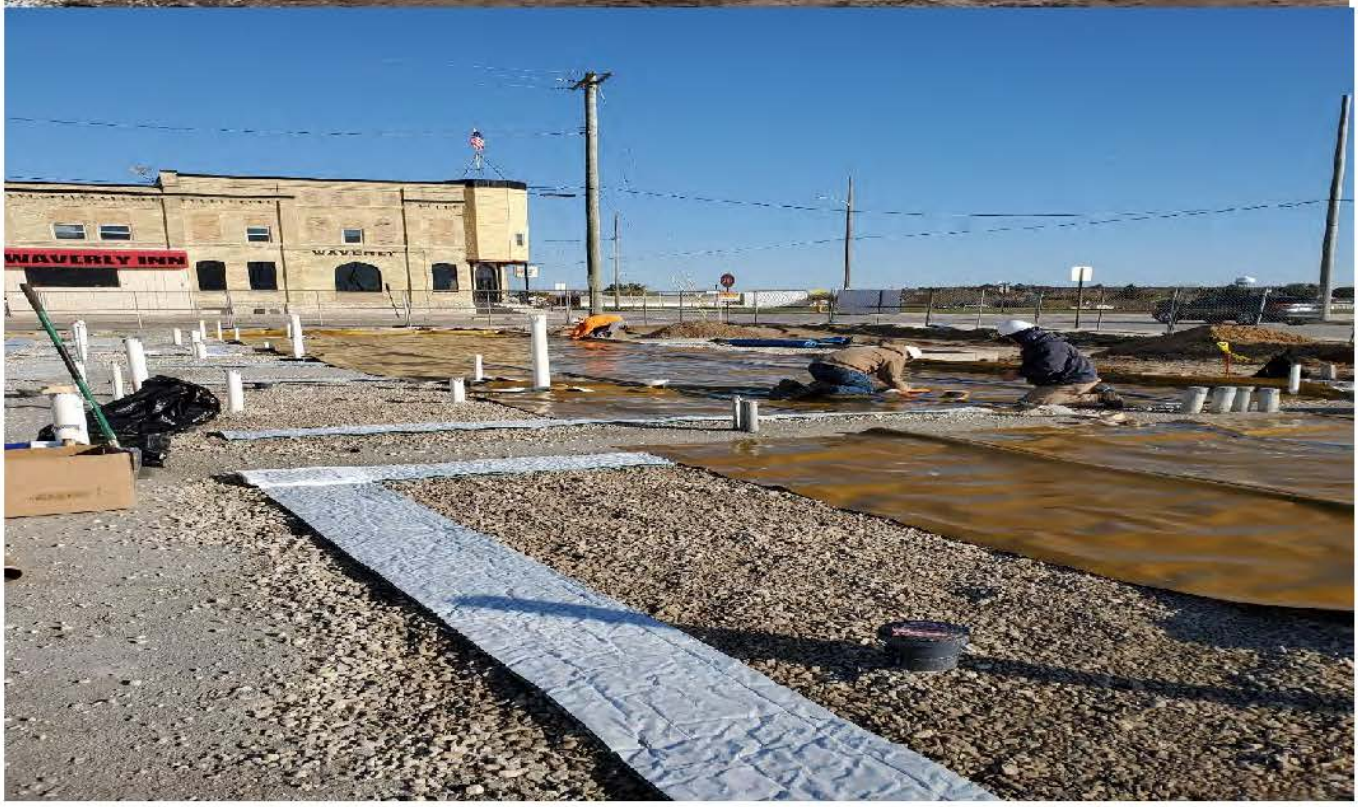
Attachment B

Installation Photographs



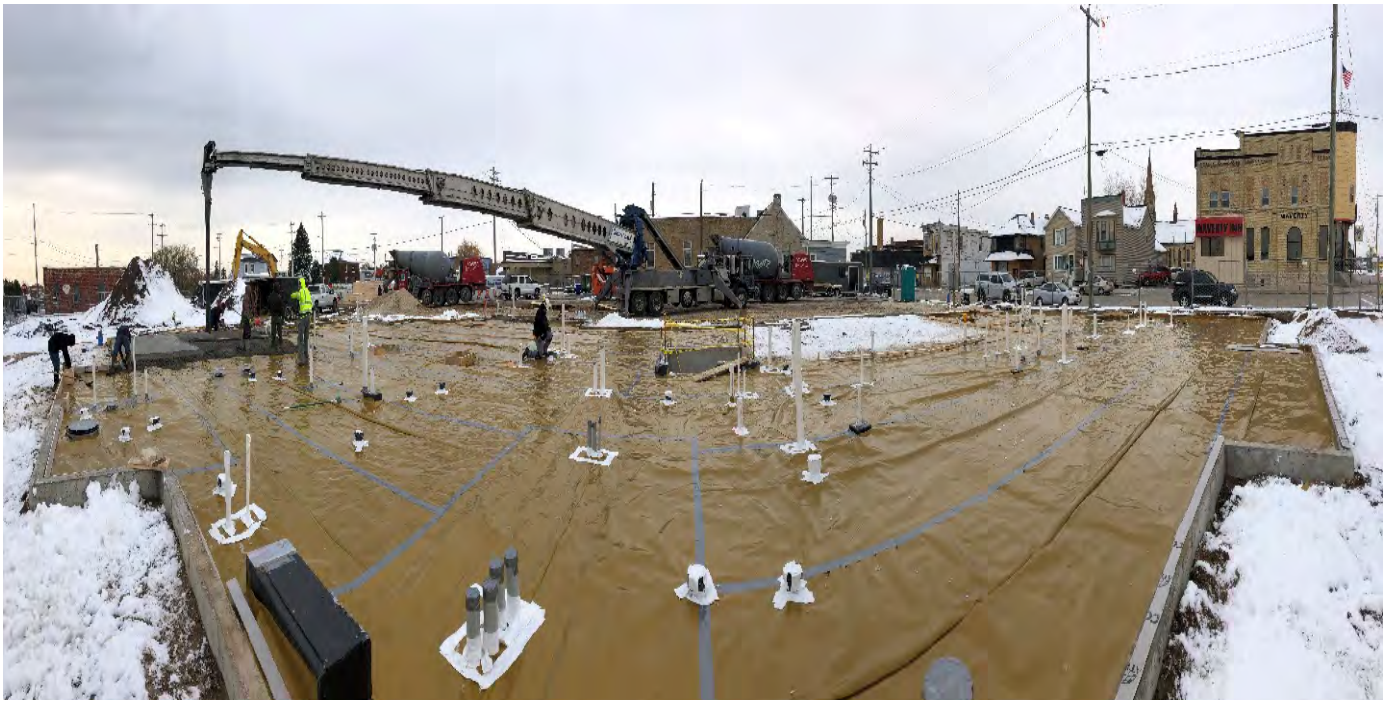


STOP

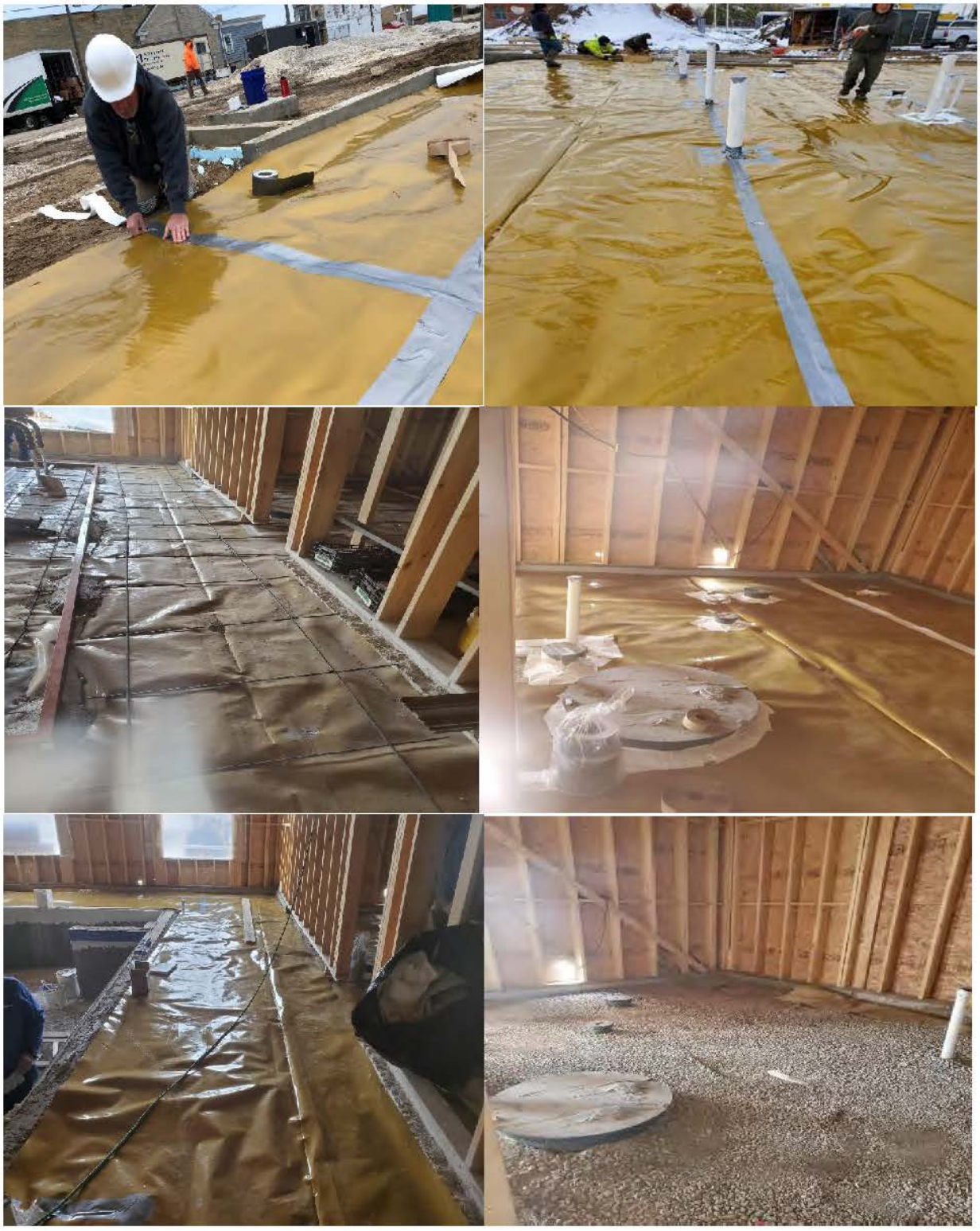

WAVERLY INN

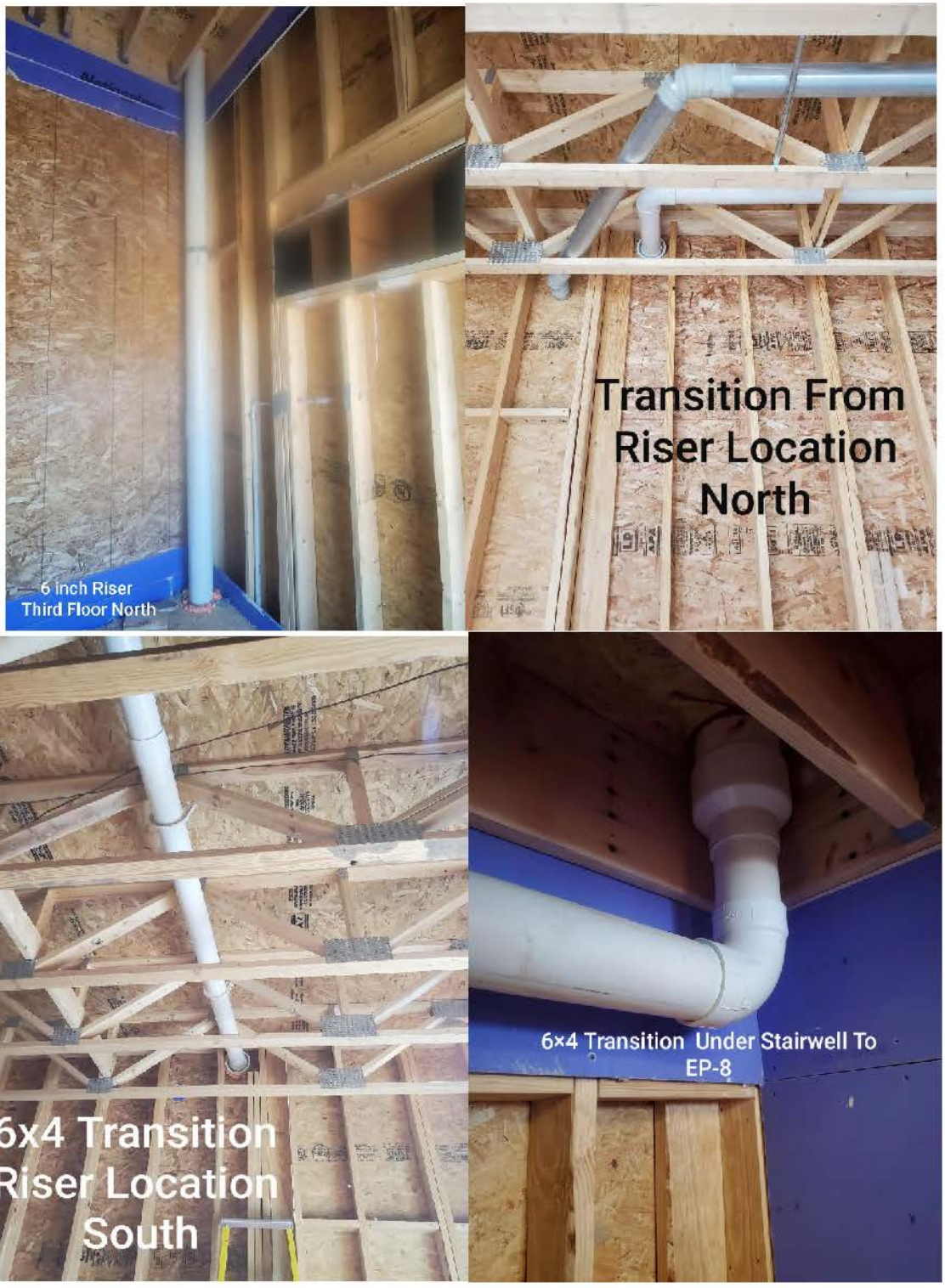

WAVERLY INN


SCHROEDER'S
WAVERLY INN



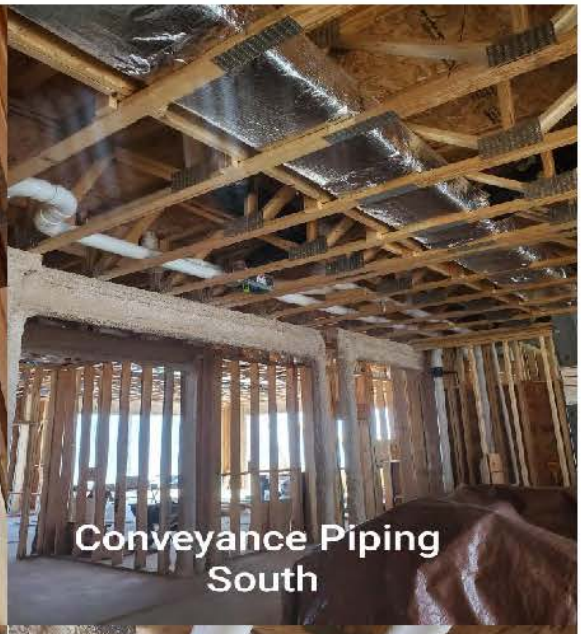
Example: Pressure Field Test (EP-2 & EP-3)




6 inch Riser
Third Floor North
Transition From
Riser Location
North
6x4 Transition
Riser Location
South
6×4 Transition Under Stairwell To
EP-8


Attic Piping Through Roof
Conveyance Piping North

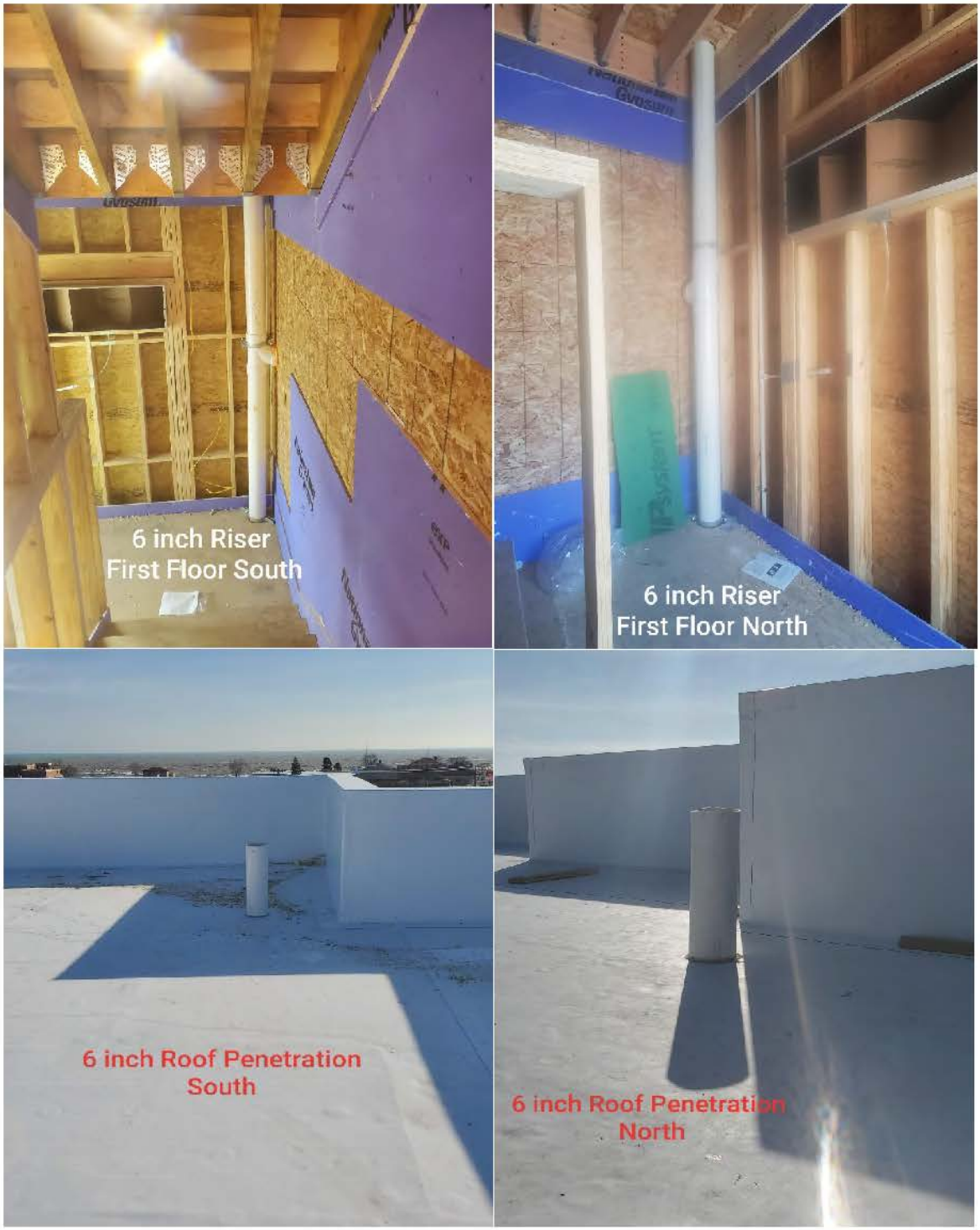

Conveyance Piping
North


Conveyance Piping
South


Conveyance Piping
South
EP-1
EP-2
EP-3


EP-4
EP-5
EP-6
EP-8


6 inch Riser
Second Floor North
6 inch Riser
Second Floor South
VAPOR MITIGATION SYSTEM
System Label - Pool Mech. Room
6 inch Riser
Third Floor South

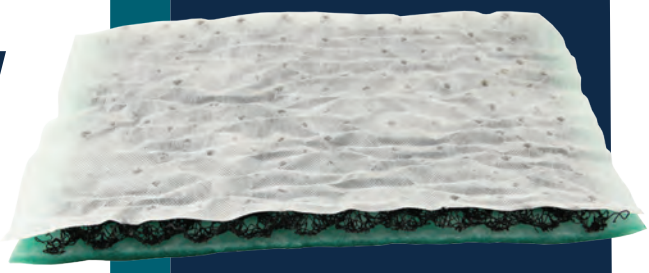

6 inch Riser
First Floor South
6 inch Riser
First Floor North
6 inch Roof Penetration
South
6 inch Roof Penetration
North

Attachment C

Vapormat™ and VaporBlock® Plus™ Information

RadonAway
The world's leading radon fan manufacturer

VAPORMAT™



VAPORMAT
FOR RADON, MOISTURE AND VOC REDUCTION

The VAPORMAT System is enveloped in a filter fabric and is comprised of 95% air space, allowing the radon and other soil gases and vapors to be channeled to the riser pipe connection (Radon-T; see accessories on the back). Two sizes of VAPORMAT are available: 040-48 and 1-16.

Features

- Ideal for RRNC and crawlspace installations
- Saves time & money
- Easy to install
- >40% recycled pre-consumer material
- LEED v4 credit eligible (1-2 points)
- Complies w/RRNC 2.0 & IRC Appendix F
- Complies w/ANSI-AARST CC-1000 Standard

VAPORMAT™	040-48 (P/N 66105)	1-16 (P/N 66238)
Thickness	0.4 in	1.1 in
Width	48 in	16 in
Roll Length	50 ft	45 ft
Rolls per Pallet	10	24
Compressive Strength	>2,500 PSF*	>2,500 PSF*
Determined Flow Rate	11.856 gallons/min/ft or 140.56 gallons/min/ft² **	11.856 gallons/min/ft or 140.56 gallons/min/ft² **
Determined Cross-sectional Area (void space)	29.0	15.2
Percent Recycled	>40% (pre-consumer material)	>40% (pre-consumer material)

*Concrete slab typically 30-60 PSF **Per ASTM 4716

For Further Information, Contact Sales@RadonAway.com

MADE IN USA
with U.S. and imported materials

Rev A 0919
P/N 02074

VAPORMAT™ Application

The VAPORMAT System can be used where a pressure field is required across obstacles or over distances; in conjunction with sand and/or gravel; or in place of perforated piping for negative pressure field extension under a concrete slab or radon vapor barrier.

Benefits/Additional Features

- Reduces radon, moisture and other toxic vapor levels in the living space of a home, commercial or industrial building.*
- Reduces the potential for mold and mildew problems.*
- Maintains air flow communication across grade beams, downturns, footers and distant corners.*
- Reduces the need for an exhaust fan or basement dehumidifier reducing lifetime energy costs.*
- Manufactured in USA.
- Shortens concrete slab cure time significantly.*
- When used with Radon-T (see “Accessories”), provides a more cost-effective solution vs. pipe fittings.
- When pouring slabs in existing dirt floor basements or crawlspaces, the low profile of the VAPORMAT™ allows for less excavation when compared to placing perforated pipe in gravel.

*When used in conjunction with an active fan

Accessories & Related Products

RadonAway Hybrid Sealant
P/N 28523

Radon-T
P/N 28353, 28354
Single, 12-Pack

VAPORMAT Staples
P/N 66107

Radon Barrier
P/N 28567, 28565, 28566
6 mil & 12 mil

Tape
P/N 68017, 68066
Black, White

VAPORBLOCK® PLUS™ VBP20

UNDER-SLAB VAPOR / GAS BARRIER

RAVEN

PRODUCT DESCRIPTION

VaporBlock® Plus™ is a seven-layer co-extruded barrier made using high quality virgin-grade polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission. VaporBlock® Plus™ 20 is more than 100 times less permeable than typical high-performance polyethylene vapor retarders against Methane, Radon, and other harmful VOCs. Tested and verified for unsurpassed protection against BTEX, HS, TCE, PCE, methane, radon, other toxic chemicals and odors.

VaporBlock® Plus™ 20 multi-layer gas barrier is manufactured with the latest EVOH barrier technology to mitigate hazardous vapor intrusion from damaging indoor air quality, and the safety and health of building occupants. VBP20 is one of the most effective underslab gas barriers in the building industry today far exceeding ASTM E-1745 (Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B and C requirements. Available in a 20 (Class A) mil thicknesses designed to meet the most stringent requirements. VaporBlock® Plus™ 20 is produced within the strict guidelines of our ISO 9001 Certified Management System.

PRODUCT USE

VaporBlock® Plus™ 20 resists gas and moisture migration into the building envelop when properly installed to provide protection from toxic/harmful chemicals. It can be installed as part of a passive or active control system extending across the entire building including floors, walls and crawl spaces. When installed as a passive system it is recommended to also include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans.

VaporBlock® Plus™ 20 works to protect your flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold and degradation.

SIZE & PACKAGING

VaporBlock® Plus™ 20 is available in 10' x 150' rolls to maximize coverage. All rolls are folded on heavy-duty cores for ease in handling and installation. Other custom sizes with factory welded seams are available based on minimum volume requirements. Installation instructions and ASTM E-1745 classifications accompany each roll.

Under-Slab Vapor/Gas Retarder

PRODUCT	PART #
VaporBlock® Plus™ 20	VBP20

APPLICATIONS

- Radon Barrier
- Methane Barrier
- VOC Barrier
- Brownfields Barrier
- Vapor Intrusion Barrier
- Under-Slab Vapor Retarder
- Foundation Wall Vapor Retarder

VaporBlock® Plus™
UNDERSLAB VAPOR RETARDER / GAS BARRIER

VAPORBLOCK® PLUS™ VBP20

UNDER-SLAB VAPOR / GAS BARRIER

PROPERTIES	TEST METHOD	VAPORBLOCK® PLUS™ 20 IMPERIAL	VAPORBLOCK® PLUS™ 20 METRIC
Appearance		White/Gold	
Thickness, Nominal		20 mil	0.51 mm
Weight		102 lbs/MSF	498 g/m^2
Classification	ASTM E 1745	CLASS A, B & C	
[3] Tensile Strength	ASTM E 154 Section 9 (D-882)	58 lbf	102 N
Impact Resistance	ASTM D 1709	2600 g	
Permeance (new material)	ASTM E 154 Section 7 ASTM E 96 Procedure B	0.0098 Perms grains/(ft^2·hr·in·Hg)	0.0064 Perms g/(24hr·m^2·mm Hg)
Permeance (after conditioning) (same measurement as above permeance)	ASTM E 154 Section 8, E96 Section 11, E96 Section 12, E96 Section 13, E96	0.0079 0.0079 0.0097 0.0113	0.0052 0.0052 0.0064 0.0074
WVTR	ASTM E 96 Procedure B	0.0040 grains/hr-ft^2	0.0028 gm/hr-m^2
Benzene Permeance	See Note [6]	1.13 x 10^{-10} m^2/sec or 3.62 x 10^{-13} m/s	
Toluene Permeance	See Note [6]	1.57 x 10^{-10} m^2/sec or 1.46 x 10^{-13} m/s	
Ethylbenzene Permeance	See Note [6]	1.23 x 10^{-10} m^2/sec or 3.34 x 10^{-14} m/s	
M & P-Xylenes Permeance	See Note [6]	1.17 x 10^{-10} m^2/sec or 3.81 x 10^{-14} m/s	
O-Xylene Permeance	See Note [6]	1.10 x 10^{-10} m^2/sec or 3.43 x 10^{-14} m/s	
Hydrogen Sulfide	See Note [9]	1.92E^{-09} m/s	
Trichloroethylene (TCE)	See Note [6]	7.66 x 10^{-11} m^2/sec or 1.05 x 10^{-14} m/s	
Perchloroethylene (PCE)	See Note [6]	7.22 x 10^{-11} m^2/sec or 1.04 x 10^{-14} m/s	
Radon Diffusion Coeffiecient	K124/02/95	< 1.1 x 10^{-13} m^2/s	
Methane Permeance	ASTM D 1434	3.68E^{-12} m/s Gas Transmission Rate (GTR): 0.32 mL/m^2•day•atm	
Maximum Static Use Temperature		180° F	82° C
Minimum Static Use Temperature		- 70° F	- 57° C

[3] Tests are an average of machine and transverse directions.

[5] Raven Industries performs seam testing at 20" per minute.

[6] Aqueous Phase Film Permeance.
Permeation of Volatile Organic Compounds through EVOH Thin Film Membranes and Coextruded LLDPE/EVOH/LLDPE Geomembranes, McWatters and Rowe, Journal of Geotechnical and Geoenvironmental Engineering© ASCE/ September 2015. (Permeation is the Permeation Coefficient adjusted to actual film thickness - calculated at 1 kg/m^3.) The study used to determine PCE and TCE is titled: Evaluation of diffusion of PCE & TCE through high performance geomembranes by Di Battista and Rowe, Queens University 8 Feb 2018.

[9] The study used to determine diffusion coefficients is titled: Hydrogen Sulfide (H_2S) Transport through Simulated Interim Covers with Conventional and Co-Extruded Ethylene-Vinyl Alcohol (EVOH) Geomembranes.

VaporBlock® Plus™ Placement

All instructions on architectural or structural drawings should be reviewed and followed.

Detailed installation instructions accompany each roll of VaporBlock® Plus™ and can also be located at www.ravenefd.com.

ASTM E-1643 also provides general installation information for vapor retarders.

VaporBlock® Plus™ UNDERSLAB VAPOR RETARDER / GAS BARRIER

VaporBlock® Plus™ is a seven-layer co-extruded barrier made using high quality virgin-grade polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

Scan QR Code to download current technical data sheets via the Raven website.

Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. Chemical resistance, odor transmission, longevity as well as other performance criteria is not implied or given and actual testing must be performed for applicability in specific applications and/or conditions. RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage. Limited Warranty available at www.RavenEFD.com

RAVEN ENGINEERED FILMS
P.O. Box 5107 Sioux Falls, SD 57117-5107
Ph: +1 (605) 335-0174 • TF: +1 (800) 635-3456
efdsales@ravenind.com
www.ravenefd.com

RAVEN

July 29, 2020

Mr. Steve Schmutzer, Project Manger
BriMark Builders, LLC
980 American Way
Neenah, Wisconsin 54956

Subject: Sub-Slab Vapor Assessment Activities Summary
Cobblestone Hotel & Suites
1407 16th Street
Two Rivers, Wisconsin

Dear Mr. Schmutzer:

EnviroForensics, LLC (EnviroForensics) has prepared this *Sub-Slab Vapor Assessment Activities Summary* letter for the Cobblestone Hotel and Suites building located at 1407 16th Street in Two Rivers, Wisconsin (Site). A vapor barrier and a passive sub-slab depressurization system (SSDS) was installed at the Site by EnviroForensics from October 2019 to March 2020, as detailed in the *Passive Vapor Mitigation System Installation Report*, dated April 8, 2020.

EnviroForensics completed two (2) sub-slab vapor sampling events after the installation of the passive SSDS at the request of the Wisconsin Department of Natural Resources (WDNR) to determine if an active system is necessary by evaluating concentrations beneath the Site property in areas of known groundwater impacts of trichloroethene (TCE) from a historic release at the Former Hamilton Industries facility located to the northeast of the Site.

The scope of activities, the methods employed, and the results and conclusions from the two (2) sub-slab vapor assessment events are presented below.

1.0 Sub-Slab Vapor Assessment Activities

EnviroForensics conducted sub-slab vapor port installation and sampling activities at the Site during winter worst-case conditions on April 27, 2020 and summer worst-case conditions on July 7, 2020. Based on the construction schedule, temporary above ground sub-slab vapor ports were installed during the April 2020 event. Permanent below ground sub-slab vapor ports were installed near the temporary locations during the second event in July 2020. The locations of the sub-slab vapor ports at the Site are depicted on **Figure 1**. Sub-slab vapor installation, quality assurance and quality control (QA/QC) methods, and sampling activities were conducted in accordance with EnviroForensics procedures as described below.

EnviroForensics, LLC
825 North Capitol Avenue, Indianapolis, IN 46204
Phone: 866-888-7911 • Fax 317-972-7875

Sub-Slab Vapor Port Installation

A 1 ½-inch diameter hole was drilled approximately 1 ¾-inch deep into the concrete slab using an electric impact-drill for a permanent below ground sub-slab vapor port. Subsequently, a guide was used to drill a $^{5}/_{8}$-inch diameter hole through the center of the previously drilled hole and advanced through the concrete slab. For the temporary above ground sub-slab vapor ports, a $^{5}/_{8}$-inch diameter hole was drilled through the concrete slab. A Vapor Pin™ sub-slab vapor sampling port, constructed with a silicon sleeve to provide a mechanical seal between the sample port and the slab, was installed in the $^{5}/_{8}$-inch diameter hole using a dead blow hammer for both below and above ground ports. The sampling ports were capped following installation until sampling was initiated. A Vapor Pin™ stainless steel secure flush mount cover was placed over the below ground sampling ports following sampling activities to facilitate future activities as additional sampling may be necessary. The ports were capped and left in place prior to QA/QC activities.

Sub-Slab Vapor Sampling

To ensure sub-slab vapor samples collected from the ports were representative of subsurface vapor conditions, water dam leak testing was performed at each sample port. The water dam leak test consists of pouring distilled water directly into the 1 ½-inch flush mount depression to immerse the tubing connected to the Vapor Pin™. Similarly, the above ground sub-slab vapor port was enclosed in an approximate 2-inch section of a 2-inch polyvinyl chloride (PVC) pipe sealed to the concrete slab with non-toxic modelling clay. Once sealed, distilled water was poured into the enclosure. After the water was poured into the dam, a tape measure was placed into the dam, at the base of the flush-mount depression or at the top of the PVC pipe to observe any water loss which may indicate a leaky seal. The water level was observed for at least two (2) minutes to determine if a leak was present. The water level did not decrease at the sub-slab vapor port locations, indicating no leaks were present within the sub-slab vapor sampling ports.

Prior to sample collection, the integrity of the sample tubing and fittings were inspected utilizing a negative pressure test with a hand pump. The fittings and the sample canister were connected with its valve closed. A negative pressure of approximately 15 inches of mercury was induced on the sampling train and held for approximately 60 seconds while being visually monitored. No pressure drops were noted during the negative pressure testing, indicating no leaks were present in the sampling trains prior to sampling activities. QA/QC results were recorded on sampling forms provided as **Attachment 1**.

The samples were collected through disposable Teflon™-lined polyethylene tubing connected to the sub-slab vapor port. A graduated syringe was utilized to purge ambient air from the tubing prior to initiating sample collection. Following purging, vapors beneath the concrete slab were drawn from the end of the tubing into a batch certified 1-Liter stainless steel canister fitted with laboratory supplied regulators that allowed a flow rate of approximately 200 milliliters per minute (mL/min). Initial and final pressure readings were collected from each canister during each event and recorded on the sub-slab vapor field sampling forms provided as **Attachment 1**.

The samples collected are submitted to EnvisionAir laboratories, under appropriate chain-of-custody procedures, for analysis of volatile organic compounds (VOCs) by United States (U.S.) Environmental Protection Agency (EPA) Method TO-15.

2.0 Sub-Slab Vapor Sample Results

A summary of the sub-slab vapor from the Site is provided in **Table 1** and depicted on **Figure 1**. The laboratory analytical reports are provided as **Attachment 2**. Sub-slab vapor results were evaluated in accordance with the WDNR's Residential Vapor Risk Screening Levels (VRSLs). The sub-slab vapor results were compared to the applicable 2020 VRSLs divided by an attenuation factor of 0.03 for sub-slab vapor.

April 2020

Tetrachloroethene (PCE) and TCE were detected in sub-slab vapor sample SS-3 at concentrations greater than the laboratory reporting limits, but less than the WDNR Residential VRSLs. In addition, benzene was detected at concentrations greater than the laboratory reporting limit, but less than the WDNR Residential VRSL in sub-slab vapor samples SS-1 and SS-3. No other compounds were detected in the sub-slab vapor samples collected at the Site in April 2020.

July 2020

PCE and TCE were not detected in the five (5) sub-slab vapor samples collected from beneath the first floor. One (1) sub-slab vapor sample SS-2 contained a concentration of chloroform greater than the laboratory reporting limit, but less than the WDNR Residential VRSL. No other compounds were detected in the sub-slab vapor samples collected at the Site in July 2020.

3.0 Conclusions

Sub-slab vapor samples were collected from the Site during winter and summer worst-case conditions to determine subsurface concentrations beneath the Site and the necessity of an active SSDS. The sub-slab vapor analytical data indicated the presence of PCE and TCE at concentrations less than the WDNR Residential VRSLs beneath the Site in April 2020. However, PCE and TCE were not detected in the sub-slab vapor samples in July 2020. The sub-slab vapor sampling results from the two (2) events demonstrate that there is not a current unacceptable exposure to the employees or visitors to the Site through the vapor intrusion pathway and an active SSDS is not necessary at this time.

We appreciate your review of this *Sub-Slab Vapor Assessment Activities Summary* letter. If you have any questions, please feel free to contact the undersigned at 866-800-7911.

Sincerely,

EnviroForensics, LLC

Grace Randall
Vapor Intrusion Specialist

Robert S. Fedorchak, P.E.
Senior Engineer

Attachments:

Table 1 – Summary of Sub-Slab Vapor Sample Analytical Results

Figure 1 – Above-Grade Passive Vapor Mitigation Diagram and Sub-Slab Vapor Port Locations

Attachment 1 – Field Sampling Forms
Attachment 2 – Laboratory Analytical Reports – Level IV

TABLE

TABLE 1
SUMMARY OF SUB-SLAB VAPOR ANALYTICAL RESULTS
Cobblestone Hotel & Suites
1407 16th Street
Two Rivers, Wisconsin

Sample Address	Sample Identification	Sample Location	Applicable Criteria	Date Sampled	VOCs (µg/m^3)				
					Tetrachloroethene	Trichloroethene	Vinyl Chloride	Benzene	Chloroform
SUB-SLAB VAPOR SAMPLES									
Residential Sub-Slab Vapor Risk Screening Levels					**1,400**	**70**	**57**	**120**	**40**
1407 16th Street	300040-1407 16th St-SS-1	First Floor - NE	Residential	4/27/2020	< 31.9	< 10.7	< 12.8	**73.2**	< 8.30
	300040-1407 16th St-SS-2	First Floor - Central			< 31.9	< 10.7	< 12.8	< 198	< 8.30
	300040-1407 16th St-SS-3	First Floor - SE			**76.6**	**62.3**	< 12.8	**20.4**	<8.30
	300040-1407 16th St-SS-4	First Floor - SW			< 31.9	< 10.7	< 12.8	< 198	< 8.30
	300040-1407 16th St-SS-5	First Floor - NW			< 31.9	< 10.7	< 12.8	< 198	< 8.30
	300040-SS-1	First Floor - NE	Residential	7/7/2020	< 31.9	< 10.7	< 12.8	< 198	< 8.30
	300040-SS-2	First Floor - Central			< 31.9	< 10.7	< 12.8	< 198	**18.1**
	300040-SS-3	First Floor - SE			< 31.9	< 10.7	< 12.8	< 198	< 8.30
	300040-SS-4	First Floor - SW			< 31.9	< 10.7	< 12.8	< 198	< 8.30
	300040-SS-5	First Floor - NW			< 31.9	< 10.7	< 12.8	< 198	< 8.30

Notes:

Samples analyzed for volatile organic compounds (VOCs) using the United States Environmental Protection Agency (U.S. EPA) Method TO-15

µg/m^3 = micrograms per cubic meter

Constituents not shown are below laboratory reporting limits

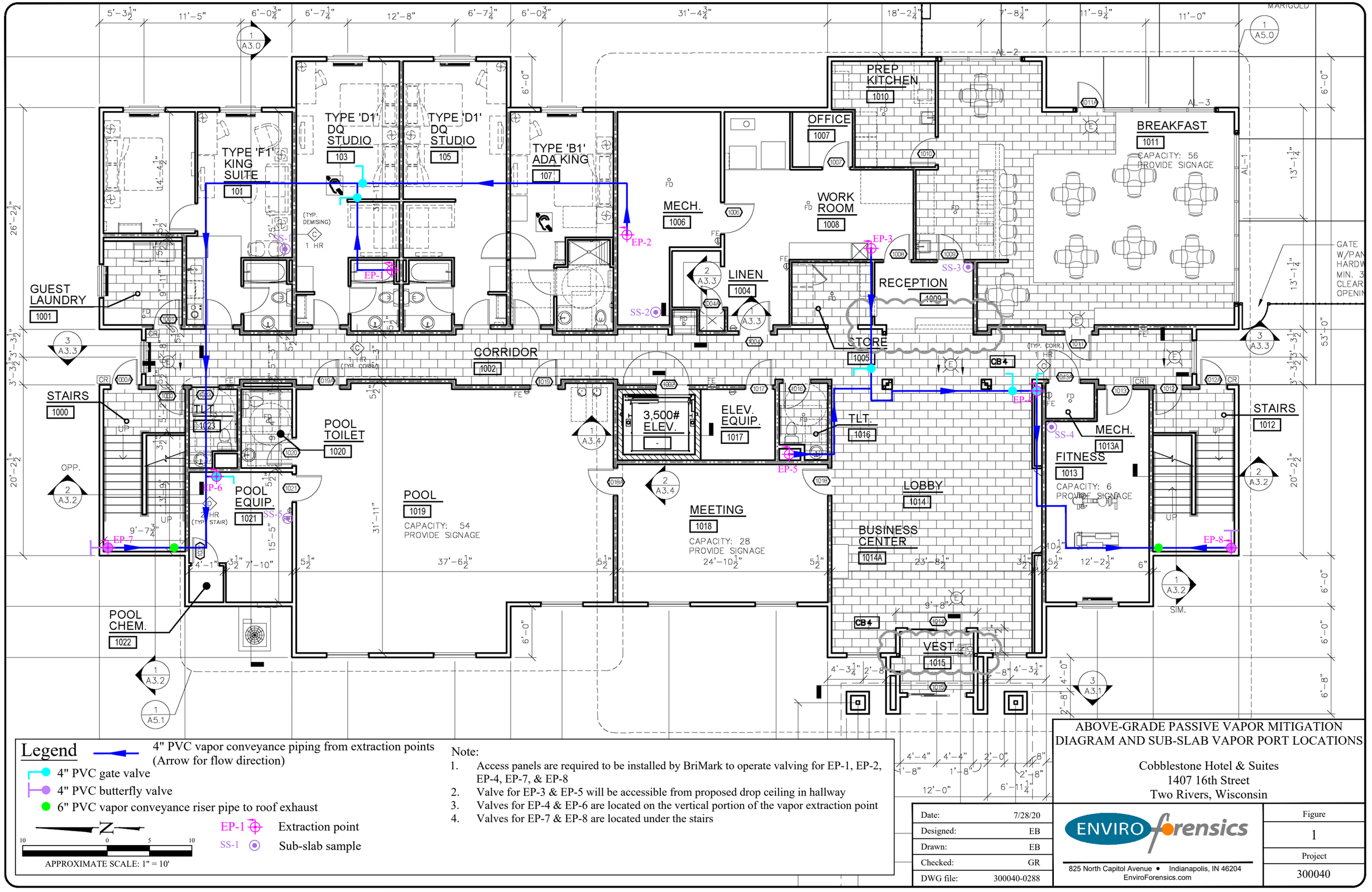
Residential and Commercial Indoor Air Screening Levels (IASLs) are from Table A-6 of the Indiana Department of Environmental Management (IDEM) Remediation Closure Guide (RCG)

Sub-Slab Vapor Risk Screening Levels (VRSLs) are calculated in accordance with WDNR Publication RR-800 and associated guidance documents

SS = Sub-Slab

Bolded values are above laboratory detection limits

FIGURE



Legend

- 4" PVC vapor conveyance piping from extraction points (Arrow for flow direction)
- 4" PVC gate valve
- 4" PVC butterfly valve
- 6" PVC vapor conveyance riser pipe to roof exhaust
- EP-1 Extraction point
- SS-1 Sub-slab sample

APPROXIMATE SCALE: 1" = 10'

Note:

1. Access panels are required to be installed by BriMark to operate valving for EP-1, EP-2, EP-4, EP-7, & EP-8
2. Valve for EP-3 & EP-5 will be accessible from proposed drop ceiling in hallway
3. Valves for EP-4 & EP-6 are located on the vertical portion of the vapor extraction point
4. Valves for EP-7 & EP-8 are located under the stairs

ABOVE-GRADE PASSIVE VAPOR MITIGATION DIAGRAM AND SUB-SLAB VAPOR PORT LOCATIONS

Cobblestone Hotel & Suites
1407 16th Street
Two Rivers, Wisconsin

Date:	7/28/20
Designed:	EB
Drawn:	EB
Checked:	GR
DWG file:	300040-0288

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure	1
Project	300040

ATTACHMENT 1

Field Sampling Forms

ENVIROforensics

Sub-Slab Vapor Field Sampling Form

825 N Capitol Avenue
Indianapolis, IN 46204
(317) 972-7870

Project Name: Cobblestone Hotel
Project Number: 300040
Project Address: Two Rivers, WI
Client/Contact: BriMark Builders

Property Address: 1407 16th St.
Two Rivers, WI
Sampler(s): B. Kappen

Sample ID	Canister ID	Flow Controller ID	Date mm/dd/yy	Time Start hh:mm	Time End hh:mm	Vacuum Reading Initial in. Hg	Vacuum Reading Final in. Hg	Sub-Slab Pressure in H_2O	Negative Pressure Test: Induced -15 in Hg on sample train and pressure held? (yes/no)		Water Dam Test: Water Dam Test passed? (air bubbles not observed or water level did not drop) (yes/no)	
300040-1407 16th St-SS-4	84051	0109	04/27/20	1030	1039	-30	-3	0.000	(yes)	no	(yes)	no
300040-1407 16th St-SS-3	83944	0017	04/27/20	1130	1139	-29	-3	0.307	(yes)	no	(yes)	no
300040-1407 16th St-SS-2	84134	0057	04/27/20	1219	1225	-30	-3	0.000	(yes)	no	(yes)	no
300040-1407 16th St-SS-5	2218	0075	04/27/20	1304	1309	-29	-3	0.000	(yes)	no	(yes)	no
300040-1407 16th St-SS1	83942	0025	04/27/20	1345	1401	-29	-3	-0.071	(yes)	no	(yes)	no
									yes	no	yes	no

Sketch

See hotel plan sketch with locations.

Wind Direction	Wind Speed mph	Temperature °F	Relative Humidity %	Barometric Pressure in. of Hg
SE	9	45-50	70-80	29.25

Notes:

ENVIROforensics

Sub-Slab Vapor Field Sampling Form

825 N Capitol Avenue
Indianapolis, IN 46204
(317) 972-7870

Project Name: Cobblestone Hotel
Project Number: 300040
Project Address: Two Rivers, WI
Client/Contact: Brimark Builders

Property Address: 1407 16th St
Two Rivers, WI 54241

Sampler(s): B. Kappen

Sample ID	Canister ID	Flow Controller ID	Date mm/dd/yy	Time Start hh:mm	Time End hh:mm	Vacuum Reading Initial in. Hg	Vacuum Reading Final in. Hg	Sub-Slab Pressure in H_2O	Negative Pressure Test: Induced -15 in Hg on sample train and pressure held? (yes/no)		Water Dam Test: Water Dam Test passed? (air bubbles not observed or water level did not drop) (yes/no)	
300040-SS-1	83924	0063	07/07/20	1155	1201	-30	-3	0.000	(yes)	no	(yes)	no
300040-SS-5	2214	0072	07/07/20	1218	1224	-29.5	-3	0.000	(yes)	no	(yes)	no
300040-SS-2	83734	0089	07/07/20	1305	1311	-30	-3	0.000	(yes)	no	(yes)	no
300040-SS-4	83739	0112	07/07/20	1337	1342	-27	-3	0.000	(yes)	no	(yes)	no
300040-SS-3	2235	0127	07/07/20	1354	1359	-26.5	-3	0.000	(yes)	no	(yes)	no
									yes	no	yes	no

Sketch

Wind Direction	Wind Speed mph	Temperature °F	Relative Humidity %	Barometric Pressure in. of Hg
VAR	5	87	59	29.20

Notes:

ATTACHMENT 2

Laboratory Analytical Reports
(Level IV)

EnvisionAir
1441 Sadlier Circle West Drive
Indianapolis, IN 46239
Ph: 317-351-0885
Fax: 317-351-0882
www.envision-air.com

Ms. Grace Randall
Enviroforensics
825 N. Capitol Ave.
Indianapolis, IN 46204

May 5, 2020

EnvisionAir Project Number: 2020-265
Client Project Name: 300040

Dear Ms. Randall,

Please find the attached analytical report for the samples received April 29, 2020. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

Feel free to contact me if you have any questions or comments regarding your analytical report or service.

Thank you for your business. EnvisionAir looks forward to working with you on your next project.

Yours Sincerely,

Stanley A. Hunnicutt

Stan Hunnicutt

Project Manager
EnvisionAir, LLC

EnvisionAir
1441 Sadlier Circle West Drive
Indianapolis, IN 46239
Ph: 317-351-0885
Fax: 317-351-0882
www.envision-air.com

Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-265

Sample Summary

Canister Pressure / Vacuum

Laboratory Sample Number:	Sample Description:	Matrix:	START Date Collected:	START Time Collected:	End Date Collected:	End Time Collected:	Date Received:	Time Received	Initial Field (in. Hg)	Final Field (in. Hg)	Lab Received (in. Hg)
20-1224	300040-1407 16TH ST-SS-4	A	4/27/20	10:30			4/29/20	15:35	-30	-3	-3
20-1225	300040-1407 16TH ST-SS-3	A	4/27/20	11:30			4/29/20	15:35	-29	-3	-3
20-1226	300040-1407 16TH ST-SS-2	A	4/27/20	12:19			4/29/20	15:35	-30	-3	-3
20-1227	300040-1407 16TH ST-SS-5	A	4/27/20	13:04			4/29/20	15:35	-29	-3	-3
20-1228	300040-1407 16TH ST-SS-1	A	4/27/20	13:45			4/29/20	15:35	-29	-3	-3

EnvisionAir
1441 Sadlier Circle West Drive
Indianapolis, IN 46239
Ph: 317-351-0885
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www.envision-air.com

Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-265

Analytical Method: TO-15
Analytical Batch: 043020AIR

Client Sample ID: 300040-1407 16TH ST-SS-4
Sample Collection START Date/Time: 4/27/20 10:30
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1224
Sample Received Date/Time: 4/29/20 15:35
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	< 16.0	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	88%		
Analysis Date/Time:	04-30-20/13:51		
Analyst Initials	tjg		

EnvisionAir
1441 Sadlier Circle West Drive
Indianapolis, IN 46239
Ph: 317-351-0885
Fax: 317-351-0882
www.envision-air.com

Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-265

Analytical Method: TO-15
Analytical Batch: 043020AIR

Client Sample ID: 300040-1407 16TH ST-SS-3
Sample Collection START Date/Time: 4/27/20 11:30
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1225
Sample Received Date/Time: 4/29/20 15:35
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	**20.4**	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	**76.6**	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	**62.3**	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	96%		
Analysis Date/Time:	04-30-20/14:29		
Analyst Initials	tjg		

EnvisionAir
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Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-265

Analytical Method: TO-15
Analytical Batch: 043020AIR

Client Sample ID: 300040-1407 16TH ST-SS-2
Sample Collection START Date/Time: 4/27/20 12:19
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1226
Sample Received Date/Time: 4/29/20 15:35
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	< 16.0	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	93%		
Analysis Date/Time:	04-30-20/15:07		
Analyst Initials	tjg		

EnvisionAir
1441 Sadlier Circle West Drive
Indianapolis, IN 46239
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www.envision-air.com

Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-265

Analytical Method: TO-15
Analytical Batch: 043020AIR

Client Sample ID: 300040-1407 16TH ST-SS-5
Sample Collection START Date/Time: 4/27/20 13:04
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1227
Sample Received Date/Time: 4/29/20 15:35
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	< 16.0	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	91%		
Analysis Date/Time:	04-30-20/15:46		
Analyst Initials	tjg		

EnvisionAir
1441 Sadlier Circle West Drive
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Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-265

Analytical Method: TO-15
Analytical Batch: 043020AIR

Client Sample ID: 300040-1407 16TH ST-SS-1
Sample Collection START Date/Time: 4/27/20 13:45
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1228
Sample Received Date/Time: 4/29/20 15:35
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	**73.2**	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	103%		
Analysis Date/Time:	04-30-20/16:24		
Analyst Initials	tjg		

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Analytical Report

TO-15 Quality Control Data

EnvisionAir Batch Number: 043020AIR

Method Blank (MB):	MB Results (ppbv)	Reporting Limit (ppbv)	Flags
4-Ethyltoluene	< 100	100	
4-Methyl-2-pentanone (MIBK)	< 500	500	
1,1,1-Trichloroethane	< 100	100	
1,1,2,2-Tetrachloroethane	< 0.049	0.049	1
1,1,2-Trichloroethane	< 0.038	0.038	1
1,1-Dichloroethane	< 1	1	
1,1-Dichloroethene	< 50	50	
1,2,4-Trichlorobenzene	< 0.1	0.1	
1,2,4-Trimethylbenzene	< 1	1	
1,2-dibromoethane (EDB)	< 0.0041	0.0041	1
1,2-Dichlorobenzene	< 10	10	
1,2-Dichloroethane	< 0.1	0.1	
1,2-Dichloropropane	< 0.1	0.1	
1,3,5-Trimethylbenzene	< 1	1	
1,3-Butadiene	< 0.1	0.1	
1,3-Dichlorobenzene	< 10	10	
1,4-Dichlorobenzene	< 0.1	0.1	
1,4-Dioxane	< 0.5	0.5	
2-Butanone (MEK)	< 1000	1000	
2-Hexanone	< 5	5	
Acetone	< 1000	1000	
Benzene	< 0.5	0.5	
Benzyl Chloride	< 0.08	0.08	1
Bromodichloromethane	< 0.08	0.08	1
Bromoform	< 1	1	
Bromomethane	< 1	1	
Carbon Disulfide	< 100	100	
Carbon Tetrachloride	< 0.1	0.1	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
Chloroform	< 0.17	0.17	
Chloromethane	< 10	10	
cis-1,2-Dichloroethene	< 5	5	
cis-1,3-Dichloropropene	< 1	1	
Cyclohexane	< 1600	1600	
Dibromochloromethane	< 0.1	0.1	
Dichlorodifluoromethane	< 10	10	
Ethyl Acetate	< 15	15	
Ethylbenzene	< 2	2	
Hexachloro-1,3-butadiene	< 0.1	0.1	
Isooctane	< 100	100	
m,p-Xylene	< 10	10	
Methylene Chloride	< 12	12	
Methyl-tert-butyl ether	< 10	10	
N-Heptane	< 100	100	
N-Hexane	< 50	50	
o-Xylene	< 10	10	
Propylene	< 100	100	
Styrene	< 100	100	
Tetrachloroethene	< 0.47	0.47	
Tetrahydrofuran	< 100	100	

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Analytical Report

Method Blank (MB):	MB Results (ppbv)	Reporting Limit (ppbv)	Flags
Toluene	< 1000	1000	
trans-1,2-Dichloroethene	< 10	10	
trans-1,3-Dichloropropene	< 1	1	
Trichloroethene	< 0.2	0.2	
Trichlorofluoromethane	< 100	100	
Vinyl Acetate	< 50	50	
Vinyl Bromide	< 0.1	0.1	
Vinyl Chloride	< 0.5	0.5	
4-bromofluorobenzene (surrogate)	94%		
Analysis Date/Time:	04-30-20/13:12		
Analyst Initials	tjg		

LCS/LCSD	LCS Results (ppbv)	LCSD Results (ppbv)	LCS/D Conc(ppbv)	LCS Rec.	LCSD Rec.	RPD	Flag
Propylene	9.88	10.5	10	99%	105%	6.1%	
Dichlorodifluoromethane	11.2	11.3	10	112%	113%	0.9%	
Chloromethane	10.6	11	10	106%	110%	3.7%	
Vinyl Chloride	10.3	9.87	10	103%	99%	4.3%	
1,3-Butadiene	9.57	11.2	10	96%	112%	15.7%	
Bromomethane	9.18	10	10	92%	100%	8.6%	
Chloroethane	9.4	10	10	94%	100%	6.2%	
Vinyl Bromide	10.6	11.5	10	106%	115%	8.1%	
Trichlorofluoromethane	10.2	11.1	10	102%	111%	8.5%	
Acetone	10	10.7	10	100%	107%	6.8%	
1,1-Dichloroethene	10.9	10.3	10	109%	103%	5.7%	
Methylene Chloride	9.74	10.5	10	97%	105%	7.5%	
Carbon Disulfide	10.3	9.53	10	103%	95%	7.8%	
trans-1,2-Dichloroethene	10.8	8.69	10	108%	87%	21.7%	2
Methyl-tert-butyl ether	9.46	9.69	10	95%	97%	2.4%	
1,1-Dichloroethane	9.73	9.38	10	97%	94%	3.7%	
Vinyl Acetate	10.3	10.4	10	103%	104%	1.0%	
N-Hexane	9.56	9.62	10	96%	96%	0.6%	
2-Butanone (MEK)	9.34	9.29	10	93%	93%	0.5%	
cis-1,2-Dichloroethene	9.03	9.84	10	90%	98%	8.6%	
Ethyl Acetate	9.6	10	10	96%	100%	4.1%	
Chloroform	8.29	9.02	10	83%	90%	8.4%	
Tetrahydrofuran	10.5	11.2	10	105%	112%	6.5%	
1,2-Dichloroethane	9.45	9.93	10	95%	99%	5.0%	
1,1,1-Trichloroethane	8.98	9.27	10	90%	93%	3.2%	
Carbon Tetrachloride	9.07	9.55	10	91%	96%	5.2%	
Benzene	8.89	9.32	10	89%	93%	4.7%	
Cyclohexane	9.37	9.86	10	94%	99%	5.1%	
1,2-Dichloropropane	8.78	9.21	10	88%	92%	4.8%	
Trichloroethene	8.87	9.32	10	89%	93%	4.9%	
Bromodichloromethane	9.02	9.41	10	90%	94%	4.2%	
1,4-Dioxane	10.1	8.98	10	101%	90%	11.7%	
Isooctane	10.1	10.7	10	101%	107%	5.8%	
N-Heptane	9.24	9.81	10	92%	98%	6.0%	
cis-1,3-Dichloropropene	8.6	9.16	10	86%	92%	6.3%	
4-Methyl-2-pentanone (MIBK)	10.5	10.2	10	105%	102%	2.9%	
trans-1,3-Dichloropropene	9.22	9.49	10	92%	95%	2.9%	
1,1,2-Trichloroethane	8.49	9.03	10	85%	90%	6.2%	
Toluene	8.94	9.38	10	89%	94%	4.8%	
2-Hexanone	10.4	11.1	10	104%	111%	6.5%	
Dibromochloromethane	10.6	11.3	10	106%	113%	6.4%	
1,2-dibromoethane (EDB)	10.1	10.7	10	101%	107%	5.8%	
Tetrachloroethene	11.3	10.6	10	113%	106%	6.4%	
Chlorobenzene	9.48	10.1	10	95%	101%	6.3%	
Ethylbenzene	9.88	10.5	10	99%	105%	6.1%	
m,p-Xylene	18.2	19.8	20	91%	99%	8.4%	
Bromoform	10.7	11.5	10	107%	115%	7.2%	

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Analytical Report

LCS/LCSD	LCS Results (ppbv)	LCSD Results (ppbv)	LCS/D Conc(ppbv)	LCS Rec.	LCSD Rec.	RPD	Flag
Styrene	10.1	10.7	10	101%	107%	5.8%	
1,1,2,2-Tetrachloroethane	9.3	9.98	10	93%	100%	7.1%	
o-Xylene	10.1	10.8	10	101%	108%	6.7%	
4-Ethyltoluene	10.7	11.3	10	107%	113%	5.5%	
1,3,5-Trimethylbenzene	9.4	9.97	10	94%	100%	5.9%	
1,2,4-Trimethylbenzene	10.4	11	10	104%	110%	5.6%	
1,3-Dichlorobenzene	10.7	11.2	10	107%	112%	4.6%	
Benzyl Chloride	9.73	10.4	10	97%	104%	6.7%	
1,4-Dichlorobenzene	9.08	9.72	10	91%	97%	6.8%	
1,2-Dichlorobenzene	9.02	9.57	10	90%	96%	5.9%	
1,2,4-Trichlorobenzene	9.46	10.4	10	95%	104%	9.5%	
Hexachloro-1,3-butadiene	10.3	11.3	10	103%	113%	9.3%	
4-bromofluorobenzene (surrogate)	106%	106%					
Analysis Date/Time:	04-30-20/10:33	04-30-20/11:18					
Analyst Initials	tjg	tjg					

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Flag Number	Comments
1	Reporting limit is supported by MDL. TJG
2	RPD is biased high but recoveries are within control. TJG 05-01-20

EnvisionAir Proj#: 2020-265 Page 1 of 1

CHAIN OF CUSTODY RECORD

EnvisionAir | 1441 Sadlier Circle West Drive | Indianapolis, IN 46239 | Phone: (317) 351-0885 | Fax: (317) 351-0882

Client: EnviroForensics	P.O. Number: 2020-1522
Report Address: grandall@enviroforensics.com	Project Name or Number: 300040
Report To: Grace Randall	Sampled by: B. Kappen
Phone: 317-490-1510	QA/QC Required: (circle if applicable) Level III Level IV
Invoice Address: accountspayable@enviroforensics.com	Reporting Units needed: (circle) ug/m³ mg/m³ PPBV PPMV
Desired TAT: (Please Circle One) 1 day 2 days 3 days Std (5 bus. days)	Media type: 1LC = 1 Liter Canister, 6LC = 6 Liter Canister, TB = Tedlar Bag, TD = Thermal Desorption Tube

REQUESTED PARAMETERS

TO-15 Full List | TO-15 Short List (Specify in notes)

ENVISIONAIR

Sampling Type:
Soil-Gas: ☐
Sub-Slab: ☒
Indoor-Air: ☐

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Canister Pressure / Vacuum

Air Sample ID	Media Type (see code above)	Coll. Date (Grab/Comp Start)	Coll. Time (Grab/Comp Start)	Coll. Date (Comp. End)	Coll. Time (Comp. End)	TO-15 Full List	TO-15 Short List			Canister Serial #	Flow Controller Serial #	Initial Field (in. Hg)	Final Field (in. Hg)	Lab Received (in. Hg)	EnvisionAir Sample Number
300040-1407 16th St-SS-4	1LC	4/27/20	1030			X				84051	0109	-30	-3	-3	20-1224
300040-1407 16th St-SS-3	↓	↓	1130			X				83944	0017	-29	-3	-3	20-1225
300040-1407 16th St-SS-2			1219			X				84134	0057	-30	-3	-3	20-1226
300040-1407 16th St-SS-5			1309			X				2218	0075	-29	-3	-3	20-1227
300040-1407 16th St-SS-1			1345			X				83942	0025	-29	-3	-3	20-1228

Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
B. Kappen	4/27/20	1900	FedEx	4/27/20	1900
			Stan Hummel	4/29/20	1535

2020-265

ENVISIONAIR

TO-15 VOC

- Sequence Log

Injection Log

Directory: C:\HPCHEM\1\DATA\043020

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0101001.D	1.	BFB/CCV 10PPBV	TO-15 QC	30 Apr 2020 09:49
2	2	0201002.D	1.	10PPBV LCS	TO-15 QC	30 Apr 2020 10:33
3	3	0301003.D	1.	10PPBV LCSD	TO-15 QC	30 Apr 2020 11:18
4	4	0401004.D	1.	10PPBV LCSDD	TO-15 QC	30 Apr 2020 12:02
5	5	0501005.D	1.	CSI-16020	TO-15 QC	30 Apr 2020 12:37
6	6	0601006.D	1.	MB	TO-15 QC	30 Apr 2020 13:12
7	7	0701007.D	1.	20-1224:10	TO-15 QC	30 Apr 2020 13:51
8	8	0801008.D	1.	20-1225:10	TO-15 QC	30 Apr 2020 14:29
9	9	0901009.D	1.	20-1226:10	TO-15 QC	30 Apr 2020 15:07
10	10	1001010.D	1.	20-1227:10	TO-15 QC	30 Apr 2020 15:46
11	11	1101011.D	1.	20-1228:10	TO-15 QC	30 Apr 2020 16:24
12	12	1201012.D	1.	20-1223:10	TO-15 QC	30 Apr 2020 17:02
13	13	1301013.D	1.	20-1223:40	TO-15 QC	30 Apr 2020 17:41
14	14	1401014.D	1.	LCSD-10PPBV	TO-15 QC	30 Apr 2020 18:25
15	15	1501015.D	1.	LCSD-10PPBV	TO-15 QC	30 Apr 2020 19:10
16	16	1601016.D	1.	CSI	TO-15 QC	30 Apr 2020 19:44
17		1701017.D	1.			30 Apr 2020

ENVISIONAIR

TO-15 VOC
Initial Calibration Data

- Tune
- Initial Calibration Summary
- Initial Calibration Quant Reports
- Initial Calibration Verification Summary

Injection Log

Directory: C:\HPCHEM\1\DATA\041420C

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	2	0201001.D	1.	BFB TUNE	TO-15 QC	14 Apr 2020 07:48
2	3	0301002.D	1.	0.05PPBV TO-15 CURVE	TO-15 QC	14 Apr 2020 08:26
3	4	0401003.D	1.	0.1PPBV TO-15 CURVE	TO-15 QC	14 Apr 2020 09:12
4	5	0501004.D	1.	0.5PPBV TO-15 CURVE	TO-15 QC	14 Apr 2020 09:54
5	6	0601005.D	1.	1PPBV TO-15 CURVE	TO-15 QC	14 Apr 2020 10:40
6	7	0701006.D	1.	2PPBV TO-15 CURVE	TO-15 QC	14 Apr 2020 11:18
7	8	0801007.D	1.	5PPBV TO-15 CURVE	TO-15 QC	14 Apr 2020 12:00
8	9	0901008.D	1.	10PPBV TO-15 CURVE/BFB/CCV	TO-15 QC	14 Apr 2020 12:45
9	10	1001009.D	1.	20PPBV TO-15 CURVE	TO-15 QC	14 Apr 2020 13:37
10	11	1101010.D	1.	10PPBV TO-15 CURVE VER/LCS	TO-15 QC	14 Apr 2020 14:22
11	12	1201011.D	1.	CB	TO-15 QC	14 Apr 2020 15:07
12	13	1301012.D	1.	10PPBV LCSD	TO-15 QC	14 Apr 2020 15:52
13	14	1401013.D	1.	CSI-4694	TO-15 QC	14 Apr 2020 16:52
14	15	1501014.D	1.	MB	TO-15 QC	14 Apr 2020 17:27
15	16	1601015.D	1.	20-1153:10	TO-15 QC	14 Apr 2020 18:05
16	17	1701016.D	1.	20-1154:10	TO-15 QC	14 Apr 2020 18:43
17	18	1801017.D	1.	20-1155:10	TO-15 QC	14 Apr 2020 19:22
18	19	1901018.D	1.	20-1156:10	TO-15 QC	14 Apr 2020 20:01
19	20	2001019.D	1.	20-1157:10	TO-15 QC	14 Apr 2020 20:39
20	21	2101020.D	1.	20-1158:10	TO-15 QC	14 Apr 2020 21:18
21	22	2201021.D	1.	20-1159:10	TO-15 QC	14 Apr 2020 21:56
22	23	2301022.D	1.	20-1160:10	TO-15 QC	14 Apr 2020 22:35
23	24	2401023.D	1.	20-1161:10	TO-15 QC	14 Apr 2020 23:13
24	25	2501024.D	1.	20-1162:10	TO-15 QC	14 Apr 2020 23:52
25	26	2601025.D	1.	LCSD-10PPBV	TO-15 QC	15 Apr 2020 00:37
26	27	2701026.D	1.	20-1163:10	TO-15 QC	15 Apr 2020 01:16
27	28	2801027.D	1.	20-1164:10	TO-15 QC	15 Apr 2020 01:55
28	29	2901028.D	1.	CSI	TO-15 QC	15 Apr 2020 02:33
29	30	3001029.D	1.	20-1166 IA	TO-15 QC	15 Apr 2020 03:15
30	31	3101030.D	1.	20-1165:10	TO-15 QC	15 Apr 2020 03:54
31	32	3201031.D	1.	LCSD-10PPBV	TO-15 QC	15 Apr 2020 04:40
32	33	3301032.D	1.	LCSD-10PPBV	TO-15 QC	15 Apr 2020 05:26
33	34	3401033.D	1.	METHOD BLANK	TO-15 QC	15 Apr 2020 06:01
34	35	3501034.D	1.	CSI-4101	TO-15 QC	15 Apr 2020 06:36
35	36	3601035.D	1.	CSI-19506	TO-15 QC	15 Apr 2020 07:12
36	37	3701036.D	1.	CSI-91441	TO-15 QC	15 Apr 2020 07:47
37	38	3801001.D	1.	BFB/CCV-10PPBV	TO-15 QC	15 Apr 2020 09:22
38		3801037.D	1.			
39	39	3901002.D	1.	LCS-10PPBV	TO-15 QC	15 Apr 2020 10:08
40	40	4001003.D	1.	LCSD-10PPBV	TO-15 QC	15 Apr 2020 10:53
41	41	4101004.D	1.	METHOD BLANK	TO-15 QC	15 Apr 2020 11:28
42	42	4201001.D	1.	20-1166:80	TO-15 QC	15 Apr 2020 14:27
43	43	4301002.D	1.	20-1165:800	TO-15 QC	15 Apr 2020 15:05
44	44	4401003.D	1.	CSI-2228-BATCH	TO-15 QC	15 Apr 2020 15:44
45	45	4501004.D	1.	20-1169	TO-15 QC	15 Apr 2020 16:25
46	46	4601005.D	1.	20-1170	TO-15 QC	15 Apr 2020 17:07
47	47	4701006.D	1.	20-1171	TO-15 QC	15 Apr 2020 17:49
48	48	4801007.D	1.	20-1172	TO-15 QC	15 Apr 2020 18:30
49	49	4901008.D	1.	20-1173	TO-15 QC	15 Apr 2020 19:12
50	50	5001009.D	1.	20-1174	TO-15 QC	15 Apr 2020 19:53
51	51	5101010.D	1.	20-1175	TO-15 QC	15 Apr 2020 20:35
52	52	5201011.D	1.	20-1176 DUP	TO-15 QC	15 Apr 2020 21:16
53	53	5301012.D	1.	LCSD-10PPBV	TO-15 QC	15 Apr 2020 22:01

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration

Calibration Files
10 =0901008.D .5 =0501004.D 5 =0801007.D
2 =0701006.D 1 =0601005.D 0.05 =0301002.D

		Compound	10	.5	5	2	1	0.05	Avg	%RSD
1)	T	Bromochloromethane (I	----------			ISTD	----------			
2)	T	Propylene	1.323	1.311	1.215	1.504	1.309	1.427	1.335	6.77
3)	T	Dichlorodifluoromet	3.924	3.935	4.384	3.854	3.450	2.660	3.716	13.82
4)	T	Chloromethane	2.425	2.360	2.342	2.476	2.970	2.568	2.467	9.04
5)	T	Vinyl Chloride	2.040	2.287	2.481	2.268	2.157	2.033	2.208	7.40
6)	T	1,3-Butadiene	0.987	0.832	1.048	1.135	1.233	0.999	1.054	11.44
7)	T	Bromomethane	2.003	2.292	2.210	2.395	2.775	2.346	2.303	10.25
8)	T	Chloroethane	1.129	1.149	1.237	1.297	1.197	1.371	1.267	11.09
9)	T	Vinyl Bromide	1.842	1.728	1.986	1.881	1.576	1.902	1.872	9.72
10)	T	Trichlorofluorometh	4.601	5.146	4.995	4.992	4.596	4.988	4.958	9.72
11)	T	Acetone	2.689	2.297	2.262	2.396	2.629	2.895	2.591	9.30
12)		Isopropyl Alcohol (	2.608	2.154	3.134	3.390	3.170	2.549	2.920	14.68
13)		1,1-Dichloroethene	2.800	2.530	2.859	2.745	2.425	2.252	2.668	8.94
14)	T	Methylene Chloride	1.534	1.484	1.473	1.547	1.443	1.709	1.557	6.94
15)	T	Carbon Disulfide	4.689	4.060	4.814	4.633	4.156	4.622	4.596	7.48
16)	T	trans-1,2-Dichloroe	1.479	1.360	1.475	1.579	1.190	1.581	1.468	9.14
17)	T	Methyl-tert-butyl e	4.728	5.182	4.799	5.081	4.949	6.624	5.298	11.77
18)	T	1,1-Dichloroethane	3.463	3.831	3.408	3.353	2.758	3.295	3.511	13.81
19)	T	Vinyl Acetate	4.264	3.939	5.028	3.920	3.640	4.615	4.109	12.12
20)	T	N-Hexane	2.732	2.715	2.898	2.694	2.264	2.445	2.663	9.74
21)	T	2-Butanone (MEK)	3.635	3.351	3.721	3.908	4.451	4.029	3.855	8.78
22)	T	cis-1,2-Dichloroeth	2.376	2.234	2.349	1.859	1.805	1.733	2.089	12.10
23)	T	Ethyl Acetate	4.824	5.103	5.606	5.505	5.402	7.637	5.722	14.98
24)	T	Chloroform	3.320	3.241	3.243	2.831	3.204	3.260	3.212	5.05
25)	T	1,4-Difluorobenzene (	----------			ISTD	----------			
26)	T	Tetrahydrofuran	0.601	0.514	0.663	0.623	0.531	0.537	0.575	9.43
27)	T	1,2-Dichloroethane	0.551	0.484	0.538	0.486	0.481	0.368	0.494	12.13
28)	T	1,1,1-Trichloroetha	0.680	0.779	0.684	0.722	0.853	0.610	0.713	10.42
29)	T	1,1-Dichloropropene	0.678	0.690	0.660	0.628	0.505	0.716	0.656	10.09
30)	T	Carbon Tetrachlorid	0.684	0.786	0.670	0.686	0.925	0.591	0.717	14.25
31)	T	Benzene	1.048	1.275	1.088	1.076	0.938	0.919	1.073	11.23
32)	T	Cyclohexane	0.643	0.713	0.667	0.666	0.421	0.664	0.631	14.14
33)	T	1,2-Dichloropropane	0.438	0.516	0.460	0.452	0.305	0.412	0.432	14.24
34)	T	Trichloroethene	0.433	0.471	0.411	0.434	0.384	0.477	0.434	6.90
35)	T	Bromodichloromethan	0.794	0.902	0.790	0.794	0.793	0.591	0.783	12.47
36)	T	1,4-Dioxane	0.098	0.106	0.102	0.095	0.102	0.119	0.106	9.21
37)	T	Isooctane	1.617	1.207	1.517	1.750	1.835	1.791	1.671	15.61
38)	T	N-Heptane	0.672	0.820	0.682	0.690	0.588	0.698	0.696	9.44
39)	T	cis-1,3-Dichloropro	0.678	0.743	0.660	0.628	0.505	0.642	0.658	11.27
40)	T	4-Methyl-2-Penanone	0.818	0.836	0.804	0.763	0.677	0.614	0.757	10.05
41)	T	trans-1,3-Dichlorop	0.498	0.495	0.451	0.461	0.355	0.349	0.442	13.33
42)	T	1,1,2-Trichloroetha	0.339	0.377	0.362	0.329	0.244	0.295	0.338	14.37
43)	T	Toluene	0.927	1.084	0.947	0.932	0.679	0.909	0.929	13.32
44)	T	2-Hexanone	0.508	0.657	0.527	0.453	0.602	0.700	0.589	14.41
45)	I	Chlorobenzene-d5 (IS)	----------			ISTD	----------			
46)	T	Dibromochloromethan	0.990	1.047	0.964	0.941	1.129	1.057	0.994	9.38
47)	T	1,2-Dibromoethane (	0.812	0.757	0.783	0.715	0.861	0.754	0.782	6.50
48)	T	Tetrachloroethene	0.548	0.540	0.514	0.514	0.603	0.612	0.561	7.36
49)	T	Chlorobenzene	0.981	1.093	0.969	0.922	1.056	1.158	1.028	7.51
50)	T	Ethylbenzene	1.752	2.024	1.819	1.801	2.034	1.500	1.828	10.55
51)	T	m,p-Xylene	0.612	0.646	0.608	0.643	0.677	0.705	0.652	5.06
52)	T	Bromoform	0.603	0.610	0.545	0.561	0.627	0.683	0.604	6.92
53)	T	Styrene	0.789	0.710	0.729	0.680	0.786	0.784	0.747	5.96
54)	T	1,1,2,2-Tetrachloro	1.113	1.265	1.086	0.987	1.306	1.259	1.194	11.76
55)	T	o-Xylene	0.546	0.534	0.513	0.490	0.543	0.572	0.536	4.70
56)	S	4-Bromofluorobenzen	0.428	0.419	0.503	0.480	0.410	0.337	0.421	12.34
57)	T	4-Ethyltoluene	1.258	1.277	1.205	1.018	1.381	1.103	1.188	10.45
58)	T	1,3,5-Trimethylbenz	1.121	1.294	1.071	1.015	1.355	1.351	1.242	14.82
59)	T	1,2,4-Trimethylbenz	0.948	1.023	0.890	0.794	0.947	0.827	0.933	10.71
60)	T	1,3-Dichlorobenzene	0.497	0.555	0.392	0.461	0.452	0.418	0.470	12.20
61)	T	Benzyl Chloride	0.737	0.696	0.519	0.520	0.537	0.716	0.634	14.62
62)	T	1,4-Dichlorobenzene	0.196	0.207	0.187	0.176	0.166	0.206	0.193	8.32
63)	T	1,2-Dichlorobenzene	0.410	0.460	0.348	0.467	0.502	0.580	0.461	14.86
64)	T	1,2,4-Trichlorobenz	0.053	0.050	0.055	0.047	0.051	0.062	0.055	11.31

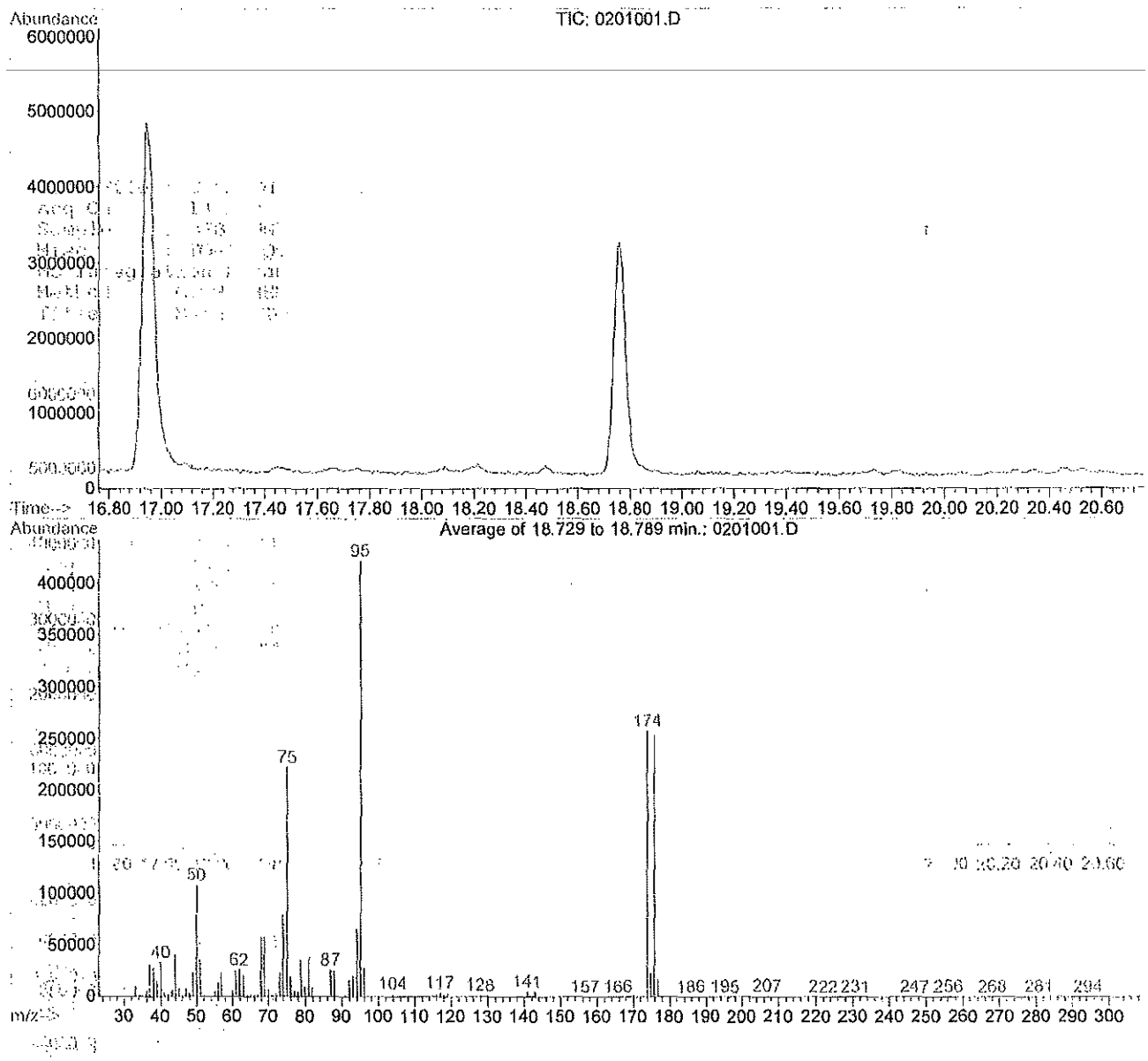
65)		Naphthalene	0.115	0.119	0.099	0.110	0.118	0.108	0.120	14.34
66)	T	Hexachloro-1,3-buta	0.073	0.088	0.064	0.077	0.080	0.085	0.079	10.74

(#) = Out of Range ### Number of calibration levels exceeded format ###

041420AI.M Thu Apr 30 04:08:30 2020

BFB

Data File : C:\HPCHEM\1\DATA\041420C\0201001.D Vial: 2
Acq On : 14 Apr 2020 7:48 am Operator: TJG
Sample : BFB TUNE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION



Spectrum Information: Average of 18.729 to 18.789 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.7	108409	PASS
75	95	30	60	52.8	223060	PASS
95	95	100	100	100.0	422575	PASS
96	95	2	9	6.6	28089	PASS
173	174	0.00	2	0.3	761	PASS
174	95	50	100	61.1	258342	PASS
175	174	5	9	8.9	23106	PASS
176	174	95	101	98.5	254353	PASS
177	176	5	9	6.4	16326	PASS

0201001.D 041420AI.M Thu Apr 30 04:08:41 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0301002.D Vial: 3
Acq On : 14 Apr 2020 8:26 am Operator: TJG
Sample : 0.05PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 14 14:49 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Mar 17 09:49:17 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.43	128	2180146	5.00	ppbv		-0.02
25) 1,4-Difluorobenzene (IS)	11.71	114	8479200	5.00	ppbv		-0.02
45) Chlorobenzene-d5 (IS)	16.95	117	4866667	5.00	ppbv		0.00
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.75	95	1642057	3.53	ppbv		0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 70.60%				
Target Compounds						Qvalue	
2) Propylene	4.11	39	23329	0.06	ppbv		
3) Dichlorodifluoromethane	4.19	85	57998	0.03	ppbv		
4) Chloromethane	4.38	50	41778	0.04	ppbv		
5) Vinyl Chloride	4.61	62	37420	0.08	ppbv		
6) 1,3-Butadiene	4.51	39	24648	0.12	ppbv		
7) Bromomethane	5.07	94	45344	0.09	ppbv		
8) Chloroethane	5.28	64	19726	0.11	ppbv		
9) Vinyl Bromide	5.66	106	36465	0.08	ppbv		
10) Trichlorofluoromethane	6.11	101	108749	0.05	ppbv	#	88
11) Acetone	5.96	43	63107m	0.08	ppbv		
12) Isopropyl Alcohol (IPA)	6.30	45	39576	0.06	ppbv		
13) 1,1-Dichloroethene	6.82	61	49097	0.04	ppbv		
14) Methylene Chloride	6.96	84	37250	0.06	ppbv		
15) Carbon Disulfide	7.30	76	96772	0.05	ppbv		
16) trans-1,2-Dichloroethene	8.03	96	26105m	0.04	ppbv		
17) Methyl-tert-butyl ether	8.43	73	78512	0.05	ppbv		
18) 1,1-Dichloroethane	8.27	63	61238	0.04	ppbv		
19) Vinyl Acetate	8.56	43	100615	0.05	ppbv		
20) N-Hexane	9.50	57	53302	0.04	ppbv		
21) 2-Butanone (MEK)	8.74	43	50546	0.03	ppbv		
22) cis-1,2-Dichloroethene	9.23	61	37791	0.04	ppbv		
23) Ethyl Acetate	9.58	43	103507	0.04	ppbv		
24) Chloroform	9.56	83	71083	0.05	ppbv		
26) Tetrahydrofuran	10.13	42	45532	0.05	ppbv		
27) 1,2-Dichloroethane	10.45	62	31207	0.04	ppbv		
28) 1,1,1-Trichloroethane	10.75	97	51729	0.05	ppbv	#	67
29) 1,1-Dichloropropene	13.60	75	60733	0.05	ppbv		
30) Carbon Tetrachloride	11.48	117	50073	0.05	ppbv		99
31) Benzene	11.30	78	77936	0.04	ppbv	#	81
32) Cyclohexane	11.62	56	56291m	0.05	ppbv		
33) 1,2-Dichloropropane	12.28	63	34966m	0.04	ppbv		
34) Trichloroethene	12.56	95	40460	0.06	ppbv		
35) Bromodichloromethane	12.50	83	50091	0.04	ppbv		
36) 1,4-Dioxane	12.62	88	10118m	0.04	ppbv		
37) Isooctane	12.62	57	191869	0.05	ppbv		
38) N-Heptane	12.93	43	59180	0.04	ppbv		
39) cis-1,3-Dichloropropene	13.60	75	54425	0.05	ppbv		
40) 4-Methyl-2-Penanone (MIBK)	13.68	43	52064	0.03	ppbv		
41) trans-1,3-Dichloropropene	14.26	75	29595	0.04	ppbv		
42) 1,1,2-Trichloroethane	14.44	83	24977	0.04	ppbv		
43) Toluene	14.78	91	77047	0.04	ppbv		99
44) 2-Hexanone	15.14	43	59331m	0.04	ppbv		
46) Dibromochloromethane	15.28	129	51439m	0.05	ppbv		
47) 1,2-Dibromoethane (EDB)	15.60	107	36719	0.05	ppbv		
48) Tetrachloroethene	16.17	166	29777	0.05	ppbv		
49) Chlorobenzene	17.00	112	56378	0.05	ppbv	#	77
50) Ethylbenzene	17.44	91	73022	0.04	ppbv	#	92
51) m,p-Xylene	17.66	91	68575m	0.11	ppbv		
52) Bromoform	17.73	173	33244	0.05	ppbv		
53) Styrene	18.09	104	38165	0.04	ppbv		

(#) = qualifier out of range (m) = manual integration
0301002.D 041420AI.M Thu Apr 30 04:09:18 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0301002.D Vial: 3
Acq On : 14 Apr 2020 8:26 am Operator: TJG
Sample : 0.05PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 14 14:49 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Mar 17 09:49:17 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

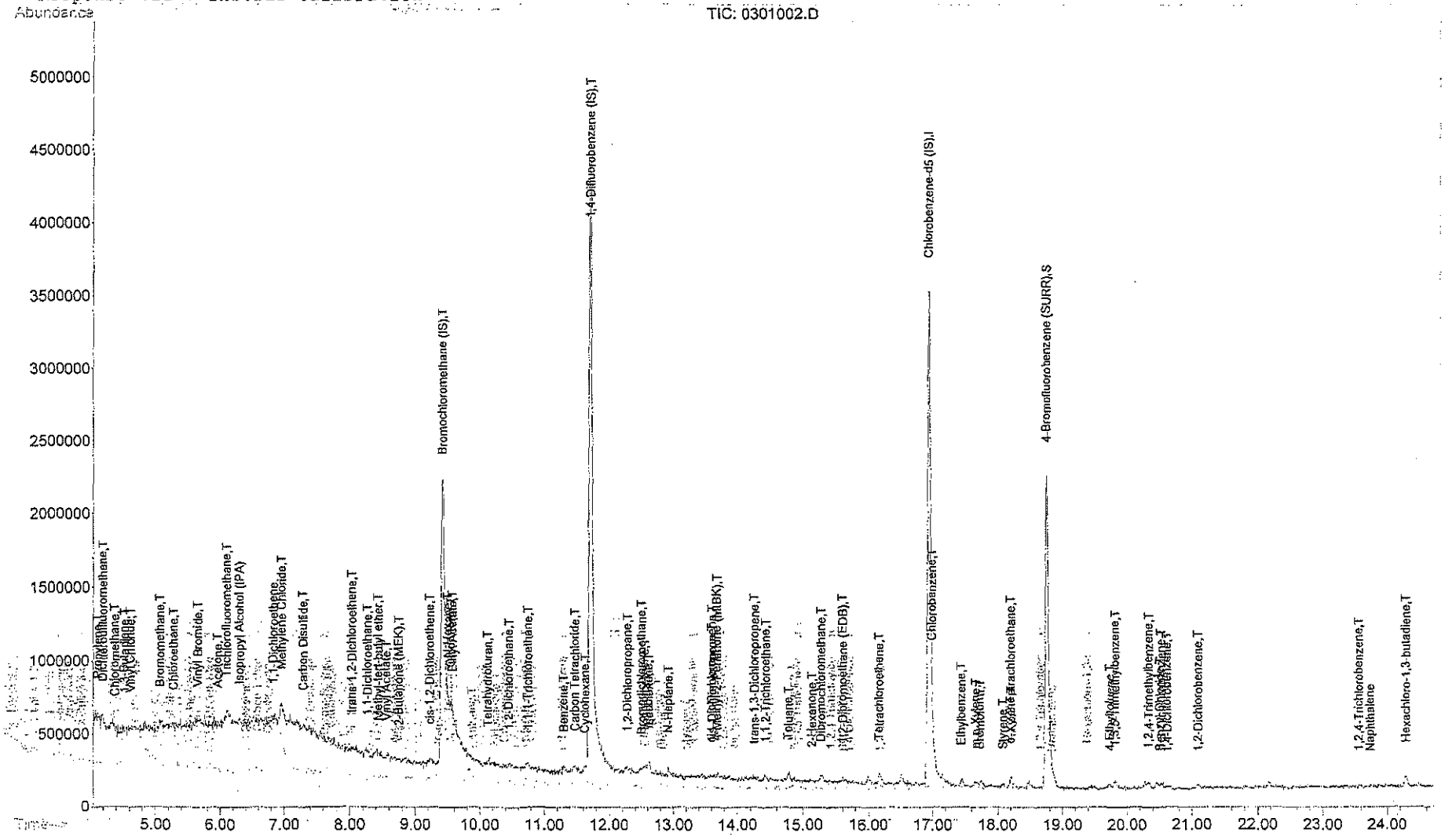
Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.21	83	61288	0.05 ppbv		
55) o-Xylene	18.21	106	27860	0.05 ppbv	#	25
57) 4-Ethyltoluene	19.74	105	53666	0.04 ppbv		99
58) 1,3,5-Trimethylbenzene	19.82	105	65755	0.05 ppbv	#	97
59) 1,2,4-Trimethylbenzene	20.34	105	61226m	0.06 ppbv		
60) 1,3-Dichlorobenzene	20.54	146	20343	0.03 ppbv	#	63
61) Benzyl Chloride	20.51	91	34826	0.05 ppbv		
62) 1,4-Dichlorobenzene	20.62	148	12635	0.04 ppbv		
63) 1,2-Dichlorobenzene	21.09	146	28242m	0.05 ppbv		
64) 1,2,4-Trichlorobenzene	23.55	180	3827	0.05 ppbv	#	67
65) Naphthalene	23.74	128	5245m	0.04 ppbv		
66) Hexachloro-1,3-butadiene	24.29	225	4544	0.05 ppbv		

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\041420C\0301002.D Vial: 3
Acq On : 14 Apr 2020 8:26 am Operator: TJG
Sample : 0.05PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 14 14:49 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0401003.D Vial: 4
Acq On : 14 Apr 2020 9:12 am Operator: TJG
Sample : 0.1PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:39 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 09:11:15 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.41	128	1949316	5.00	ppbv		-0.03
25) 1,4-Difluorobenzene (IS)	11.70	114	7301001	5.00	ppbv		-0.03
45) Chlorobenzene-d5 (IS)	16.95	117	3979170	5.00	ppbv		0.00
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.76	95	1544503	4.21	ppbv		0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 84.20%				
Target Compounds							Qvalue
2) Propylene	4.08	39	45596	0.13	ppbv		
3) Dichlorodifluoromethane	4.16	85	155347	0.09	ppbv		
4) Chloromethane	4.35	50	69768	0.09	ppbv		
5) Vinyl Chloride	4.59	62	57219	0.13	ppbv		
6) 1,3-Butadiene	4.79	39	37749	0.23	ppbv		
7) Bromomethane	4.98	94	68188	0.14	ppbv		
8) Chloroethane	5.23	64	39633	0.24	ppbv		
9) Vinyl Bromide	5.63	106	73819	0.18	ppbv		
10) Trichlorofluoromethane	6.09	101	232312	0.13	ppbv		
11) Acetone	6.01	43	109171	0.16	ppbv		
12) Isopropyl Alcohol (IPA)	6.33	45	82624	0.15	ppbv		
13) 1,1-Dichloroethene	6.81	61	109040	0.11	ppbv	#	85
14) Methylene Chloride	6.93	84	67693	0.12	ppbv		
15) Carbon Disulfide	7.30	76	147885	0.09	ppbv		
16) trans-1,2-Dichloroethene	8.02	96	47074	0.09	ppbv	#	75
17) Methyl-tert-butyl ether	8.39	73	174315	0.12	ppbv	#	73
18) 1,1-Dichloroethane	8.24	63	143688	0.11	ppbv	#	52
19) Vinyl Acetate	8.39	43	151509m	0.09	ppbv		
20) N-Hexane	9.49	57	119751	0.10	ppbv		98
21) 2-Butanone (MEK)	8.82	43	114314	0.09	ppbv		
22) cis-1,2-Dichloroethene	9.21	61	85058	0.10	ppbv		
23) Ethyl Acetate	9.50	43	169738	0.08	ppbv		
24) Chloroform	9.56	83	131084	0.10	ppbv	#	66
26) Tetrahydrofuran	10.10	42	88029m	0.11	ppbv		
27) 1,2-Dichloroethane	10.45	62	70938	0.11	ppbv		
28) 1,1,1-Trichloroethane	10.75	97	102693	0.11	ppbv		98
29) 1,1-Dichloropropene	13.59	75	101167m	0.10	ppbv		
30) Carbon Tetrachloride	11.45	117	95209	0.10	ppbv		100
31) Benzene	11.28	78	151236	0.09	ppbv		
32) Cyclohexane	11.62	56	96418	0.10	ppbv	#	75
33) 1,2-Dichloropropane	12.28	63	67883	0.09	ppbv		
34) Trichloroethene	12.56	95	62590	0.10	ppbv		
35) Bromodichloromethane	12.48	83	129431	0.11	ppbv	#	85
36) 1,4-Dioxane	12.64	88	17831	0.09	ppbv		
37) Isooctane	12.61	57	305315	0.09	ppbv	#	94
38) N-Heptane	12.93	43	108508	0.09	ppbv		91
39) cis-1,3-Dichloropropene	13.59	75	107388	0.11	ppbv		
40) 4-Methyl-2-Penanone (MIBK)	13.70	43	116073	0.09	ppbv		
41) trans-1,3-Dichloropropene	14.23	75	70489	0.10	ppbv		
42) 1,1,2-Trichloroethane	14.42	83	55694	0.10	ppbv		90
43) Toluene	14.78	91	155472	0.10	ppbv	#	96
44) 2-Hexanone	15.16	43	95375m	0.09	ppbv		
46) Dibromochloromethane	15.28	129	64899	0.08	ppbv	#	83
47) 1,2-Dibromoethane (EDB)	15.63	107	66706	0.11	ppbv		
48) Tetrachloroethene	16.18	166	48503	0.10	ppbv		
49) Chlorobenzene	17.00	112	84507	0.09	ppbv	#	28
50) Ethylbenzene	17.44	91	161282	0.11	ppbv	#	58
51) m,p-Xylene	17.66	91	107441	0.20	ppbv	#	92
52) Bromoform	17.74	173	47572	0.08	ppbv		
53) Styrene	18.10	104	62604	0.09	ppbv	#	78

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0401003.D Vial: 4
Acq On : 14 Apr 2020 9:12 am Operator: TJG
Sample : 0.1PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:39 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 09:11:15 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

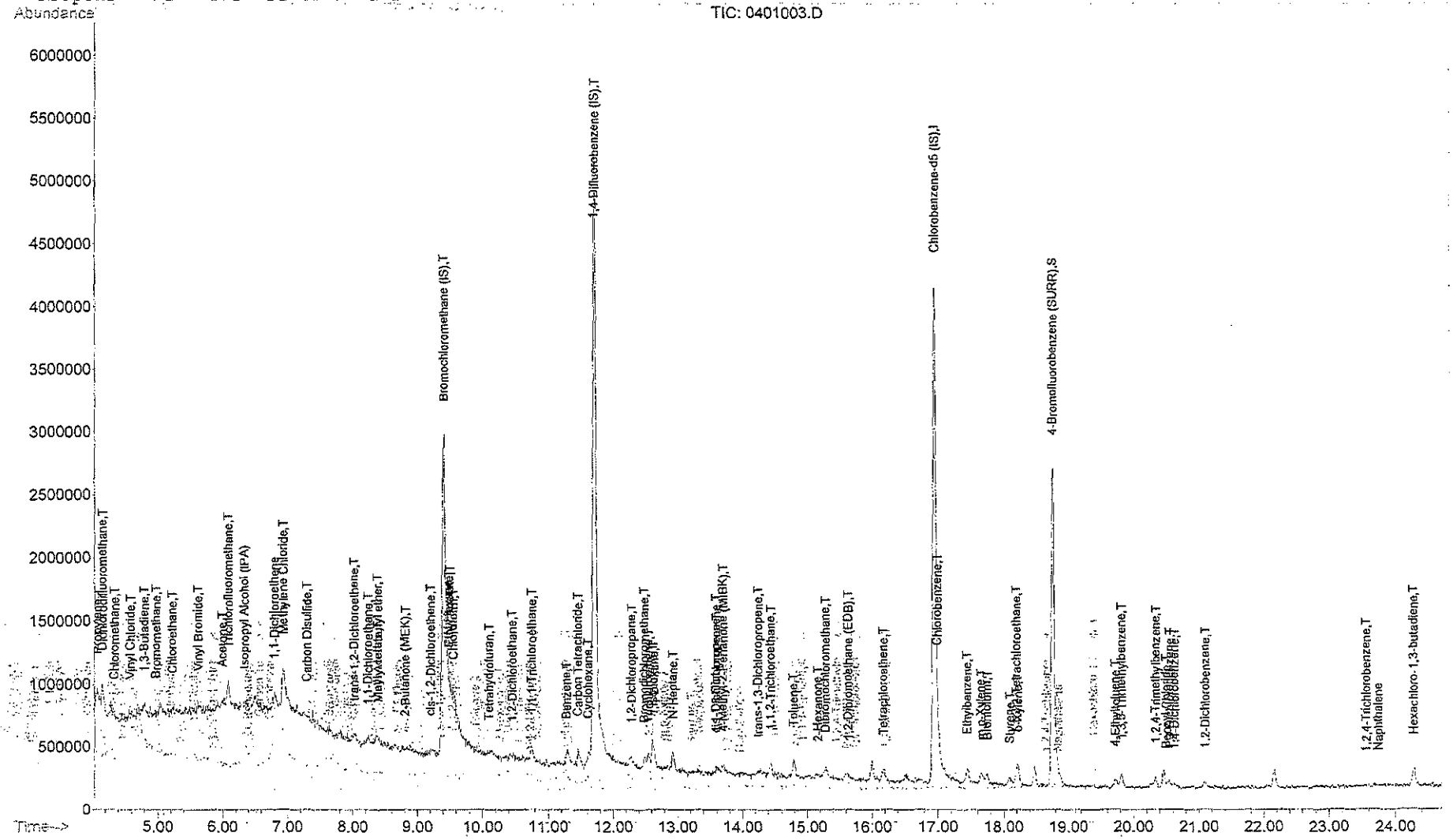
Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.19	83	112804	0.11 ppbv		90
55) o-Xylene	18.22	106	44029	0.09 ppbv	#	85
57) 4-Ethyltoluene	19.72	105	96673	0.09 ppbv	#	59
58) 1,3,5-Trimethylbenzene	19.81	105	125033	0.11 ppbv	#	86
59) 1,2,4-Trimethylbenzene	20.34	105	97783	0.11 ppbv	#	88
60) 1,3-Dichlorobenzene	20.56	146	35481m	0.07 ppbv		
61) Benzyl Chloride	20.51	91	54664	0.09 ppbv		
62) 1,4-Dichlorobenzene	20.62	148	20127	0.08 ppbv		
63) 1,2-Dichlorobenzene	21.10	146	38648m	0.08 ppbv		
64) 1,2,4-Trichlorobenzene	23.57	180	5653	0.09 ppbv		
65) Naphthalene	23.74	128	12189m	0.10 ppbv		
66) Hexachloro-1,3-butadiene	24.28	225	8155	0.10 ppbv		

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\041420C\0401003.D Vial: 4
Acq On : 14 Apr 2020 9:12 am Operator: TJG
Sample : 0.1PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:39 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0501004.D Vial: 5
Acq On : 14 Apr 2020 9:54 am Operator: TJG
Sample : 0.5PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:37 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 09:43:40 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS)	9.43	128	2218682	5.00 ppbv		-0.02
25) 1,4-Difluorobenzene (IS)	11.71	114	6645977	5.00 ppbv		-0.03
45) Chlorobenzene-d5 (IS)	16.95	117	3988784	5.00 ppbv		0.00
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.75	95	1672754	4.62 ppbv		0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 92.40%			
Target Compounds						Qvalue
2) Propylene	4.09	39	260852	0.65 ppbv		
3) Dichlorodifluoromethane	4.18	85	873111	0.44 ppbv		
4) Chloromethane	4.37	50	483652	0.52 ppbv		97
5) Vinyl Chloride	4.60	62	421439	0.86 ppbv		
6) 1,3-Butadiene	4.77	39	210584	1.13 ppbv		
7) Bromomethane	5.05	94	508565	0.94 ppbv		
8) Chloroethane	5.26	64	174905	0.89 ppbv		
9) Vinyl Bromide	5.64	106	333463	0.69 ppbv		
10) Trichlorofluoromethane	6.10	101	1141631	0.53 ppbv	#	27
11) Acetone	6.01	43	509694	0.63 ppbv		
12) Isopropyl Alcohol (IPA)	6.32	45	432819	0.67 ppbv		
13) 1,1-Dichloroethene	6.81	61	561264	0.49 ppbv		93
14) Methylene Chloride	6.95	84	329304	0.49 ppbv		89
15) Carbon Disulfide	7.29	76	922864m	0.49 ppbv		
16) trans-1,2-Dichloroethene	8.04	96	301687	0.52 ppbv		
17) Methyl-tert-butyl ether	8.38	73	949681	0.56 ppbv		97
18) 1,1-Dichloroethane	8.26	63	730062	0.47 ppbv	#	94
19) Vinyl Acetate	8.49	43	873924	0.53 ppbv		
20) N-Hexane	9.50	57	602400	0.46 ppbv		
21) 2-Butanone (MEK)	8.79	43	673548	0.46 ppbv		
22) cis-1,2-Dichloroethene	9.23	61	495683	0.51 ppbv		
23) Ethyl Acetate	9.55	43	1132189	0.47 ppbv		
24) Chloroform	9.57	83	719071	0.48 ppbv		
26) Tetrahydrofuran	10.10	42	341291	0.48 ppbv		95
27) 1,2-Dichloroethane	10.44	62	321502	0.54 ppbv		90
28) 1,1,1-Trichloroethane	10.75	97	517926	0.61 ppbv		98
29) 1,1-Dichloropropene	13.58	75	458658m	0.50 ppbv		
30) Carbon Tetrachloride	11.47	117	522085	0.62 ppbv		96
31) Benzene	11.29	78	847511	0.58 ppbv		97
32) Cyclohexane	11.63	56	473566	0.53 ppbv		94
33) 1,2-Dichloropropane	12.27	63	343099	0.53 ppbv		91
34) Trichloroethene	12.55	95	313064	0.54 ppbv		
35) Bromodichloromethane	12.49	83	599340	0.57 ppbv	#	98
36) 1,4-Dioxane	12.60	88	88299	0.52 ppbv		
37) Isooctane	12.62	57	1652467	0.59 ppbv	#	90
38) N-Heptane	12.92	43	544860	0.52 ppbv		
39) cis-1,3-Dichloropropene	13.58	75	493758	0.57 ppbv		
40) 4-Methyl-2-Pentanone (MIBK)	13.69	43	555618	0.49 ppbv		
41) trans-1,3-Dichloropropene	14.24	75	329276	0.52 ppbv		
42) 1,1,2-Trichloroethane	14.42	83	250417	0.49 ppbv		98
43) Toluene	14.78	91	720500	0.50 ppbv		98
44) 2-Hexanone	15.13	43	436666m	0.46 ppbv		
46) Dibromochloromethane	15.28	129	417818	0.54 ppbv	#	93
47) 1,2-Dibromoethane (EDB)	15.61	107	301888	0.48 ppbv	#	4
48) Tetrachloroethene	16.17	166	215575	0.43 ppbv	#	89
49) Chlorobenzene	16.99	112	435799	0.48 ppbv		91
50) Ethylbenzene	17.44	91	807197	0.54 ppbv		96
51) m,p-Xylene	17.66	91	515201	0.97 ppbv		99
52) Bromoform	17.75	173	243205	0.45 ppbv		
53) Styrene	18.09	104	283157	0.42 ppbv	#	90

(#) = qualifier out of range (m) = manual integration
0501004.D 041420AI.M Thu Apr 30 04:09:27 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0501004.D Vial: 5
Acq On : 14 Apr 2020 9:54 am Operator: TJG
Sample : 0.5PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:37 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 09:43:40 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

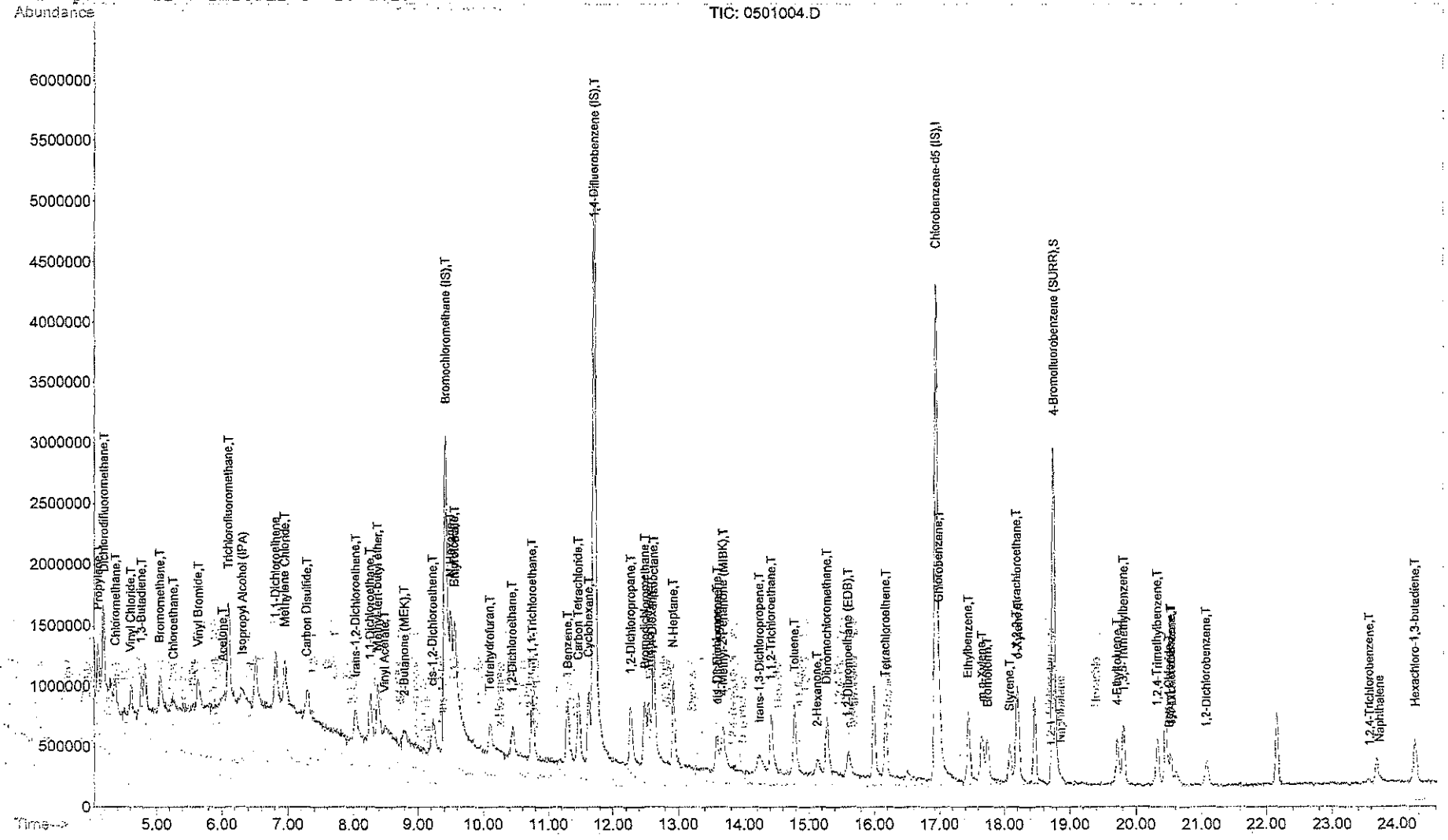
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.19	83	504702	0.48 ppbv #	98
55) o-Xylene	18.22	106	213026	0.46 ppbv	84
57) 4-Ethyltoluene	19.72	105	509337	0.47 ppbv	94
58) 1,3,5-Trimethylbenzene	19.81	105	515992	0.47 ppbv	93
59) 1,2,4-Trimethylbenzene	20.32	105	428049	0.47 ppbv	95
60) 1,3-Dichlorobenzene	20.55	146	221500m	0.45 ppbv	
61) Benzyl Chloride	20.50	91	277702	0.46 ppbv	
62) 1,4-Dichlorobenzene	20.55	148	102729	0.43 ppbv	
63) 1,2-Dichlorobenzene	21.08	146	213404m	0.43 ppbv	
64) 1,2,4-Trichlorobenzene	23.58	180	29860	0.50 ppbv	
65) Naphthalene	23.73	128	47577	0.40 ppbv	
66) Hexachloro-1,3-butadiene	24.28	225	39933m	0.50 ppbv	

(#) = qualifier out of range (m) = manual integration
0501004.D 041420AI.M Thu Apr 30 04:09:27 2020 Page 2

Quantitation Report

Data File : C:\HPCHEM\1\DATA\041420C\0501004.D Vial: 5
Acq On : 14 Apr 2020 9:54 am Operator: TJG
Sample : 0.5PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:37 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0601005.D Vial: 6
Acq On : 14 Apr 2020 10:40 am Operator: TJG
Sample : 1PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:36 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 14:07:46 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.41	128	2581554	5.00	ppbv		-0.03
25) 1,4-Difluorobenzene (IS)	11.69	114	10086066	5.00	ppbv		-0.05
45) Chlorobenzene-d5 (IS)	16.94	117	3735547	5.00	ppbv		-0.02
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.75	95	1531622	4.69	ppbv		-0.02
Spiked Amount 5.000	Range 62 - 145		Recovery = 93.80%				
Target Compounds							Qvalue
2) Propylene	4.10	39	575953	1.21	ppbv		
3) Dichlorodifluoromethane	4.18	85	1781495	0.76	ppbv		
4) Chloromethane	4.36	50	1183350	1.10	ppbv		
5) Vinyl Chloride	4.61	62	1153677	1.71	ppbv		
6) 1,3-Butadiene	4.77	39	616726	2.15	ppbv		
7) Bromomethane	5.06	94	1102637	1.54	ppbv		
8) Chloroethane	5.26	64	466253	1.59	ppbv		
9) Vinyl Bromide	5.64	106	783461	1.25	ppbv		
10) Trichlorofluoromethane	6.11	101	2373198	0.95	ppbv		98
11) Acetone	5.98	43	1357359m	1.43	ppbv		
12) Isopropyl Alcohol (IPA)	6.29	45	1366515	1.56	ppbv		
13) 1,1-Dichloroethene	6.82	61	1251931	0.93	ppbv		
14) Methylene Chloride	6.95	84	745267	0.94	ppbv		
15) Carbon Disulfide	7.28	76	1946045m	0.88	ppbv		
16) trans-1,2-Dichloroethene	8.03	96	584594	0.89	ppbv	#	77
17) Methyl-tert-butyl ether	8.37	73	2008261	0.96	ppbv	#	91
18) 1,1-Dichloroethane	8.26	63	1423800	0.81	ppbv	#	93
19) Vinyl Acetate	8.47	43	1879284	0.87	ppbv		
20) N-Hexane	9.49	57	1169049	0.82	ppbv		
21) 2-Butanone (MEK)	8.76	43	1798316	1.05	ppbv		
22) cis-1,2-Dichloroethene	9.23	61	931690	0.82	ppbv		
23) Ethyl Acetate	9.53	43	2122177	0.76	ppbv		
24) Chloroform	9.56	83	1654149	1.00	ppbv		95
26) Tetrahydrofuran	10.07	42	1071088	1.03	ppbv		
27) 1,2-Dichloroethane	10.43	62	970915	1.04	ppbv	#	79
28) 1,1,1-Trichloroethane	10.73	97	1721183	1.28	ppbv	#	91
29) 1,1-Dichloropropene	13.56	75	1018528	0.77	ppbv		96
30) Carbon Tetrachloride	11.45	117	1865974	1.39	ppbv		100
31) Benzene	11.28	78	1892350	0.84	ppbv		
32) Cyclohexane	11.60	56	848507	0.64	ppbv		
33) 1,2-Dichloropropane	12.24	63	615028	0.64	ppbv		
34) Trichloroethene	12.52	95	774693	0.87	ppbv	#	78
35) Bromodichloromethane	12.46	83	1598780	1.01	ppbv	#	97
36) 1,4-Dioxane	12.55	88	205570	0.83	ppbv		
37) Isooctane	12.59	57	3000938	0.72	ppbv		
38) N-Heptane	12.89	43	1186927	0.77	ppbv		
39) cis-1,3-Dichloropropene	13.56	75	1018528	0.79	ppbv		93
40) 4-Methyl-2-Pentanone (MIBK)	13.64	43	1365830	0.84	ppbv		
41) trans-1,3-Dichloropropene	14.19	75	716569	0.76	ppbv		
42) 1,1,2-Trichloroethane	14.41	83	492565	0.66	ppbv		99
43) Toluene	14.76	91	1369274	0.65	ppbv		96
44) 2-Hexanone	15.12	43	1214651m	0.99	ppbv		
46) Dibromochloromethane	15.27	129	843655	1.17	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.58	107	643268	1.10	ppbv		94
48) Tetrachloroethene	16.16	166	450822	1.01	ppbv		95
49) Chlorobenzene	16.99	112	788736	0.98	ppbv		90
50) Ethylbenzene	17.44	91	1519646	1.09	ppbv		97
51) m,p-Xylene	17.65	91	1012258m	2.06	ppbv		
52) Bromoform	17.74	173	468259	0.96	ppbv	#	29
53) Styrene	18.07	104	586999	0.97	ppbv		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0601005.D Vial: 6
Acq On : 14 Apr 2020 10:40 am Operator: TJG
Sample : 1PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:36 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 14:07:46 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

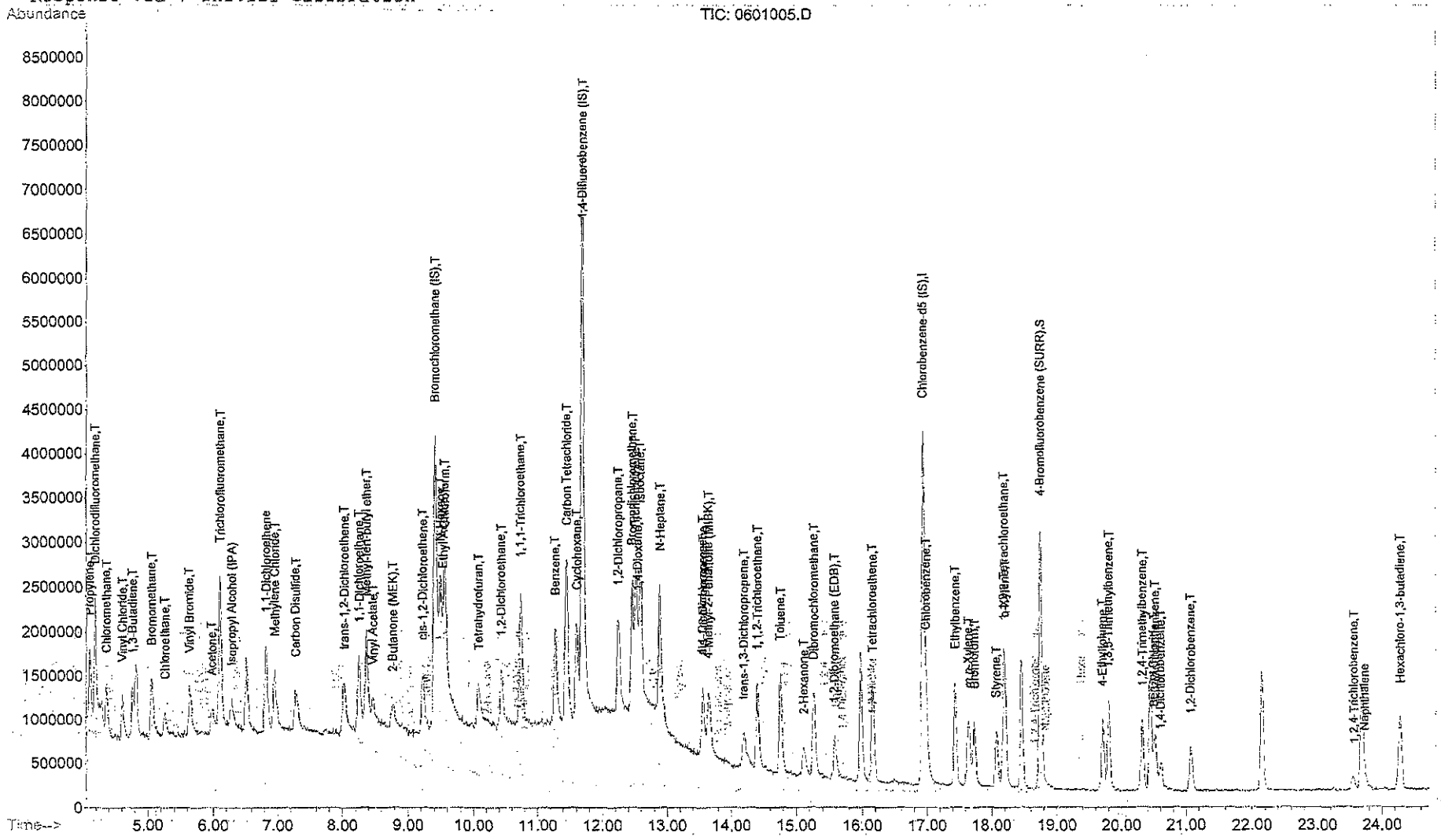
Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.18	83	975509	1.04	ppbv		98
55) o-Xylene	18.21	106	405462	0.96	ppbv		91
57) 4-Ethyltoluene	19.71	105	1031664	1.06	ppbv	#	92
58) 1,3,5-Trimethylbenzene	19.80	105	1011970	1.03	ppbv		94
59) 1,2,4-Trimethylbenzene	20.32	105	847440	1.03	ppbv		94
60) 1,3-Dichlorobenzene	20.52	146	337846	0.86	ppbv		
61) Benzyl Chloride	20.50	91	401335	0.84	ppbv		96
62) 1,4-Dichlorobenzene	20.61	148	164021	0.89	ppbv		
63) 1,2-Dichlorobenzene	21.08	146	375361	0.95	ppbv	#	91
64) 1,2,4-Trichlorobenzene	23.56	180	48097	0.99	ppbv		
65) Naphthalene	23.74	128	88285	0.88	ppbv		
66) Hexachloro-1,3-butadiene	24.28	225	69153	1.02	ppbv		

(#) = qualifier out of range (m) = manual integration
0601005.D 041420AI.M Thu Apr 30 04:09:32 2020 Page 2

Quantitation Report

Data File : C:\HPCHEM\1\DATA\041420C\0601005.D Vial: 6
Acq On : 14 Apr 2020 10:40 am Operator: TJG
Sample : 1PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:36 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0701006.D Vial: 7
Acq On : 14 Apr 2020 11:18 am Operator: TJG
Sample : 2PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:38 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 14:05:24 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.43	128	2205100	5.00	ppbv		-0.02
25) 1,4-Difluorobenzene (IS)	11.71	114	7255605	5.00	ppbv		-0.02
45) Chlorobenzene-d5 (IS)	16.94	117	4141737	5.00	ppbv		-0.01
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.75	95	1986202	5.37	ppbv		-0.01
Spiked Amount 5.000	Range 62 - 145		Recovery = 107.40%				
Target Compounds							Qvalue
2) Propylene	4.12	39	1026280	2.56	ppbv		
3) Dichlorodifluoromethane	4.19	85	3399655	1.71	ppbv		
4) Chloromethane	4.38	50	1883665	2.04	ppbv		99
5) Vinyl Chloride	4.62	62	2030702	3.77	ppbv		
6) 1,3-Butadiene	4.78	39	706246	3.09	ppbv	#	80
7) Bromomethane	5.08	94	1591552	2.74	ppbv		97
8) Chloroethane	5.27	64	775088	3.39	ppbv		96
9) Vinyl Bromide	5.65	106	1249517m	2.43	ppbv		
10) Trichlorofluoromethane	6.12	101	4402972	2.10	ppbv		98
11) Acetone	5.99	43	2113231	2.64	ppbv		
12) Isopropyl Alcohol (IPA)	6.27	45	2120036	2.89	ppbv		
13) 1,1-Dichloroethene	6.83	61	2420764	2.10	ppbv		99.
14) Methylene Chloride	6.97	84	1364525m	2.03	ppbv		
15) Carbon Disulfide	7.30	76	3496173	1.83	ppbv	#	82
16) trans-1,2-Dichloroethene	8.05	96	792987	1.35	ppbv		82
17) Methyl-tert-butyl ether	8.38	73	3331401	1.86	ppbv	#	98
18) 1,1-Dichloroethane	8.27	63	2957514	1.96	ppbv		
19) Vinyl Acetate	8.47	43	3457489	1.81	ppbv		
20) N-Hexane	9.51	57	2376622	1.91	ppbv		
21) 2-Butanone (MEK)	8.76	43	3137092	2.16	ppbv		
22) cis-1,2-Dichloroethene	9.24	61	1639477	1.65	ppbv		
23) Ethyl Acetate	9.52	43	4196682	1.69	ppbv	#	94
24) Chloroform	9.58	83	2497303	1.73	ppbv		97
26) Tetrahydrofuran	10.08	42	1809503	2.40	ppbv		
27) 1,2-Dichloroethane	10.45	62	1410846	2.12	ppbv		96
28) 1,1,1-Trichloroethane	10.76	97	2094988	2.23	ppbv		94
29) 1,1-Dichloropropene	13.58	75	1822545	1.92	ppbv		94
30) Carbon Tetrachloride	11.48	117	1991031	2.09	ppbv		99
31) Benzene	11.30	78	3123570	1.91	ppbv		96
32) Cyclohexane	11.64	56	1933487	2.01	ppbv		95
33) 1,2-Dichloropropane	12.28	63	1312898	1.87	ppbv	#	89
34) Trichloroethene	12.56	95	1258478m	1.97	ppbv		
35) Bromodichloromethane	12.48	83	2303025	2.03	ppbv		99
36) 1,4-Dioxane	12.56	88	274910	1.49	ppbv	#	78
37) Isooctane	12.63	57	5878582	1.94	ppbv	#	91
38) N-Heptane	12.93	43	2001511	1.76	ppbv		96
39) cis-1,3-Dichloropropene	13.58	75	1822545	1.97	ppbv		95
40) 4-Methyl-2-Pentanone (MIBK)	13.65	43	2214771	1.86	ppbv		95
41) trans-1,3-Dichloropropene	14.21	75	1338390m	1.98	ppbv		
42) 1,1,2-Trichloroethane	14.42	83	953404	1.73	ppbv		98
43) Toluene	14.78	91	2705275	1.77	ppbv		100
44) 2-Hexanone	15.11	43	1315950	1.39	ppbv		
46) Dibromochloromethane	15.28	129	1558847	1.93	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.59	107	1184146	1.80	ppbv		97
48) Tetrachloroethene	16.17	166	852364	1.69	ppbv		93
49) Chlorobenzene	17.00	112	1527596	1.65	ppbv		93
50) Ethylbenzene	17.44	91	2983111	1.90	ppbv		97
51) m,p-Xylene	17.65	91	2130589	3.85	ppbv		
52) Bromoform	17.74	173	929623	1.69	ppbv		
53) Styrene	18.08	104	1126452	1.66	ppbv		

(#) = qualifier out of range (m) = manual integration
0701006.D 041420AI.M Thu Apr 30 04:09:55 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0701006.D Vial: 7
Acq On : 14 Apr 2020 11:18 am Operator: TJG
Sample : 2PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:38 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 14:05:24 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

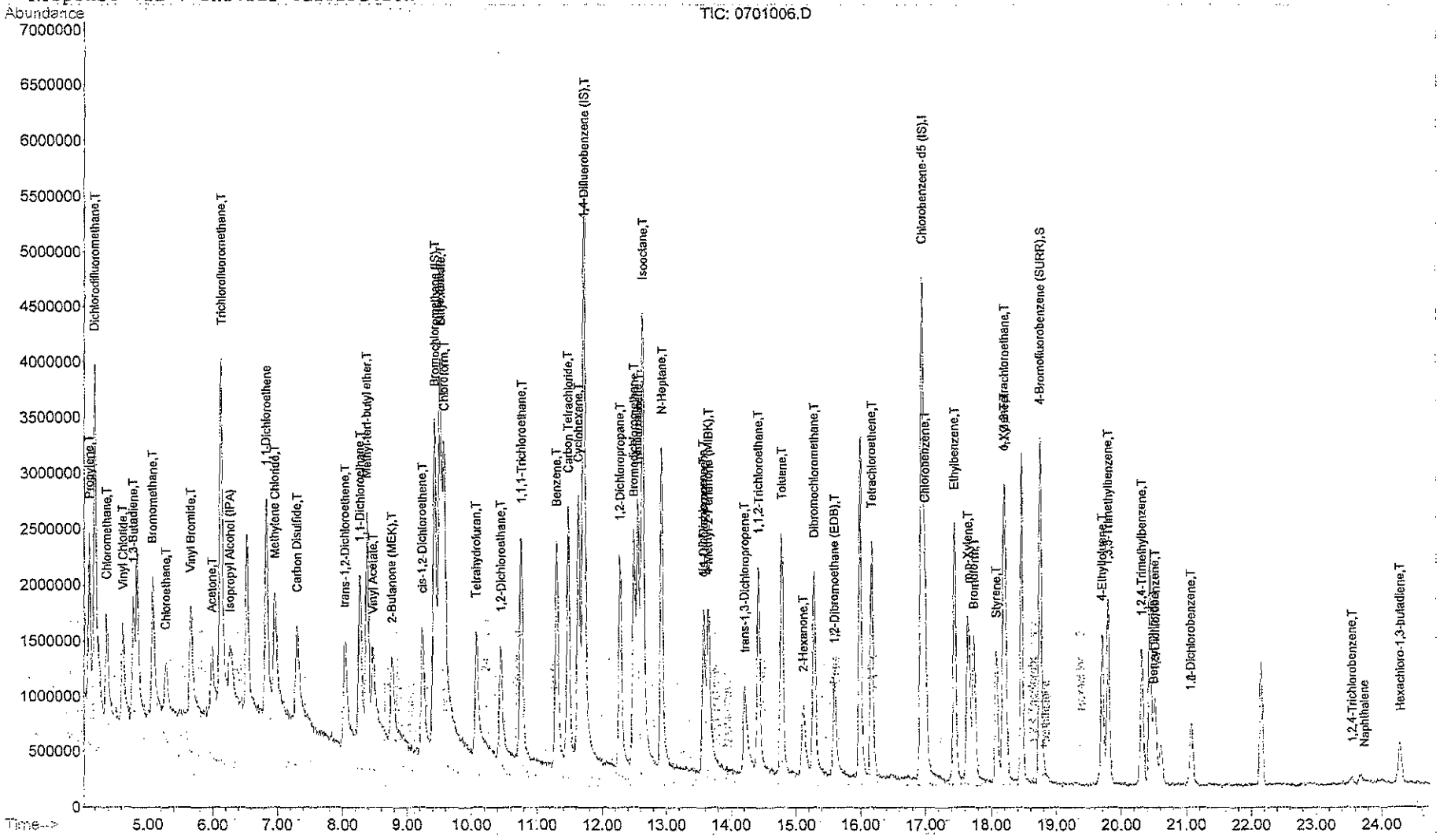
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.19	83	1635443	1.55 ppbv	100
55) o-Xylene	18.20	106	811309	1.70 ppbv	95
57) 4-Ethyltoluene	19.72	105	1686743	1.51 ppbv	98
58) 1,3,5-Trimethylbenzene	19.80	105	1681481	1.52 ppbv	94
59) 1,2,4-Trimethylbenzene	20.33	105	1315571	1.41 ppbv	93
60) 1,3-Dichlorobenzene	20.53	146	762980	1.63 ppbv	
61) Benzyl Chloride	20.50	91	861295	1.48 ppbv	
62) 1,4-Dichlorobenzene	21.07	148	292203	1.27 ppbv	
63) 1,2-Dichlorobenzene	21.07	146	773263	1.62 ppbv	
64) 1,2,4-Trichlorobenzene	23.56	180	100545	1.70 ppbv	
65) Naphthalene	23.75	128	183058	1.55 ppbv	
66) Hexachloro-1,3-butadiene	24.29	225	157485	1.96 ppbv	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\041420C\0701006.D Vial: 7
Acq On : 14 Apr 2020 11:18 am Operator: TJG
Sample : 2PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:38 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0801007.D Vial: 8
Acq On : 14 Apr 2020 12:00 pm Operator: TJG
Sample : 5PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:38 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 10:28:25 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.41	128	2014210	5.00	ppbv		-0.04
25) 1,4-Difluorobenzene (IS)	11.71	114	7566374	5.00	ppbv		-0.03
45) Chlorobenzene-d5 (IS)	16.94	117	4566064	5.00	ppbv		-0.02
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.74	95	2297030	5.70	ppbv		-0.02
Spiked Amount 5.000	Range 62 - 145		Recovery = 114.00%				
Target Compounds							Qvalue
2) Propylene	4.07	39	2447622	6.69	ppbv		
3) Dichlorodifluoromethane	4.16	85	8830062	4.82	ppbv		
4) Chloromethane	4.33	50	4718221	5.58	ppbv		99
5) Vinyl Chloride	4.58	62	4186574	9.23	ppbv		98
6) 1,3-Butadiene	4.73	39	2080226	11.25	ppbv		
7) Bromomethane	5.04	94	4266175	8.53	ppbv		
8) Chloroethane	5.24	64	1991688	11.05	ppbv		95
9) Vinyl Bromide	5.62	106	3457784	7.83	ppbv	#	93
10) Trichlorofluoromethane	6.09	101	10060278	5.16	ppbv		97
11) Acetone	5.95	43	4557054	6.53	ppbv	#	76
12) Isopropyl Alcohol (IPA)	6.22	45	4812186	7.64	ppbv	#	89
13) 1,1-Dichloroethene	6.81	61	5758224	5.47	ppbv		97
14) Methylene Chloride	6.93	84	2966038	4.81	ppbv		86
15) Carbon Disulfide	7.27	76	9697077m	5.60	ppbv		
16) trans-1,2-Dichloroethene	8.02	96	2971341	5.66	ppbv		
17) Methyl-tert-butyl ether	8.35	73	9666280	6.15	ppbv		97
18) 1,1-Dichloroethane	8.25	63	6864509	4.86	ppbv	#	97
19) Vinyl Acetate	8.45	43	10127698	5.89	ppbv		
20) N-Hexane	9.49	57	5837013	5.01	ppbv		
21) 2-Butanone (MEK)	8.74	43	8454171	6.56	ppbv		93
22) cis-1,2-Dichloroethene	9.22	61	4731188m	5.20	ppbv		
23) Ethyl Acetate	9.50	43	11291523	4.89	ppbv		98
24) Chloroform	9.56	83	6532908	4.91	ppbv		100
26) Tetrahydrofuran	10.05	42	5014358m	6.45	ppbv		
27) 1,2-Dichloroethane	10.44	62	4067952	6.04	ppbv		93
28) 1,1,1-Trichloroethane	10.75	97	5174893	5.39	ppbv		98
29) 1,1-Dichloropropene	13.57	75	4996488	5.01	ppbv		99
30) Carbon Tetrachloride	11.47	117	5071040	5.17	ppbv		100
31) Benzene	11.29	78	8230146	4.80	ppbv		97
32) Cyclohexane	11.62	56	5049063	4.93	ppbv		97
33) 1,2-Dichloropropane	12.27	63	3483860	4.71	ppbv		
34) Trichloroethene	12.55	95	3112626	4.66	ppbv		94
35) Bromodichloromethane	12.48	83	5979291	5.08	ppbv		97
36) 1,4-Dioxane	12.55	88	920115	4.78	ppbv		
37) Isooctane	12.62	57	14481773	4.44	ppbv	#	88
38) N-Heptane	12.92	43	5160754	4.29	ppbv		97
39) cis-1,3-Dichloropropene	13.57	75	4996488	5.14	ppbv	#	87
40) 4-Methyl-2-Penanone (MIBK)	13.63	43	6080109	4.79	ppbv		96
41) trans-1,3-Dichloropropene	14.20	75	3409373	4.85	ppbv	#	89
42) 1,1,2-Trichloroethane	14.42	83	2742557	4.74	ppbv		
43) Toluene	14.78	91	7165830	4.40	ppbv		98
44) 2-Hexanone	15.09	43	3986995	3.83	ppbv		
46) Dibromochloromethane	15.28	129	4401692	5.01	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.59	107	3576209	4.96	ppbv	#	97
48) Tetrachloroethene	16.17	166	2347918	4.17	ppbv		92
49) Chlorobenzene	16.99	112	4424216	4.31	ppbv		97
50) Ethylbenzene	17.44	91	8307149	4.77	ppbv		99
51) m,p-Xylene	17.65	91	5549458	9.10	ppbv		97
52) Bromoform	17.73	173	2486618	4.04	ppbv	#	99
53) Styrene	18.08	104	3330523	4.40	ppbv		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0801007.D Vial: 8
Acq On : 14 Apr 2020 12:00 pm Operator: TJG
Sample : 5PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:38 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 10:28:25 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

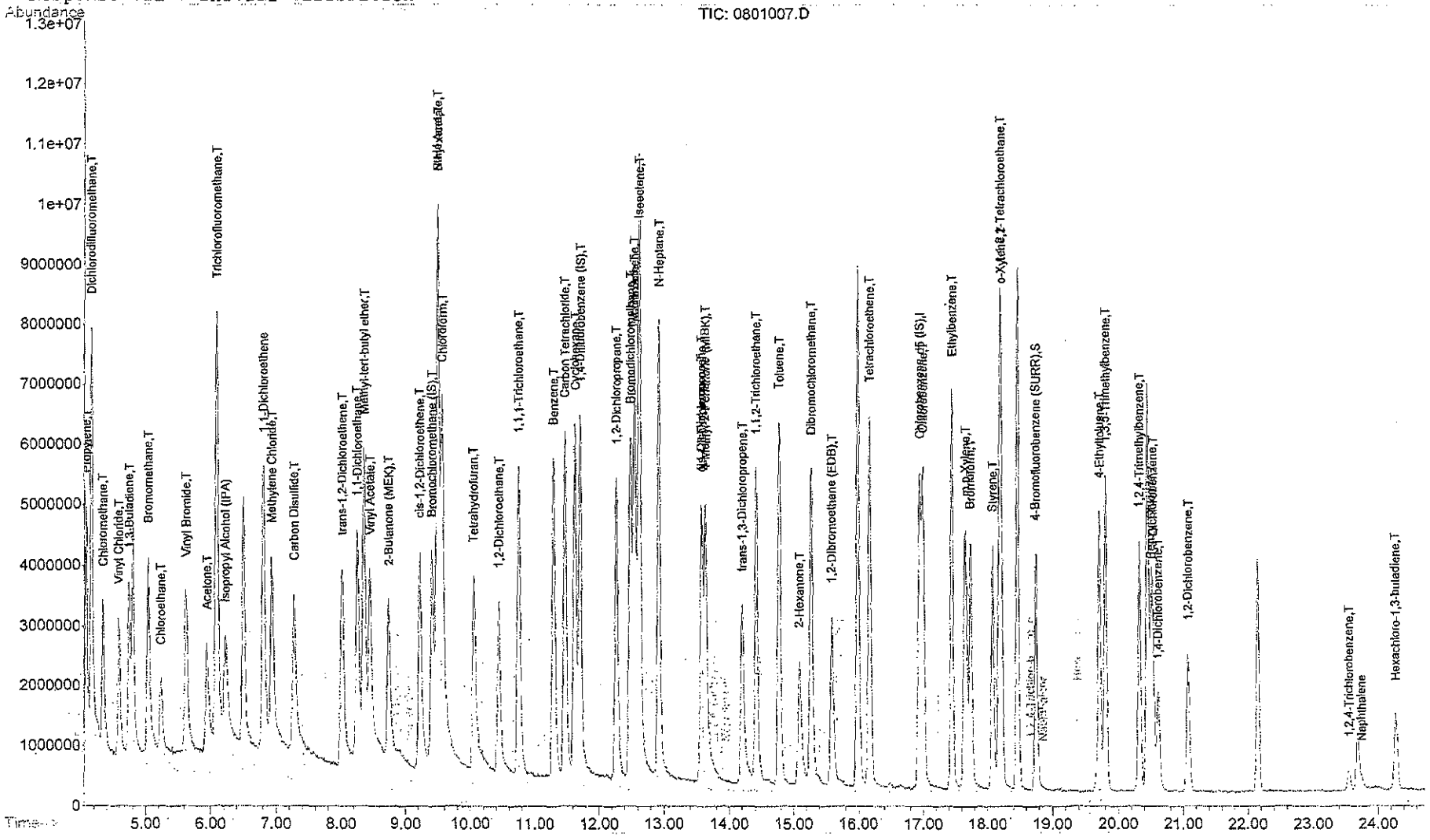
Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.19	83	4958813	4.21	ppbv		98
55) o-Xylene	18.21	106	2342834	4.40	ppbv		95
57) 4-Ethyltoluene	19.71	105	5504299	4.40	ppbv		97
58) 1,3,5-Trimethylbenzene	19.81	105	4888428	3.96	ppbv		95
59) 1,2,4-Trimethylbenzene	20.32	105	4062566	3.92	ppbv		97
60) 1,3-Dichlorobenzene	20.53	146	1788378	3.27	ppbv	#	93
61) Benzyl Chloride	20.50	91	2370649	3.55	ppbv		96
62) 1,4-Dichlorobenzene	20.61	148	714949	2.69	ppbv	#	95
63) 1,2-Dichlorobenzene	21.08	146	1587578	2.87	ppbv	#	93
64) 1,2,4-Trichlorobenzene	23.55	180	196977	2.88	ppbv		
65) Naphthalene	23.74	128	449879m	3.35	ppbv		
66) Hexachloro-1,3-butadiene	24.27	225	291492	3.17	ppbv		96

(#) = qualifier out of range (m) = manual integration
0801007.D 041420AI.M Thu Apr 30 04:10:00 2020 Page 2

Quantitation Report

Data File : C:\HPCHEM\1\DATA\041420C\0801007.D Vial: 8
Acq On : 14 Apr 2020 12:00 pm Operator: TJG
Sample : 5PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:38 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0901008.D Vial: 9
Acq On : 14 Apr 2020 12:45 pm Operator: TJG
Sample : 10PPBV TO-15 CURVE/BFB/CCV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 13:33 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.42	128	2010153	5.00	ppbv		0.00
25) 1,4-Difluorobenzene (IS)	11.71	114	7863109	5.00	ppbv		0.00
45) Chlorobenzene-d5 (IS)	16.95	117	4824060	5.00	ppbv		0.00
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.75	95	2069885	5.10	ppbv		0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 102.00%				
Target Compounds							Qvalue
2) Propylene	4.07	39	5308884	9.89	ppbv		
3) Dichlorodifluoromethane	4.16	85	15785066	10.57	ppbv		100
4) Chloromethane	4.33	50	9708190	9.79	ppbv		
5) Vinyl Chloride	4.58	62	8231305	9.27	ppbv		
6) 1,3-Butadiene	4.74	39	3968299	9.36	ppbv		
7) Bromomethane	5.04	94	8057262	8.70	ppbv		84
8) Chloroethane	5.24	64	4519271	8.87	ppbv		
9) Vinyl Bromide	5.62	106	7410358	9.84	ppbv		86
10) Trichlorofluoromethane	6.10	101	18507904	9.29	ppbv		100
11) Acetone	5.94	43	10817318	10.39	ppbv	#	84
12) Isopropyl Alcohol (IPA)	6.23	45	10491540	8.94	ppbv	#	90
13) 1,1-Dichloroethene	6.80	61	11263303	10.50	ppbv		88
14) Methylene Chloride	6.93	84	6172014	9.86	ppbv		100
15) Carbon Disulfide	7.27	76	18863861	10.21	ppbv		100
16) trans-1,2-Dichloroethene	8.02	96	5948023	10.08	ppbv		100
17) Methyl-tert-butyl ether	8.35	73	19020872	8.93	ppbv		100
18) 1,1-Dichloroethane	8.26	63	13930097	9.87	ppbv		100
19) Vinyl Acetate	8.45	43	17153637	10.38	ppbv		100
20) N-Hexane	9.49	57	10988925	10.27	ppbv		100
21) 2-Butanone (MEK)	8.73	43	14621050	9.43	ppbv		100
22) cis-1,2-Dichloroethene	9.23	61	9557148	11.38	ppbv		100
23) Ethyl Acetate	9.50	43	19424249m	8.44	ppbv		
24) Chloroform	9.57	83	13354750	10.34	ppbv		100
26) Tetrahydrofuran	10.05	42	9445596	10.44	ppbv		92
27) 1,2-Dichloroethane	10.44	62	8670529	11.17	ppbv		100
28) 1,1,1-Trichloroethane	10.75	97	10695680	9.54	ppbv		100
29) 1,1-Dichloropropene	13.58	75	10664488	10.34	ppbv		100
30) Carbon Tetrachloride	11.48	117	10750600	9.54	ppbv		100
31) Benzene	11.30	78	16478041	9.77	ppbv		100
32) Cyclohexane	11.63	56	10117683	10.19	ppbv		100
33) 1,2-Dichloropropane	12.27	63	6893348	10.14	ppbv		100
34) Trichloroethene	12.55	95	6808095	9.97	ppbv		100
35) Bromodichloromethane	12.49	83	12489568	10.14	ppbv		100
36) 1,4-Dioxane	12.54	88	1534905	9.18	ppbv		100
37) Isooctane	12.62	57	25424299	9.67	ppbv		100
38) N-Heptane	12.93	43	10572838	9.65	ppbv		100
39) cis-1,3-Dichloropropene	13.58	75	10664488	10.30	ppbv		100
40) 4-Methyl-2-Penanone (MIBK)	13.63	43	12858088	10.81	ppbv		100
41) trans-1,3-Dichloropropene	14.20	75	7831231	11.27	ppbv		100
42) 1,1,2-Trichloroethane	14.42	83	5336337	10.03	ppbv		100
43) Toluene	14.78	91	14578289	9.98	ppbv		100
44) 2-Hexanone	15.09	43	7989553	8.63	ppbv		100
46) Dibromochloromethane	15.28	129	9552682	9.96	ppbv		100
47) 1,2-Dibromoethane (EDB)	15.59	107	7832142	10.38	ppbv		100
48) Tetrachloroethene	16.18	166	5282966	9.76	ppbv		100
49) Chlorobenzene	17.00	112	9462090	9.54	ppbv		100
50) Ethylbenzene	17.45	91	16902262	9.58	ppbv		100
51) m,p-Xylene	17.65	91	11811333	18.78	ppbv		100
52) Bromoform	17.74	173	5818521	9.98	ppbv		100
53) Styrene	18.08	104	7609939	10.56	ppbv		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\0901008.D Vial: 9
Acq On : 14 Apr 2020 12:45 pm Operator: TJG
Sample : 10PPBV TO-15 CURVE/BFB/CCV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 13:33 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

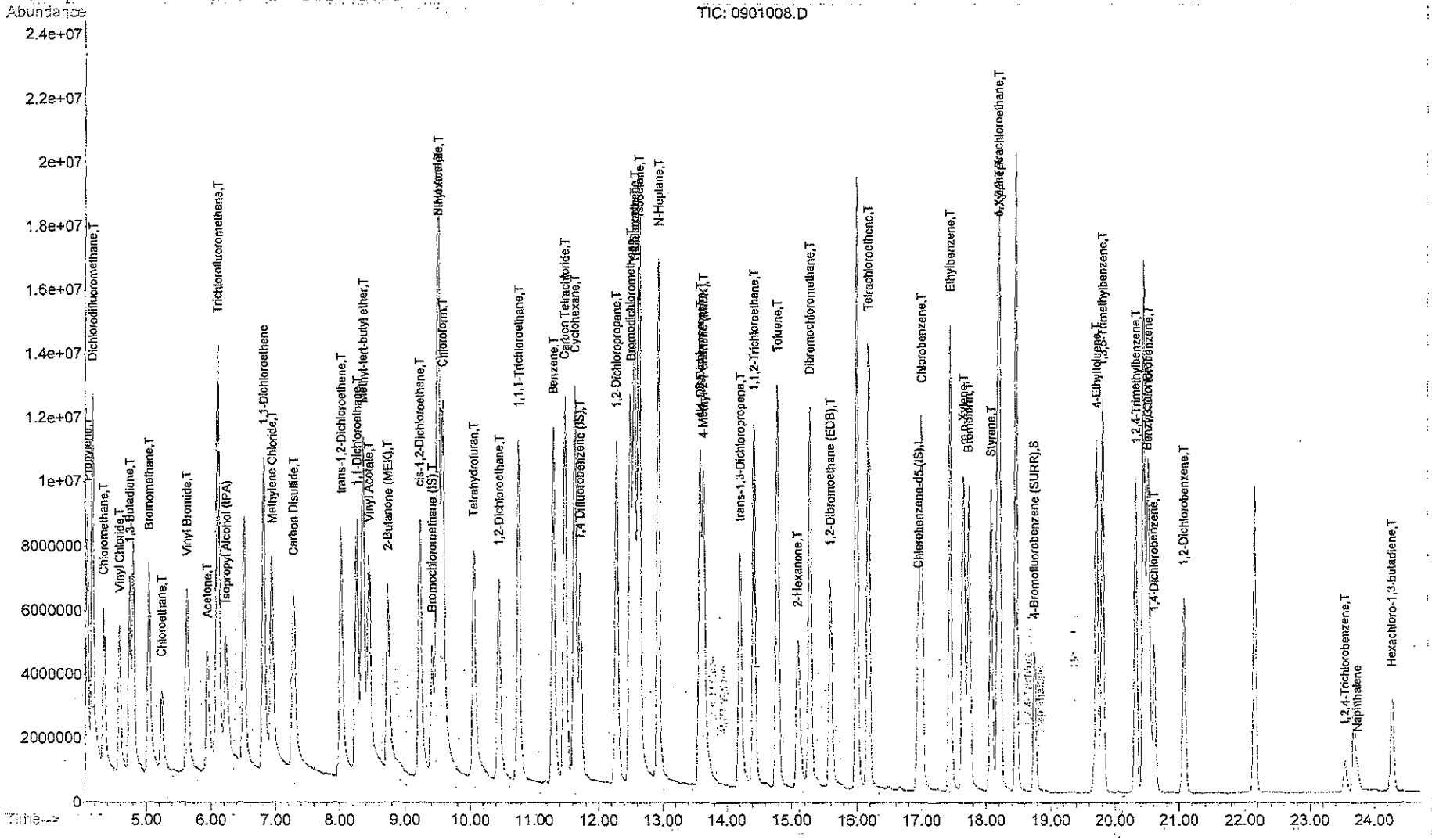
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.19	83	10740289	9.32	ppbv	100
55) o-Xylene	18.21	106	5263128	10.18	ppbv	100
57) 4-Ethyltoluene	19.71	105	12135382	10.59	ppbv	100
58) 1,3,5-Trimethylbenzene	19.81	105	10818424	9.02	ppbv	100
59) 1,2,4-Trimethylbenzene	20.32	105	9142535	10.16	ppbv	100
60) 1,3-Dichlorobenzene	20.52	146	4797199	10.57	ppbv	100
61) Benzyl Chloride	20.50	91	7106365	11.62	ppbv	100
62) 1,4-Dichlorobenzene	20.61	148	1891987	10.18	ppbv	100
63) 1,2-Dichlorobenzene	21.08	146	3953988	8.90	ppbv	100
64) 1,2,4-Trichlorobenzene	23.55	180	514746	9.75	ppbv	100
65) Naphthalene	23.74	128	1113432	9.63	ppbv	100
66) Hexachloro-1,3-butadiene	24.28	225	703872	9.21	ppbv	100

(#) = qualifier out of range (m) = manual integration
0901008.D 041420AI.M Thu Apr 30 04:10:17 2020 Page 2

Quantitation Report

Data File : C:\HPCHEM\1\DATA\041420C\0901008.D Vial: 9
Acq On : 14 Apr 2020 12:45 pm Operator: TJG
Sample : 10PPBV TO-15 CURVE/BFB/CCV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 13:33 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\1001009.D Vial: 10
Acq On : 14 Apr 2020 1:37 pm Operator: TJG
Sample : 20PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:50 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 14:11:28 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.42	128	2134920	5.00	ppbv		-0.02
25) 1,4-Difluorobenzene (IS)	11.71	114	9088799	5.00	ppbv		-0.02
45) Chlorobenzene-d5 (IS)	16.94	117	5159703	5.00	ppbv		-0.01
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.76	95	2061242	4.67	ppbv		0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 93.40%				
Target Compounds							Qvalue
2) Propylene	4.08	39	8833866	22.21	ppbv		
3) Dichlorodifluoromethane	4.16	85	30191423	15.58	ppbv		
4) Chloromethane	4.35	50	19606783	22.49	ppbv		
5) Vinyl Chloride	4.59	62	16246178	27.24	ppbv		
6) 1,3-Butadiene	4.75	39	7658170	29.56	ppbv		
7) Bromomethane	5.05	94	17423206	27.90	ppbv		
8) Chloroethane	5.25	64	8239604	31.18	ppbv		
9) Vinyl Bromide	5.64	106	15897936	29.41	ppbv		
10) Trichlorofluoromethane	6.12	101	37456376	17.87	ppbv		
11) Acetone	5.95	43	23540305	29.54	ppbv		
12) Isopropyl Alcohol (IPA)	6.24	45	23610344	31.62	ppbv		
13) 1,1-Dichloroethene	6.82	61	25051658	22.33	ppbv		
14) Methylene Chloride	6.95	84	13088666	19.77	ppbv		84
15) Carbon Disulfide	7.28	76	35926350m	20.04	ppbv		
16) trans-1,2-Dichloroethene	8.02	96	11476077	21.45	ppbv		
17) Methyl-tert-butyl ether	8.36	73	33069744	19.05	ppbv		97
18) 1,1-Dichloroethane	8.27	63	23542163	16.72	ppbv	#	81
19) Vinyl Acetate	8.45	43	30596226	17.20	ppbv		
20) N-Hexane	9.49	57	21179664	18.14	ppbv		
21) 2-Butanone (MEK)	8.75	43	28239612	19.69	ppbv		
22) cis-1,2-Dichloroethene	9.23	61	18586889	20.37	ppbv	#	79
23) Ethyl Acetate	9.51	43	39520156	18.30	ppbv		
24) Chloroform	9.58	83	27640985	20.03	ppbv	#	89
26) Tetrahydrofuran	10.06	42	19301203	21.76	ppbv		
27) 1,2-Dichloroethane	10.45	62	20145760	24.36	ppbv	#	87
28) 1,1,1-Trichloroethane	10.76	97	24358030	19.40	ppbv		95
29) 1,1-Dichloropropene	13.58	75	24533790	21.83	ppbv	#	86
30) Carbon Tetrachloride	11.48	117	26965459	21.34	ppbv		
31) Benzene	11.30	78	43699636	22.24	ppbv		
32) Cyclohexane	11.63	56	22408502	19.83	ppbv		
33) 1,2-Dichloropropane	12.28	63	14859644	18.09	ppbv	#	68
34) Trichloroethene	12.56	95	15798480	20.07	ppbv		94
35) Bromodichloromethane	12.50	83	25996903	18.25	ppbv	#	87
36) 1,4-Dioxane	12.56	88	3914724	18.21	ppbv		
37) Isooctane	12.62	57	56832526	16.09	ppbv		
38) N-Heptane	12.92	43	24641398	18.52	ppbv		
39) cis-1,3-Dichloropropene	13.58	75	24533790	21.96	ppbv	#	85
40) 4-Methyl-2-Penanone (MIBK)	13.65	43	27130771	19.04	ppbv	#	88
41) trans-1,3-Dichloropropene	14.21	75	16075681m	20.15	ppbv		
42) 1,1,2-Trichloroethane	14.42	83	13832049	21.80	ppbv		96
43) Toluene	14.78	91	32387854	18.10	ppbv		
44) 2-Hexanone	15.11	43	22094374	21.33	ppbv	#	96
46) Dibromochloromethane	15.28	129	20743314m	20.30	ppbv		
47) 1,2-Dibromoethane (EDB)	15.60	107	15243076	18.47	ppbv		99
48) Tetrachloroethene	16.18	166	11253805	18.36	ppbv		94
49) Chlorobenzene	17.00	112	20352798	18.44	ppbv		
50) Ethylbenzene	17.45	91	34390472	17.66	ppbv		
51) m,p-Xylene	17.66	91	26780481	38.80	ppbv		
52) Bromoform	17.75	173	12558269	18.74	ppbv	#	95
53) Styrene	18.08	104	14622838	17.78	ppbv		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\1001009.D Vial: 10
Acq On : 14 Apr 2020 1:37 pm Operator: TJG
Sample : 20PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:50 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Apr 14 14:11:28 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

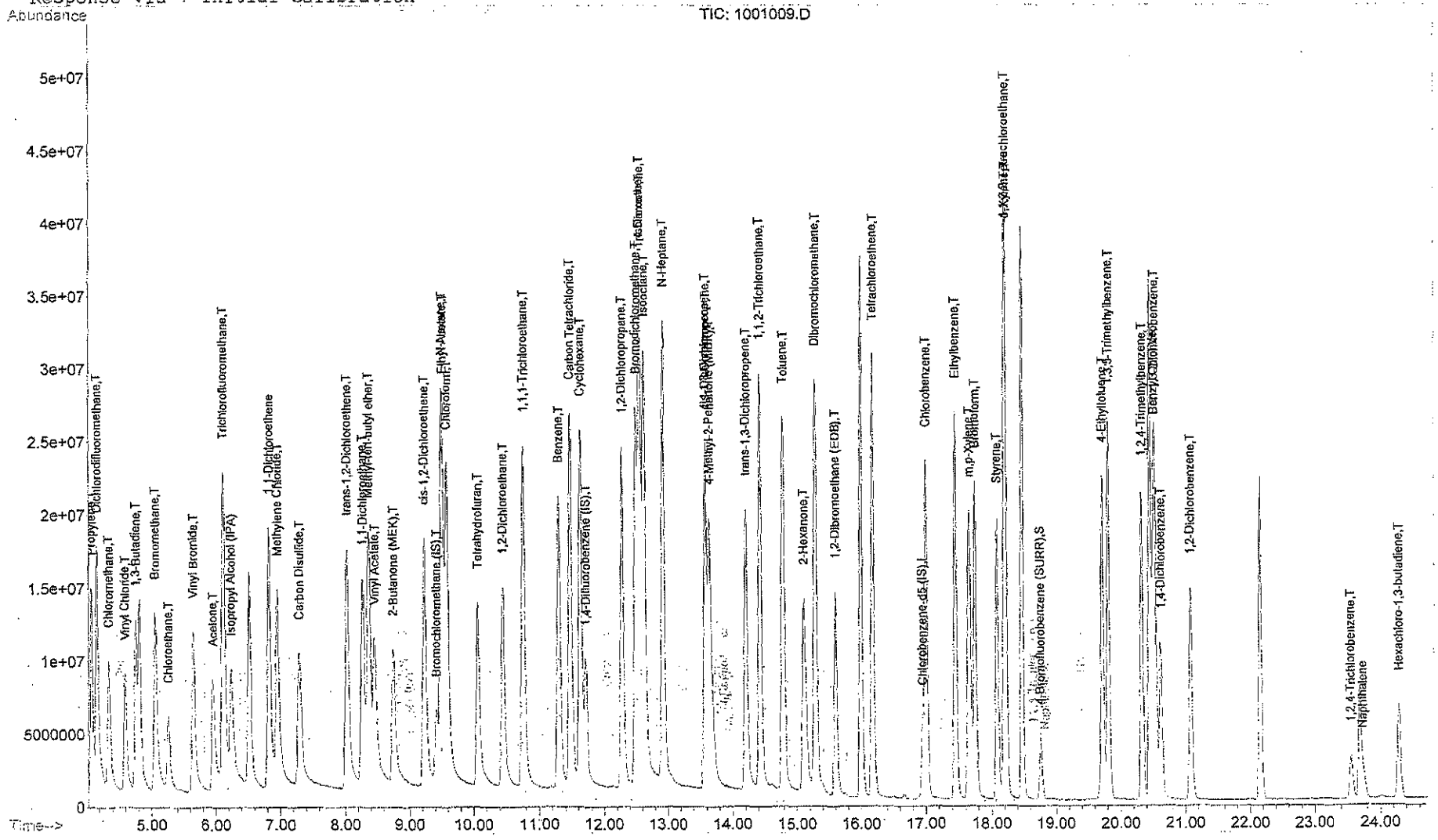
Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.20	83	23139339	18.15	ppbv		
55) o-Xylene	18.22	106	11029543	19.16	ppbv		87
57) 4-Ethyltoluene	19.72	105	21555696	16.09	ppbv	#	88
58) 1,3,5-Trimethylbenzene	19.81	105	23993182	17.81	ppbv		
59) 1,2,4-Trimethylbenzene	20.33	105	19232535	17.05	ppbv		
60) 1,3-Dichlorobenzene	20.53	146	11190855	21.76	ppbv		
61) Benzyl Chloride	20.51	91	13635257	21.19	ppbv		
62) 1,4-Dichlorobenzene	20.62	148	4376361	18.07	ppbv		96
63) 1,2-Dichlorobenzene	21.08	146	8940463	17.01	ppbv	#	90
64) 1,2,4-Trichlorobenzene	23.55	180	1310270m	19.84	ppbv		
65) Naphthalene	23.74	128	2796167m	20.51	ppbv		
66) Hexachloro-1,3-butadiene	24.28	225	1586954	17.39	ppbv		

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\041420C\1001009.D Vial: 10
Acq On : 14 Apr 2020 1:37 pm Operator: TJG
Sample : 20PPBV TO-15 CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 7:50 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\041420C\1101010.D Vial: 11
Acq On : 14 Apr 2020 2:22 pm Operator: TJG
Sample : 10PPBV TO-15 CURVE VER/LCS Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	T	Bromochloromethane (IS)	1.000	1.000	0.0	103	0.02
2	T	Propylene	1.335	1.392	-4.3	109	0.00
3	T	Dichlorodifluoromethane	3.716	3.638	2.1	96	0.00
4	T	Chloromethane	2.467	2.289	7.2	98	0.01
5	T	Vinyl Chloride	2.208	1.953	11.5	99	0.02
6	T	1,3-Butadiene	1.054	0.954	9.5	100	0.01
7	T	Bromomethane	2.303	1.940	15.8	100	0.02
8	T	Chloroethane	1.267	1.168	7.8	107	0.02
9	T	Vinyl Bromide	1.872	1.844	1.5	103	0.02
10	T	Trichlorofluoromethane	4.958	4.544	8.4	102	0.01
11	T	Acetone	2.591	2.521	2.7	97	0.01
12		Isopropyl Alcohol (IPA)	2.920	2.508	14.1	99	0.01
13		1,1-Dichloroethene	2.668	2.772	-3.9	102	0.01
14	T	Methylene Chloride	1.557	1.490	4.3	100	0.03
15	T	Carbon Disulfide	4.596	4.660	-1.4	103	0.02
16	T	trans-1,2-Dichloroethene	1.468	1.428	2.7	100	0.02
17	T	Methyl-tert-butyl ether	5.298	4.530	14.5	99	0.02
18	T	1,1-Dichloroethane	3.511	3.323	5.4	99	0.01
19	T	Vinyl Acetate	4.109	4.685	-14.0	114	0.01
20	T	N-Hexane	2.663	2.672	-0.3	101	0.02
21	T	2-Butanone (MEK)	3.855	4.057	-5.2	115	0.02
22	T	cis-1,2-Dichloroethene	2.089	2.289	-9.6	100	0.01
23	T	Ethyl Acetate	5.722	5.855	-2.3	125	0.01
24	T	Chloroform	3.212	3.181	1.0	99	0.01
25	T	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	97	0.00
26	T	Tetrahydrofuran	0.575	0.613	-6.6	99	0.01
27	T	1,2-Dichloroethane	0.494	0.565	-14.4	99	0.01
28	T	1,1,1-Trichloroethane	0.713	0.703	1.4	100	0.02
29	T	1,1-Dichloropropene	0.656	0.701	-6.9	100	0.00
30	T	Carbon Tetrachloride	0.717	0.699	2.5	99	0.00
31	T	Benzene	1.073	1.077	-0.4	99	0.01
32	T	Cyclohexane	0.631	0.662	-4.9	99	0.01
33	T	1,2-Dichloropropane	0.432	0.445	-3.0	98	0.01
34	T	Trichloroethene	0.434	0.442	-1.8	99	0.01
35	T	Bromodichloromethane	0.783	0.813	-3.8	99	0.00
36	T	1,4-Dioxane	0.106	0.099	6.6	98	0.00
37	T	Isooctane	1.671	1.685	-0.8	101	0.01
38	T	N-Heptane	0.696	0.699	-0.4	100	0.00
39	T	cis-1,3-Dichloropropene	0.658	0.701	-6.5	100	0.00
40	T	4-Methyl-2-Penanone (MIBK)	0.757	0.819	-8.2	97	0.00
41	T	trans-1,3-Dichloropropene	0.442	0.509	-15.2	99	0.00
42	T	1,1,2-Trichloroethane	0.338	0.349	-3.3	99	0.00
43	T	Toluene	0.929	0.949	-2.2	99	0.00
44	T	2-Hexanone	0.589	0.529	10.2	101	0.01
45	I	Chlorobenzene-d5 (IS)	1.000	1.000	0.0	95	0.00
46	T	Dibromochloromethane	0.994	1.023	-2.9	99	0.00
47	T	1,2-Dibromoethane (EDB)	0.782	0.829	-6.0	97	0.00
48	T	Tetrachloroethene	0.561	0.568	-1.2	99	0.00
49	T	Chlorobenzene	1.028	1.016	1.2	99	0.00
50	T	Ethylbenzene	1.828	1.817	0.6	99	0.00
51	T	m,p-Xylene	0.652	0.627	3.8	98	0.00
52	T	Bromoform	0.604	0.623	-3.1	98	0.00
53	T	Styrene	0.747	0.814	-9.0	98	0.00
54	T	1,1,2,2-Tetrachloroethane	1.194	1.141	4.4	98	0.00
55	T	o-Xylene	0.536	0.555	-3.5	97	0.01
56	S	4-Bromofluorobenzene (SURR)	0.421	0.416	1.2	93	0.00
57	T	4-Ethyltoluene	1.188	1.306	-9.9	99	0.00
58	T	1,3,5-Trimethylbenzene	1.242	1.148	7.6	98	0.00
59	T	1,2,4-Trimethylbenzene	0.933	0.979	-4.9	99	0.00
60	T	1,3-Dichlorobenzene	0.470	0.515	-9.6	99	0.00

61	T	Benzyl Chloride	0.634	0.639	-0.8	83	0.00
62	T	1,4-Dichlorobenzene	0.193	0.211	-9.3	103	0.00
63	T	1,2-Dichlorobenzene	0.461	0.428	7.2	100	0.00
64	T	1,2,4-Trichlorobenzene	0.055	0.055	0.0	98	0.01
65		Naphthalene	0.120	0.133	-10.8	110	0.00
66	T	Hexachloro-1,3-butadiene	0.079	0.077	2.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
0901008.D 041420AI.M Thu Apr 30 04:10:31 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\1101010.D Vial: 11
Acq On : 14 Apr 2020 2:22 pm Operator: TJG
Sample : 10PPBV TO-15 CURVE VER/LCS Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 13:24 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.44	128	2078946	5.00	ppbv		0.02
25) 1,4-Difluorobenzene (IS)	11.72	114	7595493	5.00	ppbv		0.00
45) Chlorobenzene-d5 (IS)	16.95	117	4600061	5.00	ppbv		0.00
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.76	95	1911505	4.94	ppbv		0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 98.80%				
Target Compounds							Qvalue
2) Propylene	4.08	39	5787111	10.42	ppbv		
3) Dichlorodifluoromethane	4.17	85	15125223	9.79	ppbv		99
4) Chloromethane	4.35	50	9519006	9.28	ppbv		95
5) Vinyl Chloride	4.60	62	8121953	8.85	ppbv		90
6) 1,3-Butadiene	4.75	39	3964953	9.04	ppbv	#	67
7) Bromomethane	5.06	94	8067100	8.42	ppbv	#	84
8) Chloroethane	5.26	64	4857048m	9.22	ppbv		
9) Vinyl Bromide	5.64	106	7668497	9.85	ppbv	#	84
10) Trichlorofluoromethane	6.11	101	18894868	9.17	ppbv		99
11) Acetone	5.95	43	10483799	9.73	ppbv	#	84
12) Isopropyl Alcohol (IPA)	6.24	45	10426914	8.59	ppbv	#	93
13) 1,1-Dichloroethene	6.82	61	11525578	10.39	ppbv		91
14) Methylene Chloride	6.96	84	6195095	9.57	ppbv		97
15) Carbon Disulfide	7.29	76	19375676	10.14	ppbv		97
16) trans-1,2-Dichloroethene	8.03	96	5937047	9.73	ppbv		97
17) Methyl-tert-butyl ether	8.37	73	18833459	8.55	ppbv		97
18) 1,1-Dichloroethane	8.27	63	13817546	9.46	ppbv		100
19) Vinyl Acetate	8.46	43	19477751	11.40	ppbv		95
20) N-Hexane	9.51	57	11110766	10.04	ppbv		99
21) 2-Butanone (MEK)	8.75	43	16867709	10.52	ppbv		93
22) cis-1,2-Dichloroethene	9.24	61	9519480	10.96	ppbv		98
23) Ethyl Acetate	9.52	43	24346122	10.23	ppbv		98
24) Chloroform	9.59	83	13228148	9.90	ppbv		100
26) Tetrahydrofuran	10.07	42	9319397	10.66	ppbv		93
27) 1,2-Dichloroethane	10.46	62	8583100	11.45	ppbv		99
28) 1,1,1-Trichloroethane	10.77	97	10684433	9.87	ppbv		98
29) 1,1-Dichloropropene	13.59	75	10646845	10.69	ppbv		100
30) Carbon Tetrachloride	11.49	117	10621220	9.75	ppbv		100
31) Benzene	11.31	78	16363705	10.04	ppbv		99
32) Cyclohexane	11.64	56	10061258	10.49	ppbv		98
33) 1,2-Dichloropropane	12.29	63	6756058	10.29	ppbv		100
34) Trichloroethene	12.56	95	6710046	10.17	ppbv		100
35) Bromodichloromethane	12.50	83	12344181	10.38	ppbv		99
36) 1,4-Dioxane	12.55	88	1506805	9.33	ppbv	#	95
37) Isooctane	12.64	57	25590468	10.08	ppbv		99
38) N-Heptane	12.93	43	10613649	10.03	ppbv		99
39) cis-1,3-Dichloropropene	13.59	75	10646845	10.65	ppbv		100
40) 4-Methyl-2-Penanone (MIBK)	13.64	43	12448529	10.83	ppbv		99
41) trans-1,3-Dichloropropene	14.21	75	7727012	11.51	ppbv		98
42) 1,1,2-Trichloroethane	14.42	83	5300679	10.31	ppbv		100
43) Toluene	14.79	91	14412832	10.21	ppbv		99
44) 2-Hexanone	15.11	43	8032038	8.98	ppbv		98
46) Dibromochloromethane	15.29	129	9409976	10.29	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.60	107	7625442	10.59	ppbv		96
48) Tetrachloroethene	16.18	166	5229496	10.14	ppbv		99
49) Chlorobenzene	17.01	112	9344451	9.88	ppbv		100
50) Ethylbenzene	17.45	91	16716104	9.94	ppbv		99
51) m,p-Xylene	17.66	91	11535267	19.24	ppbv		99
52) Bromoform	17.75	173	5727793	10.30	ppbv		100
53) Styrene	18.08	104	7487310	10.90	ppbv		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\041420C\1101010.D Vial: 11
Acq On : 14 Apr 2020 2:22 pm Operator: TJG
Sample : 10PPBV TO-15 CURVE VER/LCS Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 15 13:24 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.20	83	10492868	9.55	ppbv		99
55) o-Xylene	18.22	106	5106907	10.36	ppbv		98
57) 4-Ethyltoluene	19.72	105	12014886	11.00	ppbv		99
58) 1,3,5-Trimethylbenzene	19.81	105	10561272	9.24	ppbv		98
59) 1,2,4-Trimethylbenzene	20.33	105	9005963	10.49	ppbv		99
60) 1,3-Dichlorobenzene	20.53	146	4738085m	10.95	ppbv		
61) Benzyl Chloride	20.50	91	5876304	10.07	ppbv		
62) 1,4-Dichlorobenzene	20.62	148	1945161	10.97	ppbv		96
63) 1,2-Dichlorobenzene	21.08	146	3941705	9.30	ppbv		99
64) 1,2,4-Trichlorobenzene	23.56	180	502101	9.97	ppbv		
65) Naphthalene	23.74	128	1224877	11.11	ppbv	#	88
66) Hexachloro-1,3-butadiene	24.28	225	711455	9.76	ppbv		97

(#) = qualifier out of range (m) = manual integration

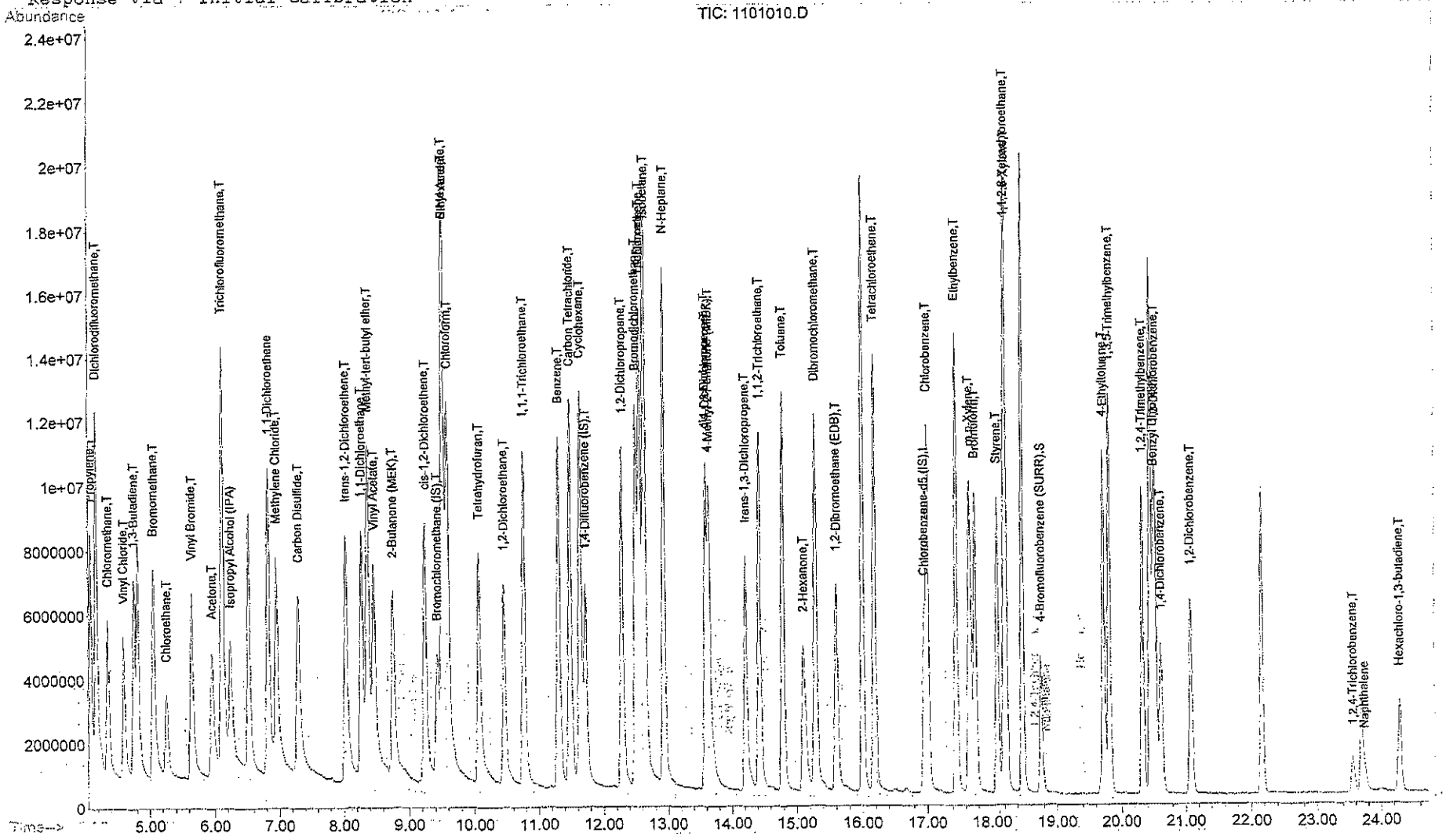
Quantitation Report

Data File : C:\HPCHEM\1\DATA\041420C\1101010.D
Acq On : 14 Apr 2020 2:22 pm
Sample : 10PPBV TO-15 CURVE VER/LCS
Misc : TO-15 QC
MS Integration Params: rteint.p
Quant Time: Apr 15 13:24 2020

Vial: 11
Operator: TJG
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



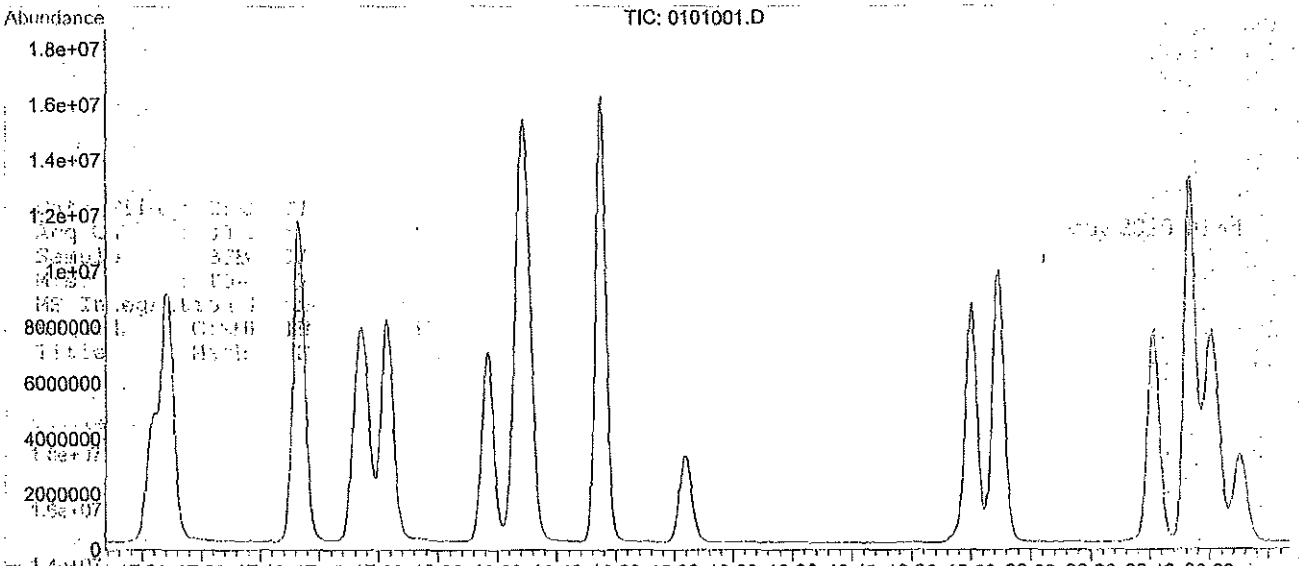
ENVISIONAIR

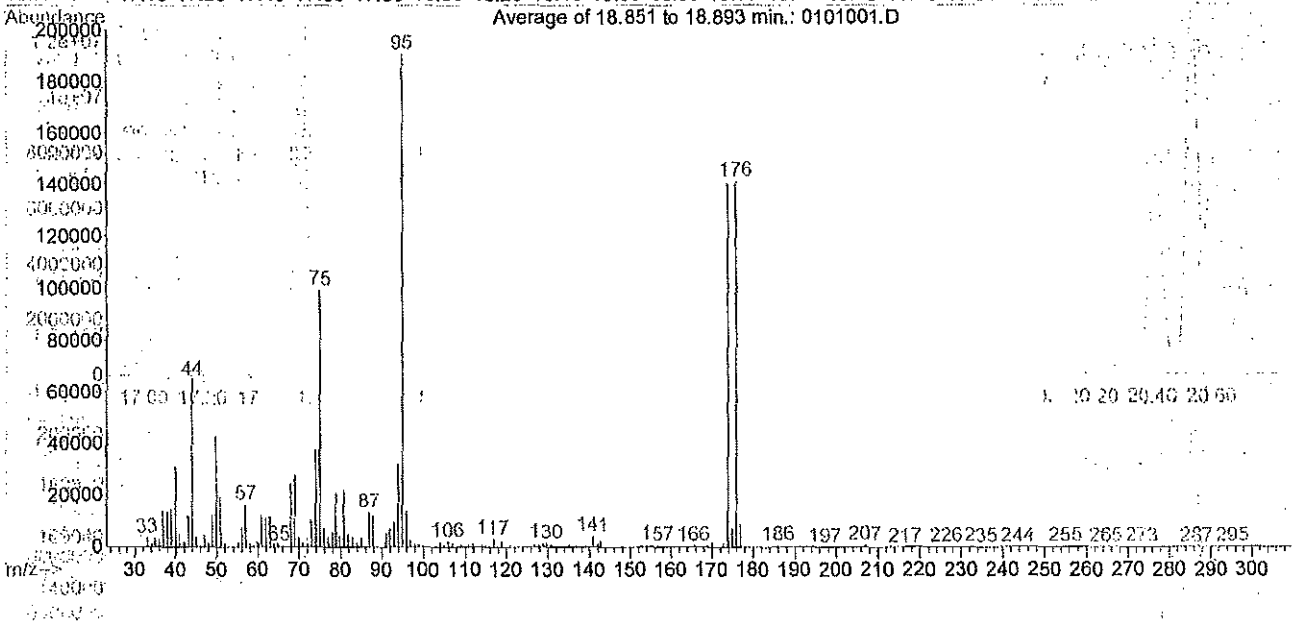
TO-15 VOC
Continuing Calibration Data

- Tune Data
- Continuing Calibration Verification Summary
- Continuing Calibration Verification (CCV) Quant Report
- Internal Standard Area Summary

Data File : C:\HPCHEM\1\DATA\043020\0101001.D
Acq On : 30 Apr 2020 9:49 am
Sample : BFB/CCV 10PPBV
Misc : TO-15 QC
MS Integration Params: rteint.p
Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION

Vial: 1
Operator: TJG
Inst : GC/MS Ins
Multiplr: 1.00





Spectrum Information: Average of 18.851 to 18.893 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.9	43677	PASS
75	95	30	60	52.2	99634	PASS
95	95	100	100	100.0	190987	PASS
96	95	2	9	7.2	13795	PASS
173	174	0.00	2	1.0	1472	PASS
174	95	50	100	73.6	140503	PASS
175	174	5	9	5.0	7000	PASS
176	174	95	101	100.6	141346	PASS
177	176	5	9	6.2	8706	PASS

0101001.D 041420AI.M Fri May 01 10:44:55 2020

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\043020\0101001.D Vial: 1
Acq On : 30 Apr 2020 9:49 am Operator: TJG
Sample : BFB/CCV 10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	T	Bromochloromethane (IS)	1.000	1.000	0.0	92	0.08
2	T	Propylene	1.335	1.299	2.7	90	0.05
3	T	Dichlorodifluoromethane	3.716	3.562	4.1	84	0.05
4	T	Chloromethane	2.467	2.523	-2.3	96	0.07
5	T	Vinyl Chloride	2.208	2.299	-4.1	104	0.07
6	T	1,3-Butadiene	1.054	1.213	-15.1	113	0.07
7	T	Bromomethane	2.303	2.174	5.6	100	0.08
8	T	Chloroethane	1.267	1.078	14.9	88	0.07
9	T	Vinyl Bromide	1.872	1.907	-1.9	95	0.08
10	T	Trichlorofluoromethane	4.958	4.845	2.3	97	0.08
11	T	Acetone	2.591	2.692	-3.9	92	0.07
12		Isopropyl Alcohol (IPA)	2.920	2.857	2.2	101	0.08
13		1,1-Dichloroethene	2.668	2.951	-10.6	97	0.08
14	T	Methylene Chloride	1.557	1.613	-3.6	97	0.08
15	T	Carbon Disulfide	4.596	4.203	8.6	82	0.08
16	T	trans-1,2-Dichloroethene	1.468	1.350	8.0	84	0.08
17	T	Methyl-tert-butyl ether	5.298	4.341	18.1	84	0.08
18	T	1,1-Dichloroethane	3.511	3.110	11.4	83	0.08
19	T	Vinyl Acetate	4.109	4.835	-17.7	104	0.08
20	T	N-Hexane	2.663	2.542	4.5	86	0.09
21	T	2-Butanone (MEK)	3.855	3.925	-1.8	99	0.09
22	T	cis-1,2-Dichloroethene	2.089	2.046	2.1	79	0.08
23	T	Ethyl Acetate	5.722	6.050	-5.7	115	0.08
24	T	Chloroform	3.212	2.924	9.0	81	0.08
25	T	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	88	0.09
26	T	Tetrahydrofuran	0.575	0.610	-6.1	89	0.09
27	T	1,2-Dichloroethane	0.494	0.485	1.8	77	0.09
28	T	1,1,1-Trichloroethane	0.713	0.641	10.1	83	0.10
29	T	1,1-Dichloropropene	0.656	0.597	9.0	77	0.08
30	T	Carbon Tetrachloride	0.717	0.656	8.5	84	0.09
31	T	Benzene	1.073	1.084	-1.0	91	0.09
32	T	Cyclohexane	0.631	0.584	7.4	80	0.09
33	T	1,2-Dichloropropane	0.432	0.391	9.5	78	0.09
34	T	Trichloroethene	0.434	0.403	7.1	82	0.09
35	T	Bromodichloromethane	0.783	0.718	8.3	80	0.09
36	T	1,4-Dioxane	0.106	0.093	12.3	84	0.08
37	T	Isooctane	1.671	1.626	2.7	88	0.09
38	T	N-Heptane	0.696	0.690	0.9	90	0.08
39	T	cis-1,3-Dichloropropene	0.658	0.597	9.3	77	0.08
40	T	4-Methyl-2-Penanone (MIBK)	0.757	0.767	-1.3	83	0.08
41	T	trans-1,3-Dichloropropene	0.442	0.404	8.6	71	0.08
42	T	1,1,2-Trichloroethane	0.338	0.300	11.2	78	0.09
43	T	Toluene	0.929	0.859	7.5	82	0.09
44	T	2-Hexanone	0.589	0.659	-11.9	114	0.08
45	I	Chlorobenzene-d5 (IS)	1.000	1.000	0.0	81	0.08
46	T	Dibromochloromethane	0.994	1.013	-1.9	82	0.09
47	T	1,2-Dibromoethane (EDB)	0.782	0.792	-1.3	79	0.10
48	T	Tetrachloroethene	0.561	0.619	-10.3	91	0.09
49	T	Chlorobenzene	1.028	0.971	5.5	80	0.08
50	T	Ethylbenzene	1.828	1.752	4.2	81	0.08
51	T	m,p-Xylene	0.652	0.673	-3.2	89	0.09
52	T	Bromoform	0.604	0.646	-7.0	86	0.08
53	T	Styrene	0.747	0.745	0.3	76	0.08
54	T	1,1,2,2-Tetrachloroethane	1.194	1.091	8.6	79	0.08
55	T	o-Xylene	0.536	0.532	0.7	79	0.09
56	S	4-Bromofluorobenzene (SURR)	0.421	0.463	-10.0	87	0.08
57	T	4-Ethyltoluene	1.188	1.263	-6.3	81	0.09
58	T	1,3,5-Trimethylbenzene	1.242	1.148	7.6	82	0.08
59	T	1,2,4-Trimethylbenzene	0.933	0.954	-2.3	81	0.09
60	T	1,3-Dichlorobenzene	0.470	0.502	-6.8	81	0.09

61	T	Benzyl Chloride	0.634	0.652	-2.8	71	0.09
62	T	1,4-Dichlorobenzene	0.193	0.173	10.4	71	0.10
63	T	1,2-Dichlorobenzene	0.461	0.430	6.7	84	0.09
64	T	1,2,4-Trichlorobenzene	0.055	0.059	-7.3	89	0.10
65		Naphthalene	0.120	0.113	5.8	79	0.10
66	T	Hexachloro-1,3-butadiene	0.079	0.084	-6.3	93	0.10

(#) = Out of Range SPCC's out = 0 CCC's out = 0
0901008.D 041420AI.M Fri May 01 10:44:57 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0101001.D Vial: 1
Acq On : 30 Apr 2020 9:49 am Operator: TJG
Sample : BFB/CCV 10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 10:32 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.50	128	1851224	5.00	ppbv		0.08
25) 1,4-Difluorobenzene (IS)	11.80	114	6916954	5.00	ppbv		0.09
45) Chlorobenzene-d5 (IS)	17.03	117	3885502	5.00	ppbv		0.08
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.83	95	1799275	5.51	ppbv		0.08
Spiked Amount 5.000	Range 62 - 145		Recovery = 110.20%				
Target Compounds							Qvalue
2) Propylene	4.12	39	4807676	9.73	ppbv	#	66
3) Dichlorodifluoromethane	4.21	85	13189458	9.59	ppbv		96
4) Chloromethane	4.40	50	9341736	10.23	ppbv		97
5) Vinyl Chloride	4.65	62	8511360	10.41	ppbv		92
6) 1,3-Butadiene	4.81	39	4489505	11.50	ppbv	#	81
7) Bromomethane	5.11	94	8049907m	9.44	ppbv		
8) Chloroethane	5.31	64	3989812	8.51	ppbv	#	83
9) Vinyl Bromide	5.70	106	7060926	10.19	ppbv		86
10) Trichlorofluoromethane	6.17	101	17937565	9.77	ppbv		97
11) Acetone	6.01	43	9967139	10.39	ppbv		
12) Isopropyl Alcohol (IPA)	6.31	45	10579265	9.79	ppbv		
13) 1,1-Dichloroethene	6.89	61	10927173	11.06	ppbv		97
14) Methylene Chloride	7.02	84	5973254	10.36	ppbv	#	73
15) Carbon Disulfide	7.35	76	15561929	9.15	ppbv	#	77
16) trans-1,2-Dichloroethene	8.10	96	4996717	9.19	ppbv		99
17) Methyl-tert-butyl ether	8.43	73	16072407	8.19	ppbv		97
18) 1,1-Dichloroethane	8.34	63	11514118	8.86	ppbv		97
19) Vinyl Acetate	8.52	43	17901273	11.77	ppbv		95
20) N-Hexane	9.58	57	9413377	9.55	ppbv		98
21) 2-Butanone (MEK)	8.82	43	14533060	10.18	ppbv		93
22) cis-1,2-Dichloroethene	9.31	61	7574972	9.79	ppbv		97
23) Ethyl Acetate	9.58	43	22400118	10.57	ppbv		98
24) Chloroform	9.66	83	10824959	9.10	ppbv		99
26) Tetrahydrofuran	10.14	42	8435171	10.60	ppbv		97
27) 1,2-Dichloroethane	10.53	62	6715490	9.84	ppbv		94
28) 1,1,1-Trichloroethane	10.85	97	8863694	8.99	ppbv		98
29) 1,1-Dichloropropene	13.66	75	8252589	9.10	ppbv		99
30) Carbon Tetrachloride	11.57	117	9077524	9.15	ppbv		98
31) Benzene	11.38	78	14996514	10.11	ppbv		
32) Cyclohexane	11.72	56	8085577	9.26	ppbv		99
33) 1,2-Dichloropropane	12.36	63	5409040	9.04	ppbv		99
34) Trichloroethene	12.64	95	5576156	9.28	ppbv		94
35) Bromodichloromethane	12.58	83	9939655	9.18	ppbv		100
36) 1,4-Dioxane	12.63	88	1288431	8.76	ppbv		
37) Isooctane	12.71	57	22495897	9.73	ppbv		98
38) N-Heptane	13.01	43	9539967	9.90	ppbv		
39) cis-1,3-Dichloropropene	13.66	75	8252589	9.06	ppbv		93
40) 4-Methyl-2-Pentanone (MIBK)	13.72	43	10611355	10.14	ppbv		
41) trans-1,3-Dichloropropene	14.29	75	5582145	9.13	ppbv		97
42) 1,1,2-Trichloroethane	14.51	83	4148180	8.86	ppbv		98
43) Toluene	14.87	91	11886798	9.25	ppbv		97
44) 2-Hexanone	15.17	43	9115141	11.20	ppbv		98
46) Dibromochloromethane	15.37	129	7874715	10.20	ppbv		100
47) 1,2-Dibromoethane (EDB)	15.69	107	6155163	10.12	ppbv		98
48) Tetrachloroethene	16.27	166	4812656	11.04	ppbv		94
49) Chlorobenzene	17.08	112	7541864	9.44	ppbv		94
50) Ethylbenzene	17.53	91	13616529	9.59	ppbv		98
51) m,p-Xylene	17.74	91	10455532m	20.64	ppbv		
52) Bromoform	17.83	173	5020816	10.69	ppbv	#	97
53) Styrene	18.17	104	5789014	9.98	ppbv		96

(#) = qualifier out of range (m) = manual integration
0101001.D 041420AI.M Fri May 01 10:45:08 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0101001.D Vial: 1
Acq On : 30 Apr 2020 9:49 am Operator: TJG
Sample : BFB/CCV 10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 10:32 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

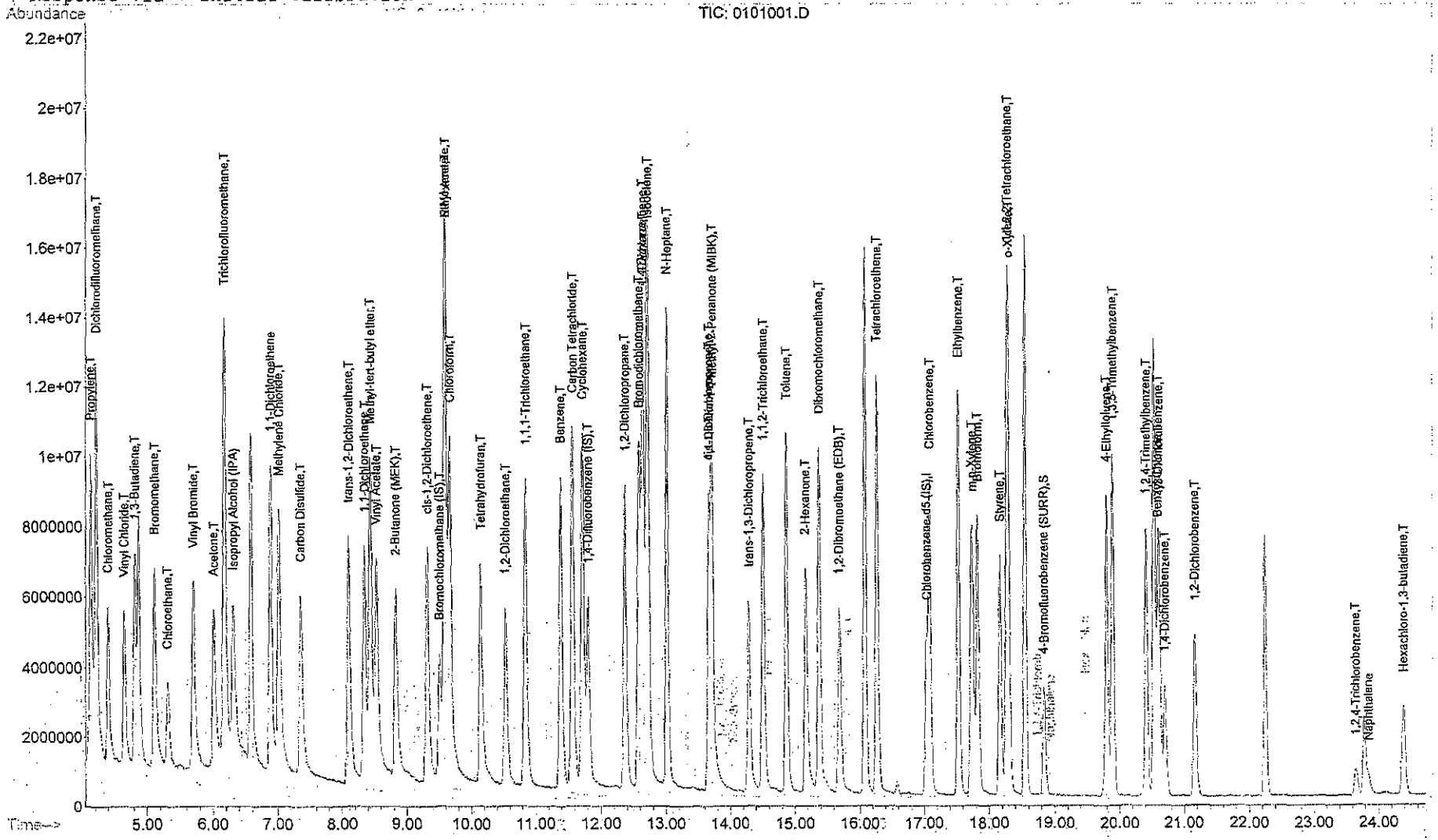
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.27	83	8475398	9.13	ppbv	100
55) o-Xylene	18.30	106	4137477	9.94	ppbv	99
57) 4-Ethyltoluene	19.80	105	9815307	10.64	ppbv	98
58) 1,3,5-Trimethylbenzene	19.89	105	8924789	9.24	ppbv	98
59) 1,2,4-Trimethylbenzene	20.41	105	7416558	10.23	ppbv	99
60) 1,3-Dichlorobenzene	20.61	146	3897184	10.66	ppbv	97
61) Benzyl Chloride	20.59	91	5068088	10.29	ppbv	98
62) 1,4-Dichlorobenzene	20.70	148	1348067	9.00	ppbv	94
63) 1,2-Dichlorobenzene	21.17	146	3341117	9.33	ppbv	97
64) 1,2,4-Trichlorobenzene	23.65	180	455899	10.72	ppbv	96
65) Naphthalene	23.84	128	879351	9.45	ppbv	97
66) Hexachloro-1,3-butadiene	24.38	225	653704	10.62	ppbv	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\043020\0101001.D Vial: 1
Acq On : 30 Apr 2020 9:49 am Operator: TJG
Sample : BFB/CCV 10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 10:32 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA\043020\0101001.D
Tune Time : 30 Apr 2020 9:49 am

Daily Calibration File : C:\HPCHEM\1\DATA\043020\0101001.D

			1851220	6916950	3885500
File	Sample	Surrogate Recovery %	Internal Standard Responses		
0201002.D	10PPBV L	106	2011345	6800517	3584286
0301003.D	10PPBV L	106	1843681	6417851	3342191
0601006.D	MB	94	1300115	9251741	2042411
0701007.D	20-1224:	88	1311843	4292342	2209901
0801008.D	20-1225:	96	1982553	9830127	2254550
0901009.D	20-1226:	93	1128698	4120093	2065592
1001010.D	20-1227:	91	1116414	3969216	1956478
1101011.D	20-1228:	103	1180277	4099964	2056194

t = fails 24hr time check * = fails criteria

Created: Fri May 01 10:50:30 2020 GC
MS Ins

ENVISIONAIR

TO-15 VOC
Quality Control Data

- Method Blank (MB)
- Laboratory Control Standard (LCS)

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0201002.D Vial: 2
Acq On : 30 Apr 2020 10:33 am Operator: TJG
Sample : 10PPBV LCS Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 11:59 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.50	128	2011345	5.00	ppbv		0.08
25) 1,4-Difluorobenzene (IS)	11.80	114	6800517	5.00	ppbv		0.09
45) Chlorobenzene-d5 (IS)	17.03	117	3584286	5.00	ppbv		0.08
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.83	95	1597945	5.30	ppbv		0.08
Spiked Amount 5.000	Range 62 - 145		Recovery = 106.00%				
Target Compounds							Qvalue
2) Propylene	4.13	39	5307129	9.88	ppbv	#	62
3) Dichlorodifluoromethane	4.22	85	16673043	11.15	ppbv		98
4) Chloromethane	4.41	50	10483552	10.56	ppbv		93
5) Vinyl Chloride	4.66	62	9116873	10.26	ppbv		
6) 1,3-Butadiene	4.82	39	4061432	9.57	ppbv		
7) Bromomethane	5.12	94	8502358	9.18	ppbv	#	84
8) Chloroethane	5.33	64	4789317	9.40	ppbv	#	84
9) Vinyl Bromide	5.71	106	7961407	10.57	ppbv	#	83
10) Trichlorofluoromethane	6.18	101	20372461	10.21	ppbv		98
11) Acetone	6.03	43	10422357	10.00	ppbv		
12) Isopropyl Alcohol (IPA)	6.33	45	13458528	11.46	ppbv	#	88
13) 1,1-Dichloroethene	6.89	61	11658826	10.87	ppbv		96
14) Methylene Chloride	7.03	84	6104880	9.74	ppbv	#	73
15) Carbon Disulfide	7.37	76	19067546	10.31	ppbv		
16) trans-1,2-Dichloroethene	8.11	96	6372158	10.79	ppbv		
17) Methyl-tert-butyl ether	8.45	73	20157988	9.46	ppbv		
18) 1,1-Dichloroethane	8.36	63	13747641	9.73	ppbv		
19) Vinyl Acetate	8.54	43	17080107	10.33	ppbv		96
20) N-Hexane	9.59	57	10241195	9.56	ppbv		
21) 2-Butanone (MEK)	8.83	43	14488656	9.34	ppbv		93
22) cis-1,2-Dichloroethene	9.32	61	7586597	9.03	ppbv		99
23) Ethyl Acetate	9.60	43	22094714	9.60	ppbv		97
24) Chloroform	9.66	83	10712672	8.29	ppbv		99
26) Tetrahydrofuran	10.15	42	8202107	10.48	ppbv		97
27) 1,2-Dichloroethane	10.54	62	6345549	9.45	ppbv		94
28) 1,1,1-Trichloroethane	10.85	97	8701061	8.98	ppbv		97
29) 1,1-Dichloropropene	13.66	75	7702301	8.64	ppbv		99
30) Carbon Tetrachloride	11.57	117	8846150	9.07	ppbv		98
31) Benzene	11.39	78	12975223	8.89	ppbv		99
32) Cyclohexane	11.72	56	8041706	9.37	ppbv		98
33) 1,2-Dichloropropane	12.37	63	5163328	8.78	ppbv		99
34) Trichloroethene	12.65	95	5239322	8.87	ppbv		94
35) Bromodichloromethane	12.58	83	9608615	9.02	ppbv		99
36) 1,4-Dioxane	12.63	88	1461182m	10.10	ppbv		
37) Isooctane	12.72	57	22997742	10.12	ppbv		95
38) N-Heptane	13.02	43	8750570	9.24	ppbv		96
39) cis-1,3-Dichloropropene	13.66	75	7702301	8.60	ppbv		95
40) 4-Methyl-2-Penanone (MIBK)	13.72	43	10841329	10.54	ppbv		
41) trans-1,3-Dichloropropene	14.29	75	5542268	9.22	ppbv		
42) 1,1,2-Trichloroethane	14.51	83	3906914	8.49	ppbv		99
43) Toluene	14.87	91	11301354	8.94	ppbv		96
44) 2-Hexanone	15.17	43	8346001	10.43	ppbv		96
46) Dibromochloromethane	15.37	129	7529854	10.57	ppbv		100
47) 1,2-Dibromoethane (EDB)	15.69	107	5634713	10.05	ppbv		97
48) Tetrachloroethene	16.27	166	4556111	11.33	ppbv		94
49) Chlorobenzene	17.08	112	6986256	9.48	ppbv		95
50) Ethylbenzene	17.53	91	12951917	9.88	ppbv		97
51) m,p-Xylene	17.74	91	8495340	18.18	ppbv		99
52) Bromoform	17.82	173	4653362	10.74	ppbv	#	34
53) Styrene	18.16	104	5425090	10.14	ppbv		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0201002.D Vial: 2
Acq On : 30 Apr 2020 10:33 am Operator: TJG
Sample : 10PPBV LCS Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 11:59 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.27	83	7963136	9.30	ppbv		100
55) o-Xylene	18.30	106	3885516	10.12	ppbv		100
57) 4-Ethyltoluene	19.80	105	9064372	10.65	ppbv		99
58) 1,3,5-Trimethylbenzene	19.89	105	8368207	9.40	ppbv		98
59) 1,2,4-Trimethylbenzene	20.40	105	6923517	10.35	ppbv		99
60) 1,3-Dichlorobenzene	20.61	146	3589698	10.65	ppbv		95
61) Benzyl Chloride	20.58	91	4421020	9.73	ppbv		99
62) 1,4-Dichlorobenzene	20.70	148	1254707	9.08	ppbv		95
63) 1,2-Dichlorobenzene	21.16	146	2977718	9.02	ppbv		97
64) 1,2,4-Trichlorobenzene	23.64	180	370948	9.46	ppbv	#	90
65) Naphthalene	23.84	128	724009	8.43	ppbv	#	95
66) Hexachloro-1,3-butadiene	24.38	225	585478	10.31	ppbv		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

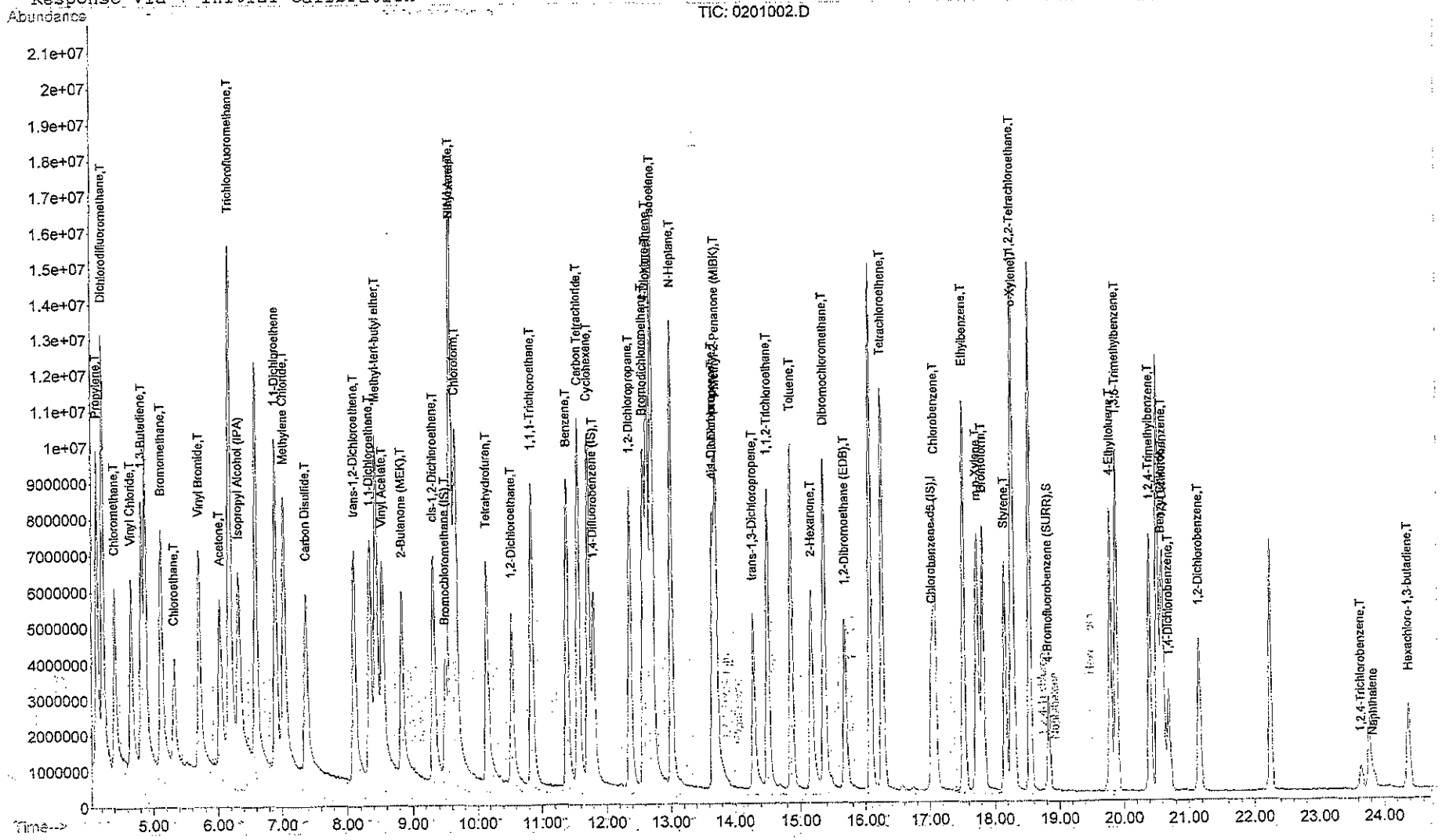
Data File : C:\HPCHEM\1\DATA\043020\0201002.D
Acq On : 30 Apr 2020 10:33 am
Sample : 10PPBV LCS
Misc : TO-15 QC
MS Integration Params: rteint.p
Quant Time: Apr 30 11:59 2020

Vial: 2
Operator: TJG
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration

TIC: 0201002.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0301003.D Vial: 3
Acq On : 30 Apr 2020 11:18 am Operator: TJG
Sample : 10PPBV LCSD Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 12:01 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.51	128	1843681	5.00	ppbv		0.10
25) 1,4-Difluorobenzene (IS)	11.80	114	6417851	5.00	ppbv		0.09
45) Chlorobenzene-d5 (IS)	17.03	117	3342191	5.00	ppbv		0.08
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.83	95	1488602	5.29	ppbv		0.08
Spiked Amount 5.000	Range 62 - 145		Recovery =	105.80%			
Target Compounds							Qvalue
2) Propylene	4.13	39	5176454	10.51	ppbv	#	65
3) Dichlorodifluoromethane	4.21	85	15521636	11.33	ppbv		98
4) Chloromethane	4.39	50	10047438	11.04	ppbv		96
5) Vinyl Chloride	4.65	62	8036153	9.87	ppbv		
6) 1,3-Butadiene	4.81	39	4350484	11.19	ppbv		
7) Bromomethane	5.11	94	8512716	10.02	ppbv		85
8) Chloroethane	5.31	64	4686624	10.03	ppbv	#	85
9) Vinyl Bromide	5.70	106	7959202	11.53	ppbv		84
10) Trichlorofluoromethane	6.17	101	20312701	11.11	ppbv		96
11) Acetone	6.02	43	10183963	10.66	ppbv		
12) Isopropyl Alcohol (IPA)	6.32	45	10323704	9.59	ppbv		
13) 1,1-Dichloroethene	6.89	61	10158654	10.33	ppbv		
14) Methylene Chloride	7.02	84	6049531	10.53	ppbv	#	76
15) Carbon Disulfide	7.36	76	16148933	9.53	ppbv	#	75
16) trans-1,2-Dichloroethene	8.10	96	4703236	8.69	ppbv		93
17) Methyl-tert-butyl ether	8.44	73	18936492	9.69	ppbv		
18) 1,1-Dichloroethane	8.34	63	12147322	9.38	ppbv		96
19) Vinyl Acetate	8.54	43	15766955	10.41	ppbv		97
20) N-Hexane	9.58	57	9444718	9.62	ppbv		97
21) 2-Butanone (MEK)	8.83	43	13203885	9.29	ppbv		96
22) cis-1,2-Dichloroethene	9.31	61	7584148	9.84	ppbv		99
23) Ethyl Acetate	9.59	43	21191470	10.04	ppbv		98
24) Chloroform	9.67	83	10682668	9.02	ppbv		100
26) Tetrahydrofuran	10.14	42	8262299	11.19	ppbv		98
27) 1,2-Dichloroethane	10.54	62	6287363	9.93	ppbv		93
28) 1,1,1-Trichloroethane	10.85	97	8476802	9.27	ppbv		99
29) 1,1-Dichloropropene	13.66	75	7738264	9.19	ppbv		98
30) Carbon Tetrachloride	11.56	117	8784174	9.55	ppbv		99
31) Benzene	11.39	78	12836381	9.32	ppbv		99
32) Cyclohexane	11.72	56	7991367	9.86	ppbv		97
33) 1,2-Dichloropropane	12.36	63	5112680	9.21	ppbv		98
34) Trichloroethene	12.64	95	5194669	9.32	ppbv		95
35) Bromodichloromethane	12.58	83	9456841	9.41	ppbv		99
36) 1,4-Dioxane	12.63	88	1225764	8.98	ppbv		
37) Isooctane	12.71	57	23051727	10.74	ppbv		94
38) N-Heptane	13.01	43	8769042	9.81	ppbv		95
39) cis-1,3-Dichloropropene	13.66	75	7738264	9.16	ppbv		96
40) 4-Methyl-2-Penanone (MIBK)	13.71	43	9880848	10.17	ppbv		
41) trans-1,3-Dichloropropene	14.29	75	5383802	9.49	ppbv		
42) 1,1,2-Trichloroethane	14.51	83	3922956	9.03	ppbv		99
43) Toluene	14.86	91	11185539	9.38	ppbv		96
44) 2-Hexanone	15.17	43	8355535	11.06	ppbv		95
46) Dibromochloromethane	15.37	129	7493922	11.28	ppbv		98
47) 1,2-Dibromoethane (EDB)	15.68	107	5603041	10.71	ppbv		98
48) Tetrachloroethene	16.26	166	3986586	10.63	ppbv		
49) Chlorobenzene	17.08	112	6930620	10.08	ppbv		95
50) Ethylbenzene	17.53	91	12766367	10.45	ppbv		97
51) m,p-Xylene	17.73	91	8638347	19.83	ppbv		99
52) Bromoform	17.82	173	4624491	11.45	ppbv	#	96
53) Styrene	18.16	104	5333269	10.69	ppbv		97

(#) = qualifier out of range (m) = manual integration
0301003.D 041420AI.M Fri May 01 10:45:20 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0301003.D Vial: 3
Acq On : 30 Apr 2020 11:18 am Operator: TJG
Sample : 10PPBV LCSD Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 12:01 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

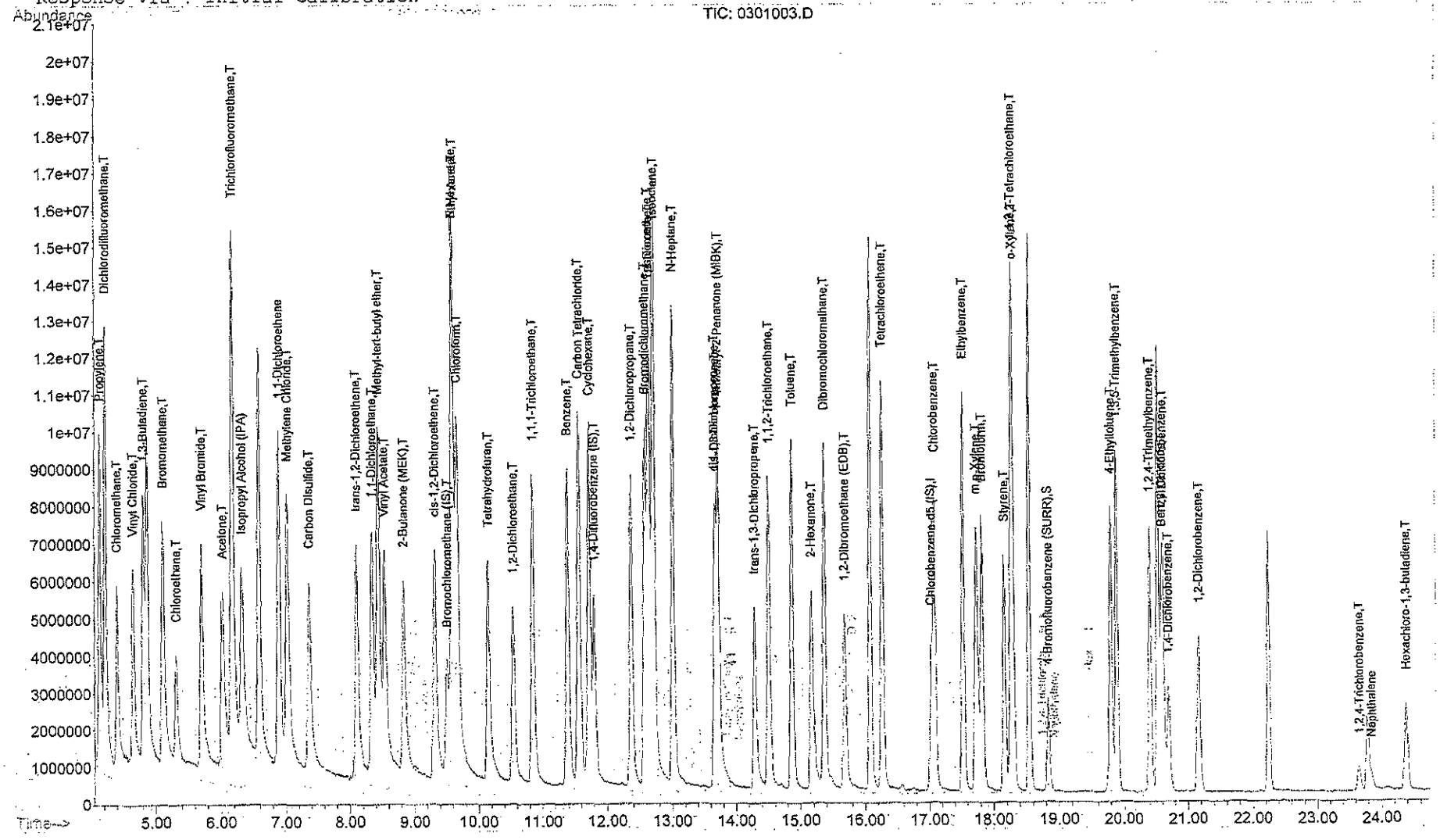
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.27	83	7967596	9.98 ppbv	98
55) o-Xylene	18.29	106	3874039	10.82 ppbv	99
57) 4-Ethyltoluene	19.80	105	8991568	11.33 ppbv	98
58) 1,3,5-Trimethylbenzene	19.89	105	8276805	9.97 ppbv	98
59) 1,2,4-Trimethylbenzene	20.41	105	6845613	10.98 ppbv	98
60) 1,3-Dichlorobenzene	20.61	146	3513284	11.17 ppbv	96
61) Benzyl Chloride	20.59	91	4409003	10.40 ppbv	98
62) 1,4-Dichlorobenzene	20.69	148	1251284	9.72 ppbv	95
63) 1,2-Dichlorobenzene	21.17	146	2946269	9.57 ppbv	97
64) 1,2,4-Trichlorobenzene	23.65	180	380118	10.39 ppbv	96
65) Naphthalene	23.84	128	817145m	10.21 ppbv	
66) Hexachloro-1,3-butadiene	24.38	225	596287	11.26 ppbv	98

(#) = qualifier out of range (m) = manual integration
0301003.D 041420AI.M Fri May 01 10:45:20 2020 Page 2

Quantitation Report

Data File : C:\HPCHEM\1\DATA\043020\0301003.D Vial: 3
Acq On : 30 Apr 2020 11:18 am Operator: TJG
Sample : 10PPBV LCSD Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 12:01 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0601006.D Vial: 6
Acq On : 30 Apr 2020 1:12 pm Operator: TJG
Sample : MB Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 13:40 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

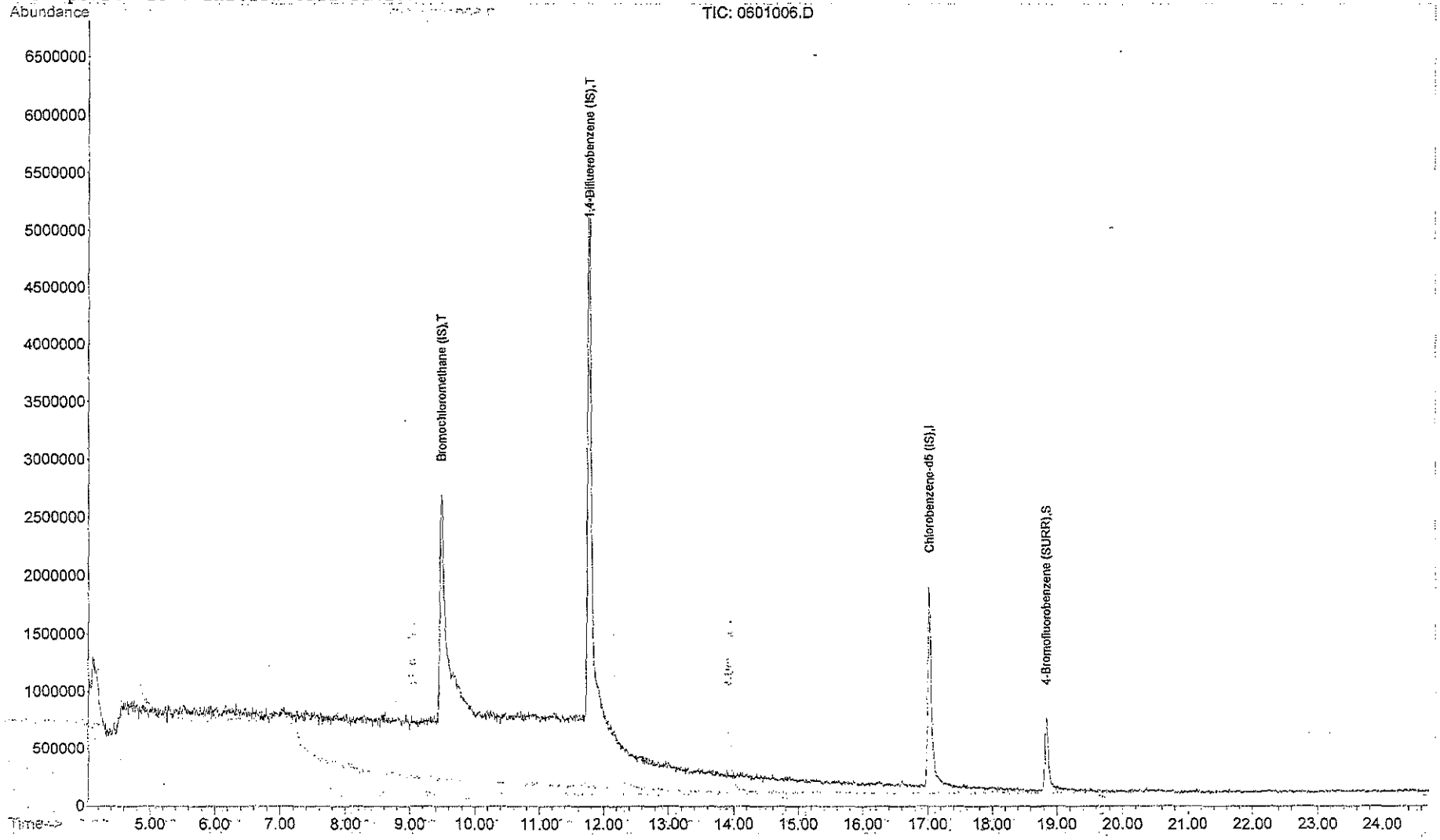
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.49	128	1300115	5.00	ppbv	0.07
25) 1,4-Difluorobenzene (IS)	11.78	114	9251741	5.00	ppbv	0.07
45) Chlorobenzene-d5 (IS)	17.03	117	2042411	5.00	ppbv	0.08
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.85	95	807295	4.70	ppbv	0.10
Spiked Amount 5.000	Range 62 - 145		Recovery = 94.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
0601006.D 041420AI.M Fri May 01 10:45:29 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\043020\0601006.D Vial: 6
Acq On : 30 Apr 2020 1:12 pm Operator: TJG
Sample : MB Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 30 13:40 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



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TO-15 VOC

- Raw Sample Data

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0701007.D Vial: 7
Acq On : 30 Apr 2020 1:51 pm Operator: TJG
Sample : 20-1224:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 1 10:47 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

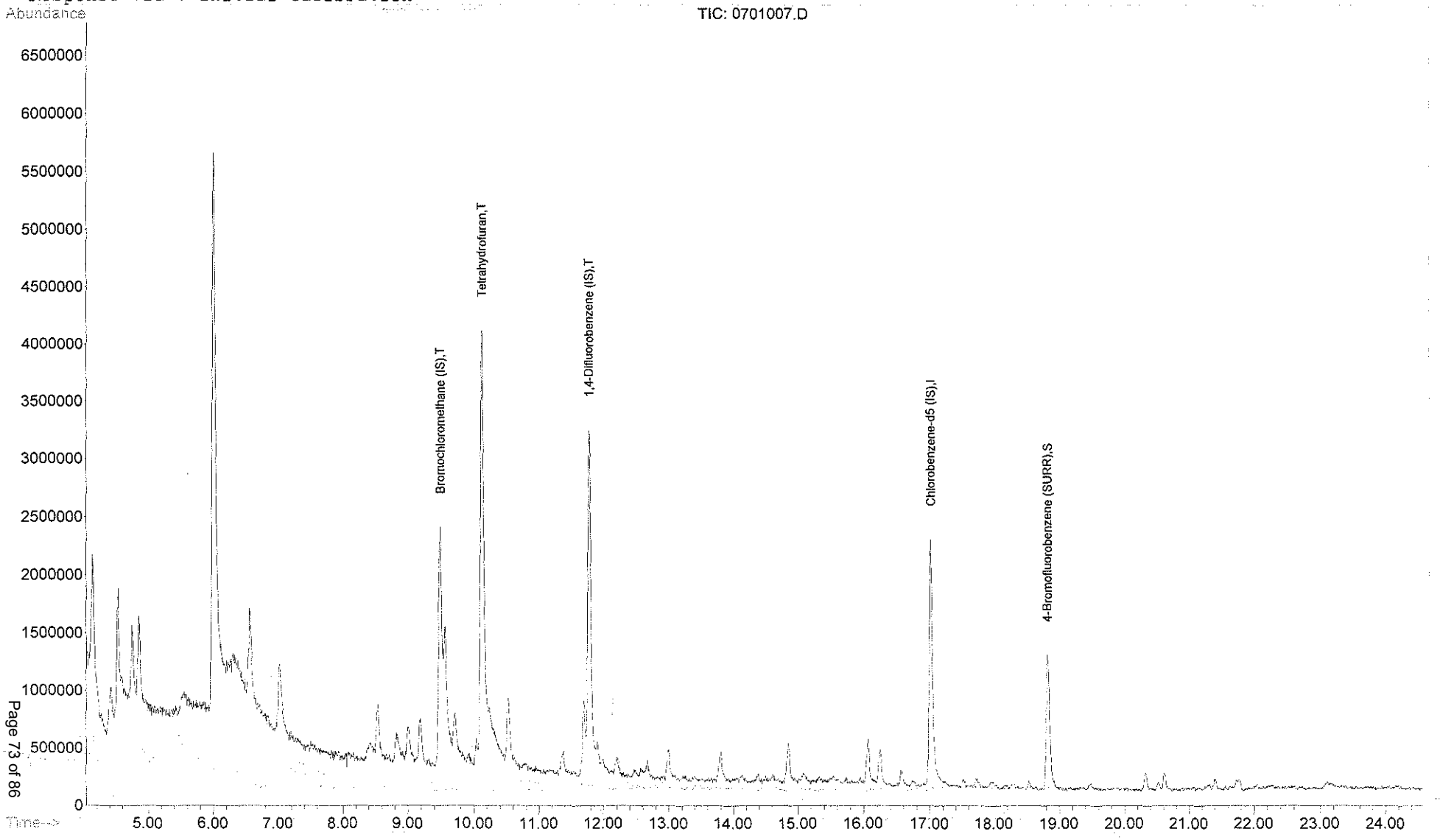
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.49	128	1311843	5.00	ppbv	0.07
25) 1,4-Difluorobenzene (IS)	11.79	114	4292342	5.00	ppbv	0.07
45) Chlorobenzene-d5 (IS)	17.02	117	2209901	5.00	ppbv	0.07
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.83	95	821540	4.42	ppbv	0.08
Spiked Amount 5.000	Range 62 - 145		Recovery = 88.40%			
Target Compounds						Qvalue
26) Tetrahydrofuran	10.13	42	5143956	10.42	ppbv	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\043020\0701007.D Vial: 7
Acq On : 30 Apr 2020 1:51 pm Operator: TJG
Sample : 20-1224:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 1 10:47 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0801008.D Vial: 8
Acq On : 30 Apr 2020 2:29 pm Operator: TJG
Sample : 20-1225:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 1 10:48 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.49	128	1982553	5.00	ppbv	0.07
25) 1,4-Difluorobenzene (IS)	11.75	114	9830127	5.00	ppbv	0.04
45) Chlorobenzene-d5 (IS)	16.96	117	2254550	5.00	ppbv	0.01
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.79	95	910572	4.80	ppbv	0.04
Spiked Amount 5.000	Range 62 - 145		Recovery = 96.00%			
Target Compounds						Qvalue
20) N-Hexane	9.56	57	5736283	5.43	ppbv	98
26) Tetrahydrofuran	10.13	42	3786971	3.35	ppbv #	77
31) Benzene	11.34	78	1355233	0.64	ppbv	95
32) Cyclohexane	11.67	56	3639427	2.93	ppbv #	84
34) Trichloroethene	12.57	95	988866	1.16	ppbv	
48) Tetrachloroethene	16.18	166	286851	1.13	ppbv	93
51) m,p-Xylene	17.67	91	383080	1.30	ppbv	97

(#) = qualifier out of range (m) = manual integration

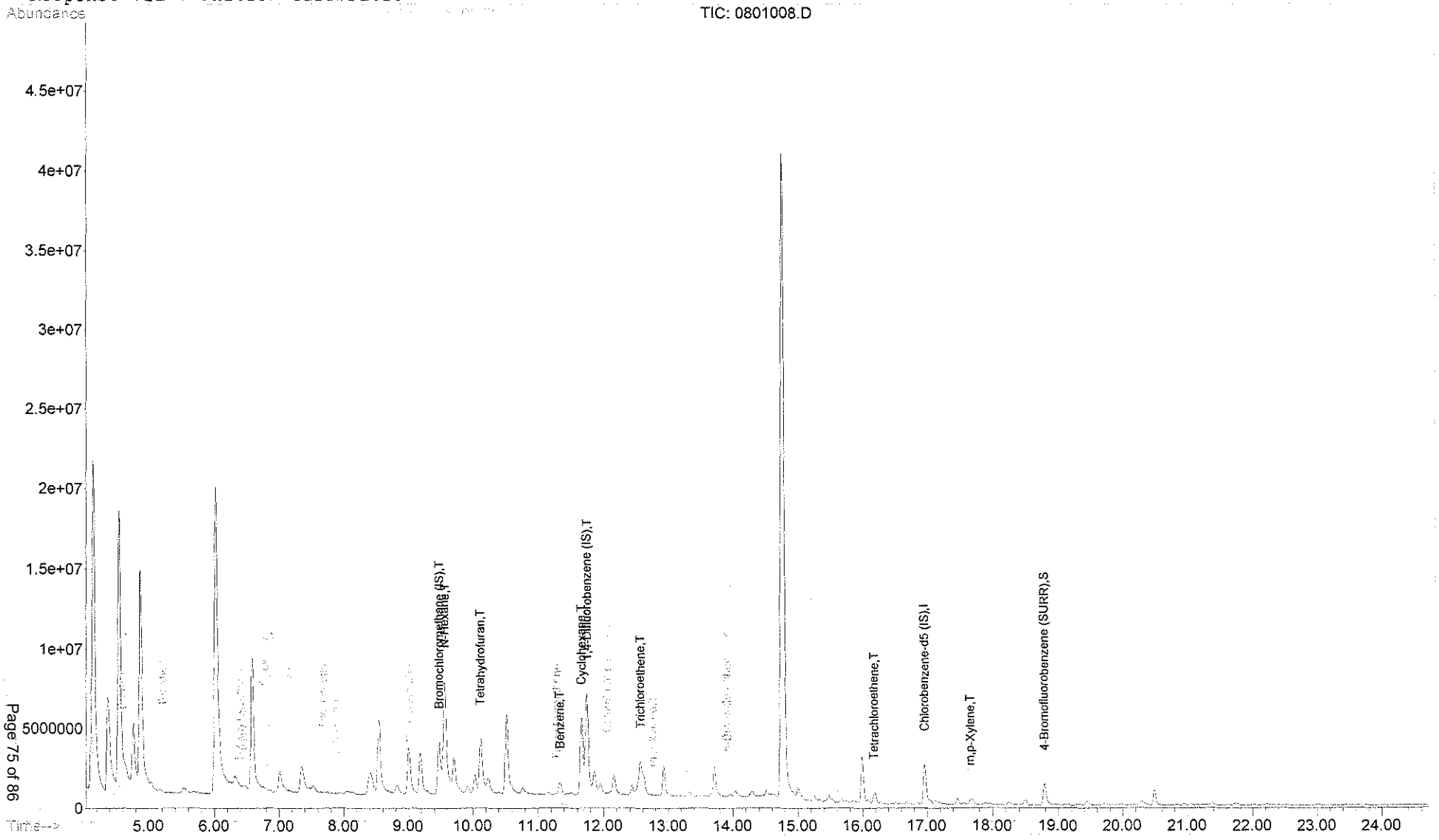
Quantitation Report

Data File : C:\HPCHEM\1\DATA\043020\0801008.D
Acq On : 30 Apr 2020 2:29 pm
Sample : 20-1225:10
Misc : TO-15 QC
MS Integration Params: rteint.p
Quant Time: May 1 10:48 2020

Vial: 8
Operator: TJG
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\0901009.D Vial: 9
Acq On : 30 Apr 2020 3:07 pm Operator: TJG
Sample : 20-1226:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 1 10:48 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

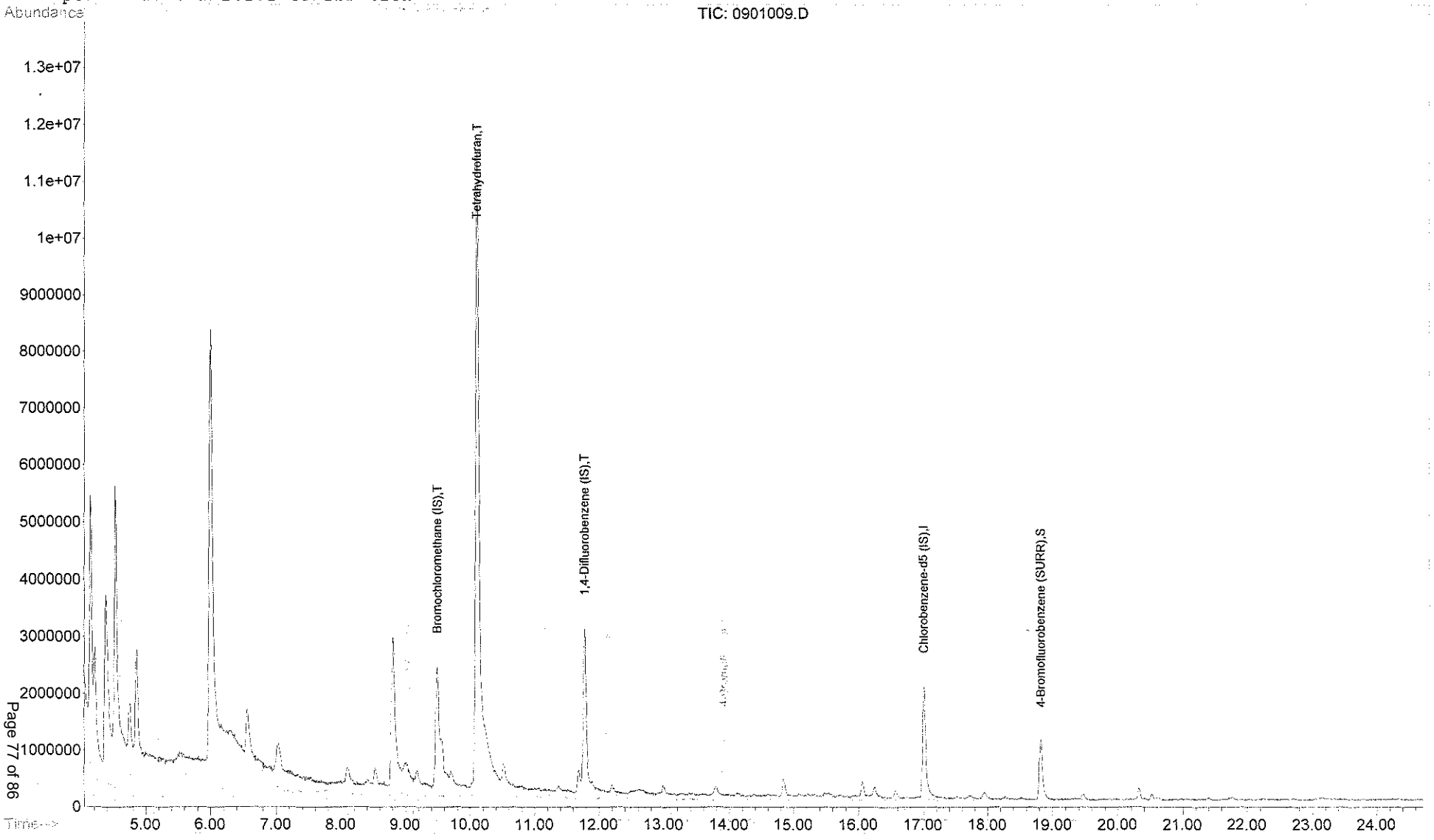
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.50	128	1128698	5.00	ppbv	0.08
25) 1,4-Difluorobenzene (IS)	11.78	114	4120093	5.00	ppbv	0.07
45) Chlorobenzene-d5 (IS)	17.02	117	2065592	5.00	ppbv	0.07
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.83	95	807132	4.65	ppbv	0.08
Spiked Amount 5.000	Range 62 - 145		Recovery = 93.00%			
Target Compounds						Qvalue
26) Tetrahydrofuran	10.11	42	17042233	35.95	ppbv	94

(#) = qualifier out of range (m) = manual integration
0901009.D 041420AI.M Fri May 01 10:50:13 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\043020\0901009.D Vial: 9
Acq On : 30 Apr 2020 3:07 pm Operator: TJG
Sample : 20-1226:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 1 10:48 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\1001010.D Vial: 10
Acq On : 30 Apr 2020 3:46 pm Operator: TJG
Sample : 20-1227:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 1 10:49 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

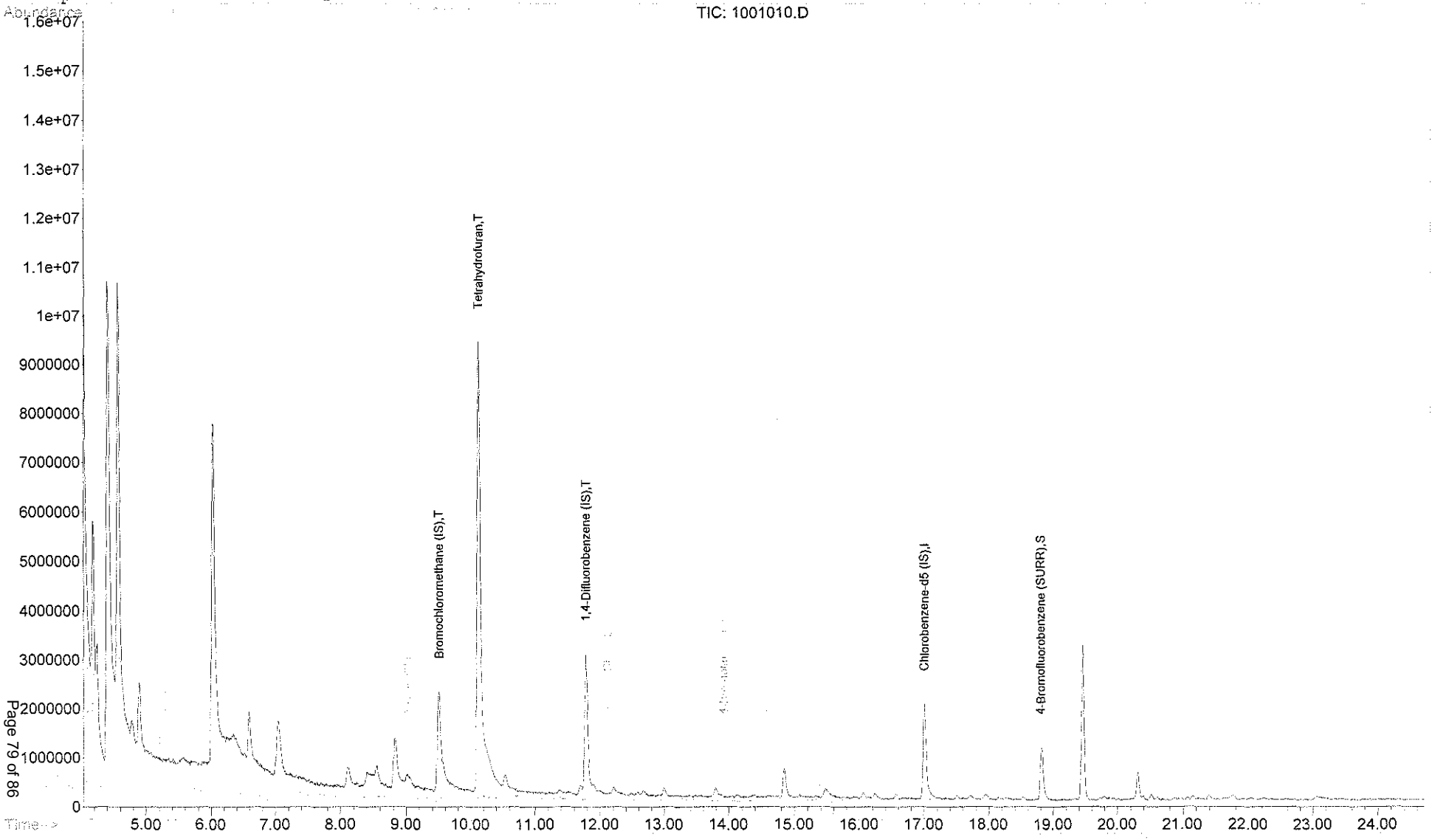
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.51	128	1116414	5.00	ppbv	0.10
25) 1,4-Difluorobenzene (IS)	11.79	114	3969216	5.00	ppbv	0.08
45) Chlorobenzene-d5 (IS)	17.02	117	1956478	5.00	ppbv	0.07
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.81	95	746768	4.54	ppbv	0.07
Spiked Amount 5.000	Range 62 - 145		Recovery = 90.80%			
Target Compounds						Qvalue
26) Tetrahydrofuran	10.13	42	14911969	32.65	ppbv	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\043020\1001010.D Vial: 10
Acq On : 30 Apr 2020 3:46 pm Operator: TJG
Sample : 20-1227:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 1 10:49 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\043020\1101011.D Vial: 11
Acq On : 30 Apr 2020 4:24 pm Operator: TJG
Sample : 20-1228:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 1 10:50 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.50	128	1180277	5.00	ppbv	0.08
25) 1,4-Difluorobenzene (IS)	11.79	114	4099964	5.00	ppbv	0.07
45) Chlorobenzene-d5 (IS)	17.01	117	2056194	5.00	ppbv	0.06
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.82	95	892006	5.16	ppbv	0.07
Spiked Amount 5.000	Range 62 - 145		Recovery = 103.20%			
Target Compounds						Qvalue
20) N-Hexane	9.57	57	4210795	6.70	ppbv	94
21) 2-Butanone (MEK)	8.81	43	4547391	5.00	ppbv	96
26) Tetrahydrofuran	10.11	42	16905081	35.84	ppbv	99
31) Benzene	11.37	78	2013026	2.29	ppbv	95
32) Cyclohexane	11.71	56	1689666	3.26	ppbv	96
34) Trichloroethene	12.63	95	67030	0.19	ppbv	
43) Toluene	14.85	91	4624076	6.07	ppbv	
48) Tetrachloroethene	16.23	166	93176	0.40	ppbv	97
50) Ethylbenzene	17.51	91	1463727	1.95	ppbv	94
51) m,p-Xylene	17.71	91	1038142	3.87	ppbv	99
55) o-Xylene	18.28	106	206120	0.94	ppbv	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

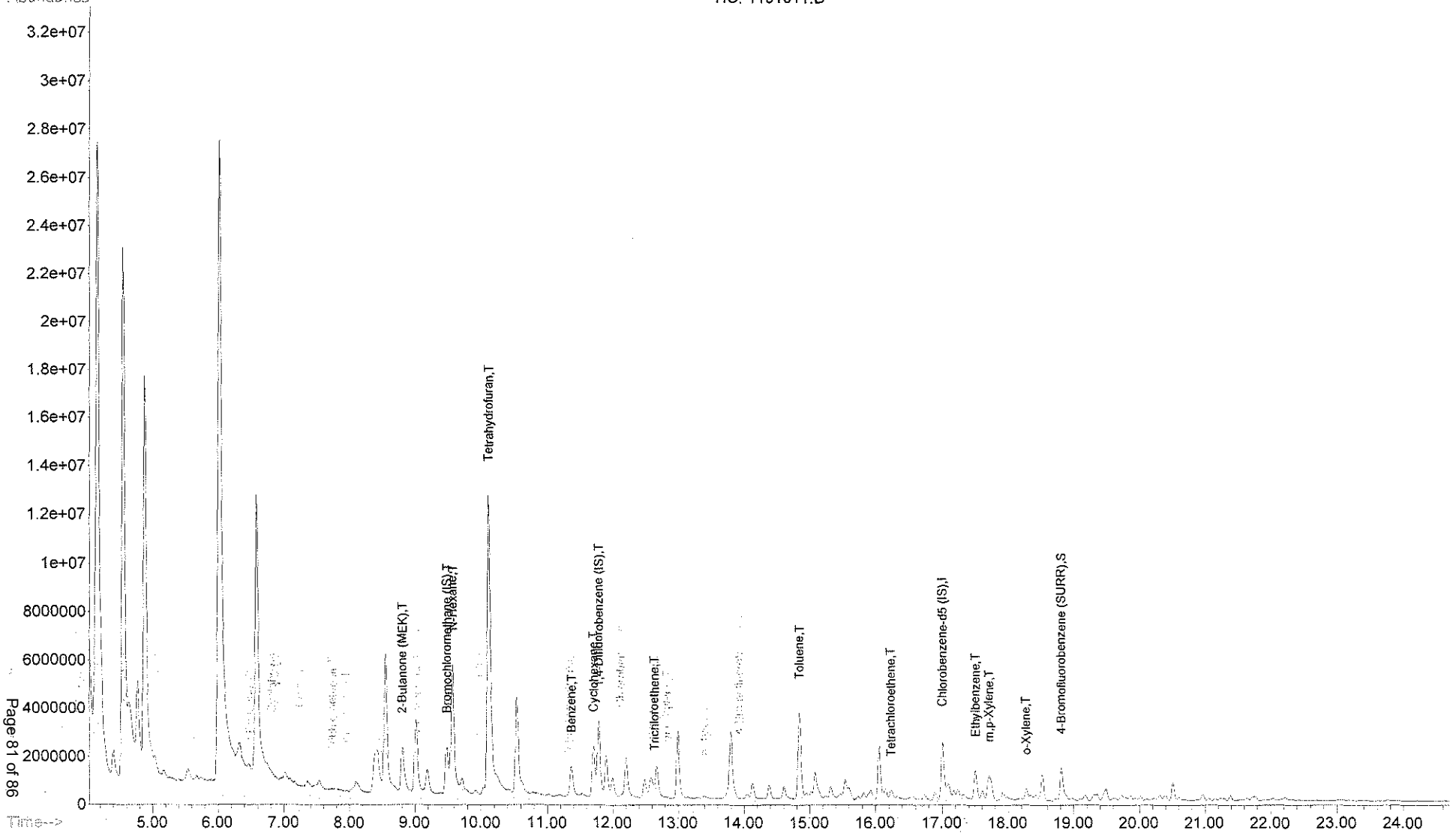
Data File : C:\HPCHEM\1\DATA\043020\1101011.D
Acq On : 30 Apr 2020 4:24 pm
Sample : 20-1228:10
Misc : TO-15 QC
MS Integration Params: rteint.p
Quant Time: May 1 10:50 2020

Vial: 11
Operator: TJG
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration

TIC: 1101011.D



ENVISIONAIR

TO-15 Certified Canister

- Cleaned Canister Verification Data

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042220\0401004.D Vial: 4
Acq On : 22 Apr 2020 12:31 pm Operator: TJG
Sample : CSI-2218 BATCH Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 14:37 2020 Quant Results File: 041420AI.RES

Quant Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

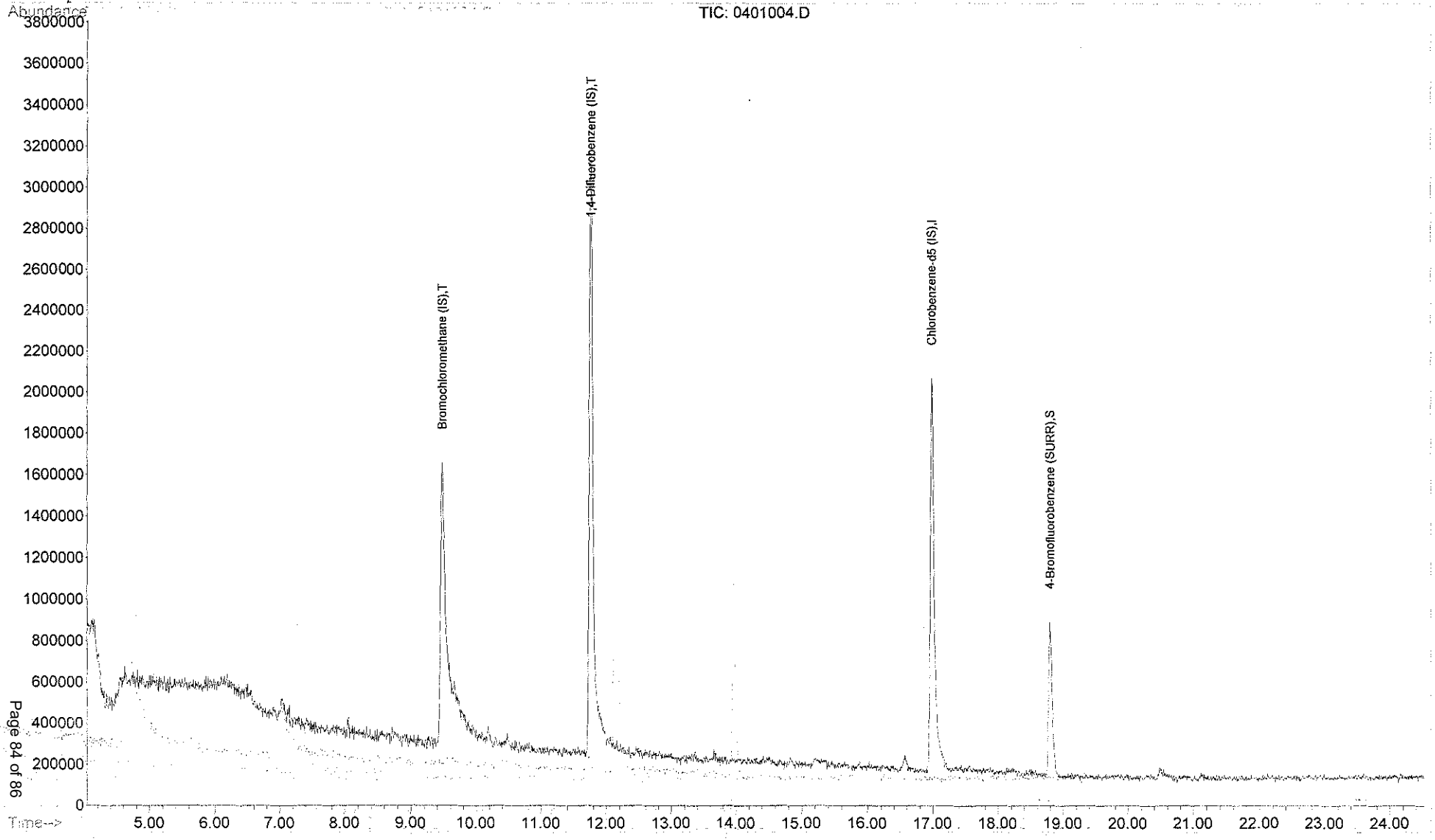
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.48	128	1958786	5.00	ppbv	0.06
25) 1,4-Difluorobenzene (IS)	11.77	114	5022107	5.00	ppbv	0.06
45) Chlorobenzene-d5 (IS)	16.99	117	2257052	5.00	ppbv	0.04
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.81	95	967077	5.09	ppbv	0.06
Spiked Amount 5.000	Range 62 - 145		Recovery = 101.80%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
0401004.D 041420AI.M Wed May 13 14:37:05 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042220\0401004.D Vial: 4
Acq On : 22 Apr 2020 12:31 pm Operator: TJG
Sample : CSI-2218 BATCH Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 14:37 2020 Quant Results File: 041420AI.RES

Method : C:\HPCHEM\1\METHODS\041420AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Wed Apr 15 08:49:57 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\032820\3601006.D Vial: 36
Acq On : 29 Mar 2020 7:26 am Operator: TJG
Sample : CSI-83944-BATCH Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 14:40 2020 Quant Results File: 031620AI.RES

Quant Method : C:\HPCHEM\1\METHODS\031620AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Mar 17 09:49:17 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.47	128	782724	5.00	ppbv	0.02
25) 1,4-Difluorobenzene (IS)	11.74	114	2542753	5.00	ppbv	0.00
45) Chlorobenzene-d5 (IS)	16.98	117	1067394	5.00	ppbv	0.02
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.80	95	489148	4.79	ppbv	0.04
Spiked Amount 5.000	Range 62 - 145		Recovery = 95.80%			
Target Compounds						Qvalue

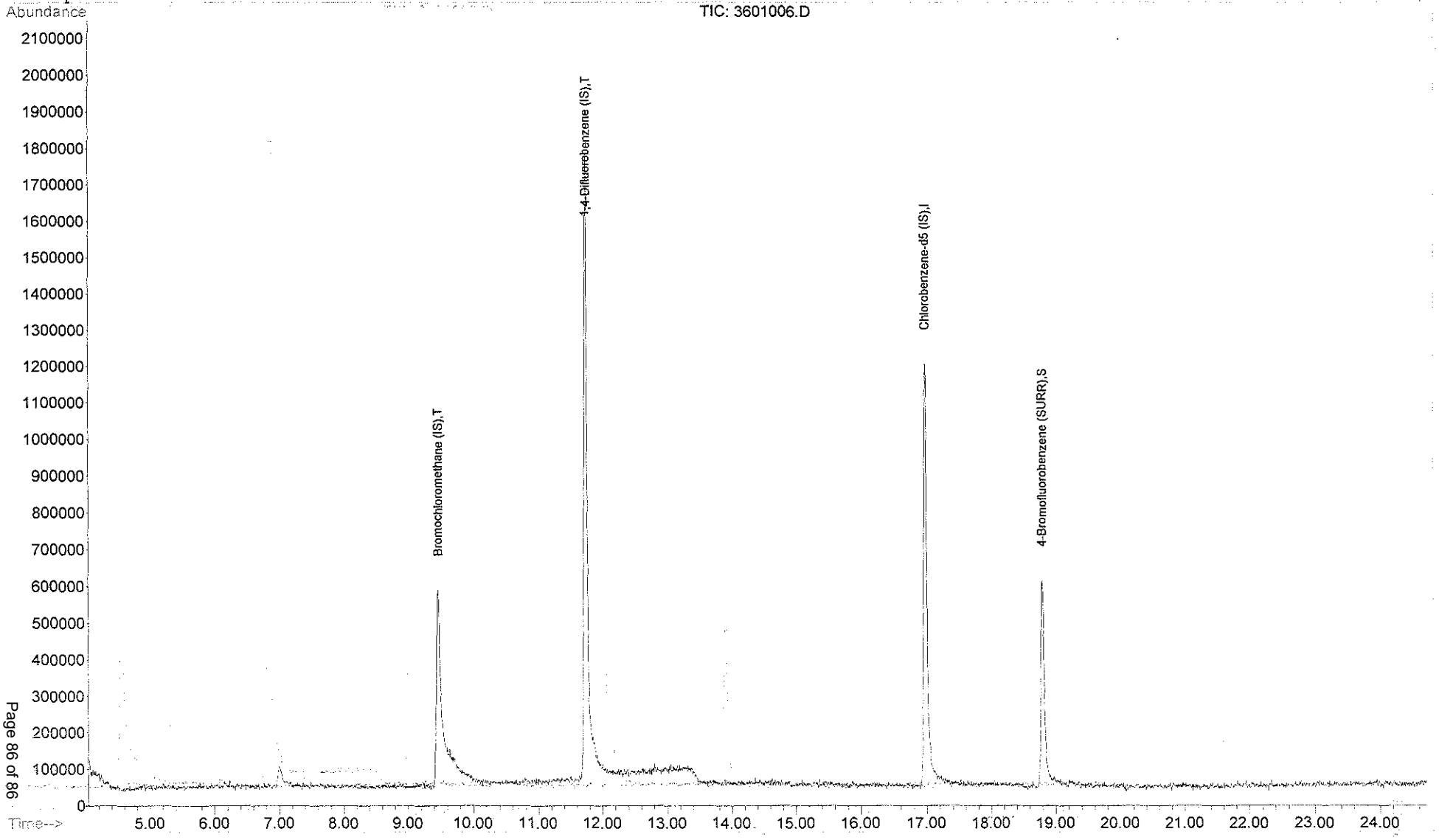
(#) = qualifier out of range (m) = manual integration
3601006.D 031620AI.M Wed May 13 14:40:40 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\032820\3601006.D
Acq On : 29 Mar 2020 7:26 am
Sample : CSI-83944-BATCH
Misc : TO-15 QC
MS Integration Params: rteint.p
Quant Time: May 13 14:40 2020

Vial: 36
Operator: TJG
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 031620AI.RES

Method : C:\HPCHEM\1\METHODS\031620AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Mar 17 09:49:17 2020
Response via : Initial Calibration



EnvisionAir
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Ms. Grace Randall
Enviroforensics
825 N. Capitol Ave.
Indianapolis, IN 46204

July 17, 2020

EnvisionAir Project Number: 2020-373
Client Project Name: 300040

Dear Ms. Randall,

Please find the attached analytical report for the samples received July 10, 2020. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

Feel free to contact me if you have any questions or comments regarding your analytical report or service.

Thank you for your business. EnvisionAir looks forward to working with you on your next project.

Yours Sincerely,

Stanley A. Hunnicutt

Stan Hunnicutt

Project Manager
EnvisionAir, LLC

EnvisionAir
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Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-373

Sample Summary

Canister Pressure / Vacuum

Laboratory Sample Number:	Sample Description:	Matrix:	START Date Collected:	START Time Collected:	End Date Collected:	End Time Collected:	Date Received:	Time Received	Initial Field (in. Hg)	Final Field (in. Hg)	Lab Received (in. Hg)
20-1687	300040-SS-1	A	7/7/20	12:00			7/10/20	14:46	-30	-3	-3
20-1688	300040-SS-5	A	7/7/20	12:24			7/10/20	14:46	-29.5	-3	-3
20-1689	300040-SS-2	A	7/7/20	13:11			7/10/20	14:46	-30	-3	-3
20-1690	300040-SS-4	A	7/7/20	13:42			7/10/20	14:46	-27	-3	-3
20-1691	300040-SS-3	A	7/7/20	13:59			7/10/20	14:46	-26.5	-3	-3

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Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-373

Analytical Method: TO-15
Analytical Batch:

Client Sample ID: 300040-SS-1
Sample Collection START Date/Time: 7/7/20 12:00
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1687
Sample Received Date/Time: 7/10/20 14:46
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-Dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	< 16.0	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	101%		
Analysis Date/Time:	7-14-20/22:24		
Analyst Initials	tjg		

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Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-373

Analytical Method: TO-15
Analytical Batch: 071320AIR

Client Sample ID: 300040-SS-5
Sample Collection START Date/Time: 7/7/20 12:24
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1688
Sample Received Date/Time: 7/10/20 14:46
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-Dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	< 16.0	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	104%		
Analysis Date/Time:	7-14-20/23:02		
Analyst Initials	tjg		

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Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-373

Analytical Method: TO-15
Analytical Batch: 071320AIR

Client Sample ID: 300040-SS-2
Sample Collection START Date/Time: 7/7/20 13:11
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1689
Sample Received Date/Time: 7/10/20 14:46
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-Dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	< 16.0	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	**18.1**	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	98%		
Analysis Date/Time:	7-15-20/00:18		
Analyst Initials	tjg		

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Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-373

Analytical Method: TO-15
Analytical Batch: 071320AIR

Client Sample ID: 300040-SS-4
Sample Collection START Date/Time: 7/7/20 13:42
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1690
Sample Received Date/Time: 7/10/20 14:46
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-Dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	< 16.0	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	88%		
Analysis Date/Time:	7-15-20/05:03		
Analyst Initials	tjg		

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Client Name: ENVIROFORENSICS

Project ID: 300040

Client Project Manager: GRACE RANDALL

EnvisionAir Project Number: 2020-373

Analytical Method: TO-15
Analytical Batch: 071320AIR

Client Sample ID: 300040-SS-3
Sample Collection START Date/Time: 7/7/20 13:59
Sample Collection END Date/Time:
EnvisionAir Sample Number: 20-1691
Sample Received Date/Time: 7/10/20 14:46
Sample Matrix: AIR

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
4-Ethyltoluene	< 4920	4920	
4-Methyl-2-pentanone (MIBK)	< 20500	20500	
1,1,1-Trichloroethane	< 5460	5460	
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1
1,1,2-Trichloroethane	< 2.10	2.10	1
1,1-Dichloroethane	< 40.5	40.5	
1,1-Dichloroethene	< 1980	1980	
1,2,4-Trichlorobenzene	< 7.42	7.42	
1,2,4-Trimethylbenzene	< 49.2	49.2	
1,2-Dibromoethane (EDB)	< 0.32	0.32	1
1,2-Dichlorobenzene	< 601	601	
1,2-Dichloroethane	< 4.05	4.05	
1,2-Dichloropropane	< 4.62	4.62	
1,3,5-Trimethylbenzene	< 49.2	49.2	
1,3-Butadiene	< 2.21	2.21	
1,3-Dichlorobenzene	< 601	601	
1,4-Dichlorobenzene	< 6.01	6.01	
1,4-Dioxane	< 18.0	18.0	
2-Butanone (MEK)	< 29500	29500	
2-Hexanone	< 205	205	
Acetone	< 23800	23800	
Benzene	< 16.0	16.0	
Benzyl Chloride	< 4.14	4.14	1
Bromodichloromethane	< 5.36	5.36	1
Bromoform	< 103	103	
Bromomethane	< 38.8	38.8	
Carbon Disulfide	< 3110	3110	
Carbon Tetrachloride	< 6.29	6.29	
Chlorobenzene	< 230	230	
Chloroethane	< 132	132	

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Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	96%		
Analysis Date/Time:	7-15-20/05:41		
Analyst Initials	tjg		

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Analytical Report

TO-15 Quality Control Data

EnvisionAir Batch Number: 071320AIR

Method Blank (MB):	MB Results (ppbv)	Reporting Limit (ppbv)	Flags
4-Ethyltoluene	< 100	100	
4-Methyl-2-pentanone (MIBK)	< 500	500	
1,1,1-Trichloroethane	< 100	100	
1,1,2,2-Tetrachloroethane	< 0.049	0.049	1
1,1,2-Trichloroethane	< 0.038	0.038	1
1,1-Dichloroethane	< 1	1	
1,1-Dichloroethene	< 50	50	
1,2,4-Trichlorobenzene	< 0.1	0.1	
1,2,4-Trimethylbenzene	< 1	1	
1,2-dibromoethane (EDB)	< 0.0041	0.0041	1
1,2-Dichlorobenzene	< 10	10	
1,2-Dichloroethane	< 0.1	0.1	
1,2-Dichloropropane	< 0.1	0.1	
1,3,5-Trimethylbenzene	< 1	1	
1,3-Butadiene	< 0.1	0.1	
1,3-Dichlorobenzene	< 10	10	
1,4-Dichlorobenzene	< 0.1	0.1	
1,4-Dioxane	< 0.5	0.5	
2-Butanone (MEK)	< 1000	1000	
2-Hexanone	< 5	5	
Acetone	< 1000	1000	
Benzene	< 0.5	0.5	
Benzyl Chloride	< 0.08	0.08	1
Bromodichloromethane	< 0.08	0.08	1
Bromoform	< 1	1	
Bromomethane	< 1	1	
Carbon Disulfide	< 100	100	
Carbon Tetrachloride	< 0.1	0.1	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
Chloroform	< 0.17	0.17	
Chloromethane	< 10	10	
cis-1,2-Dichloroethene	< 5	5	
cis-1,3-Dichloropropene	< 1	1	
Cyclohexane	< 1600	1600	
Dibromochloromethane	< 0.1	0.1	
Dichlorodifluoromethane	< 10	10	
Ethyl Acetate	< 15	15	
Ethylbenzene	< 2	2	
Hexachloro-1,3-butadiene	< 0.1	0.1	
Isooctane	< 100	100	
m,p-Xylene	< 10	10	
Methylene Chloride	< 12	12	
Methyl-tert-butyl ether	< 10	10	
N-Heptane	< 100	100	
N-Hexane	< 50	50	
o-Xylene	< 10	10	
Propylene	< 100	100	
Styrene	< 100	100	
Tetrachloroethene	< 0.47	0.47	
Tetrahydrofuran	< 100	100	

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Analytical Report

Method Blank (MB):	MB Results (ppbv)	Reporting Limit (ppbv)	Flags
Toluene	< 1000	1000	
trans-1,2-Dichloroethene	< 10	10	
trans-1,3-Dichloropropene	< 1	1	
Trichloroethene	< 0.2	0.2	
Trichlorofluoromethane	< 100	100	
Vinyl Acetate	< 50	50	
Vinyl Bromide	< 0.1	0.1	
Vinyl Chloride	< 0.5	0.5	
4-bromofluorobenzene (surrogate)	91%		
Analysis Date/Time:	7-14-20/09:34		
Analyst Initials	tjg		

LCS/LCSD	LCS Results (ppbv)	LCSD Results (ppbv)	LCS/D Conc(ppbv)	LCS Rec.	LCSD Rec.	RPD	Flag
Propylene	10.9	10.3	10	109%	103%	5.7%	
Dichlorodifluoromethane	11.4	10.1	10	114%	101%	12.1%	
Chloromethane	9.42	10.1	10	94%	101%	7.0%	
Vinyl Chloride	10.1	10.2	10	101%	102%	1.0%	
1,3-Butadiene	9.18	10.4	10	92%	104%	12.5%	
Bromomethane	9.11	10.5	10	91%	105%	14.2%	
Chloroethane	10.1	9.96	10	101%	100%	1.4%	
Vinyl Bromide	9.89	11.2	10	99%	112%	12.4%	
Trichlorofluoromethane	9.18	8.99	10	92%	90%	2.1%	
Acetone	9.77	10.2	10	98%	102%	4.3%	
1,1-Dichloroethene	8.27	8.59	10	83%	86%	3.8%	
Methylene Chloride	8.88	9.01	10	89%	90%	1.5%	
Carbon Disulfide	9.72	9.73	10	97%	97%	0.1%	
trans-1,2-Dichloroethene	9.91	10.3	10	99%	103%	3.9%	
Methyl-tert-butyl ether	10.1	10.7	10	101%	107%	5.8%	
1,1-Dichloroethane	10.5	10.8	10	105%	108%	2.8%	
Vinyl Acetate	10.2	10.6	10	102%	106%	3.8%	
N-Hexane	9.56	11.1	10	96%	111%	14.9%	
2-Butanone (MEK)	11	10.9	10	110%	109%	0.9%	
cis-1,2-Dichloroethene	11.1	10.9	10	111%	109%	1.8%	
Ethyl Acetate	10.2	10.1	10	102%	101%	1.0%	
Chloroform	10.8	10.3	10	108%	103%	4.7%	
Tetrahydrofuran	9.63	9.45	10	96%	95%	1.9%	
1,2-Dichloroethane	9.42	9.51	10	94%	95%	1.0%	
1,1,1-Trichloroethane	9.27	9.79	10	93%	98%	5.5%	
Carbon Tetrachloride	9.26	9.61	10	93%	96%	3.7%	
Benzene	9.75	10.1	10	98%	101%	3.5%	
Cyclohexane	9.6	9.43	10	96%	94%	1.8%	
1,2-Dichloropropane	9.3	9.45	10	93%	95%	1.6%	
Trichloroethene	10.1	10.4	10	101%	104%	2.9%	
Bromodichloromethane	10.4	10.5	10	104%	105%	1.0%	
1,4-Dioxane	9.89	9.64	10	99%	96%	2.6%	
Isooctane	8.98	9.16	10	90%	92%	2.0%	
N-Heptane	9.73	9.91	10	97%	99%	1.8%	
cis-1,3-Dichloropropene	10.9	10.8	10	109%	108%	0.9%	
4-Methyl-2-pentanone (MIBK)	8.98	9.11	10	90%	91%	1.4%	
trans-1,3-Dichloropropene	10.3	9.98	10	103%	100%	3.2%	
1,1,2-Trichloroethane	9.74	10	10	97%	100%	2.6%	
Toluene	9.83	9.84	10	98%	98%	0.1%	
2-Hexanone	8.9	8.89	10	89%	89%	0.1%	
Dibromochloromethane	8.9	8.75	10	89%	88%	1.7%	
1,2-dibromoethane (EDB)	9.04	9.19	10	90%	92%	1.6%	
Tetrachloroethene	9.33	9.63	10	93%	96%	3.2%	
Chlorobenzene	9.18	9.35	10	92%	94%	1.8%	
Ethylbenzene	9.84	9.9	10	98%	99%	0.6%	
m,p-Xylene	19.5	19.7	20	98%	99%	1.0%	
Bromoform	8.89	8.24	10	89%	82%	7.6%	

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Analytical Report

LCS/LCSD	LCS Results (ppbv)	LCSD Results (ppbv)	LCS/D Conc(ppbv)	LCS Rec.	LCSD Rec.	RPD	Flag
Styrene	9.6	9.72	10	96%	97%	1.2%	
1,1,2,2-Tetrachloroethane	9	9.25	10	90%	93%	2.7%	
o-Xylene	9.09	9.56	10	91%	96%	5.0%	
4-Ethyltoluene	9.26	9.12	10	93%	91%	1.5%	
1,3,5-Trimethylbenzene	9.52	9.66	10	95%	97%	1.5%	
1,2,4-Trimethylbenzene	9.51	9.34	10	95%	93%	1.8%	
1,3-Dichlorobenzene	9.44	9.51	10	94%	95%	0.7%	
Benzyl Chloride	8.7	8.82	10	87%	88%	1.4%	
1,4-Dichlorobenzene	9.09	9.01	10	91%	90%	0.9%	
1,2-Dichlorobenzene	10.8	10.9	10	108%	109%	0.9%	
1,2,4-Trichlorobenzene	9.93	9.95	10	99%	100%	0.2%	
Hexachloro-1,3-butadiene	10.5	10.5	10	105%	105%	0.0%	
4-bromofluorobenzene (surrogate)	102%	105%					
Analysis Date/Time:	7-14-20/07:39	7-14-20/08:25					
Analyst Initials	tjg	tjg					

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Flag Number	Comments
1	Reporting limit is supported by MDL. TJG

EnvisionAir Proj#: 2020-373 Page 1 of 1

CHAIN OF CUSTODY RECORD

EnvisionAir | 1441 Sadlier Circle West Drive | Indianapolis, IN 46239 | Phone: (317) 351-0885 | Fax: (317) 351-0882

Client: EnviroForensics	P.O. Number: 2020-1719
Report Address: grandall@enviroforensics.com	Project Name or Number: 300040
Report To: G. Randall	Sampled by: B. Kappen
Phone: 317-972-7870	QA/QC Required: (circle if applicable) Level III Level IV
Invoice Address: accountspayable@enviroforensics.com	Reporting Units needed: (circle) ug/m³ mg/m³ PPBV PPMV
Desired TAT: (Please Circle One) 1 day 2 days 3 days Std (5 bus. days)	Media type: 1LC = 1 Liter Canister, 6LC = 6 Liter Canister, TB = Tedlar Bag, TD = Thermal Desorption Tube

REQUESTED PARAMETERS

TO-15 Full List

TO-15 Short List (Specify in notes)

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Sampling Type:
Soil-Gas: ☐
Sub-Slab: ☒
Indoor-Air: ☐

Canister Pressure / Vacuum

Air Sample ID	Media Type (see code above)	Coll. Date (Grab/Comp Start)	Coll. Time (Grab/Comp Start)	Coll. Date (Comp. End)	Coll. Time (Comp. End)	TO-15 Full List	TO-15 Short List (Specify in notes)			Canister Serial #	Flow Controller Serial #	Initial Field (in. Hg)	Final Field (in. Hg)	Lab Received (in. Hg)	EnvisionAir Sample Number
300040-SS-1	1LC	7/7/20	1200			X				83924	0063	-30	-3	-3	20-1687
300040-SS-5	1LC	7/7/20	1224			X				2214	0072	-29.5	-3	-3	20-1688
300040-SS-2	1LC	7/7/20	1311			X				83734	0089	-30	-3	-3	20-1689
300040-SS-4	1LC	7/7/20	1342			X				83739	0112	-27	-3	-3	20-1690
300040-SS-3	1LC	7/7/20	1359			X				2235	0127	-26.5	-3	-3	20-1691

Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	7/9/20	1630	FedEx	7/9/20	1630
			[signature]	7/10/20	1446

2020-373

ENVISIONAIR

TO-15 VOC

- Sequence Log

Injection Log

Directory: C:\HPCHEM\1\DATA\071320

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0101001.D	1.	BFB/CCV 10PPBV	TO-15 QC	13 Jul 2020 07:23
2	2	0201002.D	1.	BFB/CCV 10PPBV	TO-15 QC	13 Jul 2020 08:09
3	3	0301003.D	1.	LCS 10PPBV	TO-15 QC	13 Jul 2020 08:55
4	4	0401004.D	1.	LCSD-10PPBV	TO-15 QC	13 Jul 2020 09:41
5	5	0501005.D	1.	CSI	TO-15 QC	13 Jul 2020 10:16
6	7	0701006.D	1.	20-1646:200	TO-15 QC	13 Jul 2020 10:54
7	8	0801007.D	1.	20-1648:200	TO-15 QC	13 Jul 2020 11:33
8	9	0901008.D	1.	METHOD BLANK	TO-15 QC	13 Jul 2020 12:08
9	10	1001009.D	1.	20-1643:10 RR CON CLEAN	TO-15 QC	13 Jul 2020 12:43
10	11	1101010.D	1.	20-1645:10 RR CON CLEAN	TO-15 QC	13 Jul 2020 13:18
11	12	1201011.D	1.	20-1649 RR CONFIRMATION (LOW ISTD)	TO-15 QC	13 Jul 2020 13:59
12	13	1801012.D	1.	20-1661:20 n-Heptane dil	TO-15 QC	13 Jul 2020 14:37
13	14	1401013.D	1.	20-1663:20 n-Heptane dil	TO-15 QC	13 Jul 2020 15:16
14	15	1501014.D	1.	20-1665:20 n-Heptane dil	TO-15 QC	13 Jul 2020 15:55
15	16	1601015.D	1.	20-1667:20 n-Heptane dil dup	TO-15 QC	13 Jul 2020 16:35
16	17	1701016.D	1.	LCSDD-10PPBV	TO-15 QC	13 Jul 2020 17:20
17	18	1801017.D	1.	20-1677 OA	TO-15 QC	13 Jul 2020 17:59
18	19	1901018.D	1.	20-1678	TO-15 QC	13 Jul 2020 18:40
19	20	2001019.D	1.	20-1679	TO-15 QC	13 Jul 2020 19:21
20	21	2101020.D	1.	20-1680	TO-15 QC	13 Jul 2020 20:02
21	22	2201021.D	1.	20-1681	TO-15 QC	13 Jul 2020 20:43
22	23	2301022.D	1.	20-1682	TO-15 QC	13 Jul 2020 21:27
23	24	2401023.D	1.	20-1683	TO-15 QC	13 Jul 2020 22:10
24	25	2501024.D	1.	20-1684	TO-15 QC	13 Jul 2020 22:52
25	26	2601025.D	1.	20-1685	TO-15 QC	13 Jul 2020 23:35
26	27	2701026.D	1.	20-1686 DUP	TO-15 QC	14 Jul 2020 00:16
27	28	2801027.D	1.	LCSDD-10PPBV	TO-15 QC	14 Jul 2020 01:01
28	29	2901028.D	1.	CSI	TO-15 QC	14 Jul 2020 01:36
29	30	3001029.D	1.	CSI	TO-15 QC	14 Jul 2020 02:11
30	31	3101030.D	1.	CSI	TO-15 QC	14 Jul 2020 02:45
31	32	3201031.D	1.	CSI	TO-15 QC	14 Jul 2020 03:20
32	33	3301032.D	1.	CSI	TO-15 QC	14 Jul 2020 03:55
33		3401033.D	1.			
34	35	3501001.D	1.	20-1685:200	TO-15 QC	14 Jul 2020 04:42
35	36	3601002.D	1.	20-1666 RR	TO-15 QC	14 Jul 2020 05:23
36	37	3701003.D	1.	BFB TUNE	TO-15 QC	14 Jul 2020 06:08
37	38	3801004.D	1.	BFB/CCV-10PPBV	TO-15 QC	14 Jul 2020 06:53
38	39	3901005.D	1.	LCS-10PPBV	TO-15 QC	14 Jul 2020 07:39
39	40	4001006.D	1.	LCSD-10PPBV	TO-15 QC	14 Jul 2020 08:25
40	41	4101007.D	1.	CSI	TO-15 QC	14 Jul 2020 08:59
41	42	4201008.D	1.	MB	TO-15 QC	14 Jul 2020 09:34
42	43	4301009.D	1.	20-1693 RUSH	TO-15 QC	14 Jul 2020 10:15
43	44	4401010.D	1.	20-1694 RUSH	TO-15 QC	14 Jul 2020 10:57
44	45	4501011.D	1.	20-1695 RUSH	TO-15 QC	14 Jul 2020 11:38
45	46	4601012.D	1.	20-1696 RUSH	TO-15 QC	14 Jul 2020 12:18
46	47	4701013.D	1.	20-1695 RUSH RR	TO-15 QC	14 Jul 2020 12:57
47	48	4801014.D	1.	20-1697 AA	TO-15 QC	14 Jul 2020 13:34
48	49	4901015.D	1.	20-1698	TO-15 QC	14 Jul 2020 14:14
49	50	5001016.D	1.	20-1699	TO-15 QC	14 Jul 2020 14:54
50	51	5101017.D	1.	20-1700 DUP	TO-15 QC	14 Jul 2020 15:35
51	52	5201018.D	1.	LCSDD-10PPBV	TO-15 QC	14 Jul 2020 16:20
52	53	5301019.D	1.	LCSDD-10PPBV	TO-15 QC	14 Jul 2020 17:04
53	54	5401020.D	1.	CSI	TO-15 QC	14 Jul 2020 17:40
54	55	5501021.D	1.	CSI	TO-15 QC	14 Jul 2020 18:16

Injection Log

Directory: C:\HPCHEM\1\DATA\071320

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
55	56	5601022.D	1.	20-1701 RUSH	TO-15 QC	14 Jul 2020 18:57
56	57	5701023.D	1.	20-1702 RUSH	TO-15 QC	14 Jul 2020 19:40
57	58	5801024.D	1.	20-1703 RUSH	TO-15 QC	14 Jul 2020 20:25
58	59	5901025.D	1.	20-1704 RUSH	TO-15 QC	14 Jul 2020 21:07
59	60	6001026.D	1.	20-1687:10	TO-15 QC	14 Jul 2020 21:46
60	61	6101027.D	1.	20-1687:10 RR	TO-15 QC	14 Jul 2020 22:24
61	62	6201028.D	1.	20-1688:10	TO-15 QC	14 Jul 2020 23:02
62	63	6301029.D	1.	20-1688:40	TO-15 QC	14 Jul 2020 23:40
63	64	6401030.D	1.	20-1689:10	TO-15 QC	15 Jul 2020 00:18
64	65	6501031.D	1.	20-1689:40	TO-15 QC	15 Jul 2020 00:56
65	66	6601032.D	1.	LCSDD-10PPBV	TO-15 QC	15 Jul 2020 01:42
66	67	6701033.D	1.	20-1699 RR	TO-15 QC	15 Jul 2020 02:18
67	68	6801034.D	1.	CSI	TO-15 QC	15 Jul 2020 02:54
68	69	6901035.D	1.	CSI	TO-15 QC	15 Jul 2020 03:30
69	70	7001036.D	1.	20-1690:10	TO-15 QC	15 Jul 2020 04:20
70	71	7101037.D	1.	20-1690:10	TO-15 QC	15 Jul 2020 05:03
71	72	7201038.D	1.	20-1691:10	TO-15 QC	15 Jul 2020 05:41
72	73	7301039.D	1.	20-1692:10	TO-15 QC	15 Jul 2020 06:20
73	74	7401040.D	1.	CSI	TO-15 QC	15 Jul 2020 06:57
74	75	7501041.D	1.	CSI	TO-15 QC	15 Jul 2020 07:32
75	76	7601042.D	1.	CSI	TO-15 QC	15 Jul 2020 08:09
76	77	7701043.D	1.	CSI	TO-15 QC	15 Jul 2020 08:46
77		7801044.D	1.			

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TO-15 VOC
Initial Calibration Data

- Tune
- Initial Calibration Summary
- Initial Calibration Quant Reports
- Initial Calibration Verification Summary

Injection Log

Directory: C:\HPCHEM\1\DATA\070220C

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0101001.D	1.	BFB TUNE PRE-CURVE	TO-15 QC	2 Jul 2020 09:14
2	2	0201002.D	1.	0.05PPBV TO-15	TO-15 QC	2 Jul 2020 09:54
3	3	0301003.D	1.	CLEANOUT RUN	TO-15 QC	2 Jul 2020 10:38
4	4	0401004.D	1.	0.5PPBV TO-15	TO-15 QC	2 Jul 2020 11:17
5	5	0501005.D	1.	0.1PPBV TO-15	TO-15 QC	2 Jul 2020 11:54
6	6	0601006.D	1.	1PPBV TO-15	TO-15 QC	2 Jul 2020 12:38
7	7	0701007.D	1.	2PPBV TO-15	TO-15 QC	2 Jul 2020 13:16
8	8	0801008.D	1.	5PPBV TO-15	TO-15 QC	2 Jul 2020 13:57
9	9	0901009.D	1.	10PPBV TO-15	TO-15 QC	2 Jul 2020 14:40
10	10	1001010.D	1.	5PPBV TO-15 RR	TO-15 QC	2 Jul 2020 15:21
11	11	1101011.D	1.	CB	TO-15 QC	2 Jul 2020 16:12
12	12	1201012.D	1.	20PPBV TO-15	TO-15 QC	2 Jul 2020 17:02
13	13	1301013.D	1.	10PPBV TO-15 ICV/LCS/CCV	TO-15 QC	2 Jul 2020 17:46
14	14	1401014.D	1.	10PPBV TO-15 LCS	TO-15 QC	2 Jul 2020 18:30
15	15	1501015.D	1.	10PPBV TO-15 LCSD	TO-15 QC	2 Jul 2020 19:14
16	16	1601016.D	1.	MB	TO-15 QC	2 Jul 2020 19:50
17	17	1701017.D	1.	CSI-20669	TO-15 QC	2 Jul 2020 20:24
18	18	1801018.D	1.	20-1564	TO-15 QC	2 Jul 2020 20:58
19	19	1901019.D	1.	20-1566	TO-15 QC	2 Jul 2020 21:32
20	20	2001020.D	1.	20-1568	TO-15 QC	2 Jul 2020 22:06
21	21	2101021.D	1.	20-1570	TO-15 QC	2 Jul 2020 22:40
22	22	2201022.D	1.	20-1572 DUP	TO-15 QC	2 Jul 2020 23:14
23	23	2301023.D	1.	20-1580	TO-15 QC	2 Jul 2020 23:48
24	24	2401024.D	1.	20-1581	TO-15 QC	3 Jul 2020 00:23
25	25	2501025.D	1.	20-1582	TO-15 QC	3 Jul 2020 01:03
26	26	2601026.D	1.	20-1583	TO-15 QC	3 Jul 2020 01:47
27	27	2701027.D	1.	20-1584	TO-15 QC	3 Jul 2020 02:27
28	28	2801028.D	1.	LCSD-10PPBV	TO-15 QC	3 Jul 2020 03:12
29	29	2901029.D	1.	20-1585	TO-15 QC	3 Jul 2020 03:53
30	30	3001030.D	1.	20-1586	TO-15 QC	3 Jul 2020 04:34
31	31	3101031.D	1.	CSI-91578	TO-15 QC	3 Jul 2020 05:11
32	32	3201032.D	1.	CSI-10332	TO-15 QC	3 Jul 2020 05:47
33	33	3301033.D	1.	CSI-4684	TO-15 QC	3 Jul 2020 06:24
34	34	3401034.D	1.	CSI-B2010	TO-15 QC	3 Jul 2020 07:01
35	35	3501035.D	1.	CSI-10348	TO-15 QC	3 Jul 2020 07:37
36	36	3601036.D	1.	CSI-91572	TO-15 QC	3 Jul 2020 08:14
37	37	3701037.D	1.	CSI-4659	TO-15 QC	3 Jul 2020 08:51
38	38	3801001.D	1.	20-1584 RR	TO-15 QC	3 Jul 2020 09:36
39	39	3901002.D	1.	20-1590	TO-15 QC	3 Jul 2020 10:18
40	40	4001003.D	1.	20-1591	TO-15 QC	3 Jul 2020 10:59
41	41	4101004.D	1.	20-1592	TO-15 QC	3 Jul 2020 11:42
42	42	4201005.D	1.	20-1593	TO-15 QC	3 Jul 2020 12:23
43	43	4301006.D	1.	20-1600 AA	TO-15 QC	3 Jul 2020 13:02
44	44	4401007.D	1.	20-1596	TO-15 QC	3 Jul 2020 13:43
45	45	4501008.D	1.	20-1597	TO-15 QC	3 Jul 2020 14:24
46	46	4601009.D	1.	20-1598	TO-15 QC	3 Jul 2020 15:06
47	47	4701010.D	1.	20-1599	TO-15 QC	3 Jul 2020 15:49
48	48	4801011.D	1.	20-1604 DUP	TO-15 QC	3 Jul 2020 16:31
49	49	4901012.D	1.	20-1607	TO-15 QC	3 Jul 2020 17:12
50	50	5001013.D	1.	LCS-10PPBV	TO-15 QC	3 Jul 2020 17:57
51	51	5101014.D	1.	CSI-14886	TO-15 QC	3 Jul 2020 18:34
52	52	5201015.D	1.	CSI-4695	TO-15 QC	3 Jul 2020 19:11
53	53	5301016.D	1.	CSI-4696	TO-15 QC	3 Jul 2020 19:47
54	54	5401017.D	1.	CSI-16028	TO-15 QC	3 Jul 2020 20:24
55	55	5501018.D	1.	CSI-17895	TO-15 QC	3 Jul 2020 21:00

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration

Calibration Files
10 =0901009.D .5 =0401004.D 5 =1001010.D
1 =0601006.D 0.05 =0201002.D 20 =1201012.D

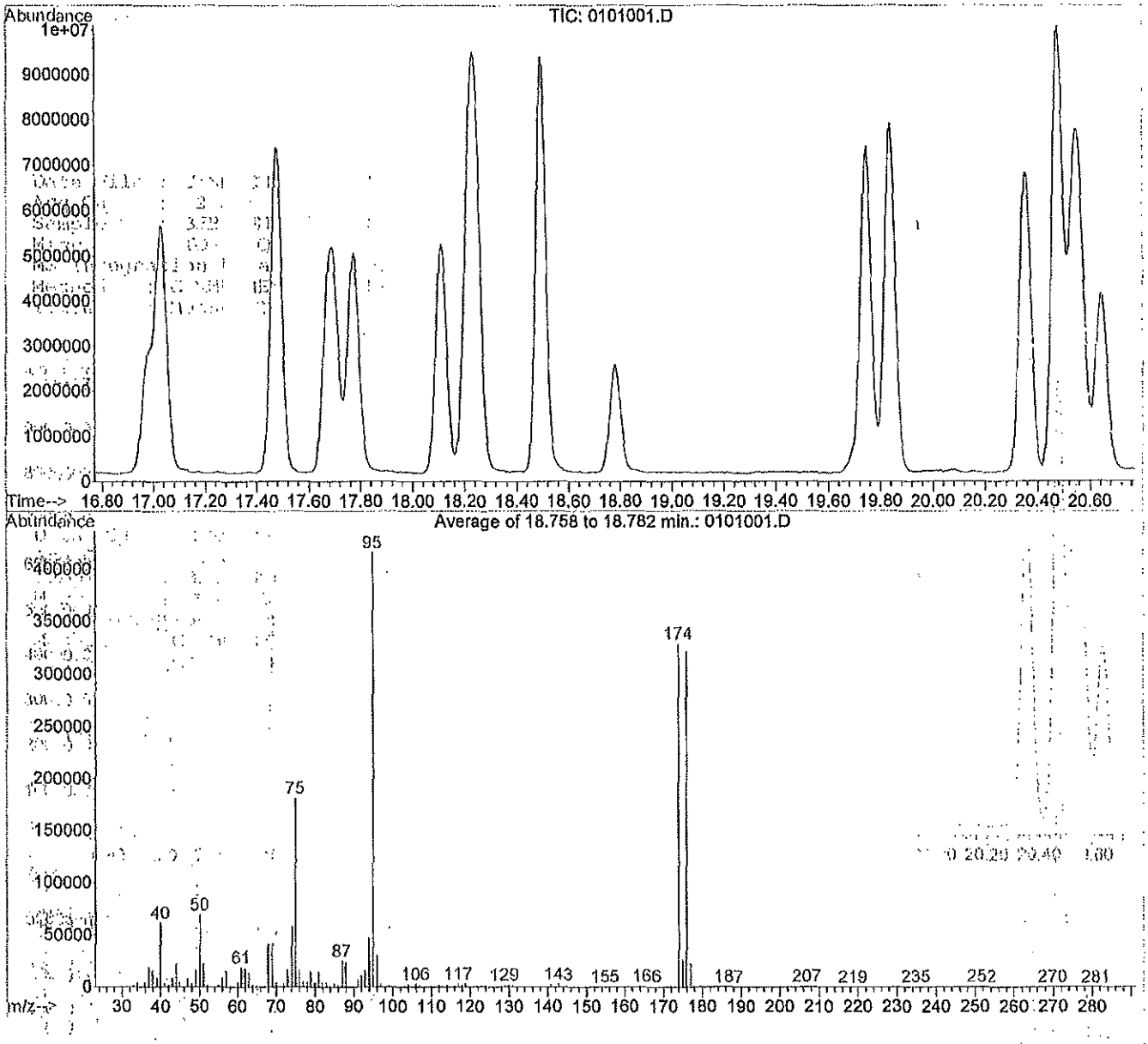
		Compound	10	.5	5	1	0.05	20	Avg	%RSD
1)	T	Bromochloromethane (I	ISTD							
2)	T	Propylene	0.537	0.680	0.527	0.712	0.573	0.633	0.616	11.62
3)	T	Dichlorodifluoromet	2.699	3.437	2.952	2.666	3.036	3.082	3.096	13.03
4)	T	Chloromethane	1.127	1.387	1.242	1.458	1.408	1.178	1.316	9.96
5)	T	Vinyl Chloride	0.990	1.143	0.979	0.889	1.073	1.050	1.028	8.02
6)	T	1,3-Butadiene	0.400	0.540	0.483	0.504	0.558	0.415	0.475	13.26
7)	T	Bromomethane	0.672	0.762	0.729	0.942	0.757	0.751	0.752	12.61
8)	T	Chloroethane	0.262	0.326	0.292	0.371	0.325	0.294	0.310	11.22
9)	T	Vinyl Bromide	0.462	0.679	0.447	0.536	0.480	0.575	0.535	15.13
10)	T	Trichlorofluorometh	2.723	3.468	3.064	3.503	3.098	2.976	3.116	8.96
11)	T	Acetone	1.215	1.341	1.262	1.385	1.281	1.426	1.330	5.98
12)		Isopropyl Alcohol (	1.683	1.322	1.834	1.547	1.848	1.826	1.741	14.70
13)		1,1-Dichloroethene	1.860	2.274	2.141	2.142	2.140	1.971	2.055	7.80
14)	T	Methylene Chloride	1.219	1.249	1.277	1.088	1.380	1.313	1.312	13.53
15)	T	Carbon Disulfide	3.622	3.831	3.836	3.175	3.332	3.817	3.704	10.15
16)	T	trans-1,2-Dichloroe	1.233	1.137	1.208	1.244	1.710	1.379	1.319	14.35
17)	T	Methyl-tert-butyl e	3.339	3.725	3.575	3.636	2.918	3.410	3.468	8.07
18)	T	1,1-Dichloroethane	2.545	3.040	2.901	3.250	2.815	2.721	2.948	9.86
19)	T	Vinyl Acetate	2.808	3.305	2.834	2.939	3.303	3.115	3.136	9.70
20)	T	N-Hexane	2.127	2.387	2.412	2.581	2.436	2.074	2.330	7.69
21)	T	2-Butanone (MEK)	2.642	2.892	2.426	3.058	2.781	2.784	2.832	9.47
22)	T	cis-1,2-Dichloroeth	1.811	1.714	2.305	1.686	1.740	2.053	1.925	12.86
23)	T	Ethyl Acetate	4.301	4.968	4.573	5.478	4.724	4.061	4.803	11.57
24)	T	Chloroform	2.968	3.542	3.156	3.472	3.315	2.910	3.178	8.52
25)	T	1,4-Difluorobenzene (	ISTD							
26)	T	Tetrahydrofuran	0.330	0.297	0.330	0.322	0.341	0.312	0.325	4.84
27)	T	1,2-Dichloroethane	0.324	0.355	0.310	0.299	0.367	0.307	0.332	8.70
28)	T	1,1,1-Trichloroetha	0.495	0.516	0.502	0.509	0.618	0.456	0.512	9.89
29)	T	1,1-Dichloropropene	0.597	0.418	0.595	0.512	0.620	0.565	0.538	14.28
30)	T	Carbon Tetrachlorid	0.517	0.557	0.543	0.562	0.674	0.475	0.546	11.98
31)	T	Benzene	0.888	0.879	0.914	0.911	1.052	0.826	0.890	10.24
32)	T	Cyclohexane	0.463	0.449	0.489	0.475	0.516	0.450	0.467	6.36
33)	T	1,2-Dichloropropane	0.341	0.342	0.365	0.367	0.412	0.312	0.366	10.70
34)	T	Trichloroethene	0.375	0.339	0.378	0.359	0.445	0.338	0.366	10.74
35)	T	Bromodichloromethan	0.615	0.647	0.663	0.667	0.660	0.574	0.627	7.13
36)	T	1,4-Dioxane	0.174	0.145	0.165	0.135	0.153	0.162	0.154	8.92
37)	T	Isooctane	1.473	1.638	1.601	1.666	1.893	1.206	1.578	13.20
38)	T	N-Heptane	0.472	0.529	0.422	0.506	0.613	0.413	0.498	13.95
39)	T	cis-1,3-Dichloropro	0.597	0.526	0.595	0.512	0.596	0.565	0.557	7.45
40)	T	4-Methyl-2-Penanone	0.697	0.744	0.703	0.741	0.941	0.622	0.762	14.76
41)	T	trans-1,3-Dichlorop	0.425	0.383	0.429	0.353	0.431	0.420	0.401	8.25
42)	T	1,1,2-Trichloroetha	0.343	0.336	0.343	0.356	0.368	0.314	0.337	7.25
43)	T	Toluene	0.989	0.928	0.905	1.019	1.260	0.873	0.980	13.75
44)	T	2-Hexanone	0.610	0.582	0.592	0.595	0.791	0.581	0.638	12.89
45)	I	Chlorobenzene-d5 (IS)	ISTD							
46)	T	Dibromochloromethan	0.902	0.995	0.895	0.964	1.135	0.866	0.948	10.03
47)	T	1,2-Dibromoethane (	0.760	0.734	0.758	0.761	0.864	0.774	0.767	6.05
48)	T	Tetrachloroethene	0.624	0.707	0.642	0.681	0.850	0.621	0.677	12.28
49)	T	Chlorobenzene	1.028	1.114	1.065	1.112	1.004	1.009	1.032	7.35
50)	T	Ethylbenzene	1.760	1.861	1.822	1.897	2.270	1.636	1.800	15.37
51)	T	m,p-Xylene	0.599	0.596	0.634	0.651	0.793	0.606	0.622	15.28
52)	T	Bromoform	0.737	0.804	0.751	0.818	0.897	0.750	0.771	10.51
53)	T	Styrene	0.854	0.836	0.725	0.677	0.762	0.706	0.788	12.56
54)	T	1,1,2,2-Tetrachloro	1.101	1.315	1.128	1.320	1.165	1.056	1.176	8.72
55)	T	o-Xylene	0.571	0.623	0.570	0.606	0.590	0.561	0.560	13.23
56)	S	4-Bromofluorobenzen	0.572	0.495	0.556	0.526	0.493	0.649	0.550	9.74
57)	T	4-Ethyltoluene	1.584	1.438	1.630	1.745	2.118	1.583	1.679	12.79
58)	T	1,3,5-Trimethylbenz	1.402	1.360	1.479	1.733	1.385	1.334	1.431	10.01
59)	T	1,2,4-Trimethylbenz	1.261	1.328	1.305	1.448	1.448	1.256	1.320	7.34
60)	T	1,3-Dichlorobenzene	0.795	0.572	0.707	0.749	0.691	0.807	0.693	15.29
61)	T	Benzyl Chloride	0.804	0.764	0.645	0.791	0.692	0.852	0.753	9.43
62)	T	1,4-Dichlorobenzene	0.326	0.293	0.286	0.274	0.292	0.357	0.296	12.62
63)	T	1,2-Dichlorobenzene	0.672	0.654	0.675	0.658	0.552	0.621	0.615	12.32
64)	T	1,2,4-Trichlorobenz	0.113	0.092	0.098	0.107	0.091	0.115	0.104	10.35

65)		Naphthalene	0.176	0.152	0.146	0.190	0.141	0.181	0.163	11.69
66)	T	Hexachloro-1,3-buta	0.164	0.140	0.165	0.148	0.162	0.177	0.156	9.36

(#) = Out of Range ### Number of calibration levels exceeded format ###

070220AI.M Wed Jul 15 09:53:11 2020

Data File : C:\HPCHEM\1\DATA\070220C\0101001.D Vial: 1
Acq On : 2 Jul 2020 9:14 am Operator: TJG
Sample : BFB TUNE PRE-CURVE Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION



Spectrum Information: Average of 18.758 to 18.782 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.6	69230	PASS
75	95	30	60	43.5	181054	PASS
95	95	100	100	100.0	415872	PASS
96	95	2	9	7.2	29754	PASS
173	174	0.00	2	0.2	746	PASS
174	95	50	100	79.0	328474	PASS
175	174	5	9	7.7	25154	PASS
176	174	95	101	97.7	321024	PASS
177	176	5	9	7.0	22364	PASS

0101001.D 070220AI.M Wed Jul 15 09:53:20 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0201002.D Vial: 2
Acq On : 2 Jul 2020 9:54 am Operator: TJG
Sample : 0.05PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 10:34 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Jun 23 23:28:59 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.47	128	661303	5.00	ppbv		-0.05
25) 1,4-Difluorobenzene (IS)	11.75	114	3261985	5.00	ppbv		-0.05
45) Chlorobenzene-d5 (IS)	16.97	117	2901163	5.00	ppbv		-0.04
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.79	95	1430105	4.27	ppbv		-0.03
Spiked Amount 5.000	Range 62 - 145		Recovery = 85.40%				
Target Compounds							Qvalue
2) Propylene	4.13	39	5290	0.04	ppbv		
3) Dichlorodifluoromethane	4.22	85	28080	0.05	ppbv		91
4) Chloromethane	4.42	50	9311	0.05	ppbv		93
5) Vinyl Chloride	4.66	62	7699	0.06	ppbv		93
6) 1,3-Butadiene	4.81	39	3688m	0.04	ppbv		
7) Bromomethane	5.12	94	5727	0.04	ppbv	#	68
8) Chloroethane	5.32	64	2550	0.04	ppbv	#	67
9) Vinyl Bromide	5.70	106	6171	0.04	ppbv		
10) Trichlorofluoromethane	6.16	101	20488	0.04	ppbv	#	94
11) Acetone	6.01	43	10471	0.04	ppbv		
12) Isopropyl Alcohol (IPA)	6.43	45	8963	0.04	ppbv		
13) 1,1-Dichloroethene	6.88	61	14155	0.05	ppbv	#	71
14) Methylene Chloride	7.01	84	8123	0.05	ppbv		
15) Carbon Disulfide	7.36	76	17036	0.05	ppbv		
16) trans-1,2-Dichloroethene	8.10	96	11307	0.06	ppbv		
17) Methyl-tert-butyl ether	8.47	73	19294	0.04	ppbv	#	85
18) 1,1-Dichloroethane	8.31	63	18615	0.04	ppbv	#	84
19) Vinyl Acetate	8.60	43	21841m	0.04	ppbv		
20) N-Hexane	9.54	57	16108	0.05	ppbv		
21) 2-Butanone (MEK)	8.72	43	21392	0.04	ppbv		
22) cis-1,2-Dichloroethene	9.28	61	13395	0.05	ppbv	#	66
23) Ethyl Acetate	9.54	43	40878m	0.04	ppbv		
24) Chloroform	9.62	83	21920	0.05	ppbv	#	26
26) Tetrahydrofuran	10.21	42	15406	0.04	ppbv		
27) 1,2-Dichloroethane	10.50	62	11976	0.04	ppbv	#	53
28) 1,1,1-Trichloroethane	10.80	97	20155	0.06	ppbv		88
29) 1,1-Dichloropropene	13.62	75	20211	0.05	ppbv		
30) Carbon Tetrachloride	11.51	117	22000	0.06	ppbv	#	88
31) Benzene	11.34	78	34330	0.06	ppbv		92
32) Cyclohexane	11.67	56	16839	0.05	ppbv	#	79
33) 1,2-Dichloropropane	12.30	63	13431	0.06	ppbv	#	39
34) Trichloroethene	12.59	95	14509	0.06	ppbv		94
35) Bromodichloromethane	12.52	83	21526	0.05	ppbv		
36) 1,4-Dioxane	12.70	88	4994	0.05	ppbv		
37) Isooctane	12.66	57	61746	0.05	ppbv	#	90
38) N-Heptane	12.96	43	27248	0.05	ppbv	#	92
39) cis-1,3-Dichloropropene	13.62	75	19434	0.04	ppbv		
40) 4-Methyl-2-Penanone (MIBK)	13.75	43	30707	0.04	ppbv		
41) trans-1,3-Dichloropropene	14.32	75	14053	0.05	ppbv		
42) 1,1,2-Trichloroethane	14.48	83	11993	0.06	ppbv		
43) Toluene	14.81	91	48139	0.07	ppbv	#	90
44) 2-Hexanone	15.21	43	25801m	0.05	ppbv		
46) Dibromochloromethane	15.32	129	32939	0.06	ppbv		97
47) 1,2-Dibromoethane (EDB)	15.64	107	25077	0.05	ppbv		
48) Tetrachloroethene	16.20	166	24661	0.06	ppbv		
49) Chlorobenzene	17.03	112	47017	0.07	ppbv		93
50) Ethylbenzene	17.47	91	65864	0.05	ppbv	#	96
51) m,p-Xylene	17.68	91	46039	0.11	ppbv	#	86
52) Bromoform	17.78	173	26022	0.05	ppbv		
53) Styrene	18.12	104	31197	0.06	ppbv		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0201002.D Vial: 2
Acq On : 2 Jul 2020 9:54 am Operator: TJG
Sample : 0.05PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 10:34 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Jun 23 23:28:59 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

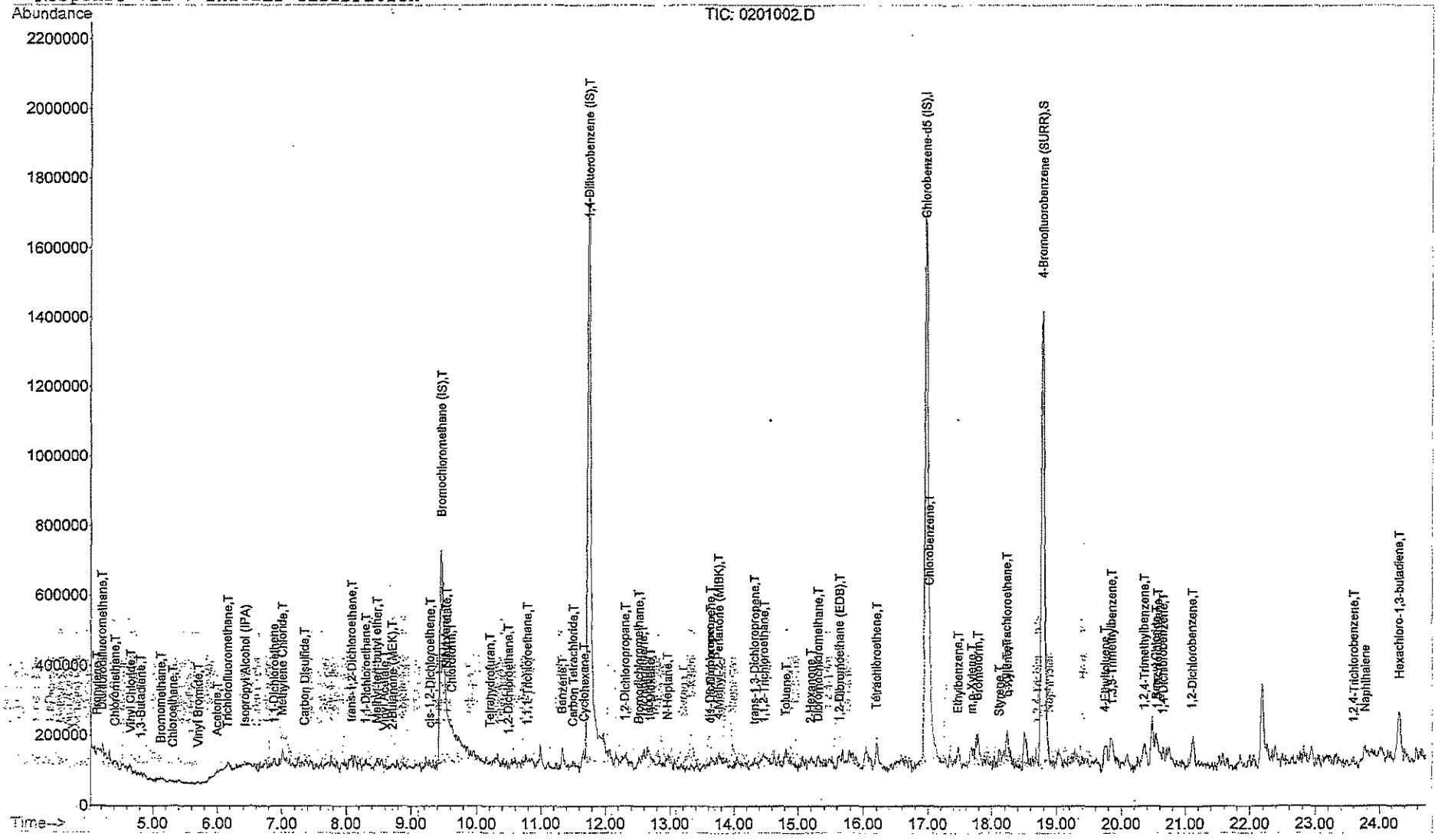
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.23	83	33794	0.05 ppbv	
55) o-Xylene	18.24	106	23274	0.06 ppbv	97
57) 4-Ethyltoluene	19.75	105	61448	0.05 ppbv	97
58) 1,3,5-Trimethylbenzene	19.84	105	51190	0.05 ppbv	
59) 1,2,4-Trimethylbenzene	20.36	105	55685m	0.06 ppbv	
60) 1,3-Dichlorobenzene	20.57	146	23334	0.05 ppbv	
61) Benzyl Chloride	20.53	91	26986	0.06 ppbv	
62) 1,4-Dichlorobenzene	20.65	148	10482	0.06 ppbv	
63) 1,2-Dichlorobenzene	21.10	146	20357	0.05 ppbv	
64) 1,2,4-Trichlorobenzene	23.60	180	2628	0.05 ppbv	
65) Naphthalene	23.79	128	5392m	0.05 ppbv	
66) Hexachloro-1,3-butadiene	24.31	225	4686	0.06 ppbv	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070220C\0201002.D Vial: 2
Acq.On : 2 Jul 2020 9:54 am Operator: TJG
Sample : 0.05PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 10:34 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



0201002.D 070220AI.M Wed Jul 15 09:53:25 2020 Page 3

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0501005.D Vial: 5
Acq On : 2 Jul 2020 11:54 am Operator: TJG
Sample : 0.1PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 12:51 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Thu Jul 02 10:34:34 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.47	128	463227	5.00	ppbv		-0.05
25) 1,4-Difluorobenzene (IS)	11.76	114	2934872	5.00	ppbv		-0.04
45) Chlorobenzene-d5 (IS)	16.98	117	2094306	5.00	ppbv		-0.04
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.78	95	775665	3.20	ppbv		-0.03
Spiked Amount 5.000	Range 62 - 145		Recovery = 64.00%				
Target Compounds							Qvalue
2) Propylene	4.12	39	9932	0.10	ppbv		
3) Dichlorodifluoromethane	4.20	85	40185	0.10	ppbv		97
4) Chloromethane	4.40	50	13080m	0.09	ppbv		
5) Vinyl Chloride	4.66	62	10923	0.12	ppbv		
6) 1,3-Butadiene	4.79	39	3923	0.07	ppbv	#	75
7) Bromomethane	5.11	94	6889	0.07	ppbv	#	60
8) Chloroethane	5.31	64	3059	0.07	ppbv	#	62
9) Vinyl Bromide	5.69	106	6244	0.06	ppbv		
10) Trichlorofluoromethane	6.15	101	27643	0.08	ppbv	#	93
11) Acetone	6.14	43	16920	0.09	ppbv		
12) Isopropyl Alcohol (IPA)	6.30	45	9704	0.06	ppbv		
13) 1,1-Dichloroethene	6.88	61	17217	0.08	ppbv	#	63
14) Methylene Chloride	7.01	84	30374	0.28	ppbv	#	75
15) Carbon Disulfide	7.35	76	28793	0.11	ppbv	#	26
16) trans-1,2-Dichloroethene	8.11	96	12250	0.10	ppbv		
17) Methyl-tert-butyl ether	8.47	73	34018	0.09	ppbv		
18) 1,1-Dichloroethane	8.32	63	31166	0.10	ppbv		
19) Vinyl Acetate	8.70	43	33774	0.08	ppbv		
20) N-Hexane	9.55	57	21235	0.09	ppbv		90
21) 2-Butanone (MEK)	9.01	43	33769	0.08	ppbv		
22) cis-1,2-Dichloroethene	9.29	61	22963	0.12	ppbv		
23) Ethyl Acetate	9.55	43	60504	0.09	ppbv		
24) Chloroform	9.62	83	26720	0.09	ppbv		90
26) Tetrahydrofuran	10.23	42	26686m	0.09	ppbv		
27) 1,2-Dichloroethane	10.50	62	21409	0.09	ppbv		
28) 1,1,1-Trichloroethane	10.80	97	28583	0.09	ppbv		92
29) 1,1-Dichloropropene	13.63	75	26948m	0.08	ppbv		
30) Carbon Tetrachloride	11.52	117	28904	0.08	ppbv		98
31) Benzene	11.34	78	44321	0.08	ppbv		98
32) Cyclohexane	11.67	56	24989	0.08	ppbv		86
33) 1,2-Dichloropropane	12.33	63	24708	0.11	ppbv		
34) Trichloroethene	12.59	95	19361	0.09	ppbv	#	24
35) Bromodichloromethane	12.53	83	32835	0.08	ppbv		96
36) 1,4-Dioxane	12.71	88	8420	0.10	ppbv		
37) Isooctane	12.67	57	92085	0.08	ppbv		
38) N-Heptane	12.97	43	37032	0.08	ppbv		
39) cis-1,3-Dichloropropene	13.63	75	29669	0.08	ppbv		
40) 4-Methyl-2-Penanone (MIBK)	13.79	43	52066	0.08	ppbv		
41) trans-1,3-Dichloropropene	14.33	75	21382	0.09	ppbv		
42) 1,1,2-Trichloroethane	14.46	83	17372	0.09	ppbv		95
43) Toluene	14.82	91	61070m	0.09	ppbv		
44) 2-Hexanone	15.26	43	41995	0.08	ppbv		
46) Dibromochloromethane	15.32	129	36755	0.09	ppbv		93
47) 1,2-Dibromoethane (EDB)	15.65	107	30197	0.09	ppbv		
48) Tetrachloroethene	16.22	166	25910	0.09	ppbv		96
49) Chlorobenzene	17.03	112	43549	0.09	ppbv		95
50) Ethylbenzene	17.48	91	56837	0.07	ppbv	#	69
51) m,p-Xylene	17.69	91	39594	0.13	ppbv		99
52) Bromoform	17.77	173	26656	0.08	ppbv	#	97
53) Styrene	18.14	104	22085	0.06	ppbv	#	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0501005.D Vial: 5
Acq On : 2 Jul 2020 11:54 am Operator: TJG
Sample : 0.1PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 12:51 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Thu Jul 02 10:34:34 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

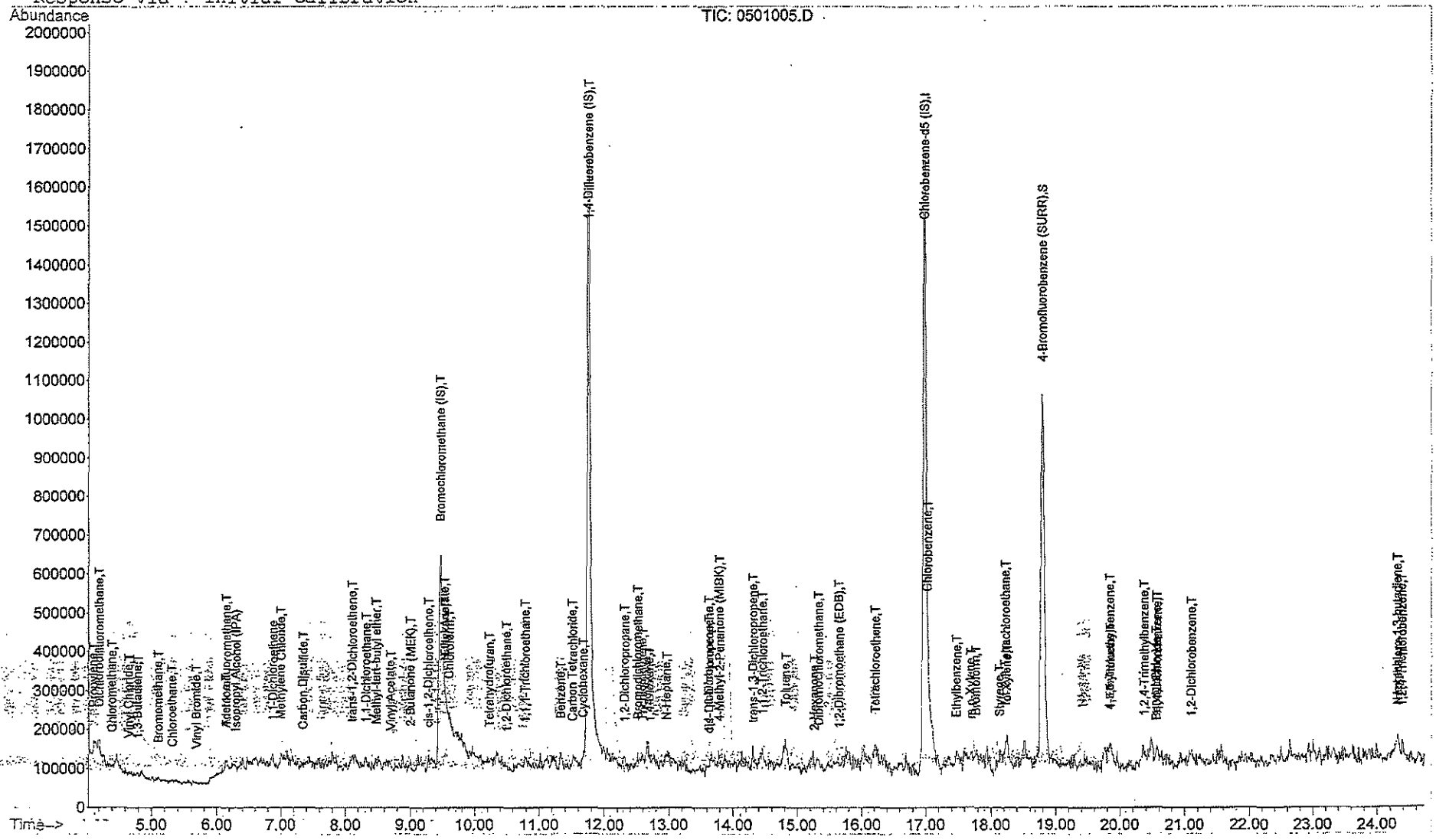
Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.23	83	48119	0.09 ppbv		98
55) o-Xylene	18.24	106	19734	0.07 ppbv	#	91
57) 4-Ethyltoluene	19.84	105	69357	0.08 ppbv		
58) 1,3,5-Trimethylbenzene	19.84	105	60321	0.08 ppbv		
59) 1,2,4-Trimethylbenzene	20.37	105	58132	0.09 ppbv		
60) 1,3-Dichlorobenzene	20.56	146	26157	0.08 ppbv		
61) Benzyl Chloride	20.55	91	30245	0.08 ppbv		
62) 1,4-Dichlorobenzene	20.58	148	12861	0.10 ppbv		
63) 1,2-Dichlorobenzene	21.11	146	20801	0.07 ppbv		96
64) 1,2,4-Trichlorobenzene	24.39	180	4842	0.12 ppbv		
65) Naphthalene	24.33	128	6544	0.08 ppbv		
66) Hexachloro-1,3-butadiene	24.31	225	5757m	0.10 ppbv		

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070220C\0501005.D Vial: 5
Acq On : 2 Jul 2020 11:54 am Operator: TJG
Sample : 0.1PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 12:51 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



0501005.D 070220AI.M Wed Jul 15 09:53:29 2020 Page 3

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0401004.D Vial: 4
Acq On : 2 Jul 2020 11:17 am Operator: TJG
Sample : 0.5PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 13:26 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Thu Jul 02 12:52:00 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.47	128	525663	5.00	ppbv		-0.05
25) 1,4-Difluorobenzene (IS)	11.76	114	3230407	5.00	ppbv		-0.04
45) Chlorobenzene-d5 (IS)	16.98	117	2287482	5.00	ppbv		-0.04
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.78	95	1132684	4.48	ppbv		-0.03
Spiked Amount 5.000	Range 62 - 145		Recovery = 89.60%				
Target Compounds							Qvalue
2) Propylene	4.11	39	54734m	0.46	ppbv		
3) Dichlorodifluoromethane	4.19	85	220680	0.50	ppbv		98
4) Chloromethane	4.38	50	72895	0.48	ppbv	#	93
5) Vinyl Chloride	4.63	62	65183	0.60	ppbv		94
6) 1,3-Butadiene	4.79	39	28380	0.45	ppbv	#	79
7) Bromomethane	5.09	94	46180	0.46	ppbv	#	14
8) Chloroethane	5.30	64	20118	0.45	ppbv		
9) Vinyl Bromide	5.67	106	42679	0.39	ppbv		
10) Trichlorofluoromethane	6.14	101	182298	0.51	ppbv		98
11) Acetone	6.08	43	91498m	0.43	ppbv		
12) Isopropyl Alcohol (IPA)	6.43	45	45475	0.27	ppbv	#	86
13) 1,1-Dichloroethene	6.86	61	119538	0.49	ppbv		93
14) Methylene Chloride	7.00	84	85662	0.56	ppbv	#	76
15) Carbon Disulfide	7.34	76	201378	0.68	ppbv	#	25
16) trans-1,2-Dichloroethene	8.09	96	59763	0.41	ppbv		
17) Methyl-tert-butyl ether	8.44	73	195812	0.46	ppbv		
18) 1,1-Dichloroethane	8.31	63	159782	0.45	ppbv		97
19) Vinyl Acetate	8.55	43	173738	0.38	ppbv		
20) N-Hexane	9.55	57	125453	0.45	ppbv		99
21) 2-Butanone (MEK)	8.88	43	195785	0.44	ppbv		
22) cis-1,2-Dichloroethene	9.28	61	85088	0.36	ppbv		89
23) Ethyl Acetate	9.55	43	316249	0.39	ppbv		
24) Chloroform	9.61	83	186168	0.52	ppbv		97
26) Tetrahydrofuran	10.17	42	96063	0.30	ppbv		
27) 1,2-Dichloroethane	10.50	62	114536	0.44	ppbv		
28) 1,1,1-Trichloroethane	10.79	97	166809	0.46	ppbv		93
29) 1,1-Dichloropropene	13.63	75	135121	0.37	ppbv		93
30) Carbon Tetrachloride	11.51	117	179827	0.48	ppbv		99
31) Benzene	11.34	78	284104	0.49	ppbv	#	93
32) Cyclohexane	11.67	56	145105	0.41	ppbv		87
33) 1,2-Dichloropropane	12.31	63	110517	0.45	ppbv		92
34) Trichloroethene	12.59	95	109630	0.45	ppbv		95
35) Bromodichloromethane	12.53	83	208940	0.48	ppbv		98
36) 1,4-Dioxane	12.63	88	46707m	0.48	ppbv		
37) Isooctane	12.67	57	529279	0.44	ppbv	#	86
38) N-Heptane	12.96	43	170912	0.34	ppbv		
39) cis-1,3-Dichloropropene	13.63	75	169807	0.41	ppbv		
40) 4-Methyl-2-Penanone (MIBK)	13.74	43	240358	0.35	ppbv		
41) trans-1,3-Dichloropropene	14.26	75	123648	0.46	ppbv		
42) 1,1,2-Trichloroethane	14.46	83	108403	0.50	ppbv		98
43) Toluene	14.82	91	299905	0.42	ppbv		95
44) 2-Hexanone	15.20	43	188079	0.35	ppbv		
46) Dibromochloromethane	15.31	129	227587	0.54	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.63	107	167819	0.48	ppbv		
48) Tetrachloroethene	16.21	166	161648	0.52	ppbv		93
49) Chlorobenzene	17.03	112	254791	0.48	ppbv		97
50) Ethylbenzene	17.48	91	425701	0.47	ppbv	#	95
51) m,p-Xylene	17.69	91	272889	0.86	ppbv		100
52) Bromoform	17.77	173	183984	0.52	ppbv	#	99
53) Styrene	18.11	104	171386m	0.42	ppbv		

(#) = qualifier out of range (m) = manual integration
0401004.D 070220AI.M Wed Jul 15 09:53:33 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0401004.D Vial: 4
Acq On : 2 Jul 2020 11:17 am Operator: TJG
Sample : 0.5PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 13:26 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Thu Jul 02 12:52:00 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

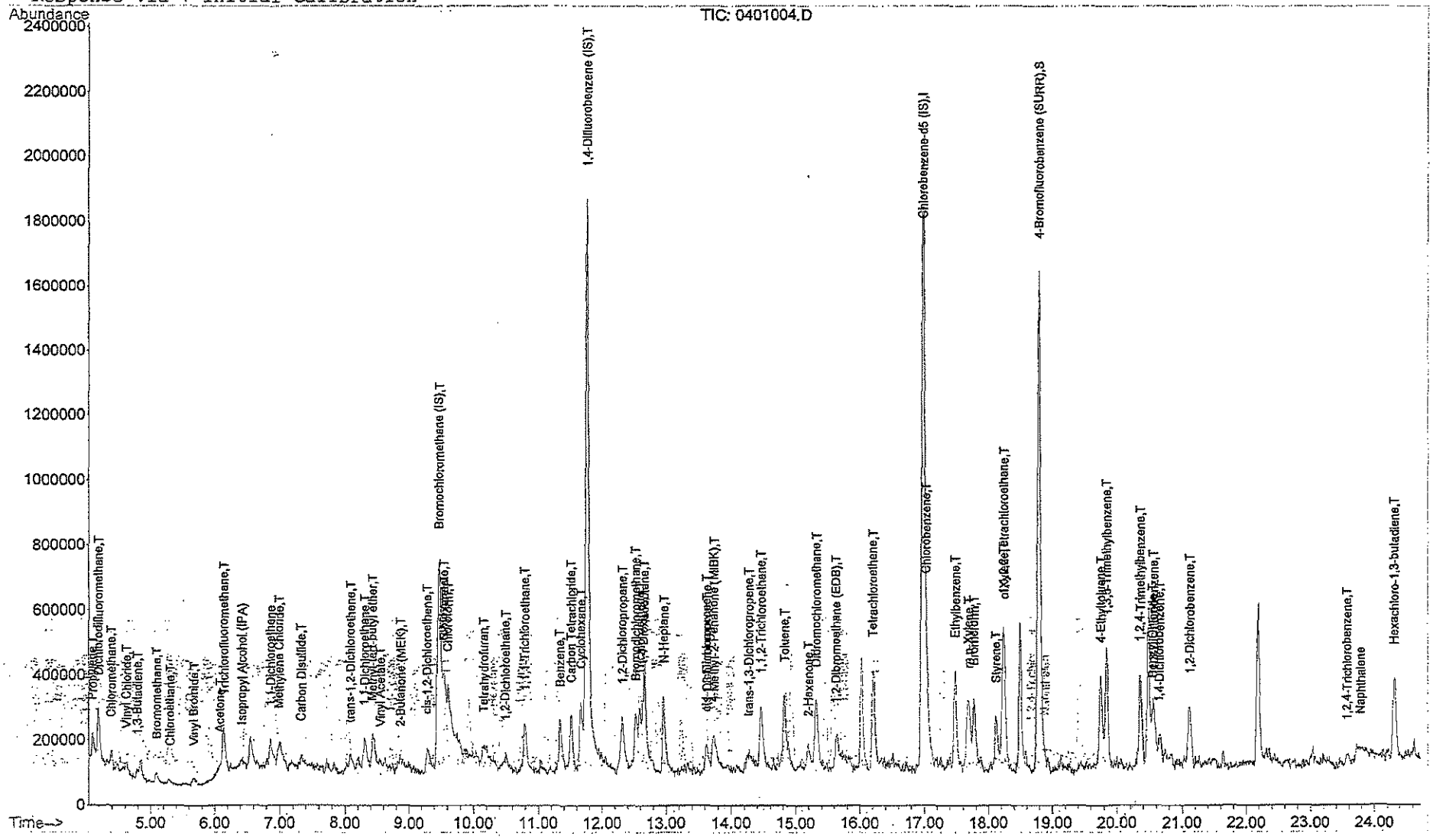
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.23	83	300807	0.53 ppbv	99
55) o-Xylene	18.24	106	142470	0.48 ppbv	98
57) 4-Ethyltoluene	19.75	105	328849	0.34 ppbv	99
58) 1,3,5-Trimethylbenzene	19.84	105	370290	0.46 ppbv	97
59) 1,2,4-Trimethylbenzene	20.35	105	303885	0.44 ppbv	99
60) 1,3-Dichlorobenzene	20.56	146	130832	0.38 ppbv	95
61) Benzyl Chloride	20.53	91	174861	0.44 ppbv	
62) 1,4-Dichlorobenzene	20.64	148	66968	0.50 ppbv	
63) 1,2-Dichlorobenzene	21.11	146	149495	0.51 ppbv	96
64) 1,2,4-Trichlorobenzene	23.58	180	21105	0.48 ppbv	
65) Naphthalene	23.78	128	34807m	0.42 ppbv	
66) Hexachloro-1,3-butadiene	24.30	225	32038	0.52 ppbv	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070220C\0401004.D Vial: 4
Acq On : 2 Jul 2020 11:17 am Operator: TJG
Sample : 0.5PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 13:26 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0601006.D Vial: 6
Acq On : 2 Jul 2020 12:38 pm Operator: TJG
Sample : 1PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 13:29 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Thu Jul 02 13:26:48 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.48	128	562981	5.00	ppbv		-0.03
25) 1,4-Difluorobenzene (IS)	11.76	114	3262558	5.00	ppbv		-0.04
45) Chlorobenzene-d5 (IS)	16.98	117	2390365	5.00	ppbv		-0.03
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.78	95	1256624	4.81	ppbv		-0.03
Spiked Amount 5.000	Range 62 - 145		Recovery = 96.20%				
Target Compounds							Qvalue
2) Propylene	4.13	39	96493	0.77	ppbv		
3) Dichlorodifluoromethane	4.22	85	421662	0.90	ppbv		98
4) Chloromethane	4.40	50	164157	1.01	ppbv		
5) Vinyl Chloride	4.66	62	135898	1.15	ppbv		98
6) 1,3-Butadiene	4.82	39	56761	0.86	ppbv	#	69
7) Bromomethane	5.11	94	106096	0.99	ppbv		
8) Chloroethane	5.32	64	41740	0.89	ppbv		
9) Vinyl Bromide	5.70	106	87351	0.79	ppbv		
10) Trichlorofluoromethane	6.16	101	394399	1.03	ppbv		95
11) Acetone	6.07	43	193918	0.89	ppbv		
12) Isopropyl Alcohol (IPA)	6.40	45	174234	1.01	ppbv	#	75
13) 1,1-Dichloroethene	6.88	61	241224	0.93	ppbv	#	88
14) Methylene Chloride	7.02	84	173545	1.02	ppbv	#	75
15) Carbon Disulfide	7.35	76	357524m	1.08	ppbv		
16) trans-1,2-Dichloroethene	8.09	96	140074	0.93	ppbv		86
17) Methyl-tert-butyl ether	8.44	73	409426	0.92	ppbv		
18) 1,1-Dichloroethane	8.33	63	365992	1.00	ppbv		99
19) Vinyl Acetate	8.54	43	330864	0.68	ppbv		
20) N-Hexane	9.56	57	290647	1.00	ppbv		98
21) 2-Butanone (MEK)	8.85	43	344281	0.75	ppbv		
22) cis-1,2-Dichloroethene	9.29	61	189840	0.78	ppbv		86
23) Ethyl Acetate	9.59	43	616806	0.74	ppbv		
24) Chloroform	9.62	83	390982	1.04	ppbv		98
26) Tetrahydrofuran	10.14	42	210265	0.70	ppbv		
27) 1,2-Dichloroethane	10.51	62	195291	0.76	ppbv		93
28) 1,1,1-Trichloroethane	10.81	97	332192	0.93	ppbv		95
29) 1,1-Dichloropropene	13.63	75	333837	0.94	ppbv		94
30) Carbon Tetrachloride	11.53	117	366936	0.98	ppbv		98
31) Benzene	11.35	78	594572	1.02	ppbv	#	94
32) Cyclohexane	11.68	56	310223m	0.88	ppbv		
33) 1,2-Dichloropropane	12.32	63	239231	0.98	ppbv		94
34) Trichloroethene	12.60	95	234443	0.97	ppbv		96
35) Bromodichloromethane	12.54	83	435458	1.01	ppbv		97
36) 1,4-Dioxane	12.62	88	87956	0.90	ppbv		
37) Isooctane	12.68	57	1086914	0.93	ppbv	#	86
38) N-Heptane	12.97	43	330295	0.69	ppbv	#	76
39) cis-1,3-Dichloropropene	13.63	75	333837	0.80	ppbv	#	55
40) 4-Methyl-2-Penanone (MIBK)	13.71	43	483531	0.72	ppbv		
41) trans-1,3-Dichloropropene	14.25	75	230434	0.85	ppbv	#	64
42) 1,1,2-Trichloroethane	14.46	83	232199	1.07	ppbv		99
43) Toluene	14.82	91	665122	0.94	ppbv		96
44) 2-Hexanone	15.17	43	388439	0.73	ppbv		
46) Dibromochloromethane	15.32	129	460839	1.04	ppbv		100
47) 1,2-Dibromoethane (EDB)	15.64	107	363667	1.01	ppbv		98
48) Tetrachloroethene	16.21	166	325477	1.01	ppbv		94
49) Chlorobenzene	17.03	112	531672	0.97	ppbv		99
50) Ethylbenzene	17.47	91	906995	1.00	ppbv	#	96
51) m,p-Xylene	17.69	91	622516	1.95	ppbv		99
52) Bromoform	17.77	173	391205	1.05	ppbv	#	99
53) Styrene	18.11	104	386431	0.94	ppbv		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0601006.D Vial: 6
Acq On : 2 Jul 2020 12:38 pm Operator: TJG
Sample : 1PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 13:29 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Thu Jul 02 13:26:48 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

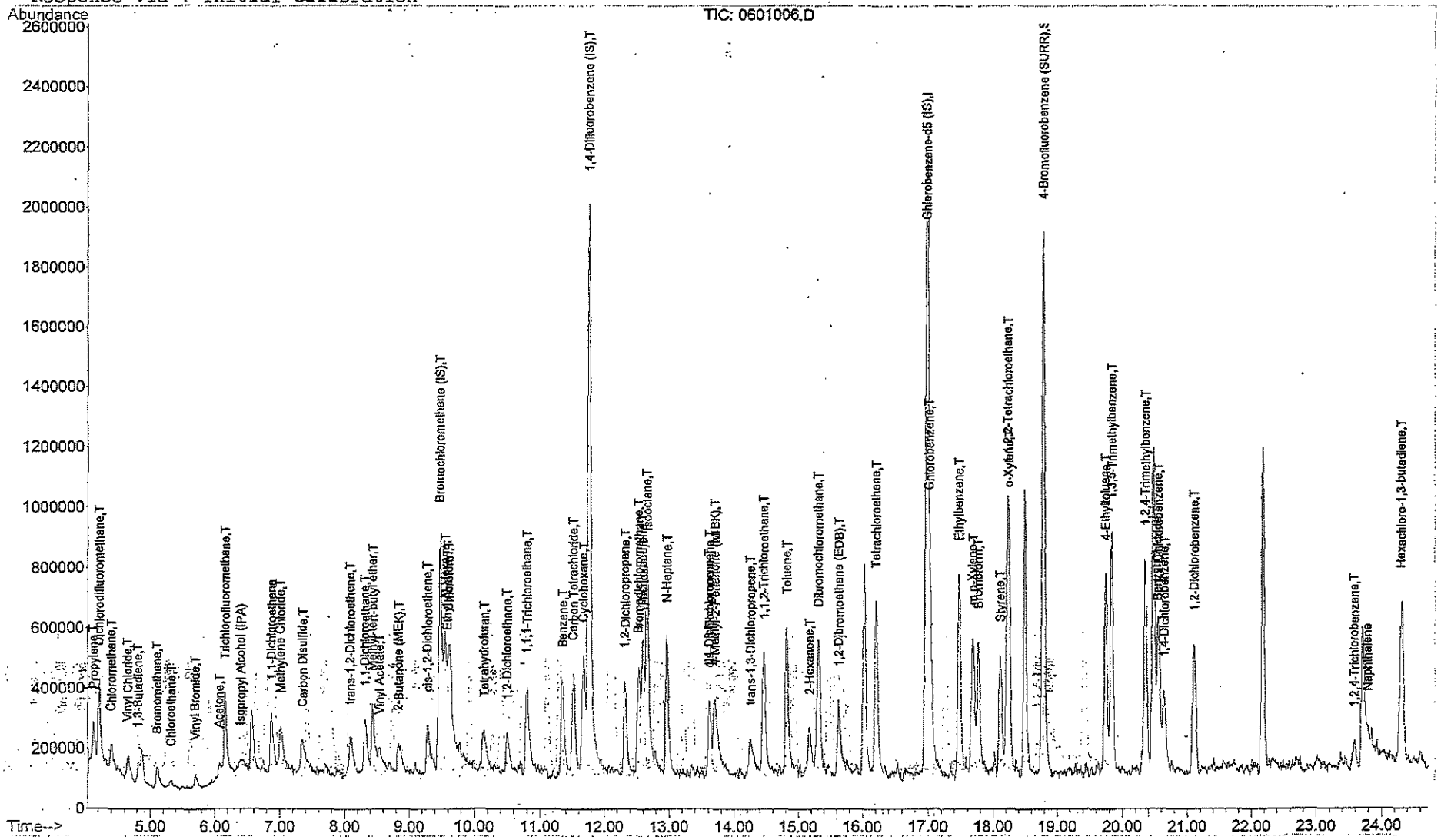
Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.22	83	630906	1.09	ppbv		99
55) o-Xylene	18.25	106	289680	0.96	ppbv		97
57) 4-Ethyltoluene	19.75	105	834455	0.86	ppbv		99
58) 1,3,5-Trimethylbenzene	19.84	105	828433	1.01	ppbv		96
59) 1,2,4-Trimethylbenzene	20.35	105	692096	0.96	ppbv		98
60) 1,3-Dichlorobenzene	20.56	146	358131	1.04	ppbv		96
61) Benzyl Chloride	20.53	91	378342	0.95	ppbv		
62) 1,4-Dichlorobenzene	20.65	148	131067	0.93	ppbv		97
63) 1,2-Dichlorobenzene	21.11	146	314503	1.02	ppbv		
64) 1,2,4-Trichlorobenzene	23.59	180	51153	1.11	ppbv		
65) Naphthalene	23.78	128	91046	1.04	ppbv	#	93
66) Hexachloro-1,3-butadiene	24.31	225	70879	1.08	ppbv		

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070220C\0601006.D Vial: 6
Acq On : 2 Jul 2020 12:38 pm Operator: TJG
Sample : 1PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 13:29 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\1001010.D Vial: 10
Acq On : 2 Jul 2020 3:21 pm Operator: TJG
Sample : 5PPBV TO-15 RR Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 3 9:50 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Fri Jul 03 09:50:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.48	128	624761	5.00	ppbv		-0.03
25) 1,4-Difluorobenzene (IS)	11.77	114	3317999	5.00	ppbv		-0.02
45) Chlorobenzene-d5 (IS)	16.98	117	2525035	5.00	ppbv		-0.04
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.78	95	1403246	5.28	ppbv		-0.03
Spiked Amount 5.000	Range 62 - 145		Recovery = 105.60%				
Target Compounds							Qvalue
2) Propylene	4.13	39	398982	3.12	ppbv		98
3) Dichlorodifluoromethane	4.21	85	2304558	4.52	ppbv		99
4) Chloromethane	4.40	50	776032	4.55	ppbv		96
5) Vinyl Chloride	4.66	62	674536	4.89	ppbv		99
6) 1,3-Butadiene	4.81	39	301764	4.52	ppbv	#	62
7) Bromomethane	5.11	94	455638	4.13	ppbv		98
8) Chloroethane	5.32	64	182132	3.88	ppbv		96
9) Vinyl Bromide	5.70	106	309244	2.90	ppbv	#	94
10) Trichlorofluoromethane	6.17	101	1914214	4.67	ppbv		97
11) Acetone	6.05	43	788521	3.48	ppbv	#	75
12) Isopropyl Alcohol (IPA)	6.35	45	964181	5.21	ppbv	#	93
13) 1,1-Dichloroethene	6.89	61	1337642	4.85	ppbv		93
14) Methylene Chloride	7.02	84	797906	3.90	ppbv	#	78
15) Carbon Disulfide	7.36	76	2396342	6.28	ppbv	#	79
16) trans-1,2-Dichloroethene	8.10	96	754790	4.39	ppbv		92
17) Methyl-tert-butyl ether	8.44	73	2233643	4.71	ppbv	#	93
18) 1,1-Dichloroethane	8.33	63	1812644	4.64	ppbv		99
19) Vinyl Acetate	8.53	43	1770421	3.75	ppbv	#	95
20) N-Hexane	9.56	57	1506782	4.89	ppbv		98
21) 2-Butanone (MEK)	8.82	43	1515440	3.35	ppbv	#	80
22) cis-1,2-Dichloroethene	9.30	61	1150204	4.45	ppbv	#	86
23) Ethyl Acetate	9.58	43	2857204m	3.70	ppbv		
24) Chloroform	9.64	83	1972055	4.81	ppbv		100
26) Tetrahydrofuran	10.13	42	1095799	3.93	ppbv	#	73
27) 1,2-Dichloroethane	10.51	62	1029965	4.25	ppbv		93
28) 1,1,1-Trichloroethane	10.82	97	1666876	4.75	ppbv		94
29) 1,1-Dichloropropene	13.63	75	1973697	5.54	ppbv		98
30) Carbon Tetrachloride	11.54	117	1801958	4.86	ppbv		100
31) Benzene	11.36	78	3032844	5.12	ppbv	#	94
32) Cyclohexane	11.69	56	1621093	4.90	ppbv		92
33) 1,2-Dichloropropane	12.33	63	1211397	4.95	ppbv		93
34) Trichloroethene	12.60	95	1253825	5.15	ppbv		97
35) Bromodichloromethane	12.54	83	2201414	5.19	ppbv		98
36) 1,4-Dioxane	12.60	88	546032	5.45	ppbv	#	83
37) Isooctane	12.68	57	5311263	4.85	ppbv	#	85
38) N-Heptane	12.97	43	1674352	3.97	ppbv	#	73
39) cis-1,3-Dichloropropene	13.63	75	1973697	4.99	ppbv	#	70
40) 4-Methyl-2-Pentanone (MIBK)	13.68	43	2333424	3.97	ppbv	#	85
41) trans-1,3-Dichloropropene	14.25	75	1422709	5.26	ppbv	#	75
42) 1,1,2-Trichloroethane	14.47	83	1139646	5.15	ppbv		99
43) Toluene	14.82	91	3413158	4.89	ppbv		98
44) 2-Hexanone	15.14	43	1963247	4.07	ppbv	#	78
46) Dibromochloromethane	15.32	129	2259073	4.82	ppbv		100
47) 1,2-Dibromoethane (EDB)	15.64	107	1913946	5.01	ppbv		98
48) Tetrachloroethene	16.21	166	1620008	4.70	ppbv		94
49) Chlorobenzene	17.03	112	2688209	4.68	ppbv		98
50) Ethylbenzene	17.47	91	4600167	4.99	ppbv	#	96
51) m,p-Xylene	17.69	91	3200320	10.01	ppbv		100
52) Bromoform	17.78	173	1896745	4.79	ppbv	#	99
53) Styrene	18.11	104	2131108	5.12	ppbv		97

(#) = qualifier out of range (m) = manual integration
1001010.D 070220AI.M Wed Jul 15 09:53:51 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\1001010.D Vial: 10
Acq On : 2 Jul 2020 3:21 pm Operator: TJG
Sample : 5PPBV TO-15 RR Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 3 9:50 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Fri Jul 03 09:50:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

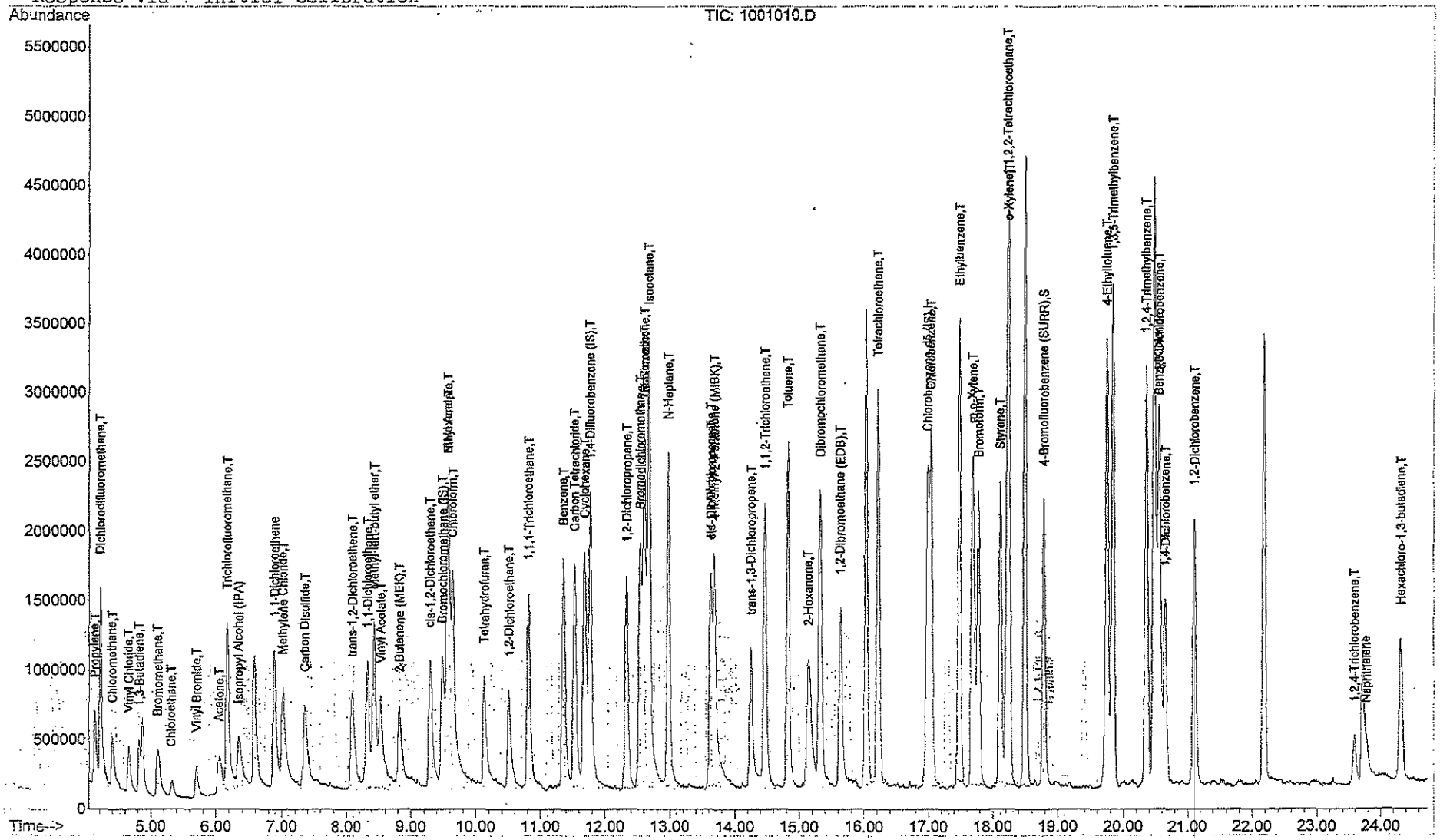
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.22	83	2849472	4.78	ppbv	99
55) o-Xylene	18.24	106	1438210	4.67	ppbv	97
57) 4-Ethyltoluene	19.75	105	4116330	4.46	ppbv	99
58) 1,3,5-Trimethylbenzene	19.84	105	3733765	4.62	ppbv	98
59) 1,2,4-Trimethylbenzene	20.35	105	3294854	4.54	ppbv	99
60) 1,3-Dichlorobenzene	20.56	146	1785814	4.98	ppbv	97
61) Benzyl Chloride	20.53	91	1629818	3.93	ppbv	98
62) 1,4-Dichlorobenzene	20.65	148	722455	4.70	ppbv	94
63) 1,2-Dichlorobenzene	21.10	146	1704615	5.21	ppbv	96
64) 1,2,4-Trichlorobenzene	23.58	180	246571	4.50	ppbv	97
65) Naphthalene	23.78	128	368022	3.84	ppbv	97
66) Hexachloro-1,3-butadiene	24.31	225	417472	5.68	ppbv	99

(#) = qualifier out of range (m) = manual integration
1001010.D 070220AI.M Wed Jul 15 09:53:51 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070220C\1001010.D Vial: 10
Acq On : 2 Jul 2020 3:21 pm Operator: TJG
Sample : 5PPBV TO-15 RR Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 3 9:50 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0901009.D Vial: 9
Acq On : 2 Jul 2020 2:40 pm Operator: TJG
Sample : 10PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 12:33 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.48	128	669400	5.00	ppbv		-0.03
25) 1,4-Difluorobenzene (IS)	11.76	114	3451834	5.00	ppbv		-0.03
45) Chlorobenzene-d5 (IS)	16.98	117	2651550	5.00	ppbv		-0.04
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.78	95	1516872	5.20	ppbv		-0.03
Spiked Amount 5.000	Range 62 - 145		Recovery = 104.00%				
Target Compounds							Qvalue
2) Propylene	4.09	39	719306	8.80	ppbv		
3) Dichlorodifluoromethane	4.17	85	3613199	8.72	ppbv		100
4) Chloromethane	4.35	50	1508612	8.63	ppbv		
5) Vinyl Chloride	4.61	62	1325545	9.63	ppbv		99
6) 1,3-Butadiene	4.78	39	535589	8.43	ppbv		
7) Bromomethane	5.08	94	899550	8.94	ppbv		99
8) Chloroethane	5.29	64	350431	8.46	ppbv		97
9) Vinyl Bromide	5.67	106	619121	8.65	ppbv	#	90
10) Trichlorofluoromethane	6.14	101	3645245m	8.78	ppbv		
11) Acetone	6.01	43	1626089	9.13	ppbv	#	79
12) Isopropyl Alcohol (IPA)	6.32	45	2252533	9.66	ppbv	#	89
13) 1,1-Dichloroethene	6.86	61	2489894	9.05	ppbv		91
14) Methylene Chloride	6.99	84	1631938	9.29	ppbv	#	75
15) Carbon Disulfide	7.33	76	4849155	9.78	ppbv	#	24
16) trans-1,2-Dichloroethene	8.07	96	1650532	9.35	ppbv		91
17) Methyl-tert-butyl ether	8.41	73	4470038	9.63	ppbv	#	94
18) 1,1-Dichloroethane	8.32	63	3407764	8.63	ppbv		98
19) Vinyl Acetate	8.51	43	3758903	8.95	ppbv	#	91
20) N-Hexane	9.55	57	2847582	9.13	ppbv		98
21) 2-Butanone (MEK)	8.80	43	3537051	9.33	ppbv	#	81
22) cis-1,2-Dichloroethene	9.28	61	2425172	9.18	ppbv	#	86
23) Ethyl Acetate	9.56	43	5758796	8.96	ppbv	#	89
24) Chloroform	9.64	83	3973739	9.34	ppbv		99
26) Tetrahydrofuran	10.12	42	2278937	10.16	ppbv	#	64
27) 1,2-Dichloroethane	10.50	62	2234904	9.74	ppbv	#	96
28) 1,1,1-Trichloroethane	10.81	97	3416050	9.67	ppbv		93
29) 1,1-Dichloropropene	13.62	75	4123096	11.10	ppbv		98
30) Carbon Tetrachloride	11.53	117	3570093	9.47	ppbv		99
31) Benzene	11.35	78	6132369	9.99	ppbv	#	94
32) Cyclohexane	11.68	56	3199055	9.92	ppbv		88
33) 1,2-Dichloropropane	12.32	63	2357057	9.34	ppbv		93
34) Trichloroethene	12.60	95	2585612	10.23	ppbv		97
35) Bromodichloromethane	12.54	83	4248147	9.82	ppbv		100
36) 1,4-Dioxane	12.59	88	1198560	11.29	ppbv	#	83
37) Isooctane	12.67	57	10172271	9.34	ppbv	#	85
38) N-Heptane	12.97	43	3260877	9.48	ppbv	#	71
39) cis-1,3-Dichloropropene	13.62	75	4123096	10.73	ppbv	#	69
40) 4-Methyl-2-Penanone (MIBK)	13.68	43	4809141	9.14	ppbv	#	80
41) trans-1,3-Dichloropropene	14.25	75	2932022	10.60	ppbv	#	75
42) 1,1,2-Trichloroethane	14.47	83	2368742	10.19	ppbv		99
43) Toluene	14.82	91	6828298	10.09	ppbv		98
44) 2-Hexanone	15.13	43	4208306	9.55	ppbv	#	75
46) Dibromochloromethane	15.33	129	4781664	9.51	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.63	107	4031606	9.91	ppbv		98
48) Tetrachloroethene	16.22	166	3308668	9.21	ppbv		94
49) Chlorobenzene	17.03	112	5451779	9.96	ppbv		98
50) Ethylbenzene	17.48	91	9331461	9.77	ppbv	#	96
51) m,p-Xylene	17.69	91	6350229	19.26	ppbv		99
52) Bromoform	17.77	173	3907513	9.56	ppbv	#	99
53) Styrene	18.11	104	4527959	11.01	ppbv		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\0901009.D Vial: 9
Acq On : 2 Jul 2020 2:40 pm Operator: TJG
Sample : 10PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 12:33 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

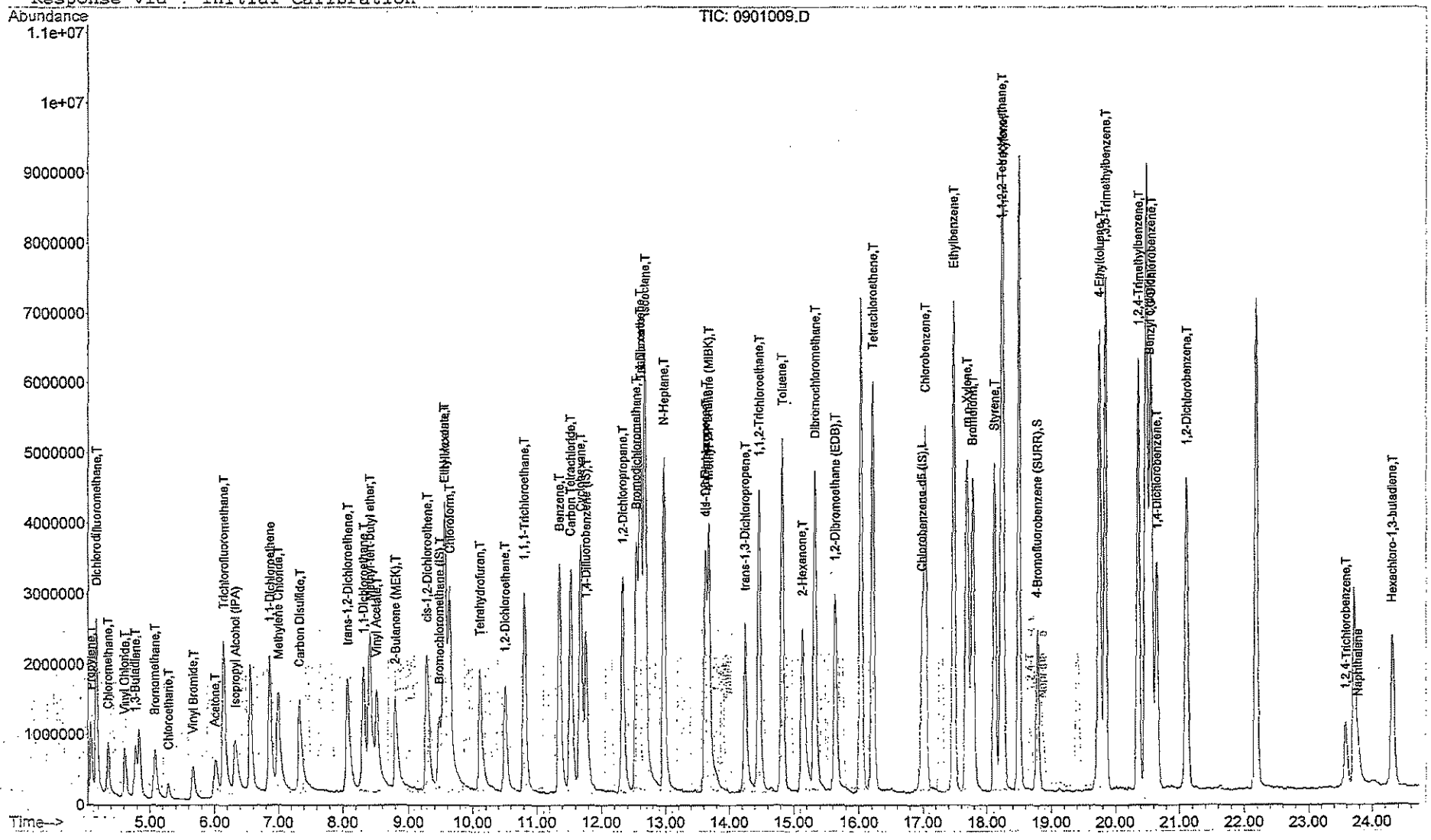
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.22	83	5838739	9.36 ppbv	100
55) o-Xylene	18.25	106	3027055	10.20 ppbv	100
57) 4-Ethyltoluene	19.75	105	8400204	9.43 ppbv	98
58) 1,3,5-Trimethylbenzene	19.84	105	7436129	9.80 ppbv	99
59) 1,2,4-Trimethylbenzene	20.35	105	6686296	9.55 ppbv	99
60) 1,3-Dichlorobenzene	20.56	146	4214980	11.47 ppbv	97
61) Benzyl Chloride	20.53	91	4264851	10.68 ppbv	98
62) 1,4-Dichlorobenzene	20.64	148	1728482	11.03 ppbv	97
63) 1,2-Dichlorobenzene	21.10	146	3562893	10.78 ppbv	
64) 1,2,4-Trichlorobenzene	23.58	180	599198	10.56 ppbv	
65) Naphthalene	23.78	128	931871	10.47 ppbv	
66) Hexachloro-1,3-butadiene	24.32	225	872305	10.53 ppbv	99

(#) = qualifier out of range (m) = manual integration
0901009.D 070220AI.M Wed Jul 15 09:53:56 2020 Page 2

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070220C\0901009.D Vial: 9
Acq On : 2 Jul 2020 2:40 pm Operator: TJG
Sample : 10PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 12:33 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\1201012.D Vial: 12
Acq On : 2 Jul 2020 5:02 pm Operator: TJG
Sample : 20PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 3 9:51 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Thu Jul 02 13:30:34 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.51	128	648904	5.00	ppbv		0.00
25) 1,4-Difluorobenzene (IS)	11.79	114	3527837	5.00	ppbv		-0.01
45) Chlorobenzene-d5 (IS)	16.99	117	2477180	5.00	ppbv		-0.03
System Monitoring Compounds							
156) 4-Bromofluorobenzene (SURR	18.79	95	1606988	6.13	ppbv		-0.03
Spiked Amount 5.000	Range 62 - 145		Recovery = 122.60%				
Target Compounds							Qvalue
2) Propylene	4.14	39	2193208	16.19	ppbv		
3) Dichlorodifluoromethane	4.23	85	11030370	21.28	ppbv		
4) Chloromethane	4.41	50	3058251	16.61	ppbv		95
5) Vinyl Chloride	4.67	62	2724527	19.10	ppbv		98
6) 1,3-Butadiene	4.84	39	1078455	14.43	ppbv	#	69
7) Bromomethane	5.14	94	1949078	15.87	ppbv		99
8) Chloroethane	5.35	64	763042	14.61	ppbv		97
9) Vinyl Bromide	5.73	106	1491319	12.33	ppbv	#	88
10) Trichlorofluoromethane	6.20	101	7723611	17.73	ppbv		100
11) Acetone	6.05	43	4035635	16.20	ppbv	#	77
12) Isopropyl Alcohol (IPA)	6.36	45	4739163	24.34	ppbv	#	94
13) 1,1-Dichloroethene	6.91	61	5116660	17.56	ppbv		92
14) Methylene Chloride	7.05	84	3407370	16.32	ppbv	#	76
15) Carbon Disulfide	7.38	76	7907817m	20.16	ppbv		
16) trans-1,2-Dichloroethene	8.11	96	3578620	20.16	ppbv		91
17) Methyl-tert-butyl ether	8.45	73	8851713	17.70	ppbv	#	95
18) 1,1-Dichloroethane	8.36	63	7062672	16.92	ppbv		98
19) Vinyl Acetate	8.55	43	8086206	15.45	ppbv	#	91
20) N-Hexane	9.58	57	5383753	16.26	ppbv		98
21) 2-Butanone (MEK)	8.84	43	7225546	14.30	ppbv	#	79
22) cis-1,2-Dichloroethene	9.32	61	4958276	17.94	ppbv	#	84
23) Ethyl Acetate	9.59	43	10540485	11.93	ppbv	#	87
24) Chloroform	9.67	83	7553573	17.67	ppbv		98
26) Tetrahydrofuran	10.14	42	4408142	13.93	ppbv	#	64
27) 1,2-Dichloroethane	10.53	62	4337122	16.14	ppbv	#	94
28) 1,1,1-Trichloroethane	10.84	97	6436713	16.86	ppbv		93
29) 1,1-Dichloropropene	13.64	75	7978082	21.05	ppbv		98
30) Carbon Tetrachloride	11.55	117	6699799	16.73	ppbv		97
31) Benzene	11.38	78	11659039	18.58	ppbv	#	94
32) Cyclohexane	11.70	56	6347270	17.60	ppbv		87
33) 1,2-Dichloropropane	12.34	63	4405006	16.70	ppbv		95
34) Trichloroethene	12.62	95	4765495	18.22	ppbv		97
35) Bromodichloromethane	12.55	83	8097393	17.59	ppbv		99
36) 1,4-Dioxane	12.60	88	2284081	22.11	ppbv	#	83
37) Isooctane	12.69	57	17020889	13.92	ppbv	#	86
38) N-Heptane	12.98	43	5831828	12.11	ppbv	#	69
39) cis-1,3-Dichloropropene	13.64	75	7978082	18.30	ppbv	#	68
40) 4-Methyl-2-Pentanone (MIBK)	13.69	43	8776392	12.87	ppbv	#	77
41) trans-1,3-Dichloropropene	14.26	75	5925570	20.41	ppbv	#	76
42) 1,1,2-Trichloroethane	14.48	83	4435514	18.79	ppbv		99
43) Toluene	14.83	91	12316497	16.06	ppbv		99
44) 2-Hexanone	15.14	43	8195293	15.05	ppbv	#	72
46) Dibromochloromethane	15.34	129	8583036	18.18	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.65	107	7668714	20.04	ppbv	#	97
48) Tetrachloroethene	16.23	166	6148445	17.68	ppbv		94
49) Chlorobenzene	17.04	112	10001964	17.23	ppbv		99
50) Ethylbenzene	17.49	91	16213128	17.33	ppbv	#	94
51) m,p-Xylene	17.69	91	12008932	36.95	ppbv		98
52) Bromoform	17.78	173	7430461	18.70	ppbv	#	97
53) Styrene	18.12	104	8587281	20.23	ppbv		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\1201012.D Vial: 12
Acq On : 2 Jul 2020 5:02 pm Operator: TJG
Sample : 20PPBV TO-15 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 3 9:51 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Thu Jul 02 13:30:34 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.22	83	10460546	17.35	ppbv	98
55) o-Xylene	18.26	106	5554804	17.61	ppbv	97
57) 4-Ethyltoluene	19.75	105	15687109	16.24	ppbv	96
58) 1,3,5-Trimethylbenzene	19.84	105	13213395	15.54	ppbv	97
59) 1,2,4-Trimethylbenzene	20.36	105	12442423	16.86	ppbv	97
60) 1,3-Dichlorobenzene	20.56	146	7993347m	22.56	ppbv	
61) Benzyl Chloride	20.53	91	9353560	23.16	ppbv	97
62) 1,4-Dichlorobenzene	20.65	148	3538914	23.88	ppbv	95
63) 1,2-Dichlorobenzene	21.11	146	7653320	23.99	ppbv	96
64) 1,2,4-Trichlorobenzene	23.59	180	1739191	35.22	ppbv	97
65) Naphthalene	23.77	128	2794032	31.14	ppbv	97
66) Hexachloro-1,3-butadiene	24.31	225	1752442	25.39	ppbv	99

(#) = qualifier out of range (m) = manual integration

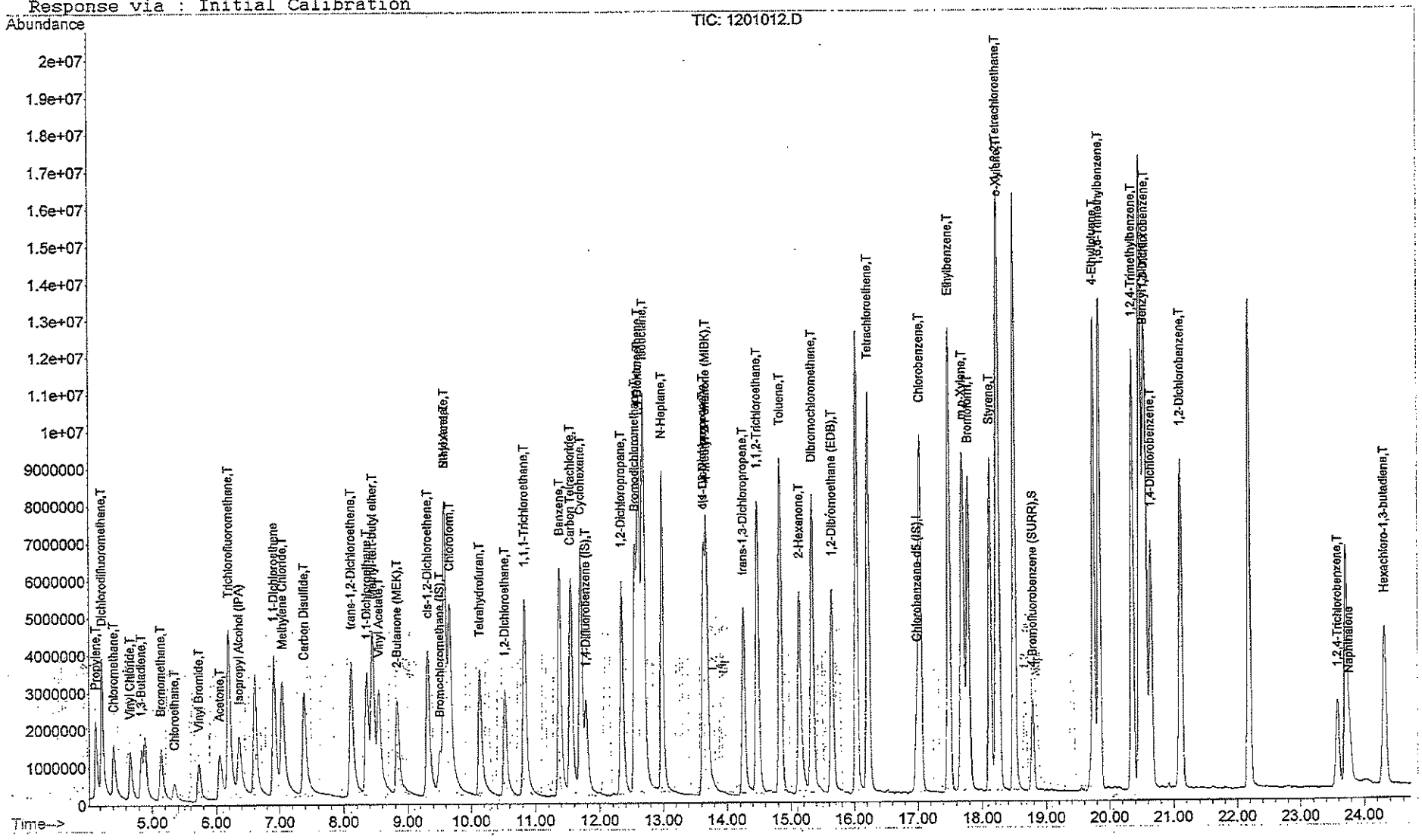
Quantitation Report

Data File : C:\HPCHEM\1\DATA\070220C\1201012.D
Acq On : 2 Jul 2020 5:02 pm
Sample : 20PPBV TO-15
Misc : TO-15 QC
MS Integration Params: rteint.p
Quant Time: Jul 3 9:51 2020

Vial: 12
Operator: TJG
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\070220C\1301013.D Vial: 13
Acq On : 2 Jul 2020 5:46 pm Operator: TJG
Sample : 10PPBV TO-15 ICV/LCS/CCV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	T	Bromochloromethane (IS)	1.000	1.000	0.0	100	0.00
2	T	Propylene	0.616	0.561	8.9	104	0.01
3	T	Dichlorodifluoromethane	3.096	2.745	11.3	101	0.01
4	T	Chloromethane	1.316	1.171	11.0	104	0.01
5	T	Vinyl Chloride	1.028	1.063	-3.4	107	0.01
6	T	1,3-Butadiene	0.475	0.472	0.6	118	0.01
7	T	Bromomethane	0.752	0.715	4.9	106	0.01
8	T	Chloroethane	0.310	0.282	9.0	108	0.01
9	T	Vinyl Bromide	0.535	0.507	5.2	109	0.01
10	T	Trichlorofluoromethane	3.116	2.917	6.4	107	0.02
11	T	Acetone	1.330	1.432	-7.7	118	0.02
12		Isopropyl Alcohol (IPA)	1.741	1.853	-6.4	110	0.00
13		1,1-Dichloroethene	2.055	2.031	1.2	109	0.02
14	T	Methylene Chloride	1.312	1.290	1.7	106	0.02
15	T	Carbon Disulfide	3.704	3.806	-2.8	105	0.02
16	T	trans-1,2-Dichloroethene	1.319	1.382	-4.8	112	0.02
17	T	Methyl-tert-butyl ether	3.468	3.681	-6.1	110	0.02
18	T	1,1-Dichloroethane	2.948	2.719	7.8	107	0.00
19	T	Vinyl Acetate	3.136	3.206	-2.2	114	0.02
20	T	N-Hexane	2.330	2.263	2.9	106	0.01
21	T	2-Butanone (MEK)	2.832	3.034	-7.1	115	0.01
22	T	cis-1,2-Dichloroethene	1.925	2.009	-4.4	111	0.01
23	T	Ethyl Acetate	4.803	4.652	3.1	108	0.00
24	T	Chloroform	3.178	3.149	0.9	106	0.00
25	T	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	101	0.00
26	T	Tetrahydrofuran	0.325	0.339	-4.3	103	0.00
27	T	1,2-Dichloroethane	0.332	0.337	-1.5	105	0.01
28	T	1,1,1-Trichloroethane	0.512	0.497	2.9	101	0.01
29	T	1,1-Dichloropropene	0.538	0.626	-16.4	105	0.00
30	T	Carbon Tetrachloride	0.546	0.525	3.8	102	0.00
31	T	Benzene	0.890	0.915	-2.8	104	0.00
32	T	Cyclohexane	0.467	0.496	-6.2	108	0.00
33	T	1,2-Dichloropropane	0.366	0.357	2.5	105	0.00
34	T	Trichloroethene	0.366	0.380	-3.8	102	0.00
35	T	Bromodichloromethane	0.627	0.650	-3.7	106	0.00
36	T	1,4-Dioxane	0.154	0.172	-11.7	100	0.00
37	T	Isooctane	1.578	1.467	7.0	100	0.00
38	T	N-Heptane	0.498	0.474	4.8	101	0.00
39	T	cis-1,3-Dichloropropene	0.557	0.626	-12.4	105	0.00
40	T	4-Methyl-2-Penanone (MIBK)	0.762	0.721	5.4	104	0.00
41	T	trans-1,3-Dichloropropene	0.401	0.463	-15.5	110	0.00
42	T	1,1,2-Trichloroethane	0.337	0.347	-3.0	102	0.00
43	T	Toluene	0.980	1.028	-4.9	105	0.00
44	T	2-Hexanone	0.638	0.622	2.5	103	0.00
45	I	Chlorobenzene-d5 (IS)	1.000	1.000	0.0	99	0.00
46	T	Dibromochloromethane	0.948	0.923	2.6	102	0.00
47	T	1,2-Dibromoethane (EDB)	0.767	0.787	-2.6	103	0.00
48	T	Tetrachloroethene	0.677	0.656	3.1	104	0.00
49	T	Chlorobenzene	1.032	1.057	-2.4	102	0.00
50	T	Ethylbenzene	1.800	1.806	-0.3	102	0.00
51	T	m,p-Xylene	0.622	0.633	-1.8	105	0.00
52	T	Bromoform	0.771	0.759	1.6	102	0.00
53	T	Styrene	0.788	0.897	-13.8	104	0.00
54	T	1,1,2,2-Tetrachloroethane	1.176	1.143	2.8	103	0.00
55	T	o-Xylene	0.560	0.595	-6.2	104	0.00
56	S	4-Bromofluorobenzene (SURR)	0.550	0.564	-2.5	98	0.00
57	T	4-Ethyltoluene	1.679	1.703	-1.4	107	0.00
58	T	1,3,5-Trimethylbenzene	1.431	1.437	-0.4	102	0.00
59	T	1,2,4-Trimethylbenzene	1.320	1.342	-1.7	106	0.00
60	T	1,3-Dichlorobenzene	0.693	0.714	-3.0	89	0.00

61	T	Benzyl Chloride	0.753	0.839	-11.4	104	0.00
62	T	1,4-Dichlorobenzene	0.296	0.320	-8.1	97	0.00
63	T	1,2-Dichlorobenzene	0.615	0.691	-12.4	102	0.00
64	T	1,2,4-Trichlorobenzene	0.104	0.118	-13.5	104	0.00
65		Naphthalene	0.163	0.183	-12.3	104	0.00
66	T	Hexachloro-1,3-butadiene	0.156	0.174	-11.5	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
0901009.D 070220AI.M Wed Jul 15 09:54:14 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\1301013.D Vial: 13
Acq On : 2 Jul 2020 5:46 pm Operator: TJG
Sample : 10PPBV TO-15 ICV/LCS/CCV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 12:44 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.48	128	667616	5.00	ppbv		-0.03
25) 1,4-Difluorobenzene (IS)	11.77	114	3471144	5.00	ppbv		-0.03
45) Chlorobenzene-d5 (IS)	16.99	117	2633131	5.00	ppbv		-0.03
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.78	95	1484694	5.12	ppbv		-0.03
Spiked Amount 5.000	Range 62 - 145		Recovery = 102.40%				
Target Compounds							Qvalue
2) Propylene	4.10	39	748690m	9.19	ppbv		
3) Dichlorodifluoromethane	4.19	85	3664591	8.87	ppbv		99
4) Chloromethane	4.37	50	1563201	8.96	ppbv		98
5) Vinyl Chloride	4.62	62	1419667	10.34	ppbv		99
6) 1,3-Butadiene	4.79	39	630686	9.95	ppbv	#	74
7) Bromomethane	5.09	94	954685	9.51	ppbv		98
8) Chloroethane	5.30	64	376836	9.12	ppbv		97
9) Vinyl Bromide	5.68	106	676304	9.47	ppbv	#	95
10) Trichlorofluoromethane	6.16	101	3895157	9.41	ppbv		98
11) Acetone	6.03	43	1911920	10.76	ppbv	#	76
12) Isopropyl Alcohol (IPA)	6.33	45	2474253	10.64	ppbv	#	98
13) 1,1-Dichloroethene	6.88	61	2711625	9.88	ppbv		92
14) Methylene Chloride	7.01	84	1722556	9.83	ppbv	#	76
15) Carbon Disulfide	7.35	76	5081309	10.27	ppbv	#	69
16) trans-1,2-Dichloroethene	8.09	96	1845257	10.48	ppbv		90
17) Methyl-tert-butyl ether	8.43	73	4914946	10.61	ppbv	#	95
18) 1,1-Dichloroethane	8.32	63	3630785	9.22	ppbv		98
19) Vinyl Acetate	8.53	43	4280542	10.22	ppbv	#	92
20) N-Hexane	9.56	57	3021426	9.71	ppbv		98
21) 2-Butanone (MEK)	8.81	43	4051741	10.71	ppbv	#	82
22) cis-1,2-Dichloroethene	9.29	61	2682276	10.18	ppbv		86
23) Ethyl Acetate	9.57	43	6211513	9.69	ppbv	#	91
24) Chloroform	9.64	83	4204911	9.91	ppbv		99
26) Tetrahydrofuran	10.12	42	2352255	10.43	ppbv	#	65
27) 1,2-Dichloroethane	10.52	62	2342317	10.15	ppbv		94
28) 1,1,1-Trichloroethane	10.82	97	3451532	9.71	ppbv		93
29) 1,1-Dichloropropene	13.63	75	4345879	11.64	ppbv		97
30) Carbon Tetrachloride	11.53	117	3643305	9.61	ppbv		99
31) Benzene	11.36	78	6352230	10.29	ppbv	#	94
32) Cyclohexane	11.68	56	3444745	10.63	ppbv		88
33) 1,2-Dichloropropane	12.33	63	2479301	9.76	ppbv		92
34) Trichloroethene	12.61	95	2635122	10.37	ppbv		97
35) Bromodichloromethane	12.54	83	4514123	10.38	ppbv		99
36) 1,4-Dioxane	12.59	88	1195816	11.21	ppbv	#	85
37) Isooctane	12.68	57	10181523	9.29	ppbv	#	85
38) N-Heptane	12.97	43	3288933	9.51	ppbv	#	71
39) cis-1,3-Dichloropropene	13.63	75	4345879	11.25	ppbv	#	68
40) 4-Methyl-2-Penanone (MIBK)	13.68	43	5001992	9.45	ppbv	#	80
41) trans-1,3-Dichloropropene	14.25	75	3215651	11.56	ppbv	#	75
42) 1,1,2-Trichloroethane	14.47	83	2412333	10.32	ppbv		100
43) Toluene	14.83	91	7137074	10.49	ppbv		99
44) 2-Hexanone	15.13	43	4316529	9.75	ppbv	#	75
46) Dibromochloromethane	15.33	129	4858217	9.73	ppbv		100
47) 1,2-Dibromoethane (EDB)	15.64	107	4143648	10.25	ppbv		98
48) Tetrachloroethene	16.22	166	3454646	9.68	ppbv		94
49) Chlorobenzene	17.03	112	5568073	10.24	ppbv		99
50) Ethylbenzene	17.48	91	9513481	10.03	ppbv	#	96
51) m,p-Xylene	17.69	91	6664638	20.36	ppbv		99
52) Bromoform	17.78	173	3994567	9.84	ppbv	#	99
53) Styrene	18.11	104	4722770	11.56	ppbv		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070220C\1301013.D Vial: 13
Acq On : 2 Jul 2020 5:46 pm Operator: TJG
Sample : 10PPBV TO-15 ICV/LCS/CCV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 12:44 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

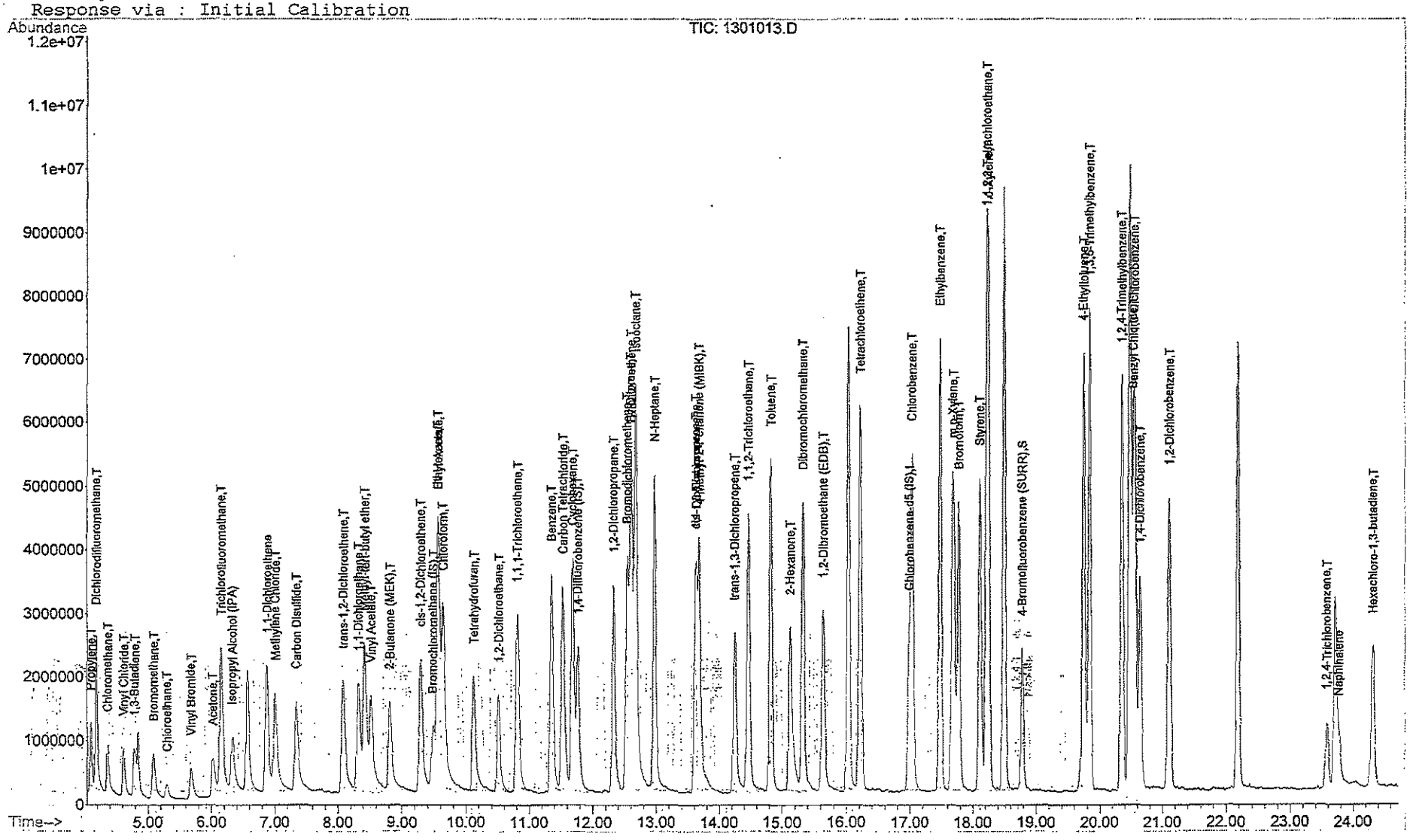
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.22	83	6019573	9.72	ppbv	100
55) o-Xylene	18.25	106	3134200	10.63	ppbv	99
57) 4-Ethyltoluene	19.75	105	8969444	10.14	ppbv	99
58) 1,3,5-Trimethylbenzene	19.84	105	7566644	10.04	ppbv	98
59) 1,2,4-Trimethylbenzene	20.35	105	7069326	10.17	ppbv	98
60) 1,3-Dichlorobenzene	20.56	146	3761969	10.31	ppbv	
61) Benzyl Chloride	20.53	91	4417508	11.14	ppbv	
62) 1,4-Dichlorobenzene	20.65	148	1683879	10.82	ppbv	
63) 1,2-Dichlorobenzene	21.11	146	3639085	11.09	ppbv	
64) 1,2,4-Trichlorobenzene	23.58	180	623838	11.07	ppbv	
65) Naphthalene	23.78	128	965447	10.92	ppbv	
66) Hexachloro-1,3-butadiene	24.32	225	915085	11.12	ppbv	99

(#) = qualifier out of range (m) = manual integration
1301013.D 070220AI.M Wed Jul 15 09:54:22 2020 Page 2

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070220C\1301013.D Vial: 13
Acq On : 2 Jul 2020 5:46 pm Operator: TJG
Sample : 10PPBV TO-15 ICV/LCS/CCV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 12:44 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration

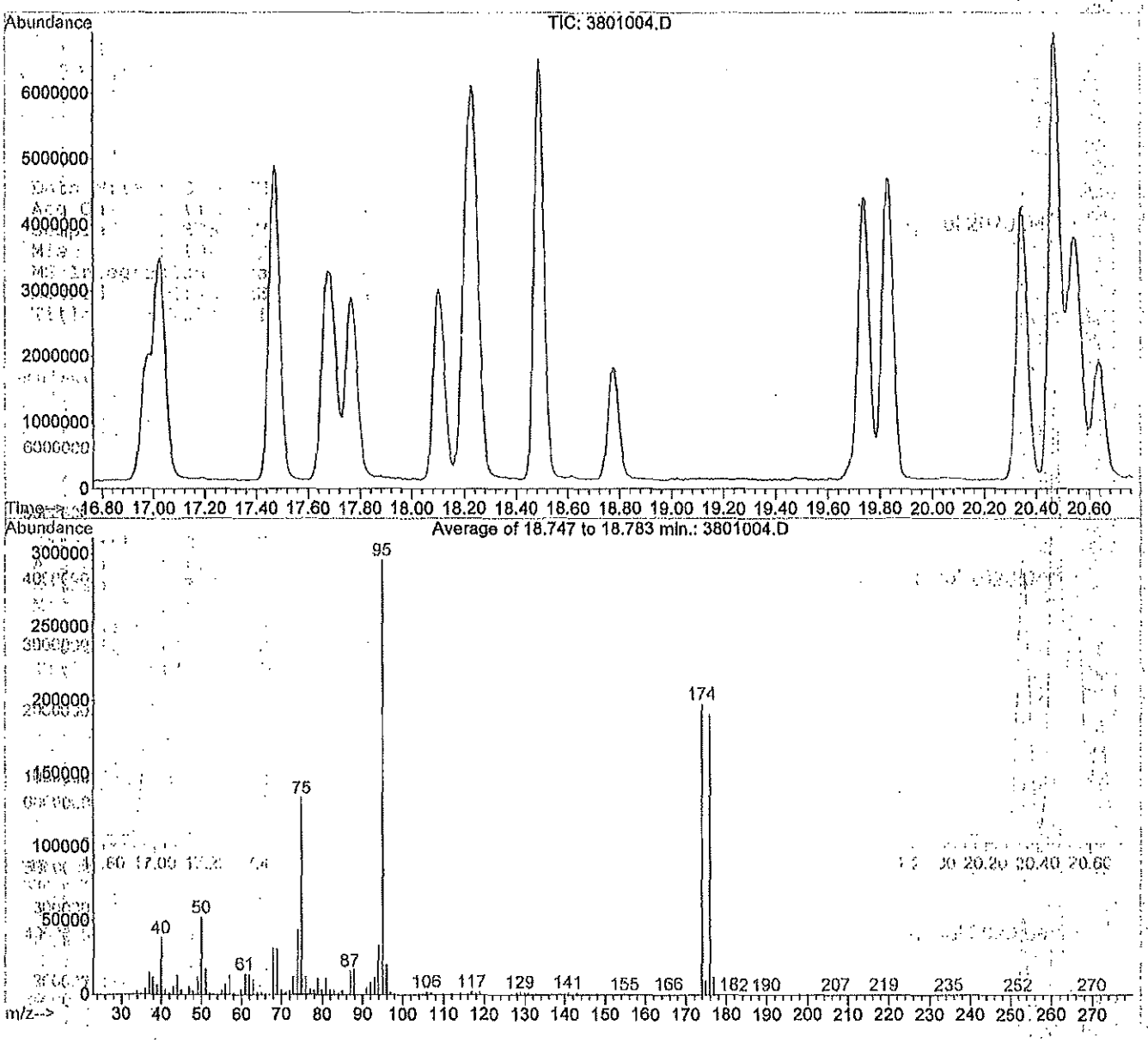


ENVISIONAIR

TO-15 VOC
Continuing Calibration Data

- Tune Data
- Continuing Calibration Verification Summary
- Continuing Calibration Verification (CCV) Quant Report
- Internal Standard Area Summary

Data File : C:\HPCHEM\1\DATA\071320\3801004.D Vial: 38
Acq On : 14 Jul 2020 6:53 am Operator: TJG
Sample : BFB/CCV-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION



Spectrum Information: Average of 18.747 to 18.783 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.6	51905	PASS
75	95	30	60	45.1	133299	PASS
95	95	100	100	100.0	295715	PASS
96	95	2	9	7.0	20688	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	66.8	197486	PASS
175	174	5	9	4.9	9709	PASS
176	174	95	101	96.3	190257	PASS
177	176	5	9	6.6	12637	PASS

3801004.D 070220AI.M Wed Jul 15 04:15:44 2020

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\071320\3801004.D Vial: 38
Acq On : 14 Jul 2020 6:53 am Operator: TJG
Sample : BFB/CCV-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	T	Bromochloromethane (IS)	1.000	1.000	0.0	59	-0.03
2	T	Propylene	0.616	0.675	-9.6	74	0.01
3	T	Dichlorodifluoromethane	3.096	3.244	-4.8	71	0.02
4	T	Chloromethane	1.316	1.184	10.0	62	0.02
5	T	Vinyl Chloride	1.028	1.019	0.9	61	0.01
6	T	1,3-Butadiene	0.475	0.428	9.9	63	0.00
7	T	Bromomethane	0.752	0.738	1.9	65	0.00
8	T	Chloroethane	0.310	0.283	8.7	64	0.00
9	T	Vinyl Bromide	0.535	0.518	3.2	66	0.00
10	T	Trichlorofluoromethane	3.116	2.880	7.6	62	0.00
11	T	Acetone	1.330	1.276	4.1	62	-0.04
12		Isopropyl Alcohol (IPA)	1.741	1.818	-4.4	64	-0.06
13		1,1-Dichloroethene	2.055	1.729	15.9	55	-0.01
14	T	Methylene Chloride	1.312	1.173	10.6	57	-0.02
15	T	Carbon Disulfide	3.704	3.688	0.4	60	-0.01
16	T	trans-1,2-Dichloroethene	1.319	1.355	-2.7	65	-0.01
17	T	Methyl-tert-butyl ether	3.468	3.654	-5.4	64	-0.03
18	T	1,1-Dichloroethane	2.948	3.017	-2.3	70	-0.03
19	T	Vinyl Acetate	3.136	3.429	-9.3	72	-0.03
20	T	N-Hexane	2.330	2.319	0.5	64	-0.01
21	T	2-Butanone (MEK)	2.832	3.098	-9.4	69	-0.03
22	T	cis-1,2-Dichloroethene	1.925	2.126	-10.4	69	-0.02
23	T	Ethyl Acetate	4.803	4.951	-3.1	68	-0.03
24	T	Chloroform	3.178	3.593	-13.1	71	-0.03
25	T	1,4-Difluorobenzene (IS)	1.000	1.000	0.0	64	-0.01
26	T	Tetrahydrofuran	0.325	0.344	-5.8	67	-0.03
27	T	1,2-Dichloroethane	0.332	0.394	-18.7	78	-0.02
28	T	1,1,1-Trichloroethane	0.512	0.543	-6.1	71	-0.01
29	T	1,1-Dichloropropene	0.538	0.555	-3.2	60	-0.01
30	T	Carbon Tetrachloride	0.546	0.555	-1.6	69	-0.01
31	T	Benzene	0.890	0.907	-1.9	66	-0.02
32	T	Cyclohexane	0.467	0.494	-5.8	69	0.00
33	T	1,2-Dichloropropane	0.366	0.359	1.9	68	0.00
34	T	Trichloroethene	0.366	0.403	-10.1	69	-0.01
35	T	Bromodichloromethane	0.627	0.695	-10.8	73	-0.01
36	T	1,4-Dioxane	0.154	0.156	-1.3	58	-0.02
37	T	Isooctane	1.578	1.614	-2.3	71	-0.01
38	T	N-Heptane	0.498	0.507	-1.8	69	0.00
39	T	cis-1,3-Dichloropropene	0.557	0.660	-18.5	71	-0.01
40	T	4-Methyl-2-Penanone (MIBK)	0.762	0.734	3.7	68	-0.01
41	T	trans-1,3-Dichloropropene	0.401	0.441	-10.0	67	-0.01
42	T	1,1,2-Trichloroethane	0.337	0.364	-8.0	68	0.00
43	T	Toluene	0.980	1.013	-3.4	66	-0.01
44	T	2-Hexanone	0.638	0.596	6.6	63	0.00
45	I	Chlorobenzene-d5 (IS)	1.000	1.000	0.0	69	0.00
46	T	Dibromochloromethane	0.948	0.817	13.8	63	-0.01
47	T	1,2-Dibromoethane (EDB)	0.767	0.694	9.5	63	0.00
48	T	Tetrachloroethene	0.677	0.545	19.5	60	0.00
49	T	Chlorobenzene	1.032	0.903	12.5	61	0.00
50	T	Ethylbenzene	1.800	1.735	3.6	68	0.00
51	T	m,p-Xylene	0.622	0.591	5.0	68	-0.01
52	T	Bromoform	0.771	0.661	14.3	62	0.00
53	T	Styrene	0.788	0.725	8.0	59	0.00
54	T	1,1,2,2-Tetrachloroethane	1.176	1.061	9.8	67	-0.01
55	T	o-Xylene	0.560	0.518	7.5	63	-0.01
56	S	4-Bromofluorobenzene (SURR)	0.550	0.546	0.7	66	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\071320\3801004.D Vial: 38
Acq On : 14 Jul 2020 6:53 am Operator: TJG
Sample : BFB/CCV-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
57	T	4-Ethyltoluene	1.679	1.480	11.9	64	0.00
58	T	1,3,5-Trimethylbenzene	1.431	1.307	8.7	64	-0.01
59	T	1,2,4-Trimethylbenzene	1.320	1.205	8.7	66	0.00
60	T	1,3-Dichlorobenzene	0.693	0.648	6.5	56	-0.01
61	T	Benzyl Chloride	0.753	0.644	14.5	55	0.00
62	T	1,4-Dichlorobenzene	0.296	0.248	16.2	53	0.00
63	T	1,2-Dichlorobenzene	0.615	0.641	-4.2	66	0.00
64	T	1,2,4-Trichlorobenzene	0.104	0.095	8.7	58	0.00
65		Naphthalene	0.163	0.156	4.3	61	-0.02
66	T	Hexachloro-1,3-butadiene	0.156	0.160	-2.6	67	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\3801004.D Vial: 38
Acq On : 14 Jul 2020 6:53 am Operator: TJG
Sample : BFB/CCV-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 9:35 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.45	128	394361	5.00	ppbv		-0.03
25) 1,4-Difluorobenzene (IS)	11.75	114	2223551	5.00	ppbv		-0.01
45) Chlorobenzene-d5 (IS)	16.97	117	1830897	5.00	ppbv		0.00
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.77	95	999839	4.96	ppbv		-0.01
Spiked Amount 5.000	Range 62 - 145		Recovery = 99.20%				
Target Compounds							Qvalue
2) Propylene	4.10	39	532548	10.96	ppbv		96
3) Dichlorodifluoromethane	4.19	85	2558621	10.48	ppbv		
4) Chloromethane	4.37	50	933575	8.99	ppbv		97
5) Vinyl Chloride	4.62	62	803567	9.91	ppbv		
6) 1,3-Butadiene	4.78	39	337855	9.02	ppbv		95
7) Bromomethane	5.08	94	582141	9.82	ppbv		97
8) Chloroethane	5.28	64	223317	9.15	ppbv		93
9) Vinyl Bromide	5.66	106	408704	9.69	ppbv	#	90
10) Trichlorofluoromethane	6.13	101	2271177	9.24	ppbv		
11) Acetone	5.98	43	1006238	9.59	ppbv	#	97
12) Isopropyl Alcohol (IPA)	6.26	45	1434136	10.44	ppbv		
13) 1,1-Dichloroethene	6.85	61	1363942	8.41	ppbv		
14) Methylene Chloride	6.97	84	925439	8.94	ppbv		
15) Carbon Disulfide	7.32	76	2908521	9.95	ppbv		
16) trans-1,2-Dichloroethene	8.05	96	1068701	10.27	ppbv		98
17) Methyl-tert-butyl ether	8.39	73	2881920	10.54	ppbv	#	96
18) 1,1-Dichloroethane	8.29	63	2379690	10.23	ppbv		99
19) Vinyl Acetate	8.48	43	2704493	10.94	ppbv	#	94
20) N-Hexane	9.53	57	1829071	9.95	ppbv		99
21) 2-Butanone (MEK)	8.78	43	2443076m	10.94	ppbv		
22) cis-1,2-Dichloroethene	9.26	61	1677024	11.05	ppbv		
23) Ethyl Acetate	9.54	43	3905220	10.31	ppbv	#	91
24) Chloroform	9.61	83	2834252	11.31	ppbv		99
26) Tetrahydrofuran	10.09	42	1529278	10.59	ppbv	#	69
27) 1,2-Dichloroethane	10.48	62	1753494	11.86	ppbv		93
28) 1,1,1-Trichloroethane	10.79	97	2414098	10.60	ppbv		95
29) 1,1-Dichloropropene	13.61	75	2468904m	10.32	ppbv		
30) Carbon Tetrachloride	11.51	117	2466372	10.16	ppbv		100
31) Benzene	11.33	78	4033987	10.20	ppbv	#	94
32) Cyclohexane	11.67	56	2198894	10.59	ppbv		89
33) 1,2-Dichloropropane	12.31	63	1594797	9.81	ppbv		99
34) Trichloroethene	12.59	95	1791924	11.00	ppbv		96
35) Bromodichloromethane	12.53	83	3091628	11.10	ppbv		100
36) 1,4-Dioxane	12.57	88	692858	10.14	ppbv	#	90
37) Isooctane	12.66	57	7179577	10.23	ppbv	#	88
38) N-Heptane	12.96	43	2256790	10.19	ppbv	#	76
39) cis-1,3-Dichloropropene	13.61	75	2933915	11.85	ppbv	#	70
40) 4-Methyl-2-Penanone (MIBK)	13.66	43	3263261	9.63	ppbv	#	83
41) trans-1,3-Dichloropropene	14.23	75	1961557	11.01	ppbv	#	79
42) 1,1,2-Trichloroethane	14.46	83	1619109	10.82	ppbv		99
43) Toluene	14.81	91	4503318	10.33	ppbv		97
44) 2-Hexanone	15.12	43	2651985	9.35	ppbv	#	80
46) Dibromochloromethane	15.31	129	2992455	8.62	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.63	107	2542878	9.05	ppbv		100
48) Tetrachloroethene	16.21	166	1994262	8.04	ppbv		97
49) Chlorobenzene	17.03	112	3307376	8.75	ppbv		96
50) Ethylbenzene	17.47	91	6351603	9.63	ppbv	#	96
51) m,p-Xylene	17.67	91	4331062	19.02	ppbv		96
52) Bromoform	17.77	173	2421660	8.58	ppbv		
53) Styrene	18.10	104	2655426	9.20	ppbv		99

(#) = qualifier out of range (m) = manual integration
3801004.D 070220AI.M Wed Jul 15 04:16:14 2020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\3801004.D Vial: 38
Acq On : 14 Jul 2020 6:53 am Operator: TJG
Sample : BFB/CCV-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 9:35 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

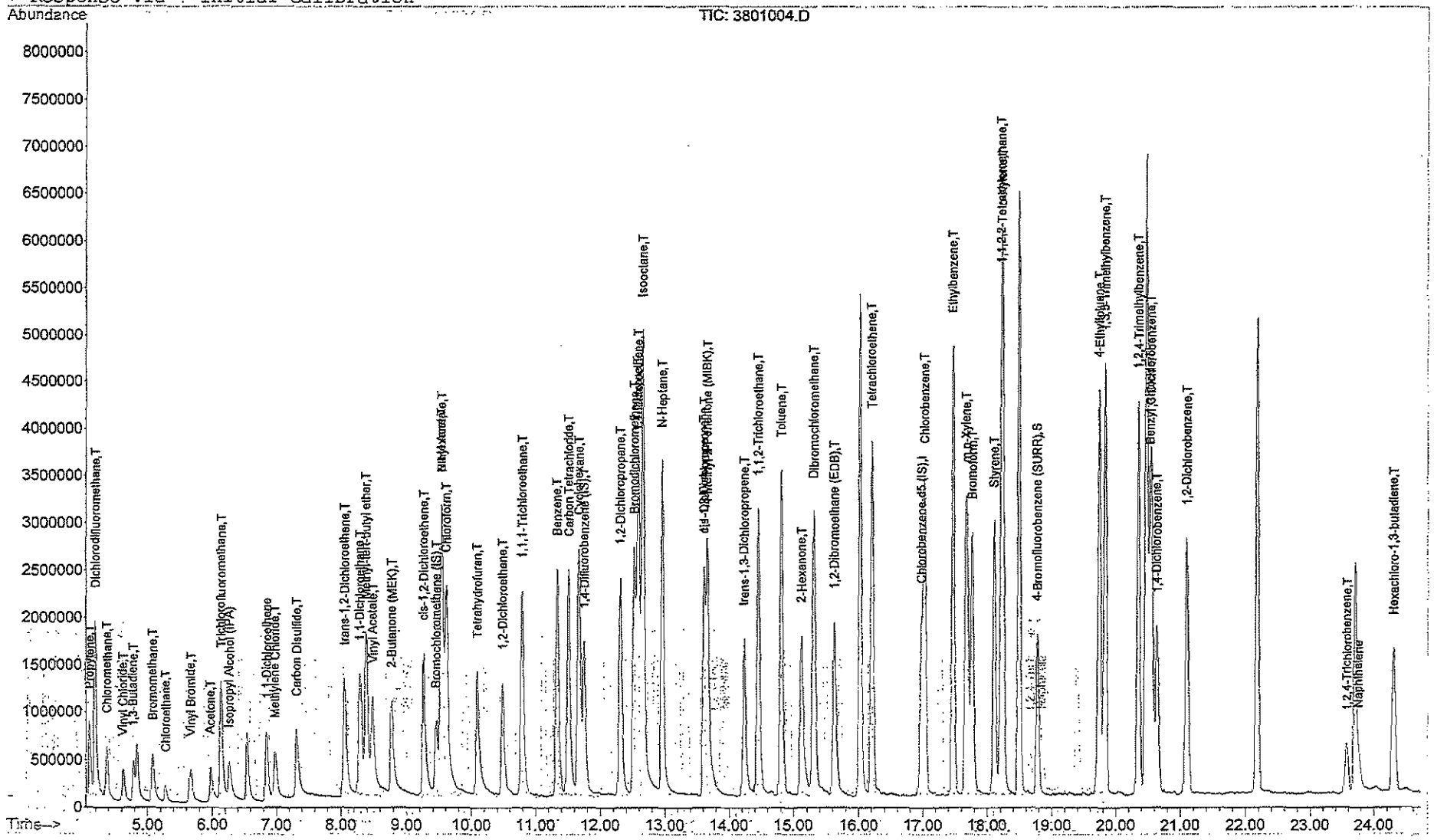
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.21	83	3886479	9.02 ppbv	99
55) o-Xylene	18.24	106	1895684	9.25 ppbv	92
57) 4-Ethyltoluene	19.74	105	5417685	8.81 ppbv	99
58) 1,3,5-Trimethylbenzene	19.83	105	4785859	9.14 ppbv	96
59) 1,2,4-Trimethylbenzene	20.35	105	4411330	9.13 ppbv	97
60) 1,3-Dichlorobenzene	20.55	146	2371246	9.34 ppbv	97
61) Benzyl Chloride	20.52	91	2359360	8.55 ppbv	99
62) 1,4-Dichlorobenzene	20.64	148	908476	8.40 ppbv	95
63) 1,2-Dichlorobenzene	21.10	146	2348973	10.43 ppbv	97
64) 1,2,4-Trichlorobenzene	23.58	180	349561	9.14 ppbv	98
65) Naphthalene	23.76	128	572008	9.57 ppbv	99
66) Hexachloro-1,3-butadiene	24.30	225	585030	10.22 ppbv	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Quantitation Report)

Data File : C:\HPCHEM\1\DATA\071320\3801004.D Vial: 38
Acq On : 14 Jul 2020 6:53 am Operator: TJG
Sample : BFB/CCV-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 9:35 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA\071320\3801004.D
Tune Time : 14 Jul 2020 6:53 am

Daily Calibration File : C:\HPCHEM\1\DATA\071320\3801004.D

			394361	2223550	1830900
File	Sample	Surrogate Recovery %	Internal Standard Responses		
3901005.D	LCS-10PP	102	385678	2415316	1829012
4001006.D	LCSD-10P	105	372866	2384243	1779319
4201008.D	MB	91	430778	1610003	1190032
6101027.D	20-1687:	101	303440	1800645	1080256
6201028.D	20-1688:	104	420019	1671482	1120503
6401030.D	20-1689:	98	431080	1724331	1210691
7101037.D	20-1690:	88	451889	1906658	1473931
7201038.D	20-1691:	96	409637	1615287	1211348

t = fails 24hr time check * - fails criteria

Created: Wed Jul 15 09:50:35 2020 GC/MS Ins

ENVISIONAIR

TO-15 VOC
Quality Control Data

- Method Blank (MB)
- Laboratory Control Standard (LCS)

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\3901005.D Vial: 39
Acq On : 14 Jul 2020 7:39 am Operator: TJG
Sample : LCS-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 9:38 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.44	128	385678	5.00	ppbv		-0.04
25) 1,4-Difluorobenzene (IS)	11.75	114	2415316	5.00	ppbv		-0.01
45) Chlorobenzene-d5 (IS)	16.97	117	1829012	5.00	ppbv		0.00
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.78	95	1028494	5.11	ppbv		0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 102.20%				
Target Compounds							Qvalue
2) Propylene	4.09	39	518140	10.90	ppbv		
3) Dichlorodifluoromethane	4.17	85	2723361	11.40	ppbv		99
4) Chloromethane	4.35	50	956436	9.42	ppbv		98
5) Vinyl Chloride	4.60	62	797566	10.06	ppbv		
6) 1,3-Butadiene	4.76	39	336195	9.18	ppbv		90
7) Bromomethane	5.06	94	528461	9.11	ppbv		100
8) Chloroethane	5.26	64	241567	10.12	ppbv		97
9) Vinyl Bromide	5.65	106	407966	9.89	ppbv	#	90
10) Trichlorofluoromethane	6.12	101	2206295	9.18	ppbv		
11) Acetone	5.96	43	1002756	9.77	ppbv	#	97
12) Isopropyl Alcohol (IPA)	6.26	45	1402249	10.44	ppbv		
13) 1,1-Dichloroethene	6.83	61	1311233	8.27	ppbv		
14) Methylene Chloride	6.97	84	898316	8.88	ppbv		
15) Carbon Disulfide	7.30	76	2778719	9.72	ppbv		
16) trans-1,2-Dichloroethene	8.04	96	1008084	9.91	ppbv		99
17) Methyl-tert-butyl ether	8.38	73	2710138	10.13	ppbv	#	95
18) 1,1-Dichloroethane	8.29	63	2391315	10.52	ppbv		99
19) Vinyl Acetate	8.48	43	2475895	10.24	ppbv	#	92
20) N-Hexane	9.52	57	1717734	9.56	ppbv		99
21) 2-Butanone (MEK)	8.77	43	2399365	10.98	ppbv	#	84
22) cis-1,2-Dichloroethene	9.26	61	1649415	11.11	ppbv		94
23) Ethyl Acetate	9.54	43	3767508	10.17	ppbv	#	91
24) Chloroform	9.61	83	2655228	10.83	ppbv		
26) Tetrahydrofuran	10.09	42	1510756	9.63	ppbv	#	68
27) 1,2-Dichloroethane	10.48	62	1513276	9.42	ppbv		
28) 1,1,1-Trichloroethane	10.79	97	2292388	9.27	ppbv		96
29) 1,1-Dichloropropene	13.61	75	2516957	9.68	ppbv		
30) Carbon Tetrachloride	11.51	117	2441182	9.26	ppbv		99
31) Benzene	11.33	78	4191506	9.75	ppbv	#	95
32) Cyclohexane	11.67	56	2165246	9.60	ppbv	#	88
33) 1,2-Dichloropropane	12.31	63	1643409	9.30	ppbv		99
34) Trichloroethene	12.59	95	1788740	10.11	ppbv		95
35) Bromodichloromethane	12.52	83	3145893	10.39	ppbv		100
36) 1,4-Dioxane	12.57	88	734272	9.89	ppbv	#	87
37) Isooctane	12.66	57	6841757	8.98	ppbv	#	88
38) N-Heptane	12.96	43	2341555	9.73	ppbv	#	75
39) cis-1,3-Dichloropropene	13.61	75	2916965	10.85	ppbv	#	71
40) 4-Methyl-2-Penanone (MIBK)	13.66	43	3307629	8.98	ppbv	#	85
41) trans-1,3-Dichloropropene	14.23	75	1997871	10.32	ppbv	#	78
42) 1,1,2-Trichloroethane	14.45	83	1583782	9.74	ppbv		97
43) Toluene	14.81	91	4654653	9.83	ppbv		97
44) 2-Hexanone	15.12	43	2744031	8.90	ppbv	#	80
46) Dibromochloromethane	15.31	129	3087034	8.90	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.63	107	2537428	9.04	ppbv		97
48) Tetrachloroethene	16.20	166	2313124	9.33	ppbv		
49) Chlorobenzene	17.03	112	3466735	9.18	ppbv		97
50) Ethylbenzene	17.47	91	6477637	9.84	ppbv	#	96
51) m,p-Xylene	17.68	91	4433920	19.50	ppbv		97
52) Bromoform	17.77	173	2504452m	8.89	ppbv		
53) Styrene	18.11	104	2767196	9.60	ppbv		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\3901005.D Vial: 39
Acq On : 14 Jul 2020 7:39 am Operator: TJG
Sample : LCS-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 9:38 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

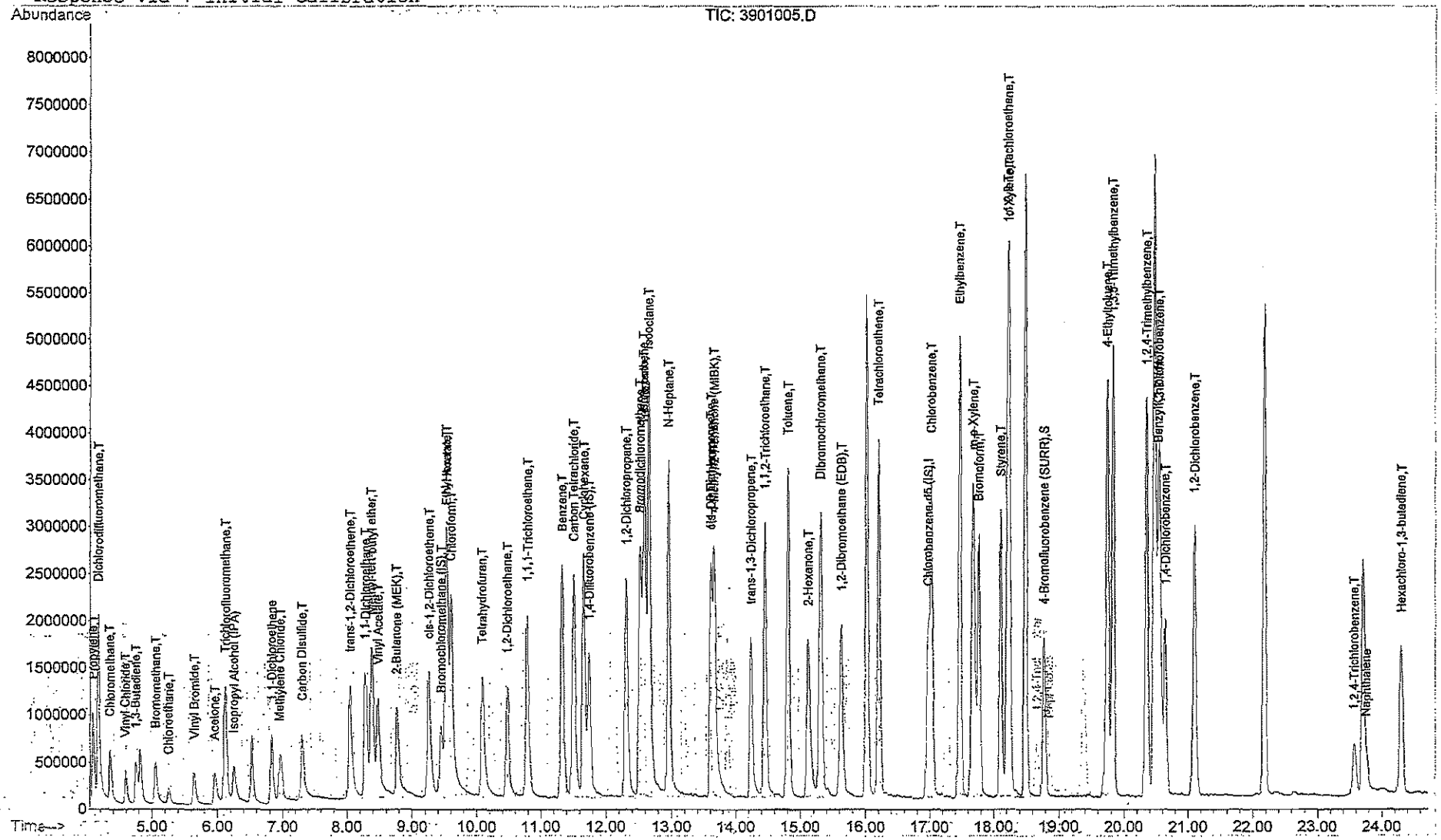
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54) 1,1,2,2-Tetrachloroethane	18.21	83	3872981	9.00 ppbv	99
55) o-Xylene	18.24	106	1861276	9.09 ppbv	93
57) 4-Ethyltoluene	19.74	105	5687475	9.26 ppbv	99
58) 1,3,5-Trimethylbenzene	19.83	105	4984104	9.52 ppbv	96
59) 1,2,4-Trimethylbenzene	20.35	105	4592529	9.51 ppbv	98
60) 1,3-Dichlorobenzene	20.55	146	2392587	9.44 ppbv	98
61) Benzyl Chloride	20.52	91	2397573	8.70 ppbv	99
62) 1,4-Dichlorobenzene	20.64	148	983163	9.09 ppbv	97
63) 1,2-Dichlorobenzene	21.10	146	2419636	10.76 ppbv	96
64) 1,2,4-Trichlorobenzene	23.58	180	379204	9.93 ppbv	98
65) Naphthalene	23.76	128	590213	9.89 ppbv	100
66) Hexachloro-1,3-butadiene	24.30	225	601953	10.53 ppbv	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\071320\3901005.D Vial: 39
Acq On : 14 Jul 2020 7:39 am Operator: TJG
Sample : LCS-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 9:38 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\4001006.D Vial: 40
Acq On : 14 Jul 2020 8:25 am Operator: TJG
Sample : LCSD-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 9:42 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS)	9.46	128	372866	5.00	ppbv		-0.02
25) 1,4-Difluorobenzene (IS)	11.75	114	2384243	5.00	ppbv		-0.01
45) Chlorobenzene-d5 (IS)	16.97	117	1779319	5.00	ppbv		0.00
System Monitoring Compounds							
56) 4-Bromofluorobenzene (SURR	18.77	95	1028369	5.25	ppbv		-0.01
Spiked Amount 5.000	Range 62 - 145		Recovery = 105.00%				
Target Compounds							Qvalue
2) Propylene	4.09	39	471016	10.25	ppbv		
3) Dichlorodifluoromethane	4.18	85	2339954	10.14	ppbv		
4) Chloromethane	4.37	50	993684	10.13	ppbv		99
5) Vinyl Chloride	4.62	62	779201	10.17	ppbv		
6) 1,3-Butadiene	4.78	39	368744	10.41	ppbv		90
7) Bromomethane	5.08	94	588102	10.49	ppbv		99
8) Chloroethane	5.28	64	229982	9.96	ppbv		
9) Vinyl Bromide	5.66	106	447324	11.21	ppbv	#	89
10) Trichlorofluoromethane	6.14	101	2089203	8.99	ppbv		
11) Acetone	5.98	43	1010776	10.19	ppbv		94
12) Isopropyl Alcohol (IPA)	6.26	45	1228814	9.47	ppbv		
13) 1,1-Dichloroethene	6.85	61	1316187	8.59	ppbv		
14) Methylene Chloride	6.98	84	882105	9.01	ppbv		
15) Carbon Disulfide	7.32	76	2687348	9.73	ppbv		
16) trans-1,2-Dichloroethene	8.06	96	1013301	10.30	ppbv		99
17) Methyl-tert-butyl ether	8.39	73	2771131	10.72	ppbv	#	95
18) 1,1-Dichloroethane	8.30	63	2366162	10.76	ppbv		98
19) Vinyl Acetate	8.50	43	2484333	10.62	ppbv	#	93
20) N-Hexane	9.53	57	1919704	11.05	ppbv		100
21) 2-Butanone (MEK)	8.78	43	2297897	10.88	ppbv	#	80
22) cis-1,2-Dichloroethene	9.27	61	1563505	10.89	ppbv		
23) Ethyl Acetate	9.55	43	3628992m	10.13	ppbv		
24) Chloroform	9.61	83	2428443	10.25	ppbv		
26) Tetrahydrofuran	10.09	42	1464498	9.45	ppbv	#	70
27) 1,2-Dichloroethane	10.48	62	1508313	9.51	ppbv		
28) 1,1,1-Trichloroethane	10.79	97	2388951	9.79	ppbv		96
29) 1,1-Dichloropropene	13.61	75	2441150	9.52	ppbv		
30) Carbon Tetrachloride	11.51	117	2501846	9.61	ppbv		99
31) Benzene	11.34	78	4286290	10.11	ppbv	#	94
32) Cyclohexane	11.67	56	2098440	9.43	ppbv	#	86
33) 1,2-Dichloropropane	12.31	63	1648409	9.45	ppbv		99
34) Trichloroethene	12.59	95	1815081	10.39	ppbv		95
35) Bromodichloromethane	12.53	83	3133791	10.49	ppbv		99
36) 1,4-Dioxane	12.57	88	706256	9.64	ppbv	#	90
37) Isooctane	12.66	57	6892630	9.16	ppbv	#	87
38) N-Heptane	12.96	43	2354672	9.91	ppbv	#	73
39) cis-1,3-Dichloropropene	13.61	75	2873604	10.83	ppbv	#	72
40) 4-Methyl-2-Penanone (MIBK)	13.66	43	3310776	9.11	ppbv	#	84
41) trans-1,3-Dichloropropene	14.23	75	1906635	9.98	ppbv	#	79
42) 1,1,2-Trichloroethane	14.45	83	1604856	10.00	ppbv		97
43) Toluene	14.81	91	4597425	9.84	ppbv		97
44) 2-Hexanone	15.12	43	2704094	8.89	ppbv	#	79
46) Dibromochloromethane	15.31	129	2949668	8.75	ppbv		99
47) 1,2-Dibromoethane (EDB)	15.62	107	2508514	9.19	ppbv		100
48) Tetrachloroethene	16.21	166	2322702	9.63	ppbv		
49) Chlorobenzene	17.03	112	3433183	9.35	ppbv		97
50) Ethylbenzene	17.47	91	6345843	9.90	ppbv	#	96
51) m,p-Xylene	17.68	91	4360181	19.71	ppbv		97
52) Bromoform	17.77	173	2260421	8.24	ppbv	#	100
53) Styrene	18.11	104	2726293	9.72	ppbv		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\4001006.D Vial: 40
Acq On : 14 Jul 2020 8:25 am Operator: TJG
Sample : LCSD-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 9:42 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

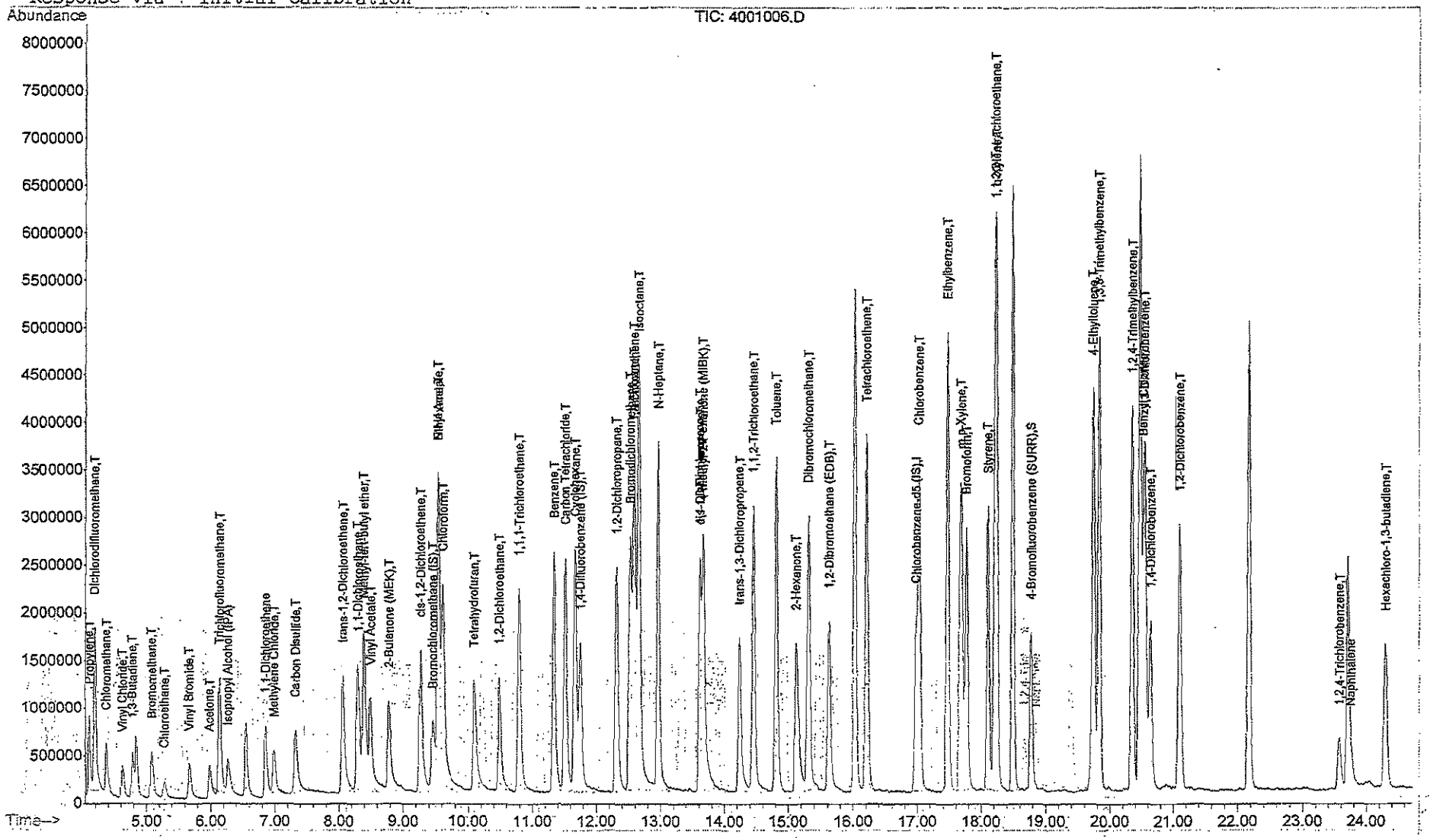
Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
54) 1,1,2,2-Tetrachloroethane	18.21	83	3871195	9.25	ppbv		100
55) o-Xylene	18.24	106	1904761	9.56	ppbv		92
57) 4-Ethyltoluene	19.73	105	5448673	9.12	ppbv		98
58) 1,3,5-Trimethylbenzene	19.83	105	4919569	9.66	ppbv		97
59) 1,2,4-Trimethylbenzene	20.35	105	4388648	9.34	ppbv		97
60) 1,3-Dichlorobenzene	20.55	146	2344734	9.51	ppbv		98
61) Benzyl Chloride	20.52	91	2364217	8.82	ppbv		99
62) 1,4-Dichlorobenzene	20.64	148	947982	9.01	ppbv		97
63) 1,2-Dichlorobenzene	21.10	146	2378765	10.87	ppbv		97
64) 1,2,4-Trichlorobenzene	23.57	180	369718	9.95	ppbv		98
65) Naphthalene	23.76	128	575341	9.91	ppbv	#	84
66) Hexachloro-1,3-butadiene	24.30	225	583471	10.49	ppbv		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\071320\4001006.D Vial: 40
Acq On : 14 Jul 2020 8:25 am Operator: TJG
Sample : LCSD-10PPBV Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 9:42 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\4201008.D Vial: 42
Acq On : 14 Jul 2020 9:34 am Operator: TJG
Sample : MB Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 10:09 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

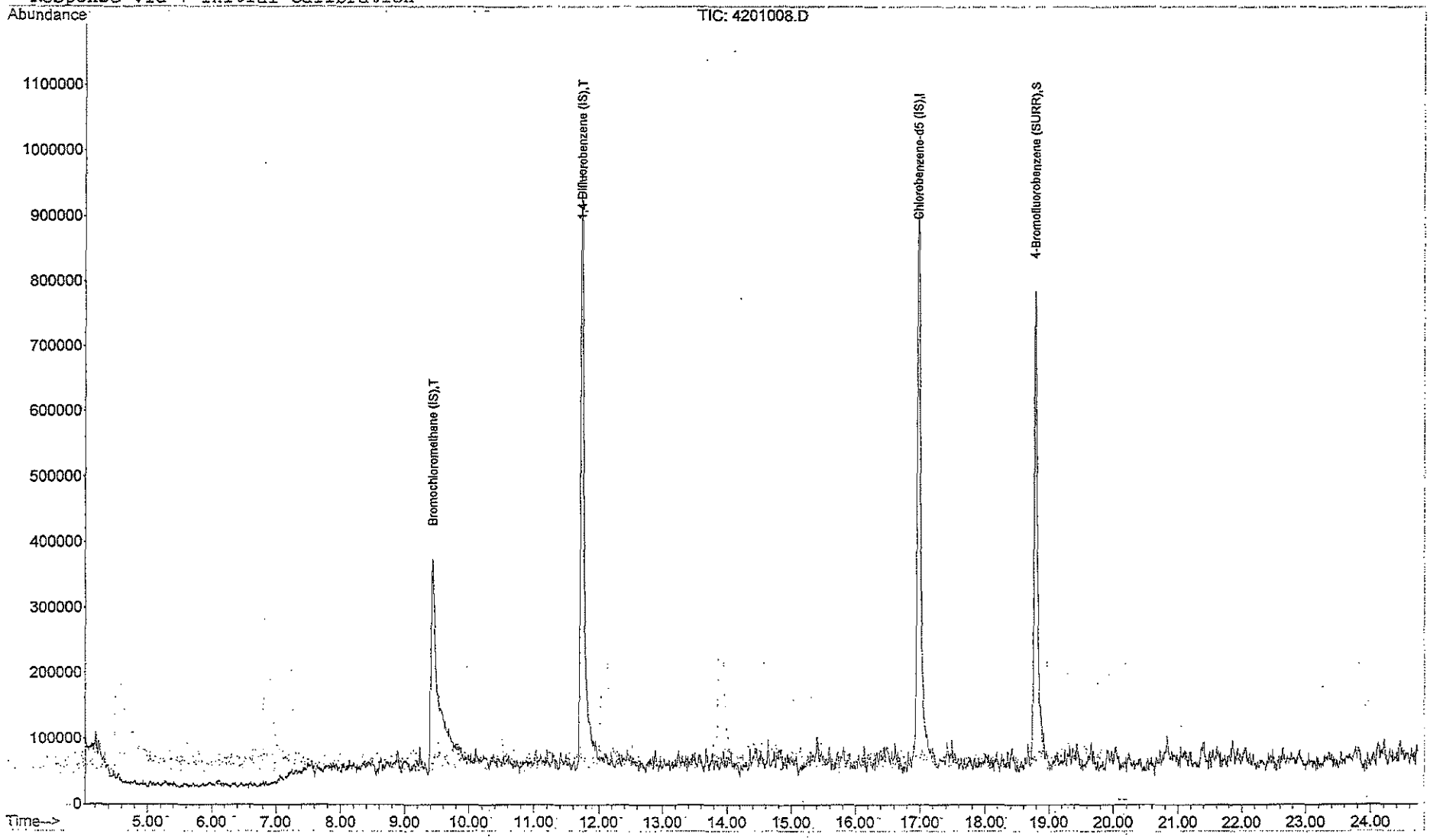
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.44	128	430778	5.00	ppbv	-0.04
25) 1,4-Difluorobenzene (IS)	11.73	114	1610003	5.00	ppbv	-0.03
45) Chlorobenzene-d5 (IS)	16.98	117	1190032	5.00	ppbv	0.00
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.78	95	598082	4.57	ppbv	0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 91.40%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
4201008.D 070220AI.M Wed Jul 15 04:16:22 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\071320\4201008.D Vial: 42
Acq On : 14 Jul 2020 9:34 am Operator: TJG
Sample : MB Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 14 10:09 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



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TO-15 VOC

- Raw Sample Data

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\6101027.D Vial: 61
Acq On : 14 Jul 2020 10:24 pm Operator: TJG
Sample : 20-1687:10 RR Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:47 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

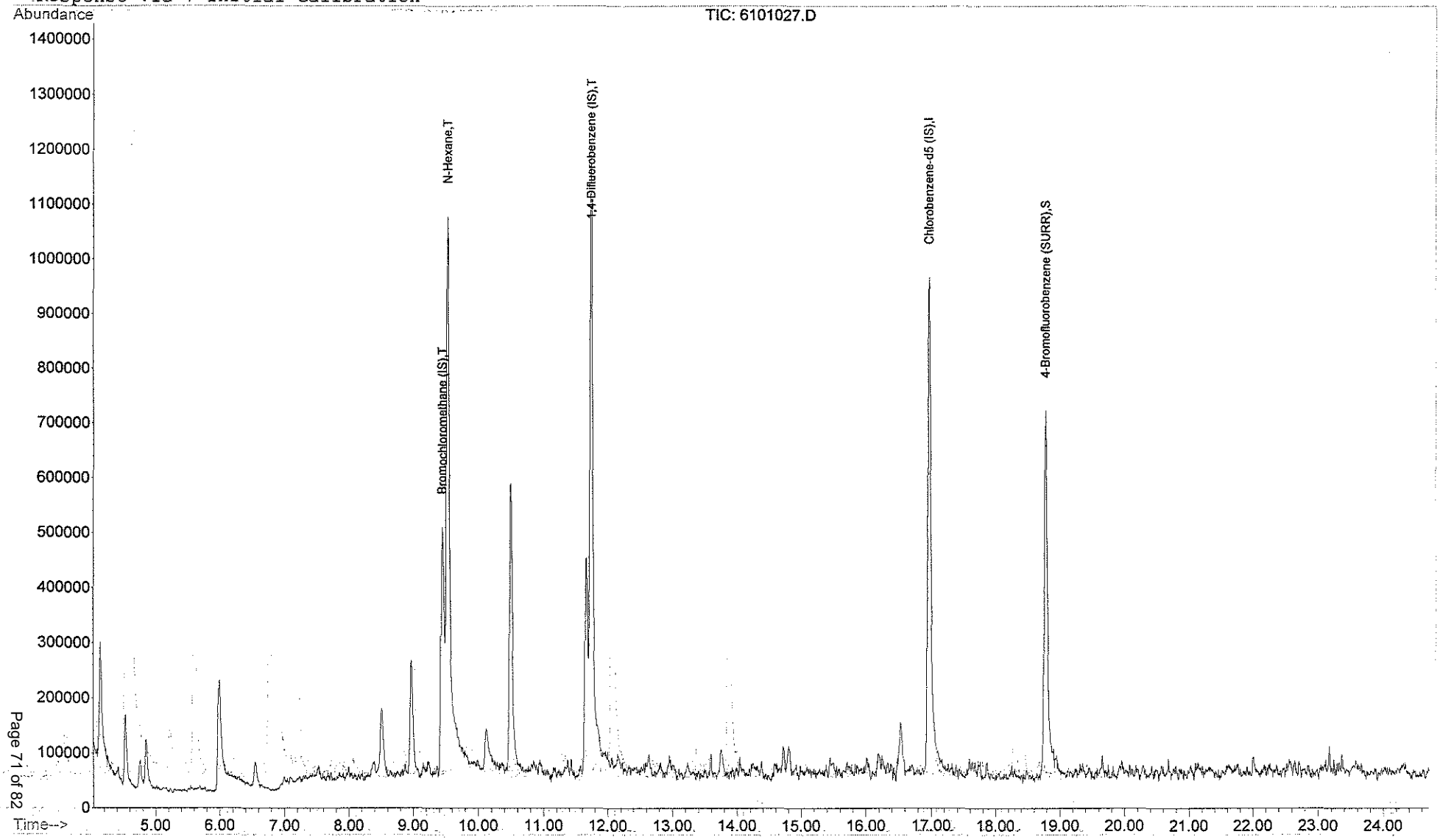
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.45	128	303440	5.00	ppbv	-0.02
25) 1,4-Difluorobenzene (IS)	11.74	114	1800645	5.00	ppbv	-0.02
45) Chlorobenzene-d5 (IS)	16.97	117	1080256	5.00	ppbv	0.00
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.78	95	601261	5.06	ppbv	0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 101.20%			
Target Compounds						Qvalue
20) N-Hexane	9.53	57	1473463	10.42	ppbv	

(#) = qualifier out of range (m) = manual integration
6101027.D 070220AI.M Wed Jul 15 09:50:05 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\071320\6101027.D Vial: 61
Acq On : 14 Jul 2020 10:24 pm Operator: TJG
Sample : 20-1687:10 RR Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:47 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\6201028.D Vial: 62
Acq On : 14 Jul 2020 11:02 pm Operator: TJG
Sample : 20-1688:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:48 2020 Quant Results File: 070220AI.RES

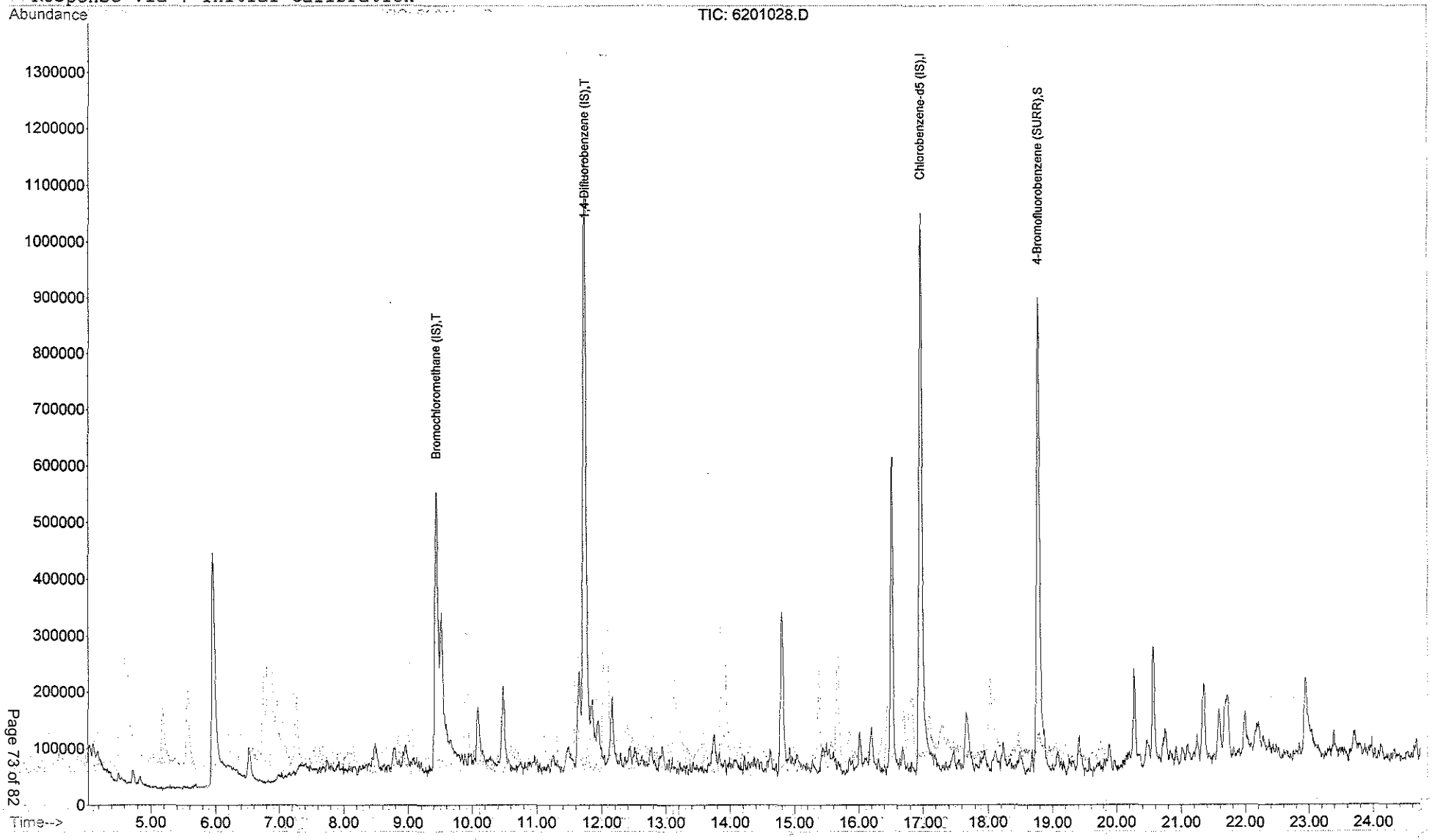
Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.44	128	420019	5.00	ppbv	-0.04
25) 1,4-Difluorobenzene (IS)	11.74	114	1671482	5.00	ppbv	-0.03
45) Chlorobenzene-d5 (IS)	16.97	117	1120503	5.00	ppbv	-0.01
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.78	95	639249	5.18	ppbv	0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 103.60%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
6201028.D 070220AI.M Wed Jul 15 09:50:07 2020

Data File : C:\HPCHEM\1\DATA\071320\6201028.D Vial: 62
Acq On : 14 Jul 2020 11:02 pm Operator: TJG
Sample : 20-1688:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:48 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\6401030.D Vial: 64
Acq On : 15 Jul 2020 12:18 am Operator: TJG
Sample : 20-1689:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:49 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

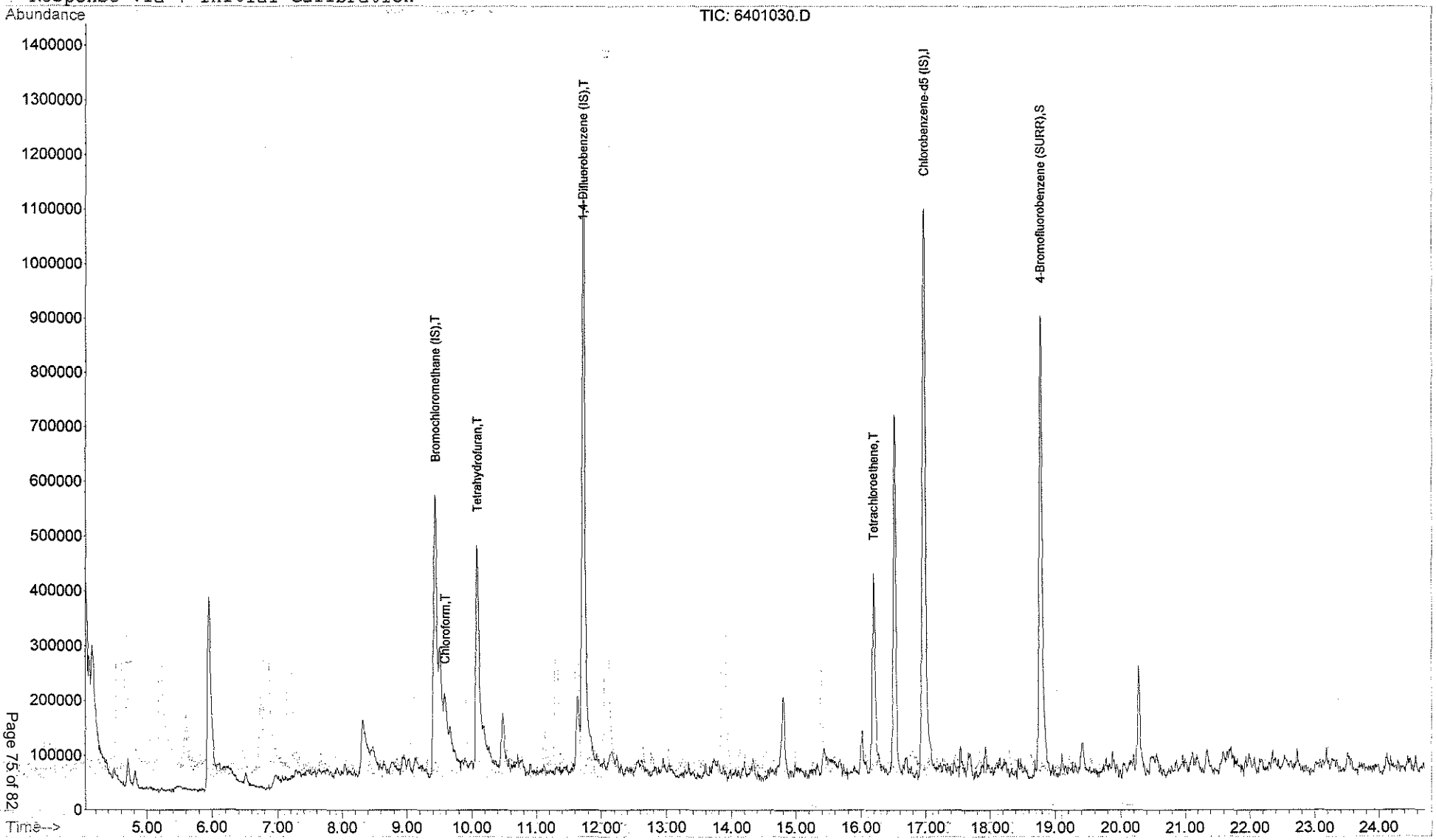
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.44	128	431080	5.00	ppbv	-0.04
25) 1,4-Difluorobenzene (IS)	11.73	114	1724331	5.00	ppbv	-0.03
45) Chlorobenzene-d5 (IS)	16.97	117	1210691	5.00	ppbv	0.00
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.78	95	651111	4.89	ppbv	0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 97.80%			
Target Compounds						Qvalue
24) Chloroform	9.59	83	101611	0.37	ppbv	96
26) Tetrahydrofuran	10.08	42	547286	4.89	ppbv	
48) Tetrachloroethene	16.20	166	60130	0.37	ppbv	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\071320\6401030.D Vial: 64
Acq On : 15 Jul 2020 12:18 am Operator: TJG
Sample : 20-1689:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:49 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\7101037.D Vial: 71
Acq On : 15 Jul 2020 5:03 am Operator: TJG
Sample : 20-1690:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:42 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

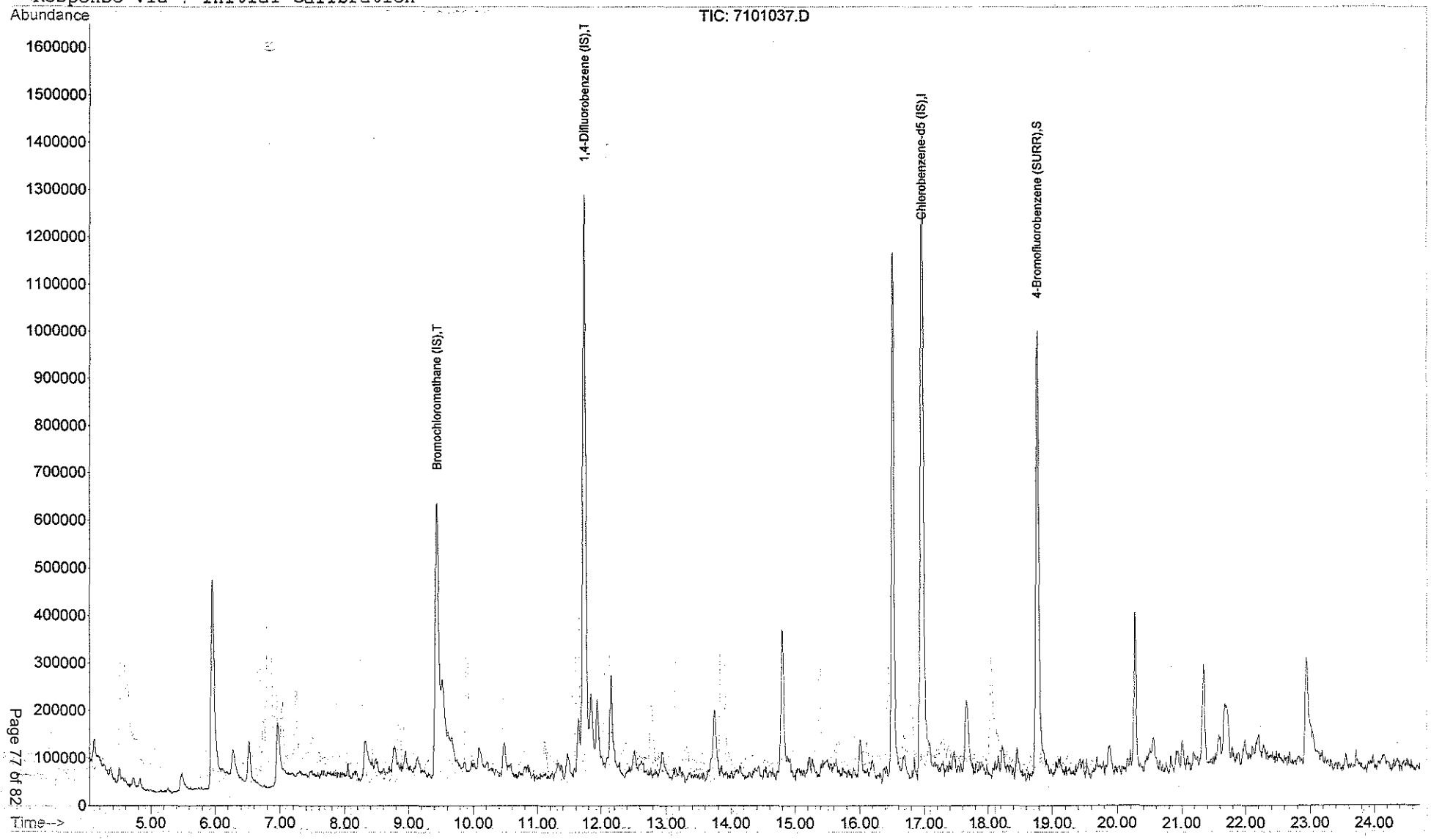
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.44	128	451889	5.00	ppbv	-0.04
25) 1,4-Difluorobenzene (IS)	11.74	114	1906658	5.00	ppbv	-0.03
45) Chlorobenzene-d5 (IS)	16.97	117	1473931	5.00	ppbv	0.00
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.78	95	717506	4.42	ppbv	0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 88.40%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
7101037.D 070220AI.M Wed Jul 15 09:43:12 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\071320\7101037.D Vial: 71
Acq On : 15 Jul 2020 5:03 am Operator: TJG
Sample : 20-1690:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:42 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\071320\7201038.D Vial: 72
Acq On : 15 Jul 2020 5:41 am Operator: TJG
Sample : 20-1691:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:42 2020 Quant Results File: 070220AI.RES

Quant Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

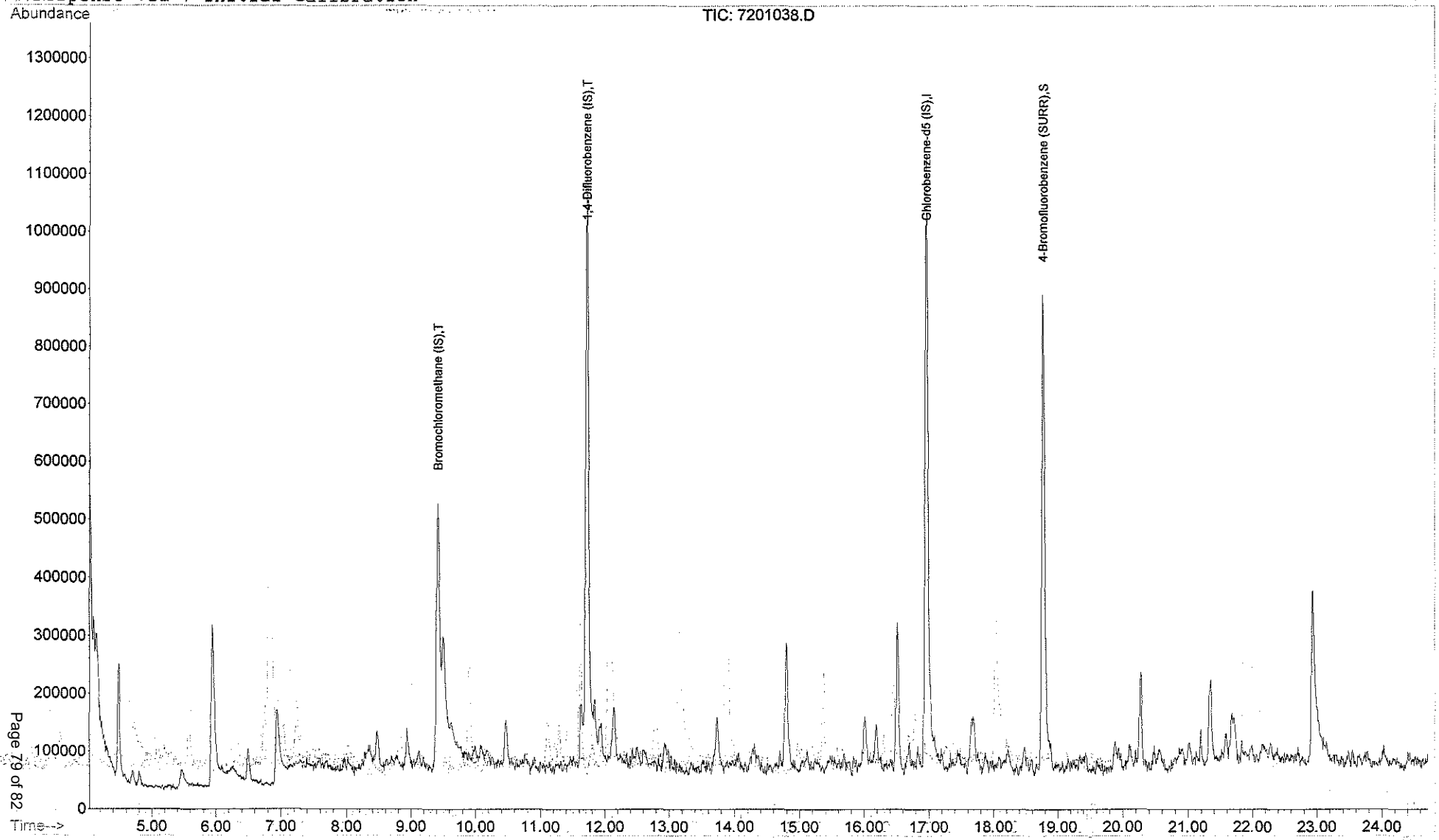
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.42	128	409637	5.00	ppbv	-0.06
25) 1,4-Difluorobenzene (IS)	11.73	114	1615287	5.00	ppbv	-0.04
45) Chlorobenzene-d5 (IS)	16.97	117	1211348	5.00	ppbv	-0.01
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.78	95	637949	4.79	ppbv	0.00
Spiked Amount 5.000	Range 62 - 145		Recovery = 95.80%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\071320\7201038.D Vial: 72
Acq On : 15 Jul 2020 5:41 am Operator: TJG
Sample : 20-1691:10 Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 15 9:42 2020 Quant Results File: 070220AI.RES

Method : C:\HPCHEM\1\METHODS\070220AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Sun Jul 05 10:04:05 2020
Response via : Initial Calibration



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TO-15 Certified Canister

- Cleaned Canister Verification Data

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070120C\0601005.D Vial: 6
Acq On : 1 Jul 2020 11:14 am Operator: TJG
Sample : CSI-83924-BATCH CERT. Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:28 2020 Quant Results File: 062320AI.RES

Quant Method : C:\HPCHEM\1\METHODS\062320AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Jun 23 22:28:59 2020
Response via : Initial Calibration
DataAcq Meth : ENV05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS)	9.45	128	664855	5.00	ppbv	-0.06
25) 1,4-Difluorobenzene (IS)	11.75	114	1574148	5.00	ppbv	-0.05
45) Chlorobenzene-d5 (IS)	16.99	117	1038994	5.00	ppbv	-0.03
System Monitoring Compounds						
56) 4-Bromofluorobenzene (SURR	18.80	95	637827	5.32	ppbv	-0.02
Spiked Amount 5.000	Range 62 - 145		Recovery = 106.40%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Quantitation Report)

Data File : C:\HPCHEM\1\DATA\070120C\0601005.D Vial: 6
Acq On : 1 Jul 2020 11:14 am Operator: TJG
Sample : CSI-83924-BATCH:CERT Inst : GC/MS Ins
Misc : TO-15 QC Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 28 9:28 2020 Quant Results File: 062320AI.RES

Method : C:\HPCHEM\1\METHODS\062320AI.M (RTE Integrator)
Title : Method TO-15 CALIBRATION
Last Update : Tue Jun 23 22:28:59 2020
Response via : Initial Calibration