Haley & Aldrich of New York
200 Town Centre Drive
Suite 2
Rochester, NY 14623
585.359.9000

17 March 2017
File No. 129388 002

Bunzl Distribution USA, LLC
One City Place Drive
Suite 200
St. Louis, MO 63141

Attention: Mr. Daniel J. Lett
Secretary

Subject: Soil Vapor Results Report
Former Dollinger Corporation Facility
1 Townline Circle
Brighton, New York 14623
Site # 828078

Dear Mr. Lett:

Haley & Aldrich of New York (Haley & Aldrich) is pleased to submit this letter report with the soil vapor and indoor air sampling results for the former Dollinger site located in Brighton, New York as requested by Bunzl Distribution USA, LLC (Bunzl). The sampling program was conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC) approved Revised Soil Vapor Intrusion Evaluation Work Plan (Work Plan) dated 6 January 2017 which was prepared in conformance with the New York State Department of Health (NYSDOH) document *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006. This report presents the results of the soil vapor evaluation as required by the Order on Consent between Bunzl and the New York State Department of Environmental Conservation (NYSDEC) dated 9 February 2016.

Soil Vapor Intrusion Sampling

The sampling was conducted to perform an evaluation for potential soil vapor intrusion at the facility: including, evaluation of chemicals present and used at the facility that may affect site sampling and results; installing sampling points below the building's floor slab to allow collection and analysis of sub slab vapors; sampling and analysis of indoor air; sampling and analysis of outdoor ambient air to evaluate the area background air quality; and synthesis and evaluation of results of the overall program. This report presents a summary of the completed work.

On 8 February 2017, Haley & Aldrich personnel installed five temporary soil vapor sampling points beneath the floor slab in the locations as shown on the attached figure. These locations were required by the work plan that was submitted to, reviewed, commented on and ultimately approved by NYSDEC. The sample points were installed using a hand drill advanced to a depth of approximately 2 inches below

the base of the floor slab. The probes were constructed of inert tubing (e.g. high density polyethylene (HDPE)) of appropriate size, approximately 1/8 inch in diameter. The sampling points were sealed with hydrated bentonite and cement grout to prevent the infiltration of indoor air during sampling, and capped until the time of sampling.

In addition, a product inventory was completed at the time of the sub slab installation to identify potential sources of volatile organic compounds (VOC) that could impact the indoor air quality. An inventory of products that are stored near the sample locations was documented on a building inventory form and pictures of the commercially available products were taken, to determine if the products may contain the site compounds of concern (COC).

On 9 February 2017, Haley & Aldrich performed the sampling program. ALS Environmental Laboratory, of Simi Valley, CA, supplied 6 liter SUMMA® canisters used for all the soil vapor and indoor air sampling. The SUMMA® canisters were equipped with dedicated pre calibrated 8 hour integrated flow controllers and were placed on a table or bench at the selected indoor air sampling locations and one outdoor air sampling location so that the intake of the flow controllers is at the approximate height of the breathing zone for facility workers (36 – 54 inches above the floor) at each sampling location. Figure 2 shows the sampling locations.

The sub slab vapor sampling points were briefly evacuated to purge any stagnant vapors within the point (the purge volume was approximately three point volumes). During the purging process, Helium tracer gas was released around the point at the ground surface, and vapor samples were collected from the installed point and analyzed for helium to assess potential short circuiting and ensure that the surface seal is intact. Purging occurred at a rate of less than 200 milliliters/minute (0.2 L/min) in accordance with NYSDOH Guidance. The samples were collected immediately after purging. The soil vapor samples were collected in dedicated 6 liter SUMMA® canisters.

The samples were shipped at ambient temperature under a Chain of Custody (COC) to the laboratory and analyzed for tetrachloroethene (PCE), trichloroethene (TCE) and their subsequent breakdown products cis 1,2 dichloroethene (cis DCE), and vinyl chloride (VC). Vacuum readings were recorded before and after sampling on a field form to document the sample collection. The final vacuum reading recorded at the end of the sampling period were placed on the COC form prior to shipping to the laboratory and each canister vacuum was checked upon arrival at the laboratory to confirm sample integrity during shipment.

Results

The results of soil vapor intrusion sampling program are shown on the attached figure and laboratory report. All results are shown in units of micrograms per cubic meter ($\mu g/m^3$) and compared to the NYSDOH guidance document's Matrices. The comparison criteria are shown in the notes of the figure. Bold results indicate the detections of a compound above the laboratory reporting limits, and results shown in red font indicate the detection of a compound at a concentration above a NYDOH guidance criterion where mitigation is recommended by the guidance document.

At locations 3 and 4, the indoor air (IA 3 and 4) and sub slab (SS 3 and 4), PCE was detected at concentrations above the criteria where sub slab vapor mitigation is recommended by the NYSDOH guidance. However, the PCE concentration detected in the indoor air samples at these locations are higher than the sub slab soil vapor concentrations indicating is the presence of an indoor source of PCE. During the product inventory taken during the sampling event, an electrical parts cleaner manufactured by CDC (Lectra Clean®) was identified as a product currently used by the building tenant. This product is an aerosol cleaner that contains between 90 100% PCE, per the product SDS (attached).

At location 2, just inside the manufacturing building south of the annex, TCE was detected in both indoor air (IA 2) and sub slab (SS 2) vapor at concentrations that also indicate the potential need for sub slab vapor mitigation per the NYSDOH guidance. PCE was detected at this location at a concentration below the applicable NYSDOH comparison criteria.

In summary, results of the sampling indicate PCE presence indoors and in soil vapor beneath the building slab.

As per the approved work plan, the attached laboratory reports are required to be provided to the current building owner and the NYSDEC.

We appreciate the opportunity to continue to assist Bunzl on this project. Please contact the undersigned if you wish to discuss this report further.

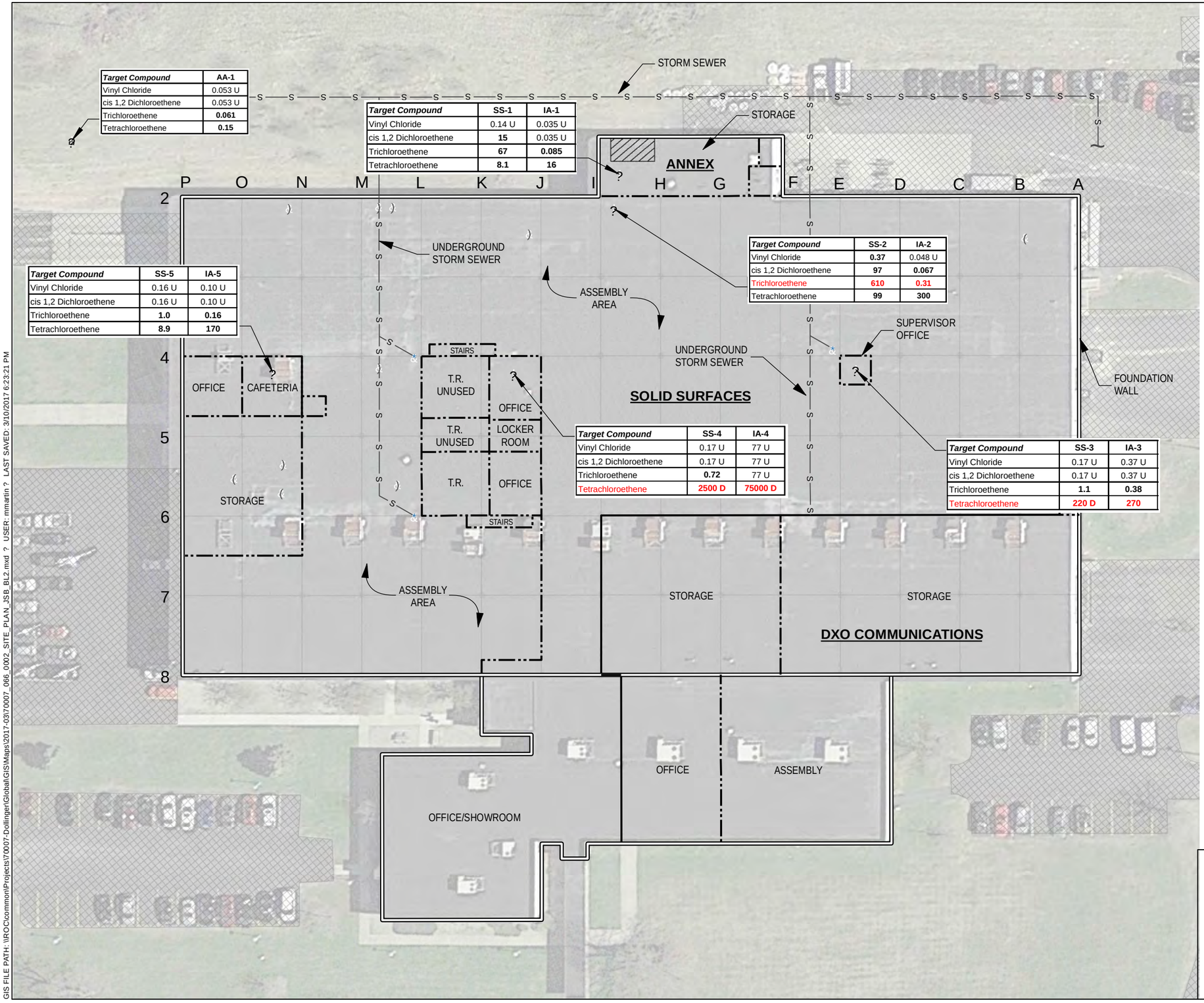
Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Mark N. Ramsdell, P.E.
Senior Project Manager

Vincent B. Dick
Vice President

c: Husch Blackwell LLP; Bradley Hiles

Attachments:
- Site Plan Figure
- Lectra Clean SDS ALS
- Laboratory Report



Target Compound	AA-1
Vinyl Chloride	0.053 U
cis 1,2 Dichloroethene	0.053 U
Trichloroethene	**0.061**
Tetrachloroethene	**0.15**

Target Compound	SS-1	IA-1
Vinyl Chloride	0.14 U	0.035 U
cis 1,2 Dichloroethene	**15**	0.035 U
Trichloroethene	**67**	**0.085**
Tetrachloroethene	**8.1**	**16**

Target Compound	SS-2	IA-2
Vinyl Chloride	**0.37**	0.048 U
cis 1,2 Dichloroethene	**97**	**0.067**
Trichloroethene	**610**	**0.31**
Tetrachloroethene	**99**	**300**

Target Compound	SS-5	IA-5
Vinyl Chloride	0.16 U	0.10 U
cis 1,2 Dichloroethene	0.16 U	0.10 U
Trichloroethene	**1.0**	**0.16**
Tetrachloroethene	**8.9**	**170**

Target Compound	SS-4	IA-4
Vinyl Chloride	0.17 U	77 U
cis 1,2 Dichloroethene	0.17 U	77 U
Trichloroethene	**0.72**	77 U
Tetrachloroethene	**2500 D**	**75000 D**

Target Compound	SS-3	IA-3
Vinyl Chloride	0.17 U	0.37 U
cis 1,2 Dichloroethene	0.17 U	0.37 U
Trichloroethene	**1.1**	**0.38**
Tetrachloroethene	**220 D**	**270**

LEGEND

- FOUNDATION WALL
- TENANT SEPARATION WALL
- INTERIOR WALL
- S STORM SEWER
- FORMER DEGREASER PIT
-) CLEAN OUT
- (FLOOR DRAIN
- * ROOF DRAIN
- ? INDOOR/SUB-SLAB SAMPLE LOCATION
- a AMBIENT AIR SAMPLE LOCATION

NOTES

1. PARTIAL BUILDING DETAILS FROM ORIGINAL DESIGN DRAWINGS, DOLLINGER CORPORATION, 1968.

2. AERIAL IMAGERY SOURCE: GOOGLE EARTH, 2016

Sample Number	IA Comparison Criteria[1]	SS Comparison Criteria[2]
Sample Location	(ug/M3)	(ug/M3)
Target Compound		
Vinyl Chloride	0.25	5
cis 1,2 Dichloroethene	3	100
Trichloroethene	0.25	5
Tetrachloroethene	3	100

NOTES:
- •units = micrograms per cubic meter (ug/M3)
- •U =Parameter Not Detected above the Sample Reporting Limit
- •D = Dilution Required for Analysis
- •Bold - Parameter Detected Above the Sample Reporting Limit.
- •Red - Mitigation Required
- •SS- Sub Slab Sample
- •IA - Indoor Air Sample
- •1 - No Further Action Indoor Air Concentration
- •2 - No Further Action Sub Slab Vapor Concentration

Reference: NYSDOH Guidance for Evaluting Soil Vapor Intrusion in New York State, 2006 as updated September 2013 and August 2015.

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SCALE IN FEET

HALEY ALDRICH

BUNZL USA, INC.
FORMER DOLLINGER BUILDING
BRIGHTON, NEW YORK

SITE PLAN

MARCH 2017

FIGURE

SAFETY DATA SHEET

1. Identification

Product identifier **Lectra Clean® Heavy Duty Electrical Parts Degreaser**

Other means of identification

Product code 02018

Recommended use Energized electrical cleaner

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name CRC Industries, Inc.

Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical Assistance 800-521-3168

Customer Service 800-272-4620

24-Hour Emergency (CHEMTREC) 800-424-9300 (US)
703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Gases under pressure	Compressed gas
Health hazards	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 1B
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Contains gas under pressure; may explode if heated. Causes skin irritation. May cause drowsiness or dizziness. May cause cancer. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not puncture or incinerate container. Do not expose to heat or store at temperatures above 49°C/120°F. Use with adequate ventilation. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid breathing mist or vapor. Avoid breathing gas. Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If exposed or concerned: Get medical attention. Take off contaminated clothing and wash before reuse. Collect spillage.

Storage Store locked up. Protect from sunlight. Store in a well-ventilated place. Exposure to high temperature may cause can to burst.

Disposal Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information

When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
tetrachloroethylene	perchloroethylene	127-18-4	90 - 100
carbon dioxide		124-38-9	1 - 3
decafluoropentane	HFC 43-10mee	138495-42-8	< 1

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Remove contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Do not induce vomiting. Rinse mouth. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of eyes and mucous membranes. Irritation of nose and throat. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Contents under pressure. During fire, gases hazardous to health may be formed. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene.

Special protective equipment and precautions for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Fire-fighting equipment/instructions In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Avoid breathing gas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk. Collect spillage. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid breathing mist or vapor. Avoid breathing gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Use only in well-ventilated areas. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities Level 1 Aerosol.

Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
carbon dioxide (CAS 124-38-9)	PEL	9000 mg/m3
		5000 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
tetrachloroethylene (CAS 127-18-4)	Ceiling	200 ppm
	TWA	100 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
carbon dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm
tetrachloroethylene (CAS 127-18-4)	STEL	100 ppm
	TWA	25 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
carbon dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	9000 mg/m3
		5000 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
tetrachloroethylene (CAS 127-18-4)	0.5 mg/l	Tetrachloroethylene	Blood	*
	3 ppm	Tetrachloroethylene	End-exhaled air	*

* - For sampling details, please see the source document.

Exposure guidelines

US - Minnesota Haz Subs: Skin designation applies

tetrachloroethylene (CAS 127-18-4)	Skin designation applies.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower should be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves such as: Polyvinyl alcohol (PVA). Ethyl vinyl alcohol laminate (EVAL). Viton®.

Other Wear appropriate chemical resistant clothing.

Respiratory protection If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Aerosol.

Color Colorless.

Odor Irritating.

Odor threshold 50 ppm

pH Not available.

Melting point/freezing point -8.1 °F (-22.3 °C) estimated

Initial boiling point and boiling range 250.3 °F (121.3 °C) estimated

Flash point None (Tag Closed Cup)

Evaporation rate Very fast.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not applicable.

Flammability limit - upper (%) Not applicable.

Vapor pressure 1333.3 hPa estimated

Vapor density 5.76 (air = 1)

Relative density 1.61 estimated

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity (kinematic) Not available.

Percent volatile 97.7 % estimated

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Metals. Powdered metal. Amines. Strong bases.
Hazardous decomposition products	Hydrogen fluoride. Hydrogen chloride. Trace amounts of chlorine and phosgene.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Single dose oral toxicity is considered to be extremely low. Swallowing large amounts may cause injury if aspirated into the lungs. This may be rapidly absorbed through the lungs and result in injury to other body systems.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Narcotic effects.

Components	Species	Test Results
decafluoropentane (CAS 138495-42-8)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Inhalation		
LC50	Rat	11058 mg/kg, 4 hours calculated
Oral		
LD50	Rat	> 5000 mg/kg
tetrachloroethylene (CAS 127-18-4)		
Acute		
Dermal		
LD50	Rabbit	> 3228 mg/kg
Inhalation		
Vapor		
LC50	Rat	3786 ppm, 4 hours
Oral		
LD50	Rat	2629 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

tetrachloroethylene (CAS 127-18-4) 2A Probably carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

tetrachloroethylene (CAS 127-18-4) Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Based on available data, the classification criteria are not met.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Components		Species	Test Results
decafluoropentane (CAS 138495-42-8)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	11.7 mg/l, 48 hours
Fish	LC50	Zebra danio (Danio rerio)	13 mg/l, 96 hours
tetrachloroethylene (CAS 127-18-4)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4.73 - 5.27 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

decafluoropentane	2.7, Pow at 20 °C
tetrachloroethylene	2.88

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products This material and its container must be disposed of as hazardous waste. Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.

Hazardous waste code D039: Waste Tetrachloroethylene
F001: Waste Tetrachloroethylene - Spent halogenated solvent used in degreasing
F002: Waste Tetrachloroethylene - Spent halogenated solvent

US RCRA Hazardous Waste U List: Reference

tetrachloroethylene (CAS 127-18-4) U210

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number UN1950
UN proper shipping name Aerosols, poison, Limited Quantity
Transport hazard class(es)
Class 2.2
Subsidiary risk 6.1(PGIII)
Label(s) 2.2, 6.1

Packing group	Not applicable.
Special precautions for user	Forbidden from transportation by air.
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, non-flammable, containing substances in Division 6.1, Packing Group III
Transport hazard class(es)	
Class	2.2
Subsidiary risk	6.1(PGIII)
Packing group	Not applicable.
ERG Code	2P
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	
Class	2
Subsidiary risk	6.1(PGIII)
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

decafluoropentane (CAS 138495-42-8) 1.0 % One-Time Export Notification only.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

tetrachloroethylene (CAS 127-18-4)

CERCLA Hazardous Substance List (40 CFR 302.4)

tetrachloroethylene (CAS 127-18-4) Listed.

CERCLA Hazardous Substances: Reportable quantity

tetrachloroethylene (CAS 127-18-4) 100 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

tetrachloroethylene (CAS 127-18-4)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.
Food and Drug Administration (FDA)	Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - Yes Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

tetrachloroethylene (CAS 127-18-4)

US. New Jersey Worker and Community Right-to-Know Act

carbon dioxide (CAS 124-38-9)
tetrachloroethylene (CAS 127-18-4)

US. Massachusetts RTK - Substance List

carbon dioxide (CAS 124-38-9)
tetrachloroethylene (CAS 127-18-4)

US. Pennsylvania Worker and Community Right-to-Know Law

carbon dioxide (CAS 124-38-9)
tetrachloroethylene (CAS 127-18-4)

US. Rhode Island RTK

carbon dioxide (CAS 124-38-9)
tetrachloroethylene (CAS 127-18-4)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

tetrachloroethylene (CAS 127-18-4) Listed: April 1, 1988

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s))	0 %
Consumer products (40 CFR 59, Subpt. C)	Not regulated

State

Consumer products	This product is regulated as an Energized Electrical Cleaner for the following states: California, Connecticut, Delaware, District of Columbia, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Rhode Island and Virginia. It is for energized equipment use only. It is not to be used for motorized vehicle maintenance or their parts. This product is compliant for use in all 50 states.
VOC content (CA)	0 %
VOC content (OTC)	0 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 07-23-2014

Revision date 01-05-2017

Prepared by Allison Cho

Version # 03

Further information CRC # 863A

HMIS® ratings
Health: 2*
Flammability: 0
Physical hazard: 0
Personal protection: B

NFPA ratings
Health: 2
Flammability: 0
Instability: 0

NFPA ratings

Disclaimer
The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC's knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries, Inc..

Revision Information
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Data
Transport Information: Material Transportation Information
Transport information: General information
Other information, including date of preparation or last revision: Disclaimer
GHS: Classification

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LABORATORY REPORT

March 2, 2017

Jonathan Sanger
Haley & Aldrich, Inc.
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264

RE: Dollinger / 129388-002

Dear Jonathan:

Enclosed are the results of the samples submitted to our laboratory on February 13, 2017. For your reference, these analyses have been assigned our service request number P1700672.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 4:17 pm, Mar 02, 2017

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
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Client: Haley & Aldrich, Inc.
Project: Dollinger / 129388-002

Service Request No: P1700672
New York Lab ID: 11221

CASE NARRATIVE

The samples were received intact under chain of custody on February 13, 2017 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The IA and AA samples were run in SIM mode and the SS samples in scan mode for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

Due to high target analytes, sample IA4-020917-0935 was analyzed in scan mode.

The response for the third internal standard in sample IA2-020917-1005 (P1700672-004) was outside control criteria; however, since this compound is not associated with the target analytes included in this report the results were not affected. No corrective action was appropriate.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1177034
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-003
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-16-7
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272016-6
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Haley & Aldrich, Inc. Service Request: P1700672
Project ID: Dollinger / 129388-002

Date Received: 2/13/2017
Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	2nd Pi (psig)	2nd Pf (psig)	TO-15 - VOC Cans	TO-15 - VOC SIM
SS1-020917-0900	P1700672-001	Air	2/9/2017	09:00	SC01035	-1.39	3.68			X	
IA1-020917-0905	P1700672-002	Air	2/9/2017	09:05	AS00269	-1.42	3.57				X
SS2-020917-1000	P1700672-003	Air	2/9/2017	10:00	SC01709	-2.75	3.80			X	
IA2-020917-1005	P1700672-004	Air	2/9/2017	10:05	AC01884	-5.11	3.77				X
SS3-020917-0945	P1700672-005	Air	2/9/2017	09:45	SC02171	-3.91	3.84			X	
IA3-020917-0950	P1700672-006	Air	2/9/2017	09:50	SC01692	-2.04	3.80				X
SS4-020917-0930	P1700672-007	Air	2/9/2017	09:30	SC02184	-3.90	3.85			X	
IA4-020917-0935	P1700672-008	Air	2/9/2017	09:35	AC02273	-2.69	3.76			X	
SS5-020917-0915	P1700672-009	Air	2/9/2017	09:15	SC02175	-3.12	3.66			X	
IA5-020917-0920	P1700672-010	Air	2/9/2017	09:20	AC01788	-3.48	3.66	-8.03	2.03		X
AA1-020917-1030	P1700672-011	Air	2/9/2017	10:30	AC01765	-5.91	3.72				X

ALS Environmental
Sample Acceptance Check Form

Client: Haley & Aldrich, Inc. Work order: P1700672

Project: Dollinger / 129388-002

Sample(s) received on: 2/13/17 Date opened: 2/13/17 by: KKELPE

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1700672-001.01	6.0 L Source Can					
P1700672-002.01	6.0 L Silonite Can					
P1700672-003.01	6.0 L Source Can					
P1700672-004.01	6.0 L Ambient Can					
P1700672-005.01	6.0 L Source Can					
P1700672-006.01	6.0 L Source Can					
P1700672-007.01	6.0 L Source Can					
P1700672-008.01	6.0 L Ambient Can					
P1700672-009.01	6.0 L Source Can					
P1700672-010.01	6.0 L Ambient Can					
P1700672-011.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
SS-020917-0900	P1700672-001	EPA TO-15					
IA1-020917-0905	P1700672-002	EPA TO-15					
SS2-020917-1000	P1700672-003	EPA TO-15					
IA2-020917-1005	P1700672-004	EPA TO-15					
SS3-020917-0945	P1700672-005	EPA TO-15					
IA3-020917-0950	P1700672-006	EPA TO-15					
SS4-020917-0930	P1700672-007	EPA TO-15					
IA4-020917-0935	P1700672-008	EPA TO-15					
SS5-020917-0915	P1700672-009	EPA TO-15					
IA5-020917-0920	P1700672-010	EPA TO-15					
AA1-020917-1030	P1700672-011	EPA TO-15					

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE (VOA)
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
P1700672-001	Air	2/9/17	2/13/17	NA	2/15/17
P1700672-002	Air	2/9/17	2/13/17	NA	2/16/17
P1700672-003	Air	2/9/17	2/13/17	NA	2/15/17
P1700672-004	Air	2/9/17	2/13/17	NA	2/16/17
P1700672-005	Air	2/9/17	2/13/17	NA	2/15/17
P1700672-006	Air	2/9/17	2/13/17	NA	2/16/17
P1700672-007	Air	2/9/17	2/13/17	NA	2/15/17
P1700672-008	Air	2/9/17	2/13/17	NA	2/17/17
P1700672-009	Air	2/9/17	2/13/17	NA	2/15/17
P1700672-010	Air	2/9/17	2/13/17	NA	2/17/17
P1700672-011	Air	2/9/17	2/13/17	NA	2/17/17

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

ALS
2655 Park Center Drive, Suite A
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Blanket Service Agreement 2015-18 ALS Group

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No. P1700672

Company Name & Address (Reporting Information)	HALEY & ALDRICH
Project Manager	MARK RAMSDELL
Phone	585-321-4262
Fax	
Email Address for Result Reporting	mramsdell@haleyaldrich.com
Project Name	Dollinger
Project Number	129388-002
P.O. # / Billing Information	ACCT Payable
Sampler (Print & Sign)	Jon Sanger
ALS Contact:	Sue Anderson

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15 - SIM for Vinyl Chloride, PCE (CTLE, CIS 1,2, DCE)	Analysis Method: TO-15 (VC, PCE, TCE, CIS 1,2, DCE)	Comments e.g. Actual Preservative or specific instructions
SS1-020917-0900	1	2/9/17	0900	SC01036	OA02106	29.5	7.1	6L		X	
IA1-020917-0905	2		0905	AC00267	FCA00813	29.0	5.9		X		
SS2-020917-1000	3		1000	SC01709	OA01826	29.0	6.0			X	
IA2-020917-1005	4		1005	AC01884	FCA00686	30.0	11.9		X		
SS3-020917-0945	5		945	SC02171	OA01072	29.0	8.9			X	
IA3-020917-0950	6		950	SC01692	FCA0153	29.0	5.0		X		
SS4-020917-0930	7		930	SC02184	OA00342	28.5	9.0			X	
IA4-020917-0935	8		935	AC00273	FCA01038	28.9	5.1		X		
SS5-020917-0915	9		915	SC02175	OA01103	28.0	6.1			X	
IA5-020917-0920	10		920	AC01788	FCA00709	29.0	7.8		X		
AA1-020917-1030	11	2/9/17	1030	AC01765	FCA00715	29.0	15.0	6L	X		

8015390

Report Tier Levels - please select

Tier I - Results (Default in not specified) _____ Tier III (Results + QC & Calibration Summaries) _____
Tier II (Results + QC Summaries _____ Tier IV (Date Validation Package) 10% Surcharge _____

EDD required (YES) No
Type: ASP-B Units: _____

Chain of Custody Seal: (Circle)
INTACT BROKEN (ABSENT)

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)		Date: 2/9/17	Time: 18:45	Received by: (Signature)		Date: 2/13/17	Time: 0930
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Date:	Time:

Cooler / Blank Temperature _____ °C

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Haley & Aldrich, Inc.**
Client Project ID: **Dollinger / 129388-002** ALS Project ID: P1700672

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date(s) Collected: 2/9/17
Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Received: 2/13/17
Analyst: Simon Cao/Lusine Hakobyan Date(s) Analyzed: 2/15 - 2/17/17
Sample Type: 6.0 L Summa Canister(s)
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P170215-MB	**93**	**104**	**108**	70-130	
Method Blank	P170216-MB	**92**	**103**	**108**	70-130	
Method Blank	P170217-MB	**98**	**101**	**103**	70-130	
Lab Control Sample	P170215-LCS	**92**	**102**	**110**	70-130	
Lab Control Sample	P170216-LCS	**92**	**101**	**109**	70-130	
Lab Control Sample	P170217-LCS	**97**	**100**	**105**	70-130	
SS1-020917-0900	P1700672-001	**94**	**99**	**115**	70-130	
SS2-020917-1000	P1700672-003	**94**	**98**	**114**	70-130	
SS3-020917-0945	P1700672-005	**93**	**99**	**110**	70-130	
SS4-020917-0930	P1700672-007	**93**	**96**	**106**	70-130	
IA4-020917-0935	P1700672-008	**91**	**100**	**101**	70-130	
SS5-020917-0915	P1700672-009	**92**	**100**	**109**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170215-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 2/15/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	210	**161**	**77**	61-125	
156-59-2	cis-1,2-Dichloroethene	212	**174**	**82**	72-117	
79-01-6	Trichloroethene	212	**195**	**92**	68-114	
127-18-4	Tetrachloroethene	213	**212**	**100**	65-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170216-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	210	**155**	**74**	61-125	
156-59-2	cis-1,2-Dichloroethene	212	**167**	**79**	72-117	
79-01-6	Trichloroethene	212	**188**	**89**	68-114	
127-18-4	Tetrachloroethene	213	**202**	**95**	65-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170217-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	210	**230**	**110**	61-125	
156-59-2	cis-1,2-Dichloroethene	212	**218**	**103**	72-117	
79-01-6	Trichloroethene	212	**219**	**103**	68-114	
127-18-4	Tetrachloroethene	213	**219**	**103**	65-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 02151703.D
Analyst: Simon Cao Date Analyzed: 2/15/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 06:48
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P170215-LCS	02151704.D	07:22
SS1-020917-0900	P1700672-001	02151723.D	19:59
SS2-020917-1000	P1700672-003	02151724.D	20:33
SS3-020917-0945	P1700672-005	02151725.D	21:07
SS4-020917-0930	P1700672-007	02151726.D	21:41
SS5-020917-0915	P1700672-009	02151727.D	22:15

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 02161703.D
Analyst: Simon Cao Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 06:48
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P170216-LCS	02161704.D	07:21
SS2-020917-1000 (Dilution)	P1700672-003	02161711.D	12:21
SS3-020917-0945 (Dilution)	P1700672-005	02161712.D	12:55
SS4-020917-0930 (Dilution)	P1700672-007	02161713.D	13:29

Client: **Haley & Aldrich, Inc.** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Lab File ID: 02171703.D
Analyst: Lusine Hakobyan Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 06:21
Test Notes:

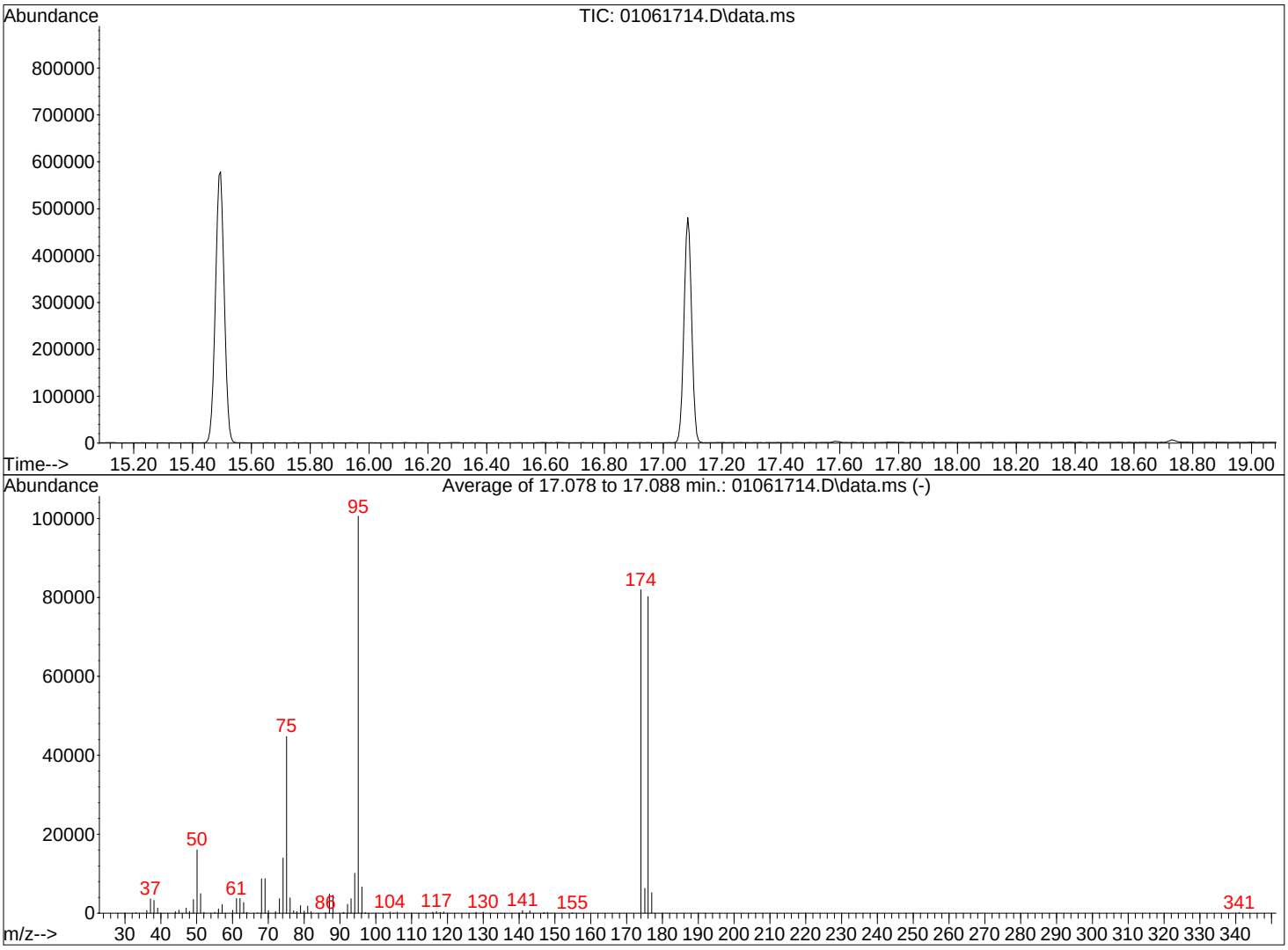
Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P170217-LCS	02171705.D	07:32
IA4-020917-0935 (Dilution)	P1700672-008	02171715.D	14:30
IA4-020917-0935	P1700672-008	02171716.D	15:05

Data Path : I:\MS09\Data\2017_01\06\
Data File : 01061714.D
Acq On : 6 Jan 2017 18:54
Operator : SC
Sample : 12.5ng TO-15 BFB STD
Misc : S29-12071602
ALS Vial : 2 Sample Multiplier: 1

1/9/17

Integration File: LSCINT.P

Method : I:\MS09\Methods\R9010617.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Dec 20 15:20:19 2016



AutoFind: Scans 2641, 2642, 2643; Background Corrected with Scan 2632

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.0	16059	PASS
75	95	30	66	44.5	44763	PASS
95	95	100	100	100.0	100592	PASS
96	95	5	9	6.6	6666	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	81.5	81936	PASS
175	174	4	9	7.7	6306	PASS
176	174	93	101	97.9	80245	PASS
177	176	5	9	6.5	5222	PASS

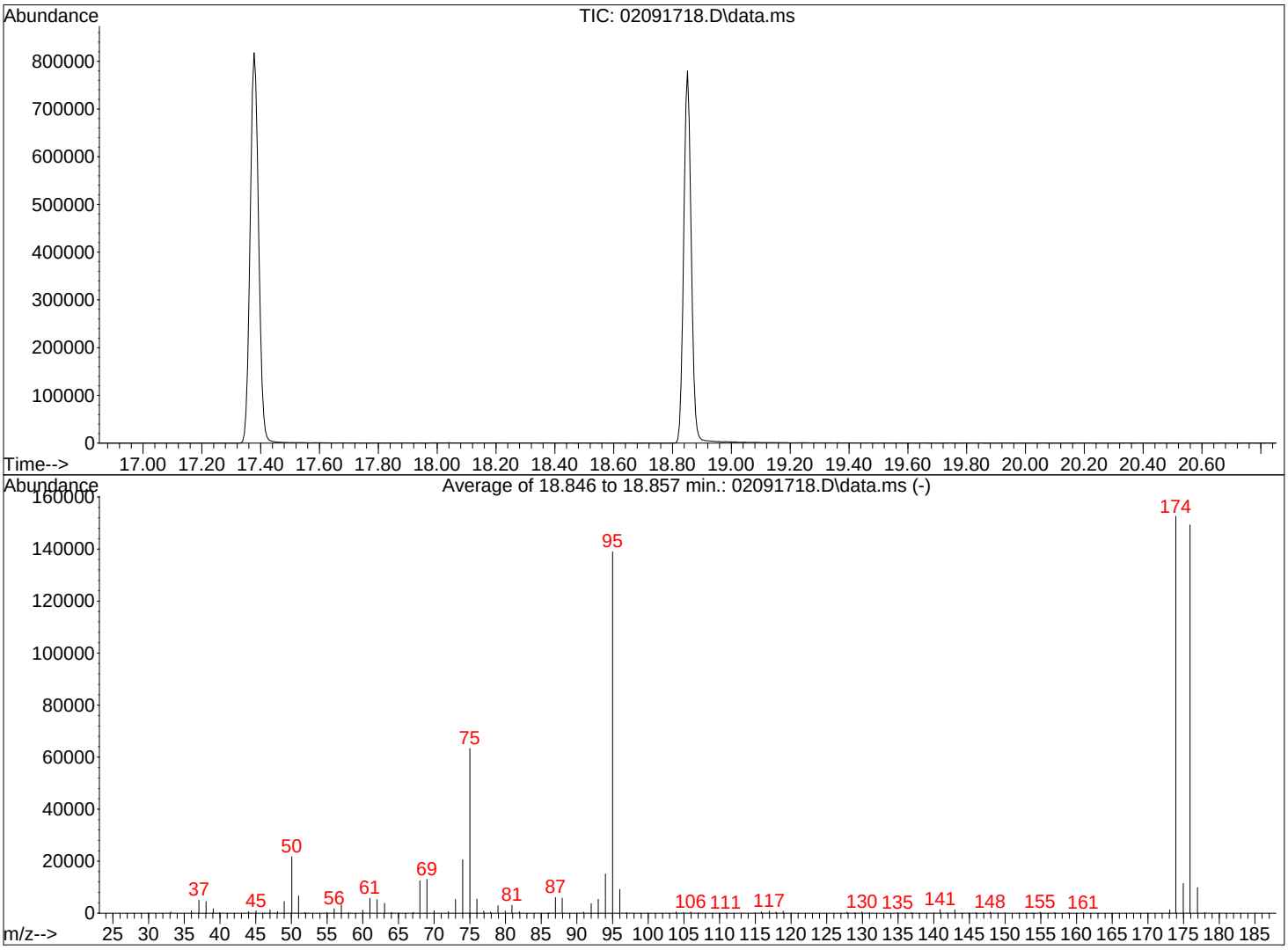
Data Path : I:\MS13\DATA\2017_02\09\
Data File : 02091718.D
Acq On : 9 Feb 2017 15:49
Operator : LH/AMF
Sample : 12.5ng BFB
Misc : S29-01311701
ALS Vial : 3 Sample Multiplier: 1

LH 2/17/17

2/10/17

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13021017.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Feb 10 12:09:18 2017



AutoFind: Scans 2793, 2794, 2795; Background Corrected with Scan 2785

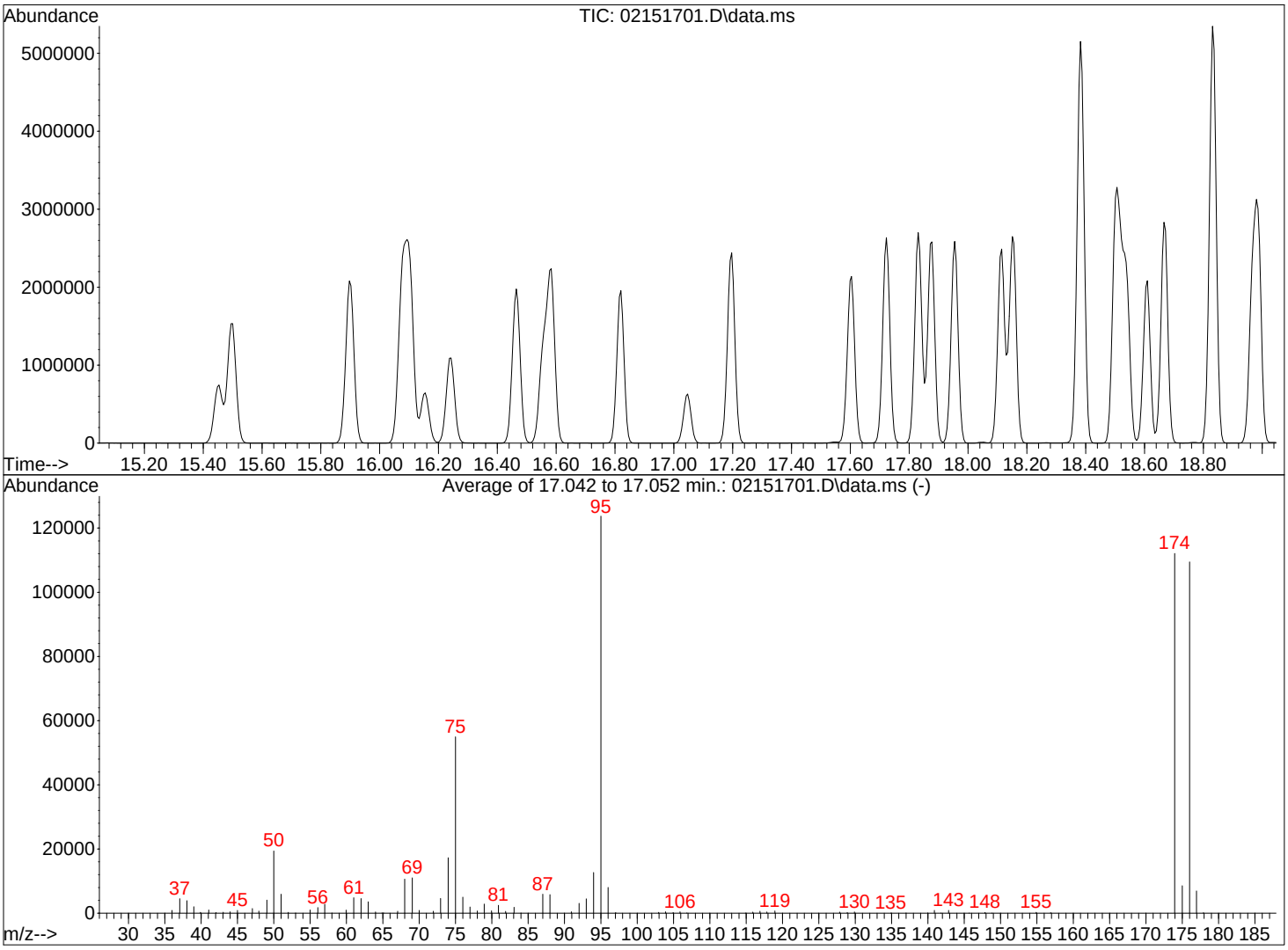
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.7	21749	PASS
75	95	30	66	45.6	63389	PASS
95	95	100	100	100.0	138965	PASS
96	95	5	9	6.6	9174	PASS
173	174	0.00	2	0.8	1286	PASS
174	95	50	120	109.9	152661	PASS
175	174	4	9	7.5	11411	PASS
176	174	93	101	97.8	149291	PASS
177	176	5	9	6.6	9867	PASS

Data Path : I:\MS09\Data\2017_02\15\
Data File : 02151701.D
Acq On : 15 Feb 2017 5:41
Operator : SC
Sample : CCV R9021517_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

2/15/17

Integration File: LSCINT.P

Method : I:\MS09\Methods\R9010617.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Feb 08 09:01:59 2017



AutoFind: Scans 2634, 2635, 2636; Background Corrected with Scan 2625

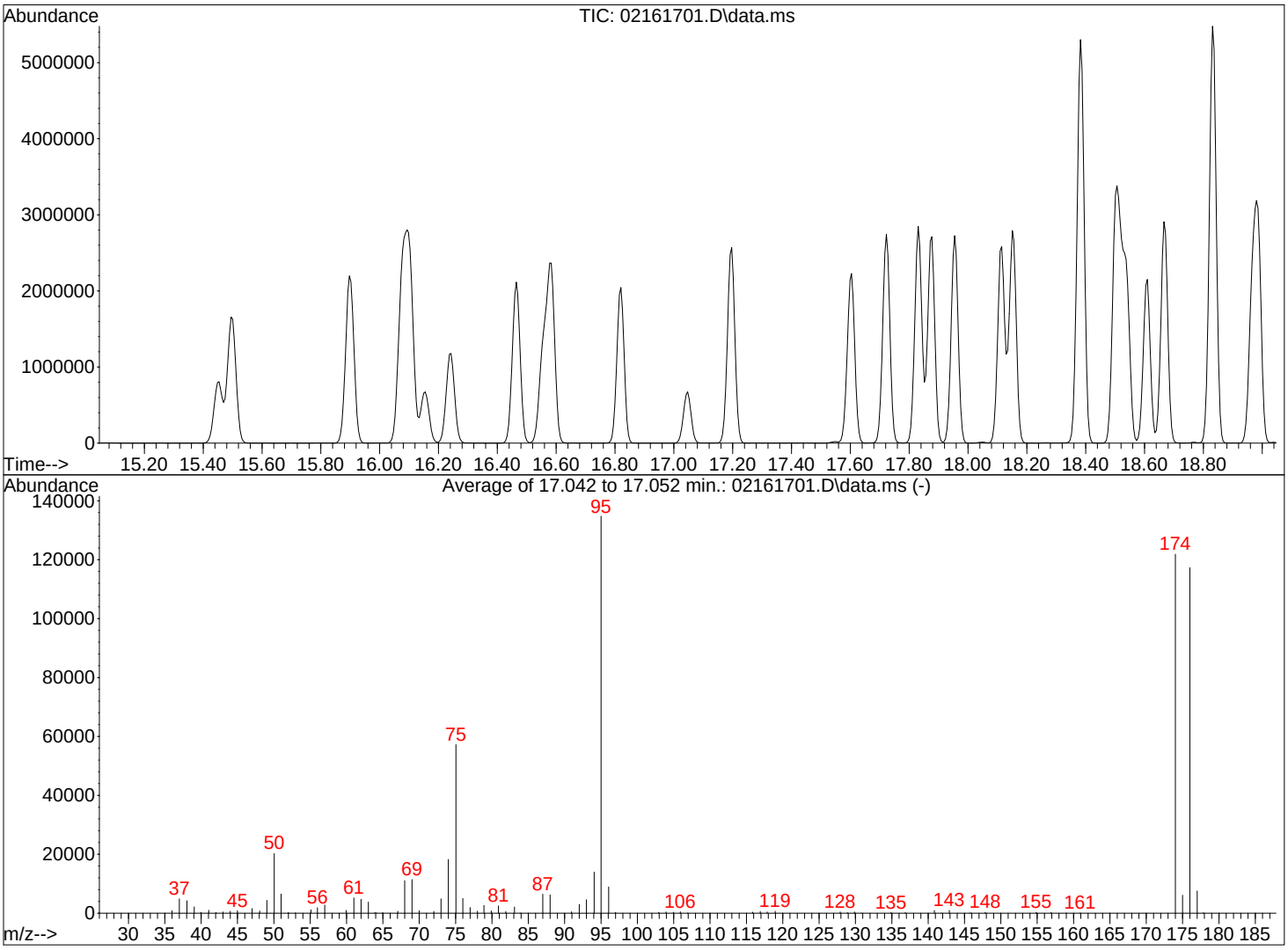
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.7	19400	PASS
75	95	30	66	44.4	54928	PASS
95	95	100	100	100.0	123699	PASS
96	95	5	9	6.5	8033	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.6	112091	PASS
175	174	4	9	7.7	8575	PASS
176	174	93	101	97.6	109453	PASS
177	176	5	9	6.3	6911	PASS

Data Path : I:\MS09\Data\2017_02\16\
Data File : 02161701.D
Acq On : 16 Feb 2017 5:40
Operator : SC
Sample : CCV R9021617_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

2/16/17

Integration File: LSCINT.P

Method : I:\MS09\Methods\R9010617.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Feb 08 09:01:59 2017



AutoFind: Scans 2634, 2635, 2636; Background Corrected with Scan 2625

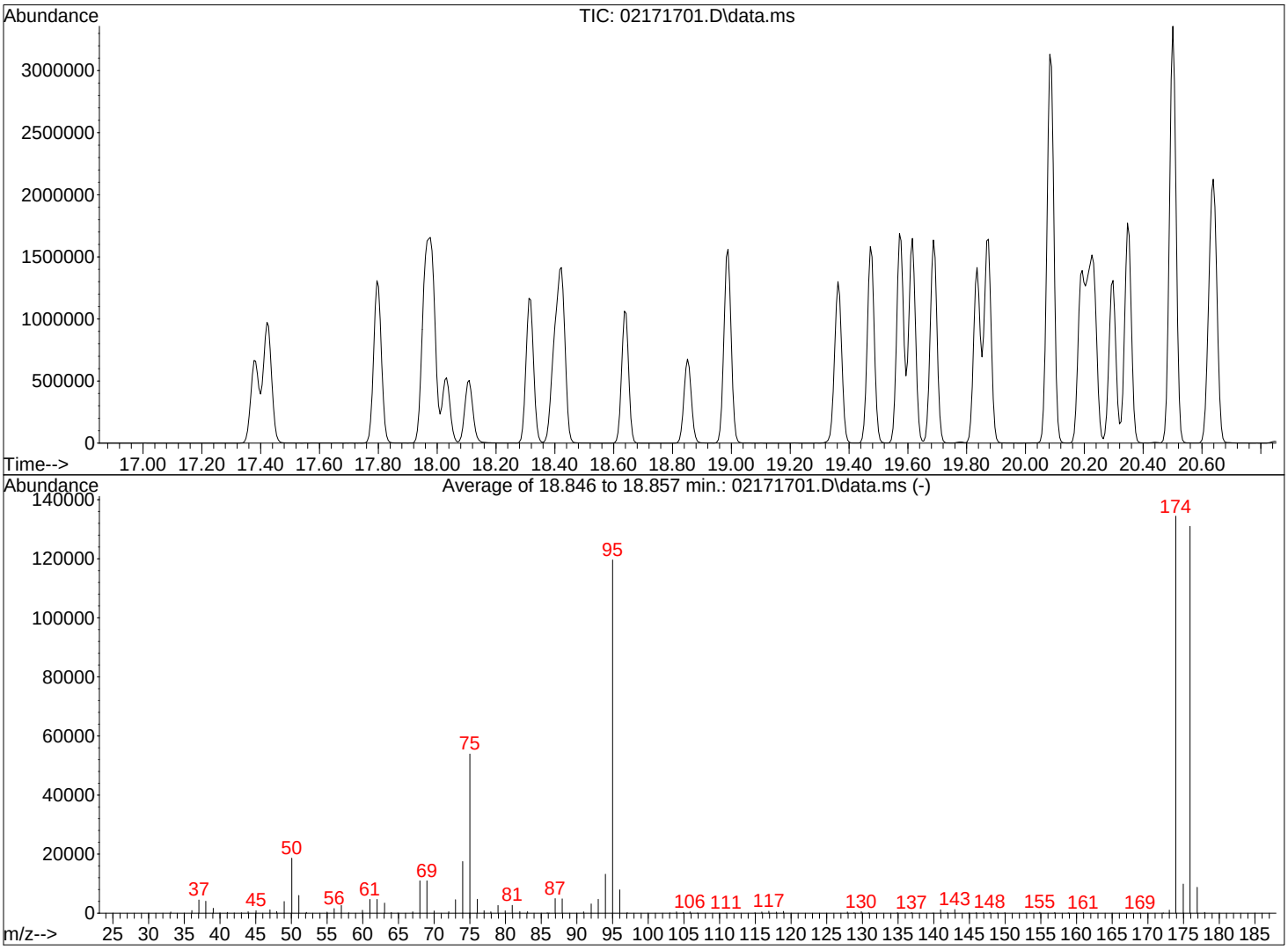
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.0	20280	PASS
75	95	30	66	42.5	57219	PASS
95	95	100	100	100.0	134779	PASS
96	95	5	9	6.6	8916	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.4	121901	PASS
175	174	4	9	5.0	6123	PASS
176	174	93	101	96.2	117304	PASS
177	176	5	9	6.4	7550	PASS

Data Path : I:\MS13\DATA\2017_02\17\
Data File : 02171701.D
Acq On : 17 Feb 2017 5:11
Operator : LH/AMF
Sample : CCV R13021717_25ng
Misc : S29-01311701/S29-01241705
ALS Vial : 3 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13021017.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Feb 10 12:09:18 2017

2/17/17



AutoFind: Scans 2793, 2794, 2795; Background Corrected with Scan 2785

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.6	18640	PASS
75	95	30	66	45.0	53888	PASS
95	95	100	100	100.0	119629	PASS
96	95	5	9	6.6	7900	PASS
173	174	0.00	2	0.8	1050	PASS
174	95	50	120	112.4	134419	PASS
175	174	4	9	7.3	9875	PASS
176	174	93	101	97.5	130997	PASS
177	176	5	9	6.7	8787	PASS

Client: **Haley & Aldrich, Inc.** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 02151701.D
Analyst: Simon Cao Date Analyzed: 2/15/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 05:41
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	140733	9.14	691798	11.10	281029	15.45
	Upper Limit	197026	9.47	968517	11.43	393441	15.78
	Lower Limit	84440	8.81	415079	10.77	168617	15.12
	Client Sample ID						
01	Method Blank	149434	9.11	737512	11.09	291206	15.45
02	Lab Control Sample	152069	9.14	738433	11.10	297103	15.45
03	SS1-020917-0900	132491	9.12	646152	11.09	270833	15.45
04	SS2-020917-1000	137162	9.12	668664	11.10	286481	15.45
05	SS3-020917-0945	150978	9.13	737007	11.11	312603	15.45
06	SS4-020917-0930	159899	9.13	791617	11.10	341719	15.45
07	SS5-020917-0915	162679	9.12	802851	11.09	332508	15.45
08							
09							
10							
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16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

Client: **Haley & Aldrich, Inc.** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 02161701.D
Analyst: Simon Cao Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 05:40
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	159285	9.13	778093	11.10	308726	15.45
	Upper Limit	222999	9.46	1089330	11.43	432216	15.78
	Lower Limit	95571	8.80	466856	10.77	185236	15.12
	Client Sample ID						
01	Method Blank	155347	9.11	773444	11.09	304837	15.45
02	Lab Control Sample	158759	9.14	774777	11.10	311498	15.45
03	SS2-020917-1000 (Dilution)	152366	9.11	734318	11.09	299745	15.45
04	SS3-020917-0945 (Dilution)	148137	9.11	714588	11.09	292010	15.45
05	SS4-020917-0930 (Dilution)	144299	9.11	701926	11.09	285655	15.45
06							
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# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

Client: **Haley & Aldrich, Inc.** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Lab File ID: 02171701.D
Analyst: Lusine Hakobyan Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 05:11
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	125321	10.92	579150	13.05	225457	17.38
	Upper Limit	175449	11.25	810810	13.38	315640	17.71
	Lower Limit	75193	10.59	347490	12.72	135274	17.05
	Client Sample ID						
01	Method Blank	120160	10.90	577399	13.04	222706	17.38
02	Lab Control Sample	120678	10.92	562692	13.05	219258	17.38
03	IA4-020917-0935 (Dilution)	137751	10.91	648929	13.04	256793	17.38
04	IA4-020917-0935	132805	10.91	621855	13.04	246398	17.38
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18							
19							
20							

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RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

ALS Environmental

MDLs for TO-15 (SCAN)

	03/11/13	11/28/12	11/15/12	12/20/12	02/21/13					FINAL	
	MS3	MS8	MS9	MS13	MS16	MAX			MW	MDL_R	MDL_R
COMPOUND	MDL_R	MDL_R	MDL_R	MDL_R	MDL_R	MDL_R	µg/m³	ppbV		µg/m³	ppbV
Propene	0.049	0.062	0.056	0.140	0.100	0.140	0.14	0.081378	42.08	**0.14**	**0.081**
Dichlorodifluoromethane	0.052	0.048	0.060	0.170	0.170	0.170	0.17	0.034394	120.90	**0.17**	**0.034**
Chloromethane	0.067	0.044	0.055	0.140	0.150	0.150	0.15	0.072668	50.49	**0.15**	**0.073**
Freon 114	0.068	0.046	0.047	0.190	0.160	0.190	0.19	0.027194	170.90	**0.19**	**0.027**
Vinyl Chloride	0.073	0.044	0.061	0.170	0.170	0.170	0.17	0.066531	62.50	**0.17**	**0.067**
1,3-Butadiene	0.074	0.063	0.051	0.220	0.170	0.220	0.22	0.099486	54.09	**0.22**	**0.099**
Bromomethane	0.062	0.041	0.054	0.190	0.160	0.190	0.19	0.048951	94.94	**0.19**	**0.049**
Chloroethane	0.080	0.053	0.066	0.170	0.140	0.170	0.17	0.064448	64.52	**0.17**	**0.064**
Ethanol	0.610	0.520	0.440	0.730	0.800	0.800	0.80	0.424745	46.07	**0.80**	**0.42**
Acetonitrile	0.090	0.070	0.110	0.180	0.150	0.180	0.18	0.107255	41.05	**0.18**	**0.11**
Acrolein	0.098	0.034	0.110	0.110	0.170	0.170	0.17	0.074174	56.06	**0.17**	**0.074**
Acetone	0.330	0.520	0.560	0.680	0.770	0.770	0.77	0.324280	58.08	**0.77**	**0.32**
Trichlorofluoromethane	0.059	0.047	0.050	0.170	0.160	0.170	0.17	0.030263	137.40	**0.17**	**0.030**
Isopropanol	0.140	0.120	0.180	0.260	0.420	0.420	0.42	0.170935	60.10	**0.42**	**0.17**
Acrylonitrile	0.069	0.061	0.099	0.170	0.160	0.170	0.17	0.078368	53.06	**0.17**	**0.078**
1,1-Dichloroethene	0.065	0.066	0.058	0.160	0.170	0.170	0.17	0.042895	96.94	**0.17**	**0.043**
tert-Butanol	0.130	0.079	0.140	0.310	0.330	0.330	0.33	0.108902	74.12	**0.33**	**0.11**
Methylene Chloride	0.049	0.065	0.076	0.170	0.140	0.170	0.17	0.048955	84.94	**0.17**	**0.049**
Allyl Chloride	0.052	0.061	0.066	0.150	0.160	0.160	0.16	0.051138	76.53	**0.16**	**0.051**
Trichlorotrifluoroethane	0.063	0.052	0.039	0.170	0.160	0.170	0.17	0.022191	187.38	**0.17**	**0.022**
Carbon Disulfide	0.058	0.120	0.072	0.130	0.150	0.150	0.15	0.048188	76.14	**0.15**	**0.048**
trans-1,2-Dichloroethene	0.074	0.048	0.075	0.190	0.160	0.190	0.19	0.047941	96.94	**0.19**	**0.048**
1,1-Dichloroethane	0.059	0.044	0.046	0.160	0.160	0.160	0.16	0.039547	98.96	**0.16**	**0.040**
Methyl tert-Butyl Ether	0.058	0.036	0.056	0.150	0.170	0.170	0.17	0.047172	88.15	**0.17**	**0.047**
Vinyl Acetate	0.350	0.260	0.580	0.650	0.500	0.650	0.65	0.184679	86.09	**0.65**	**0.18**
2-Butanone	0.110	0.090	0.140	0.150	0.210	0.210	0.21	0.071233	72.11	**0.21**	**0.071**
cis-1,2-Dichloroethene	0.061	0.046	0.064	0.150	0.160	0.160	0.16	0.040371	96.94	**0.16**	**0.040**
Diisopropyl Ether	0.083	0.045	0.052	0.160	0.190	0.190	0.19	0.045482	102.18	**0.19**	**0.045**
Ethyl Acetate	0.180	0.072	0.150	0.300	0.350	0.350	0.35	0.097167	88.11	**0.35**	**0.097**
n-Hexane	0.059	0.043	0.063	0.150	0.150	0.150	0.15	0.042579	86.17	**0.15**	**0.043**
Chloroform	0.060	0.055	0.053	0.150	0.170	0.170	0.17	0.034826	119.40	**0.17**	**0.035**
Tetrahydrofuran	0.080	0.065	0.074	0.160	0.200	0.200	0.20	0.067841	72.11	**0.20**	**0.068**
Ethyl tert-Butyl Ether	0.063	0.031	0.065	0.160	0.180	0.180	0.18	0.043090	102.18	**0.18**	**0.043**
1,2-Dichloroethane	0.060	0.044	0.053	0.150	0.160	0.160	0.16	0.039547	98.96	**0.16**	**0.040**
1,1,1-Trichloroethane	0.052	0.040	0.056	0.170	0.140	0.170	0.17	0.031171	133.40	**0.17**	**0.031**
Isopropyl Acetate	0.170	0.067	0.130	0.290	0.320	0.320	0.32	0.076640	102.13	**0.32**	**0.077**
1-Butanol	0.480	0.250	0.210	0.170	0.200	0.480	0.48	0.158397	74.12	**0.48**	**0.16**
Benzene	0.060	0.043	0.077	0.160	0.130	0.160	0.16	0.050104	78.11	**0.16**	**0.050**
Carbon Tetrachloride	0.061	0.049	0.057	0.150	0.140	0.150	0.15	0.023856	153.80	**0.15**	**0.024**
Cyclohexane	0.130	0.088	0.100	0.290	0.270	0.290	0.29	0.084285	84.16	**0.29**	**0.084**
tert-Amyl Methyl Ether	0.063	0.031	0.060	0.150	0.150	0.150	0.15	0.035909	102.18	**0.15**	**0.036**
1,2-Dichloropropane	0.053	0.036	0.058	0.150	0.160	0.160	0.16	0.034634	113.00	**0.16**	**0.035**
Bromodichloromethane	0.062	0.043	0.050	0.150	0.150	0.150	0.15	0.022399	163.80	**0.15**	**0.022**
Trichloroethene	0.064	0.039	0.041	0.140	0.140	0.140	0.14	0.026061	131.40	**0.14**	**0.026**
1,4-Dioxane	0.084	0.033	0.050	0.160	0.150	0.160	0.16	0.044417	88.11	**0.16**	**0.044**
Isooctane	0.060	0.039	0.056	0.150	0.140	0.150	0.15	0.032119	114.23	**0.15**	**0.032**
Methyl Methacrylate	0.170	0.093	0.110	0.310	0.300	0.310	0.31	0.075735	100.12	**0.31**	**0.076**
n-Heptane	0.070	0.036	0.046	0.170	0.150	0.170	0.17	0.041499	100.20	**0.17**	**0.041**
cis-1,3-Dichloropropene	0.052	0.033	0.062	0.130	0.140	0.140	0.14	0.030850	111.00	**0.14**	**0.031**
4-Methyl-2-pentanone	0.082	0.039	0.048	0.160	0.150	0.160	0.16	0.039058	100.20	**0.16**	**0.039**
trans-1,3-Dichloropropene	0.056	0.038	0.075	0.160	0.140	0.160	0.16	0.035258	111.00	**0.16**	**0.035**
1,1,2-Trichloroethane	0.077	0.038	0.046	0.140	0.160	0.160	0.16	0.029337	133.40	**0.16**	**0.029**
Toluene	0.070	0.058	0.056	0.150	0.170	0.170	0.17	0.045129	92.14	**0.17**	**0.045**
2-Hexanone	0.083	0.050	0.064	0.160	0.160	0.160	0.16	0.039073	100.16	**0.16**	**0.039**
Dibromochloromethane	0.068	0.045	0.054	0.150	0.160	0.160	0.16	0.018788	208.30	**0.16**	**0.019**
1,2-Dibromoethane	0.063	0.045	0.068	0.150	0.160	0.160	0.16	0.020828	187.90	**0.16**	**0.021**
Butyl Acetate	0.088	0.061	0.068	0.150	0.160	0.160	0.16	0.033691	116.16	**0.16**	**0.034**
n-Octane	0.065	0.042	0.058	0.150	0.180	0.180	0.18	0.038543	114.23	**0.18**	**0.039**
Tetrachloroethene	0.067	0.042	0.049	0.140	0.140	0.140	0.14	0.020654	165.80	**0.14**	**0.021**
Chlorobenzene	0.070	0.051	0.055	0.160	0.150	0.160	0.16	0.034757	112.60	**0.16**	**0.035**
Ethylbenzene	0.074	0.050	0.051	0.150	0.160	0.160	0.16	0.036851	106.20	**0.16**	**0.037**
m- & p-Xylene	0.150	0.098	0.120	0.290	0.300	0.300	0.30	0.069096	106.20	**0.30**	**0.069**
Bromoform	0.043	0.041	0.064	0.150	0.120	0.150	0.15	0.014513	252.80	**0.15**	**0.015**
Styrene	0.076	0.066	0.056	0.150	0.150	0.150	0.15	0.035245	104.10	**0.15**	**0.035**
o-Xylene	0.076	0.048	0.050	0.150	0.150	0.150	0.15	0.034548	106.20	**0.15**	**0.035**
n-Nonane	0.065	0.059	0.057	0.140	0.150	0.150	0.15	0.028606	128.26	**0.15**	**0.029**
1,1,2,2-Tetrachloroethane	0.070	0.042	0.046	0.150	0.140	0.150	0.15	0.021852	167.90	**0.15**	**0.022**
Cumene	0.068	0.045	0.054	0.150	0.150	0.150	0.15	0.030524	120.20	**0.15**	**0.031**
alpha-Pinene	0.075	0.058	0.049	0.140	0.120	0.140	0.14	0.025135	136.24	**0.14**	**0.025**
n-Propylbenzene	0.073	0.047	0.057	0.150	0.160	0.160	0.16	0.032561	120.19	**0.16**	**0.033**

ALS Environmental
MDLs for TO-15 (SCAN)

	03/11/13	11/28/12	11/15/12	12/20/12	02/21/13					FINAL	
	MS3	MS8	MS9	MS13	MS16	MAX			MW	MDL_R	MDL_R
COMPOUND	MDL_R	MDL_R	MDL_R	MDL_R	MDL_R	MDL_R	µg/m³	ppbV		µg/m³	ppbV
3-Ethyltoluene	0.087	0.047	0.060	0.150	0.150	0.150	0.15	0.030524	120.20	**0.15**	**0.031**
4-Ethyltoluene	0.078	0.052	0.053	0.160	0.150	0.160	0.16	0.032559	120.20	**0.16**	**0.033**
1,3,5-Trimethylbenzene	0.084	0.051	0.059	0.160	0.160	0.160	0.16	0.032559	120.20	**0.16**	**0.033**
alpha-Methylstyrene	0.079	0.120	0.033	0.150	0.092	0.150	0.15	0.031043	118.19	**0.15**	**0.031**
2-Ethyltoluene	0.072	0.051	0.063	0.150	0.150	0.150	0.15	0.030524	120.20	**0.15**	**0.031**
1,2,4-Trimethylbenzene	0.085	0.049	0.054	0.150	0.150	0.150	0.15	0.030524	120.20	**0.15**	**0.031**
n-Decane	0.064	0.047	0.062	0.160	0.140	0.160	0.16	0.027506	142.28	**0.16**	**0.028**
Benzyl Chloride	0.042	0.060	0.065	0.110	0.110	0.110	0.11	0.021254	126.59	**0.11**	**0.021**
1,3-Dichlorobenzene	0.089	0.057	0.071	0.150	0.150	0.150	0.15	0.024959	147.00	**0.15**	**0.025**
1,4-Dichlorobenzene	0.087	0.066	0.077	0.130	0.140	0.140	0.14	0.023295	147.00	**0.14**	**0.023**
sec-Butylbenzene	0.079	0.050	0.057	0.160	0.150	0.160	0.16	0.029158	134.22	**0.16**	**0.029**
p-Isopropyltoluene	0.079	0.063	0.053	0.150	0.150	0.150	0.15	0.027336	134.22	**0.15**	**0.027**
1,2,3-Trimethylbenzene	0.083	0.054	0.060	0.140	0.150	0.150	0.15	0.030526	120.19	**0.15**	**0.031**
1,2-Dichlorobenzene	0.087	0.060	0.065	0.130	0.150	0.150	0.15	0.024959	147.00	**0.15**	**0.025**
d-Limonene	0.097	0.110	0.038	0.140	0.110	0.140	0.14	0.025135	136.24	**0.14**	**0.025**
1,2-Dibromo-3-Chloropropane	0.081	0.054	0.064	0.085	0.099	0.099	0.10	0.010246	236.33	**0.099**	**0.010**
n-Undecane	0.110	0.054	0.060	0.130	0.150	0.150	0.15	0.023473	156.31	**0.15**	**0.023**
1,2,4-Trichlorobenzene	0.160	0.063	0.087	0.093	0.150	0.160	0.16	0.021563	181.50	**0.16**	**0.022**
Naphthalene	0.180	0.050	0.081	0.120	0.140	0.180	0.18	0.034351	128.17	**0.18**	**0.034**
n-Dodecane	0.120	0.067	0.072	0.130	0.120	0.130	0.13	0.018667	170.34	**0.13**	**0.019**
Hexachloro-1,3-butadiene	0.076	0.060	0.044	0.120	0.140	0.140	0.14	0.013130	260.80	**0.14**	**0.013**
Cyclohexanone	0.087	0.041	0.054	0.120	0.089	0.120	0.12	0.029908	98.14	**0.12**	**0.030**
tert-Butylbenzene	0.082	0.051	0.066	0.150	0.140	0.150	0.15	0.027336	134.22	**0.15**	**0.027**
n-Butylbenzene	0.098	0.052	0.062	0.140	0.170	0.170	0.17	0.030980	134.22	**0.17**	**0.031**

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **SS1-020917-0900** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-001

Test Code: EPA TO-15 Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 2/13/17
Analyst: Simon Cao Date Analyzed: 2/15/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC01035

Initial Pressure (psig): -1.39 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.14	ND	0.054	
156-59-2	cis-1,2-Dichloroethene	**15**	0.14	**3.9**	0.035	
79-01-6	Trichloroethene	**67**	0.14	**12**	0.026	
127-18-4	Tetrachloroethene	**8.1**	0.14	**1.2**	0.020	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151723.D
Acq On : 15 Feb 2017 19:59 Operator: SC
Sample : P1700672-001 (1000mL)
Misc : S29-01261704
ALS Vial : 5 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 09:31:08 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.12	130	132491	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.09	114	646152	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	15.45	82	270833	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.90	65	190869	11.756	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.08%				
57) Toluene-d8 (SS2)	13.54	98	694470	12.400	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.20%				
73) Bromofluorobenzene (SS3)	17.04	174	217330	14.323	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.56%				
Target Compounds							Qvalue
2) Propene	3.84	42	8032	0.411	ng	#	1
3) Dichlorodifluoromethan...	3.95	85	39435	1.373	ng		99
4) Chloromethane	4.14	50	1546	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.32	135	892	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.34	45	620380	56.639	ng		99
11) Acetonitrile	5.53	41	6674	0.224	ng		82
12) Acrolein	5.67	56	5907	0.574	ng		98
13) Acetone	5.81	58	410167	32.702	ng		99
14) Trichlorofluoromethane	6.00	101	18251	0.788	ng		98
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D. d			
16) Acrylonitrile	6.34	53	583	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	6.84	84	1390	N.D.			
20) 3-Chloro-1-propene (Al...	6.90	41	910	N.D.			
21) Trichlorotrifluoroethane	7.15	151	3527	0.298	ng		98
22) Carbon Disulfide	7.12	76	34783	0.571	ng		99
23) trans-1,2-Dichloroethene	7.86	61	2784	0.128	ng		85
24) 1,1-Dichloroethane	7.86	63	687	N.D.			
25) Methyl tert-Butyl Ether	8.17	73	1398	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	8.49	72	80154	7.473	ng		91
28) cis-1,2-Dichloroethene	8.95	61	231861	11.183	ng		95
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	9.20	61	6107	1.101	ng		96
31) n-Hexane	9.20	57	49833	1.880	ng		97
32) Chloroform	9.26	83	36794	1.432	ng		100
34) Tetrahydrofuran (THF)	9.67	72	3288	0.293	ng	#	79
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	10.28	97	1241	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D. d			
41) Benzene	10.73	78	36788	0.553	ng		99
42) Carbon Tetrachloride	10.88	117	3880	0.213	ng		97
43) Cyclohexane	11.02	84	19099	0.816	ng		95
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	11.55	63	499	N.D.			
46) Bromodichloromethane	11.74	83	3642	0.188	ng		80
47) Trichloroethene	11.79	130	758574	48.485	ng		99
48) 1,4-Dioxane	11.78	88	729	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151723.D
Acq On : 15 Feb 2017 19:59 Operator: SC
Sample : P1700672-001 (1000mL)
Misc : S29-01261704
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 16 09:31:08 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

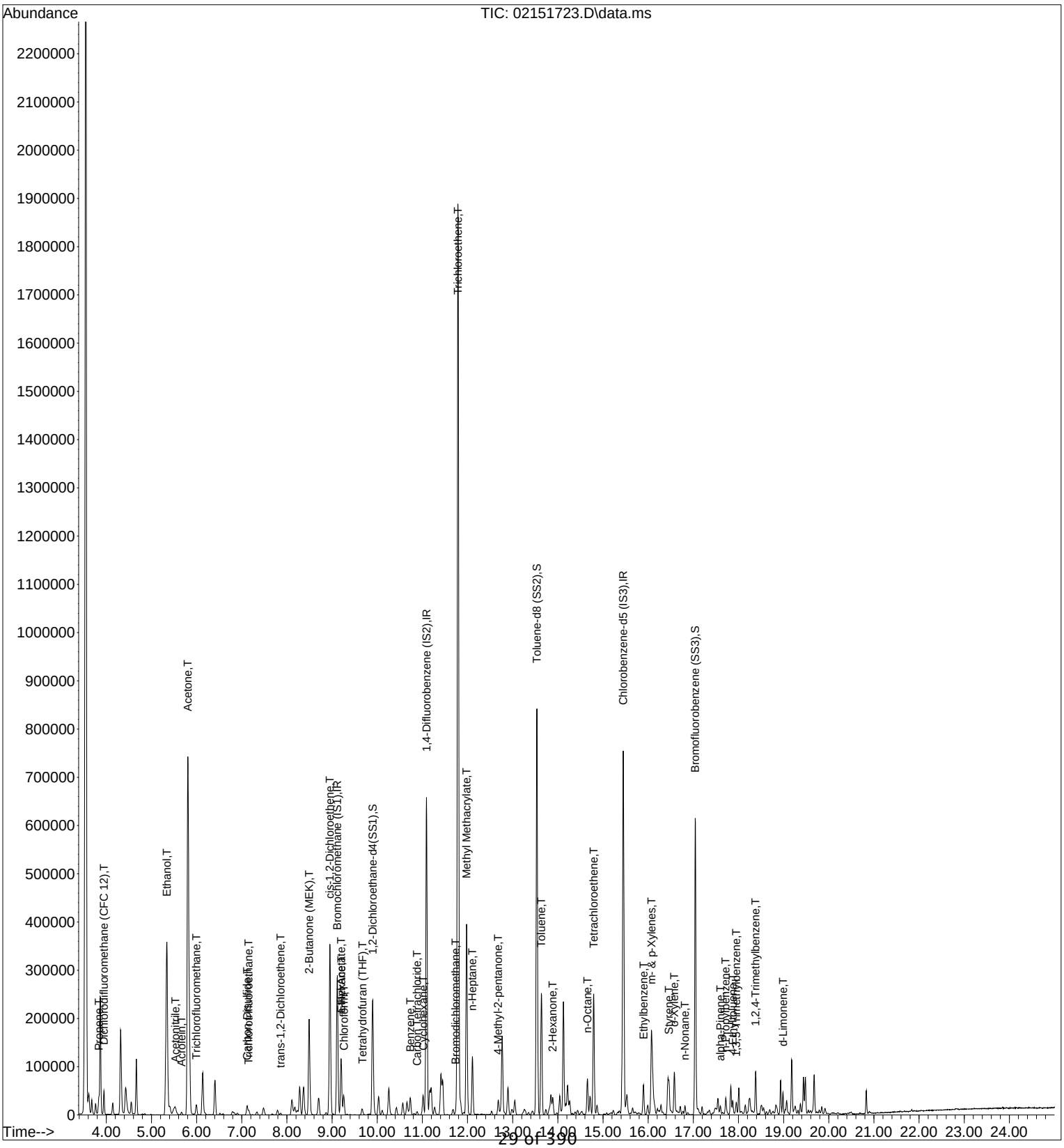
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	11.98	100	71069	11.707 ng	99
51) n-Heptane	12.11	71	34513	2.219 ng	94
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	12.68	58	9960	0.680 ng	100
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	13.63	91	225800	3.449 ng	99
59) 2-Hexanone	13.88	43	22580	0.646 ng	77
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	14.53	43	2876	N.D.	
63) n-Octane	14.65	57	14784	1.016 ng	95
64) Tetrachloroethene	14.79	166	91899	5.885 ng	100
65) Chlorobenzene	0.00	112	0	N.D. d	
66) Ethylbenzene	15.90	91	54561	0.757 ng	99
67) m- & p-Xylenes	16.07	91	157817	2.851 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.46	104	34079	0.781 ng	99
70) o-Xylene	16.58	91	57391	1.016 ng	99
71) n-Nonane	16.81	43	6940	0.217 ng	99
72) 1,1,2,2-Tetrachloroethane	16.51	83	500	N.D.	
74) Cumene	17.19	105	5255	N.D.	
75) alpha-Pinene	17.60	93	7084	0.191 ng	98
76) n-Propylbenzene	17.72	91	16134	0.189 ng	84
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	17.87	105	17723	0.267 ng	97
79) 1,3,5-Trimethylbenzene	17.95	105	13870	0.240 ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D. d	
82) 1,2,4-Trimethylbenzene	18.38	105	49320	0.862 ng	91
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	18.51	91	436	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.67	105	1136	N.D.	
88) 4-Isopropyltoluene (p-...	18.83	119	3174	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D. d	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	18.99	68	11575	0.473 ng	98
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.89	128	3964	N.D.	
96) n-Dodecane	20.92	57	778	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D. d	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	19.26	91	5174	N.D.	

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151723.D
Acq On : 15 Feb 2017 19:59 Operator: SC
Sample : P1700672-001 (1000mL)
Misc : S29-01261704
ALS Vial : 5 Sample Multiplier: 1

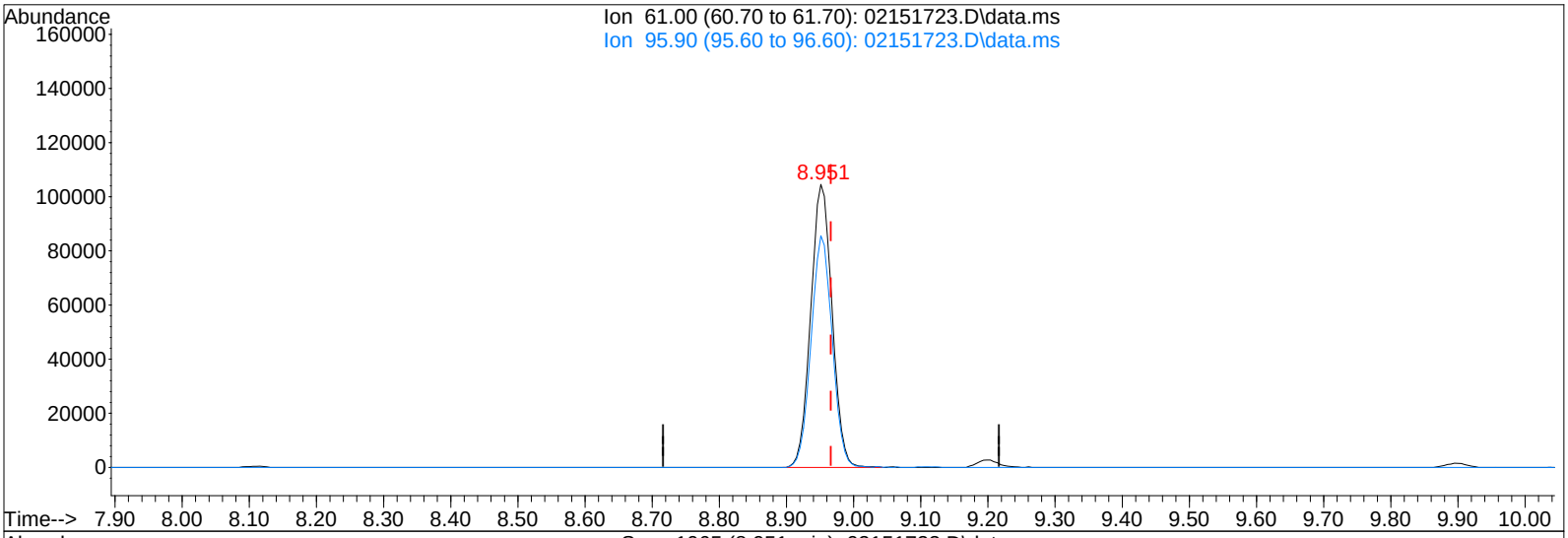
Quant Time: Feb 16 09:31:08 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

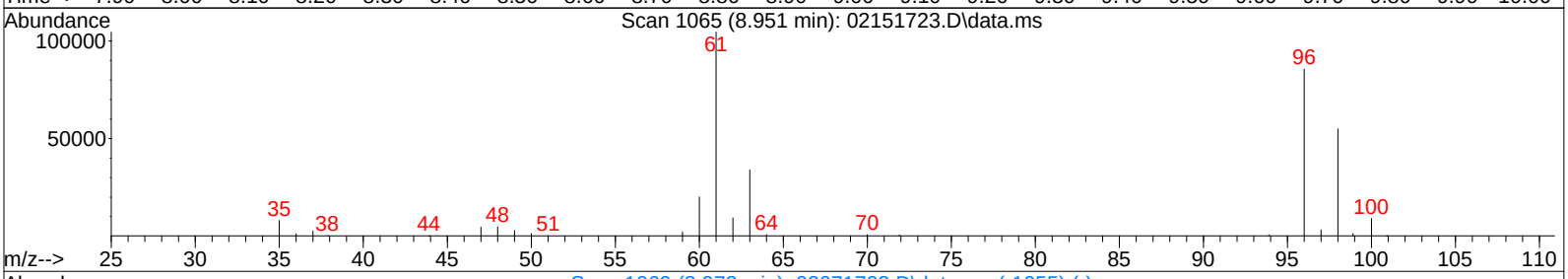


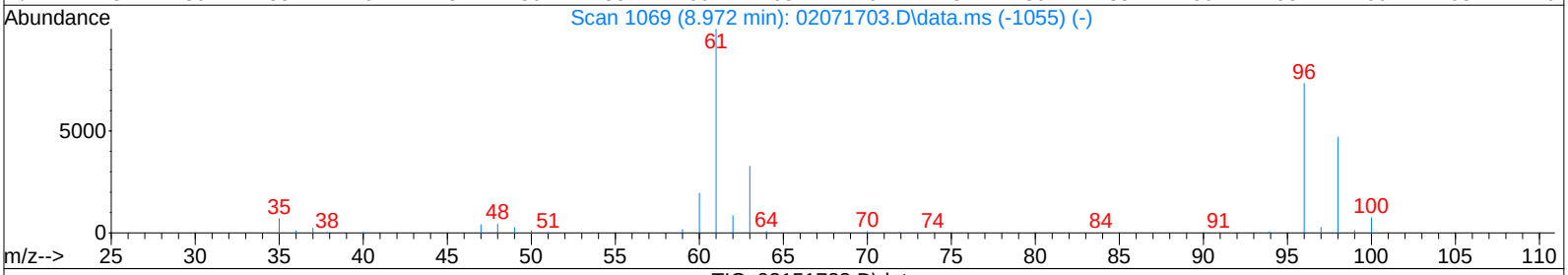
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151723.D
Acq On : 15 Feb 2017 19:59 Operator: SC
Sample : P1700672-001 (1000mL)
Misc : S29-01261704
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 16 08:47:35 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02151723.D\data.ms

(28) cis-1,2-Dichloroethene (T)

8.951min (-0.015) 11.18ng

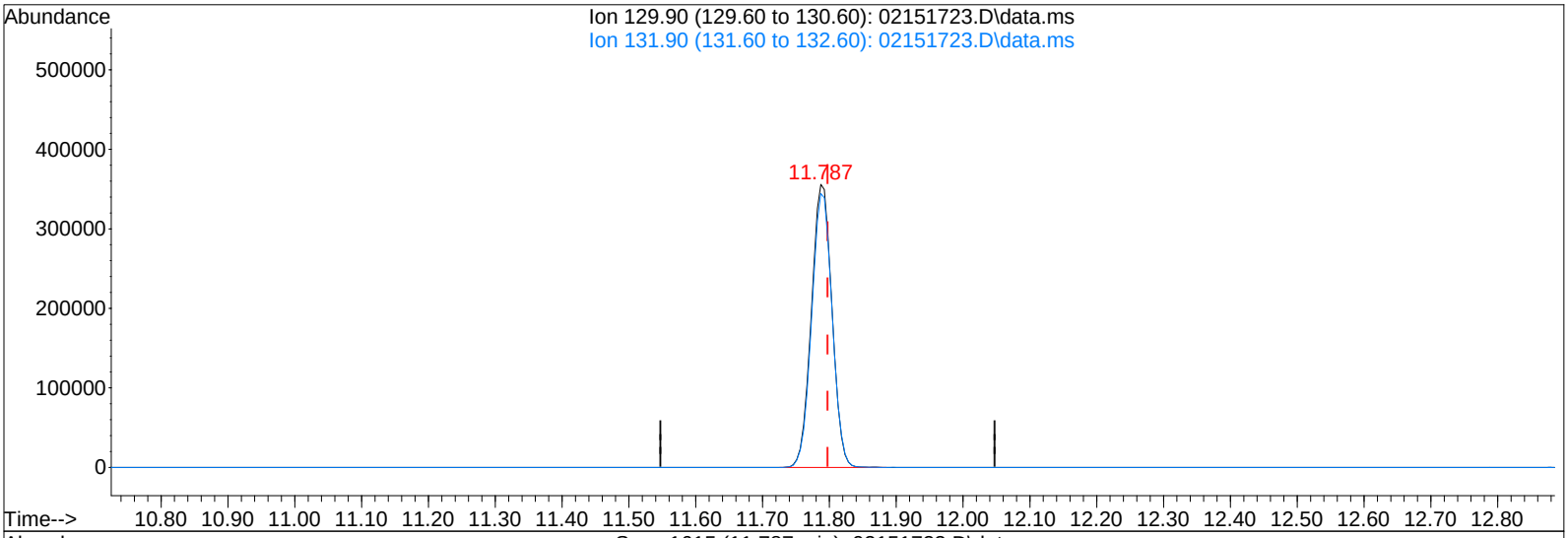
response 231861

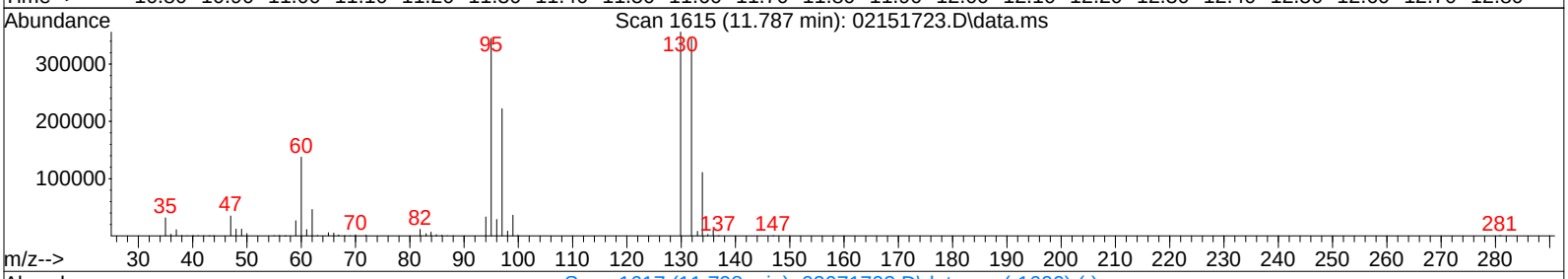
Ion	Exp%	Act%
61.00	100	100
95.90	76.80	81.01
0.00	0.00	0.00
0.00	0.00	0.00

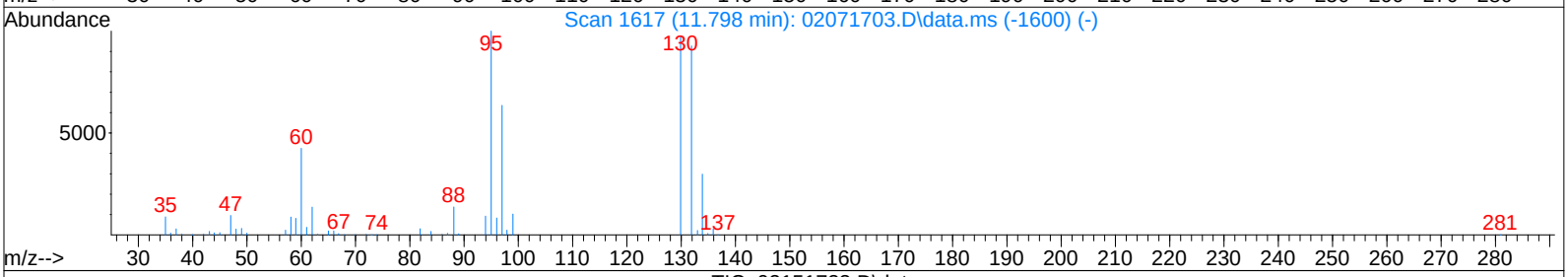
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151723.D
Acq On : 15 Feb 2017 19:59 Operator: SC
Sample : P1700672-001 (1000mL)
Misc : S29-01261704
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 16 08:47:35 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02151723.D\data.ms

(47) Trichloroethene (T)

11.787min (-0.010) 48.49ng

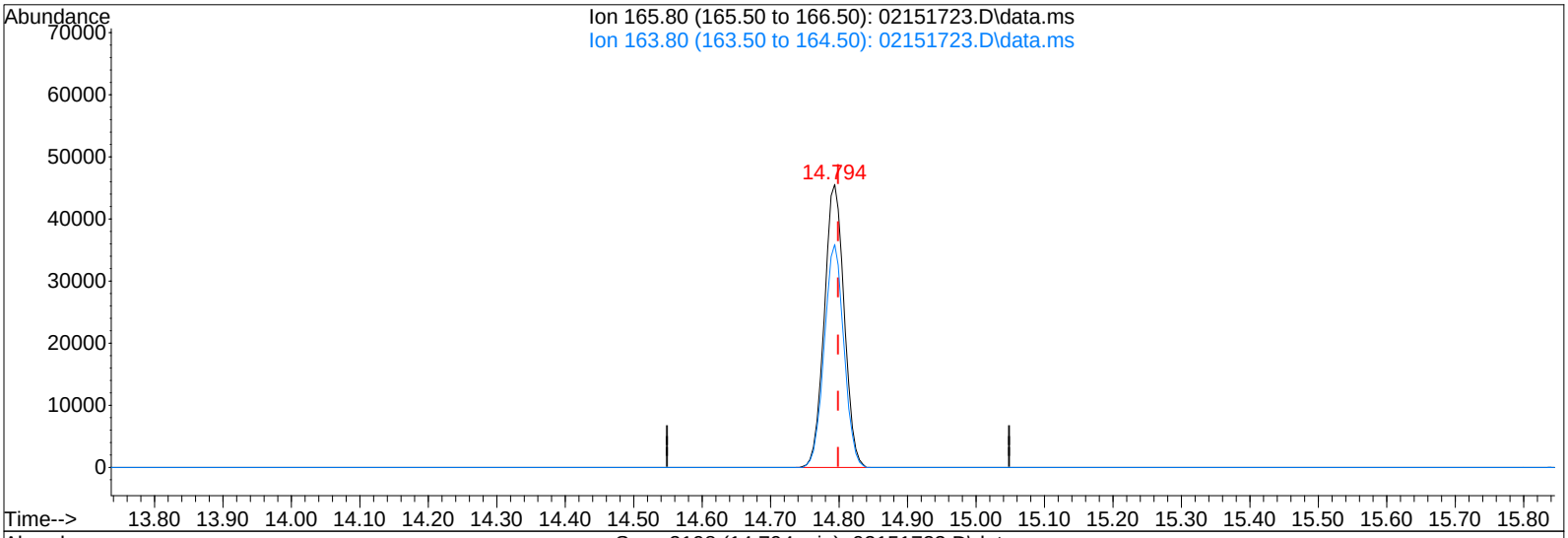
response 758574

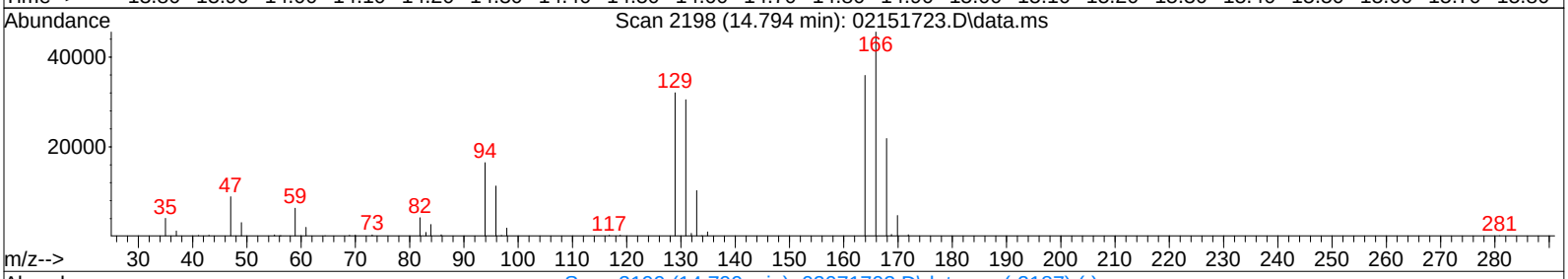
Ion	Exp%	Act%
129.90	100	100
131.90	96.90	96.37
0.00	0.00	0.00
0.00	0.00	0.00

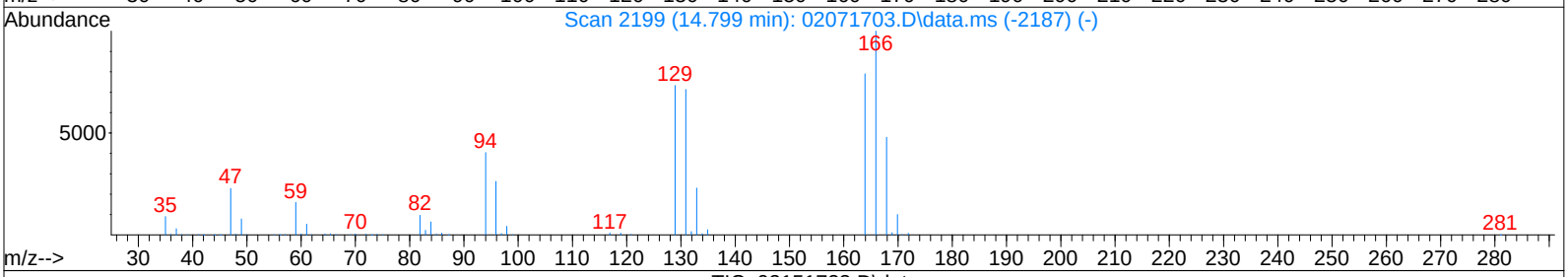
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151723.D
Acq On : 15 Feb 2017 19:59 Operator: SC
Sample : P1700672-001 (1000mL)
Misc : S29-01261704
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 16 08:47:35 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02151723.D\data.ms

(64) Tetrachloroethene (T)

14.794min (-0.005) 5.88ng

response 91899

Ion	Exp%	Act%
165.80	100	100
163.80	78.10	77.97
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **SS2-020917-1000** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-003

Test Code: EPA TO-15 Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 2/13/17
Analyst: Simon Cao Date Analyzed: 2/15 - 2/16/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: SC01709

Initial Pressure (psig): -2.75 Final Pressure (psig): 3.80

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	**0.37**	0.16	**0.14**	0.061	
156-59-2	cis-1,2-Dichloroethene	**97**	0.16	**24**	0.039	
79-01-6	Trichloroethene	**610**	1.6	**110**	0.29	**D**
127-18-4	Tetrachloroethene	**99**	0.16	**15**	0.023	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151724.D
Acq On : 15 Feb 2017 20:33 Operator: SC
Sample : P1700672-003 (1000mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 09:35:46 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.12	130	137162	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	11.10	114	668664	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	15.45	82	286481	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.91	65	196665	11.700	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.60%				
57) Toluene-d8 (SS2)	13.54	98	727901	12.287	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.32%				
73) Bromofluorobenzene (SS3)	17.05	174	228727	14.251	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.00%				
Target Compounds							Qvalue
2) Propene	3.84	42	91158	4.501	ng		96
3) Dichlorodifluoromethan...	3.95	85	36165	1.216	ng		100
4) Chloromethane	4.14	50	1907	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.30	135	826	N.D.			
6) Vinyl Chloride	4.42	62	5728	0.237	ng		98
7) 1,3-Butadiene	4.59	54	2393	0.145	ng	#	43
8) Bromomethane	4.90	94	605	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.39	45	3694987	325.857	ng		99
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	5.67	56	5460	0.513	ng		98
13) Acetone	5.82	58	1083130	83.415	ng		94
14) Trichlorofluoromethane	5.99	101	21431	0.894	ng		100
15) 2-Propanol (Isopropanol)	6.17	45	136814	3.517	ng		94
16) Acrylonitrile	6.35	53	2203	0.105	ng	#	63
17) 1,1-Dichloroethene	6.69	96	3099	0.198	ng		89
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	6.83	84	2329	0.138	ng		99
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d		
21) Trichlorotrifluoroethane	7.16	151	3250	0.266	ng		93
22) Carbon Disulfide	7.12	76	361362	5.734	ng		99
23) trans-1,2-Dichloroethene	7.86	61	101543	4.512	ng		93
24) 1,1-Dichloroethane	8.09	63	822	N.D.			
25) Methyl tert-Butyl Ether	8.13	73	1810	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	8.50	72	230084	20.721	ng	#	89
28) cis-1,2-Dichloroethene	8.96	61	1341008	62.474	ng		94
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	9.21	61	15922	2.773	ng		99
31) n-Hexane	9.20	57	131768	4.802	ng		99
32) Chloroform	9.27	83	140552	5.284	ng		100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	d		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	10.02	62	819	N.D.			
38) 1,1,1-Trichloroethane	10.28	97	2651	0.120	ng		97
39) Isopropyl Acetate	0.00	61	0	N.D.	d		
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.74	78	299352	4.350	ng		99
42) Carbon Tetrachloride	10.90	117	2182	0.116	ng		96
43) Cyclohexane	11.02	84	80261	3.314	ng		96
44) tert-Amyl Methyl Ether	11.28	73	950	N.D.			
45) 1,2-Dichloropropane	11.56	63	2110	0.131	ng		90
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	11.80	130	5322956	328.770	ng		99
48) 1,4-Dioxane	11.78	88	670	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		

Data File: I:\MS09\Data\2017_02\15\02151724.D
Acq On : 15 Feb 2017 20:33 Operator: SC
Sample : P1700672-003 (1000mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 16 09:35:46 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

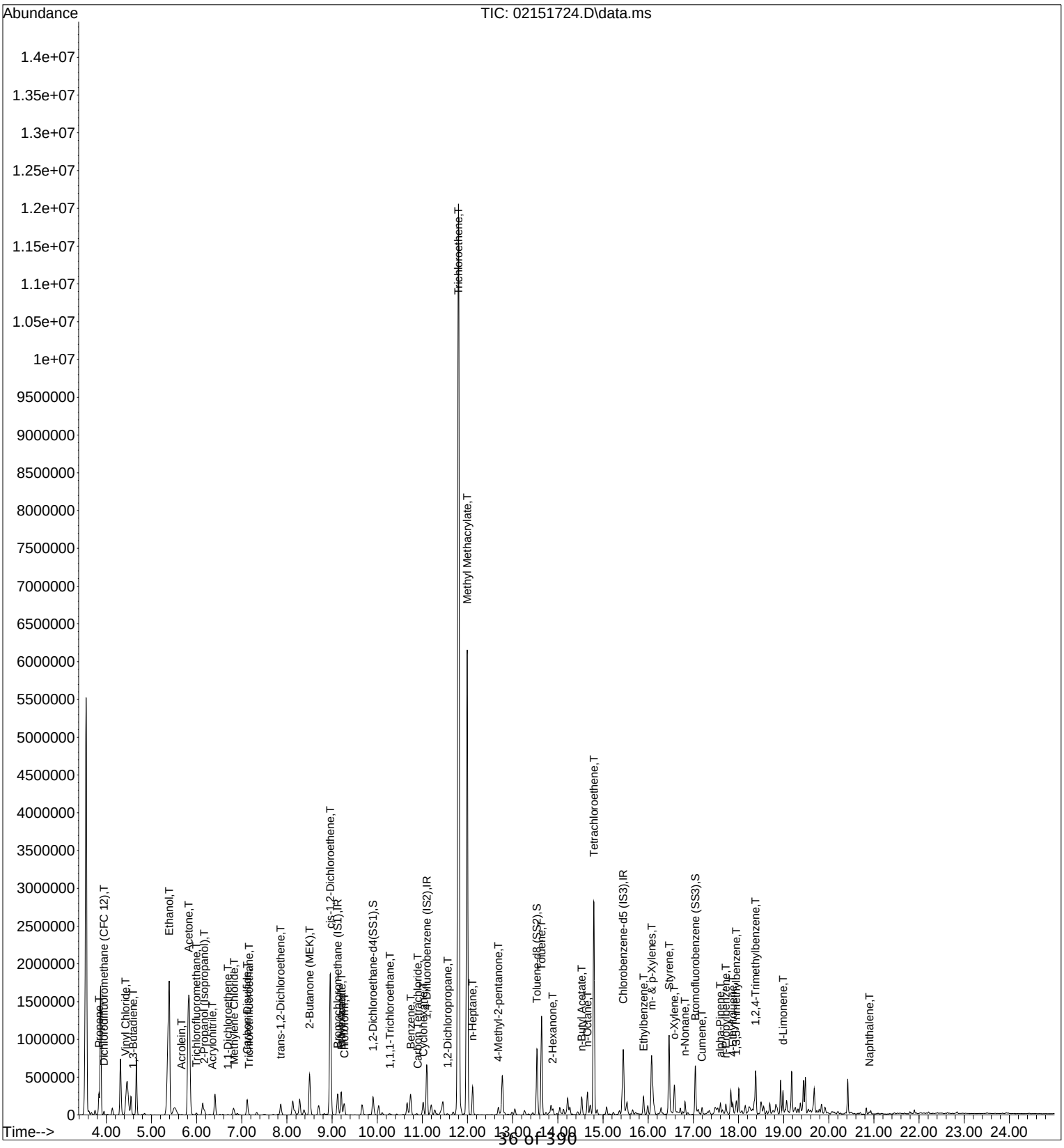
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.99	100	1247877	198.640	ng	92
51) n-Heptane	12.11	71	105840	6.576	ng	96
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	12.68	58	33757	2.227	ng	97
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	d	
58) Toluene	13.64	91	1159871	16.746	ng	99
59) 2-Hexanone	13.89	43	37624	1.018	ng	84
60) Dibromochloromethane	14.06	129	714	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	14.53	43	173075	4.223	ng	95
63) n-Octane	14.65	57	60491	3.930	ng	96
64) Tetrachloroethene	14.80	166	1055089	63.872	ng	99
65) Chlorobenzene	0.00	112	0	N.D.	d	
66) Ethylbenzene	15.90	91	203954	2.677	ng	100
67) m- & p-Xylenes	16.08	91	701461	11.980	ng	99
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.46	104	627678	13.591	ng	99
70) o-Xylene	16.58	91	248726	4.164	ng	99
71) n-Nonane	16.82	43	63810	1.883	ng	96
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	d	
74) Cumene	17.19	105	26125	0.350	ng	99
75) alpha-Pinene	17.60	93	60276	1.540	ng	100
76) n-Propylbenzene	17.72	91	76294	0.846	ng	90
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	17.87	105	91042	1.296	ng	96
79) 1,3,5-Trimethylbenzene	17.95	105	91975	1.507	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	18.38	105	342415	5.655	ng	92
83) n-Decane	0.00	57	0	N.D.	d	
84) Benzyl Chloride	18.52	91	711	N.D.		
85) 1,3-Dichlorobenzene	18.60	146	548	N.D.		
86) 1,4-Dichlorobenzene	18.60	146	548	N.D.		
87) sec-Butylbenzene	18.67	105	6429	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	d	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	18.99	68	76641	2.960	ng	90
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	57	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.90	128	21614	0.309	ng	96
96) n-Dodecane	0.00	57	0	N.D.	d	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.	d	
99) tert-Butylbenzene	0.00	119	0	N.D.	d	
100) n-Butylbenzene	0.00	91	0	N.D.	d	

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151724.D
Acq On : 15 Feb 2017 20:33 Operator: SC
Sample : P1700672-003 (1000mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

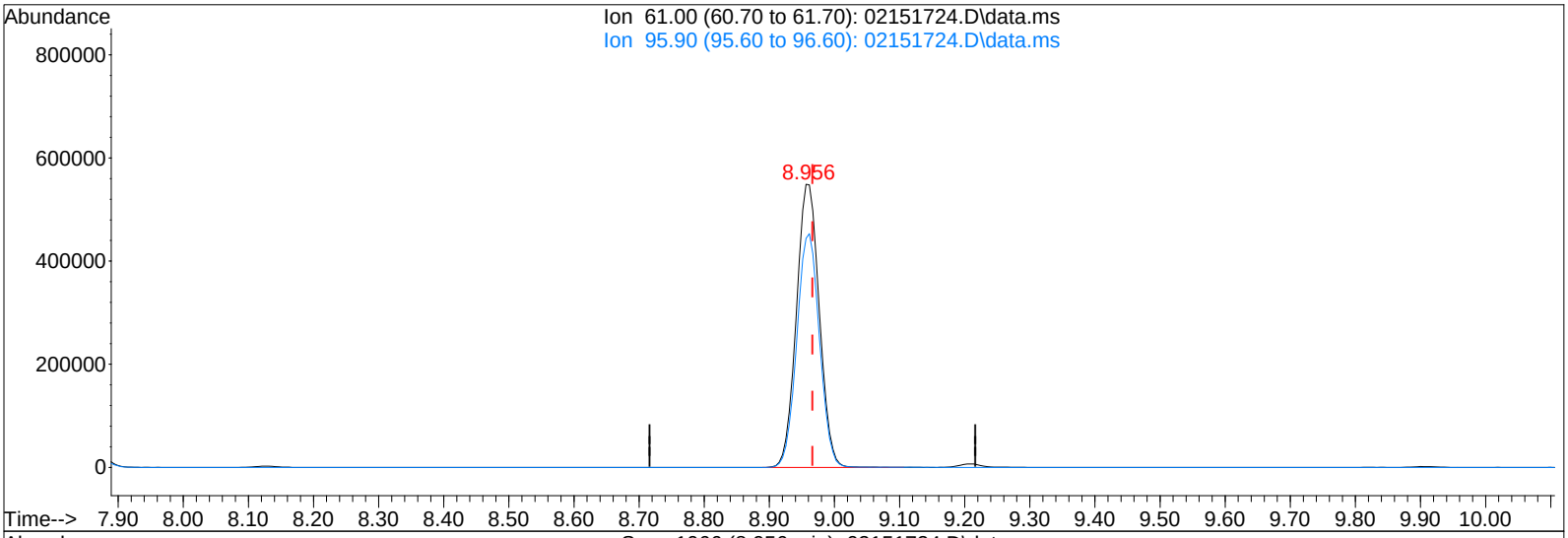
Quant Time: Feb 16 09:35:46 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

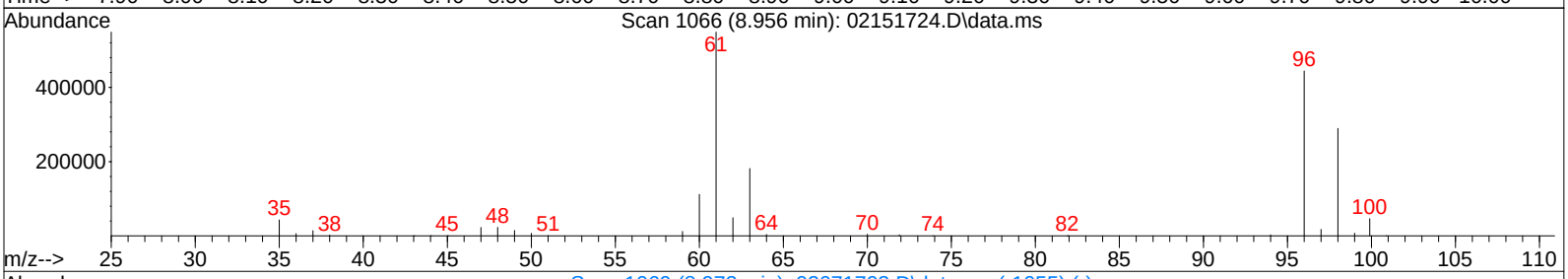


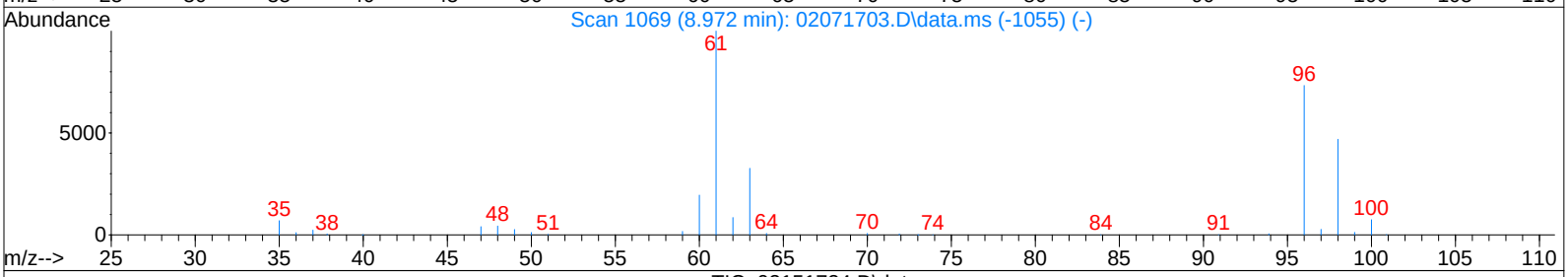
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151724.D
Acq On : 15 Feb 2017 20:33 Operator: SC
Sample : P1700672-003 (1000mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 16 08:47:53 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02151724.D\data.ms

(28) cis-1,2-Dichloroethene (T)

8.956min (-0.010) 62.47ng

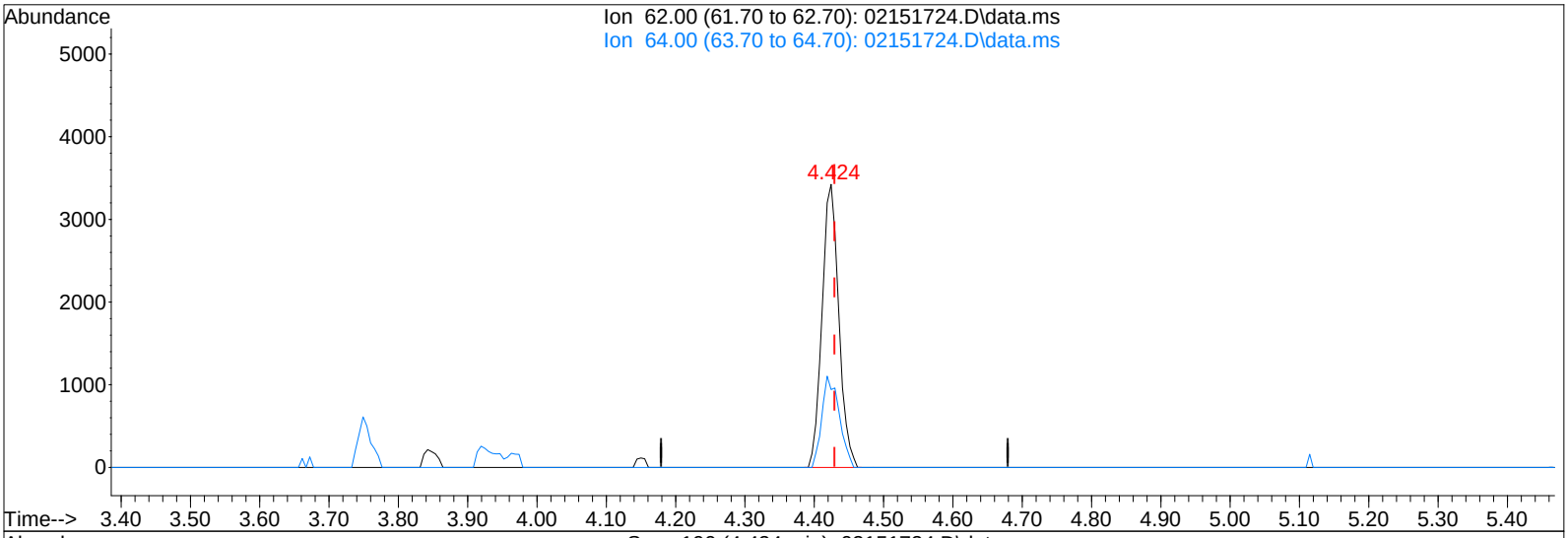
response 1341008

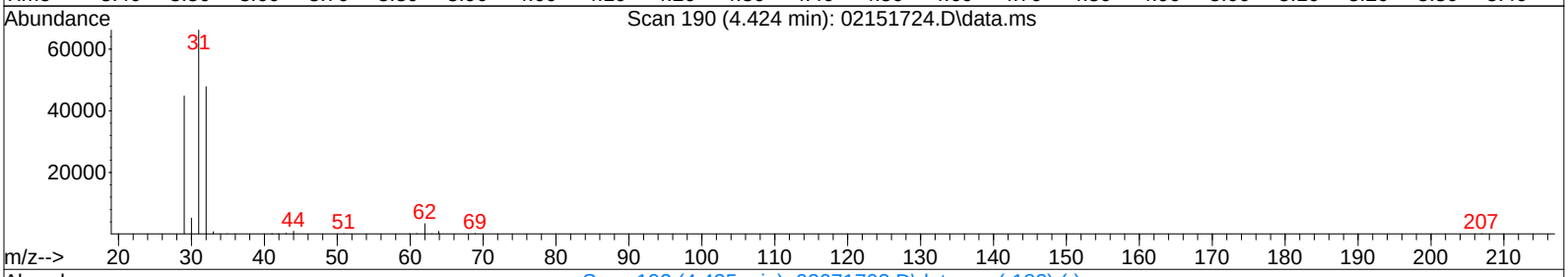
Ion	Exp%	Act%
61.00	100	100
95.90	76.80	81.68
0.00	0.00	0.00
0.00	0.00	0.00

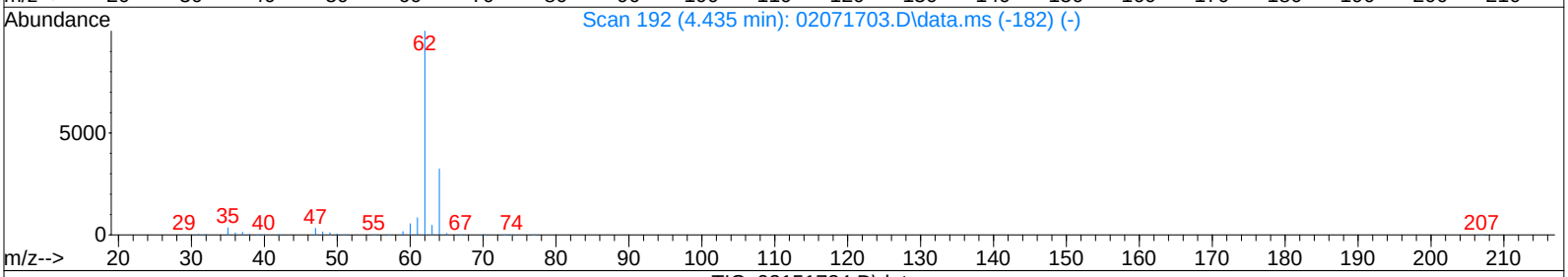
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151724.D
Acq On : 15 Feb 2017 20:33 Operator: SC
Sample : P1700672-003 (1000mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 16 08:47:53 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02151724.D\data.ms

(6) Vinyl Chloride (T)

4.424min (-0.005) 0.24ng

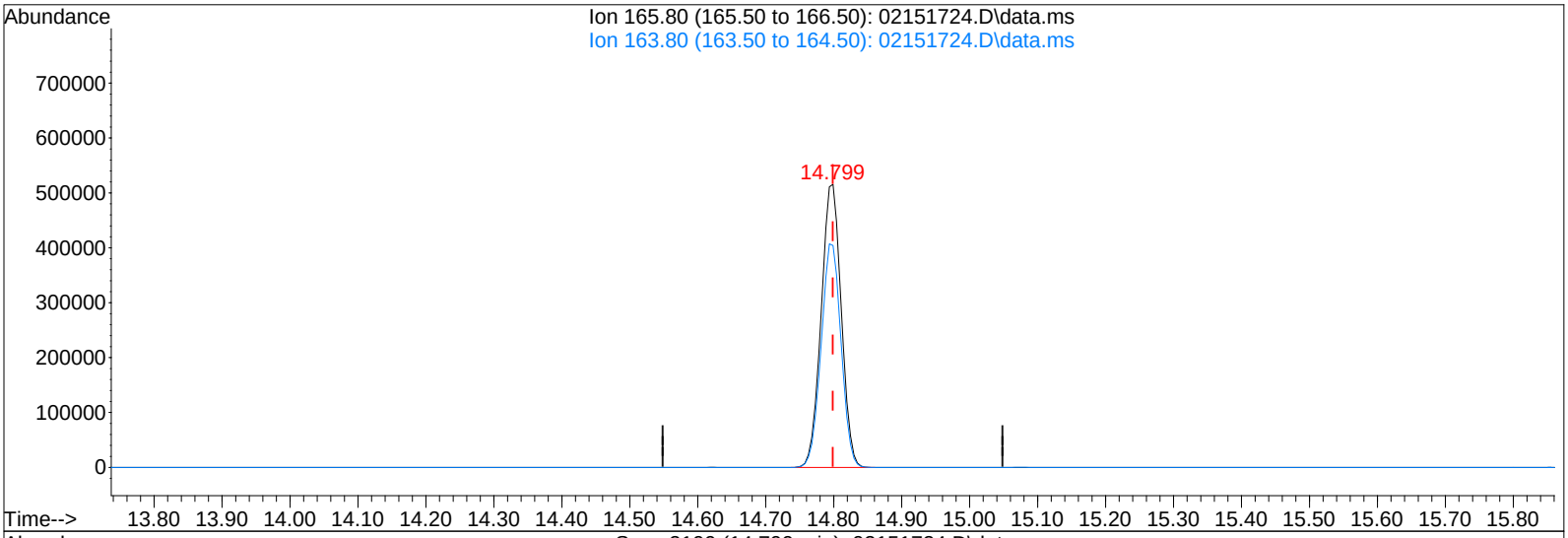
response 5728

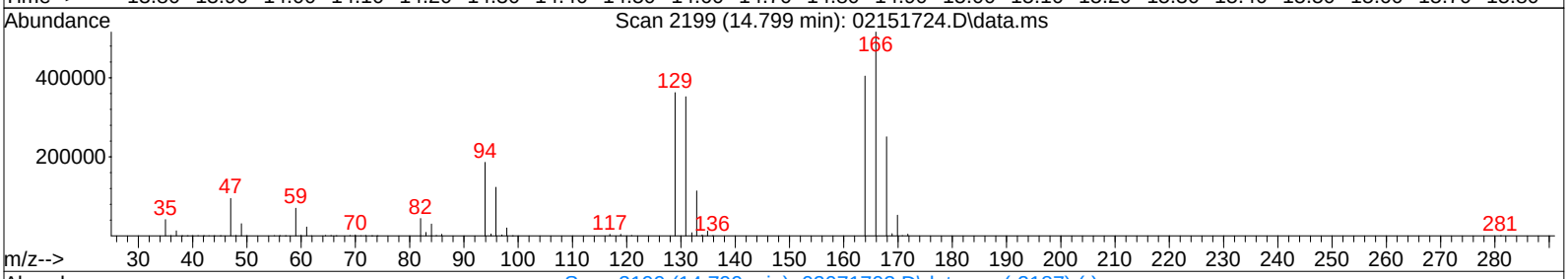
Ion	Exp%	Act%
62.00	100	100
64.00	32.20	33.40
0.00	0.00	0.00
0.00	0.00	0.00

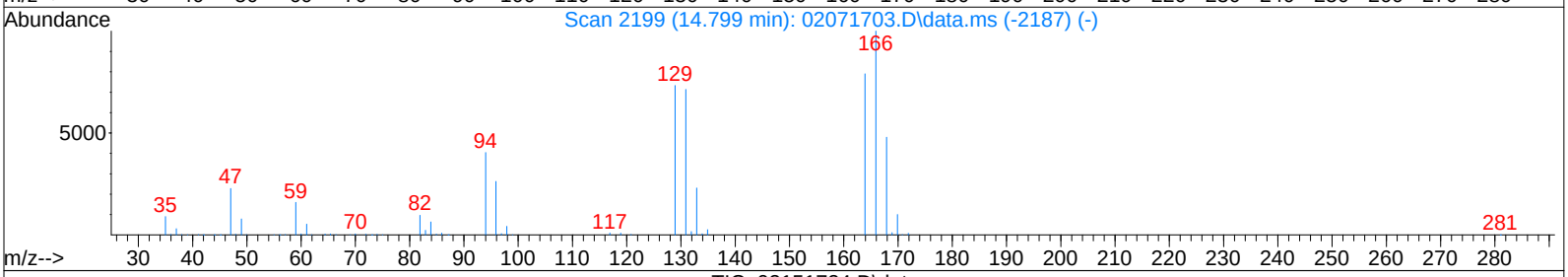
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151724.D
Acq On : 15 Feb 2017 20:33 Operator: SC
Sample : P1700672-003 (1000mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 16 08:47:53 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02151724.D\data.ms

(64) Tetrachloroethene (T)

14.799min (+0.000) 63.87ng

response 1055089

Ion	Exp%	Act%
165.80	100	100
163.80	78.10	78.72
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161711.D
Acq On : 16 Feb 2017 12:21 Operator: SC
Sample : P1700672-003Dil (100mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 12:58:15 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.11	130	152366	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.09	114	734318	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	15.45	82	299745	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.89	65	212786	11.396	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.20%				
57) Toluene-d8 (SS2)	13.54	98	781444	12.607	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.88%				
73) Bromofluorobenzene (SS3)	17.05	174	233185	13.886	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.12%				
Target Compounds							Qvalue
2) Propene	3.85	42	4097m	0.182	ng		
3) Dichlorodifluoromethan...	3.96	85	4009	0.121	ng	#	92
4) Chloromethane	4.16	50	632	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	4.44	62	492	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.34	45	460974	36.596	ng		100
11) Acetonitrile	5.53	41	1681	N.D.			
12) Acrolein	5.68	56	589	N.D.			
13) Acetone	5.82	58	142589	9.885	ng		99
14) Trichlorofluoromethane	6.00	101	2446	0.092	ng		88
15) 2-Propanol (Isopropanol)	6.14	45	26839	0.621	ng		97
16) Acrylonitrile	6.34	53	55	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	6.84	84	604	N.D.			
20) 3-Chloro-1-propene (Al...	6.91	41	1882	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	7.12	76	40543	0.579	ng		98
23) trans-1,2-Dichloroethene	7.86	61	11113	0.444	ng		93
24) 1,1-Dichloroethane	0.00	63	0	N.D.	d		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	8.50	72	25346	2.055	ng	#	89
28) cis-1,2-Dichloroethene	8.95	61	148844	6.242	ng		95
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	0.00	61	0	N.D.	d		
31) n-Hexane	9.20	57	14782	0.485	ng		99
32) Chloroform	9.26	83	15995	0.541	ng		99
34) Tetrahydrofuran (THF)	9.68	72	553	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.73	78	34700	0.459	ng		98
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	11.01	84	9487	0.357	ng		93
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	11.79	130	701305	39.443	ng		100
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	11.85	57	5428	N.D.			

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161711.D
Acq On : 16 Feb 2017 12:21 Operator: SC
Sample : P1700672-003Dil (100mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 16 12:58:15 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

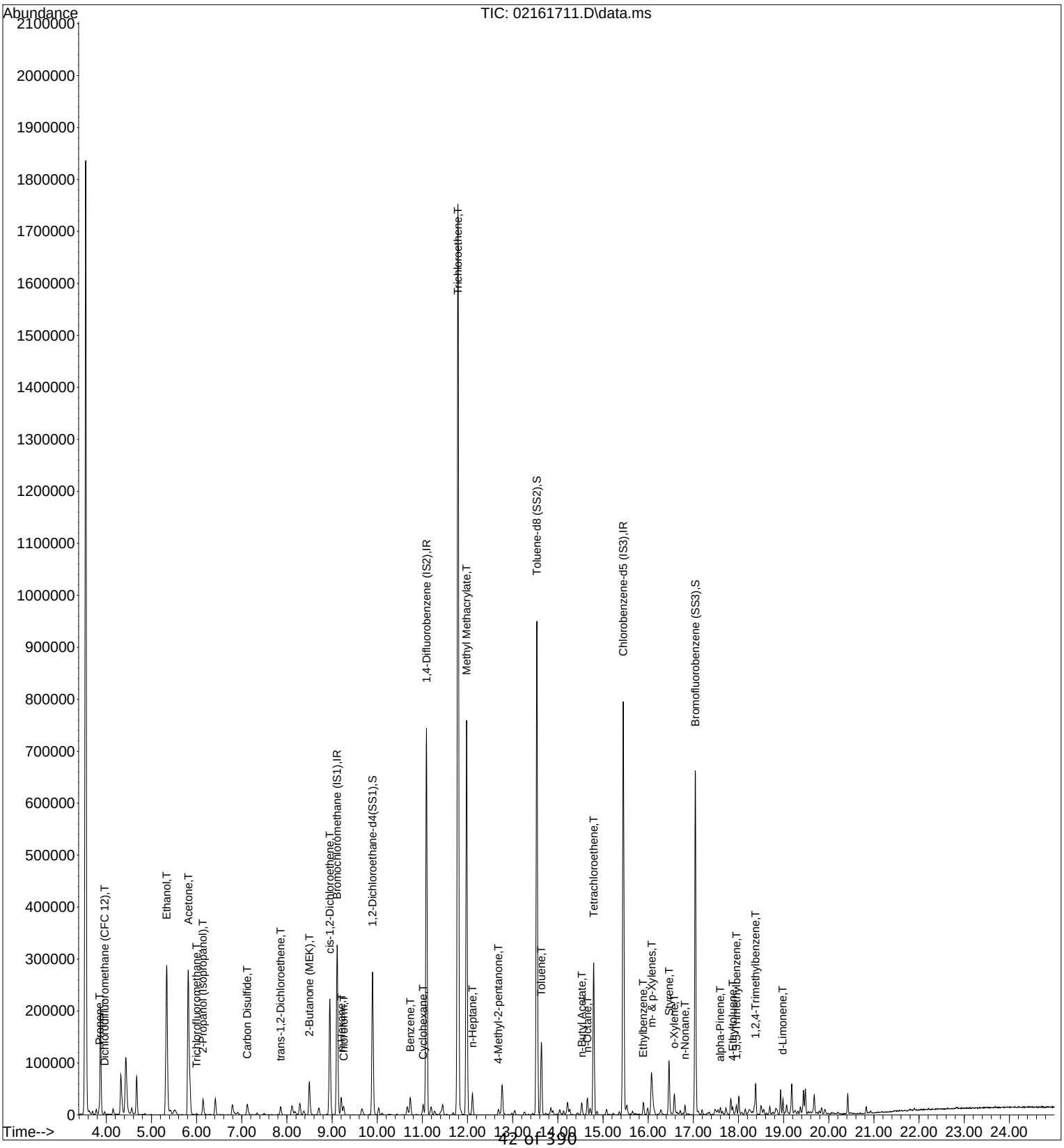
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	11.98	100	138265	20.042 ng	97
51) n-Heptane	12.11	71	11657	0.660 ng	95
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	12.68	58	3378	0.203 ng	93
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	13.63	91	124092	1.712 ng	100
59) 2-Hexanone	0.00	43	0	N.D. d	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	14.53	43	17702	0.413 ng	93
63) n-Octane	14.65	57	6607	0.410 ng	96
64) Tetrachloroethene	14.79	166	109987	6.364 ng	98
65) Chlorobenzene	15.54	112	1858	N.D.	
66) Ethylbenzene	15.89	91	21550	0.270 ng	99
67) m- & p-Xylenes	16.08	91	73545	1.200 ng	98
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.46	104	62121	1.286 ng	98
70) o-Xylene	16.58	91	26121	0.418 ng	99
71) n-Nonane	16.81	43	6936	0.196 ng	100
72) 1,1,2,2-Tetrachloroethane	16.63	83	987	N.D.	
74) Cumene	17.19	105	2655	N.D.	
75) alpha-Pinene	17.60	93	6075	0.148 ng	97
76) n-Propylbenzene	17.72	91	8103	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	17.87	105	9271	0.126 ng	94
79) 1,3,5-Trimethylbenzene	17.95	105	9317	0.146 ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D. d	
82) 1,2,4-Trimethylbenzene	18.38	105	34503	0.545 ng	91
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	18.38	91	3190	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.67	105	493	N.D.	
88) 4-Isopropyltoluene (p-...	18.83	119	1683	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D. d	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	18.98	68	7348	0.271 ng	89
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.90	128	2788	N.D.	
96) n-Dodecane	20.92	57	1556	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	16.24	55	1045	N.D.	
99) tert-Butylbenzene	18.38	119	4346	N.D.	
100) n-Butylbenzene	19.26	91	1557	N.D.	

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161711.D
Acq On : 16 Feb 2017 12:21 Operator: SC
Sample : P1700672-003Dil (100mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

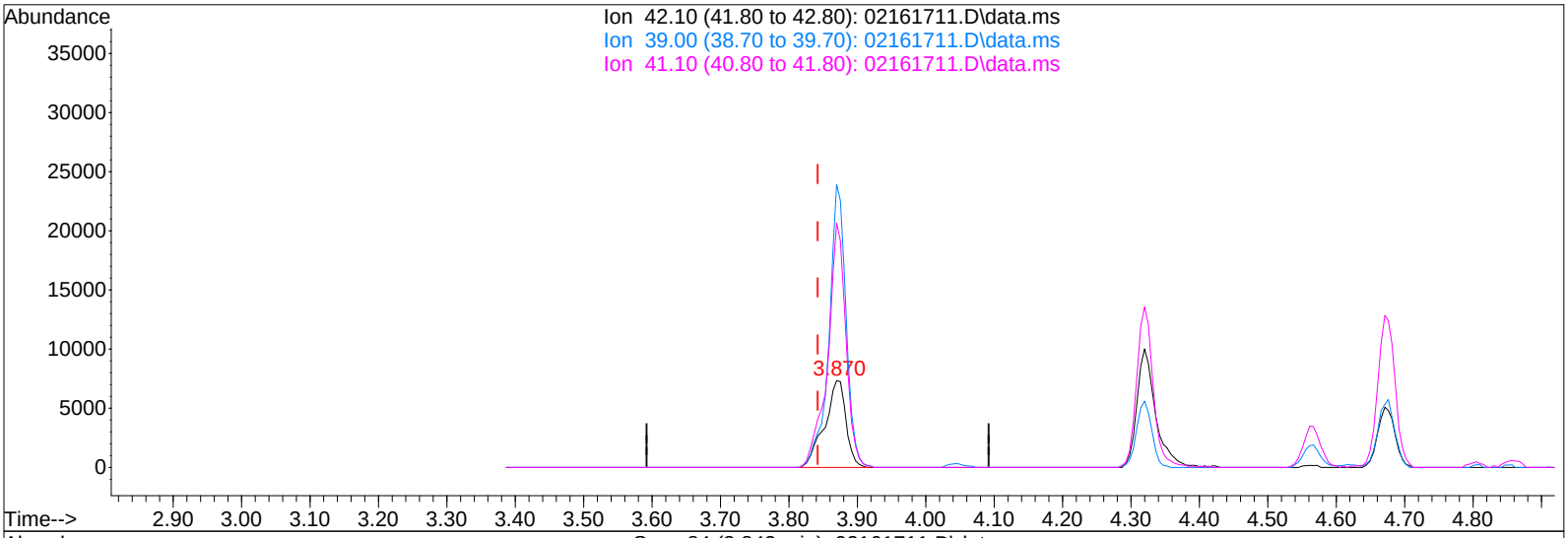
Quant Time: Feb 16 12:58:15 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

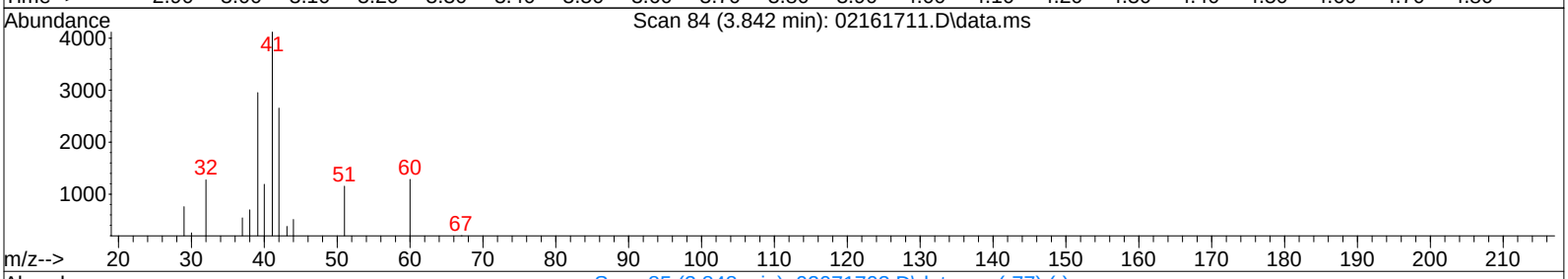


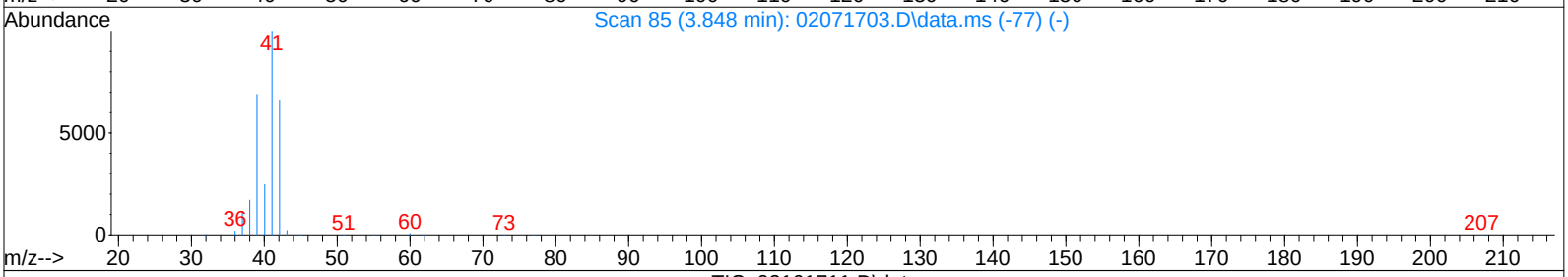
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\16\02161711.D
Acq On : 16 Feb 2017 12:21 Operator: SC
Sample : P1700672-003Dil (100mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 16 12:55:12 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02161711.D\data.ms

(2) Propene (T)

3.870min (+0.028) 0.71ng

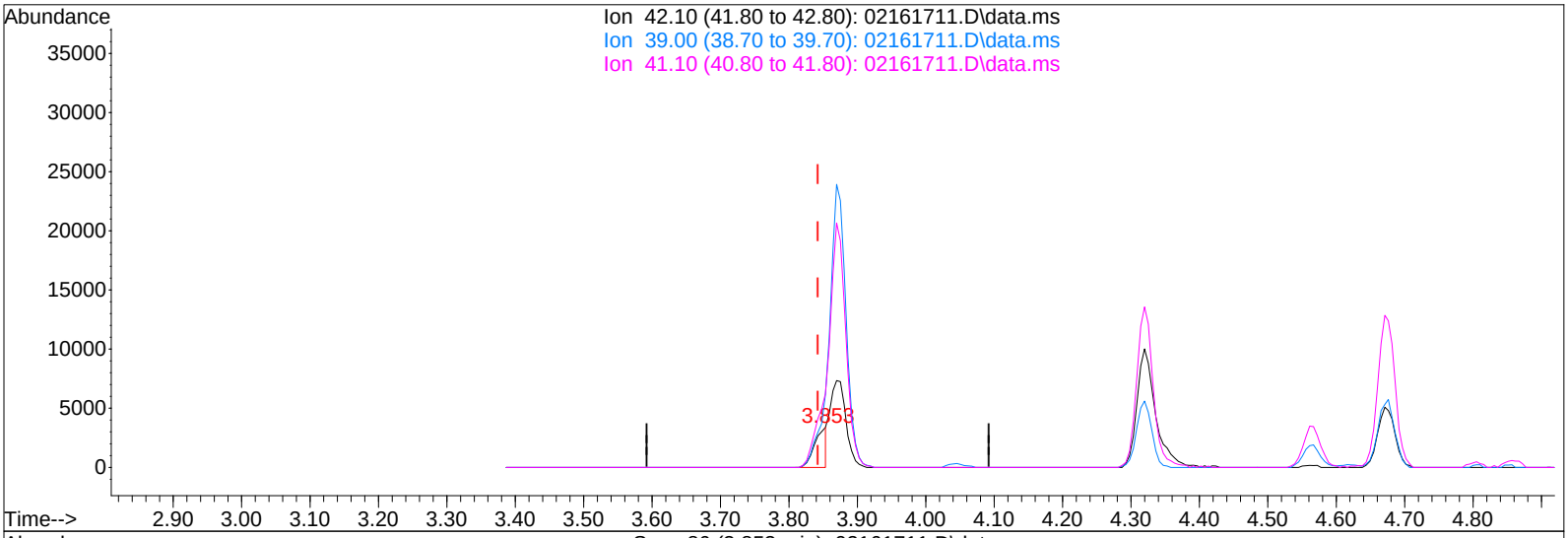
response 15913

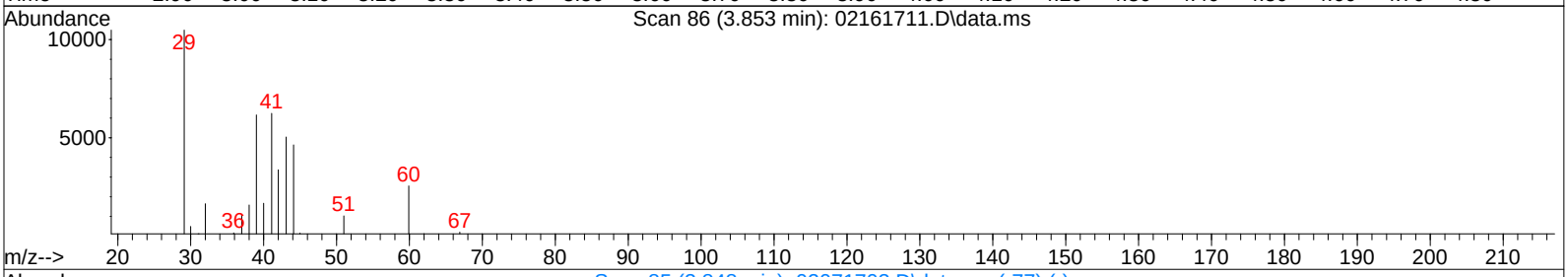
Ion	Exp%	Act%
42.10	100	100
39.00	105.00	261.88#
41.10	151.00	239.73#
0.00	0.00	0.00

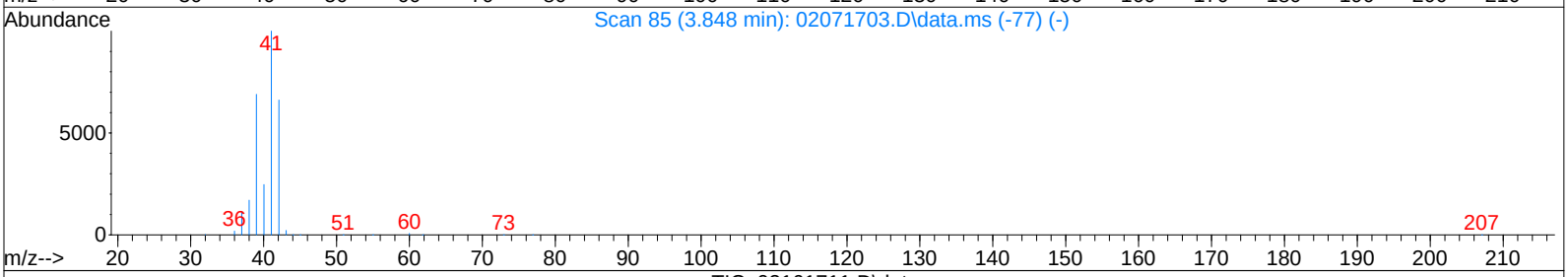
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\16\02161711.D
Acq On : 16 Feb 2017 12:21 Operator: SC
Sample : P1700672-003Dil (100mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 16 12:55:12 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02161711.D\data.ms

(2) Propene (T)

3.853min (+0.011) 0.18ng m

response 4097

Ion	Exp%	Act%
42.10	100	100
39.00	105.00	1017.16#
41.10	151.00	931.12#
0.00	0.00	0.00

IPC

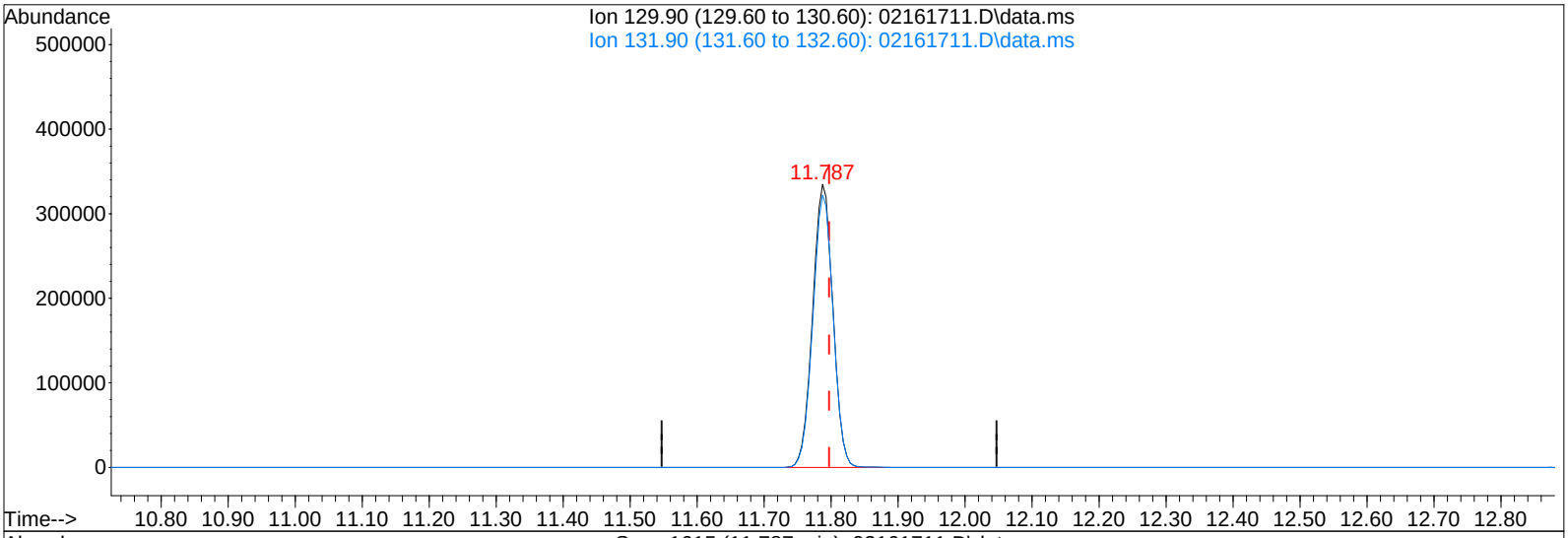
2/16/17

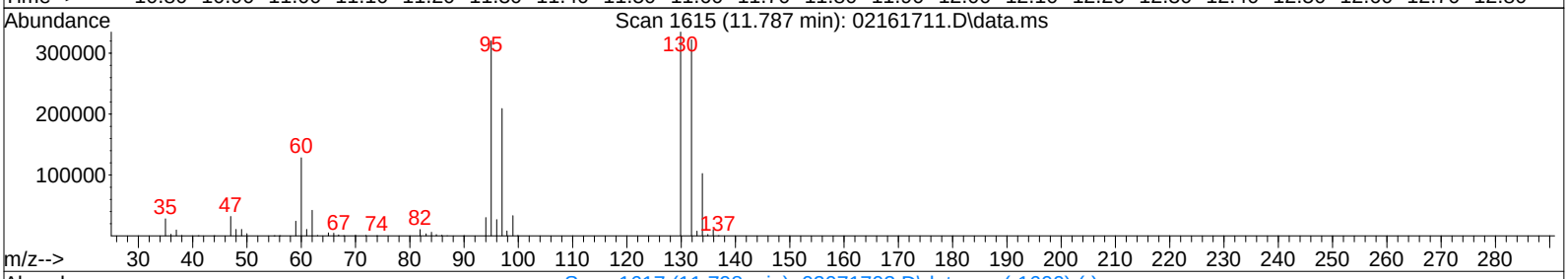
02/21/17

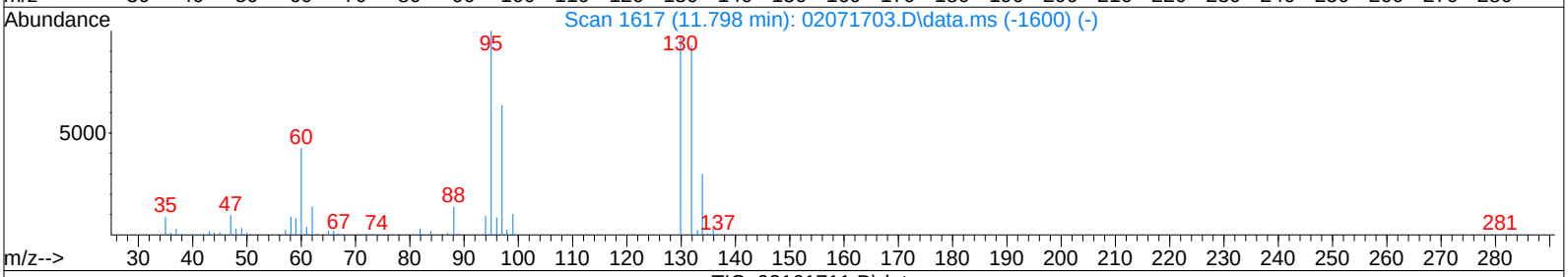
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\16\02161711.D
Acq On : 16 Feb 2017 12:21 Operator: SC
Sample : P1700672-003Dil (100mL)
Misc : S29-01261704
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 16 12:55:12 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02161711.D\data.ms

(47) Trichloroethene (T)

11.787min (-0.010) 39.44ng

response 701305

Ion	Exp%	Act%
129.90	100	100
131.90	96.90	96.50
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **SS3-020917-0945** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-005

Test Code: EPA TO-15 Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 2/13/17
Analyst: Simon Cao Date Analyzed: 2/15 - 2/16/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: SC02171

Initial Pressure (psig): -3.91 Final Pressure (psig): 3.84

Canister Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.17	ND	0.067	
156-59-2	cis-1,2-Dichloroethene	ND	0.17	ND	0.043	
79-01-6	Trichloroethene	**1.1**	0.17	**0.21**	0.032	
127-18-4	Tetrachloroethene	**220**	1.7	**32**	0.25	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151725.D
Acq On : 15 Feb 2017 21:07 Operator: SC
Sample : P1700672-005 (1000mL)
Misc : S29-01261704
ALS Vial : 7 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 09:44:58 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.13	130	150978	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	11.11	114	737007	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	15.45	82	312603	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.92	65	214159	11.575	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.64%				
57) Toluene-d8 (SS2)	13.54	98	796141	12.316	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.56%				
73) Bromofluorobenzene (SS3)	17.05	174	240309	13.721	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.76%				
Target Compounds							Qvalue
2) Propene	3.84	42	341760	15.330	ng		97
3) Dichlorodifluoromethan...	3.96	85	34966	1.068	ng		100
4) Chloromethane	4.15	50	5713	0.199	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.31	135	834	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	4.61	54	9274	0.511	ng	#	43
8) Bromomethane	4.91	94	740	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.41	45	4253029	340.747	ng		100
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	5.69	56	7523	0.642	ng		100
13) Acetone	5.83	58	3209470	224.552	ng		98
14) Trichlorofluoromethane	6.00	101	16104	0.610	ng		99
15) 2-Propanol (Isopropanol)	6.18	45	530752	12.394	ng		99
16) Acrylonitrile	0.00	53	0	N.D.	d		
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	6.86	84	4607	0.249	ng		79
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d		
21) Trichlorotrifluoroethane	7.16	151	3420	0.254	ng		90
22) Carbon Disulfide	7.12	76	46193	0.666	ng		99
23) trans-1,2-Dichloroethene	7.88	61	500	N.D.			
24) 1,1-Dichloroethane	8.06	63	684	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	d		
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	8.50	72	800424	65.489	ng	#	87
28) cis-1,2-Dichloroethene	8.97	61	815	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	9.20	61	42999	6.803	ng		100
31) n-Hexane	9.20	57	109798	3.636	ng		98
32) Chloroform	9.28	83	449308	15.345	ng		100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	d		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.	d		
38) 1,1,1-Trichloroethane	10.28	97	3351	0.138	ng		100
39) Isopropyl Acetate	0.00	61	0	N.D.	d		
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.74	78	358004	4.720	ng		99
42) Carbon Tetrachloride	10.90	117	4587	0.221	ng		99
43) Cyclohexane	11.02	84	38091	1.427	ng		96
44) tert-Amyl Methyl Ether	11.34	73	450	N.D.			
45) 1,2-Dichloropropane	11.56	63	99520	5.619	ng		99
46) Bromodichloromethane	11.75	83	22924	1.039	ng		84
47) Trichloroethene	11.80	130	11702	0.656	ng		98
48) 1,4-Dioxane	11.79	88	705	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151725.D
Acq On : 15 Feb 2017 21:07 Operator: SC
Sample : P1700672-005 (1000mL)
Misc : S29-01261704
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 16 09:44:58 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

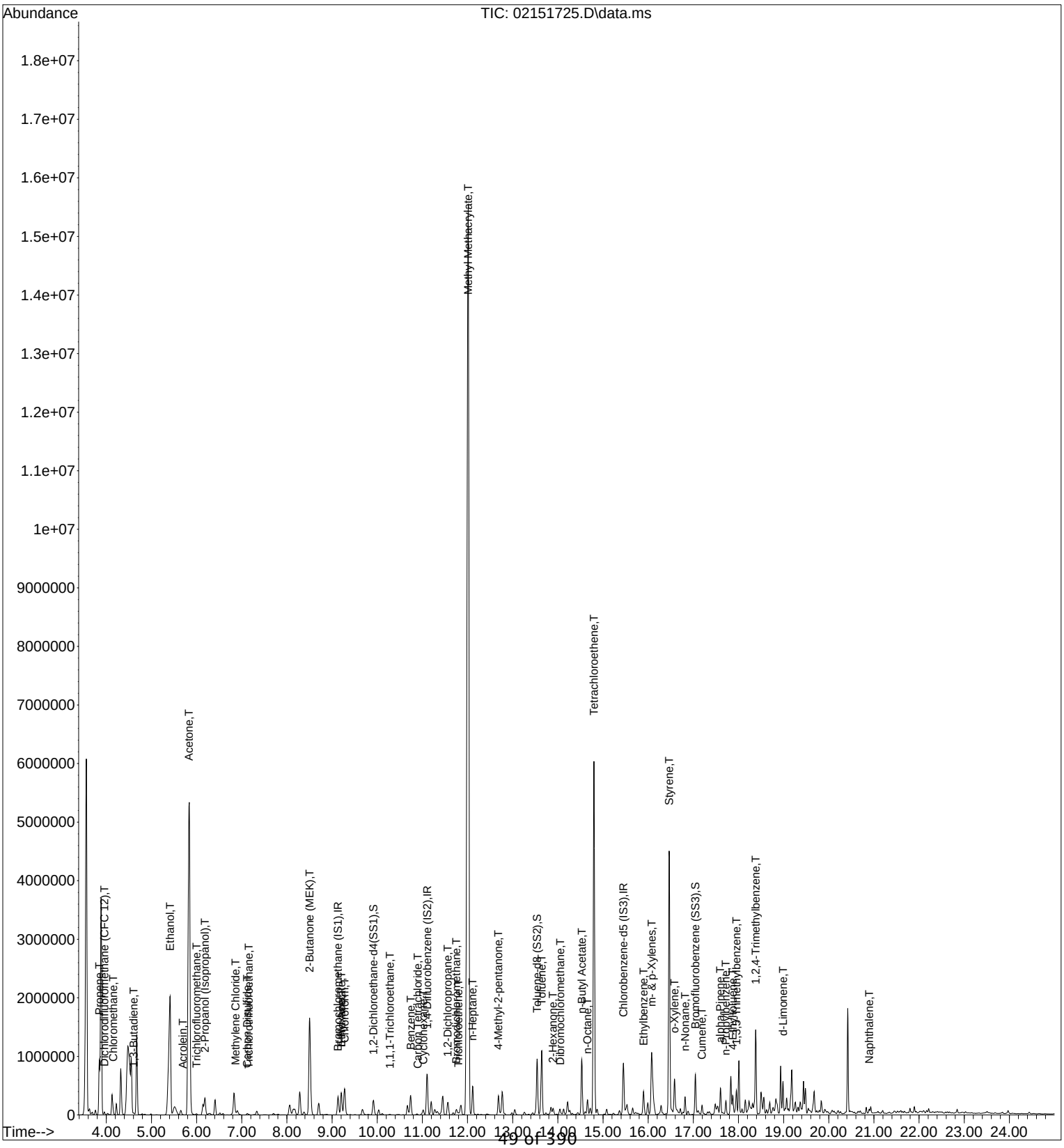
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Methyl Methacrylate	12.01	100	4053202	585.369	ng		92
51) n-Heptane	12.11	71	138719	7.820	ng		96
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.			
53) 4-Methyl-2-pentanone	12.68	58	108777	6.511	ng		98
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	d		
58) Toluene	13.64	91	972949	12.874	ng		100
59) 2-Hexanone	13.89	43	37530	0.930	ng	#	62
60) Dibromochloromethane	14.06	129	2505	0.137	ng		92
61) 1,2-Dibromoethane	0.00	107	0	N.D.			
62) n-Butyl Acetate	14.53	43	737622	16.494	ng		97
63) n-Octane	14.65	57	52615	3.133	ng		95
64) Tetrachloroethene	14.80	166	2246946	124.657	ng		99
65) Chlorobenzene	0.00	112	0	N.D.	d		
66) Ethylbenzene	15.90	91	337156	4.055	ng		100
67) m- & p-Xylenes	16.08	91	956567	14.972	ng		99
68) Bromoform	0.00	173	0	N.D.			
69) Styrene	16.46	104	2709193	53.758	ng		99
70) o-Xylene	16.58	91	340274	5.221	ng		99
71) n-Nonane	16.82	43	114587	3.100	ng		97
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	d		
74) Cumene	17.19	105	59303	0.727	ng		100
75) alpha-Pinene	17.60	93	200818	4.701	ng		99
76) n-Propylbenzene	17.72	91	176955	1.798	ng		98
77) 3-Ethyltoluene	0.00	105	0	N.D.	d		
78) 4-Ethyltoluene	17.87	105	205520	2.682	ng		97
79) 1,3,5-Trimethylbenzene	17.95	105	218277	3.277	ng		99
80) alpha-Methylstyrene	0.00	118	0	N.D.	d		
81) 2-Ethyltoluene	0.00	105	0	N.D.	d		
82) 1,2,4-Trimethylbenzene	18.38	105	853921	12.925	ng		92
83) n-Decane	0.00	57	0	N.D.	d		
84) Benzyl Chloride	18.52	91	967	N.D.			
85) 1,3-Dichlorobenzene	18.60	146	1300	N.D.			
86) 1,4-Dichlorobenzene	18.60	146	1300	N.D.			
87) sec-Butylbenzene	0.00	105	0	N.D.	d		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	d		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.			
91) d-Limonene	18.99	68	135864	4.808	ng		83
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	d		
93) n-Undecane	0.00	57	0	N.D.	d		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.			
95) Naphthalene	20.89	128	45443	0.596	ng		96
96) n-Dodecane	0.00	57	0	N.D.	d		
97) Hexachlorobutadiene	0.00	225	0	N.D.			
98) Cyclohexanone	0.00	55	0	N.D.	d		
99) tert-Butylbenzene	0.00	119	0	N.D.	d		
100) n-Butylbenzene	0.00	91	0	N.D.	d		

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151725.D
Acq On : 15 Feb 2017 21:07 Operator: SC
Sample : P1700672-005 (1000mL)
Misc : S29-01261704
ALS Vial : 7 Sample Multiplier: 1

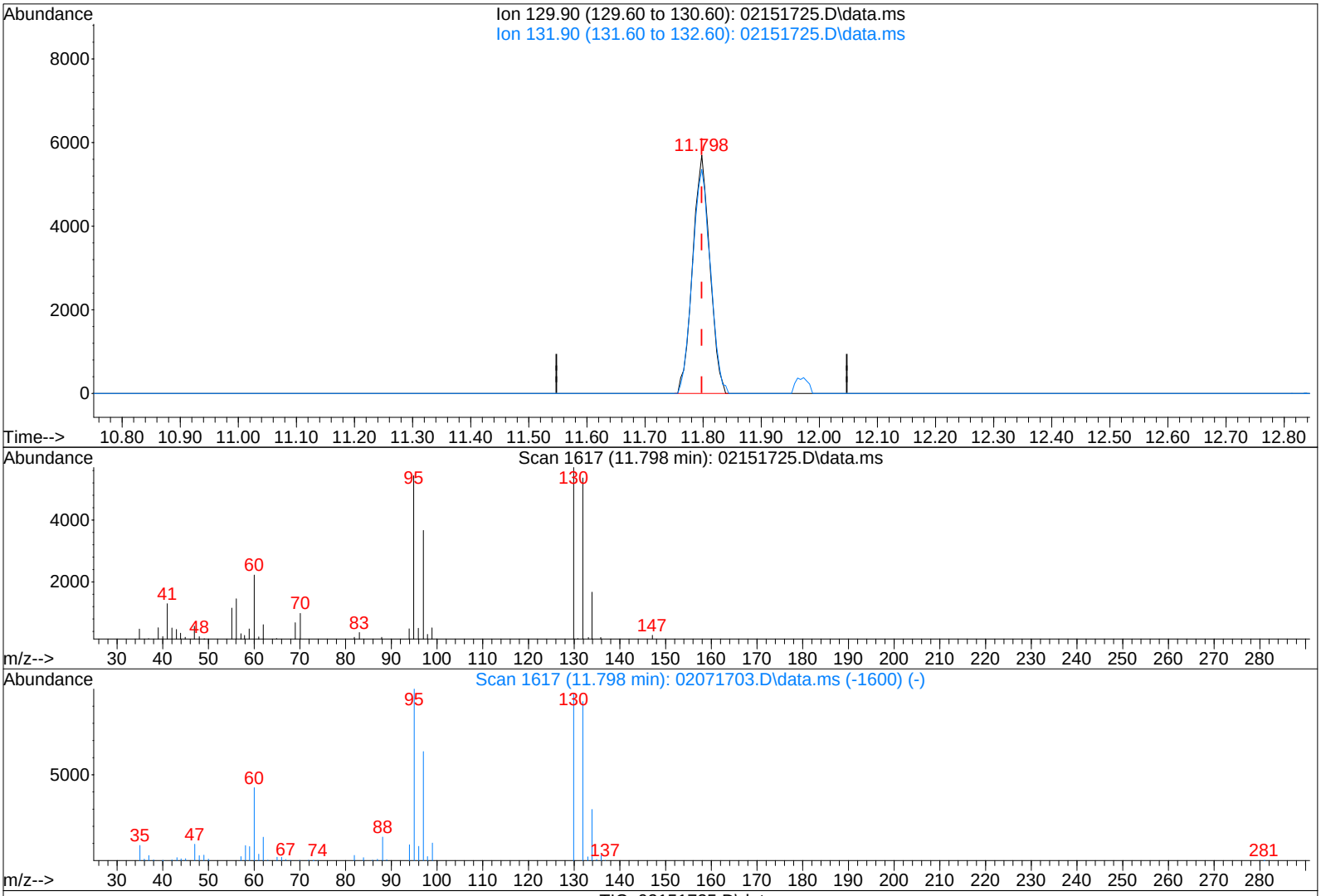
Quant Time: Feb 16 09:44:58 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151725.D
Acq On : 15 Feb 2017 21:07 Operator: SC
Sample : P1700672-005 (1000mL)
Misc : S29-01261704
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 16 08:48:17 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 02151725.D\data.ms

(47) Trichloroethene (T)

11.798min (+0.000) 0.66ng

response 11702

Ion	Exp%	Act%
129.90	100	100
131.90	96.90	98.47
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161712.D
Acq On : 16 Feb 2017 12:55 Operator: SC
Sample : P1700672-005Dil (100mL)
Misc : S29-01261704
ALS Vial : 7 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 13:34:58 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.11	130	148137	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.09	114	714588	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	15.45	82	292010	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.89	65	207977	11.457	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.68%				
57) Toluene-d8 (SS2)	13.54	98	758678	12.564	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%				
73) Bromofluorobenzene (SS3)	17.05	174	229951	14.056	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.48%				
Target Compounds							Qvalue
2) Propene	3.84	42	17653	0.807	ng	#	56
3) Dichlorodifluoromethan...	3.96	85	3384	0.105	ng	#	93
4) Chloromethane	4.15	50	1477	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	4.60	54	863	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.34	45	431608	35.243	ng		99
11) Acetonitrile	5.52	41	1097	N.D.			
12) Acrolein	5.68	56	605	N.D.			
13) Acetone	5.80	58	368951	26.309	ng		99
14) Trichlorofluoromethane	6.00	101	1512	N.D.			
15) 2-Propanol (Isopropanol)	6.14	45	97783	2.327	ng		96
16) Acrylonitrile	6.41	53	57	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	6.84	84	812	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	7.13	76	5775	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	8.17	73	680	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	8.49	72	74450	6.208	ng	#	90
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	9.20	61	3553	0.573	ng		87
31) n-Hexane	9.19	57	10406	0.351	ng		99
32) Chloroform	9.26	83	42968	1.496	ng		99
34) Tetrahydrofuran (THF)	9.67	72	743	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.73	78	35482	0.482	ng		99
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	11.01	84	3760	0.145	ng		92
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	11.56	63	9346	0.544	ng		100
46) Bromodichloromethane	11.74	83	1981	0.093	ng		82
47) Trichloroethene	11.80	130	1236	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		

Data File: I:\MS09\Data\2017_02\16\02161712.D
Acq On : 16 Feb 2017 12:55 Operator: SC
Sample : P1700672-005Dil (100mL)
Misc : S29-01261704
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 16 13:34:58 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

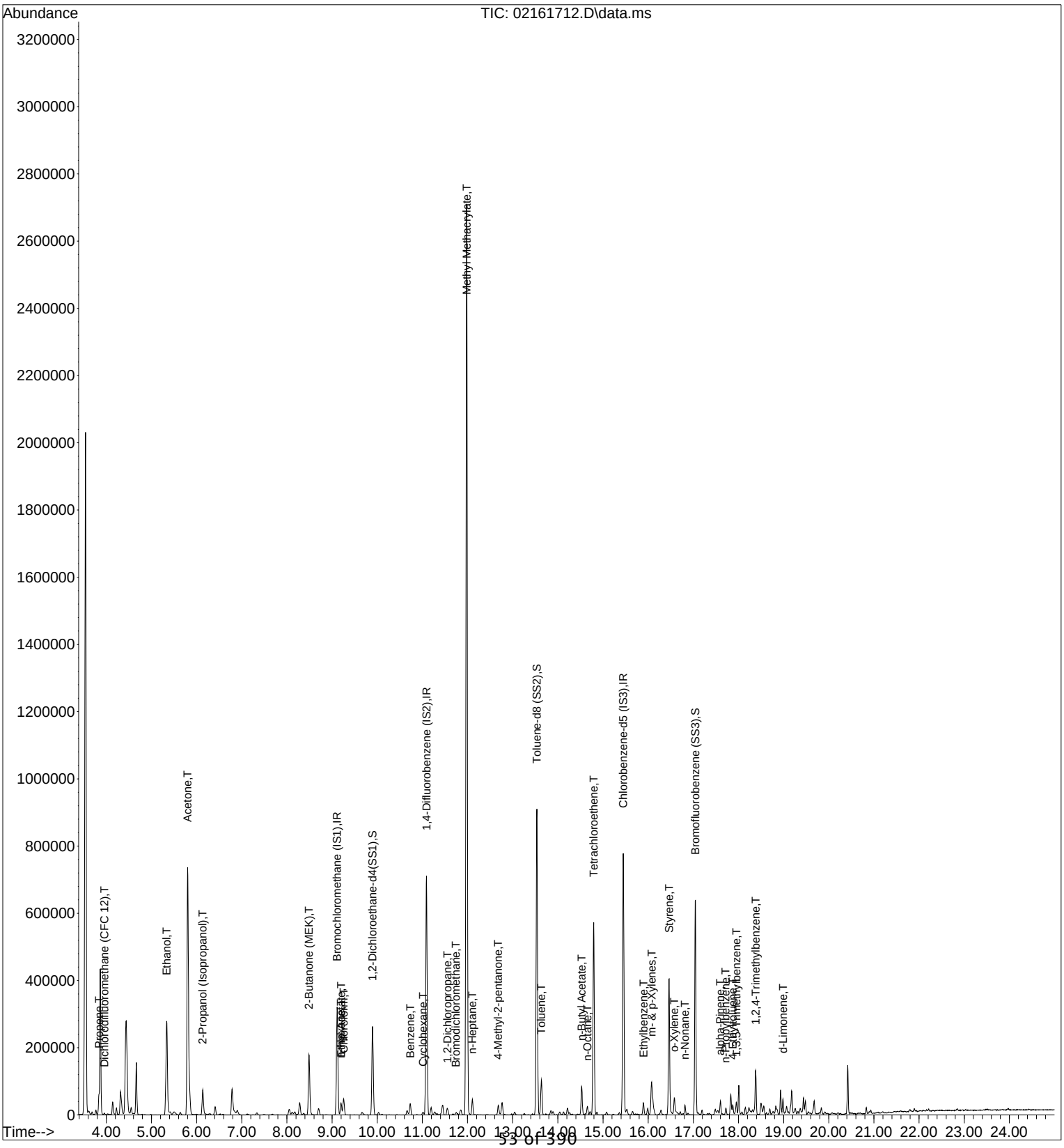
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	11.98	100	509325	75.865 ng	95
51) n-Heptane	12.11	71	12596	0.732 ng	96
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	12.68	58	9868	0.609 ng	99
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	13.63	91	90155	1.277 ng	100
59) 2-Hexanone	0.00	43	0	N.D. d	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	14.53	43	66609	1.594 ng	96
63) n-Octane	14.65	57	5176	0.330 ng	98
64) Tetrachloroethene	14.79	166	213784	12.697 ng	99
65) Chlorobenzene	15.53	112	1987	N.D.	
66) Ethylbenzene	15.90	91	30753	0.396 ng	98
67) m- & p-Xylenes	16.08	91	88286	1.479 ng	100
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.46	104	246795	5.243 ng	98
70) o-Xylene	16.58	91	31377	0.515 ng	96
71) n-Nonane	16.81	43	10977	0.318 ng	98
72) 1,1,2,2-Tetrachloroethane	16.51	83	500	N.D.	
74) Cumene	17.20	105	5663	N.D.	
75) alpha-Pinene	17.60	93	18485	0.463 ng	98
76) n-Propylbenzene	17.72	91	16150	0.176 ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	17.87	105	19272	0.269 ng	98
79) 1,3,5-Trimethylbenzene	17.95	105	20553	0.330 ng	98
80) alpha-Methylstyrene	18.11	118	646	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D. d	
82) 1,2,4-Trimethylbenzene	18.38	105	78041	1.265 ng	91
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	18.62	91	917	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.67	105	1253	N.D.	
88) 4-Isopropyltoluene (p-...	18.83	119	3026	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D. d	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	18.99	68	11318	0.429 ng	83
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.90	128	4599	N.D.	
96) n-Dodecane	0.00	57	0	N.D. d	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	16.24	55	1333	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	19.26	91	3257	N.D.	

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161712.D
Acq On : 16 Feb 2017 12:55 Operator: SC
Sample : P1700672-005Dil (100mL)
Misc : S29-01261704
ALS Vial : 7 Sample Multiplier: 1

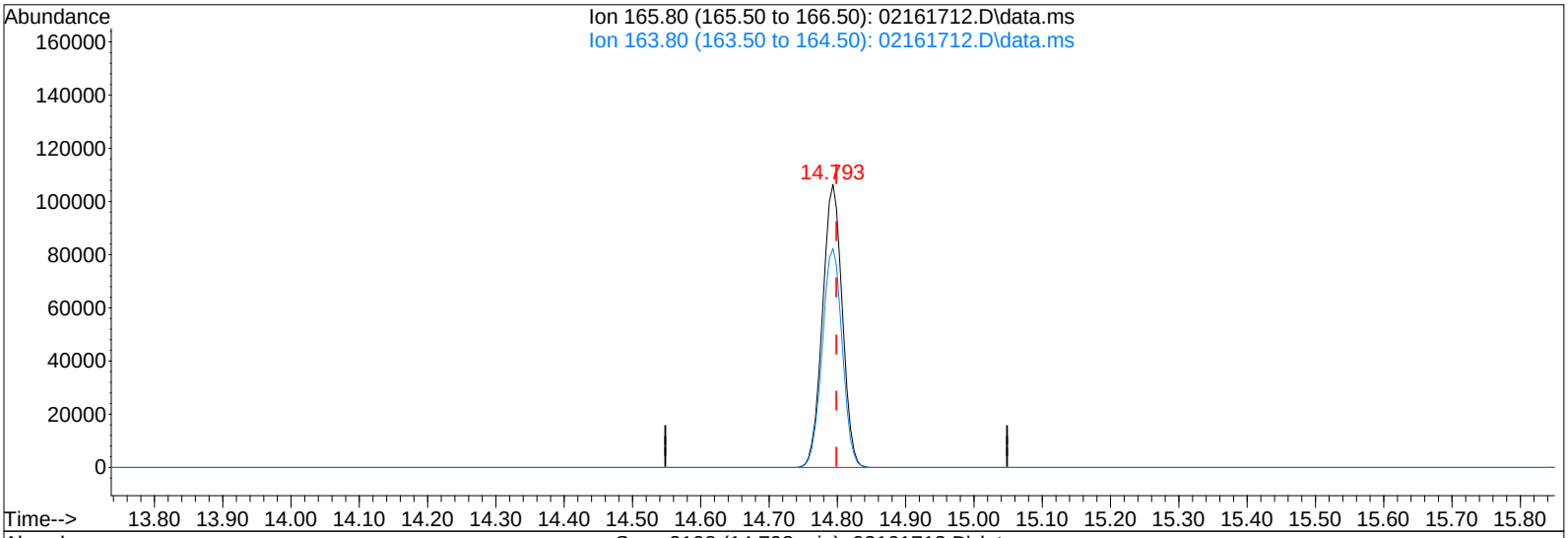
Quant Time: Feb 16 13:34:58 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

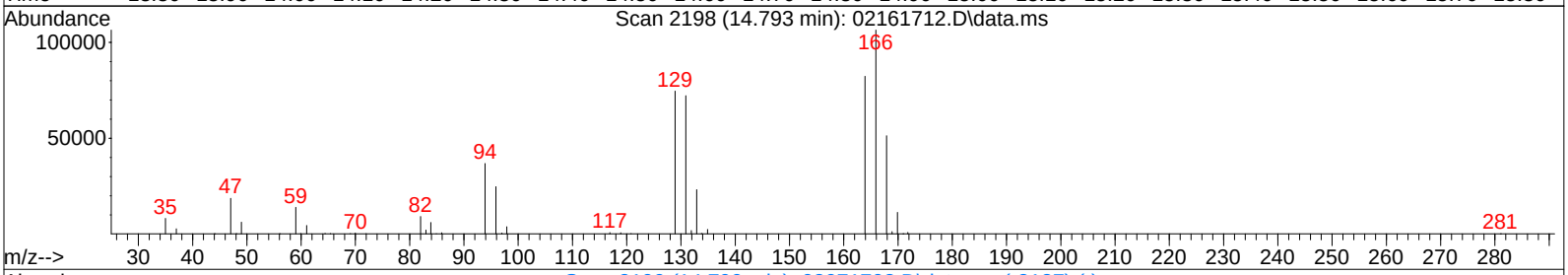


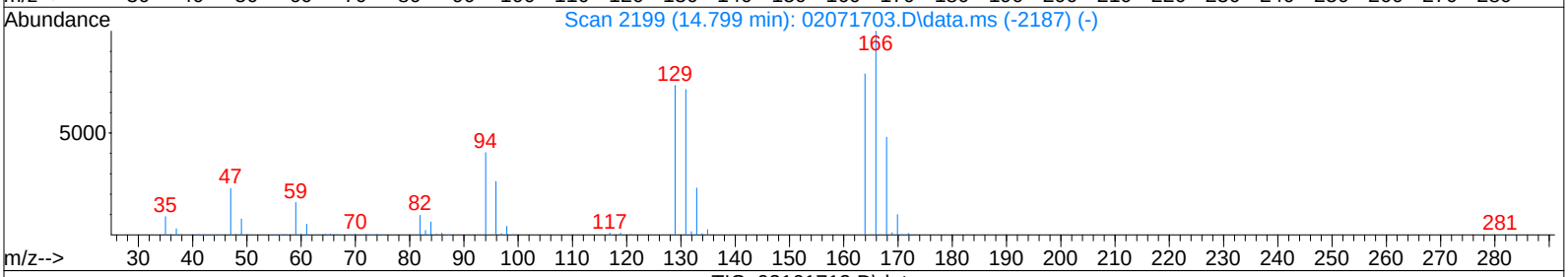
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\16\02161712.D
Acq On : 16 Feb 2017 12:55 Operator: SC
Sample : P1700672-005Dil (100mL)
Misc : S29-01261704
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 16 13:32:29 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02161712.D\data.ms

(64) Tetrachloroethene (T)

14.793min (-0.005) 12.70ng

response 213784

Ion	Exp%	Act%
165.80	100	100
163.80	78.10	78.55
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **SS4-020917-0930** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-007

Test Code: EPA TO-15 Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 2/13/17
Analyst: Simon Cao Date Analyzed: 2/15 - 2/16/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: SC02184

Initial Pressure (psig): -3.90 Final Pressure (psig): 3.85

Canister Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.17	ND	0.067	
156-59-2	cis-1,2-Dichloroethene	ND	0.17	ND	0.043	
79-01-6	Trichloroethene	**0.72**	0.17	**0.13**	0.032	
127-18-4	Tetrachloroethene	**2,500**	3.4	**380**	0.51	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151726.D
Acq On : 15 Feb 2017 21:41 Operator: SC
Sample : P1700672-007 (1000mL)
Misc : S29-01261704
ALS Vial : 8 Sample Multiplier: 1 2/16/17

Quant Time: Feb 16 09:50:33 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.13	130	159899	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	11.10	114	791617	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	15.45	82	341719	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.91	65	227348	11.603	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.80%				
57) Toluene-d8 (SS2)	13.54	98	843916	11.942	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.52%				
73) Bromofluorobenzene (SS3)	17.05	174	253034	13.217	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.76%				
Target Compounds							Qvalue
2) Propene	3.85	42	61408	2.601	ng	#	52
3) Dichlorodifluoromethan...	3.96	85	34964	1.009	ng		98
4) Chloromethane	4.16	50	1319	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.32	135	896	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.	d		
7) 1,3-Butadiene	4.61	54	2370	0.123	ng		88
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.36	45	1170435	88.542	ng		95
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	5.67	56	4366	0.352	ng		98
13) Acetone	5.82	58	742132	49.027	ng	#	47
14) Trichlorofluoromethane	6.01	101	19348	0.692	ng		100
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.	d		
16) Acrylonitrile	6.34	53	5985	0.245	ng	#	66
17) 1,1-Dichloroethene	6.72	96	1743	0.095	ng		94
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	6.84	84	7498	0.382	ng		93
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d		
21) Trichlorotrifluoroethane	7.18	151	3297	0.231	ng		94
22) Carbon Disulfide	7.14	76	671721	9.144	ng		99
23) trans-1,2-Dichloroethene	7.87	61	13360	0.509	ng		94
24) 1,1-Dichloroethane	0.00	63	0	N.D.	d		
25) Methyl tert-Butyl Ether	8.12	73	3741	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	8.50	72	227338	17.563	ng	#	90
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	9.20	61	31499	4.705	ng	#	42
31) n-Hexane	9.22	57	1822360	56.974	ng		99
32) Chloroform	9.27	83	114126	3.680	ng		92
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	d		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.	d		
38) 1,1,1-Trichloroethane	10.29	97	88602	3.387	ng		98
39) Isopropyl Acetate	0.00	61	0	N.D.	d		
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.74	78	693477	8.512	ng		100
42) Carbon Tetrachloride	10.90	117	3602	0.161	ng		92
43) Cyclohexane	11.03	84	408800	14.256	ng		96
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	11.56	63	2259	0.119	ng		100
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	11.80	130	7982	0.416	ng		98
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151726.D
Acq On : 15 Feb 2017 21:41 Operator: SC
Sample : P1700672-007 (1000mL)
Misc : S29-01261704
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 16 09:50:33 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

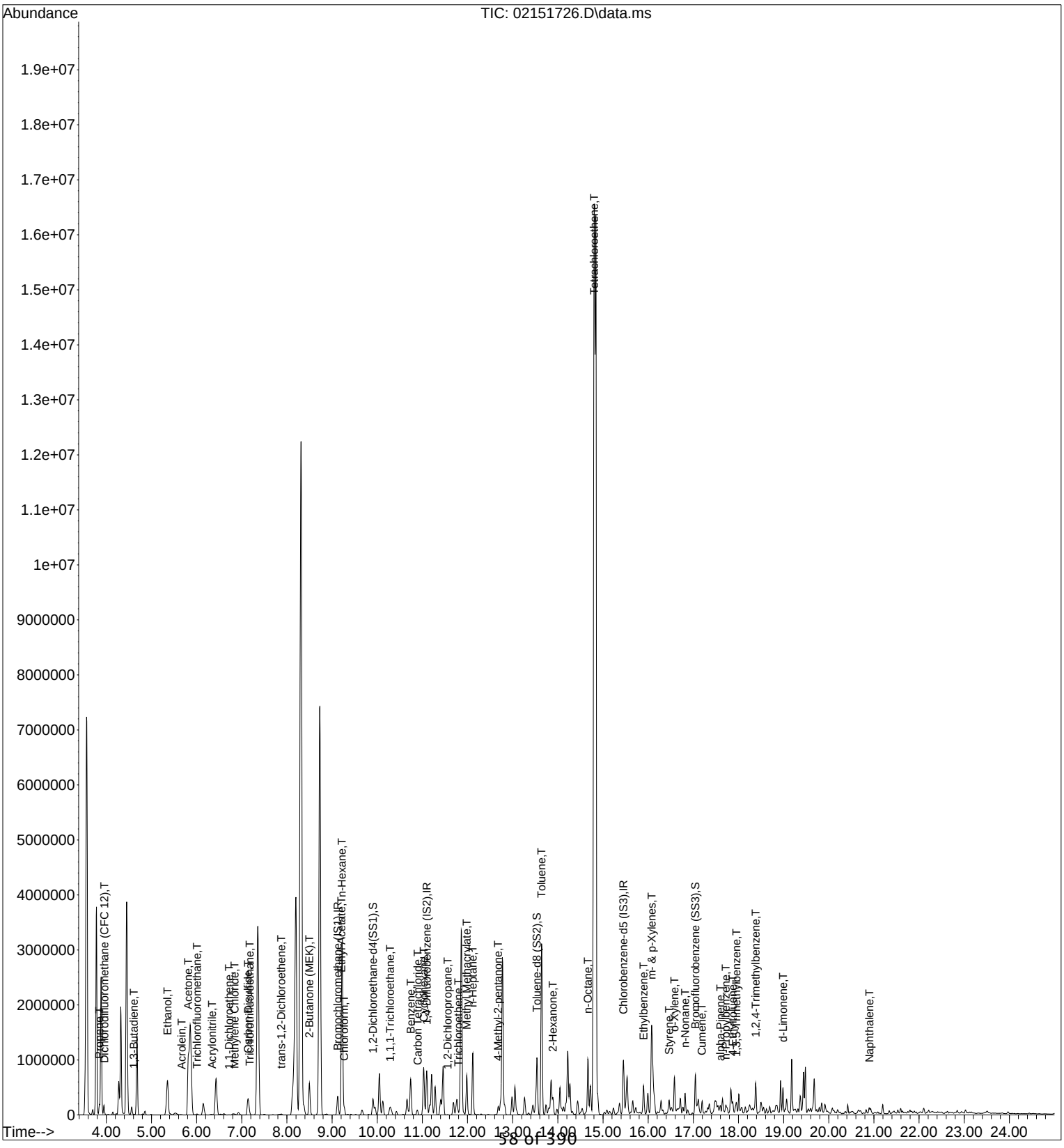
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	11.98	100	134050	18.024 ng	98
51) n-Heptane	12.12	71	323089	16.957 ng	97
52) cis-1,3-Dichloropropene	12.77	75	625	N.D.	
53) 4-Methyl-2-pentanone	12.68	58	57595	3.209 ng	90
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D. d	
58) Toluene	13.64	91	2719108	32.913 ng	100
59) 2-Hexanone	13.89	43	154943	3.514 ng	86
60) Dibromochloromethane	0.00	129	0	N.D. d	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D. d	
63) n-Octane	14.66	57	200304	10.910 ng	96
64) Tetrachloroethene	14.80	166	10517945m	533.801 ng	
65) Chlorobenzene	0.00	112	0	N.D. d	
66) Ethylbenzene	15.90	91	443538	4.880 ng	100
67) m- & p-Xylenes	16.08	91	1466623	20.999 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.46	104	135790	2.465 ng	98
70) o-Xylene	16.58	91	440476	6.183 ng	99
71) n-Nonane	16.82	43	148205	3.667 ng	99
72) 1,1,2,2-Tetrachloroethane	16.59	83	810	N.D.	
74) Cumene	17.19	105	37998	0.426 ng	99
75) alpha-Pinene	17.60	93	46993	1.006 ng	99
76) n-Propylbenzene	17.72	91	92540	0.860 ng	93
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	17.87	105	119153	1.422 ng	96
79) 1,3,5-Trimethylbenzene	17.95	105	84309	1.158 ng	99
80) alpha-Methylstyrene	18.12	118	1762	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D. d	
82) 1,2,4-Trimethylbenzene	18.38	105	305378	4.228 ng	91
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	18.56	91	732	N.D.	
85) 1,3-Dichlorobenzene	18.61	146	1053	N.D.	
86) 1,4-Dichlorobenzene	18.61	146	1053	N.D.	
87) sec-Butylbenzene	18.66	105	6665	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D. d	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D. d	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	18.99	68	113489	3.674 ng	95
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.90	128	51007	0.612 ng	97
96) n-Dodecane	0.00	57	0	N.D. d	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D. d	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	0.00	91	0	N.D. d	

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151726.D
Acq On : 15 Feb 2017 21:41 Operator: SC
Sample : P1700672-007 (1000mL)
Misc : S29-01261704
ALS Vial : 8 Sample Multiplier: 1

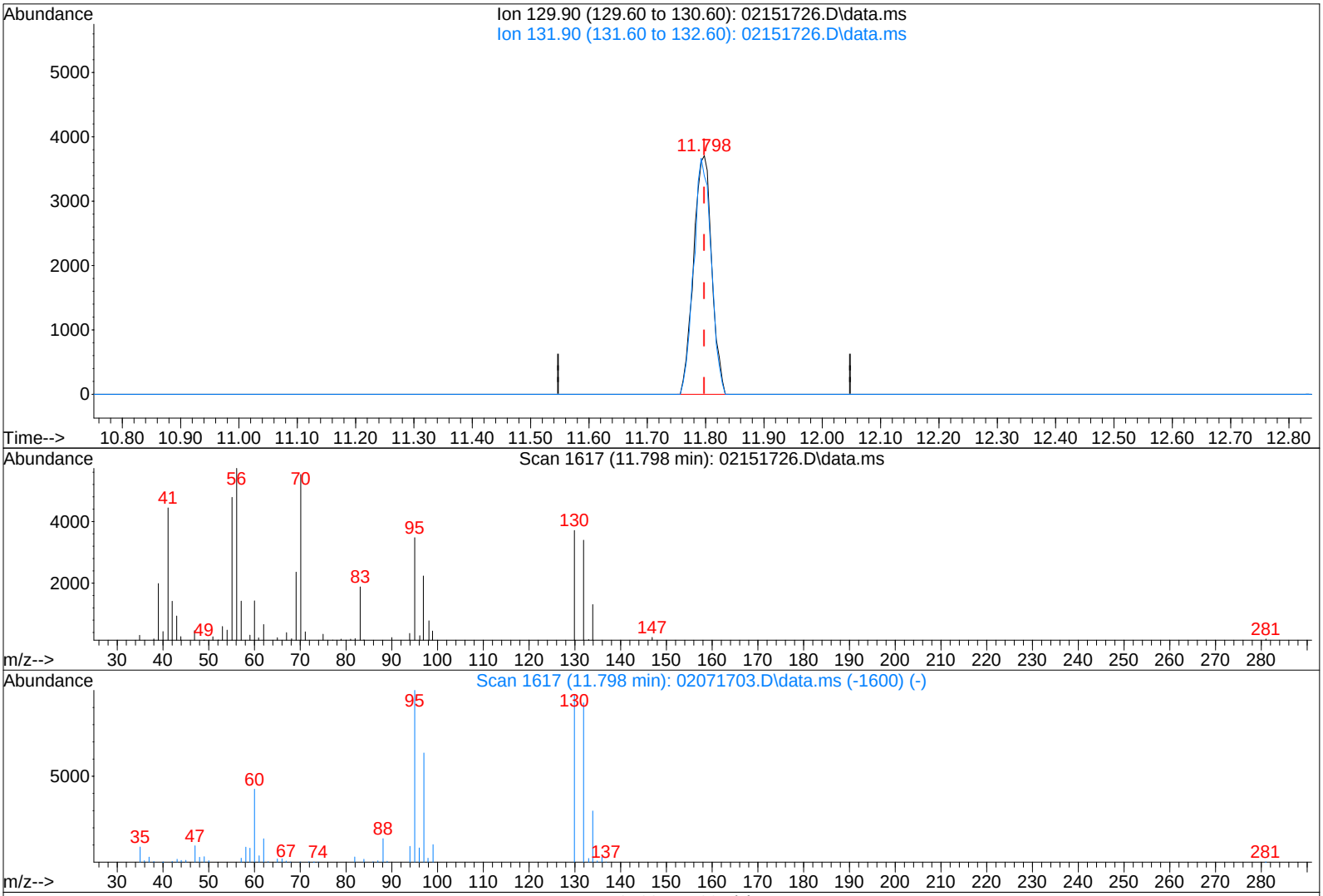
Quant Time: Feb 16 09:50:33 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151726.D
Acq On : 15 Feb 2017 21:41 Operator: SC
Sample : P1700672-007 (1000mL)
Misc : S29-01261704
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 16 08:48:43 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 02151726.D\data.ms

(47) Trichloroethene (T)

11.798min (+0.000) 0.42ng

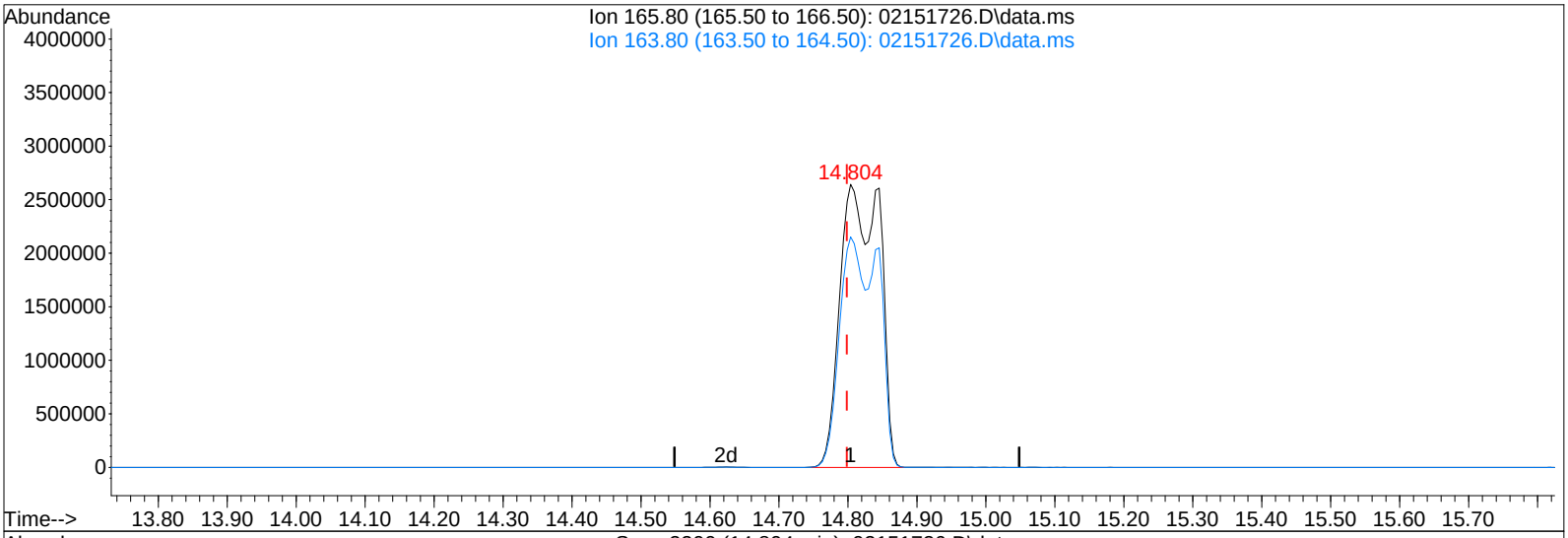
response 7982

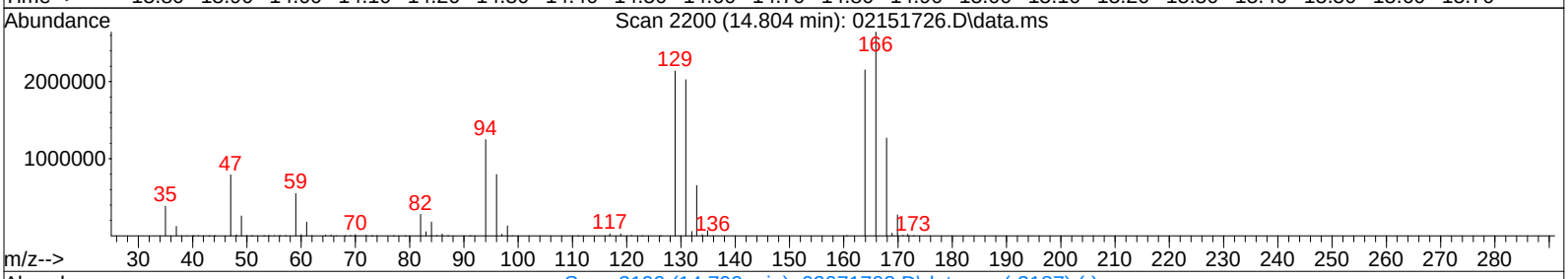
Ion	Exp%	Act%
129.90	100	100
131.90	96.90	95.41
0.00	0.00	0.00
0.00	0.00	0.00

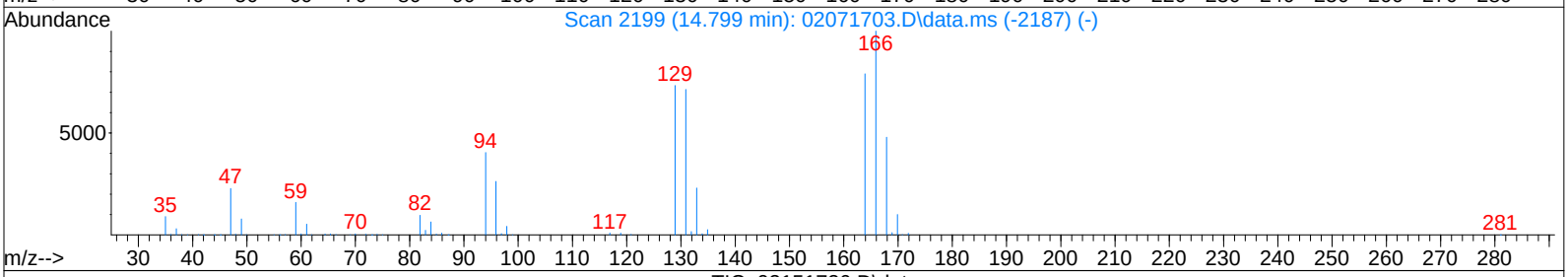
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151726.D
Acq On : 15 Feb 2017 21:41 Operator: SC
Sample : P1700672-007 (1000mL)
Misc : S29-01261704
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 16 08:48:43 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02151726.D\data.ms

(64) Tetrachloroethene (T)

14.804min (+0.005) 533.80ng m

response 10517945

Ion	Exp%	Act%
165.80	100	100
163.80	78.10	49.17#
0.00	0.00	0.00
0.00	0.00	0.00

MP

2/16/17

02/22/17

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161713.D
Acq On : 16 Feb 2017 13:29 Operator: SC
Sample : P1700672-007Dil (50mL)
Misc : S29-01261704
ALS Vial : 8 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 13:56:06 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.11	130	144299	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.09	114	701926	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	15.45	82	285655	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.89	65	205368	11.614	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.88%				
57) Toluene-d8 (SS2)	13.54	98	740200	12.530	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.24%				
73) Bromofluorobenzene (SS3)	17.05	174	223486	13.965	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.68%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D. d			
3) Dichlorodifluoromethan...	3.96	85	1683	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.32	45	54496	4.568	ng		95
11) Acetonitrile	5.55	41	452	N.D.			
12) Acrolein	0.00	56	0	N.D. d			
13) Acetone	5.83	58	37629	2.755	ng	#	61
14) Trichlorofluoromethane	6.01	101	661	N.D.			
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D. d			
16) Acrylonitrile	6.42	53	366	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	6.81	59	2166	N.D.			
19) Methylene Chloride	6.83	84	618	N.D.			
20) 3-Chloro-1-propene (Al...	6.91	41	428	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	7.13	76	28586	0.431	ng		99
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	8.29	63	1533	N.D.			
25) Methyl tert-Butyl Ether	8.18	73	490	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	8.50	72	8994	0.770	ng		95
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	9.21	87	893	N.D.			
30) Ethyl Acetate	9.21	61	1100	0.182	ng	#	27
31) n-Hexane	9.20	57	77568	2.687	ng		98
32) Chloroform	9.25	83	5030	0.180	ng		96
34) Tetrahydrofuran (THF)	9.67	72	522	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	10.28	97	4190	0.181	ng		91
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D. d			
41) Benzene	10.74	78	30199	0.418	ng		99
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	11.02	84	17090	0.672	ng		98
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	11.77	83	1780	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161713.D
Acq On : 16 Feb 2017 13:29 Operator: SC
Sample : P1700672-007Dil (50mL)
Misc : S29-01261704
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 16 13:56:06 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

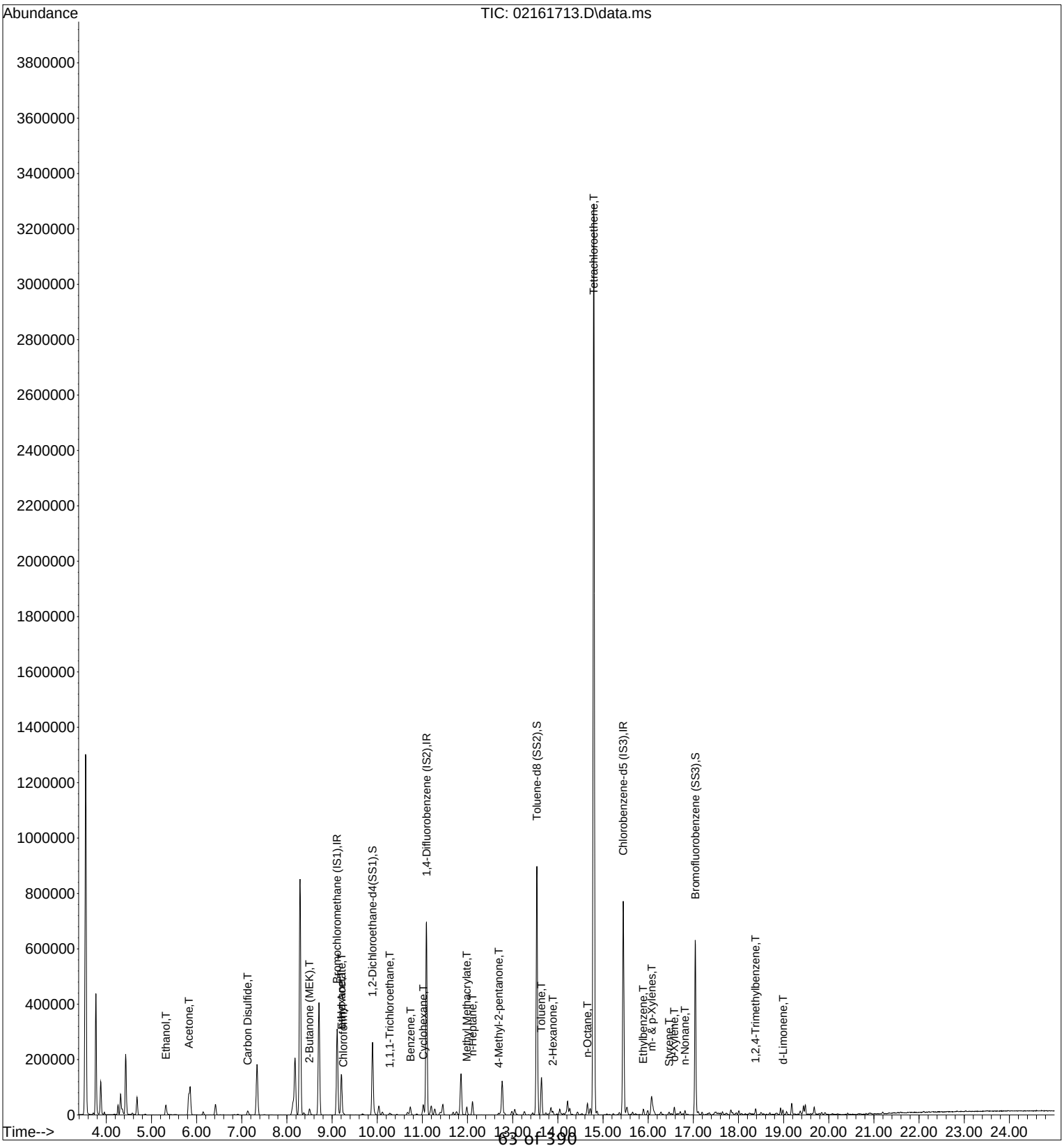
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Methyl Methacrylate	11.98	100	5406	0.820	ng		97
51) n-Heptane	12.11	71	13654	0.808	ng		96
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.			
53) 4-Methyl-2-pentanone	12.69	58	2063	0.130	ng		93
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.			
58) Toluene	13.63	91	116003	1.680	ng		100
59) 2-Hexanone	13.89	43	7488	0.203	ng	#	56
60) Dibromochloromethane	0.00	129	0	N.D.			
61) 1,2-Dibromoethane	0.00	107	0	N.D.			
62) n-Butyl Acetate	14.53	43	901	N.D.			
63) n-Octane	14.65	57	8310	0.541	ng		94
64) Tetrachloroethene	14.79	166	1219950	74.066	ng		99
65) Chlorobenzene	15.53	112	2842	N.D.			
66) Ethylbenzene	15.89	91	18465	0.243	ng		100
67) m- & p-Xylenes	16.08	91	59956	1.027	ng		96
68) Bromoform	0.00	173	0	N.D.			
69) Styrene	16.46	104	5543	0.120	ng		96
70) o-Xylene	16.58	91	18488	0.310	ng		99
71) n-Nonane	16.81	43	6116	0.181	ng		99
72) 1,1,2,2-Tetrachloroethane	16.64	83	605	N.D.			
74) Cumene	17.20	105	1671	N.D.			
75) alpha-Pinene	17.60	93	1940	N.D.			
76) n-Propylbenzene	17.72	91	3842	N.D.			
77) 3-Ethyltoluene	0.00	105	0	N.D.	d		
78) 4-Ethyltoluene	17.87	105	5022	N.D.			
79) 1,3,5-Trimethylbenzene	17.95	105	3490	N.D.			
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	18.15	105	3103	N.D.			
82) 1,2,4-Trimethylbenzene	18.38	105	12622	0.209	ng		92
83) n-Decane	0.00	57	0	N.D.	d		
84) Benzyl Chloride	18.38	91	1141	N.D.			
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.			
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.			
87) sec-Butylbenzene	18.83	105	2517	N.D.			
88) 4-Isopropyltoluene (p-...	18.83	119	761	N.D.			
89) 1,2,3-Trimethylbenzene	18.83	105	2517	N.D.			
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.			
91) d-Limonene	18.99	68	4303	0.167	ng		95
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.			
93) n-Undecane	19.84	57	2070	N.D.			
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.			
95) Naphthalene	20.90	128	2364	N.D.			
96) n-Dodecane	20.93	57	1292	N.D.			
97) Hexachlorobutadiene	0.00	225	0	N.D.			
98) Cyclohexanone	16.26	55	1019	N.D.			
99) tert-Butylbenzene	18.38	119	1604	N.D.			
100) n-Butylbenzene	19.27	91	616	N.D.			

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161713.D
Acq On : 16 Feb 2017 13:29 Operator: SC
Sample : P1700672-007Dil (50mL)
Misc : S29-01261704
ALS Vial : 8 Sample Multiplier: 1

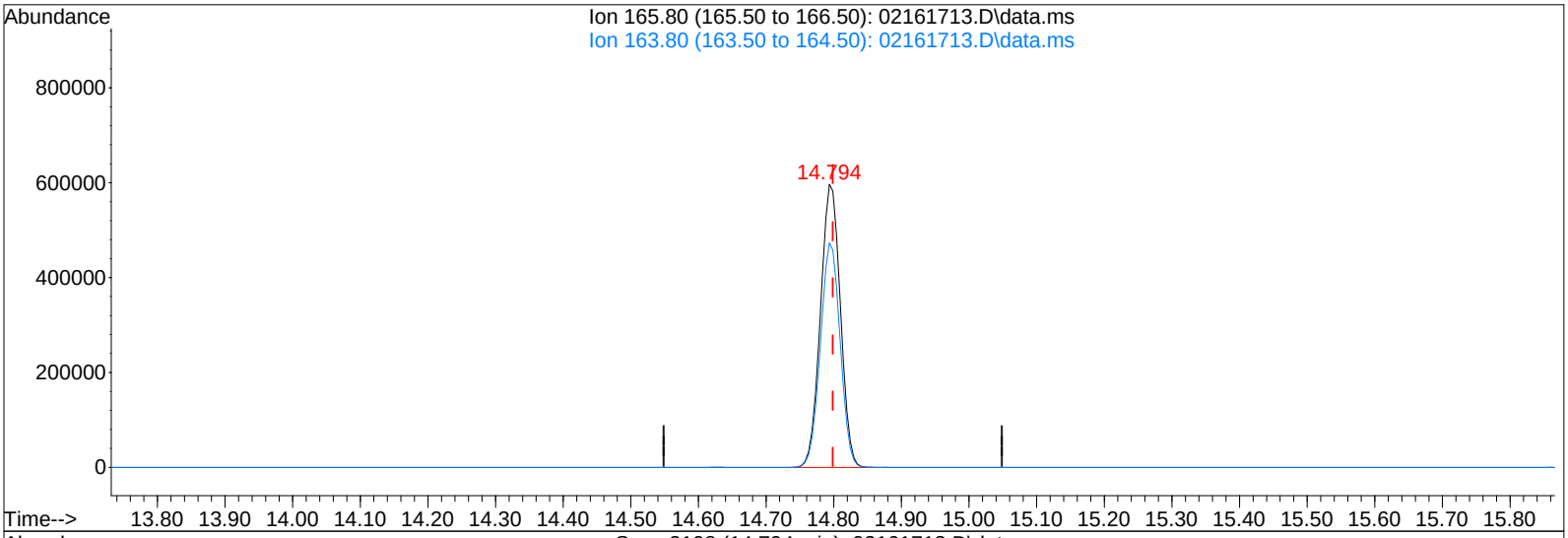
Quant Time: Feb 16 13:56:06 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

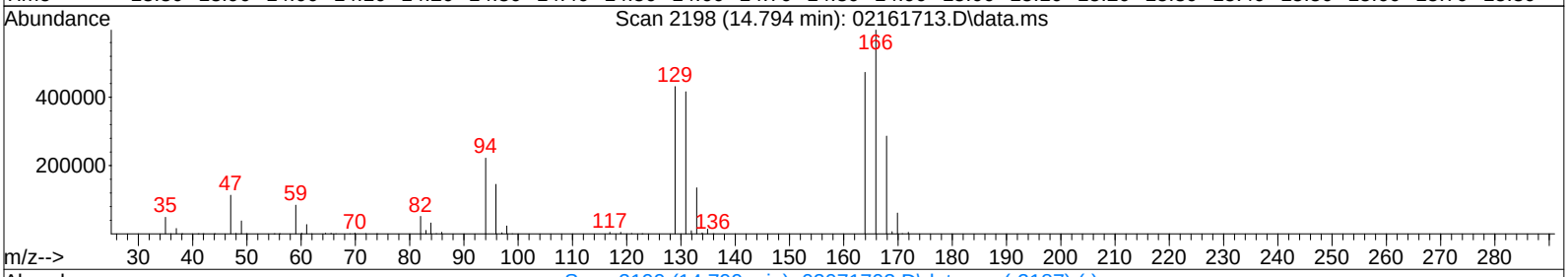


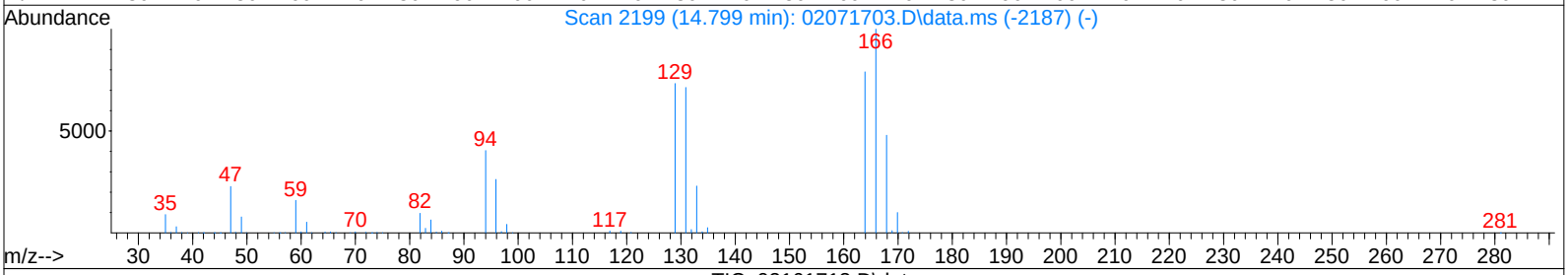
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\16\02161713.D
Acq On : 16 Feb 2017 13:29 Operator: SC
Sample : P1700672-007Dil (50mL)
Misc : S29-01261704
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 16 13:54:30 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02161713.D\data.ms

(64) Tetrachloroethene (T)

14.794min (-0.005) 74.07ng

response 1219950

Ion	Exp%	Act%
165.80	100	100
163.80	78.10	78.78
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **IA4-020917-0935** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-008

Test Code: EPA TO-15 Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 2/13/17
Analyst: Lusine Hakobyan Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.0020 Liter(s)
Test Notes: 0.00050 Liter(s)
Container ID: AC02273

Initial Pressure (psig): -2.69 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	77	ND	30	
156-59-2	cis-1,2-Dichloroethene	ND	77	ND	19	
79-01-6	Trichloroethene	ND	77	ND	14	
127-18-4	Tetrachloroethene	**75,000**	310	**11,000**	45	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171716.D Vial: 4
Acq On : 17 Feb 2017 15:05 Operator: LH/AMF
Sample : P1700672-008 (2ml) Inst : MS13
Misc : S29-01311701

Quant Time: Feb 22 08:32:32 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

CL 2/22/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	132805	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.04	114	621855	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.38	82	246398	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.76	65	171648	11.425	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.36%			
57) Toluene-d8 (SS2)	15.50	98	620379	12.466	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%			
73) Bromofluorobenzene (SS3)	18.85	174	264311	12.629	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.04%			
Target Compounds						Qvalue
2) Propene	3.95	42	371	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.16	45	5089	0.886	ng	92
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	6.81	58	9093	1.414	ng	87
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	7.33	45	4400	0.226	ng	96
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d	
19) Methylene Chloride	8.19	84	227	N.D.		
20) 3-Chloro-1-propene (Al...	8.24	41	113	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	8.49	76	1035	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.	d	
27) 2-Butanone (MEK)	10.28	72	1595	0.255	ng	95
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	11.03	57	15076	1.010	ng	99
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	11.57	72	376	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	12.17	97	361	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	12.93	56	168	N.D.		
41) Benzene	12.66	78	1022	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	12.94	84	317	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	13.82	83	266	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d	
50) Methyl Methacrylate	13.97	100	7535	1.805	ng	98

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171716.D Vial: 4
Acq On : 17 Feb 2017 15:05 Operator: LH/AMF
Sample : P1700672-008 (2ml) Inst : MS13
Misc : S29-01311701

Quant Time: Feb 22 08:32:32 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

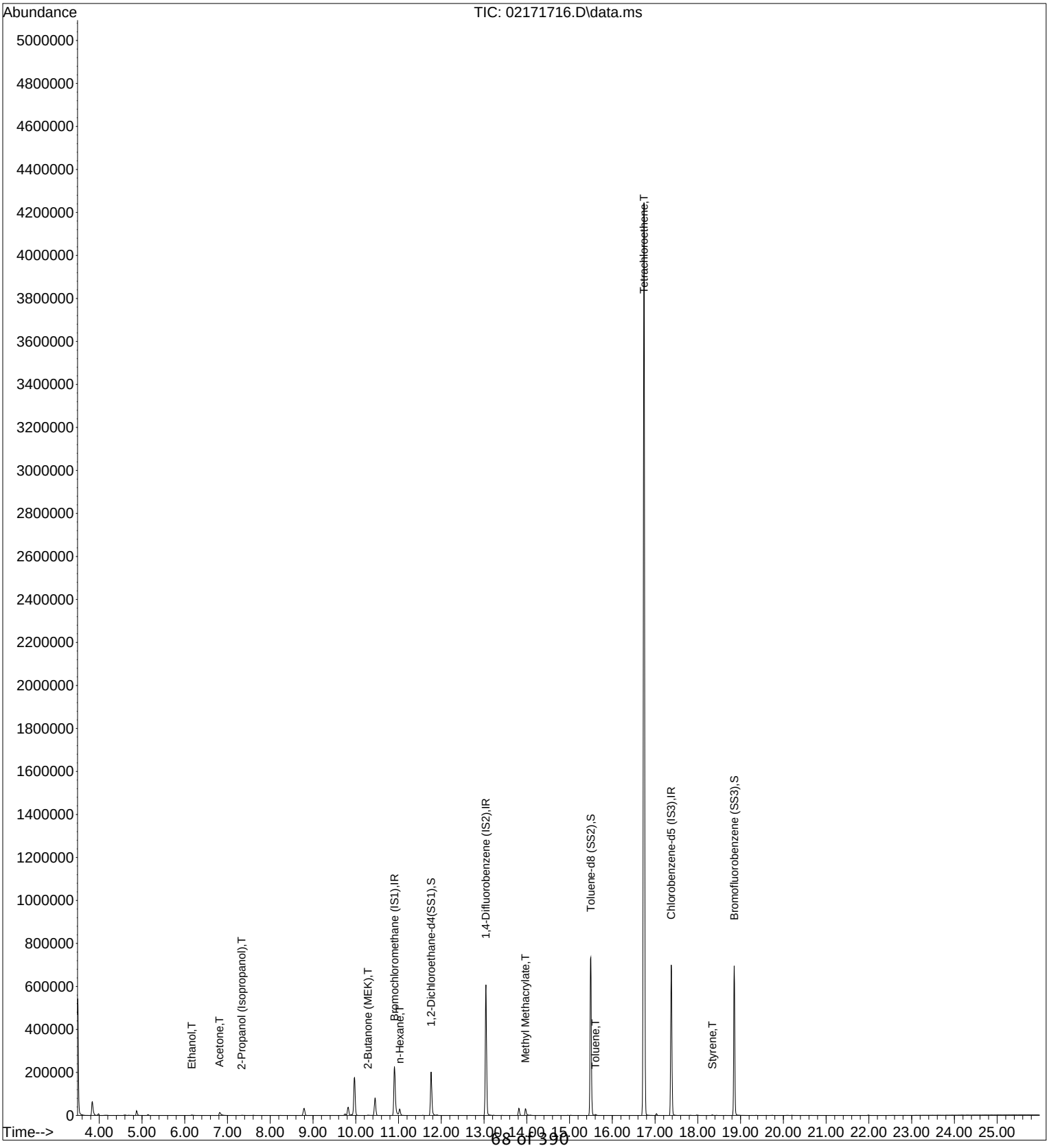
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	14.09	71	308	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	15.61	91	4450	0.105 ng	91
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	16.61	43	242	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	16.74	166	1666254	111.867 ng	98
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	17.82	91	1221	N.D.	
67) m- & p-Xylenes	17.98	91	3278	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	18.34	104	2901	0.095 ng	99
70) o-Xylene	18.43	91	1088	N.D.	
71) n-Nonane	18.64	43	500	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	18.85	105	140	N.D.	
75) alpha-Pinene	19.36	93	792	N.D.	
76) n-Propylbenzene	19.51	91	451	N.D.	
77) 3-Ethyltoluene	19.60	105	1039	N.D.	
78) 4-Ethyltoluene	19.60	105	1039	N.D.	
79) 1,3,5-Trimethylbenzene	19.70	105	814	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	19.90	105	412	N.D.	
82) 1,2,4-Trimethylbenzene	20.10	105	1840	N.D.	
83) n-Decane	20.19	57	900	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	20.53	105	499	N.D.	
88) 4-Isopropyltoluene (p-...	20.52	119	255	N.D.	
89) 1,2,3-Trimethylbenzene	20.53	105	499	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	20.65	68	472	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	21.45	57	182	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	22.55	128	129	N.D.	
96) n-Dodecane	0.00	57	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171716.D Vial: 4
Acq On : 17 Feb 2017 15:05 Operator: LH/AMF
Sample : P1700672-008 (2ml) Inst : MS13
Misc : S29-01311701

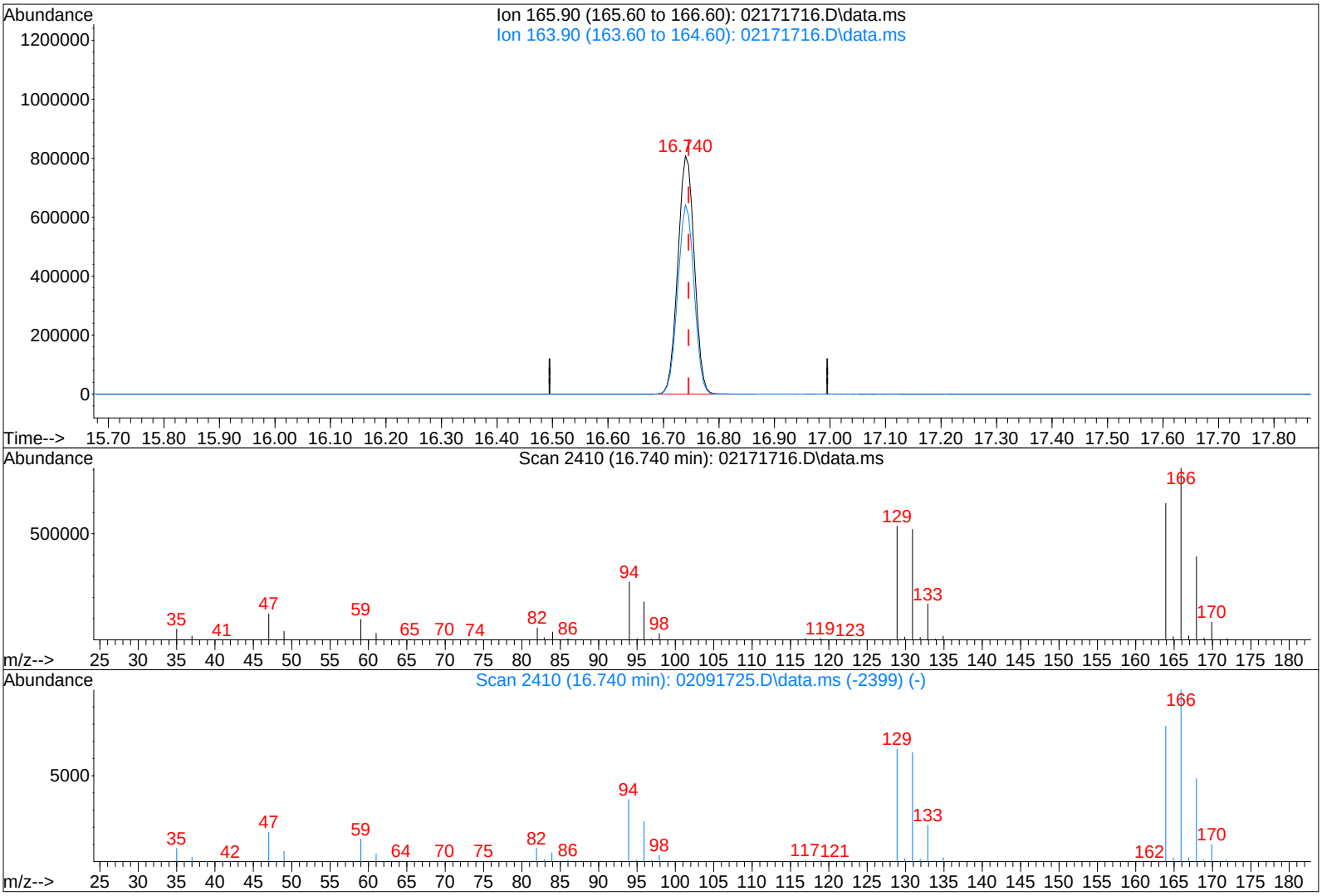
Quant Time: Feb 22 08:32:32 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\17\02171716.D Vial: 4
Acq On : 17 Feb 2017 15:05 Operator: LH/AMF
Sample : P1700672-008 (2ml) Inst : MS13
Misc : S29-01311701

Quant Time: Feb 20 08:26:57 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 02171716.D\data.ms

(64) Tetrachloroethene (T)

16.740min (-0.006) 111.87ng

response 1666254

Ion	Exp%	Act%
165.90	100	100
163.90	77.20	78.76
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171715.D Vial: 4
Acq On : 17 Feb 2017 14:30 Operator: LH/AMF
Sample : P1700672-008dil (0.5ml) Inst : MS13
Misc : S29-01311701

Quant Time: Feb 22 08:33:12 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

CL 2/22/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	137751	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.04	114	648929	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	17.38	82	256793	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.76	65	179848	11.541	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.32%				
57) Toluene-d8 (SS2)	15.49	98	646611	12.467	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
73) Bromofluorobenzene (SS3)	18.85	174	275773	12.643	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.12%				
Target Compounds							Qvalue
2) Propene	4.00	42	344	N.D.			
3) Dichlorodifluoromethan...	0.00	85	0	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	6.19	45	1494	0.251	ng		80
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	6.86	58	3364	0.504	ng	#	73
14) Trichlorofluoromethane	0.00	101	0	N.D.			
15) 2-Propanol (Isopropanol)	7.37	45	1212	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	8.27	59	41	N.D.			
19) Methylene Chloride	8.18	84	308	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	8.49	76	1619	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	11.03	57	3679	0.238	ng		97
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	11.58	72	116	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	12.66	78	543	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	13.04	84	291	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			
50) Methyl Methacrylate	14.00	100	1302	0.299	ng	#	72

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171715.D Vial: 4
Acq On : 17 Feb 2017 14:30 Operator: LH/AMF
Sample : P1700672-008dil (0.5ml) Inst : MS13
Misc : S29-01311701

Quant Time: Feb 22 08:33:12 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

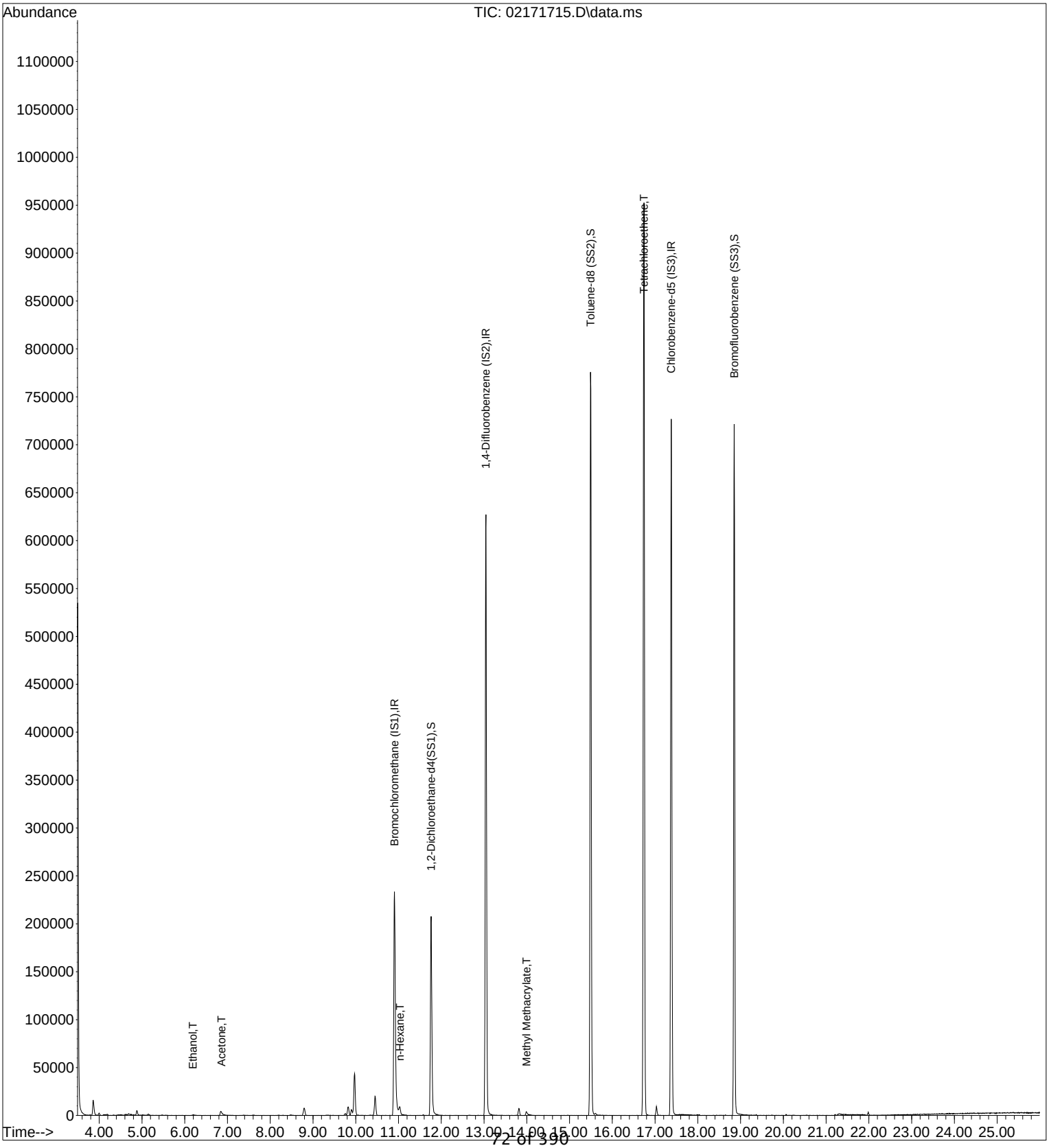
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	15.61	91	1798	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	16.74	166	375579	24.195 ng	99
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	17.82	91	386	N.D.	
67) m- & p-Xylenes	17.98	91	1046	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	18.36	104	122	N.D.	
70) o-Xylene	18.44	91	374	N.D.	
71) n-Nonane	18.65	43	143	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	18.85	105	282	N.D.	
75) alpha-Pinene	19.36	93	443	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	19.61	105	205	N.D.	
78) 4-Ethyltoluene	19.61	105	205	N.D.	
79) 1,3,5-Trimethylbenzene	19.66	105	187	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	19.66	105	187	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	20.23	57	172	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	21.45	57	105	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	57	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171715.D Vial: 4
Acq On : 17 Feb 2017 14:30 Operator: LH/AMF
Sample : P1700672-008dil (0.5ml) Inst : MS13
Misc : S29-01311701

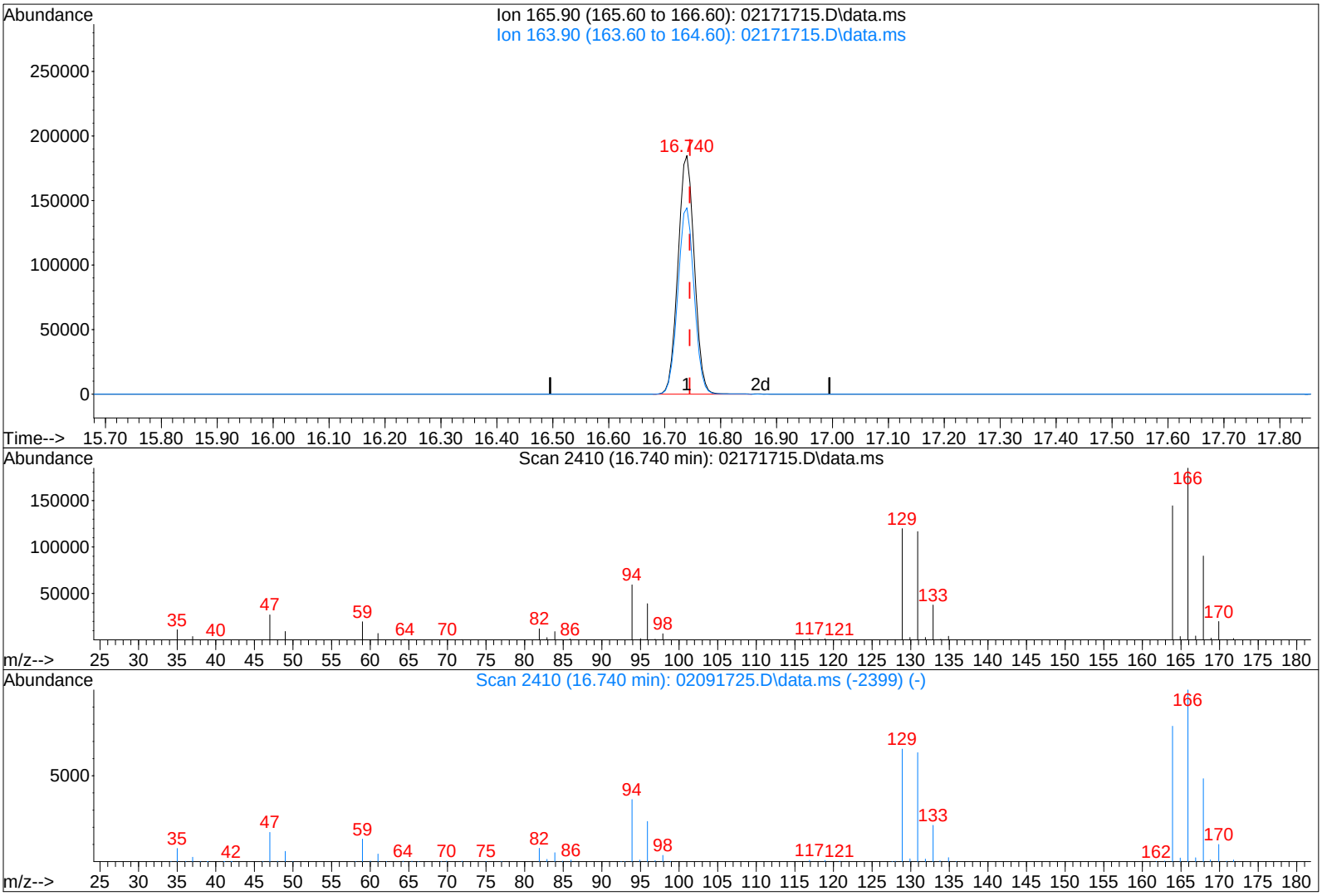
Quant Time: Feb 22 08:33:12 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\17\02171715.D Vial: 4
Acq On : 17 Feb 2017 14:30 Operator: LH/AMF
Sample : P1700672-008dil (0.5ml) Inst : MS13
Misc : S29-01311701

Quant Time: Feb 17 14:56:15 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 02171715.D\data.ms

(64) Tetrachloroethene (T)

16.740min (-0.005) 24.19ng

response 375579

Ion	Exp%	Act%
165.90	100	100
163.90	77.20	77.93
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **SS5-020917-0915** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-009

Test Code: EPA TO-15 Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 2/13/17
Analyst: Simon Cao Date Analyzed: 2/15/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC02175

Initial Pressure (psig): -3.12 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.16	ND	0.062	
156-59-2	cis-1,2-Dichloroethene	ND	0.16	ND	0.040	
79-01-6	Trichloroethene	**1.0**	0.16	**0.19**	0.030	
127-18-4	Tetrachloroethene	**8.9**	0.16	**1.3**	0.023	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151727.D
Acq On : 15 Feb 2017 22:15 Operator: SC
Sample : P1700672-009 (1000mL)
Misc : S29-01261704
ALS Vial : 9 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 09:54:02 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.12	130	162679	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.09	114	802851	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	15.45	82	332508	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.90	65	228437	11.459	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.68%				
57) Toluene-d8 (SS2)	13.54	98	862286	12.540	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.32%				
73) Bromofluorobenzene (SS3)	17.05	174	254375	13.655	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.20%				
Target Compounds							Qvalue
2) Propene	3.84	42	24832	1.034	ng	#	51
3) Dichlorodifluoromethan...	3.95	85	38086	1.080	ng		99
4) Chloromethane	4.15	50	2424	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.31	135	945	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	4.61	54	740	N.D.			
8) Bromomethane	4.92	94	856	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.43	45	8723595	648.652	ng		99
11) Acetonitrile	0.00	41	0	N.D.	d		
12) Acrolein	5.67	56	8843	0.700	ng		98
13) Acetone	5.82	58	795430	51.650	ng		97
14) Trichlorofluoromethane	6.00	101	17616	0.619	ng		100
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.	d		
16) Acrylonitrile	6.34	53	2072	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	6.84	84	2609	0.131	ng		92
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d		
21) Trichlorotrifluoroethane	7.16	151	3589	0.247	ng		98
22) Carbon Disulfide	7.12	76	361819	4.841	ng		100
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	d		
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	8.49	72	156910	11.915	ng	#	88
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	9.20	61	30590	4.491	ng		99
31) n-Hexane	9.20	57	138371	4.252	ng		100
32) Chloroform	9.26	83	28792	0.913	ng		98
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	d		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	10.28	97	5829	0.220	ng		96
39) Isopropyl Acetate	0.00	61	0	N.D.	d		
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.73	78	213746	2.587	ng		100
42) Carbon Tetrachloride	10.88	117	671	N.D.			
43) Cyclohexane	11.01	84	78135	2.687	ng		96
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	11.79	130	12775	0.657	ng		97
48) 1,4-Dioxane	11.77	88	860	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151727.D
Acq On : 15 Feb 2017 22:15 Operator: SC
Sample : P1700672-009 (1000mL)
Misc : S29-01261704
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 16 09:54:02 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

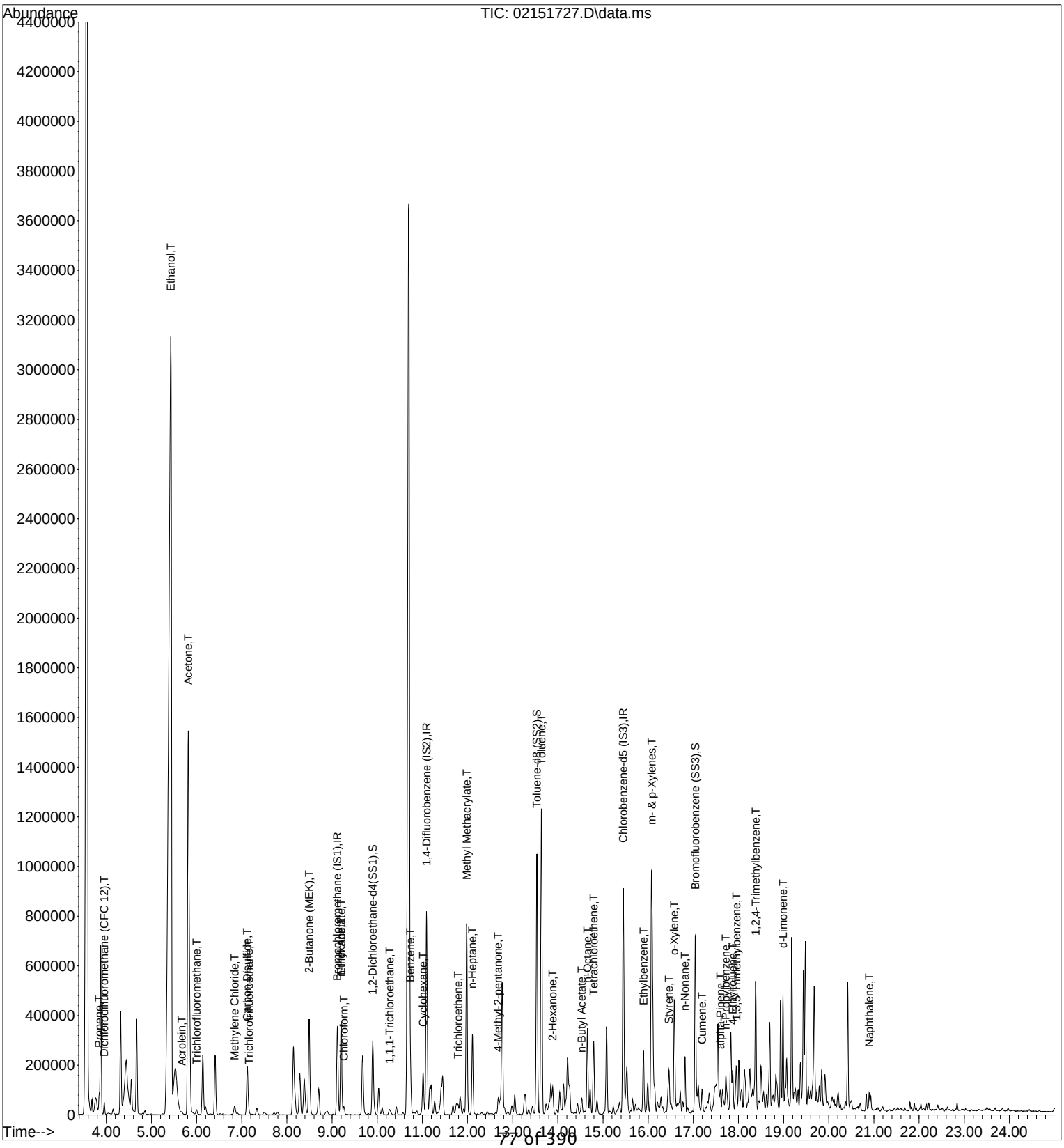
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	11.98	100	142722	18.922 ng	98
51) n-Heptane	12.11	71	92497	4.787 ng	96
52) cis-1,3-Dichloropropene	12.54	75	472	N.D.	
53) 4-Methyl-2-pentanone	12.68	58	22586	1.241 ng	97
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D. d	
58) Toluene	13.64	91	1112056	13.834 ng	100
59) 2-Hexanone	13.89	43	71755	1.672 ng	84
60) Dibromochloromethane	14.05	129	754	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	14.53	43	40377	0.849 ng	87
63) n-Octane	14.65	57	69633	3.898 ng	98
64) Tetrachloroethene	14.79	166	106821	5.571 ng	99
65) Chlorobenzene	0.00	112	0	N.D. d	
66) Ethylbenzene	15.90	91	220604	2.494 ng	100
67) m- & p-Xylenes	16.08	91	911456	13.412 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.46	104	96094	1.793 ng	98
70) o-Xylene	16.58	91	295221	4.259 ng	98
71) n-Nonane	16.81	43	89209	2.269 ng	99
72) 1,1,2,2-Tetrachloroethane	16.59	83	555	N.D.	
74) Cumene	17.20	105	22257	0.257 ng	98
75) alpha-Pinene	17.60	93	23531	0.518 ng	94
76) n-Propylbenzene	17.72	91	73981	0.707 ng	89
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	17.87	105	85863	1.053 ng	94
79) 1,3,5-Trimethylbenzene	17.95	105	86787	1.225 ng	100
80) alpha-Methylstyrene	18.11	118	1639	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D. d	
82) 1,2,4-Trimethylbenzene	18.38	105	289944	4.126 ng	92
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	18.52	91	1419	N.D.	
85) 1,3-Dichlorobenzene	18.61	146	964	N.D.	
86) 1,4-Dichlorobenzene	18.61	146	964	N.D.	
87) sec-Butylbenzene	18.67	105	7481	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D. d	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D. d	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	18.99	68	114299	3.803 ng	94
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.89	128	54905	0.677 ng	97
96) n-Dodecane	0.00	57	0	N.D. d	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D. d	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	0.00	91	0	N.D. d	

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151727.D
Acq On : 15 Feb 2017 22:15 Operator: SC
Sample : P1700672-009 (1000mL)
Misc : S29-01261704
ALS Vial : 9 Sample Multiplier: 1

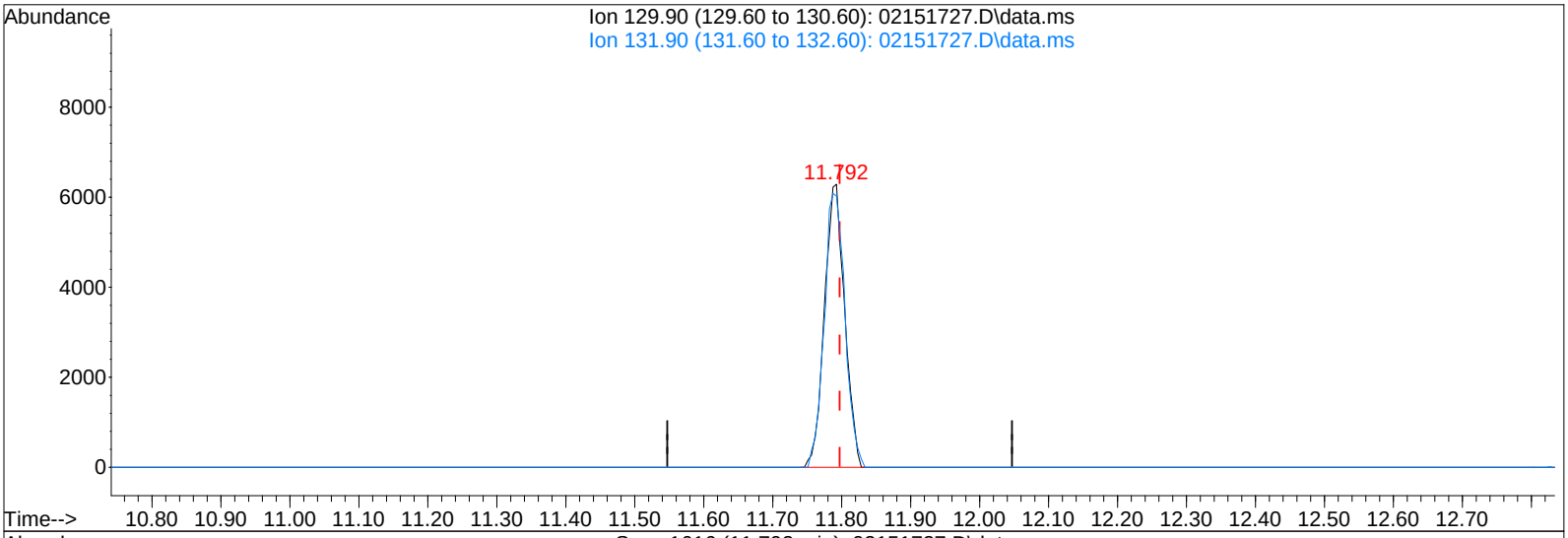
Quant Time: Feb 16 09:54:02 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

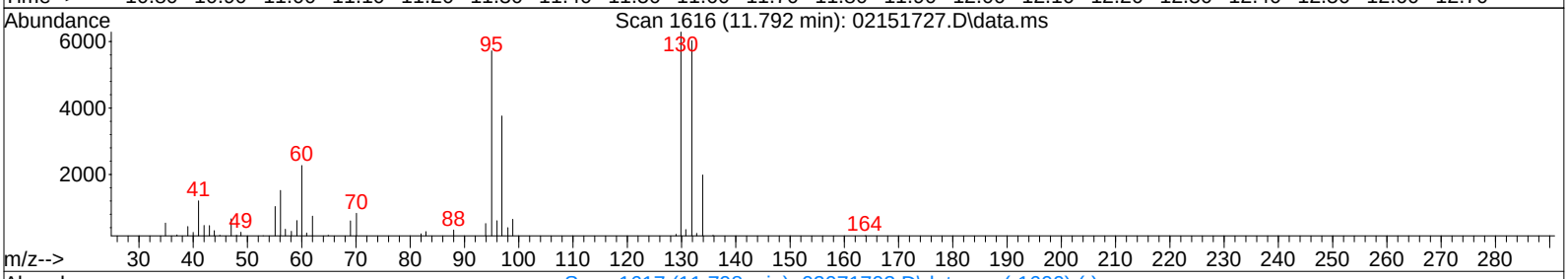


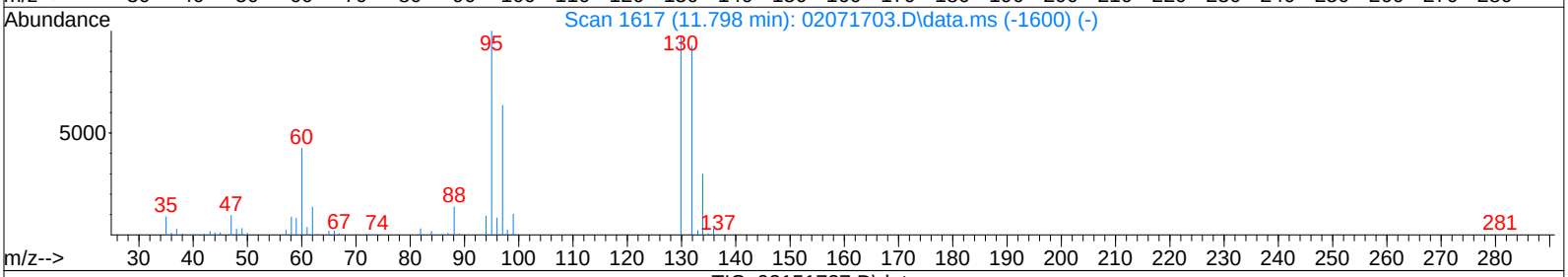
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151727.D
Acq On : 15 Feb 2017 22:15 Operator: SC
Sample : P1700672-009 (1000mL)
Misc : S29-01261704
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 16 08:49:02 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02151727.D\data.ms

(47) Trichloroethene (T)

11.792min (-0.005) 0.66ng

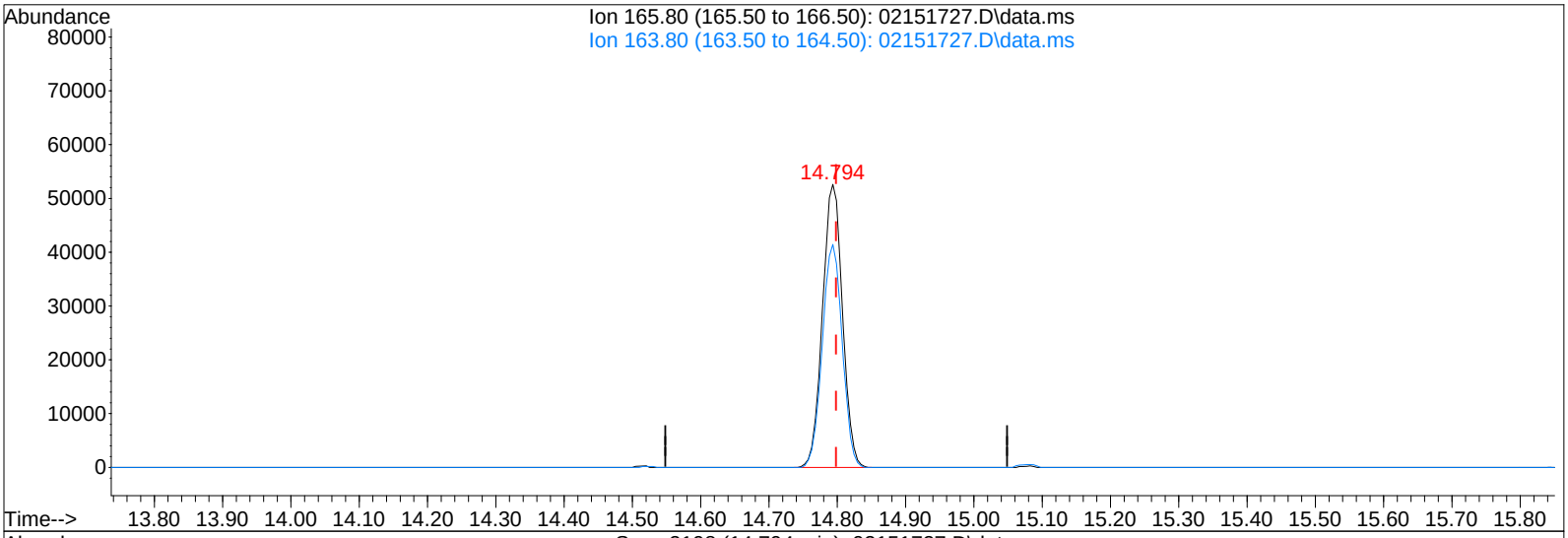
response 12775

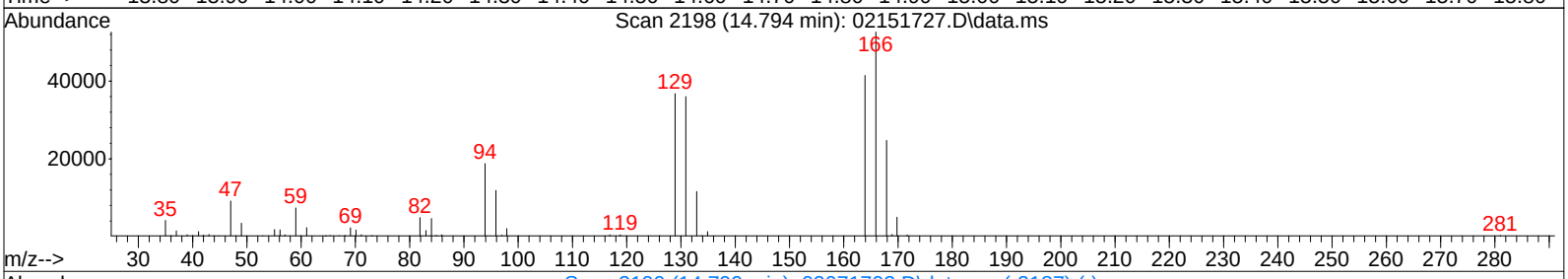
Ion	Exp%	Act%
129.90	100	100
131.90	96.90	100.04
0.00	0.00	0.00
0.00	0.00	0.00

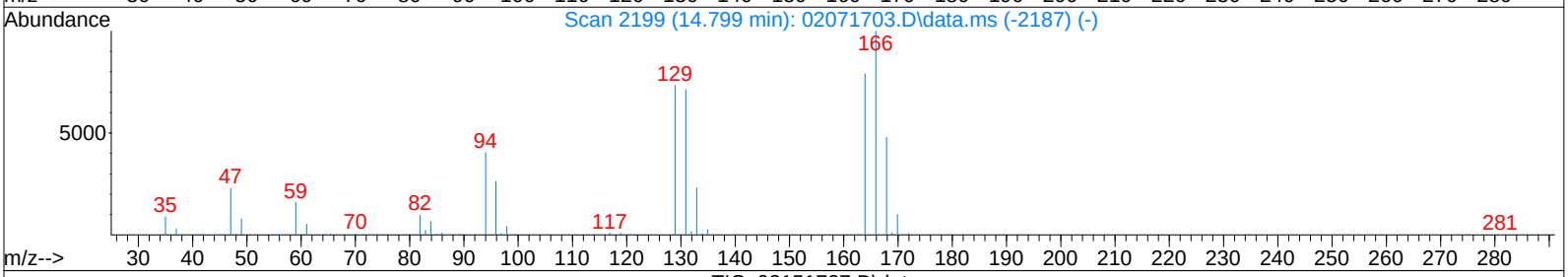
Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_02\15\02151727.D
Acq On : 15 Feb 2017 22:15 Operator: SC
Sample : P1700672-009 (1000mL)
Misc : S29-01261704
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 16 08:49:02 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 02151727.D\data.ms

(64) Tetrachloroethene (T)

14.794min (-0.005) 5.57ng

response 106821

Ion	Exp%	Act%
165.80	100	100
163.80	78.10	78.93
0.00	0.00	0.00
0.00	0.00	0.00

Response Factor Report MS09

Method Path : I:\MS09\Methods\
Method File : R9010617.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Jan 09 09:09:36 2017
Response Via : Initial Calibration

1/9/17

Calibration Files
0.08=01061715.D 0.10=01061716.D 0.20=01061717.D 0.40=01061718.D 1.0 =01061719.D 5.0 =01061720.D 25 =01061721.D
50 =01061722.D 100 =01061723.D

		Compound	0.08	0.10	0.20	0.40	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	ISTD	----------								
2)	T	Propene	2.455	2.174	1.990	1.671	1.633	1.526	1.635	1.745	1.784	1.846	16.44
3)	T	Dichlorodifluo...	3.313	3.090	2.868	2.663	2.666	2.483	2.614	2.445	2.246	2.710	12.26
4)	T	Chloromethane	2.876	2.690	2.619	2.325	2.393	2.151	2.344	2.153	1.877	2.381	12.95
5)	T	1,2-Dichloro-1...	1.629	1.605	1.462	1.366	1.333	1.243	1.340	1.292	1.205	1.386	10.81
6)	T	Vinyl Chloride	2.621	2.518	2.276	2.165	2.170	2.009	2.148	2.055	1.888	2.205	10.68
7)	T	1,3-Butadiene	1.822	1.602	1.508	1.413	1.392	1.372	1.569	1.492	1.347	1.502	9.93
8)	T	Bromomethane	1.649	1.413	1.444	1.266	1.326	1.135	1.236	1.183	1.108	1.307	13.23
9)	T	Chloroethane	1.327	1.151	1.185	1.099	1.126	1.036	1.118	1.061	0.878	1.109	10.88
10)	T	Ethanol	1.275	1.178	0.993	0.942	0.972	0.907	1.096	1.024	0.914	1.033	12.19
11)	T	Acetonitrile	3.692	3.482	2.675	2.741	2.625	2.371	2.716	2.589	2.432	2.814	16.29
12)	T	Acrolein	1.291	1.133	0.909	0.951	0.922	0.849	0.933	0.894	0.850	0.970	15.12
13)	T	Acetone	1.669	1.502	1.287	1.206	1.124	0.997	1.047	0.968	0.849	1.183	22.42
14)	T	Trichlorofluor...	2.556	2.475	2.274	2.156	2.191	1.991	2.103	2.012	1.913	2.186	9.96
15)	T	2-Propanol (Is...	4.587	4.151	3.791	3.683	3.707	3.275	3.572	2.922	2.221	3.545	19.37
16)	T	Acrylonitrile	2.030	2.035	1.832	1.795	1.875	1.806	2.025	1.933	1.822	1.906	5.34
17)	T	1,1-Dichloroet...	1.772	1.567	1.431	1.379	1.416	1.286	1.389	1.330	1.270	1.427	10.98
18)	T	2-Methyl-2-Pro...	4.295	4.184	3.795	3.719	3.750	3.106	3.543	2.659	1.805	3.429	23.03
19)	T	Methylene Chlo...	1.965	1.787	1.557	1.492	1.482	1.358	1.459	1.395	1.313	1.534	13.82
20)	T	3-Chloro-1-pro...	2.935	2.774	2.434	2.261	2.141	1.979	2.132	2.017	1.881	2.284	15.92
21)	T	Trichlorotrifl...	1.134	1.189	1.149	1.125	1.100	1.050	1.137	1.098	1.054	1.115	4.03
22)	T	Carbon Disulfide	7.852	6.945	5.829	5.442	5.423	5.006	5.393	5.102	4.695	5.743	17.70
23)	T	trans-1,2-Dich...	2.370	2.176	2.082	1.952	2.009	1.896	2.082	2.000	1.893	2.051	7.37
24)	T	1,1-Dichloroet...	3.179	2.860	2.697	2.541	2.616	2.389	2.563	2.459	2.316	2.624	10.05
25)	T	Methyl tert-Bu...	5.364	4.958	4.596	4.394	4.141	3.731	3.920	3.562	2.808	4.164	18.52
26)	T	Vinyl Acetate	0.368	0.351	0.319	0.326	0.343	0.324	0.357	0.334	0.296	0.335	6.58
27)	T	2-Butanone (MEK)	1.152	1.080	1.000	1.034	0.989	0.933	1.017	0.975	0.927	1.012	7.00
28)	T	cis-1,2-Dichlo...	2.332	2.074	1.937	1.888	1.947	1.798	1.969	1.885	1.776	1.956	8.53
29)	T	Diisopropyl Ether	1.484	1.301	1.311	1.235	1.210	1.081	1.148	1.072	0.939	1.198	13.39
30)	T	Ethyl Acetate	0.576	0.563	0.541	0.517	0.554	0.508	0.542	0.492	0.417	0.523	9.19
31)	T	n-Hexane	3.417	3.107	2.780	2.572	2.509	2.230	2.205	1.992	1.691	2.500	21.74
32)	T	Chloroform	2.849	2.588	2.517	2.461	2.411	2.216	2.382	2.266	2.128	2.424	8.94
33)	S	1,2-Dichloroet...	1.546	1.534	1.576	1.537	1.536	1.530	1.511	1.528	1.489	1.532	1.56
34)	T	Tetrahydrofura...	1.365	1.264	1.101	1.017	1.036	0.913	0.983	0.946	0.896	1.058	15.19
35)	T	Ethyl tert-But...	1.962	1.885	1.785	1.606	1.677	1.563	1.689	1.626	1.539	1.704	8.55
36)	T	1,2-Dichloroet...	1.982	1.829	1.762	1.680	1.784	1.615	1.750	1.677	1.590	1.741	6.88
37)	IR	1,4-Difluorobenzen...	----------	ISTD	----------								
38)	T	1,1,1-Trichlor...	0.489	0.478	0.426	0.396	0.408	0.371	0.405	0.382	0.363	0.413	10.74
39)	T	Isopropyl Acetate	0.213	0.213	0.195	0.191	0.194	0.180	0.191	0.174	0.155	0.190	9.72
40)	T	1-Butanol	0.409	0.371	0.290	0.275	0.277	0.259	0.324	0.295	0.266	0.307	16.64
41)	T	Benzene	1.802	1.592	1.357	1.293	1.196	1.097	1.156	1.078	1.007	1.286	20.31
42)	T	Carbon Tetrach...	0.415	0.390	0.343	0.341	0.343	0.325	0.355	0.338	0.325	0.353	8.56

Method Path : I:\MS09\Methods\
Method File : R9010617.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

43)	T	Cyclohexane	0.554	0.526	0.447	0.449	0.449	0.418	0.447	0.414	0.371	0.453	12.40
44)	T	tert-Amyl Meth...	1.103	1.033	0.915	0.870	0.829	0.785	0.848	0.798	0.754	0.882	13.27
45)	T	1,2-Dichloropr...	0.326	0.363	0.296	0.293	0.305	0.276	0.299	0.281	0.265	0.300	9.77
46)	T	Bromodichlorom...	0.451	0.393	0.358	0.362	0.369	0.349	0.384	0.361	0.343	0.374	8.73
47)	T	Trichloroethene	0.366	0.346	0.300	0.290	0.298	0.269	0.298	0.284	0.273	0.303	10.69
48)	T	1,4-Dioxane	0.262	0.260	0.228	0.231	0.234	0.217	0.250	0.236	0.220	0.237	6.85
49)	T	2,2,4-Trimethy...	1.653	1.530	1.330	1.254	1.252	1.163	1.245	1.155	1.060	1.294	14.54
50)	T	Methyl Methacr...	0.131	0.125	0.115	0.111	0.118	0.111	0.123	0.116	0.108	0.117	6.36
51)	T	n-Heptane	0.379	0.348	0.296	0.291	0.304	0.275	0.290	0.271	0.253	0.301	13.12
52)	T	cis-1,3-Dichlo...	0.541	0.521	0.485	0.470	0.482	0.449	0.499	0.470	0.444	0.485	6.56
53)	T	4-Methyl-2-pen...	0.350	0.305	0.290	0.270	0.275	0.260	0.287	0.266	0.247	0.283	10.74
54)	T	trans-1,3-Dich...	0.441	0.452	0.414	0.405	0.417	0.399	0.451	0.427	0.409	0.424	4.74
55)	T	1,1,2-Trichlor...	0.295	0.306	0.280	0.270	0.278	0.255	0.283	0.266	0.253	0.276	6.26
56)	IR	Chlorobenzene-d5 (...	----------	ISTD	----------								
57)	S	Toluene-d8 (SS2)	2.588	2.595	2.602	2.599	2.603	2.597	2.552	2.566	2.562	2.585	0.75
58)	T	Toluene	3.799	3.626	3.064	2.936	2.951	2.728	2.887	2.712	2.495	3.022	14.13
59)	T	2-Hexanone	2.120	1.873	1.662	1.550	1.555	1.429	1.555	1.448	1.324	1.613	15.22
60)	T	Dibromochlorom...	0.759	0.797	0.711	0.686	0.725	0.684	0.774	0.744	0.717	0.733	5.27
61)	T	1,2-Dibromoethane	0.825	0.793	0.724	0.704	0.783	0.703	0.787	0.749	0.714	0.753	5.94
62)	T	n-Butyl Acetate	2.236	2.129	1.748	1.737	1.768	1.614	1.746	1.630	1.488	1.788	13.53
63)	T	n-Octane	0.870	0.831	0.717	0.652	0.656	0.579	0.622	0.585	0.532	0.672	17.09
64)	T	Tetrachloroethene	0.777	0.779	0.723	0.721	0.731	0.665	0.728	0.693	0.670	0.721	5.66
65)	T	Chlorobenzene	2.300	2.145	1.947	1.828	1.888	1.723	1.902	1.803	1.694	1.914	10.26
66)	T	Ethylbenzene	3.992	3.775	3.374	3.247	3.343	3.054	3.282	3.059	2.796	3.325	11.06
67)	T	m- & p-Xylenes	3.109	2.965	2.611	2.439	2.544	2.337	2.528	2.351	2.110	2.555	12.22
68)	T	Bromoform	0.573	0.579	0.532	0.541	0.569	0.540	0.647	0.624	0.605	0.579	6.84
69)	T	Styrene	2.360	2.250	1.965	1.887	1.984	1.872	2.080	1.951	1.788	2.015	9.19
70)	T	o-Xylene	3.213	3.029	2.626	2.509	2.551	2.354	2.586	2.408	2.179	2.606	12.48
71)	T	n-Nonane	1.990	1.863	1.527	1.465	1.435	1.310	1.372	1.251	1.092	1.478	19.35
72)	T	1,1,2,2-Tetrac...	1.466	1.293	1.223	1.206	1.240	1.156	1.296	1.212	1.094	1.243	8.42
73)	S	Bromofluoroben...	0.697	0.689	0.691	0.707	0.696	0.705	0.707	0.706	0.705	0.700	1.03
74)	T	Cumene	3.890	3.761	3.278	3.215	3.237	3.004	3.230	3.006	2.724	3.261	11.21
75)	T	alpha-Pinene	1.932	2.014	1.703	1.727	1.642	1.549	1.720	1.615	1.473	1.708	10.10
76)	T	n-Propylbenzene	4.813	4.427	4.003	3.787	3.958	3.664	3.935	3.614	3.216	3.935	11.83
77)	T	3-Ethyltoluene	3.830	3.476	3.199	3.112	3.221	2.975	3.338	3.025	2.776	3.217	9.57
78)	T	4-Ethyltoluene	3.776	3.466	3.108	2.925	3.075	2.823	2.995	2.873	2.542	3.065	11.89
79)	T	1,3,5-Trimethy...	3.168	2.987	2.598	2.600	2.645	2.474	2.693	2.519	2.287	2.663	9.99
80)	T	alpha-Methylst...	1.627	1.566	1.263	1.307	1.362	1.274	1.463	1.376	1.267	1.389	9.68
81)	T	2-Ethyltoluene	3.775	3.609	3.140	3.045	3.120	2.880	3.140	2.918	2.639	3.141	11.26
82)	T	1,2,4-Trimethy...	3.198	2.926	2.604	2.581	2.710	2.489	2.727	2.477	2.064	2.642	11.90
83)	T	n-Decane	1.930	1.859	1.639	1.523	1.585	1.448	1.546	1.388	1.160	1.564	14.93
84)	T	Benzyl Chloride	2.490	2.274	2.068	2.044	2.189	2.185	2.622	2.426	2.097	2.266	8.98
85)	T	1,3-Dichlorobe...	1.577	1.575	1.386	1.338	1.463	1.344	1.538	1.451	1.336	1.445	6.93
86)	T	1,4-Dichlorobe...	1.732	1.592	1.375	1.335	1.456	1.340	1.555	1.464	1.367	1.468	9.20
87)	T	sec-Butylbenzene	4.372	4.051	3.557	3.506	3.650	3.338	3.592	3.315	2.940	3.591	11.64
88)	T	4-Isopropyltol...	4.084	3.886	3.289	3.175	3.285	3.078	3.352	2.982	2.409	3.282	14.91
89)	T	1,2,3-Trimethy...	3.251	2.930	2.593	2.553	2.701	2.480	2.757	2.496	2.068	2.648	12.37
90)	T	1,2-Dichlorobe...	1.559	1.541	1.328	1.285	1.383	1.279	1.479	1.389	1.235	1.387	8.47
91)	T	d-Limonene	1.381	1.271	1.143	1.119	1.110	1.036	1.165	1.060	0.885	1.130	12.47
92)	T	1,2-Dibromo-3-...	0.444	0.451	0.421	0.447	0.450	0.444	0.568	0.545	0.521	0.477	11.13
93)	T	n-Undecane	1.840	1.741	1.483	1.346	1.610	1.497	1.656	1.508	1.297	1.553	11.39
94)	T	1,2,4-Trichlor...	0.988	0.899	0.788	0.733	0.915	0.871	1.196	1.148	1.076	0.957	16.52

Method Path : I:\MS09\Methods\
Method File : R9010617.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

95)	T	Naphthalene				2.108	2.833	2.761	3.850	3.576	3.164	3.049	20.48
96)	T	n-Dodecane	1.461	1.258	1.096	0.971	1.408	1.309	1.687	1.530	1.283	1.334	16.38
97)	T	Hexachlorobuta...	0.654	0.577	0.560	0.561	0.584	0.552	0.674	0.651	0.624	0.604	7.75
98)	T	Cyclohexanone	1.392	1.239	1.076	0.970	0.989	0.898	1.061	0.997	0.925	1.061	15.06
99)	T	tert-Butylbenzene	3.057	2.929	2.588	2.538	2.563	2.375	2.583	2.329	1.942	2.545	12.83
100)	T	n-Butylbenzene	3.523	3.272	2.883	2.755	2.948	2.725	2.987	2.736	2.397	2.914	11.29

(#) = Out of Range

Primary Source Standards Concentrations (Working & Initial Calibration)

1/9/17

1ng/L Std. ID:
4ng/L Std. ID: S29-01051709
20ng/L Std. ID: S29-01051706
200ng/L Std. ID: S29-12301604

Dilution Factors:		5	50	250	1000	Working STD Conc.(ng/L):	4	4	4	4	20	20	200	200	200
	Source Std.	Primary Working Standards				Injection (L):	0.020	0.025	0.050	0.100	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	200ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
Propene	1.036	207.2	20.72	4.144	1.036		0.08288	0.1036	0.2072	0.4144	1.036	5.180	25.900	51.80	103.6
Dichlorodifluoromethane	1.047	209.4	20.94	4.188	1.047		0.08376	0.1047	0.2094	0.4188	1.047	5.235	26.175	52.35	104.7
Chloromethane	1.005	201.0	20.10	4.020	1.005		0.08040	0.1005	0.2010	0.4020	1.005	5.025	25.125	50.25	100.5
Freon-114	1.005	201.0	20.10	4.020	1.005		0.08040	0.1005	0.2010	0.4020	1.005	5.025	25.125	50.25	100.5
Vinyl Chloride	1.023	204.6	20.46	4.092	1.023		0.08184	0.1023	0.2046	0.4092	1.023	5.115	25.575	51.15	102.3
1,3-Butadiene	1.057	211.4	21.14	4.228	1.057		0.08456	0.1057	0.2114	0.4228	1.057	5.285	26.425	52.85	105.7
Bromomethane	0.993	198.6	19.86	3.972	0.993		0.07944	0.0993	0.1986	0.3972	0.993	4.965	24.825	49.65	99.3
Chloroethane	1.009	201.8	20.18	4.036	1.009		0.08072	0.1009	0.2018	0.4036	1.009	5.045	25.225	50.45	100.9
Ethanol	5.207	1041.4	104.14	20.828	5.207		0.41656	0.5207	1.0414	2.0828	5.207	26.035	130.175	260.35	520.7
Acetonitrile	1.046	209.2	20.92	4.184	1.046		0.08368	0.1046	0.2092	0.4184	1.046	5.230	26.150	52.30	104.6
Acrolein	1.041	208.2	20.82	4.164	1.041		0.08328	0.1041	0.2082	0.4164	1.041	5.205	26.025	52.05	104.1
Acetone	5.313	1062.6	106.26	21.252	5.313		0.42504	0.5313	1.0626	2.1252	5.313	26.565	132.825	265.65	531.3
Trichlorofluoromethane	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
Isopropanol	2.105	421.0	42.10	8.420	2.105		0.16840	0.2105	0.4210	0.8420	2.105	10.525	52.625	105.25	210.5
Acrylonitrile	1.055	211.0	21.10	4.220	1.055		0.08440	0.1055	0.2110	0.4220	1.055	5.275	26.375	52.75	105.5
1,1-Dichloroethene	1.059	211.8	21.18	4.236	1.059		0.08472	0.1059	0.2118	0.4236	1.059	5.295	26.475	52.95	105.9
tert-Butanol	2.114	422.8	42.28	8.456	2.114		0.16912	0.2114	0.4228	0.8456	2.114	10.570	52.850	105.70	211.4
Methylene Chloride	1.057	211.4	21.14	4.228	1.057		0.08456	0.1057	0.2114	0.4228	1.057	5.285	26.425	52.85	105.7
Allyl Chloride	1.052	210.4	21.04	4.208	1.052		0.08416	0.1052	0.2104	0.4208	1.052	5.260	26.300	52.60	105.2
Trichlorotrifluoroethane	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
Carbon Disulfide	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
trans-1,2-Dichloroethene	1.067	213.4	21.34	4.268	1.067		0.08536	0.1067	0.2134	0.4268	1.067	5.335	26.675	53.35	106.7
1,1-Dichloroethane	1.020	204.0	20.40	4.080	1.020		0.08160	0.1020	0.2040	0.4080	1.020	5.100	25.500	51.00	102.0
Methyl tert-Butyl Ether	1.066	213.2	21.32	4.264	1.066		0.08528	0.1066	0.2132	0.4264	1.066	5.330	26.650	53.30	106.6
Vinyl Acetate	5.265	1053.0	105.30	21.060	5.265		0.42120	0.5265	1.0530	2.1060	5.265	26.325	131.625	263.25	526.5
2-Butanone	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
cis-1,2-Dichloroethene	1.064	212.8	21.28	4.256	1.064		0.08512	0.1064	0.2128	0.4256	1.064	5.320	26.600	53.20	106.4
Diisopropyl Ether	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
Ethyl Acetate	2.129	425.8	42.58	8.516	2.129		0.17032	0.2129	0.4258	0.8516	2.129	10.645	53.225	106.45	212.9
n-Hexane	1.063	212.6	21.26	4.252	1.063		0.08504	0.1063	0.2126	0.4252	1.063	5.315	26.575	53.15	106.3
Chloroform	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
Tetrahydrofuran	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
Ethyl tert-Butyl Ether	1.057	211.4	21.14	4.228	1.057		0.08456	0.1057	0.2114	0.4228	1.057	5.285	26.425	52.85	105.7
1,2-Dichloroethane	1.052	210.4	21.04	4.208	1.052		0.08416	0.1052	0.2104	0.4208	1.052	5.260	26.300	52.60	105.2
1,1,1-Trichloroethane	1.074	214.8	21.48	4.296	1.074		0.08592	0.1074	0.2148	0.4296	1.074	5.370	26.850	53.70	107.4
Isopropyl Acetate	2.104	420.8	42.08	8.416	2.104		0.16832	0.2104	0.4208	0.8416	2.104	10.520	52.600	105.20	210.4
1-Butanol	2.105	421.0	42.10	8.420	2.105		0.16840	0.2105	0.4210	0.8420	2.105	10.525	52.625	105.25	210.5
Benzene	1.052	210.4	21.04	4.208	1.052		0.08416	0.1052	0.2104	0.4208	1.052	5.260	26.300	52.60	105.2
Carbon Tetrachloride	1.055	211.0	21.10	4.220	1.055		0.08440	0.1055	0.2110	0.4220	1.055	5.275	26.375	52.75	105.5
Cyclohexane	2.130	426.0	42.60	8.520	2.130		0.17040	0.2130	0.4260	0.8520	2.130	10.650	53.250	106.50	213.0
tert-Amyl Methyl Ether	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
1,2-Dichloropropane	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
Bromodichloromethane	1.066	213.2	21.32	4.264	1.066		0.08528	0.1066	0.2132	0.4264	1.066	5.330	26.650	53.30	106.6
Trichloroethene	1.060	212.0	21.20	4.240	1.060		0.08480	0.1060	0.2120	0.4240	1.060	5.300	26.500	53.00	106.0
1,4-Dioxane	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
Isooctane	1.059	211.8	21.18	4.236	1.059		0.08472	0.1059	0.2118	0.4236	1.059	5.295	26.475	52.95	105.9
Methyl Methacrylate	2.110	422.0	42.20	8.440	2.110		0.16880	0.2110	0.4220	0.8440	2.110	10.550	52.750	105.50	211.0
n-Heptane	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
cis-1,3-Dichloropropene	1.116	223.2	22.32	4.464	1.116		0.08928	0.1116	0.2232	0.4464	1.116	5.580	27.900	55.80	111.6
4-Methyl-2-pentanone	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
trans-1,3-Dichloropropene	1.064	212.8	21.28	4.256	1.064		0.08512	0.1064	0.2128	0.4256	1.064	5.320	26.600	53.20	106.4
1,1,2-Trichloroethane	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
Toluene	1.053	210.6	21.06	4.212	1.053		0.08424	0.1053	0.2106	0.4212	1.053	5.265	26.325	52.65	105.3
2-Hexanone	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:
4ng/L Std. ID: S29-01051709
20ng/L Std. ID: S29-01051706
200ng/L Std. ID: S29-12301604

Dilution Factors:		5	50	250	1000	Working STD Conc.(ng/L):	4	4	4	4	20	20	200	200	200
	Source Std.	Primary Working Standards				Injection (L):	0.020	0.025	0.050	0.100	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m^3	200ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
Dibromochloromethane	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
1,2-Dibromoethane	1.056	211.2	21.12	4.224	1.056		0.08448	0.1056	0.2112	0.4224	1.056	5.280	26.400	52.80	105.6
n-Butyl Acetate	1.064	212.8	21.28	4.256	1.064		0.08512	0.1064	0.2128	0.4256	1.064	5.320	26.600	53.20	106.4
n-Octane	1.057	211.4	21.14	4.228	1.057		0.08456	0.1057	0.2114	0.4228	1.057	5.285	26.425	52.85	105.7
Tetrachloroethene	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
Chlorobenzene	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
Ethylbenzene	1.055	211.0	21.10	4.220	1.055		0.08440	0.1055	0.2110	0.4220	1.055	5.275	26.375	52.75	105.5
m-&p-Xylene	2.123	424.6	42.46	8.492	2.123		0.16984	0.2123	0.4246	0.8492	2.123	10.615	53.075	106.15	212.3
Bromoform	1.063	212.6	21.26	4.252	1.063		0.08504	0.1063	0.2126	0.4252	1.063	5.315	26.575	53.15	106.3
Styrene	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
o-Xylene	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
n-Nonane	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
1,1,2,2-Tetrachloroethane	1.056	211.2	21.12	4.224	1.056		0.08448	0.1056	0.2112	0.4224	1.056	5.280	26.400	52.80	105.6
Cumene	1.050	210.0	21.00	4.200	1.050		0.08400	0.1050	0.2100	0.4200	1.050	5.250	26.250	52.50	105.0
alpha-Pinene	1.044	208.8	20.88	4.176	1.044		0.08352	0.1044	0.2088	0.4176	1.044	5.220	26.100	52.20	104.4
n-Propylbenzene	1.063	212.6	21.26	4.252	1.063		0.08504	0.1063	0.2126	0.4252	1.063	5.315	26.575	53.15	106.3
3-Ethyltoluene	1.050	210.0	21.00	4.200	1.050		0.08400	0.1050	0.2100	0.4200	1.050	5.250	26.250	52.50	105.0
4-Ethyltoluene	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
1,3,5-Trimethylbenzene	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
alpha-Methylstyrene	1.050	210.0	21.00	4.200	1.050		0.08400	0.1050	0.2100	0.4200	1.050	5.250	26.250	52.50	105.0
2-Ethyltoluene	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
1,2,4-Trimethylbenzene	1.052	210.4	21.04	4.208	1.052		0.08416	0.1052	0.2104	0.4208	1.052	5.260	26.300	52.60	105.2
n-Decane	1.053	210.6	21.06	4.212	1.053		0.08424	0.1053	0.2106	0.4212	1.053	5.265	26.325	52.65	105.3
Benzyl Chloride	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
1,3-Dichlorobenzene	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
1,4-Dichlorobenzene	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
sec-Butylbenzene	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
p-Isopropyltoluene	1.027	205.4	20.54	4.108	1.027		0.08216	0.1027	0.2054	0.4108	1.027	5.135	25.675	51.35	102.7
1,2,3-Trimethylbenzene	1.027	205.4	20.54	4.108	1.027		0.08216	0.1027	0.2054	0.4108	1.027	5.135	25.675	51.35	102.7
1,2-Dichlorobenzene	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
d-Limonene	1.005	201.0	20.10	4.020	1.005		0.08040	0.1005	0.2010	0.4020	1.005	5.025	25.125	50.25	100.5
1,2-Dibromo-3-chloropropane	1.053	210.6	21.06	4.212	1.053		0.08424	0.1053	0.2106	0.4212	1.053	5.265	26.325	52.65	105.3
n-Undecane	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
1,2,4-Trichlorobenzene	1.043	208.6	20.86	4.172	1.043		0.08344	0.1043	0.2086	0.4172	1.043	5.215	26.075	52.15	104.3
Naphthalene	1.083	216.6	21.66	4.332	1.083		0.08664	0.1083	0.2166	0.4332	1.083	5.415	27.075	54.15	108.3
n-Dodecane	1.045	209.0	20.90	4.180	1.045		0.08360	0.1045	0.2090	0.4180	1.045	5.225	26.125	52.25	104.5
Hexachloro-1,3-butadiene	1.059	211.8	21.18	4.236	1.059		0.08472	0.1059	0.2118	0.4236	1.059	5.295	26.475	52.95	105.9
Methacrylonitrile	1.065	213.0	21.30	4.260	1.065		0.08520	0.1065	0.2130	0.4260	1.065	5.325	26.625	53.25	106.5
Cyclohexanone	1.056	211.2	21.12	4.224	1.056		0.08448	0.1056	0.2112	0.4224	1.056	5.280	26.400	52.80	105.6
tert-Butylbenzene	1.051	210.2	21.02	4.204	1.051		0.08408	0.1051	0.2102	0.4204	1.051	5.255	26.275	52.55	105.1
n-Butylbenzene	1.056	211.2	21.12	4.224	1.056		0.08448	0.1056	0.2112	0.4224	1.056	5.280	26.400	52.80	105.6

Calibration Status Report MS09

Method   : I:\MS09\Methods\R9010617.M (RTE Integrator)
Title   : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Jan 09 09:09:36 2017
Response via : Initial Calibration

1/9/17

#	ID	Conc	ISTD Conc	Path\File
1	0.08	0	13	I:\MS09\Data\2017_01\06\01061715.D
2	0.10	0	13	I:\MS09\Data\2017_01\06\01061716.D
3	0.20	0	13	I:\MS09\Data\2017_01\06\01061717.D
4	0.40	0	13	I:\MS09\Data\2017_01\06\01061718.D
5	1.0	1	13	I:\MS09\Data\2017_01\06\01061719.D
6	5.0	5	13	I:\MS09\Data\2017_01\06\01061720.D
7	25	26	13	I:\MS09\Data\2017_01\06\01061721.D
8	50	52	13	I:\MS09\Data\2017_01\06\01061722.D
9	100	104	13	I:\MS09\Data\2017_01\06\01061723.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.08	Jan 09 09:07 2017	Jan 09 08:57 2017	6 Jan 2017 19:28
2	0.10	Jan 09 09:07 2017	Jan 09 08:55 2017	6 Jan 2017 20:01
3	0.20	Jan 09 09:07 2017	Jan 09 08:54 2017	6 Jan 2017 20:35
4	0.40	Jan 09 09:08 2017	Jan 09 08:53 2017	6 Jan 2017 21:08
5	1.0	Jan 09 09:08 2017	Jan 09 08:51 2017	6 Jan 2017 21:42
6	5.0	Jan 09 09:08 2017	Jan 09 08:50 2017	6 Jan 2017 22:16
7	25	Jan 09 09:09 2017	Jan 09 08:47 2017	6 Jan 2017 22:49
8	50	Jan 09 09:09 2017	Jan 09 09:04 2017	6 Jan 2017 23:22
9	100	Jan 09 09:09 2017	Jan 09 09:05 2017	6 Jan 2017 23:56

R9010617.M Mon Jan 09 09:51:42 2017

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061715.D
Acq On : 6 Jan 2017 19:28 Operator: SC
Sample : 0.08ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

1/9/17

Quant Time: Jan 09 08:57:59 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.16	130	107751	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	11.14	114	543004	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	15.49	82	221438	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.95	65	166628	9.363	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 74.88%				
57) Toluene-d8 (SS2)	13.58	98	573095	13.865	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.96%				
73) Bromofluorobenzene (SS3)	17.08	174	154351	14.557	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.48%				
Target Compounds							Qvalue
2) Propene	3.92	42	1754	0.075	ng		92
3) Dichlorodifluoromethan...	4.02	85	2392	0.085	ng	#	91
4) Chloromethane	4.22	50	1993	0.074	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.37	135	1129	0.098	ng	#	43
6) Vinyl Chloride	4.50	62	1849	0.089	ng		97
7) 1,3-Butadiene	4.67	54	1328	0.089	ng		96
8) Bromomethane	4.98	94	1129	0.091	ng		98
9) Chloroethane	5.20	64	923	0.079	ng	#	43
10) Ethanol	5.37	45	4578	0.312	ng		87
11) Acetonitrile	5.59	41	2663	0.069	ng		85
12) Acrolein	5.74	56	927	0.086	ng		92
13) Acetone	5.88	58	6115	0.462	ng		96
14) Trichlorofluoromethane	6.07	101	1849	0.082	ng		98
15) 2-Propanol (Isopropanol)	6.21	45	6659	0.143	ng		97
16) Acrylonitrile	6.39	53	1477	0.067	ng		100
17) 1,1-Dichloroethene	6.75	96	1294	0.100	ng		88
18) 2-Methyl-2-Propanol (t...	6.90	59	6262	0.158	ng		94
19) Methylene Chloride	6.89	84	1432	0.097	ng		100
20) 3-Chloro-1-propene (Al...	7.03	41	2129	0.072	ng		81
21) Trichlorotrifluoroethane	7.22	151	820	0.085	ng	#	80
22) Carbon Disulfide	7.19	76	5745	0.100	ng	#	73
23) trans-1,2-Dichloroethene	7.91	61	1744	0.077	ng		97
24) 1,1-Dichloroethane	8.13	63	2236	0.077	ng		87
25) Methyl tert-Butyl Ether	8.23	73	3943	0.087	ng		88
26) Vinyl Acetate	8.31	86	1336	0.447	ng	#	82
27) 2-Butanone (MEK)	8.57	72	833	0.088	ng	#	53
28) cis-1,2-Dichloroethene	9.00	61	1711	0.077	ng		92
29) Diisopropyl Ether	9.26	87	1087	0.092	ng	#	84
30) Ethyl Acetate	9.26	61	845	0.149	ng		95
31) n-Hexane	9.26	57	2505	0.093	ng	#	87
32) Chloroform	9.30	83	2079	0.084	ng		100
34) Tetrahydrofuran (THF)	9.72	72	1000	0.101	ng	#	80
35) Ethyl tert-Butyl Ether	9.81	87	1430	0.088	ng		88
36) 1,2-Dichloroethane	10.05	62	1438	0.069	ng	#	42
38) 1,1,1-Trichloroethane	10.32	97	1825	0.090	ng		89
39) Isopropyl Acetate	10.71	61	1557	0.164	ng	#	80
40) 1-Butanol	10.72	56	2990	0.177	ng		89
41) Benzene	10.78	78	6587	0.108	ng		96
42) Carbon Tetrachloride	10.93	117	1520	0.090	ng		93
43) Cyclohexane	11.07	84	4104	0.198	ng		96
44) tert-Amyl Methyl Ether	11.40	73	4039	0.090	ng		93
45) 1,2-Dichloropropane	11.60	63	1203	0.078	ng		98
46) Bromodichloromethane	11.78	83	1670	0.092	ng		91
47) Trichloroethene	11.84	130	1347	0.113	ng		97
48) 1,4-Dioxane	11.82	88	966	0.091	ng		97
49) 2,2,4-Trimethylpentane...	11.90	57	6082	0.089	ng		97

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061715.D
Acq On : 6 Jan 2017 19:28 Operator: SC
Sample : 0.08ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 09 08:57:59 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

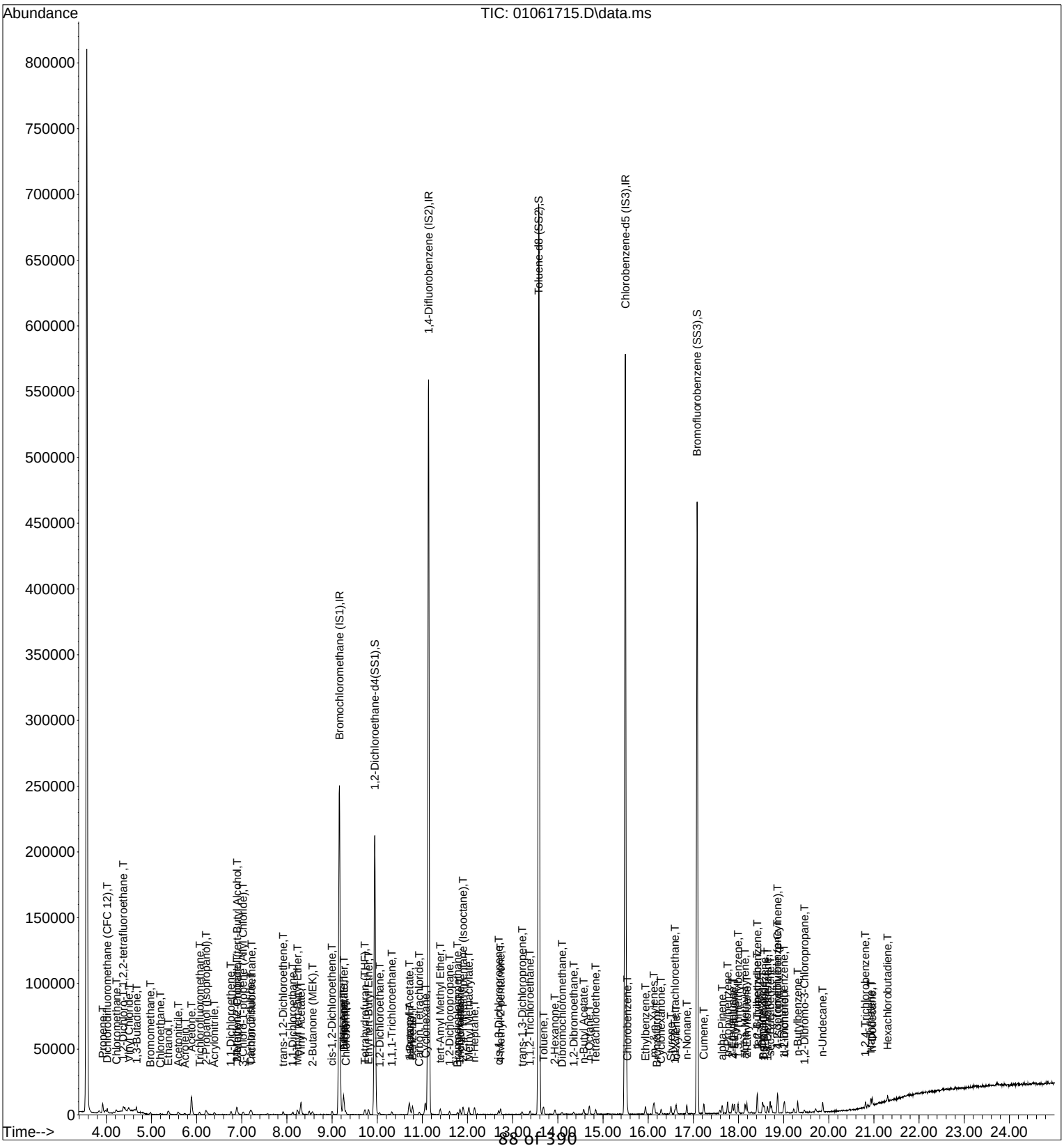
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Methyl Methacrylate	12.03	100	959	0.199	ng	#	85
51) n-Heptane	12.15	71	1400	0.098	ng	#	88
52) cis-1,3-Dichloropropene	12.69	75	2098	0.090	ng		95
53) 4-Methyl-2-pentanone	12.73	58	1288	0.089	ng	#	80
54) trans-1,3-Dichloropropene	13.21	75	1632	0.076	ng		100
55) 1,1,2-Trichloroethane	13.38	97	1088	0.088	ng		91
58) Toluene	13.68	91	5669	0.116	ng		99
59) 2-Hexanone	13.93	43	3187	0.095	ng		86
60) Dibromochloromethane	14.09	129	1143	0.103	ng		88
61) 1,2-Dibromoethane	14.35	107	1234	0.109	ng		93
62) n-Butyl Acetate	14.57	43	3371	0.089	ng		96
63) n-Octane	14.70	57	1303	0.108	ng		87
64) Tetrachloroethene	14.83	166	1169	0.115	ng		99
65) Chlorobenzene	15.54	112	3458	0.118	ng		97
66) Ethylbenzene	15.94	91	5968	0.111	ng		96
67) m- & p-Xylenes	16.12	91	9353	0.224	ng		97
68) Bromoform	16.19	173	863	0.103	ng	#	28
69) Styrene	16.51	104	3548	0.117	ng		94
70) o-Xylene	16.62	91	4800	0.113	ng		97
71) n-Nonane	16.86	43	2972	0.094	ng		89
72) 1,1,2,2-Tetrachloroethane	16.59	83	2194	0.108	ng		97
74) Cumene	17.23	105	5789	0.113	ng		99
75) alpha-Pinene	17.63	93	2859	0.107	ng		93
76) n-Propylbenzene	17.76	91	7250	0.113	ng		97
77) 3-Ethyltoluene	17.87	105	5699	0.111	ng		98
78) 4-Ethyltoluene	17.91	105	5613	0.115	ng		94
79) 1,3,5-Trimethylbenzene	17.99	105	4709	0.110	ng		98
80) alpha-Methylstyrene	18.15	118	2421	0.118	ng		98
81) 2-Ethyltoluene	18.19	105	5682	0.115	ng		100
82) 1,2,4-Trimethylbenzene	18.42	105	4768	0.112	ng		97
83) n-Decane	18.53	57	2880	0.097	ng		90
84) Benzyl Chloride	18.55	91	3744	0.094	ng		90
85) 1,3-Dichlorobenzene	18.57	146	2364	0.106	ng		96
86) 1,4-Dichlorobenzene	18.64	146	2597	0.114	ng		97
87) sec-Butylbenzene	18.70	105	6531	0.115	ng		97
88) 4-Isopropyltoluene (p-...	18.87	119	5944	0.117	ng		99
89) 1,2,3-Trimethylbenzene	18.86	105	4732	0.110	ng		98
90) 1,2-Dichlorobenzene	19.01	146	2338	0.110	ng		96
91) d-Limonene	19.02	68	1967	0.101	ng		93
92) 1,2-Dibromo-3-Chloropr...	19.46	157	662	0.097	ng		78
93) n-Undecane	19.86	57	2749	0.086	ng		96
94) 1,2,4-Trichlorobenzene	20.81	180	1460	0.094	ng	#	84
95) Naphthalene	20.93	128	4506	0.084	ng		97
96) n-Dodecane	20.96	57	2163	0.067	ng		90
97) Hexachlorobutadiene	21.30	225	981	0.106	ng		94
98) Cyclohexanone	16.28	55	2083	0.103	ng		90
99) tert-Butylbenzene	18.41	119	4554	0.115	ng		95
100) n-Butylbenzene	19.31	91	5272	0.109	ng		95

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061715.D
Acq On : 6 Jan 2017 19:28 Operator: SC
Sample : 0.08ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 09 08:57:59 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061716.D
Acq On : 6 Jan 2017 20:01 Operator: SC
Sample : 0.10ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

1/9/17

Quant Time: Jan 09 08:55:55 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.16	130	108211	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	11.14	114	540870	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	15.49	82	219763	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.95	65	165979	9.287	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 74.32%				
57) Toluene-d8 (SS2)	13.58	98	570321	13.903	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.20%				
73) Bromofluorobenzene (SS3)	17.08	174	151410	14.388	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.12%				
Target Compounds							Qvalue
2) Propene	3.92	42	1950	0.083	ng		95
3) Dichlorodifluoromethan...	4.02	85	2801	0.099	ng	#	91
4) Chloromethane	4.23	50	2340	0.087	ng		93
5) 1,2-Dichloro-1,1,2,2-t...	4.39	135	1396	0.120	ng	#	43
6) Vinyl Chloride	4.50	62	2230	0.106	ng		99
7) 1,3-Butadiene	4.68	54	1466	0.098	ng	#	59
8) Bromomethane	4.98	94	1215	0.098	ng		86
9) Chloroethane	5.21	64	1005	0.085	ng	#	43
10) Ethanol	5.38	45	5308m	0.361	ng		
11) Acetonitrile	5.59	41	3153	0.082	ng		95
12) Acrolein	5.74	56	1021	0.094	ng		91
13) Acetone	5.89	58	6907	0.519	ng		95
14) Trichlorofluoromethane	6.07	101	2248	0.099	ng		96
15) 2-Propanol (Isopropanol)	6.21	45	7564	0.162	ng		95
16) Acrylonitrile	6.40	53	1859	0.084	ng		91
17) 1,1-Dichloroethene	6.77	96	1437	0.110	ng		95
18) 2-Methyl-2-Propanol (t...	6.90	59	7657	0.193	ng		95
19) Methylene Chloride	6.89	84	1635	0.110	ng		95
20) 3-Chloro-1-propene (Al...	7.03	41	2526	0.085	ng		78
21) Trichlorotrifluoroethane	7.22	151	1080	0.111	ng		96
22) Carbon Disulfide	7.20	76	6379	0.110	ng		94
23) trans-1,2-Dichloroethene	7.92	61	2010	0.088	ng		99
24) 1,1-Dichloroethane	8.13	63	2525	0.087	ng		93
25) Methyl tert-Butyl Ether	8.23	73	4575	0.101	ng		97
26) Vinyl Acetate	8.31	86	1601	0.533	ng	#	72
27) 2-Butanone (MEK)	8.57	72	981	0.104	ng	#	65
28) cis-1,2-Dichloroethene	9.00	61	1910	0.086	ng		90
29) Diisopropyl Ether	9.27	87	1196	0.101	ng	#	76
30) Ethyl Acetate	9.26	61	1038	0.182	ng		97
31) n-Hexane	9.26	57	2859	0.105	ng	#	91
32) Chloroform	9.31	83	2370	0.096	ng		99
34) Tetrahydrofuran (THF)	9.72	72	1162	0.117	ng	#	84
35) Ethyl tert-Butyl Ether	9.81	87	1725	0.105	ng	#	87
36) 1,2-Dichloroethane	10.06	62	1666	0.080	ng	#	42
38) 1,1,1-Trichloroethane	10.33	97	2221	0.111	ng		91
39) Isopropyl Acetate	10.70	61	1943	0.205	ng	#	89
40) 1-Butanol	10.72	56	3376	0.201	ng		94
41) Benzene	10.78	78	7245	0.120	ng		99
42) Carbon Tetrachloride	10.93	117	1780	0.106	ng		97
43) Cyclohexane	11.07	84	4852	0.235	ng		93
44) tert-Amyl Methyl Ether	11.40	73	4709	0.105	ng		94
45) 1,2-Dichloropropane	11.61	63	1668	0.109	ng		89
46) Bromodichloromethane	11.78	83	1811	0.100	ng		99
47) Trichloroethene	11.84	130	1586	0.133	ng		94
48) 1,4-Dioxane	11.83	88	1195	0.114	ng		95
49) 2,2,4-Trimethylpentane...	11.90	57	7013	0.103	ng		100

Data File: I:\MS09\Data\2017_01\06\01061716.D
Acq On : 6 Jan 2017 20:01 Operator: SC
Sample : 0.10ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 09 08:55:55 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

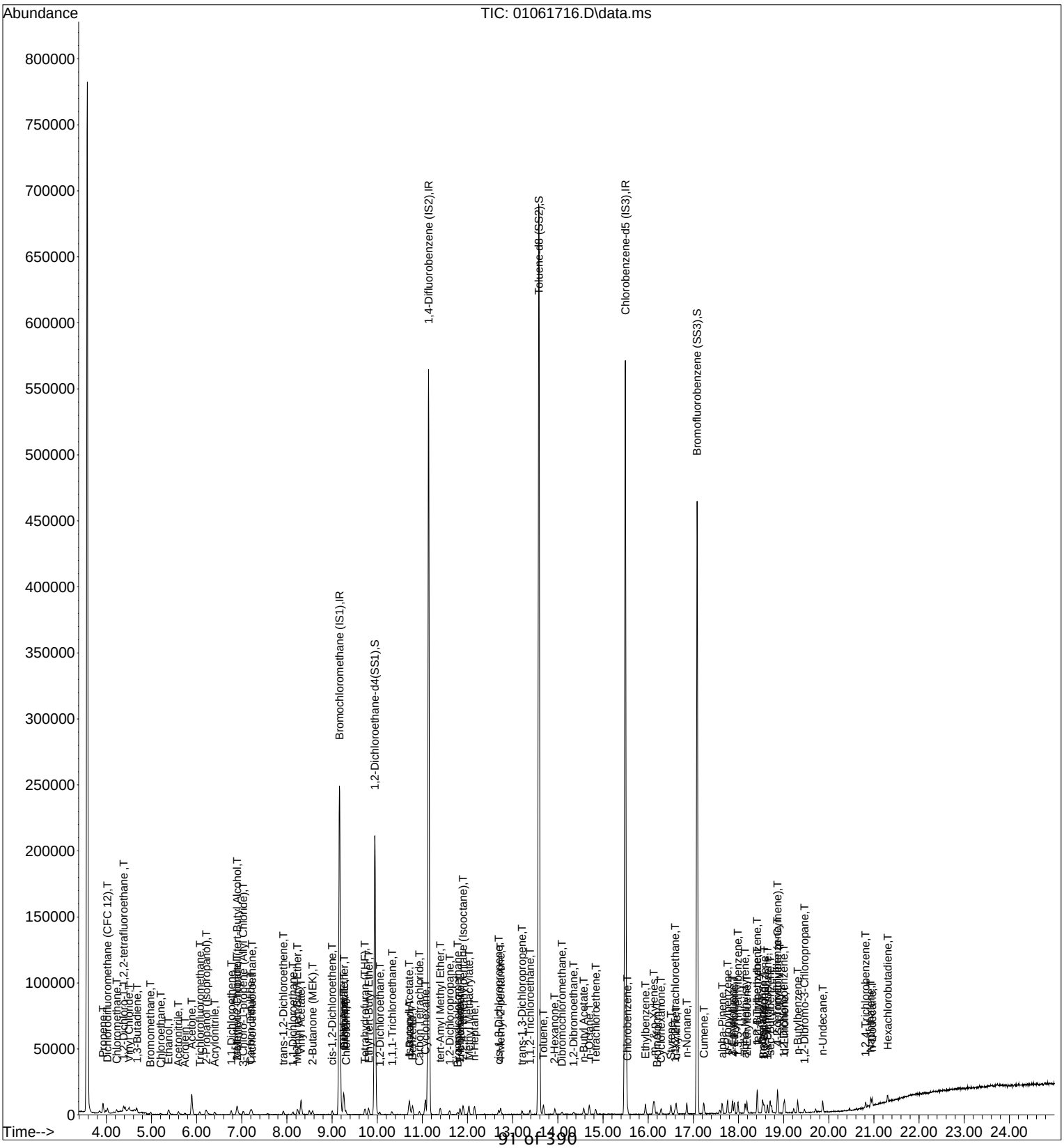
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Methyl Methacrylate	12.03	100	1138	0.237	ng		90
51) n-Heptane	12.15	71	1599	0.112	ng	#	77
52) cis-1,3-Dichloropropene	12.69	75	2515	0.109	ng		94
53) 4-Methyl-2-pentanone	12.73	58	1397	0.097	ng		81
54) trans-1,3-Dichloropropene	13.21	75	2083	0.097	ng		87
55) 1,1,2-Trichloroethane	13.39	97	1403	0.114	ng		94
58) Toluene	13.68	91	6712	0.138	ng		97
59) 2-Hexanone	13.93	43	3494	0.105	ng		87
60) Dibromochloromethane	14.09	129	1488	0.135	ng		92
61) 1,2-Dibromoethane	14.34	107	1473	0.132	ng		94
62) n-Butyl Acetate	14.57	43	3982	0.105	ng		98
63) n-Octane	14.70	57	1544	0.129	ng	#	80
64) Tetrachloroethene	14.84	166	1454	0.144	ng		98
65) Chlorobenzene	15.54	112	4001	0.138	ng		99
66) Ethylbenzene	15.94	91	7002	0.131	ng		97
67) m- & p-Xylenes	16.12	91	11066	0.267	ng		99
68) Bromoform	16.20	173	1082	0.130	ng	#	28
69) Styrene	16.51	104	4197	0.140	ng		97
70) o-Xylene	16.62	91	5612	0.134	ng		97
71) n-Nonane	16.86	43	3452	0.109	ng		92
72) 1,1,2,2-Tetrachloroethane	16.60	83	2401	0.119	ng		98
74) Cumene	17.23	105	6943	0.137	ng		95
75) alpha-Pinene	17.64	93	3696	0.139	ng		99
76) n-Propylbenzene	17.76	91	8274	0.130	ng		96
77) 3-Ethyltoluene	17.87	105	6416	0.126	ng		99
78) 4-Ethyltoluene	17.91	105	6393	0.131	ng		99
79) 1,3,5-Trimethylbenzene	17.99	105	5508	0.129	ng		99
80) alpha-Methylstyrene	18.15	118	2890	0.142	ng		94
81) 2-Ethyltoluene	18.19	105	6739	0.137	ng		99
82) 1,2,4-Trimethylbenzene	18.41	105	5411	0.128	ng		99
83) n-Decane	18.53	57	3442	0.117	ng		92
84) Benzyl Chloride	18.55	91	4242	0.108	ng		93
85) 1,3-Dichlorobenzene	18.57	146	2929	0.133	ng		96
86) 1,4-Dichlorobenzene	18.64	146	2961	0.131	ng		94
87) sec-Butylbenzene	18.70	105	7506	0.134	ng		97
88) 4-Isopropyltoluene (p-...	18.87	119	7016	0.139	ng		94
89) 1,2,3-Trimethylbenzene	18.86	105	5291	0.123	ng		90
90) 1,2-Dichlorobenzene	19.00	146	2867	0.136	ng		96
91) d-Limonene	19.02	68	2246	0.116	ng		88
92) 1,2-Dibromo-3-Chloropr...	19.46	157	835	0.124	ng		85
93) n-Undecane	19.87	57	3226	0.102	ng		92
94) 1,2,4-Trichlorobenzene	20.82	180	1649	0.107	ng		92
95) Naphthalene	20.93	128	5073	0.095	ng		94
96) n-Dodecane	20.96	57	2312	0.072	ng		88
97) Hexachlorobutadiene	21.31	225	1075	0.117	ng		85
98) Cyclohexanone	16.28	55	2300	0.114	ng		93
99) tert-Butylbenzene	18.41	119	5413	0.138	ng		96
100) n-Butylbenzene	19.31	91	6075	0.126	ng		97

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061716.D
Acq On : 6 Jan 2017 20:01 Operator: SC
Sample : 0.10ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

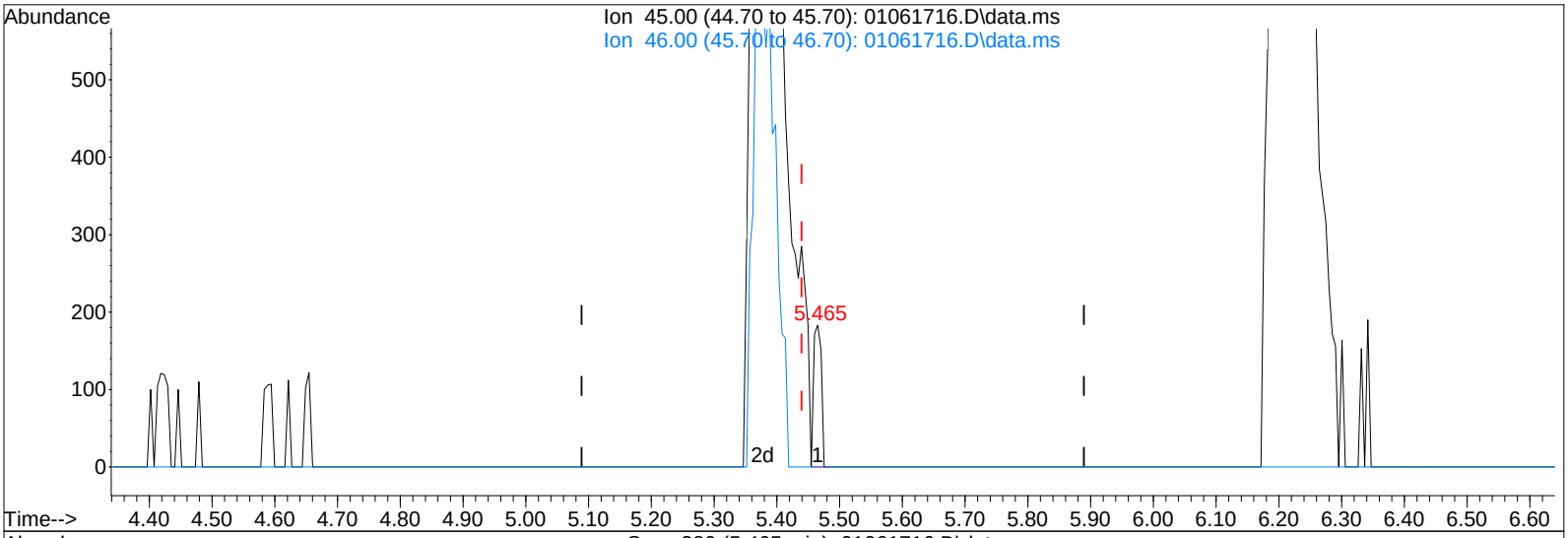
Quant Time: Jan 09 08:55:55 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

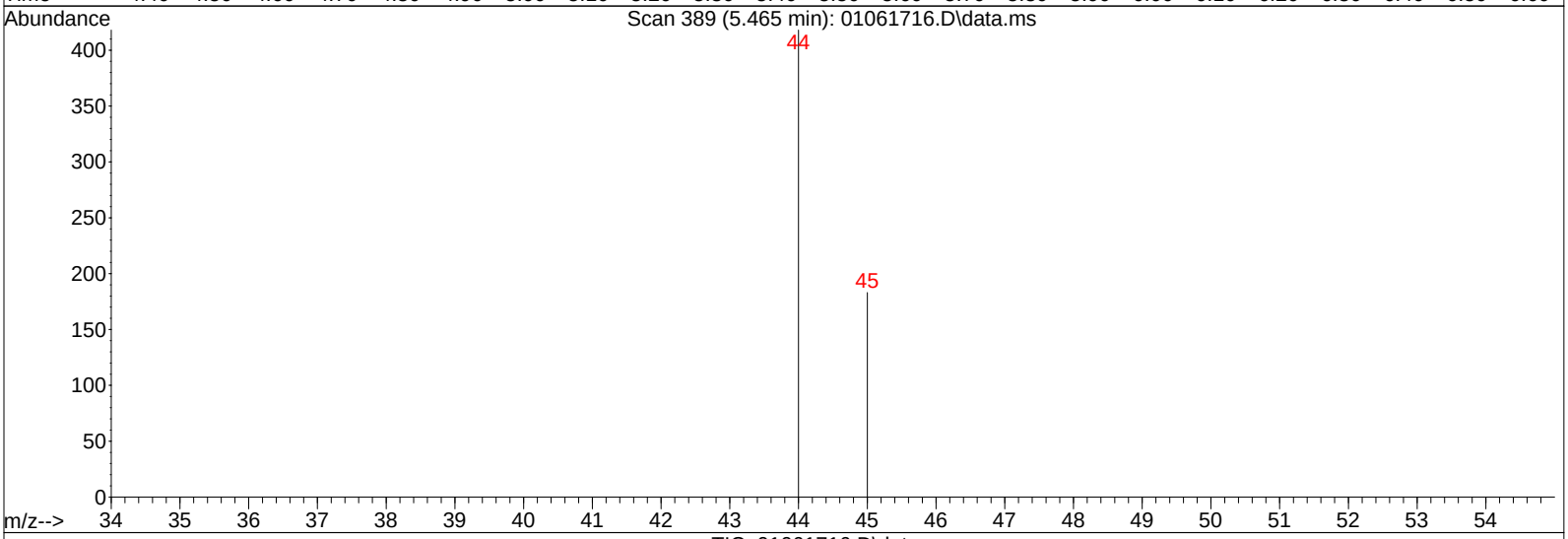


Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_01\06\01061716.D
Acq On : 6 Jan 2017 20:01 Operator: SC
Sample : 0.10ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 09 08:55:38 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 01061716.D\data.ms

(10) Ethanol (T)

5.465min (+0.026) 0.01ng

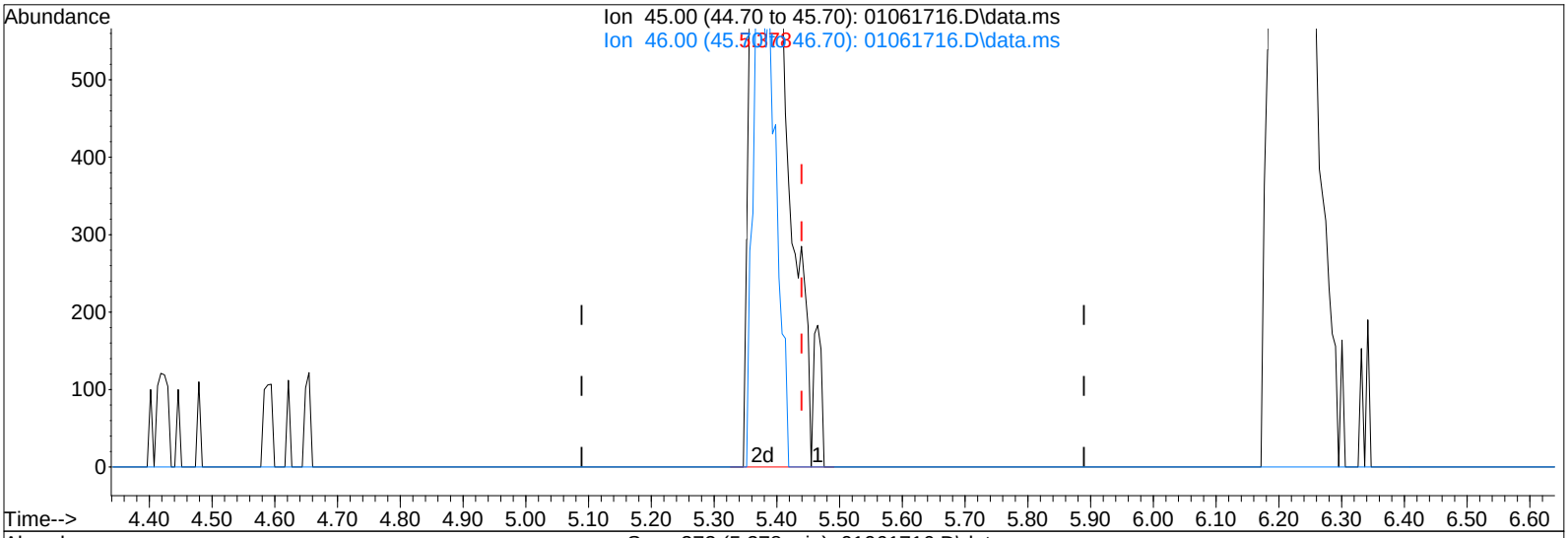
response 157

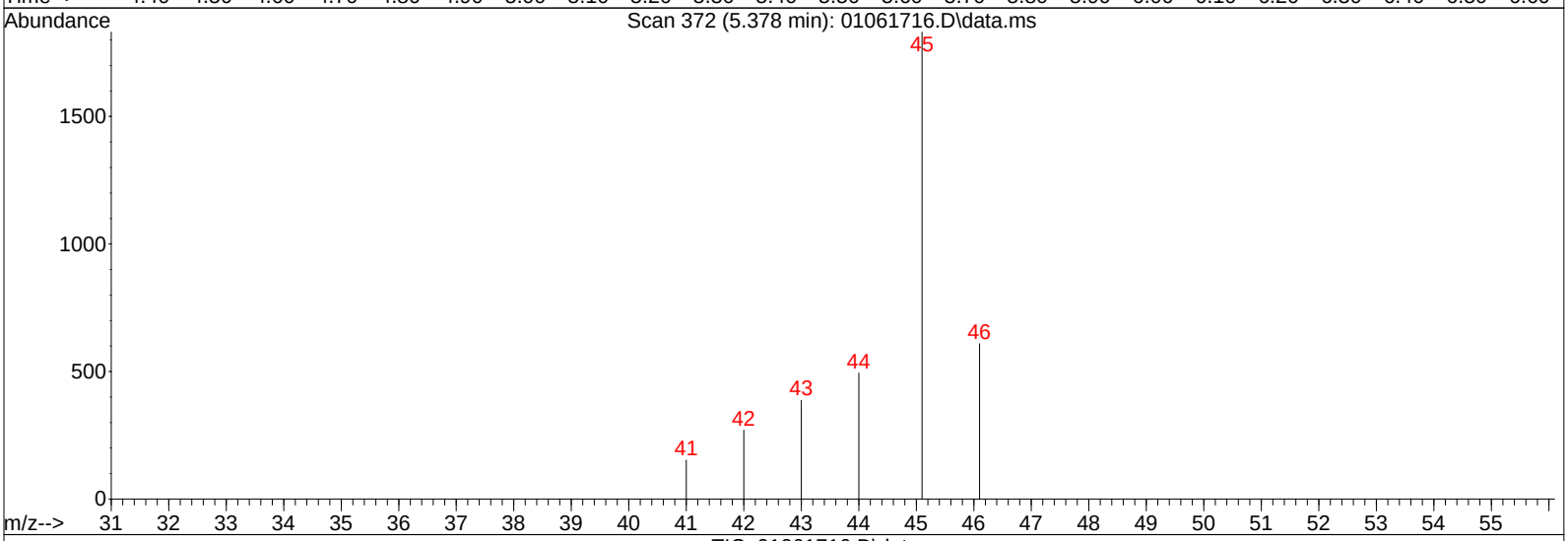
Ion	Exp%	Act%
45.00	100	100
46.00	36.70	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File: I:\MS09\Data\2017_01\06\01061716.D
Acq On : 6 Jan 2017 20:01 Operator: SC
Sample : 0.10ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 09 08:55:38 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 01061716.D\data.ms

(10) Ethanol (T)

5.378min (-0.062) 0.36ng m

response 5308

Ion	Exp%	Act%
45.00	100	100
46.00	36.70	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

MP

1/9/17

CL 1/12/17

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061717.D
Acq On : 6 Jan 2017 20:35 Operator: SC
Sample : 0.20ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

1/9/17

Quant Time: Jan 09 08:54:24 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.16	130	105188	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	11.14	114	535411	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	15.49	82	217228	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.95	65	165807	9.544	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 76.32%				
57) Toluene-d8 (SS2)	13.58	98	565259	13.941	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.52%				
73) Bromofluorobenzene (SS3)	17.09	174	150035	14.424	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.36%				
Target Compounds							Qvalue
2) Propene	3.92	42	3469	0.151	ng		97
3) Dichlorodifluoromethan...	4.02	85	5053	0.184	ng	#	97
4) Chloromethane	4.22	50	4430	0.170	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.38	135	2473	0.219	ng		100
6) Vinyl Chloride	4.50	62	3918	0.192	ng		95
7) 1,3-Butadiene	4.68	54	2683	0.185	ng		95
8) Bromomethane	4.97	94	2414	0.200	ng		97
9) Chloroethane	5.20	64	2012	0.176	ng		88
10) Ethanol	5.37	45	8705	0.608	ng		95
11) Acetonitrile	5.59	41	4709	0.126	ng		90
12) Acrolein	5.74	56	1593	0.152	ng		86
13) Acetone	5.88	58	11508	0.890	ng		97
14) Trichlorofluoromethane	6.06	101	4014	0.182	ng		97
15) 2-Propanol (Isopropanol)	6.19	45	13429	0.296	ng		99
16) Acrylonitrile	6.39	53	3252	0.150	ng		95
17) 1,1-Dichloroethene	6.76	96	2551	0.201	ng		93
18) 2-Methyl-2-Propanol (t...	6.88	59	13501	0.350	ng		95
19) Methylene Chloride	6.90	84	2770	0.192	ng		97
20) 3-Chloro-1-propene (Al...	7.03	41	4309	0.149	ng		87
21) Trichlorotrifluoroethane	7.22	151	2029	0.215	ng		93
22) Carbon Disulfide	7.19	76	10408	0.185	ng		96
23) trans-1,2-Dichloroethene	7.91	61	3738	0.169	ng		98
24) 1,1-Dichloroethane	8.13	63	4629	0.164	ng		99
25) Methyl tert-Butyl Ether	8.23	73	8246	0.187	ng		99
26) Vinyl Acetate	8.31	86	2824	0.967	ng	#	82
27) 2-Butanone (MEK)	8.56	72	1766	0.192	ng	#	76
28) cis-1,2-Dichloroethene	9.00	61	3468	0.160	ng		94
29) Diisopropyl Ether	9.26	87	2344	0.203	ng		98
30) Ethyl Acetate	9.26	61	1940	0.349	ng		98
31) n-Hexane	9.26	57	4973	0.188	ng	#	97
32) Chloroform	9.31	83	4482	0.186	ng		95
34) Tetrahydrofuran (THF)	9.72	72	1968	0.204	ng	#	88
35) Ethyl tert-Butyl Ether	9.81	87	3176	0.199	ng		95
36) 1,2-Dichloroethane	10.06	62	3119	0.153	ng		94
38) 1,1,1-Trichloroethane	10.33	97	3919	0.197	ng		94
39) Isopropyl Acetate	10.70	61	3518	0.375	ng		97
40) 1-Butanol	10.72	56	5238	0.314	ng		91
41) Benzene	10.78	78	12229	0.204	ng		100
42) Carbon Tetrachloride	10.93	117	3100	0.186	ng		99
43) Cyclohexane	11.06	84	8152	0.400	ng		92
44) tert-Amyl Methyl Ether	11.40	73	8262	0.186	ng		99
45) 1,2-Dichloropropane	11.60	63	2694	0.177	ng		97
46) Bromodichloromethane	11.78	83	3265	0.182	ng		95
47) Trichloroethene	11.84	130	2721	0.231	ng		94
48) 1,4-Dioxane	11.82	88	2070	0.199	ng		96
49) 2,2,4-Trimethylpentane...	11.90	57	12068	0.179	ng		96

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061717.D
Acq On : 6 Jan 2017 20:35 Operator: SC
Sample : 0.20ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 09 08:54:24 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

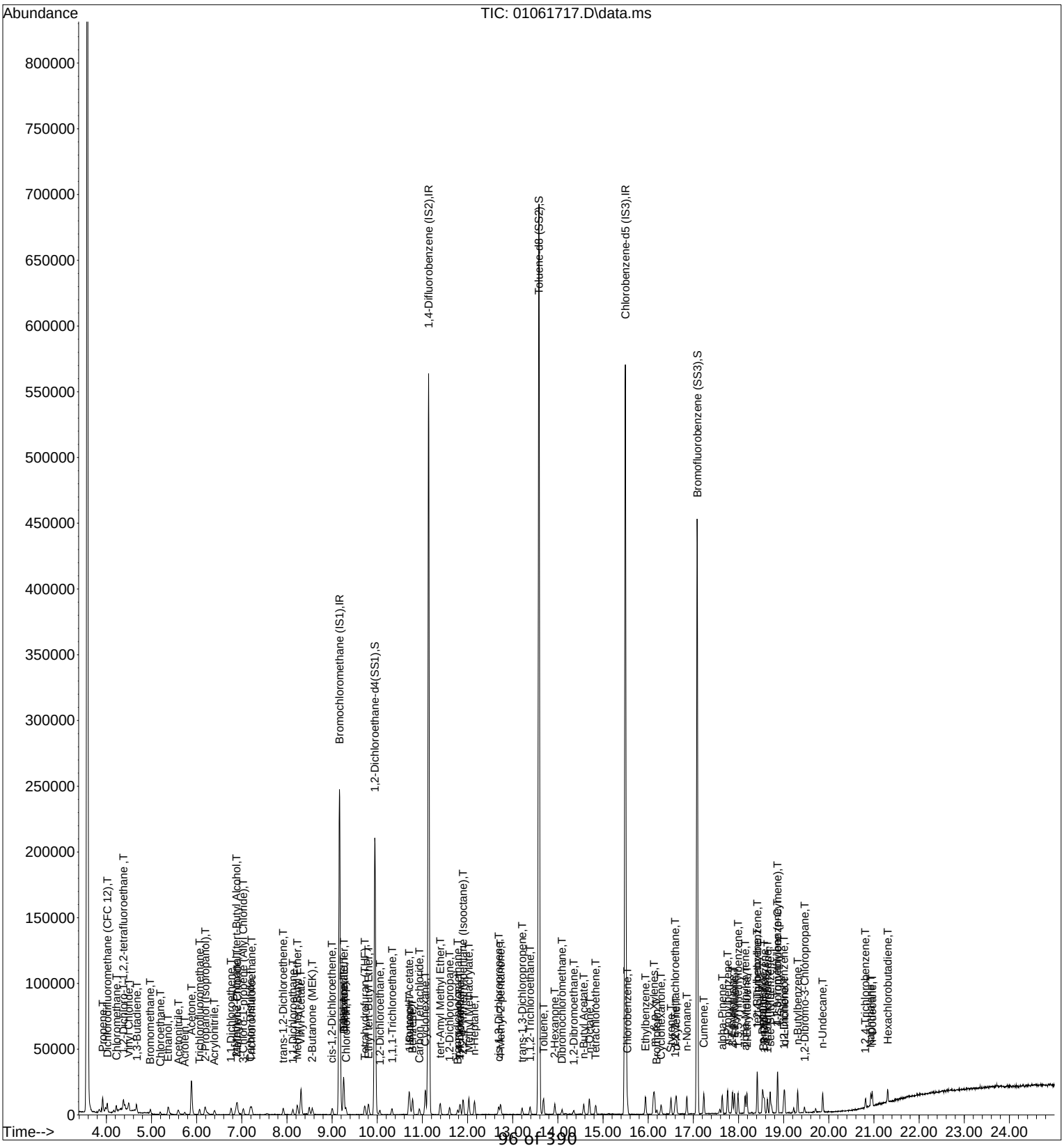
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Methyl Methacrylate	12.03	100	2080	0.437	ng		94
51) n-Heptane	12.15	71	2694	0.190	ng		95
52) cis-1,3-Dichloropropene	12.69	75	4640	0.203	ng		96
53) 4-Methyl-2-pentanone	12.73	58	2624	0.185	ng	#	93
54) trans-1,3-Dichloropropene	13.21	75	3776	0.178	ng		96
55) 1,1,2-Trichloroethane	13.39	97	2543	0.210	ng		100
58) Toluene	13.68	91	11213	0.234	ng		98
59) 2-Hexanone	13.93	43	6130	0.186	ng		94
60) Dibromochloromethane	14.09	129	2624	0.242	ng		97
61) 1,2-Dibromoethane	14.36	107	2656	0.240	ng		98
62) n-Butyl Acetate	14.57	43	6463	0.173	ng		98
63) n-Octane	14.70	57	2635	0.223	ng		88
64) Tetrachloroethene	14.83	166	2665	0.268	ng		99
65) Chlorobenzene	15.54	112	7181	0.251	ng		94
66) Ethylbenzene	15.94	91	12372	0.234	ng		97
67) m- & p-Xylenes	16.13	91	19266	0.471	ng		100
68) Bromoform	16.19	173	1967	0.239	ng		99
69) Styrene	16.51	104	7248	0.244	ng		99
70) o-Xylene	16.62	91	9619	0.231	ng		100
71) n-Nonane	16.86	43	5594	0.180	ng		95
72) 1,1,2,2-Tetrachloroethane	16.60	83	4488	0.226	ng		98
74) Cumene	17.23	105	11963	0.239	ng		99
75) alpha-Pinene	17.64	93	6179	0.235	ng		99
76) n-Propylbenzene	17.76	91	14789	0.235	ng		96
77) 3-Ethyltoluene	17.87	105	11676	0.232	ng		96
78) 4-Ethyltoluene	17.91	105	11331	0.236	ng		99
79) 1,3,5-Trimethylbenzene	17.99	105	9471	0.225	ng		100
80) alpha-Methylstyrene	18.15	118	4609	0.229	ng		96
81) 2-Ethyltoluene	18.19	105	11589	0.238	ng		98
82) 1,2,4-Trimethylbenzene	18.42	105	9523	0.228	ng		99
83) n-Decane	18.53	57	5998	0.206	ng		93
84) Benzyl Chloride	18.55	91	7626	0.196	ng		98
85) 1,3-Dichlorobenzene	18.57	146	5097	0.234	ng		98
86) 1,4-Dichlorobenzene	18.64	146	5055	0.226	ng		95
87) sec-Butylbenzene	18.70	105	13032	0.235	ng		97
88) 4-Isopropyltoluene (p-...	18.87	119	11741	0.235	ng		96
89) 1,2,3-Trimethylbenzene	18.86	105	9254	0.218	ng		99
90) 1,2-Dichlorobenzene	19.01	146	4884	0.235	ng		100
91) d-Limonene	19.02	68	3993	0.209	ng		88
92) 1,2-Dibromo-3-Chloropr...	19.47	157	1540	0.231	ng		91
93) n-Undecane	19.86	57	5434	0.173	ng		94
94) 1,2,4-Trichlorobenzene	20.81	180	2856	0.188	ng	#	91
95) Naphthalene	20.93	128	8009	0.151	ng		98
96) n-Dodecane	20.96	57	3979	0.125	ng		91
97) Hexachlorobutadiene	21.31	225	2063	0.228	ng		96
98) Cyclohexanone	16.28	55	3951	0.198	ng		95
99) tert-Butylbenzene	18.41	119	9455	0.244	ng		97
100) n-Butylbenzene	19.31	91	10581	0.222	ng		96

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061717.D
Acq On : 6 Jan 2017 20:35 Operator: SC
Sample : 0.20ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 09 08:54:24 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061718.D
Acq On : 6 Jan 2017 21:08 Operator: SC
Sample : 0.40ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

1/9/17

Quant Time: Jan 09 08:53:09 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.17	130	105240	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.14	114	523201	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	15.49	82	213358	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.95	65	161737	9.305	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 74.40%				
57) Toluene-d8 (SS2)	13.58	98	554488	13.923	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.36%				
73) Bromofluorobenzene (SS3)	17.08	174	150867	14.767	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.16%				
Target Compounds							Qvalue
2) Propene	3.91	42	5829	0.254	ng		98
3) Dichlorodifluoromethan...	4.02	85	9389	0.342	ng		99
4) Chloromethane	4.22	50	7868	0.301	ng		97
5) 1,2-Dichloro-1,1,2,2-t...	4.37	135	4622	0.410	ng		98
6) Vinyl Chloride	4.49	62	7459	0.366	ng		100
7) 1,3-Butadiene	4.67	54	5028	0.346	ng		94
8) Bromomethane	4.97	94	4232	0.350	ng		100
9) Chloroethane	5.19	64	3733	0.326	ng		96
10) Ethanol	5.37	45	16527	1.155	ng		97
11) Acetonitrile	5.59	41	9655	0.257	ng		98
12) Acrolein	5.73	56	3334	0.317	ng		94
13) Acetone	5.88	58	21585	1.669	ng		89
14) Trichlorofluoromethane	6.06	101	7615	0.344	ng		98
15) 2-Propanol (Isopropanol)	6.18	45	26109	0.575	ng		99
16) Acrylonitrile	6.39	53	6379	0.295	ng		97
17) 1,1-Dichloroethene	6.76	96	4917	0.387	ng		93
18) 2-Methyl-2-Propanol (t...	6.85	59	26477	0.686	ng	#	80
19) Methylene Chloride	6.89	84	5310	0.367	ng		97
20) 3-Chloro-1-propene (Al...	7.03	41	8010	0.277	ng		93
21) Trichlorotrifluoroethane	7.22	151	3975	0.421	ng		95
22) Carbon Disulfide	7.19	76	19446	0.345	ng		97
23) trans-1,2-Dichloroethene	7.91	61	7015	0.317	ng		95
24) 1,1-Dichloroethane	8.13	63	8729	0.308	ng		99
25) Methyl tert-Butyl Ether	8.22	73	15773	0.358	ng		99
26) Vinyl Acetate	8.31	86	5773	1.976	ng	#	84
27) 2-Butanone (MEK)	8.55	72	3654	0.397	ng	#	88
28) cis-1,2-Dichloroethene	9.00	61	6765	0.312	ng		95
29) Diisopropyl Ether	9.26	87	4417	0.383	ng		100
30) Ethyl Acetate	9.26	61	3710	0.668	ng		96
31) n-Hexane	9.26	57	9209	0.348	ng		98
32) Chloroform	9.31	83	8767	0.365	ng		95
34) Tetrahydrofuran (THF)	9.72	72	3638	0.376	ng		92
35) Ethyl tert-Butyl Ether	9.80	87	5716	0.358	ng	#	88
36) 1,2-Dichloroethane	10.06	62	5953	0.292	ng		99
38) 1,1,1-Trichloroethane	10.33	97	7121	0.366	ng		98
39) Isopropyl Acetate	10.70	61	6729	0.735	ng		97
40) 1-Butanol	10.71	56	9708	0.596	ng		90
41) Benzene	10.78	78	22772	0.388	ng		99
42) Carbon Tetrachloride	10.93	117	6027	0.371	ng		99
43) Cyclohexane	11.07	84	16002	0.803	ng		95
44) tert-Amyl Methyl Ether	11.40	73	15347	0.354	ng		98
45) 1,2-Dichloropropane	11.60	63	5205	0.351	ng		98
46) Bromodichloromethane	11.78	83	6468	0.368	ng		97
47) Trichloroethene	11.83	130	5153	0.447	ng		100
48) 1,4-Dioxane	11.82	88	4100	0.403	ng		99
49) 2,2,4-Trimethylpentane...	11.90	57	22237	0.337	ng		98

Data File: I:\MS09\Data\2017_01\06\01061718.D
Acq On : 6 Jan 2017 21:08 Operator: SC
Sample : 0.40ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 09 08:53:09 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

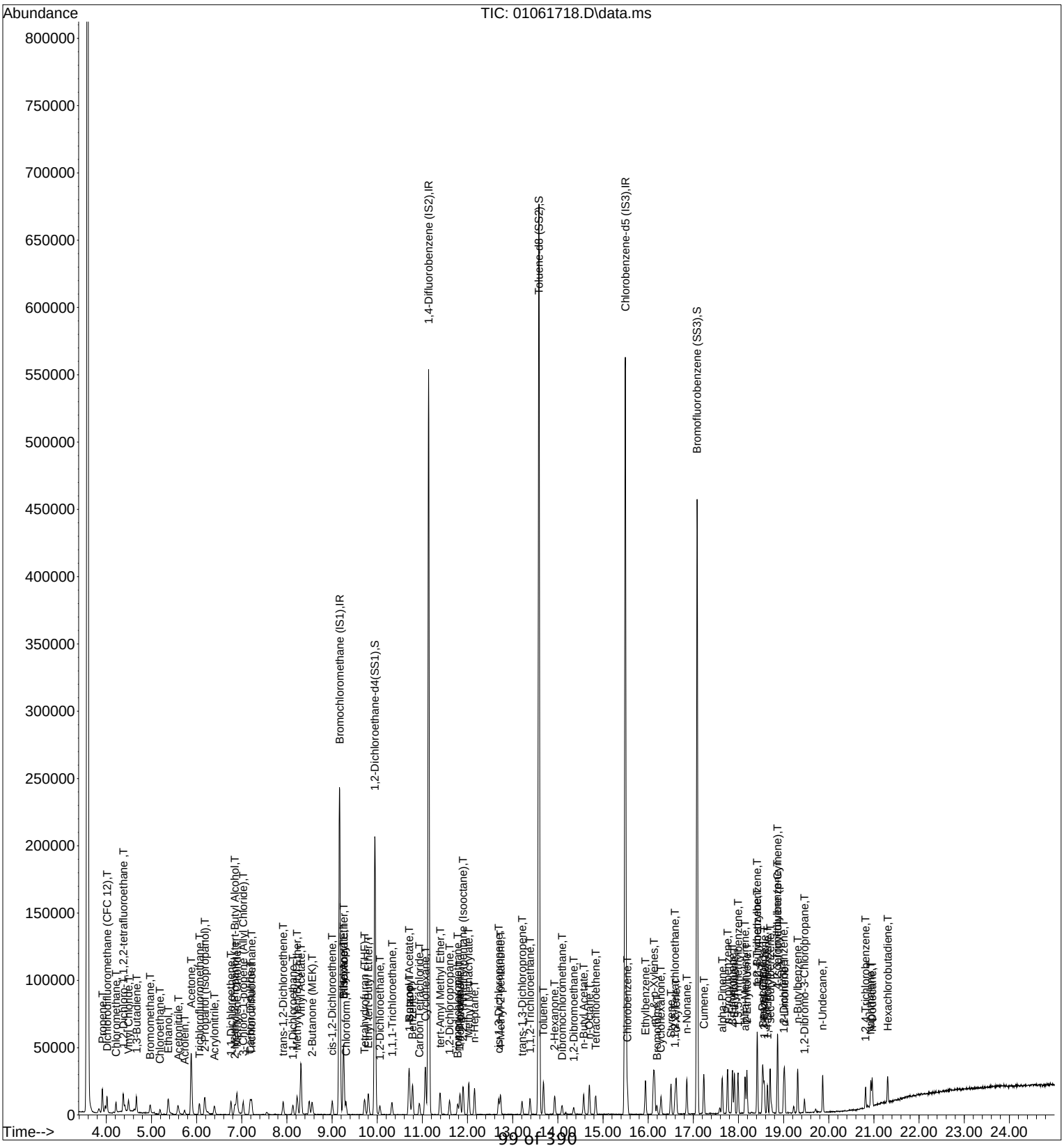
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	12.02	100	3932	0.845 ng	90
51) n-Heptane	12.15	71	5169	0.374 ng	98
52) cis-1,3-Dichloropropene	12.69	75	8774	0.392 ng	99
53) 4-Methyl-2-pentanone	12.73	58	4787	0.345 ng	91
54) trans-1,3-Dichloropropene	13.21	75	7206	0.347 ng	99
55) 1,1,2-Trichloroethane	13.39	97	4794	0.404 ng	96
58) Toluene	13.68	91	21107	0.448 ng	99
59) 2-Hexanone	13.93	43	11227	0.347 ng	96
60) Dibromochloromethane	14.09	129	4976	0.466 ng	99
61) 1,2-Dibromoethane	14.35	107	5079	0.467 ng	96
62) n-Butyl Acetate	14.57	43	12617	0.344 ng	98
63) n-Octane	14.70	57	4708	0.405 ng	94
64) Tetrachloroethene	14.84	166	5222	0.534 ng	96
65) Chlorobenzene	15.54	112	13241	0.471 ng	100
66) Ethylbenzene	15.94	91	23385	0.451 ng	99
67) m- & p-Xylenes	16.13	91	35356	0.880 ng	99
68) Bromoform	16.20	173	3928	0.485 ng	99
69) Styrene	16.51	104	13668	0.469 ng	98
70) o-Xylene	16.62	91	18055	0.442 ng	99
71) n-Nonane	16.86	43	10545	0.345 ng	96
72) 1,1,2,2-Tetrachloroethane	16.59	83	8692	0.446 ng	97
74) Cumene	17.23	105	23045	0.469 ng	98
75) alpha-Pinene	17.64	93	12309	0.477 ng	97
76) n-Propylbenzene	17.76	91	27485	0.444 ng	98
77) 3-Ethyltoluene	17.87	105	22308	0.452 ng	95
78) 4-Ethyltoluene	17.91	105	20946	0.444 ng	98
79) 1,3,5-Trimethylbenzene	17.99	105	18618	0.450 ng	99
80) alpha-Methylstyrene	18.15	118	9371	0.474 ng	98
81) 2-Ethyltoluene	18.19	105	22081	0.462 ng	99
82) 1,2,4-Trimethylbenzene	18.41	105	18535	0.452 ng	98
83) n-Decane	18.53	57	10952	0.383 ng	97
84) Benzyl Chloride	18.55	91	14810	0.387 ng	98
85) 1,3-Dichlorobenzene	18.57	146	9665	0.451 ng	96
86) 1,4-Dichlorobenzene	18.64	146	9640	0.439 ng	97
87) sec-Butylbenzene	18.70	105	25227	0.462 ng	98
88) 4-Isopropyltoluene (p-...	18.87	119	22261	0.454 ng	99
89) 1,2,3-Trimethylbenzene	18.86	105	17899	0.430 ng	96
90) 1,2-Dichlorobenzene	19.00	146	9285	0.455 ng	97
91) d-Limonene	19.02	68	7679	0.410 ng	93
92) 1,2-Dibromo-3-Chloropr...	19.46	157	3215	0.491 ng	94
93) n-Undecane	19.86	57	9685	0.315 ng	97
94) 1,2,4-Trichlorobenzene	20.82	180	5222	0.350 ng	99
95) Naphthalene	20.93	128	15584	0.300 ng	99
96) n-Dodecane	20.96	57	6930	0.222 ng	96
97) Hexachlorobutadiene	21.31	225	4054	0.456 ng	99
98) Cyclohexanone	16.28	55	6990	0.357 ng	95
99) tert-Butylbenzene	18.41	119	18214	0.478 ng	97
100) n-Butylbenzene	19.31	91	19863	0.425 ng	99

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061718.D
Acq On : 6 Jan 2017 21:08 Operator: SC
Sample : 0.40ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051709 (2/3)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 09 08:53:09 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061719.D
Acq On : 6 Jan 2017 21:42 Operator: SC
Sample : 1.0ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051706 (2/3)
ALS Vial : 10 Sample Multiplier: 1

1/9/17

Quant Time: Jan 09 08:51:46 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.17	130	106433	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.14	114	527490	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	15.49	82	213704	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.95	65	163443	9.298	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 74.40%				
57) Toluene-d8 (SS2)	13.58	98	556274	13.946	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.60%				
73) Bromofluorobenzene (SS3)	17.08	174	148790	14.540	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.32%				
Target Compounds							Qvalue
2) Propene	3.90	42	14406	0.621	ng		96
3) Dichlorodifluoromethan...	4.00	85	23768	0.856	ng		100
4) Chloromethane	4.20	50	20476	0.774	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.36	135	11408	1.000	ng		98
6) Vinyl Chloride	4.48	62	18899	0.916	ng		100
7) 1,3-Butadiene	4.65	54	12527	0.852	ng		97
8) Bromomethane	4.96	94	11209	0.917	ng		99
9) Chloroethane	5.18	64	9677	0.836	ng		98
10) Ethanol	5.37	45	43076	2.975	ng		99
11) Acetonitrile	5.58	41	23375	0.616	ng		98
12) Acrolein	5.72	56	8176	0.769	ng		99
13) Acetone	5.87	58	50869	3.889	ng		93
14) Trichlorofluoromethane	6.05	101	19573	0.876	ng		100
15) 2-Propanol (Isopropanol)	6.18	45	66436	1.447	ng		97
16) Acrylonitrile	6.39	53	16839	0.769	ng		100
17) 1,1-Dichloroethene	6.75	96	12771	0.995	ng		93
18) 2-Methyl-2-Propanol (t...	6.84	59	67507	1.729	ng		98
19) Methylene Chloride	6.89	84	13339	0.912	ng		96
20) 3-Chloro-1-propene (Al...	7.03	41	19177	0.656	ng		97
21) Trichlorotrifluoroethane	7.22	151	9827	1.030	ng		99
22) Carbon Disulfide	7.18	76	48991	0.859	ng		99
23) trans-1,2-Dichloroethene	7.91	61	18255	0.815	ng		97
24) 1,1-Dichloroethane	8.13	63	22721	0.793	ng		99
25) Methyl tert-Butyl Ether	8.21	73	37587	0.842	ng		98
26) Vinyl Acetate	8.31	86	15393	5.210	ng	#	91
27) 2-Butanone (MEK)	8.55	72	8831	0.948	ng	#	86
28) cis-1,2-Dichloroethene	9.00	61	17643	0.804	ng		98
29) Diisopropyl Ether	9.25	87	10943	0.937	ng		96
30) Ethyl Acetate	9.24	61	10045	1.788	ng		99
31) n-Hexane	9.25	57	22710	0.849	ng		99
32) Chloroform	9.31	83	21717	0.893	ng		100
34) Tetrahydrofuran (THF)	9.71	72	9364	0.957	ng		100
35) Ethyl tert-Butyl Ether	9.80	87	15093	0.935	ng		98
36) 1,2-Dichloroethane	10.06	62	15981	0.775	ng		100
38) 1,1,1-Trichloroethane	10.32	97	18485	0.943	ng		98
39) Isopropyl Acetate	10.70	61	17191	1.862	ng	#	93
40) 1-Butanol	10.71	56	24641	1.501	ng		93
41) Benzene	10.78	78	53083	0.898	ng		100
42) Carbon Tetrachloride	10.93	117	15274	0.931	ng		97
43) Cyclohexane	11.07	84	40335	2.007	ng		97
44) tert-Amyl Methyl Ether	11.39	73	36860	0.842	ng		98
45) 1,2-Dichloropropane	11.60	63	13666	0.913	ng		97
46) Bromodichloromethane	11.78	83	16584	0.937	ng		99
47) Trichloroethene	11.83	130	13314	1.146	ng		98
48) 1,4-Dioxane	11.81	88	10496	1.023	ng		97
49) 2,2,4-Trimethylpentane...	11.90	57	55935	0.842	ng		97

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061719.D
Acq On : 6 Jan 2017 21:42 Operator: SC
Sample : 1.0ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051706 (2/3)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 09 08:51:46 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

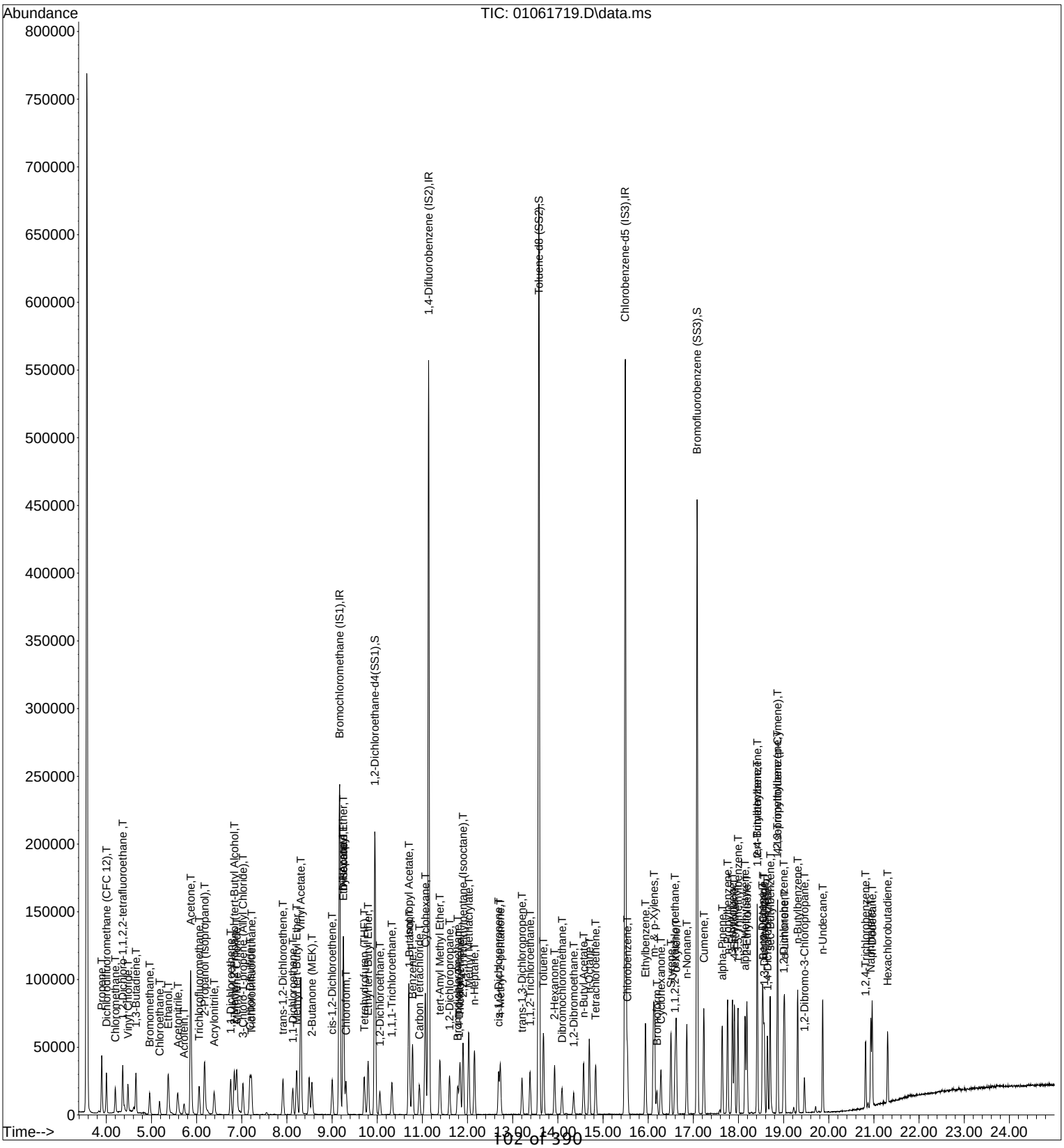
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	12.03	100	10496	2.238	ng	98
51) n-Heptane	12.15	71	13634	0.978	ng	99
52) cis-1,3-Dichloropropene	12.68	75	22708	1.006	ng	100
53) 4-Methyl-2-pentanone	12.73	58	12291	0.878	ng	97
54) trans-1,3-Dichloropropene	13.21	75	18706	0.893	ng	99
55) 1,1,2-Trichloroethane	13.39	97	12457	1.042	ng	98
58) Toluene	13.68	91	53122	1.126	ng	99
59) 2-Hexanone	13.93	43	28209	0.871	ng	98
60) Dibromochloromethane	14.09	129	13156	1.231	ng	100
61) 1,2-Dibromoethane	14.35	107	14129	1.298	ng	97
62) n-Butyl Acetate	14.57	43	32154	0.876	ng	100
63) n-Octane	14.70	57	11854	1.018	ng	95
64) Tetrachloroethene	14.83	166	13256	1.354	ng	100
65) Chlorobenzene	15.54	112	34255	1.216	ng	100
66) Ethylbenzene	15.94	91	60303	1.161	ng	98
67) m- & p-Xylenes	16.13	91	92346	2.294	ng	100
68) Bromoform	16.20	173	10348	1.277	ng	99
69) Styrene	16.51	104	35989	1.232	ng	98
70) o-Xylene	16.62	91	45967	1.125	ng	99
71) n-Nonane	16.86	43	25858	0.843	ng	99
72) 1,1,2,2-Tetrachloroethane	16.59	83	22384	1.146	ng	99
74) Cumene	17.23	105	58116	1.180	ng	100
75) alpha-Pinene	17.64	93	29302	1.133	ng	99
76) n-Propylbenzene	17.76	91	71937	1.160	ng	99
77) 3-Ethyltoluene	17.87	105	57816	1.170	ng	96
78) 4-Ethyltoluene	17.91	105	55146	1.166	ng	98
79) 1,3,5-Trimethylbenzene	17.99	105	47428	1.145	ng	99
80) alpha-Methylstyrene	18.15	118	24456	1.236	ng	100
81) 2-Ethyltoluene	18.19	105	56644	1.184	ng	99
82) 1,2,4-Trimethylbenzene	18.42	105	48743	1.186	ng	100
83) n-Decane	18.53	57	28537	0.996	ng	97
84) Benzyl Chloride	18.55	91	39710	1.037	ng	100
85) 1,3-Dichlorobenzene	18.57	146	26454	1.234	ng	98
86) 1,4-Dichlorobenzene	18.64	146	26331	1.198	ng	98
87) sec-Butylbenzene	18.70	105	65767	1.203	ng	98
88) 4-Isopropyltoluene (p-...	18.87	119	57676	1.174	ng	98
89) 1,2,3-Trimethylbenzene	18.86	105	47431	1.137	ng	99
90) 1,2-Dichlorobenzene	19.00	146	25022	1.224	ng	99
91) d-Limonene	19.02	68	19067	1.016	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.46	157	8101	1.234	ng	97
93) n-Undecane	19.87	57	29003	0.941	ng	99
94) 1,2,4-Trichlorobenzene	20.82	180	16313	1.092	ng	100
95) Naphthalene	20.93	128	52461	1.008	ng	99
96) n-Dodecane	20.96	57	25153	0.804	ng	96
97) Hexachlorobutadiene	21.30	225	10577	1.187	ng	98
98) Cyclohexanone	16.28	55	17859	0.911	ng	95
99) tert-Butylbenzene	18.41	119	46060	1.206	ng	99
100) n-Butylbenzene	19.31	91	53214	1.136	ng	99

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061719.D
Acq On : 6 Jan 2017 21:42 Operator: SC
Sample : 1.0ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051706 (2/3)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 09 08:51:46 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061720.D
Acq On : 6 Jan 2017 22:16 Operator: SC
Sample : 5.0ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051706 (2/3)
ALS Vial : 10 Sample Multiplier: 1

1/9/17

Quant Time: Jan 09 08:50:34 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.17	130	106023	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.14	114	524569	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	15.49	82	214577	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.96	65	162190	9.262	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 74.08%				
57) Toluene-d8 (SS2)	13.58	98	557304	13.915	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.28%				
73) Bromofluorobenzene (SS3)	17.08	174	151338	14.729	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.84%				
Target Compounds							Qvalue
2) Propene	3.88	42	67032	2.902	ng		96
3) Dichlorodifluoromethan...	3.99	85	110266	3.986	ng		99
4) Chloromethane	4.19	50	91672	3.480	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.36	135	52992	4.665	ng		99
6) Vinyl Chloride	4.47	62	87178	4.243	ng		99
7) 1,3-Butadiene	4.64	54	61501	4.200	ng		96
8) Bromomethane	4.95	94	47797	3.925	ng		99
9) Chloroethane	5.17	64	44317	3.842	ng		100
10) Ethanol	5.39	45	200269	13.887	ng		98
11) Acetonitrile	5.59	41	105162	2.782	ng		100
12) Acrolein	5.72	56	37491	3.538	ng		99
13) Acetone	5.87	58	224680	17.241	ng		92
14) Trichlorofluoromethane	6.05	101	88581	3.978	ng		100
15) 2-Propanol (Isopropanol)	6.19	45	292382	6.393	ng		97
16) Acrylonitrile	6.40	53	80796	3.706	ng		99
17) 1,1-Dichloroethene	6.75	96	57771	4.517	ng		94
18) 2-Methyl-2-Propanol (t...	6.85	59	278476	7.161	ng		98
19) Methylene Chloride	6.90	84	60854	4.176	ng		96
20) 3-Chloro-1-propene (Al...	7.03	41	88280	3.033	ng		99
21) Trichlorotrifluoroethane	7.21	151	46713	4.915	ng		98
22) Carbon Disulfide	7.18	76	225234	3.967	ng		100
23) trans-1,2-Dichloroethene	7.92	61	85804	3.844	ng		98
24) 1,1-Dichloroethane	8.14	63	103337	3.621	ng		100
25) Methyl tert-Butyl Ether	8.21	73	168681	3.795	ng		99
26) Vinyl Acetate	8.31	86	72402	24.602	ng	#	92
27) 2-Butanone (MEK)	8.55	72	41505	4.472	ng		97
28) cis-1,2-Dichloroethene	9.01	61	81135	3.713	ng		98
29) Diisopropyl Ether	9.25	87	48690	4.187	ng	#	92
30) Ethyl Acetate	9.25	61	45834	8.188	ng		99
31) n-Hexane	9.26	57	100545	3.775	ng		100
32) Chloroform	9.32	83	99433	4.105	ng		99
34) Tetrahydrofuran (THF)	9.71	72	41099	4.218	ng		98
35) Ethyl tert-Butyl Ether	9.80	87	70057	4.358	ng		96
36) 1,2-Dichloroethane	10.06	62	72041	3.509	ng		99
38) 1,1,1-Trichloroethane	10.33	97	83675	4.294	ng		99
39) Isopropyl Acetate	10.70	61	79678	8.678	ng	#	91
40) 1-Butanol	10.70	56	114404	7.007	ng		97
41) Benzene	10.79	78	242127	4.119	ng		99
42) Carbon Tetrachloride	10.94	117	72004	4.415	ng		100
43) Cyclohexane	11.07	84	186728	9.344	ng		99
44) tert-Amyl Methyl Ether	11.39	73	173662	3.991	ng		99
45) 1,2-Dichloropropane	11.61	63	61570	4.136	ng		100
46) Bromodichloromethane	11.79	83	78064	4.433	ng		100
47) Trichloroethene	11.84	130	59870	5.180	ng		99
48) 1,4-Dioxane	11.81	88	48406	4.745	ng		96
49) 2,2,4-Trimethylpentane...	11.90	57	258435	3.912	ng		95

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061720.D
Acq On : 6 Jan 2017 22:16 Operator: SC
Sample : 5.0ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051706 (2/3)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 09 08:50:34 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

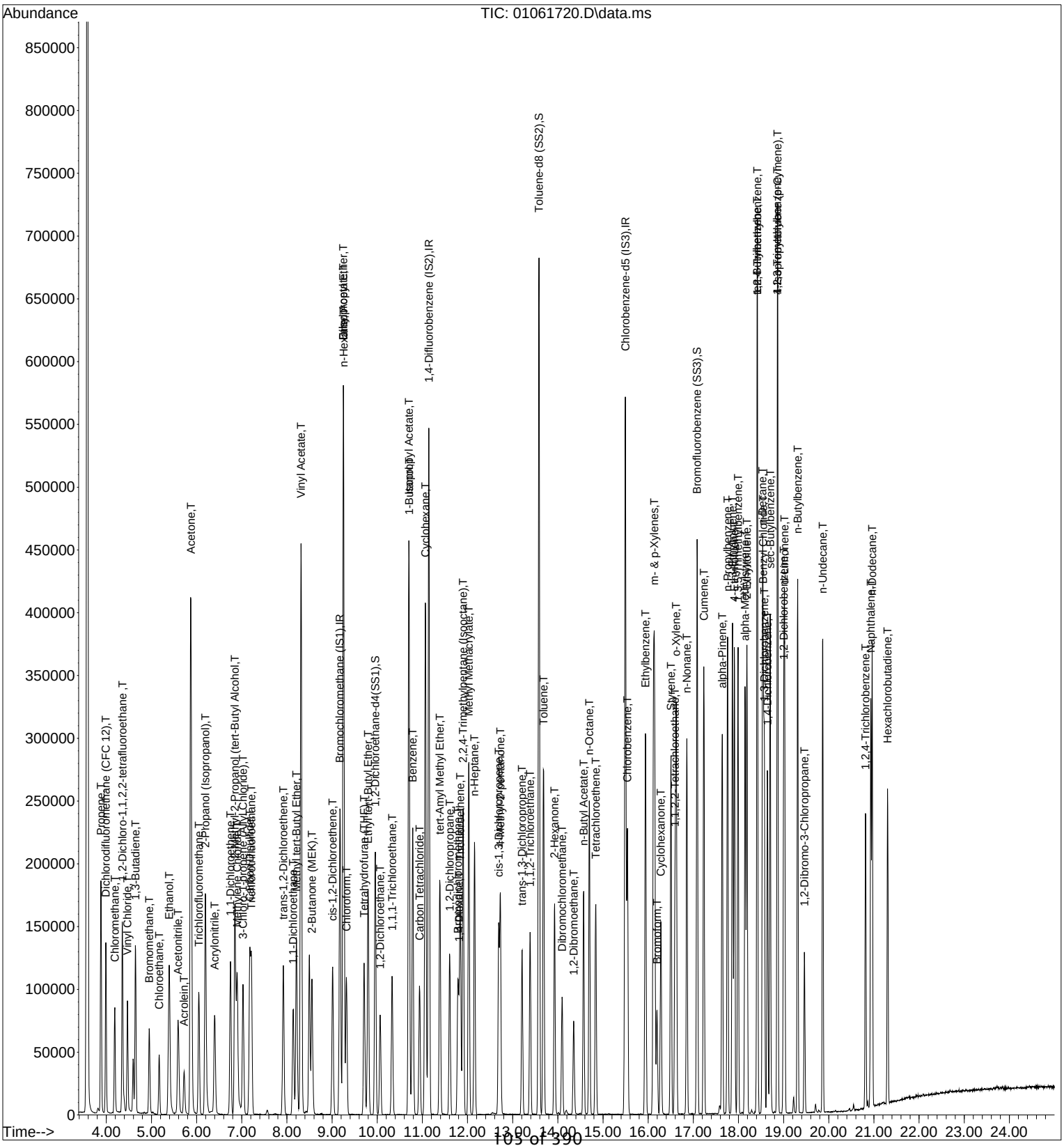
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	12.03	100	48993	10.504	ng	100
51) n-Heptane	12.15	71	61319	4.422	ng	99
52) cis-1,3-Dichloropropene	12.69	75	105254	4.691	ng	100
53) 4-Methyl-2-pentanone	12.73	58	57628	4.140	ng	98
54) trans-1,3-Dichloropropene	13.21	75	89168	4.283	ng	100
55) 1,1,2-Trichloroethane	13.39	97	56854	4.781	ng	97
58) Toluene	13.68	91	246601	5.207	ng	99
59) 2-Hexanone	13.93	43	130161	4.004	ng	99
60) Dibromochloromethane	14.09	129	62378	5.815	ng	99
61) 1,2-Dibromoethane	14.35	107	63720	5.830	ng	99
62) n-Butyl Acetate	14.57	43	147403	3.998	ng	100
63) n-Octane	14.70	57	52494	4.488	ng	99
64) Tetrachloroethene	14.84	166	60528	6.155	ng	99
65) Chlorobenzene	15.54	112	156876	5.545	ng	99
66) Ethylbenzene	15.94	91	276544	5.302	ng	99
67) m- & p-Xylenes	16.13	91	425775	10.535	ng	99
68) Bromoform	16.20	173	49261	6.052	ng	100
69) Styrene	16.51	104	170470	5.810	ng	98
70) o-Xylene	16.62	91	213000	5.189	ng	100
71) n-Nonane	16.86	43	118496	3.849	ng	99
72) 1,1,2,2-Tetrachloroethane	16.59	83	104809	5.342	ng	100
74) Cumene	17.23	105	270769	5.477	ng	98
75) alpha-Pinene	17.64	93	138798	5.345	ng	98
76) n-Propylbenzene	17.76	91	334308	5.369	ng	98
77) 3-Ethyltoluene	17.87	105	268151	5.405	ng	96
78) 4-Ethyltoluene	17.91	105	254191	5.355	ng	98
79) 1,3,5-Trimethylbenzene	17.99	105	222771	5.358	ng	99
80) alpha-Methylstyrene	18.15	118	114819	5.780	ng	100
81) 2-Ethyltoluene	18.19	105	262538	5.463	ng	99
82) 1,2,4-Trimethylbenzene	18.42	105	224767	5.445	ng	98
83) n-Decane	18.53	57	130891	4.551	ng	98
84) Benzyl Chloride	18.55	91	198981	5.176	ng	100
85) 1,3-Dichlorobenzene	18.57	146	122072	5.670	ng	100
86) 1,4-Dichlorobenzene	18.64	146	121661	5.512	ng	100
87) sec-Butylbenzene	18.70	105	301967	5.501	ng	98
88) 4-Isopropyltoluene (p-...	18.87	119	271303	5.502	ng	97
89) 1,2,3-Trimethylbenzene	18.86	105	218606	5.221	ng	98
90) 1,2-Dichlorobenzene	19.00	146	116151	5.659	ng	100
91) d-Limonene	19.02	68	89355	4.741	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.46	157	40117	6.086	ng	94
93) n-Undecane	19.87	57	135403	4.375	ng	97
94) 1,2,4-Trichlorobenzene	20.82	180	77983	5.198	ng	99
95) Naphthalene	20.93	128	256682	4.913	ng	99
96) n-Dodecane	20.96	57	117417	3.738	ng	97
97) Hexachlorobutadiene	21.30	225	50198	5.612	ng	99
98) Cyclohexanone	16.28	55	81406	4.136	ng	95
99) tert-Butylbenzene	18.41	119	214265	5.589	ng	99
100) n-Butylbenzene	19.31	91	246996	5.252	ng	100

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061720.D
Acq On : 6 Jan 2017 22:16 Operator: SC
Sample : 5.0ng TO-15 ICAL STD
Misc : S29-12071602/S29-01051706 (2/3)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 09 08:50:34 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061721.D
Acq On : 6 Jan 2017 22:49 Operator: SC
Sample : 25ng TO-15 ICAL STD
Misc : S29-12071602/S29-12301604 (12/30)
ALS Vial : 11 Sample Multiplier: 1

1/9/17

Quant Time: Jan 09 08:47:40 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Dec 20 15:20:19 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.19	130	110369	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	11.15	114	540278	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	15.49	82	222726	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.97	65	166721	9.146	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 73.20%				
57) Toluene-d8 (SS2)	13.59	98	568399	13.672	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.36%				
73) Bromofluorobenzene (SS3)	17.09	174	157485	14.766	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 118.16%				
Target Compounds							Qvalue
2) Propene	3.88	42	373832	15.545	ng		97
3) Dichlorodifluoromethan...	3.98	85	604047	20.974	ng		100
4) Chloromethane	4.19	50	520039	18.965	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	297258	25.140	ng		100
6) Vinyl Chloride	4.47	62	484949	22.673	ng		100
7) 1,3-Butadiene	4.65	54	366052	24.013	ng		98
8) Bromomethane	4.96	94	270962	21.375	ng		100
9) Chloroethane	5.18	64	249042	20.738	ng		99
10) Ethanol	5.44	45	1259236	83.880	ng		100
11) Acetonitrile	5.62	41	627058	15.937	ng		99
12) Acrolein	5.74	56	214442	19.441	ng		98
13) Acetone	5.89	58	1227587	90.493	ng		90
14) Trichlorofluoromethane	6.05	101	486912	21.004	ng		99
15) 2-Propanol (Isopropanol)	6.23	45	1659694	34.863	ng		96
16) Acrylonitrile	6.42	53	471557	20.778	ng		99
17) 1,1-Dichloroethene	6.75	96	324627	24.382	ng		94
18) 2-Methyl-2-Propanol (t...	6.88	59	1653271	40.840	ng		98
19) Methylene Chloride	6.92	84	340389	22.438	ng		97
20) 3-Chloro-1-propene (Al...	7.04	41	494989	16.337	ng		97
21) Trichlorotrifluoroethane	7.22	151	263357	26.618	ng		98
22) Carbon Disulfide	7.18	76	1263082	21.369	ng		100
23) trans-1,2-Dichloroethene	7.94	61	490392	21.106	ng		99
24) 1,1-Dichloroethane	8.16	63	576986	19.424	ng		100
25) Methyl tert-Butyl Ether	8.22	73	922310	19.933	ng		98
26) Vinyl Acetate	8.33	86	415286	135.557	ng	#	91
27) 2-Butanone (MEK)	8.57	72	235481	24.372	ng		99
28) cis-1,2-Dichloroethene	9.03	61	462500	20.332	ng		98
29) Diisopropyl Ether	9.26	87	269064	22.225	ng	#	96
30) Ethyl Acetate	9.26	61	254606	43.694	ng		100
31) n-Hexane	9.26	57	517339	18.658	ng		99
32) Chloroform	9.33	83	556228	22.058	ng		99
34) Tetrahydrofuran (THF)	9.71	72	230375	22.711	ng		100
35) Ethyl tert-Butyl Ether	9.81	87	394179	23.555	ng		99
36) 1,2-Dichloroethane	10.08	62	406361	19.013	ng		100
38) 1,1,1-Trichloroethane	10.34	97	470497	23.444	ng		98
39) Isopropyl Acetate	10.71	61	434266	45.923	ng	#	90
40) 1-Butanol	10.72	56	736722	43.810	ng		96
41) Benzene	10.80	78	1314635	21.716	ng		100
42) Carbon Tetrachloride	10.95	117	404590	24.086	ng		99
43) Cyclohexane	11.08	84	1028293	49.962	ng		100
44) tert-Amyl Methyl Ether	11.39	73	966213	21.559	ng		99
45) 1,2-Dichloropropane	11.61	63	342874	22.365	ng		100
46) Bromodichloromethane	11.79	83	442207	24.382	ng		100
47) Trichloroethene	11.84	130	341832	28.715	ng		100
48) 1,4-Dioxane	11.82	88	286843	27.299	ng		98
49) 2,2,4-Trimethylpentane...	11.91	57	1425010	20.942	ng		95

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061721.D
Acq On : 6 Jan 2017 22:49 Operator: SC
Sample : 25ng TO-15 ICAL STD
Misc : S29-12071602/S29-12301604 (12/30)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 09 08:47:40 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Dec 20 15:20:19 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

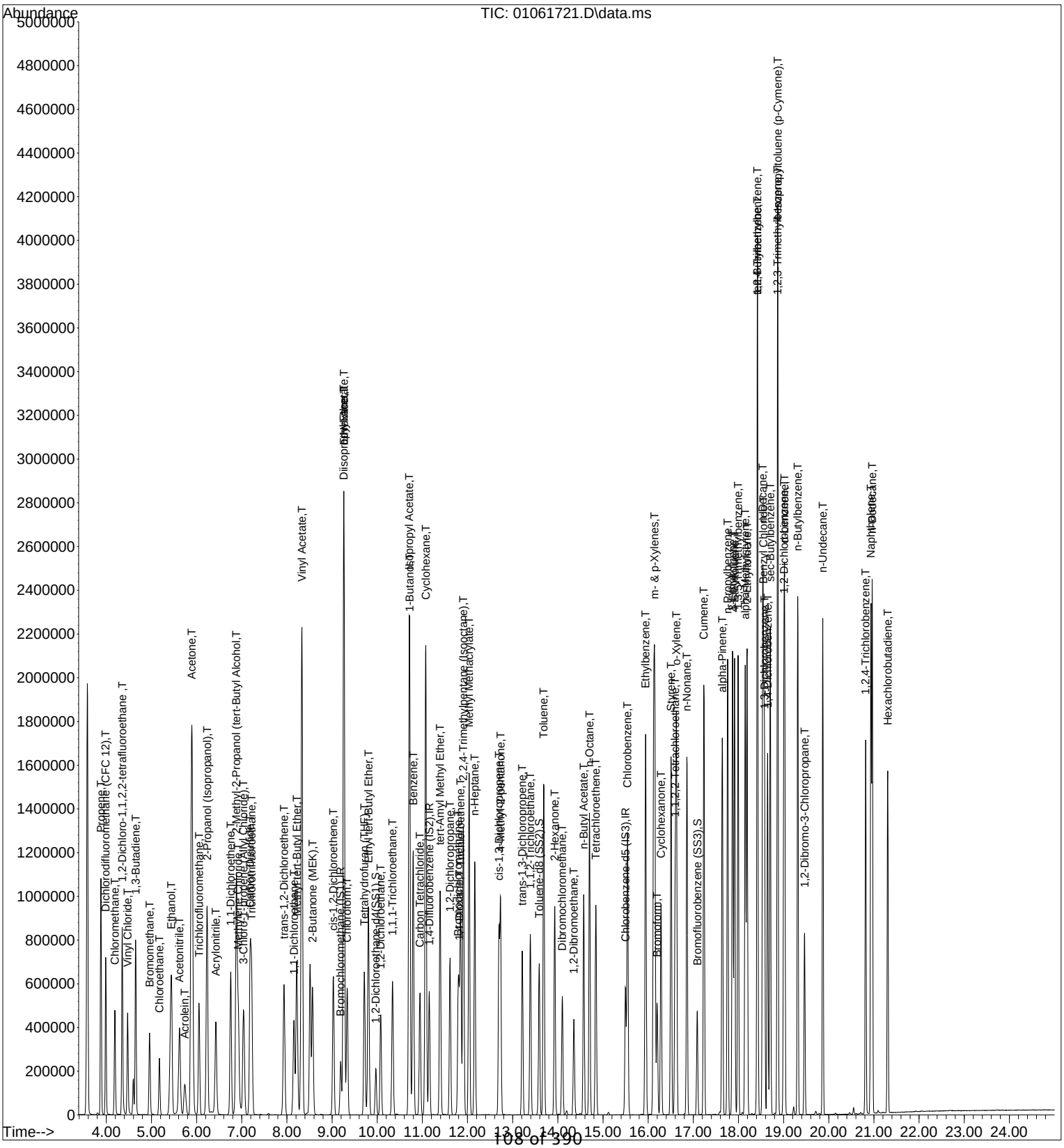
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	12.03	100	280485	58.389	ng	97
51) n-Heptane	12.16	71	333149	23.327	ng	100
52) cis-1,3-Dichloropropene	12.69	75	602274	26.063	ng	99
53) 4-Methyl-2-pentanone	12.73	58	327933	22.872	ng	95
54) trans-1,3-Dichloropropene	13.21	75	518913	24.199	ng	100
55) 1,1,2-Trichloroethane	13.39	97	324272	26.476	ng	98
58) Toluene	13.68	91	1354373	27.550	ng	100
59) 2-Hexanone	13.93	43	734836	21.779	ng	98
60) Dibromochloromethane	14.10	129	366209	32.888	ng	100
61) 1,2-Dibromoethane	14.36	107	370035	32.616	ng	99
62) n-Butyl Acetate	14.57	43	827575	21.626	ng	99
63) n-Octane	14.70	57	293081	24.140	ng	98
64) Tetrachloroethene	14.84	166	343914	33.695	ng	99
65) Chlorobenzene	15.54	112	898971	30.614	ng	99
66) Ethylbenzene	15.94	91	1542526	28.490	ng	100
67) m- & p-Xylenes	16.14	91	2390265	56.979	ng	99
68) Bromoform	16.20	173	306145	36.236	ng	100
69) Styrene	16.51	104	983085	32.281	ng	99
70) o-Xylene	16.62	91	1214113	28.498	ng	100
71) n-Nonane	16.86	43	643934	20.153	ng	98
72) 1,1,2,2-Tetrachloroethane	16.60	83	609566	29.934	ng	100
74) Cumene	17.23	105	1510659	29.439	ng	100
75) alpha-Pinene	17.64	93	800113	29.687	ng	98
76) n-Propylbenzene	17.76	91	1863176	28.829	ng	99
77) 3-Ethyltoluene	17.87	105	1561473	30.322	ng	97
78) 4-Ethyltoluene	17.91	105	1399536	28.403	ng	96
79) 1,3,5-Trimethylbenzene	17.99	105	1258558	29.161	ng	98
80) alpha-Methylstyrene	18.15	118	684089	33.175	ng	99
81) 2-Ethyltoluene	18.19	105	1485665	29.785	ng	99
82) 1,2,4-Trimethylbenzene	18.42	105	1277805	29.823	ng	98
83) n-Decane	18.54	57	725256	24.295	ng	97
84) Benzyl Chloride	18.55	91	1239047	31.052	ng	99
85) 1,3-Dichlorobenzene	18.58	146	724854	32.433	ng	99
86) 1,4-Dichlorobenzene	18.65	146	732757	31.982	ng	99
87) sec-Butylbenzene	18.70	105	1686396	29.599	ng	99
88) 4-Isopropyltoluene (p-...	18.87	119	1533407	29.959	ng	98
89) 1,2,3-Trimethylbenzene	18.87	105	1261078	29.017	ng	98
90) 1,2-Dichlorobenzene	19.01	146	697203	32.724	ng	99
91) d-Limonene	19.02	68	521399	26.653	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.47	157	266604	38.969	ng	93
93) n-Undecane	19.87	57	777309	24.197	ng	99
94) 1,2,4-Trichlorobenzene	20.82	180	555773	35.691	ng	100
95) Naphthalene	20.93	128	1857485	34.255	ng	100
96) n-Dodecane	20.96	57	785311	24.083	ng	98
97) Hexachlorobutadiene	21.31	225	317890	34.236	ng	99
98) Cyclohexanone	16.28	55	499023	24.425	ng	95
99) tert-Butylbenzene	18.42	119	1209242	30.388	ng	100
100) n-Butylbenzene	19.31	91	1405167	28.783	ng	100

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061721.D
Acq On : 6 Jan 2017 22:49 Operator: SC
Sample : 25ng TO-15 ICAL STD
Misc : S29-12071602/S29-12301604 (12/30)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 09 08:47:40 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Dec 20 15:20:19 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061722.D
Acq On : 6 Jan 2017 23:22 Operator: SC
Sample : 50ng TO-15 ICAL STD
Misc : S29-12071602/S29-12301604 (12/30)
ALS Vial : 11 Sample Multiplier: 1

1/9/17

Quant Time: Jan 09 09:04:15 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.20	130	112141	12.500	ng		0.01
37) 1,4-Difluorobenzene (IS2)	11.16	114	556088	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	15.50	82	226975	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.98	65	171387	9.253	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 74.00%				
57) Toluene-d8 (SS2)	13.59	98	582517	13.750	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.00%				
73) Bromofluorobenzene (SS3)	17.09	174	160199	14.740	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.92%				
Target Compounds							Qvalue
2) Propene	3.88	42	810921	33.187	ng		97
3) Dichlorodifluoromethan...	3.99	85	1148508	39.249	ng		100
4) Chloromethane	4.19	50	970698	34.841	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	582660	48.499	ng		99
6) Vinyl Chloride	4.47	62	943142	43.397	ng		100
7) 1,3-Butadiene	4.65	54	707175	45.658	ng		99
8) Bromomethane	4.96	94	526776	40.898	ng		99
9) Chloroethane	5.18	64	480255	39.360	ng		100
10) Ethanol	5.47	45	2392049	156.820	ng		100
11) Acetonitrile	5.64	41	1214694	30.385	ng		99
12) Acrolein	5.74	56	417563	37.258	ng		99
13) Acetone	5.91	58	2308052	167.452	ng		88
14) Trichlorofluoromethane	6.06	101	946677	40.191	ng		99
15) 2-Propanol (Isopropanol)	6.25	45	2758977	57.039	ng		96
16) Acrylonitrile	6.44	53	914712	39.668	ng		100
17) 1,1-Dichloroethene	6.76	96	631993	46.717	ng		94
18) 2-Methyl-2-Propanol (t...	6.90	59	2521037	61.292	ng		99
19) Methylene Chloride	6.93	84	661302	42.903	ng		96
20) 3-Chloro-1-propene (Al...	7.05	41	951579	30.910	ng		96
21) Trichlorotrifluoroethane	7.22	151	516483	51.377	ng		97
22) Carbon Disulfide	7.19	76	2427951	40.427	ng		100
23) trans-1,2-Dichloroethene	7.95	61	957110	40.542	ng		98
24) 1,1-Dichloroethane	8.16	63	1125053	37.276	ng		100
25) Methyl tert-Butyl Ether	8.22	73	1703299	36.231	ng		98
26) Vinyl Acetate	8.34	86	789287	253.566	ng	#	81
27) 2-Butanone (MEK)	8.58	72	458786	46.734	ng		98
28) cis-1,2-Dichloroethene	9.03	61	899540	38.920	ng		98
29) Diisopropyl Ether	9.27	87	510620	41.512	ng	#	86
30) Ethyl Acetate	9.28	61	469810	79.352	ng		97
31) n-Hexane	9.26	57	950059	33.723	ng		99
32) Chloroform	9.34	83	1075594	41.981	ng		100
34) Tetrahydrofuran (THF)	9.72	72	450812	43.740	ng		98
35) Ethyl tert-Butyl Ether	9.81	87	771085	45.350	ng		99
36) 1,2-Dichloroethane	10.09	62	791379	36.441	ng		100
38) 1,1,1-Trichloroethane	10.34	97	912241	44.162	ng		99
39) Isopropyl Acetate	10.71	61	814467	83.681	ng	#	86
40) 1-Butanol	10.74	56	1380881	79.782	ng		95
41) Benzene	10.80	78	2522673	40.486	ng		100
42) Carbon Tetrachloride	10.95	117	792267	45.823	ng		100
43) Cyclohexane	11.08	84	1962678	92.650	ng		99
44) tert-Amyl Methyl Ether	11.40	73	1871501	40.571	ng		99
45) 1,2-Dichloropropane	11.62	63	663288	42.036	ng		100
46) Bromodichloromethane	11.80	83	855658	45.837	ng		99
47) Trichloroethene	11.85	130	669825	54.668	ng		100
48) 1,4-Dioxane	11.82	88	556653	51.471	ng		98
49) 2,2,4-Trimethylpentane...	11.91	57	2719710	38.832	ng		95

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061722.D
Acq On : 6 Jan 2017 23:22 Operator: SC
Sample : 50ng TO-15 ICAL STD
Misc : S29-12071602/S29-12301604 (12/30)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 09 09:04:15 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

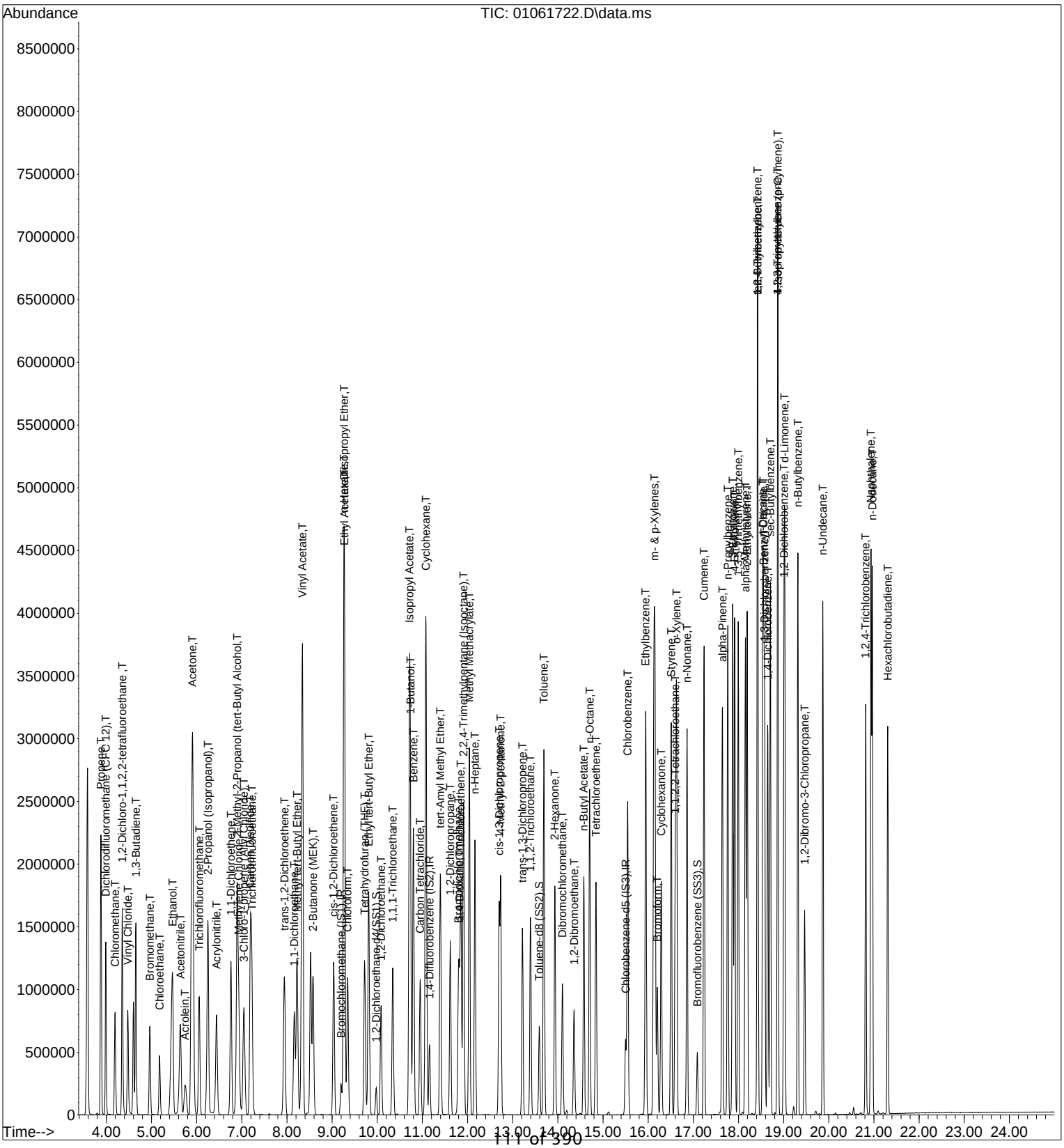
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	12.04	100	543291	109.882	ng	95
51) n-Heptane	12.16	71	639408	43.499	ng	100
52) cis-1,3-Dichloropropene	12.70	75	1165689	49.010	ng	100
53) 4-Methyl-2-pentanone	12.74	58	626017	42.422	ng	95
54) trans-1,3-Dichloropropene	13.22	75	1011631	45.836	ng	100
55) 1,1,2-Trichloroethane	13.39	97	628001	49.817	ng	98
58) Toluene	13.69	91	2592838	51.755	ng	99
59) 2-Hexanone	13.93	43	1395169	40.576	ng	97
60) Dibromochloromethane	14.10	129	716937	63.180	ng	100
61) 1,2-Dibromoethane	14.36	107	718352	62.132	ng	99
62) n-Butyl Acetate	14.58	43	1575059	40.389	ng	98
63) n-Octane	14.71	57	561819	45.409	ng	100
64) Tetrachloroethene	14.84	166	667947	64.216	ng	100
65) Chlorobenzene	15.55	112	1736960	58.044	ng	100
66) Ethylbenzene	15.94	91	2930382	53.110	ng	100
67) m- & p-Xylenes	16.14	91	4530964	105.987	ng	99
68) Bromoform	16.20	173	602613	69.990	ng	100
69) Styrene	16.51	104	1879104	60.547	ng	99
70) o-Xylene	16.63	91	2304594	53.081	ng	99
71) n-Nonane	16.86	43	1196998	36.760	ng	97
72) 1,1,2,2-Tetrachloroethane	16.60	83	1162088	55.998	ng	99
74) Cumene	17.24	105	2865906	54.804	ng	99
75) alpha-Pinene	17.65	93	1530371	55.719	ng	99
76) n-Propylbenzene	17.76	91	3487595	52.954	ng	99
77) 3-Ethyltoluene	17.87	105	2883972	54.954	ng	98
78) 4-Ethyltoluene	17.91	105	2736022	54.488	ng	95
79) 1,3,5-Trimethylbenzene	18.00	105	2399315	54.552	ng	98
80) alpha-Methylstyrene	18.16	118	1311701	62.421	ng	99
81) 2-Ethyltoluene	18.19	105	2813797	55.356	ng	99
82) 1,2,4-Trimethylbenzene	18.42	105	2366269	54.192	ng	98
83) n-Decane	18.54	57	1327054	43.622	ng	100
84) Benzyl Chloride	18.56	91	2336884	57.468	ng	97
85) 1,3-Dichlorobenzene	18.58	146	1394111	61.211	ng	100
86) 1,4-Dichlorobenzene	18.65	146	1406581	60.242	ng	99
87) sec-Butylbenzene	18.71	105	3171896	54.630	ng	99
88) 4-Isopropyltoluene (p-...	18.87	119	2780672	53.311	ng	98
89) 1,2,3-Trimethylbenzene	18.87	105	2327362	52.549	ng	98
90) 1,2-Dichlorobenzene	19.01	146	1334160	61.448	ng	99
91) d-Limonene	19.02	68	967005	48.507	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.47	157	520554	74.664	ng	91
93) n-Undecane	19.87	57	1442630	44.068	ng	100
94) 1,2,4-Trichlorobenzene	20.82	180	1086821	68.487	ng	100
95) Naphthalene	20.93	128	3516032	63.628	ng	100
96) n-Dodecane	20.97	57	1451561	43.682	ng	100
97) Hexachlorobutadiene	21.31	225	626345	66.193	ng	99
98) Cyclohexanone	16.29	55	955597	45.897	ng	95
99) tert-Butylbenzene	18.42	119	2222076	54.795	ng	99
100) n-Butylbenzene	19.32	91	2622987	52.722	ng	99

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061722.D
Acq On : 6 Jan 2017 23:22 Operator: SC
Sample : 50ng TO-15 ICAL STD
Misc : S29-12071602/S29-12301604 (12/30)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 09 09:04:15 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061723.D
Acq On : 6 Jan 2017 23:56 Operator: SC
Sample : 100ng TO-15 ICAL STD
Misc : S29-12071602/S29-12301604 (12/30)
ALS Vial : 11 Sample Multiplier: 1

1/9/17

Quant Time: Jan 09 09:05:39 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.21	130	115015	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	11.16	114	560907	12.500	ng		0.01
56) Chlorobenzene-d5 (IS3)	15.50	82	229622	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.99	65	171206	9.013	ng		0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 72.08%				
57) Toluene-d8 (SS2)	13.59	98	588233	13.724	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.76%				
73) Bromofluorobenzene (SS3)	17.09	174	161797	14.715	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 117.76%				
Target Compounds							Qvalue
2) Propene	3.89	42	1700811	67.866	ng		97
3) Dichlorodifluoromethan...	4.00	85	2163475	72.088	ng		99
4) Chloromethane	4.20	50	1735882	60.749	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.36	135	1114466	90.447	ng		100
6) Vinyl Chloride	4.48	62	1776826	79.715	ng		100
7) 1,3-Butadiene	4.66	54	1310224	82.480	ng		98
8) Bromomethane	4.97	94	1011972	76.604	ng		99
9) Chloroethane	5.19	64	814933	65.120	ng		100
10) Ethanol	5.49	45	4378783	279.896	ng		100
11) Acetonitrile	5.66	41	2341003	57.095	ng		99
12) Acrolein	5.76	56	813696	70.790	ng		99
13) Acetone	5.93	58	4151584	293.676	ng		88
14) Trichlorofluoromethane	6.06	101	1846490	76.434	ng		100
15) 2-Propanol (Isopropanol)	6.27	45	4302497	86.727	ng		96
16) Acrylonitrile	6.46	53	1768580	74.782	ng		100
17) 1,1-Dichloroethene	6.76	96	1237503	89.190	ng		93
18) 2-Methyl-2-Propanol (t...	6.91	59	3511808	83.247	ng		99
19) Methylene Chloride	6.94	84	1276883	80.770	ng		95
20) 3-Chloro-1-propene (Al...	7.05	41	1820791	57.667	ng		94
21) Trichlorotrifluoroethane	7.23	151	1017146	98.651	ng		95
22) Carbon Disulfide	7.20	76	4583554	74.412	ng		100
23) trans-1,2-Dichloroethene	7.95	61	1858146	76.742	ng		98
24) 1,1-Dichloroethane	8.17	63	2173851	70.225	ng		100
25) Methyl tert-Butyl Ether	8.23	73	2754182	57.120	ng		98
26) Vinyl Acetate	8.36	86	1434658	449.382	ng	#	68
27) 2-Butanone (MEK)	8.60	72	894934	88.884	ng		94
28) cis-1,2-Dichloroethene	9.04	61	1738789	73.352	ng		97
29) Diisopropyl Ether	9.27	87	917837	72.752	ng	#	77
30) Ethyl Acetate	9.29	61	816782	134.509	ng		94
31) n-Hexane	9.27	57	1654257	57.252	ng		99
32) Chloroform	9.36	83	2071278	78.822	ng		100
34) Tetrahydrofuran (THF)	9.73	72	875569	82.830	ng		97
35) Ethyl tert-Butyl Ether	9.82	87	1496719	85.828	ng		97
36) 1,2-Dichloroethane	10.09	62	1539333	69.112	ng		100
38) 1,1,1-Trichloroethane	10.35	97	1748454	83.917	ng		99
39) Isopropyl Acetate	10.72	61	1459282	148.643	ng	#	84
40) 1-Butanol	10.76	56	2515643	144.095	ng		95
41) Benzene	10.81	78	4754793	75.653	ng		99
42) Carbon Tetrachloride	10.96	117	1538232	88.204	ng		100
43) Cyclohexane	11.08	84	3549435	166.115	ng		97
44) tert-Amyl Methyl Ether	11.41	73	3564197	76.601	ng		99
45) 1,2-Dichloropropane	11.62	63	1262353	79.314	ng		99
46) Bromodichloromethane	11.81	83	1640036	87.101	ng		99
47) Trichloroethene	11.86	130	1299363	105.138	ng		100
48) 1,4-Dioxane	11.83	88	1049849	96.241	ng		99
49) 2,2,4-Trimethylpentane...	11.92	57	5037238	71.304	ng		96

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061723.D
Acq On : 6 Jan 2017 23:56 Operator: SC
Sample : 100ng TO-15 ICAL STD
Misc : S29-12071602/S29-12301604 (12/30)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 09 09:05:39 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

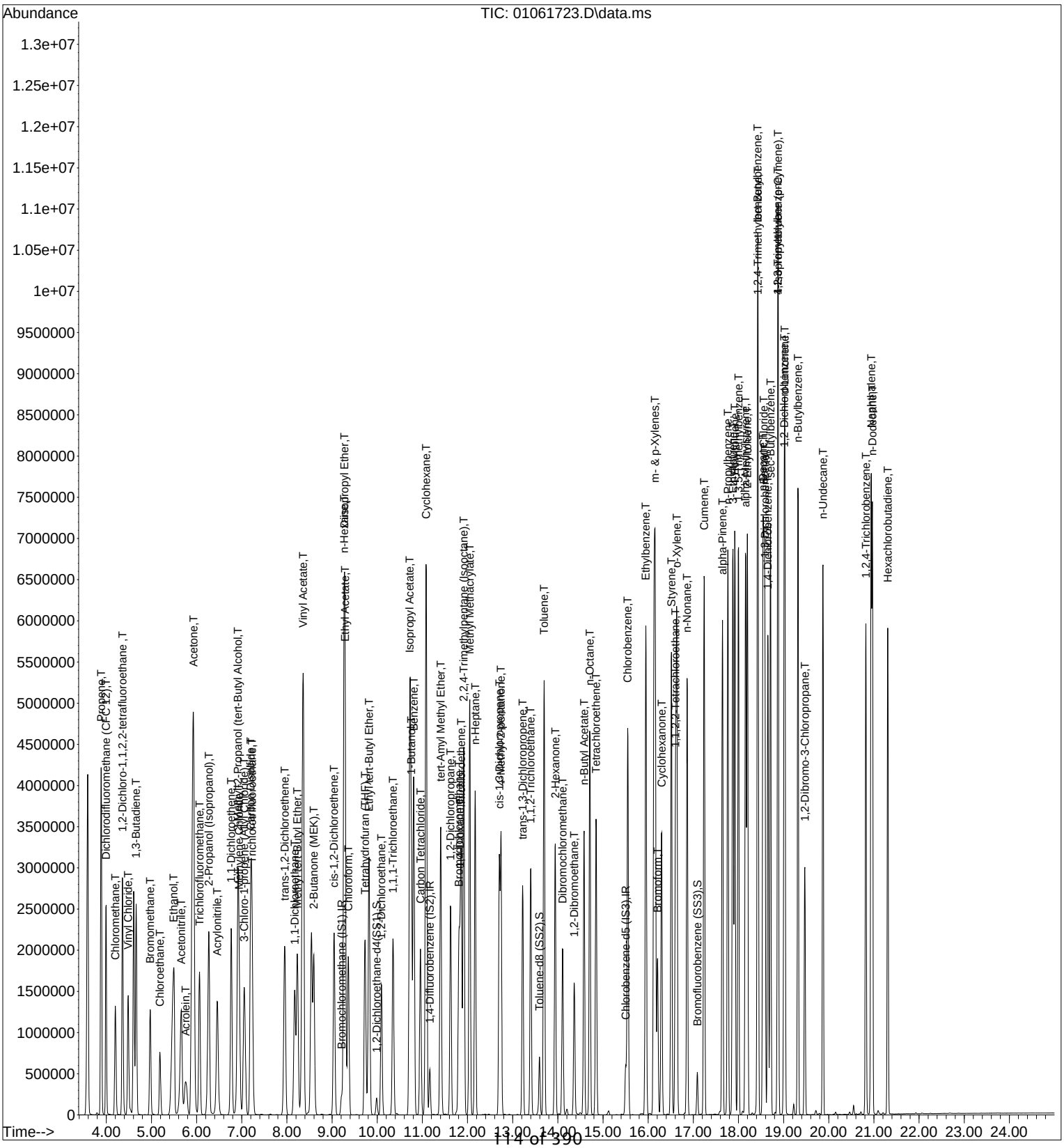
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	12.05	100	1020796	204.686	ng	91
51) n-Heptane	12.17	71	1207030	81.409	ng	99
52) cis-1,3-Dichloropropene	12.71	75	2221306	92.590	ng	100
53) 4-Methyl-2-pentanone	12.74	58	1174374	78.897	ng	93
54) trans-1,3-Dichloropropene	13.22	75	1951407	87.657	ng	100
55) 1,1,2-Trichloroethane	13.40	97	1205157	94.780	ng	98
58) Toluene	13.70	91	4827028	95.240	ng	99
59) 2-Hexanone	13.94	43	2579968	74.169	ng	96
60) Dibromochloromethane	14.11	129	1399353	121.897	ng	100
61) 1,2-Dibromoethane	14.36	107	1384584	118.375	ng	99
62) n-Butyl Acetate	14.58	43	2907487	73.697	ng	97
63) n-Octane	14.71	57	1032437	82.485	ng	98
64) Tetrachloroethene	14.85	166	1305587	124.072	ng	99
65) Chlorobenzene	15.55	112	3301915	109.068	ng	100
66) Ethylbenzene	15.95	91	5419154	97.084	ng	98
67) m- & p-Xylenes	16.15	91	8229297	190.278	ng	99
68) Bromoform	16.21	173	1181363	135.628	ng	99
69) Styrene	16.52	104	3484553	110.983	ng	99
70) o-Xylene	16.63	91	4218307	96.040	ng	98
71) n-Nonane	16.86	43	2114506	64.188	ng	94
72) 1,1,2,2-Tetrachloroethane	16.60	83	2121503	101.052	ng	99
74) Cumene	17.24	105	5254884	99.330	ng	98
75) alpha-Pinene	17.65	93	2824719	101.659	ng	100
76) n-Propylbenzene	17.76	91	6278969	94.238	ng	97
77) 3-Ethyltoluene	17.88	105	5353716	100.840	ng	99
78) 4-Ethyltoluene	17.92	105	4897770	96.414	ng	95
79) 1,3,5-Trimethylbenzene	18.00	105	4406160	99.025	ng	97
80) alpha-Methylstyrene	18.16	118	2443170	114.925	ng	98
81) 2-Ethyltoluene	18.20	105	5147505	100.100	ng	98
82) 1,2,4-Trimethylbenzene	18.43	105	3989598	90.316	ng	99
83) n-Decane	18.54	57	2243899	72.910	ng	98
84) Benzyl Chloride	18.56	91	4087140	99.351	ng	95
85) 1,3-Dichlorobenzene	18.58	146	2595832	112.662	ng	100
86) 1,4-Dichlorobenzene	18.65	146	2657496	112.505	ng	100
87) sec-Butylbenzene	18.71	105	5692004	96.904	ng	98
88) 4-Isopropyltoluene (p-...	18.88	119	4545590	86.144	ng	99
89) 1,2,3-Trimethylbenzene	18.87	105	3900573	87.055	ng	100
90) 1,2-Dichlorobenzene	19.01	146	2400983	109.309	ng	100
91) d-Limonene	19.03	68	1633009	80.970	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.47	157	1007859	142.892	ng	90
93) n-Undecane	19.87	57	2511272	75.827	ng	99
94) 1,2,4-Trichlorobenzene	20.82	180	2062062	128.445	ng	100
95) Naphthalene	20.94	128	6294876	112.602	ng	99
96) n-Dodecane	20.97	57	2462322	73.245	ng	98
97) Hexachlorobutadiene	21.31	225	1214848	126.907	ng	99
98) Cyclohexanone	16.30	55	1794142	85.180	ng	96
99) tert-Butylbenzene	18.42	119	3748884	91.379	ng	99
100) n-Butylbenzene	19.32	91	4650769	92.403	ng	97

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061723.D
Acq On : 6 Jan 2017 23:56 Operator: SC
Sample : 100ng TO-15 ICAL STD
Misc : S29-12071602/S29-12301604 (12/30)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 09 09:05:39 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 08:50:05 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061725.D
Acq On : 7 Jan 2017 1:03 Operator: SC
Sample : 25ng TO-15 ICV STD
Misc : S29-12071602/S29-01051702 (2/3)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 09 09:29:47 2017 1/9/17
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 09:09:36 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.19	130	110992	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.15	114	543026	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	15.49	82	221782	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.97	65	168087	12.358	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.88%				
57) Toluene-d8 (SS2)	13.59	98	571921	12.470	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
73) Bromofluorobenzene (SS3)	17.09	174	157050	12.639	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.12%				
Target Compounds							Qvalue
2) Propene	3.88	42	380261	23.201	ng		97
3) Dichlorodifluoromethan...	3.99	85	625786	26.008	ng		100
4) Chloromethane	4.19	50	550238	26.028	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	323779	26.306	ng		100
6) Vinyl Chloride	4.47	62	527951	26.959	ng		100
7) 1,3-Butadiene	4.65	54	378368	28.374	ng		98
8) Bromomethane	4.95	94	296650	25.570	ng		100
9) Chloroethane	5.18	64	267617	27.181	ng		100
10) Ethanol	5.44	45	1326298	144.543	ng		100
11) Acetonitrile	5.62	41	647403	25.914	ng		99
12) Acrolein	5.74	56	227152	26.364	ng		99
13) Acetone	5.89	58	1281579	121.970	ng		89
14) Trichlorofluoromethane	6.05	101	507974	26.174	ng		99
15) 2-Propanol (Isopropanol)	6.23	45	1753716	55.707	ng		96
16) Acrylonitrile	6.42	53	489914	28.950	ng		100
17) 1,1-Dichloroethene	6.75	96	339912	26.830	ng		93
18) 2-Methyl-2-Propanol (t...	6.88	59	1745573	57.339	ng		98
19) Methylene Chloride	6.92	84	356126	26.145	ng		97
20) 3-Chloro-1-propene (Al...	7.04	41	535259	26.398	ng		96
21) Trichlorotrifluoroethane	7.22	151	276963	27.971	ng		97
22) Carbon Disulfide	7.18	76	1325534	25.994	ng		100
23) trans-1,2-Dichloroethene	7.94	61	509959	28.000	ng		98
24) 1,1-Dichloroethane	8.16	63	622279	26.705	ng		99
25) Methyl tert-Butyl Ether	8.22	73	984696	26.634	ng		98
26) Vinyl Acetate	8.33	86	432946	145.364	ng	#	91
27) 2-Butanone (MEK)	8.57	72	246157	27.396	ng		100
28) cis-1,2-Dichloroethene	9.03	61	478138	27.527	ng		98
29) Diisopropyl Ether	9.26	87	279598	26.285	ng	#	94
30) Ethyl Acetate	9.27	61	262538	56.497	ng		100
31) n-Hexane	9.26	57	520524	23.444	ng		99
32) Chloroform	9.33	83	574788	26.703	ng		100
34) Tetrahydrofuran (THF)	9.71	72	239802	25.529	ng		99
35) Ethyl tert-Butyl Ether	9.80	87	412391	27.262	ng		99
36) 1,2-Dichloroethane	10.08	62	425612	27.531	ng		99
38) 1,1,1-Trichloroethane	10.34	97	481831	26.848	ng		99
39) Isopropyl Acetate	10.71	61	447444	54.328	ng	#	91
40) 1-Butanol	10.72	56	789396	59.107	ng		94
41) Benzene	10.80	78	1382740	24.743	ng		100
42) Carbon Tetrachloride	10.95	117	423463	27.636	ng		100
43) Cyclohexane	11.07	84	1063676	54.073	ng		100
44) tert-Amyl Methyl Ether	11.39	73	1010599	26.388	ng		99
45) 1,2-Dichloropropane	11.61	63	353716	27.106	ng		100
46) Bromodichloromethane	11.79	83	461954	28.410	ng		100
47) Trichloroethene	11.85	130	358578	27.272	ng		100
48) 1,4-Dioxane	11.82	88	298487	28.934	ng		99
49) 2,2,4-Trimethylpentane...	11.91	57	1473556	26.222	ng		95

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061725.D
Acq On : 7 Jan 2017 1:03 Operator: SC
Sample : 25ng TO-15 ICV STD
Misc : S29-12071602/S29-01051702 (2/3)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 09 09:29:47 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 09:09:36 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

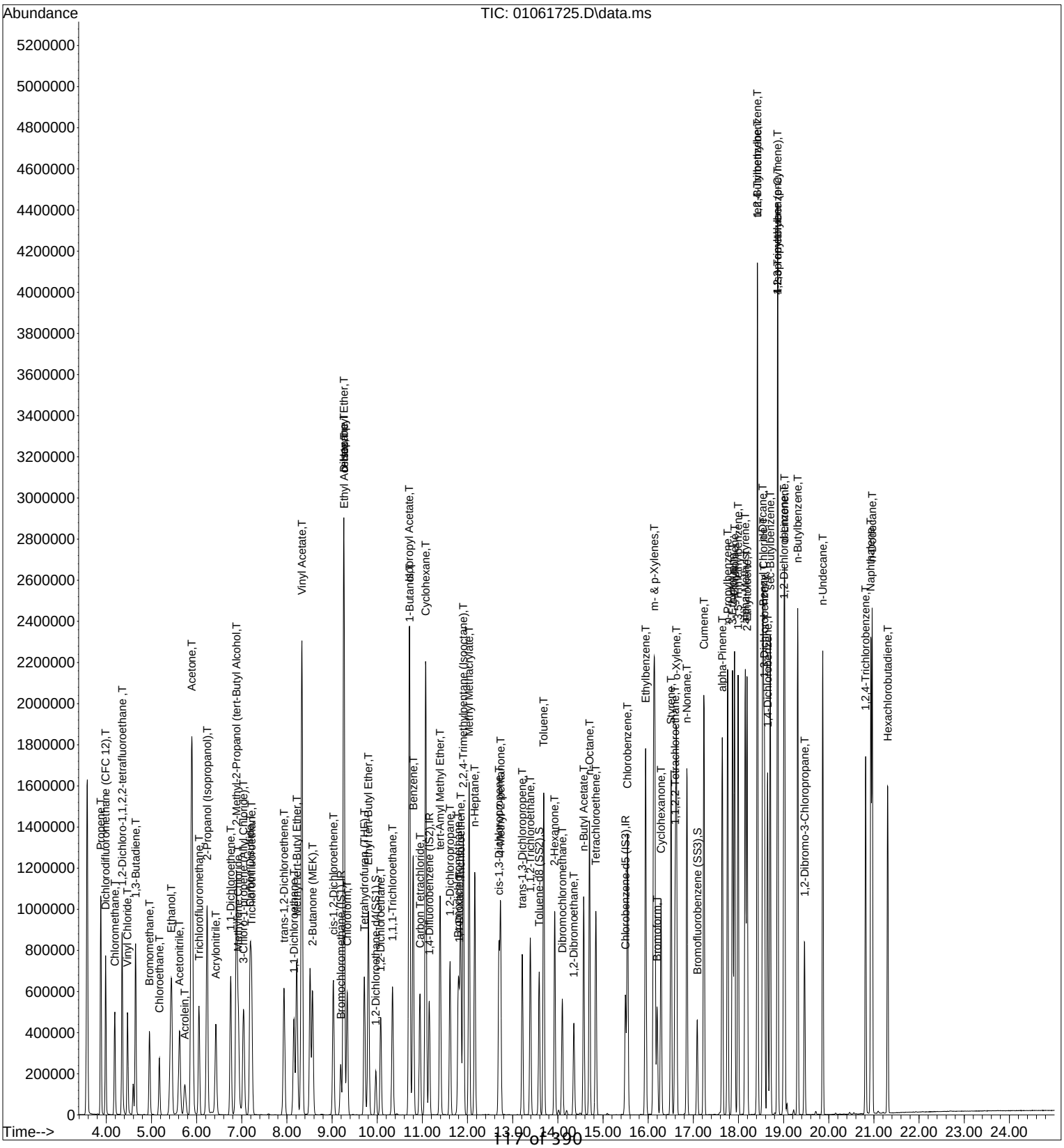
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	12.03	100	290495	56.940	ng	97
51) n-Heptane	12.16	71	340568	26.057	ng	99
52) cis-1,3-Dichloropropene	12.69	75	588892	27.976	ng	100
53) 4-Methyl-2-pentanone	12.73	58	340350	27.648	ng	95
54) trans-1,3-Dichloropropene	13.21	75	541768	29.412	ng	99
55) 1,1,2-Trichloroethane	13.39	97	336352	28.030	ng	98
58) Toluene	13.68	91	1405351	26.210	ng	99
59) 2-Hexanone	13.93	43	763487	26.680	ng	97
60) Dibromochloromethane	14.10	129	378946	29.136	ng	100
61) 1,2-Dibromoethane	14.36	107	382549	28.615	ng	99
62) n-Butyl Acetate	14.57	43	868629	27.377	ng	99
63) n-Octane	14.70	57	300878	25.250	ng	99
64) Tetrachloroethene	14.84	166	356086	27.845	ng	99
65) Chlorobenzene	15.54	112	929952	27.377	ng	99
66) Ethylbenzene	15.94	91	1596025	27.056	ng	99
67) m- & p-Xylenes	16.13	91	2467277	54.431	ng	99
68) Bromoform	16.20	173	314952	30.660	ng	100
69) Styrene	16.51	104	1010874	28.273	ng	99
70) o-Xylene	16.62	91	1254930	27.140	ng	99
71) n-Nonane	16.86	43	658657	25.113	ng	98
72) 1,1,2,2-Tetrachloroethane	16.60	83	619725	28.104	ng	100
74) Cumene	17.23	105	1576837	27.256	ng	100
75) alpha-Pinene	17.64	93	840635	27.736	ng	99
76) n-Propylbenzene	17.76	91	1921734	27.524	ng	99
77) 3-Ethyltoluene	17.87	105	1587438	27.813	ng	97
78) 4-Ethyltoluene	17.91	105	1500081	27.588	ng	96
79) 1,3,5-Trimethylbenzene	17.99	105	1302209	27.558	ng	98
80) alpha-Methylstyrene	18.15	118	730789	29.646	ng	99
81) 2-Ethyltoluene	18.19	105	1540659	27.647	ng	100
82) 1,2,4-Trimethylbenzene	18.42	105	1321246	28.187	ng	98
83) n-Decane	18.54	57	743041	26.771	ng	98
84) Benzyl Chloride	18.55	91	1282801	31.905	ng	98
85) 1,3-Dichlorobenzene	18.57	146	750580	29.271	ng	100
86) 1,4-Dichlorobenzene	18.65	146	756968	29.056	ng	99
87) sec-Butylbenzene	18.70	105	1742157	27.343	ng	99
88) 4-Isopropyltoluene (p-...	18.87	119	1611014	27.664	ng	98
89) 1,2,3-Trimethylbenzene	18.87	105	1355252	28.850	ng	98
90) 1,2-Dichlorobenzene	19.01	146	722311	29.358	ng	99
91) d-Limonene	19.02	68	560090	27.938	ng	98
92) 1,2-Dibromo-3-Chloropr...	19.47	157	274652	32.472	ng	92
93) n-Undecane	19.87	57	788598	28.620	ng	99
94) 1,2,4-Trichlorobenzene	20.82	180	574542	33.832	ng	100
95) Naphthalene	20.93	128	1862226	34.426	ng	100
96) n-Dodecane	20.96	57	785878	33.213	ng	99
97) Hexachlorobutadiene	21.31	225	328754	30.663	ng	100
98) Cyclohexanone	16.28	55	535763	28.468	ng	95
99) tert-Butylbenzene	18.42	119	1254728	27.786	ng	99
100) n-Butylbenzene	19.31	91	1444506	27.939	ng	99

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_01\06\01061725.D
Acq On : 7 Jan 2017 1:03 Operator: SC
Sample : 25ng TO-15 ICV STD
Misc : S29-12071602/S29-01051702 (2/3)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 09 09:29:47 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Jan 09 09:09:36 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: **01061725.D** Acq. Method File: **TO15.M** *1/9/17*

Data File Path: **I:\MS09\Data\2017_01\06** Sample Name: **25ng TO-15 ICV STD**

Operator: **SC** Misc Info: **S29-12071602/S29-01051702 (**

Date Acquired: **1/7/17** **1:03** Instrument Name: **MS09**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
2)	**Propene**	**3.88**	**23.201**	26.275	88	**52**	**127**	*	*
3)	**Dichlorodifluoromethane (CFC 1**	**3.99**	**26.008**	**26.250**	99	**68**	**109**	*	*
4)	**Chloromethane**	**4.19**	**26.028**	**26.225**	99	**51**	**130**	*	*
5)	**1,2-Dichloro-1,1,2,2-tetrafluoroetl**	**4.35**	**26.306**	**26.375**	100	**66**	**114**	*	*
6)	**Vinyl Chloride**	**4.47**	**26.959**	**26.250**	103	**61**	**125**	*	*
7)	**1,3-Butadiene**	**4.65**	**28.374**	**26.250**	108	**62**	**144**	*	*
8)	**Bromomethane**	**4.95**	**25.570**	**26.250**	97	**73**	**123**	*	*
9)	**Chloroethane**	**5.18**	**27.181**	**26.225**	104	**69**	**122**	*	*
10)	**Ethanol**	**5.44**	**144.543**	**132.650**	109	**62**	**124**	*	*
11)	**Acetonitrile**	**5.62**	**25.914**	**26.650**	97	**57**	**114**	*	*
12)	**Acrolein**	**5.74**	**26.364**	**26.525**	99	**62**	**116**	*	*
13)	**Acetone**	**5.89**	**121.970**	**133.050**	92	**57**	**117**	*	*
14)	**Trichlorofluoromethane**	**6.05**	**26.174**	**26.275**	100	**63**	**98**	**FAIL**	*
15)	**2-Propanol (Isopropanol)**	**6.23**	**55.707**	**53.025**	105	**66**	**121**	*	*
16)	**Acrylonitrile**	**6.42**	**28.950**	**26.575**	109	**68**	**123**	*	*
17)	**1,1-Dichloroethene**	**6.75**	**26.830**	**26.575**	101	**76**	**118**	*	*
18)	2-Methyl-2-Propanol (tert-Butyl Alc	6.88	57.339	53.275	108	74	126	*	*
19)	**Methylene Chloride**	**6.92**	**26.145**	**26.550**	98	**60**	**118**	*	*
20)	**3-Chloro-1-propene (Allyl Chlorid**	**7.04**	**26.398**	**26.500**	100	**65**	**126**	*	*
21)	**Trichlorotrifluoroethane**	**7.22**	**27.971**	**26.450**	106	**73**	**114**	*	*
22)	**Carbon Disulfide**	**7.18**	**25.994**	**26.675**	97	**57**	**102**	*	*
23)	**trans-1,2-Dichloroethene**	**7.94**	**28.000**	**26.675**	105	**74**	**123**	*	*
24)	**1,1-Dichloroethane**	**8.16**	**26.705**	**26.550**	101	**69**	**111**	*	*
25)	**Methyl tert-Butyl Ether**	**8.22**	**26.634**	**26.600**	100	**69**	**113**	*	*
26)	**Vinyl Acetate**	**8.33**	**145.364**	**132.550**	110	**76**	**128**	*	*
27)	**2-Butanone (MEK)**	**8.57**	**27.396**	**26.550**	103	**63**	**127**	*	*
28)	**cis-1,2-Dichloroethene**	**9.03**	**27.527**	**26.475**	104	**72**	**117**	*	*
29)	Diisopropyl Ether	9.26	26.285	26.575	99	64	118	*	*
30)	**Ethyl Acetate**	**9.27**	**56.497**	**53.275**	106	**68**	**127**	*	*
31)	**n-Hexane**	**9.26**	**23.444**	**26.600**	88	**55**	**116**	*	*
32)	**Chloroform**	**9.33**	**26.703**	**26.475**	101	**70**	**109**	*	*
34)	**Tetrahydrofuran (THF)**	**9.71**	**25.529**	**26.575**	96	**72**	**113**	*	*
35)	Ethyl tert-Butyl Ether	9.80	27.262	26.525	103	73	117	*	*
36)	**1,2-Dichloroethane**	**10.08**	**27.531**	**26.500**	104	**69**	**113**	*	*
38)	**1,1,1-Trichloroethane**	**10.34**	**26.848**	**26.475**	101	**72**	**115**	*	*
39)	Isopropyl Acetate	10.71	54.328	53.050	102	68	122	*	*
40)	1-Butanol	10.72	59.107	53.075	111	75	141	*	*
41)	**Benzene**	**10.80**	**24.743**	**26.525**	93	**65**	**107**	*	*
42)	**Carbon Tetrachloride**	**10.95**	**27.636**	**26.600**	104	**71**	**113**	*	*
43)	**Cyclohexane**	**11.07**	**54.073**	**53.125**	102	**71**	**115**	*	*
44)	tert-Amyl Methyl Ether	11.39	26.388	**26.525**	99	73	115	*	*
45)	**1,2-Dichloropropane**	**11.61**	**27.106**	**26.525**	102	**71**	**115**	*	*
46)	**Bromodichloromethane**	**11.79**	**28.410**	**26.700**	106	**75**	**118**	*	*
47)	**Trichloroethene**	**11.85**	**27.272**	**26.550**	103	**68**	**114**	*	*
48)	**1,4-Dioxane**	**11.82**	**28.934**	**26.600**	109	**81**	**131**	*	*
49)	2,2,4-Trimethylpentane (Isooctane)	11.91	26.222	26.525	99	68	112	*	*

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: **01061725.D** **TO15.M**
Data File Path: **I:\MS09\Data\2017_01\06** Sample Name: **25ng TO-15 ICV STD**
Operator: **SC** Misc Info: **S29-12071602/S29-01051702 (**
Date Acquired: **1/7/17** **1:03** Instrument Name: **MS09**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
50)	**Methyl Methacrylate**	**12.03**	**56.940**	**53.000**	107	**72**	**130**	*	*
51)	**n-Heptane**	**12.16**	**26.057**	**26.600**	98	**68**	**116**	*	*
52)	**cis-1,3-Dichloropropene**	**12.69**	**27.976**	**26.275**	106	**77**	**126**	*	*
53)	**4-Methyl-2-pentanone**	**12.73**	**27.648**	**26.575**	104	**69**	**126**	*	*
54)	**trans-1,3-Dichloropropene**	**13.21**	**29.412**	**26.675**	110	**79**	**125**	*	*
55)	**1,1,2-Trichloroethane**	**13.39**	**28.030**	**26.525**	106	**75**	**119**	*	*
58)	**Toluene**	**13.68**	**26.210**	**26.450**	99	**59**	**118**	*	*
59)	**2-Hexanone**	**13.93**	**26.680**	**26.575**	100	**69**	**129**	*	*
60)	**Dibromochloromethane**	**14.10**	**29.136**	**26.600**	110	**74**	**136**	*	*
61)	**1,2-Dibromoethane**	**14.36**	**28.615**	**26.450**	108	**73**	**131**	*	*
62)	**n-Butyl Acetate**	**14.57**	**27.377**	**26.950**	102	**69**	**130**	*	*
63)	**n-Octane**	**14.70**	**25.250**	**26.500**	95	**66**	**120**	*	*
64)	**Tetrachloroethene**	**14.84**	**27.845**	**26.575**	105	**65**	**130**	*	*
65)	**Chlorobenzene**	**15.54**	**27.377**	**26.500**	103	**68**	**120**	*	*
66)	**Ethylbenzene**	**15.94**	**27.056**	**26.450**	102	**68**	**122**	*	*
67)	**m- & p-Xylenes**	**16.13**	**54.431**	**53.025**	103	**68**	**123**	*	*
68)	**Bromoform**	**16.20**	**30.660**	**26.550**	115	**69**	**130**	*	*
69)	**Styrene**	**16.51**	**28.273**	**26.475**	107	**71**	**133**	*	*
70)	**o-Xylene**	**16.62**	**27.140**	**26.450**	103	**68**	**122**	*	*
71)	**n-Nonane**	**16.86**	**25.113**	**26.475**	95	**65**	**120**	*	*
72)	**1,1,2,2-Tetrachloroethane**	**16.60**	**28.104**	**26.500**	106	**69**	**130**	*	*
74)	**Cumene**	**17.23**	**27.256**	**26.525**	103	**70**	**123**	*	*
75)	**alpha-Pinene**	**17.64**	**27.736**	**26.575**	104	**70**	**128**	*	*
76)	**n-Propylbenzene**	**17.76**	**27.524**	**26.725**	103	**69**	**125**	*	*
77)	3-Ethyltoluene	17.87	27.813	26.550	105	67	128	*	*
78)	**4-Ethyltoluene**	**17.91**	**27.588**	**26.525**	**104**	**67**	**130**	*	*
79)	**1,3,5-Trimethylbenzene**	**17.99**	**27.558**	**26.525**	**104**	**67**	**124**	*	*
80)	alpha-Methylstyrene	18.15	29.646	26.550	**112**	67	141	*	*
81)	2-Ethyltoluene	18.19	27.647	26.550	**104**	67	124	*	*
82)	**1,2,4-Trimethylbenzene**	**18.42**	**28.187**	**26.525**	**106**	**67**	**129**	*	*
83)	n-Decane	18.54	26.771	26.525	**101**	66	124	*	*
84)	**Benzyl Chloride**	**18.55**	**31.905**	**26.550**	**120**	**79**	**138**	*	*
85)	**1,3-Dichlorobenzene**	**18.57**	**29.271**	**26.475**	**111**	**65**	**136**	*	*
86)	**1,4-Dichlorobenzene**	**18.65**	**29.056**	**26.650**	**109**	**66**	**141**	*	*
87)	sec-Butylbenzene	18.70	27.343	26.550	**103**	68	125	*	*
88)	4-Isopropyltoluene (p-Cymene)	18.87	27.664	26.550	**104**	68	131	*	*
89)	1,2,3-Trimethylbenzene	18.87	28.850	26.500	**109**	68	132	*	*
90)	**1,2-Dichlorobenzene**	**19.01**	**29.358**	**26.550**	**111**	**67**	**136**	*	*
91)	**d-Limonene**	**19.02**	**27.938**	**26.550**	**105**	**71**	**134**	*	*
92)	**1,2-Dibromo-3-Chloropropane**	**19.47**	**32.472**	**26.475**	**123**	**73**	**136**	*	*
93)	n-Undecane	19.87	28.620	26.600	**108**	68	132	*	*
94)	**1,2,4-Trichlorobenzene**	**20.82**	**33.832**	**26.500**	**128**	**64**	**134**	*	*
95)	**Naphthalene**	**20.93**	**34.426**	**26.700**	**129**	**62**	**136**	*	*
96)	n-Dodecane	20.96	33.213	26.550	**125**	61	137	*	*
97)	**Hexachlorobutadiene**	**21.31**	**30.663**	**26.575**	**115**	60	133	*	*
98)	Cyclohexanone	16.28	28.468	26.575	107	64	131	*	*
99)	tert-Butylbenzene	18.42	27.786	26.500	105	67	128	*	*
100)	n-Butylbenzene	19.31	27.939	26.500	105	68	128	*	*

Bold = 75 Compound List
*** = Pass**

Response Factor Report MS13

Method Path : I:\MS13\METHODS\
Method File : R13021017.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Feb 10 12:09:18 2017
Response Via : Initial Calibration

Calibration Files
0.08=02091741.D 0.10=02091742.D 0.20=02091743.D 0.40=02091722.D 1.0 =02091723.D 5.0 =02091724.D 25 =02091725.D
50 =02091726.D 100 =02091727.D

		Compound	0.08	0.10	0.20	0.40	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	ISTD	----------								
2)	T	Propene	0.813	0.858	0.794	1.179	0.970	0.909	0.862	0.852	1.100	0.926	14.32
3)	T	Dichlorodifluo...			1.951	2.729	2.466	2.289	2.115	1.943	1.848	2.192	14.64
4)	T	Chloromethane			1.230	1.655	1.549	1.394	1.399	1.097	0.810	1.305	21.95
5)	T	1,2-Dichloro-1...	1.303	1.275	1.167	1.624	1.436	1.329	1.286	1.155	1.106	1.298	12.22
6)	T	Vinyl Chloride	1.036	1.114	1.139	1.612	1.554	1.422	1.405	1.279	1.174	1.304	15.69
7)	T	1,3-Butadiene			0.568	0.927	0.841	0.848	0.895	0.796	0.757	0.804	14.75
8)	T	Bromomethane	0.673	0.661	0.767	1.089	0.891	0.931	0.892	0.863	0.847	0.846	15.72
9)	T	Chloroethane			0.550	0.813	0.673	0.644	0.625	0.612	0.602	0.646	12.87
10)	T	Ethanol	0.472	0.447	0.506	0.714	0.652	0.558	0.530	0.504	0.486	0.541	16.24
11)	T	Acetonitrile			1.165	1.598	1.509	1.444	1.389	1.399	1.400	1.415	9.42
12)	T	Acrolein				0.505	0.538	0.537	0.498	0.491	0.489	0.510	4.35
13)	T	Acetone				0.785	0.670	0.628	0.571	0.514	0.464	0.605	19.04
14)	T	Trichlorofluor...	1.720	1.708	1.670	2.401	2.131	1.971	1.877	1.759	1.710	1.883	13.09
15)	T	2-Propanol (Is...	1.428	1.410	1.665	2.469	2.232	2.131	2.062	1.871	1.223	1.832	23.24
16)	T	Acrylonitrile				0.841	1.083	1.071	1.070	1.075	1.066	1.034	9.18
17)	T	1,1-Dichloroet...	0.688	0.790	0.819	1.112	0.992	0.935	0.920	0.900	0.892	0.894	13.57
18)	T	2-Methyl-2-Pro...		1.683	1.818	2.680	2.446	2.339	2.312	2.218	1.652	2.144	17.73
19)	T	Methylene Chlo...	1.178	0.989	0.964	1.194	1.001	0.914	0.893	0.876	0.859	0.985	12.58
20)	T	3-Chloro-1-pro...			0.865	1.278	1.168	1.134	1.147	1.130	1.112	1.119	11.14
21)	T	Trichlorotrifl...	1.082	1.053	0.953	1.334	1.181	1.069	1.043	1.021	1.019	1.084	10.32
22)	T	Carbon Disulfide				4.460	3.709	3.292	3.252	3.186	3.141	3.507	14.53
23)	T	trans-1,2-Dich...	0.923	0.933	1.003	1.443	1.344	1.313	1.264	1.241	1.227	1.188	15.88
24)	T	1,1-Dichloroet...	1.387	1.392	1.452	1.992	1.809	1.647	1.573	1.527	1.492	1.586	12.72
25)	T	Methyl tert-Bu...	2.527	2.468	2.626	3.436	3.129	2.951	2.898	2.813	2.736	2.843	10.76
26)	T	Vinyl Acetate				0.214	0.215	0.215	0.217	0.211	0.202	0.212	2.70
27)	T	2-Butanone (MEK)					0.576	0.600	0.598	0.586	0.581	0.588	1.75
28)	T	cis-1,2-Dichlo...	1.004	1.036	1.100	1.536	1.334	1.243	1.219	1.179	1.156	1.201	13.53
29)	T	Diisopropyl Ether			0.794	1.113	1.038	0.949	0.907	0.877	0.696	0.910	15.49
30)	T	Ethyl Acetate				0.289	0.321	0.307	0.291	0.275	0.253	0.290	8.23
31)	T	n-Hexane	1.353	1.406	1.380	1.824	1.583	1.417	1.289	1.230	1.163	1.405	14.09
32)	T	Chloroform	1.493	1.515	1.533	2.230	1.832	1.716	1.690	1.610	1.564	1.687	13.73
33)	S	1,2-Dichloroet...	1.330	1.325	1.342	1.464	1.487	1.500	1.467	1.419	1.392	1.414	4.92
34)	T	Tetrahydrofura...	0.833	0.742	0.676	0.747	0.666	0.607	0.590	0.579	0.571	0.668	13.62
35)	T	Ethyl tert-But...	0.853	0.912	0.969	1.301	1.200	1.166	1.158	1.135	1.103	1.089	13.46
36)	T	1,2-Dichloroet...	1.066	1.045	1.156	1.680	1.501	1.397	1.359	1.275	1.233	1.301	15.91
37)	IR	1,4-Difluorobenzen...	----------	ISTD	----------								
38)	T	1,1,1-Trichlor...	0.297	0.310	0.297	0.438	0.384	0.361	0.356	0.333	0.322	0.344	13.40
39)	T	Isopropyl Acetate			0.100	0.141	0.124	0.117	0.109	0.104	0.097	0.113	13.77
40)	T	1-Butanol					0.156	0.171	0.177	0.169	0.158	0.166	5.27
41)	T	Benzene		0.775	0.779	1.021	0.859	0.767	0.732	0.685	0.624	0.780	15.32
42)	T	Carbon Tetrach...	0.255	0.248	0.268	0.385	0.349	0.336	0.334	0.317	0.306	0.311	14.89

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Method Path : I:\MS13\METHODS\
Method File : R13021017.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

43)	T	Cyclohexane	0.293	0.304	0.298	0.396	0.333	0.303	0.295	0.280	0.261	0.307	12.56
44)	T	tert-Amyl Meth...	0.495	0.480	0.500	0.680	0.593	0.567	0.569	0.542	0.520	0.549	11.27
45)	T	1,2-Dichloropr...	0.166	0.179	0.176	0.229	0.204	0.181	0.179	0.173	0.165	0.184	11.16
46)	T	Bromodichlorom...	0.226	0.230	0.222	0.337	0.309	0.293	0.292	0.275	0.266	0.272	14.75
47)	T	Trichloroethene	0.222	0.241	0.252	0.321	0.270	0.255	0.254	0.243	0.234	0.255	11.14
48)	T	1,4-Dioxane	0.103	0.123	0.127	0.208	0.178	0.173	0.175	0.166	0.160	0.157	20.94
49)	T	2,2,4-Trimethy...	0.755	0.727	0.733	0.988	0.833	0.753	0.732	0.693	0.646	0.762	12.92
50)	T	Methyl Methacr...				0.080	0.084	0.086	0.088	0.084	0.081	0.084	3.45
51)	T	n-Heptane	0.163	0.183	0.186	0.246	0.204	0.193	0.188	0.179	0.170	0.190	12.70
52)	T	cis-1,3-Dichlo...	0.226	0.246	0.235	0.357	0.330	0.328	0.335	0.319	0.307	0.298	16.47
53)	T	4-Methyl-2-pen...				0.167	0.167	0.168	0.171	0.161	0.154	0.165	3.75
54)	T	trans-1,3-Dich...				0.315	0.295	0.309	0.322	0.307	0.297	0.307	3.31
55)	T	1,1,2-Trichlor...	0.164	0.195	0.181	0.252	0.223	0.208	0.203	0.193	0.188	0.201	12.65
56)	IR	Chlorobenzene-d5 (...	----------	ISTD	----------								
57)	S	Toluene-d8 (SS2)	2.576	2.549	2.551	2.515	2.522	2.494	2.470	2.526	2.519	2.525	1.25
58)	T	Toluene	2.090	2.108	2.000	2.704	2.298	2.145	2.082	2.032	1.919	2.153	10.75
59)	T	2-Hexanone				0.972	0.883	0.981	0.992	0.958	0.901	0.948	4.77
60)	T	Dibromochlorom...	0.553	0.486	0.518	0.801	0.731	0.700	0.710	0.693	0.676	0.652	16.44
61)	T	1,2-Dibromoethane	0.473	0.438	0.461	0.738	0.650	0.616	0.614	0.600	0.587	0.575	17.21
62)	T	n-Butyl Acetate				0.868	0.935	1.053	1.082	1.046	0.988	0.995	8.21
63)	T	n-Octane	0.391	0.337	0.398	0.527	0.430	0.395	0.382	0.368	0.349	0.398	14.06
64)	T	Tetrachloroethene	0.748	0.725	0.658	0.938	0.831	0.743	0.735	0.717	0.705	0.756	10.90
65)	T	Chlorobenzene	1.415	1.421	1.313	1.969	1.684	1.542	1.514	1.450	1.393	1.522	13.01
66)	T	Ethylbenzene	2.218	2.133	2.095	3.015	2.663	2.493	2.440	2.328	2.184	2.397	12.41
67)	T	m- & p-Xylenes	1.790	1.634	1.659	2.386	2.137	1.998	1.943	1.857	1.730	1.904	12.79
68)	T	Bromoform		0.388	0.415	0.677	0.616	0.638	0.670	0.661	0.652	0.589	20.00
69)	T	Styrene				1.661	1.534	1.545	1.570	1.518	1.442	1.545	4.61
70)	T	o-Xylene	1.863	1.658	1.675	2.557	2.126	1.989	1.955	1.871	1.757	1.939	14.26
71)	T	n-Nonane	0.772	0.791	0.774	1.058	0.954	0.880	0.842	0.787	0.720	0.842	12.64
72)	T	1,1,2,2-Tetrac...	0.710	0.655	0.712	1.047	0.946	0.869	0.868	0.830	0.779	0.824	15.16
73)	S	Bromofluoroben...	1.052	1.040	1.048	1.050	1.062	1.079	1.081	1.081	1.063	1.062	1.46
74)	T	Cumene	2.485	2.283	2.249	3.237	2.861	2.654	2.601	2.456	2.259	2.565	12.63
75)	T	alpha-Pinene	1.132	1.108	1.099	1.516	1.354	1.307	1.294	1.236	1.161	1.245	11.05
76)	T	n-Propylbenzene	2.366	2.280	2.285	3.657	3.244	3.043	2.950	2.764	2.503	2.788	17.13
77)	T	3-Ethyltoluene	1.679	1.657	1.774	3.244	2.767	2.690	2.602	2.409	2.267	2.343	23.49
78)	T	4-Ethyltoluene	1.780	1.735	1.808	2.914	2.662	2.484	2.469	2.383	2.143	2.264	18.62
79)	T	1,3,5-Trimethy...	2.154	1.821	1.857	2.774	2.356	2.210	2.183	2.080	1.945	2.153	13.51
80)	T	alpha-Methylst...				1.281	1.196	1.173	1.197	1.144	1.079	1.178	5.67
81)	T	2-Ethyltoluene	2.331	2.094	2.063	3.228	2.788	2.582	2.520	2.380	2.191	2.464	15.07
82)	T	1,2,4-Trimethy...	1.737	1.547	1.588	2.660	2.386	2.236	2.219	2.076	1.876	2.036	18.56
83)	T	n-Decane	0.669	0.678	0.770	1.188	1.044	0.991	0.943	0.873	0.784	0.882	19.83
84)	T	Benzyl Chloride				1.460	1.483	1.749	1.912	1.848	1.723	1.696	11.02
85)	T	1,3-Dichlorobe...				1.714	1.511	1.439	1.407	1.345	1.276	1.449	10.55
86)	T	1,4-Dichlorobe...	1.002	0.771	0.770	1.776	1.554	1.460	1.438	1.373	1.311	1.273	27.56
87)	T	sec-Butylbenzene	2.475	2.417	2.353	3.591	3.202	3.000	2.896	2.696	2.431	2.785	15.20
88)	T	4-Isopropyltol...	2.056	2.148	2.116	3.521	3.101	2.952	2.881	2.627	2.287	2.632	19.59
89)	T	1,2,3-Trimethy...	1.660	1.504	1.581	2.706	2.383	2.299	2.274	2.112	1.909	2.047	20.04
90)	T	1,2-Dichlorobe...	0.809	0.781	0.795	1.672	1.454	1.390	1.372	1.296	1.205	1.197	27.29
91)	T	d-Limonene	0.409	0.391	0.469	0.824	0.762	0.770	0.765	0.709	0.634	0.637	26.64
92)	T	1,2-Dibromo-3-...				0.478	0.493	0.521	0.544	0.525	0.507	0.511	4.63
93)	T	n-Undecane				1.117	1.070	1.030	1.042	0.950	0.850	1.010	9.45
94)	T	1,2,4-Trichlor...				1.252	1.169	1.181	1.219	1.158	1.098	1.179	4.49

Method Path : I:\MS13\METHODS\
Method File : R13021017.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

95)	T	Naphthalene				2.796	2.891	3.091	3.207	2.966	2.593	2.924	7.44
96)	T	n-Dodecane				0.857	0.872	0.900	1.013	0.933	0.812	0.898	7.76
97)	T	Hexachlorobuta...	0.656	0.607	0.563	0.954	0.841	0.810	0.824	0.793	0.770	0.758	16.48
98)	T	Cyclohexanone				0.659	0.633	0.644	0.661	0.648	0.615	0.643	2.69
99)	T	tert-Butylbenzene	1.894	1.867	1.857	2.755	2.402	2.280	2.202	2.042	1.835	2.126	14.74
100)	T	n-Butylbenzene				2.610	2.461	2.352	2.311	2.129	1.923	2.298	10.58

(#) = Out of Range

LH 2/17/17

AM 2/17/17

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:
4ng/L Std. ID: S29-01301705
20ng/L Std. ID: S29-02061708
200ng/L Std. ID: S29-01241703

Dilution Factors:		5	50	250	1000	Working STD Conc.(ng/L):	4	4	4	4	20	200	200	200	200
	Source Std.	Primary Working Standards				Injection (L):	0.020	0.025	0.050	0.100	0.050	0.025	0.125	0.25	0.50
Compounds	mg/m³	200ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
Propene	1.036	207.2	20.72	4.144	1.036		0.08288	0.1036	0.2072	0.4144	1.036	5.180	25.900	51.80	103.6
Dichlorodifluoromethane	1.047	209.4	20.94	4.188	1.047		0.08376	0.1047	0.2094	0.4188	1.047	5.235	26.175	52.35	104.7
Chloromethane	1.005	201.0	20.10	4.020	1.005		0.08040	0.1005	0.2010	0.4020	1.005	5.025	25.125	50.25	100.5
Freon-114	1.005	201.0	20.10	4.020	1.005		0.08040	0.1005	0.2010	0.4020	1.005	5.025	25.125	50.25	100.5
Vinyl Chloride	1.023	204.6	20.46	4.092	1.023		0.08184	0.1023	0.2046	0.4092	1.023	5.115	25.575	51.15	102.3
1,3-Butadiene	1.057	211.4	21.14	4.228	1.057		0.08456	0.1057	0.2114	0.4228	1.057	5.285	26.425	52.85	105.7
Bromomethane	0.993	198.6	19.86	3.972	0.993		0.07944	0.0993	0.1986	0.3972	0.993	4.965	24.825	49.65	99.3
Chloroethane	1.009	201.8	20.18	4.036	1.009		0.08072	0.1009	0.2018	0.4036	1.009	5.045	25.225	50.45	100.9
Ethanol	5.207	1041.4	104.14	20.828	5.207		0.41656	0.5207	1.0414	2.0828	5.207	26.035	130.175	260.35	520.7
Acetonitrile	1.046	209.2	20.92	4.184	1.046		0.08368	0.1046	0.2092	0.4184	1.046	5.230	26.150	52.30	104.6
Acrolein	1.041	208.2	20.82	4.164	1.041		0.08328	0.1041	0.2082	0.4164	1.041	5.205	26.025	52.05	104.1
Acetone	5.313	1062.6	106.26	21.252	5.313		0.42504	0.5313	1.0626	2.1252	5.313	26.565	132.825	265.65	531.3
Trichlorofluoromethane	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
Isopropanol	2.105	421.0	42.10	8.420	2.105		0.16840	0.2105	0.4210	0.8420	2.105	10.525	52.625	105.25	210.5
Acrylonitrile	1.055	211.0	21.10	4.220	1.055		0.08440	0.1055	0.2110	0.4220	1.055	5.275	26.375	52.75	105.5
1,1-Dichloroethene	1.059	211.8	21.18	4.236	1.059		0.08472	0.1059	0.2118	0.4236	1.059	5.295	26.475	52.95	105.9
tert-Butanol	2.114	422.8	42.28	8.456	2.114		0.16912	0.2114	0.4228	0.8456	2.114	10.570	52.850	105.70	211.4
Methylene Chloride	1.057	211.4	21.14	4.228	1.057		0.08456	0.1057	0.2114	0.4228	1.057	5.285	26.425	52.85	105.7
Allyl Chloride	1.052	210.4	21.04	4.208	1.052		0.08416	0.1052	0.2104	0.4208	1.052	5.260	26.300	52.60	105.2
Trichlorotrifluoroethane	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
Carbon Disulfide	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
trans-1,2-Dichloroethene	1.067	213.4	21.34	4.268	1.067		0.08536	0.1067	0.2134	0.4268	1.067	5.335	26.675	53.35	106.7
1,1-Dichloroethane	1.020	204.0	20.40	4.080	1.020		0.08160	0.1020	0.2040	0.4080	1.020	5.100	25.500	51.00	102.0
Methyl tert-Butyl Ether	1.066	213.2	21.32	4.264	1.066		0.08528	0.1066	0.2132	0.4264	1.066	5.330	26.650	53.30	106.6
Vinyl Acetate	5.265	1053.0	105.30	21.060	5.265		0.42120	0.5265	1.0530	2.1060	5.265	26.325	131.625	263.25	526.5
2-Butanone	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
cis-1,2-Dichloroethene	1.064	212.8	21.28	4.256	1.064		0.08512	0.1064	0.2128	0.4256	1.064	5.320	26.600	53.20	106.4
Diisopropyl Ether	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
Ethyl Acetate	2.129	425.8	42.58	8.516	2.129		0.17032	0.2129	0.4258	0.8516	2.129	10.645	53.225	106.45	212.9
n-Hexane	1.063	212.6	21.26	4.252	1.063		0.08504	0.1063	0.2126	0.4252	1.063	5.315	26.575	53.15	106.3
Chloroform	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
Tetrahydrofuran	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
Ethyl tert-Butyl Ether	1.057	211.4	21.14	4.228	1.057		0.08456	0.1057	0.2114	0.4228	1.057	5.285	26.425	52.85	105.7
1,2-Dichloroethane	1.052	210.4	21.04	4.208	1.052		0.08416	0.1052	0.2104	0.4208	1.052	5.260	26.300	52.60	105.2
1,1,1-Trichloroethane	1.074	214.8	21.48	4.296	1.074		0.08592	0.1074	0.2148	0.4296	1.074	5.370	26.850	53.70	107.4
Isopropyl Acetate	2.104	420.8	42.08	8.416	2.104		0.16832	0.2104	0.4208	0.8416	2.104	10.520	52.600	105.20	210.4
1-Butanol	2.105	421.0	42.10	8.420	2.105		0.16840	0.2105	0.4210	0.8420	2.105	10.525	52.625	105.25	210.5
Benzene	1.052	210.4	21.04	4.208	1.052		0.08416	0.1052	0.2104	0.4208	1.052	5.260	26.300	52.60	105.2
Carbon Tetrachloride	1.055	211.0	21.10	4.220	1.055		0.08440	0.1055	0.2110	0.4220	1.055	5.275	26.375	52.75	105.5
Cyclohexane	2.130	426.0	42.60	8.520	2.130		0.17040	0.2130	0.4260	0.8520	2.130	10.650	53.250	106.50	213.0
tert-Amyl Methyl Ether	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
1,2-Dichloropropane	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
Bromodichloromethane	1.066	213.2	21.32	4.264	1.066		0.08528	0.1066	0.2132	0.4264	1.066	5.330	26.650	53.30	106.6
Trichloroethene	1.060	212.0	21.20	4.240	1.060		0.08480	0.1060	0.2120	0.4240	1.060	5.300	26.500	53.00	106.0
1,4-Dioxane	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
Isooctane	1.059	211.8	21.18	4.236	1.059		0.08472	0.1059	0.2118	0.4236	1.059	5.295	26.475	52.95	105.9
Methyl Methacrylate	2.110	422.0	42.20	8.440	2.110		0.16880	0.2110	0.4220	0.8440	2.110	10.550	52.750	105.50	211.0
n-Heptane	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
cis-1,3-Dichloropropene	1.116	223.2	22.32	4.464	1.116		0.08928	0.1116	0.2232	0.4464	1.116	5.580	27.900	55.80	111.6
4-Methyl-2-pentanone	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
trans-1,3-Dichloropropene	1.064	212.8	21.28	4.256	1.064		0.08512	0.1064	0.2128	0.4256	1.064	5.320	26.600	53.20	106.4
1,1,2-Trichloroethane	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
Toluene	1.053	210.6	21.06	4.212	1.053		0.08424	0.1053	0.2106	0.4212	1.053	5.265	26.325	52.65	105.3
2-Hexanone	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:
4ng/L Std. ID: S29-01301705
20ng/L Std. ID: S29-02061708
200ng/L Std. ID: S29-01241703

Dilution Factors:		5	50	250	1000	Working STD Conc.(ng/L):	4	4	4	4	20	200	200	200	200
	Source Std.	Primary Working Standards				Injection (L):	0.020	0.025	0.050	0.100	0.050	0.025	0.125	0.25	0.50
Compounds	mg/m^3	200ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
Dibromochloromethane	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
1,2-Dibromoethane	1.056	211.2	21.12	4.224	1.056		0.08448	0.1056	0.2112	0.4224	1.056	5.280	26.400	52.80	105.6
n-Butyl Acetate	1.064	212.8	21.28	4.256	1.064		0.08512	0.1064	0.2128	0.4256	1.064	5.320	26.600	53.20	106.4
n-Octane	1.057	211.4	21.14	4.228	1.057		0.08456	0.1057	0.2114	0.4228	1.057	5.285	26.425	52.85	105.7
Tetrachloroethene	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
Chlorobenzene	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
Ethylbenzene	1.055	211.0	21.10	4.220	1.055		0.08440	0.1055	0.2110	0.4220	1.055	5.275	26.375	52.75	105.5
m-&p-Xylene	2.123	424.6	42.46	8.492	2.123		0.16984	0.2123	0.4246	0.8492	2.123	10.615	53.075	106.15	212.3
Bromoform	1.063	212.6	21.26	4.252	1.063		0.08504	0.1063	0.2126	0.4252	1.063	5.315	26.575	53.15	106.3
Styrene	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
o-Xylene	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
n-Nonane	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
1,1,2,2-Tetrachloroethane	1.056	211.2	21.12	4.224	1.056		0.08448	0.1056	0.2112	0.4224	1.056	5.280	26.400	52.80	105.6
Cumene	1.050	210.0	21.00	4.200	1.050		0.08400	0.1050	0.2100	0.4200	1.050	5.250	26.250	52.50	105.0
alpha-Pinene	1.044	208.8	20.88	4.176	1.044		0.08352	0.1044	0.2088	0.4176	1.044	5.220	26.100	52.20	104.4
n-Propylbenzene	1.063	212.6	21.26	4.252	1.063		0.08504	0.1063	0.2126	0.4252	1.063	5.315	26.575	53.15	106.3
3-Ethyltoluene	1.050	210.0	21.00	4.200	1.050		0.08400	0.1050	0.2100	0.4200	1.050	5.250	26.250	52.50	105.0
4-Ethyltoluene	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
1,3,5-Trimethylbenzene	1.049	209.8	20.98	4.196	1.049		0.08392	0.1049	0.2098	0.4196	1.049	5.245	26.225	52.45	104.9
alpha-Methylstyrene	1.050	210.0	21.00	4.200	1.050		0.08400	0.1050	0.2100	0.4200	1.050	5.250	26.250	52.50	105.0
2-Ethyltoluene	1.062	212.4	21.24	4.248	1.062		0.08496	0.1062	0.2124	0.4248	1.062	5.310	26.550	53.10	106.2
1,2,4-Trimethylbenzene	1.052	210.4	21.04	4.208	1.052		0.08416	0.1052	0.2104	0.4208	1.052	5.260	26.300	52.60	105.2
n-Decane	1.053	210.6	21.06	4.212	1.053		0.08424	0.1053	0.2106	0.4212	1.053	5.265	26.325	52.65	105.3
Benzyl Chloride	1.061	212.2	21.22	4.244	1.061		0.08488	0.1061	0.2122	0.4244	1.061	5.305	26.525	53.05	106.1
1,3-Dichlorobenzene	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
1,4-Dichlorobenzene	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
sec-Butylbenzene	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
p-Isopropyltoluene	1.027	205.4	20.54	4.108	1.027		0.08216	0.1027	0.2054	0.4108	1.027	5.135	25.675	51.35	102.7
1,2,3-Trimethylbenzene	1.027	205.4	20.54	4.108	1.027		0.08216	0.1027	0.2054	0.4108	1.027	5.135	25.675	51.35	102.7
1,2-Dichlorobenzene	1.058	211.6	21.16	4.232	1.058		0.08464	0.1058	0.2116	0.4232	1.058	5.290	26.450	52.90	105.8
d-Limonene	1.005	201.0	20.10	4.020	1.005		0.08040	0.1005	0.2010	0.4020	1.005	5.025	25.125	50.25	100.5
1,2-Dibromo-3-chloropropane	1.053	210.6	21.06	4.212	1.053		0.08424	0.1053	0.2106	0.4212	1.053	5.265	26.325	52.65	105.3
n-Undecane	1.054	210.8	21.08	4.216	1.054		0.08432	0.1054	0.2108	0.4216	1.054	5.270	26.350	52.70	105.4
1,2,4-Trichlorobenzene	1.043	208.6	20.86	4.172	1.043		0.08344	0.1043	0.2086	0.4172	1.043	5.215	26.075	52.15	104.3
Naphthalene	1.083	216.6	21.66	4.332	1.083		0.08664	0.1083	0.2166	0.4332	1.083	5.415	27.075	54.15	108.3
n-Dodecane	1.045	209.0	20.90	4.180	1.045		0.08360	0.1045	0.2090	0.4180	1.045	5.225	26.125	52.25	104.5
Hexachloro-1,3-butadiene	1.059	211.8	21.18	4.236	1.059		0.08472	0.1059	0.2118	0.4236	1.059	5.295	26.475	52.95	105.9
Methacrylonitrile	1.065	213.0	21.30	4.260	1.065		0.08520	0.1065	0.2130	0.4260	1.065	5.325	26.625	53.25	106.5
Cyclohexanone	1.056	211.2	21.12	4.224	1.056		0.08448	0.1056	0.2112	0.4224	1.056	5.280	26.400	52.80	105.6
tert-Butylbenzene	1.051	210.2	21.02	4.204	1.051		0.08408	0.1051	0.2102	0.4204	1.051	5.255	26.275	52.55	105.1
n-Butylbenzene	1.056	211.2	21.12	4.224	1.056		0.08448	0.1056	0.2112	0.4224	1.056	5.280	26.400	52.80	105.6

Calibration Status Report MS13

Method : I:\MS13\METHODS\R13021017.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration

LH 2/17/17

2/10/17

#	ID	Conc	ISTD Conc	Path\File
1	0.08	0	13	I:\MS13\DATA\2017_02\09\02091741.D
2	0.10	0	13	I:\MS13\DATA\2017_02\09\02091742.D
3	0.20	0	13	I:\MS13\DATA\2017_02\09\02091743.D
4	0.40	0	13	I:\MS13\DATA\2017_02\09\02091722.D
5	1.0	1	13	I:\MS13\DATA\2017_02\09\02091723.D
6	5.0	5	13	I:\MS13\DATA\2017_02\09\02091724.D
7	25	26	13	I:\MS13\DATA\2017_02\09\02091725.D
8	50	52	13	I:\MS13\DATA\2017_02\09\02091726.D
9	100	104	13	I:\MS13\DATA\2017_02\09\02091727.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.08	Feb 10 12:05 2017	Feb 10 10:45 2017	10 Feb 2017 10:09
2	0.10	Feb 10 12:05 2017	Feb 10 11:14 2017	10 Feb 2017 10:44
3	0.20	Feb 10 12:06 2017	Feb 10 11:55 2017	10 Feb 2017 11:19
4	0.40	Feb 10 12:06 2017	Feb 10 08:49 2017	9 Feb 2017 18:09
5	1.0	Feb 10 12:07 2017	Feb 10 08:53 2017	9 Feb 2017 18:44
6	5.0	Feb 10 12:07 2017	Feb 10 08:25 2017	9 Feb 2017 19:20
7	25	Feb 10 12:07 2017	Feb 10 08:25 2017	9 Feb 2017 19:55
8	50	Feb 10 12:08 2017	Feb 10 08:25 2017	9 Feb 2017 20:30
9	100	Feb 10 12:08 2017	Feb 10 09:47 2017	9 Feb 2017 21:05

R13021017.M Fri Feb 10 13:02:44 2017

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091742.D Vial: 13
Acq On : 10 Feb 2017 10:44 Operator: LH/AMF
Sample : 0.1ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:14:03 2017 LH 2/17/17
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS) AM 2/10/17
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	162182	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.04	114	763073	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	296035	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.76	65	214881	11.327	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.64%				
57) Toluene-d8 (SS2)	15.49	98	754502	12.599	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.80%				
73) Bromofluorobenzene (SS3)	18.85	174	307842	12.454	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.60%				
Target Compounds							Qvalue
2) Propene	3.98	42	1153	0.105	ng		97
3) Dichlorodifluoromethan...	0.00	85	0	N.D.	d		
4) Chloromethane	4.43	50	1542	0.100	ng		84
5) 1,2-Dichloro-1,1,2,2-t...	4.65	135	1663	0.104	ng		95
6) Vinyl Chloride	4.82	62	1478	0.097	ng		85
7) 1,3-Butadiene	5.10	54	595	0.063	ng		88
8) Bromomethane	5.51	94	851	0.084	ng		94
9) Chloroethane	0.00	64	0	N.D.	d		
10) Ethanol	6.19	45	3018	0.479	ng		85
11) Acetonitrile	6.55	41	814	0.049	ng	#	1
12) Acrolein	0.00	56	0	N.D.	d		
13) Acetone	6.85	58	4325	0.609	ng	#	84
14) Trichlorofluoromethane	7.04	101	2324	0.099	ng		95
15) 2-Propanol (Isopropanol)	7.39	45	3852	0.165	ng		66
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	7.99	96	1086	0.096	ng		92
18) 2-Methyl-2-Propanol (t...	8.22	59	4615	0.174	ng		86
19) Methylene Chloride	8.20	84	1357	0.112	ng		92
20) 3-Chloro-1-propene (Al...	8.37	41	993	0.074	ng		79
21) Trichlorotrifluoroethane	8.60	151	1433	0.109	ng		97
22) Carbon Disulfide	8.37	76	286	N.D.			
23) trans-1,2-Dichloroethene	9.49	61	1291	0.091	ng	#	69
24) 1,1-Dichloroethane	9.72	63	1842	0.095	ng		83
25) Methyl tert-Butyl Ether	9.87	73	3414	0.096	ng		97
26) Vinyl Acetate	10.05	86	503	0.196	ng	#	1
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	10.74	61	1430	0.099	ng		95
29) Diisopropyl Ether	11.08	87	967	0.094	ng	#	1
30) Ethyl Acetate	0.00	61	0	N.D.	d		
31) n-Hexane	11.04	57	1939	0.114	ng	#	95
32) Chloroform	11.08	83	2079	0.098	ng		99
34) Tetrahydrofuran (THF)	11.57	72	1023	0.131	ng		91
35) Ethyl tert-Butyl Ether	11.67	87	1251	0.094	ng		91
36) 1,2-Dichloroethane	11.89	62	1426	0.087	ng		91
38) 1,1,1-Trichloroethane	12.16	97	2031	0.100	ng		96
39) Isopropyl Acetate	12.65	61	779	0.124	ng	#	52
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	12.66	78	4976	0.111	ng		98
42) Carbon Tetrachloride	12.81	117	1594	0.087	ng		98
43) Cyclohexane	12.93	84	3959	0.223	ng		94
44) tert-Amyl Methyl Ether	13.32	73	3086	0.098	ng		95
45) 1,2-Dichloropropane	13.51	63	1161	0.114	ng		87
46) Bromodichloromethane	13.70	83	1494	0.092	ng		91
47) Trichloroethene	13.75	130	1561	0.108	ng		98
48) 1,4-Dioxane	13.81	88	797	0.091	ng	#	57
49) 2,2,4-Trimethylpentane...	13.81	57	4697	0.108	ng		98
50) Methyl Methacrylate	14.03	100	250	0.053	ng	#	43

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091742.D Vial: 13
Acq On : 10 Feb 2017 10:44 Operator: LH/AMF
Sample : 0.1ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:14:03 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

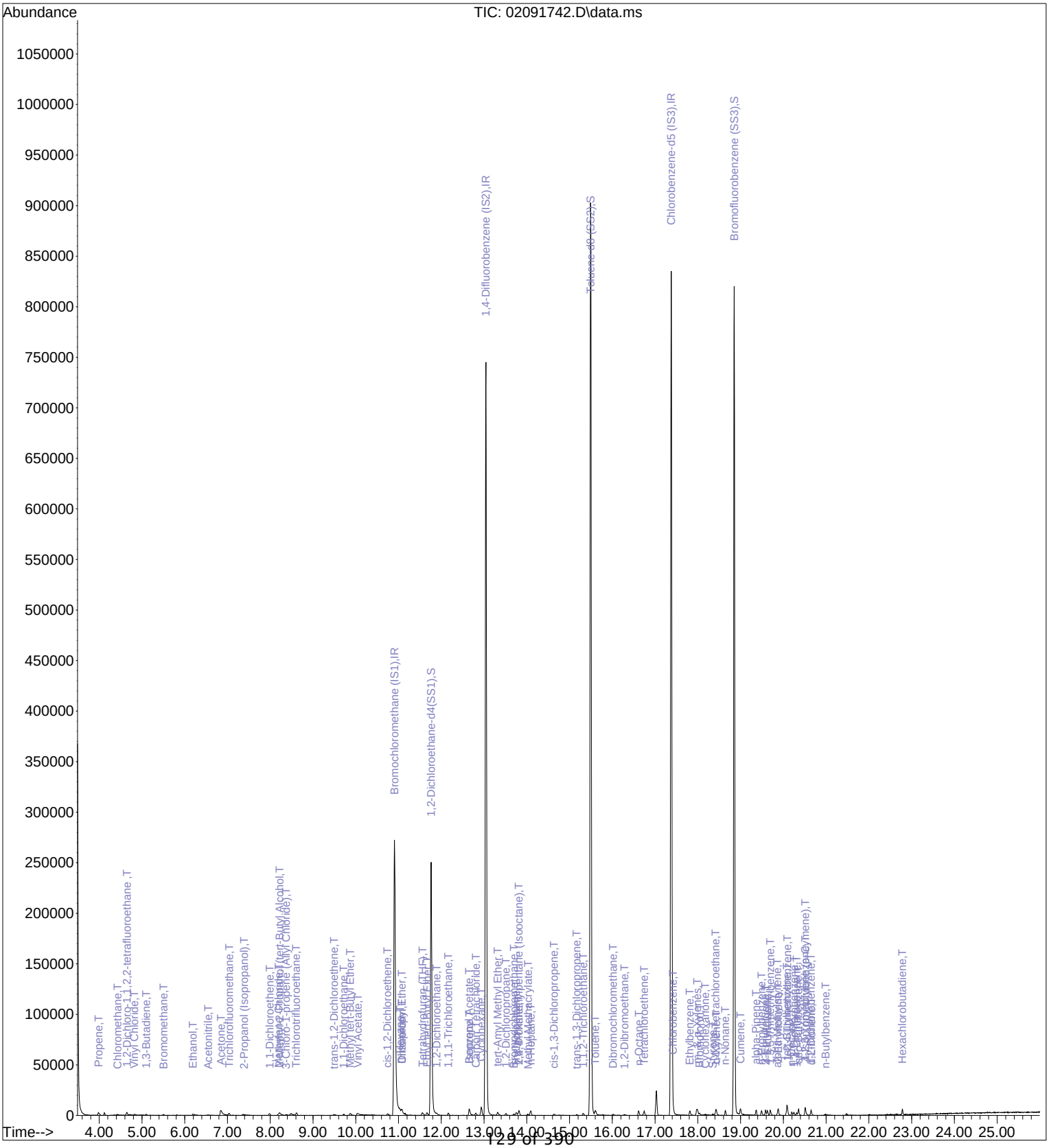
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.09	71	1189	0.110	ng		93
52) cis-1,3-Dichloropropene	14.64	75	1673	0.096	ng		72
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.			
54) trans-1,3-Dichloropropene	15.17	75	1063	0.060	ng		69
55) 1,1,2-Trichloroethane	15.32	97	1265	0.108	ng		84
58) Toluene	15.60	91	5256	0.107	ng		97
59) 2-Hexanone	0.00	43	0	N.D.			
60) Dibromochloromethane	16.02	129	1222	0.083	ng		92
61) 1,2-Dibromoethane	16.28	107	1096	0.086	ng		99
62) n-Butyl Acetate	0.00	43	0	N.D.	d		
63) n-Octane	16.62	57	844	0.097	ng		95
64) Tetrachloroethene	16.75	166	1822	0.110	ng		99
65) Chlorobenzene	17.42	112	3570	0.101	ng		99
66) Ethylbenzene	17.81	91	5329	0.095	ng		98
67) m- & p-Xylenes	17.99	91	8217	0.185	ng		100
68) Bromoform	18.04	173	977	0.071	ng		92
69) Styrene	18.35	104	1391	0.043	ng		83
70) o-Xylene	18.43	91	4139	0.094	ng		98
71) n-Nonane	18.64	43	1975	0.105	ng		92
72) 1,1,2,2-Tetrachloroethane	18.41	83	1638	0.087	ng		98
74) Cumene	19.00	105	5678	0.097	ng		94
75) alpha-Pinene	19.36	93	2740	0.098	ng		95
76) n-Propylbenzene	19.49	91	5741	0.088	ng		93
77) 3-Ethyltoluene	19.58	105	4121	0.073	ng		98
78) 4-Ethyltoluene	19.63	105	4310	0.080	ng		94
79) 1,3,5-Trimethylbenzene	19.69	105	4525	0.090	ng		95
80) alpha-Methylstyrene	19.86	118	989	0.040	ng	#	70
81) 2-Ethyltoluene	19.88	105	5267	0.092	ng		95
82) 1,2,4-Trimethylbenzene	20.09	105	3853	0.081	ng		94
83) n-Decane	20.19	57	1690	0.085	ng		90
84) Benzyl Chloride	0.00	91	0	N.D.	d		
85) 1,3-Dichlorobenzene	20.25	146	1833	0.061	ng		96
86) 1,4-Dichlorobenzene	20.31	146	1932	0.060	ng		97
87) sec-Butylbenzene	20.35	105	6034	0.095	ng		93
88) 4-Isopropyltoluene (p-...	20.51	119	5224	0.084	ng		91
89) 1,2,3-Trimethylbenzene	20.51	105	3658	0.075	ng		95
90) 1,2-Dichlorobenzene	20.64	146	1957	0.067	ng		98
91) d-Limonene	20.65	68	930	0.065	ng		93
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.			
93) n-Undecane	0.00	57	0	N.D.	d		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	d		
95) Naphthalene	22.58	128	568	N.D.			
96) n-Dodecane	0.00	57	0	N.D.	d		
97) Hexachlorobutadiene	22.78	225	1523	0.088	ng		99
98) Cyclohexanone	18.17	55	508	0.040	ng	#	51
99) tert-Butylbenzene	20.09	119	4647	0.095	ng		98
100) n-Butylbenzene	20.99	91	2807	0.060	ng	#	77

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091742.D Vial: 13
Acq On : 10 Feb 2017 10:44 Operator: LH/AMF
Sample : 0.1ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:14:03 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091743.D Vial: 13
Acq On : 10 Feb 2017 11:19 Operator: LH/AMF
Sample : 0.2ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

LH 2/17/17

Quant Time: Feb 10 11:55:44 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS) 2/10/17
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	159040	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.04	114	750244	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	289761	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.76	65	213472	11.475	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.84%				
57) Toluene-d8 (SS2)	15.50	98	739315	12.613	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.88%				
73) Bromofluorobenzene (SS3)	18.85	174	303689	12.553	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.40%				
Target Compounds							Qvalue
2) Propene	3.98	42	2094	0.194	ng		90
3) Dichlorodifluoromethan...	4.12	85	5197	0.201	ng		98
4) Chloromethane	4.41	50	3145	0.207	ng		93
5) 1,2-Dichloro-1,1,2,2-t...	4.65	135	2985	0.190	ng		100
6) Vinyl Chloride	4.82	62	2964	0.198	ng		93
7) 1,3-Butadiene	5.09	54	1528	0.166	ng		98
8) Bromomethane	5.50	94	1937	0.195	ng		97
9) Chloroethane	5.82	64	1413	0.188	ng		96
10) Ethanol	6.16	45	6702	1.085	ng		94
11) Acetonitrile	6.51	41	3102m	0.192	ng		
12) Acrolein	6.64	56	74	0.013	ng		79
13) Acetone	6.81	58	8954m	1.285	ng		
14) Trichlorofluoromethane	7.03	101	4458	0.193	ng		98
15) 2-Propanol (Isopropanol)	7.33	45	8919	0.390	ng		94
16) Acrylonitrile	7.67	53	423	0.033	ng		86
17) 1,1-Dichloroethene	7.99	96	2208	0.199	ng		94
18) 2-Methyl-2-Propanol (t...	8.20	59	9782	0.376	ng		94
19) Methylene Chloride	8.19	84	2593	0.217	ng		98
20) 3-Chloro-1-propene (Al...	8.36	41	2316	0.176	ng		89
21) Trichlorotrifluoroethane	8.61	151	2545	0.197	ng		94
22) Carbon Disulfide	0.00	76	0	N.D.	d		
23) trans-1,2-Dichloroethene	9.48	61	2723	0.196	ng		88
24) 1,1-Dichloroethane	9.72	63	3768	0.199	ng		96
25) Methyl tert-Butyl Ether	9.86	73	7123	0.204	ng		94
26) Vinyl Acetate	10.02	86	1568	0.624	ng	#	18
27) 2-Butanone (MEK)	10.31	72	549m	0.075	ng		
28) cis-1,2-Dichloroethene	10.75	61	2977	0.209	ng		98
29) Diisopropyl Ether	11.06	87	2146	0.213	ng	#	10
30) Ethyl Acetate	11.11	61	1109	0.325	ng	#	74
31) n-Hexane	11.03	57	3734	0.224	ng		97
32) Chloroform	11.08	83	4126	0.197	ng		97
34) Tetrahydrofuran (THF)	11.54	72	1826	0.238	ng		94
35) Ethyl tert-Butyl Ether	11.66	87	2605	0.201	ng		96
36) 1,2-Dichloroethane	11.89	62	3094	0.193	ng		97
38) 1,1,1-Trichloroethane	12.17	97	3831	0.192	ng		99
39) Isopropyl Acetate	12.64	61	2515	0.406	ng	#	75
40) 1-Butanol	12.73	56	1257	0.136	ng	#	11
41) Benzene	12.65	78	9841	0.223	ng		97
42) Carbon Tetrachloride	12.80	117	3400	0.188	ng		98
43) Cyclohexane	12.93	84	7610	0.436	ng		93
44) tert-Amyl Methyl Ether	13.31	73	6332	0.204	ng		98
45) 1,2-Dichloropropane	13.51	63	2240	0.225	ng		92
46) Bromodichloromethane	13.70	83	2839	0.178	ng		97
47) Trichloroethene	13.76	130	3204	0.225	ng		90
48) 1,4-Dioxane	13.77	88	1621	0.188	ng		92
49) 2,2,4-Trimethylpentane...	13.82	57	9321	0.218	ng		98
50) Methyl Methacrylate	14.00	100	1023	0.220	ng	#	74

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091743.D Vial: 13
Acq On : 10 Feb 2017 11:19 Operator: LH/AMF
Sample : 0.2ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:55:44 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

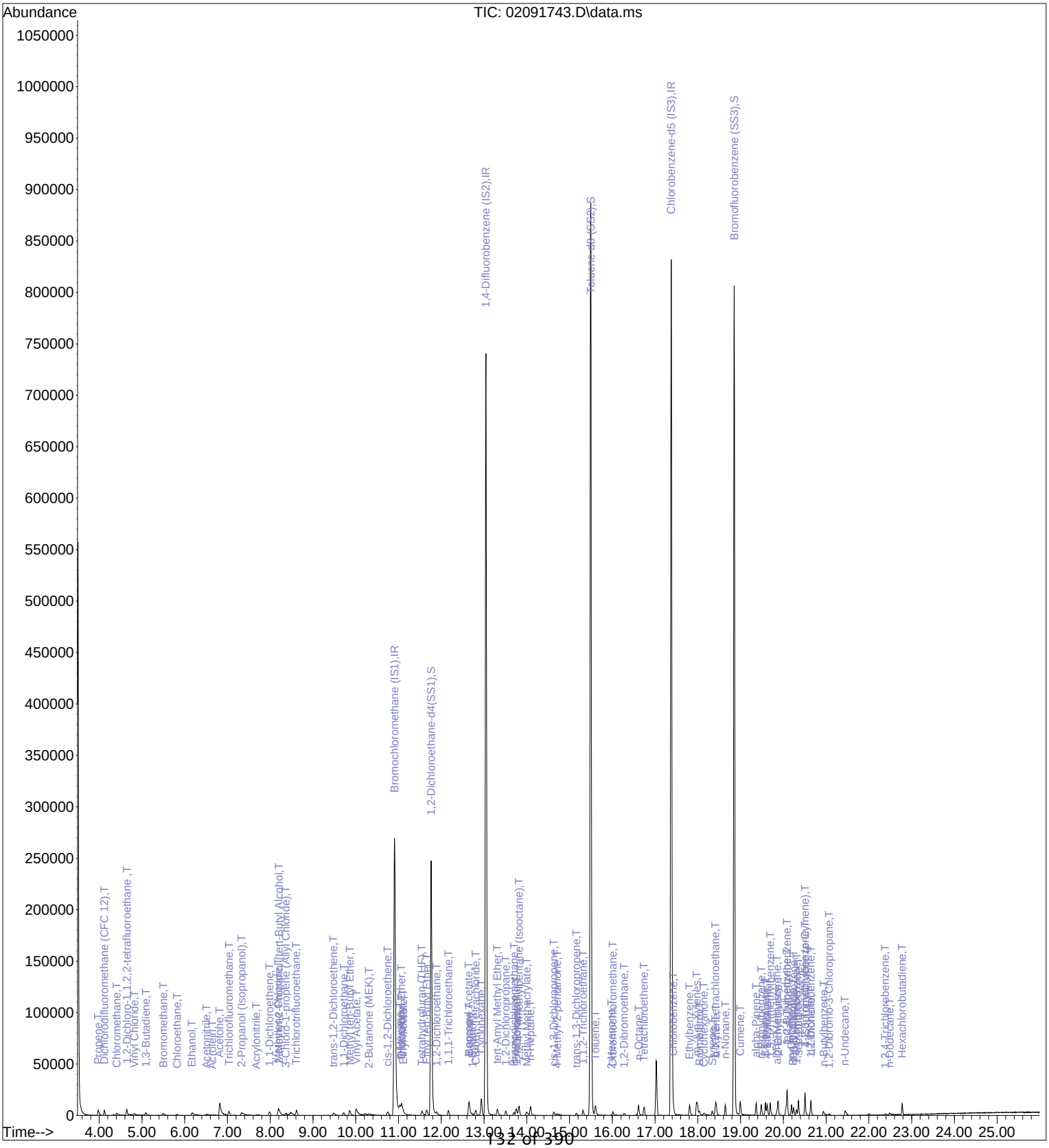
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.08	71	2372	0.223 ng		92
52) cis-1,3-Dichloropropene	14.63	75	3144	0.184 ng		98
53) 4-Methyl-2-pentanone	14.71	58	689	0.079 ng	#	60
54) trans-1,3-Dichloropropene	15.16	75	2175	0.126 ng		92
55) 1,1,2-Trichloroethane	15.32	97	2303	0.200 ng		94
58) Toluene	15.61	91	9764	0.203 ng		99
59) 2-Hexanone	15.98	43	940	0.047 ng	#	66
60) Dibromochloromethane	16.01	129	2548	0.177 ng		96
61) 1,2-Dibromoethane	16.27	107	2256	0.181 ng		98
62) n-Butyl Acetate	0.00	43	0	N.D. d		
63) n-Octane	16.61	57	1951	0.229 ng		91
64) Tetrachloroethene	16.74	166	3236	0.200 ng		93
65) Chlorobenzene	17.43	112	6459	0.186 ng		96
66) Ethylbenzene	17.81	91	10246	0.187 ng		98
67) m- & p-Xylenes	17.98	91	16333	0.375 ng		98
68) Bromoform	18.04	173	2043	0.152 ng		99
69) Styrene	18.34	104	4253	0.133 ng		83
70) o-Xylene	18.43	91	8186	0.190 ng		97
71) n-Nonane	18.64	43	3783	0.205 ng		99
72) 1,1,2,2-Tetrachloroethane	18.41	83	3488	0.189 ng		93
74) Cumene	18.99	105	10947	0.191 ng		98
75) alpha-Pinene	19.36	93	5320	0.194 ng		98
76) n-Propylbenzene	19.48	91	11263	0.177 ng		96
77) 3-Ethyltoluene	19.58	105	8635	0.157 ng		99
78) 4-Ethyltoluene	19.62	105	8792	0.167 ng		96
79) 1,3,5-Trimethylbenzene	19.69	105	9032	0.183 ng		93
80) alpha-Methylstyrene	19.85	118	2504	0.103 ng	#	80
81) 2-Ethyltoluene	19.87	105	10155	0.181 ng		95
82) 1,2,4-Trimethylbenzene	20.09	105	7746	0.167 ng		98
83) n-Decane	20.19	57	3758	0.193 ng		93
84) Benzyl Chloride	20.23	91	2289	0.062 ng		84
85) 1,3-Dichlorobenzene	20.24	146	3683	0.124 ng		98
86) 1,4-Dichlorobenzene	20.31	146	3776	0.120 ng		100
87) sec-Butylbenzene	20.35	105	11499	0.185 ng		100
88) 4-Isopropyltoluene (p-...	20.51	119	10077	0.165 ng		95
89) 1,2,3-Trimethylbenzene	20.51	105	7526	0.157 ng		99
90) 1,2-Dichlorobenzene	20.64	146	3900	0.135 ng		99
91) d-Limonene	20.64	68	2185	0.156 ng		97
92) 1,2-Dibromo-3-Chloropr...	21.07	157	794	0.073 ng		89
93) n-Undecane	21.44	57	2921	0.135 ng		89
94) 1,2,4-Trichlorobenzene	22.38	180	1238	0.056 ng	#	84
95) Naphthalene	0.00	128	0	N.D. d		
96) n-Dodecane	22.49	57	1307	0.065 ng	#	76
97) Hexachlorobutadiene	22.78	225	2765	0.162 ng		97
98) Cyclohexanone	18.14	55	1798	0.146 ng		95
99) tert-Butylbenzene	20.08	119	9050	0.189 ng		95
100) n-Butylbenzene	20.95	91	5213	0.113 ng		99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091743.D Vial: 13
Acq On : 10 Feb 2017 11:19 Operator: LH/AMF
Sample : 0.2ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

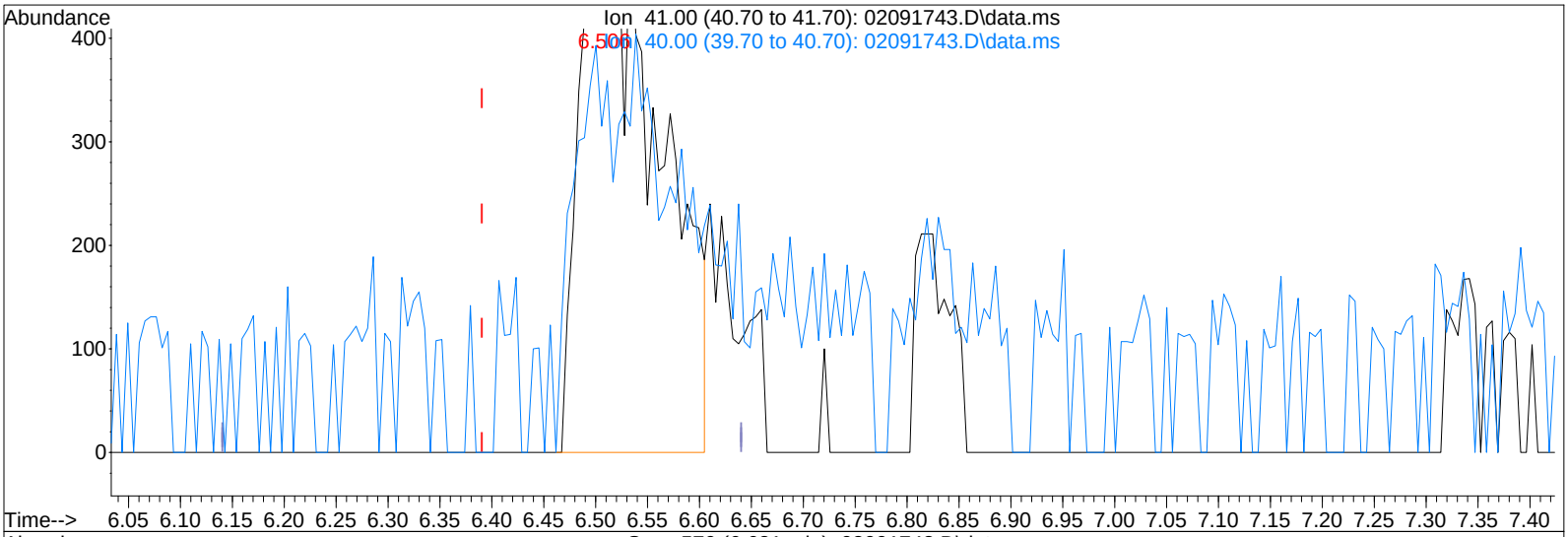
Quant Time: Feb 10 11:55:44 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

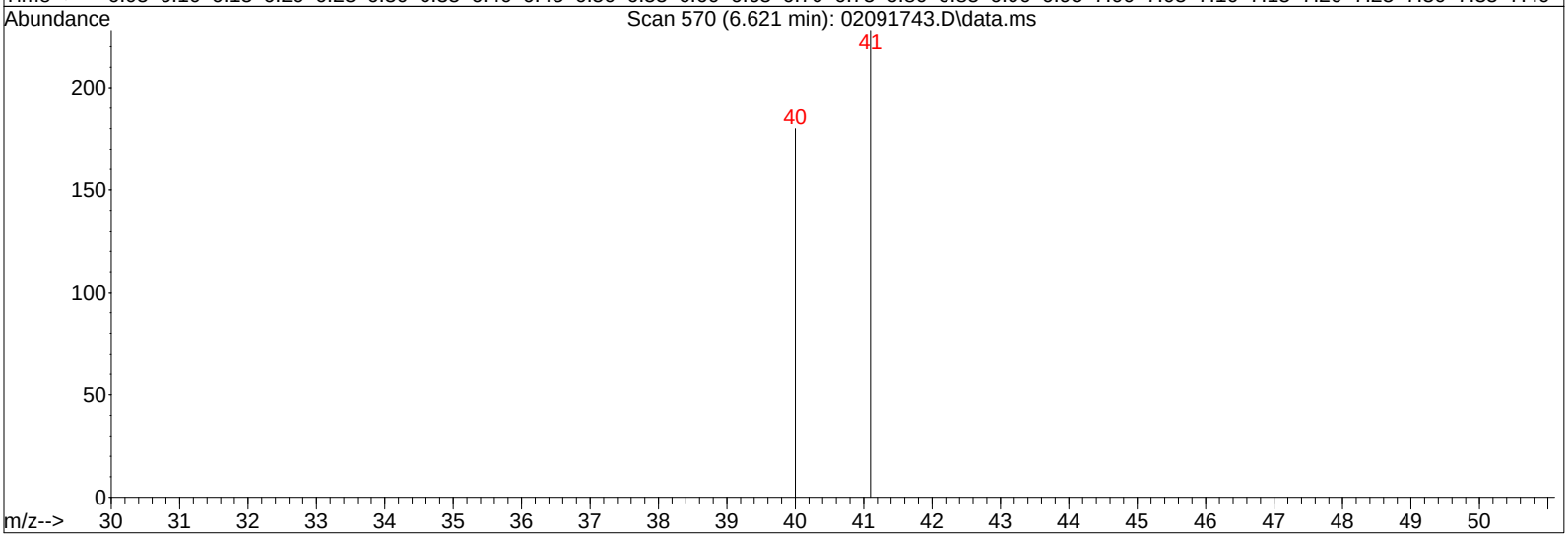


Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091743.D Vial: 13
Acq On : 10 Feb 2017 11:19 Operator: LH/AMF
Sample : 0.2ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:42:54 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091743.D\data.ms

(11) Acetonitrile (T)

6.506min (+0.115) 0.17ng

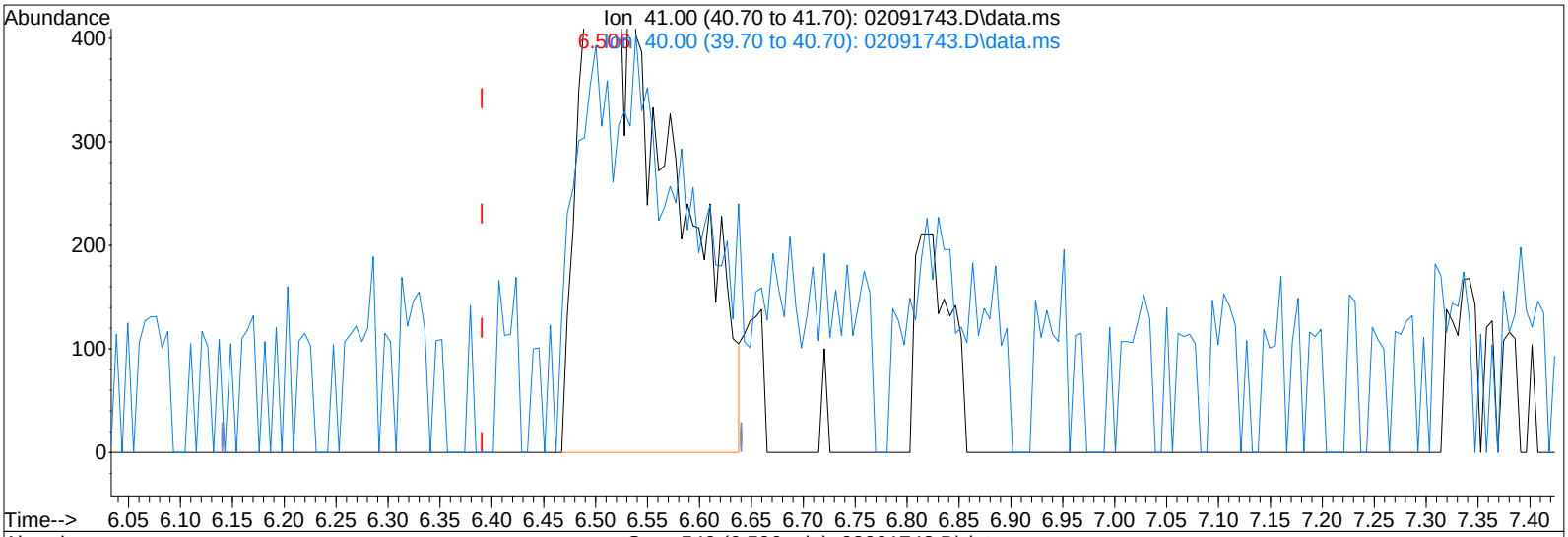
response 2776

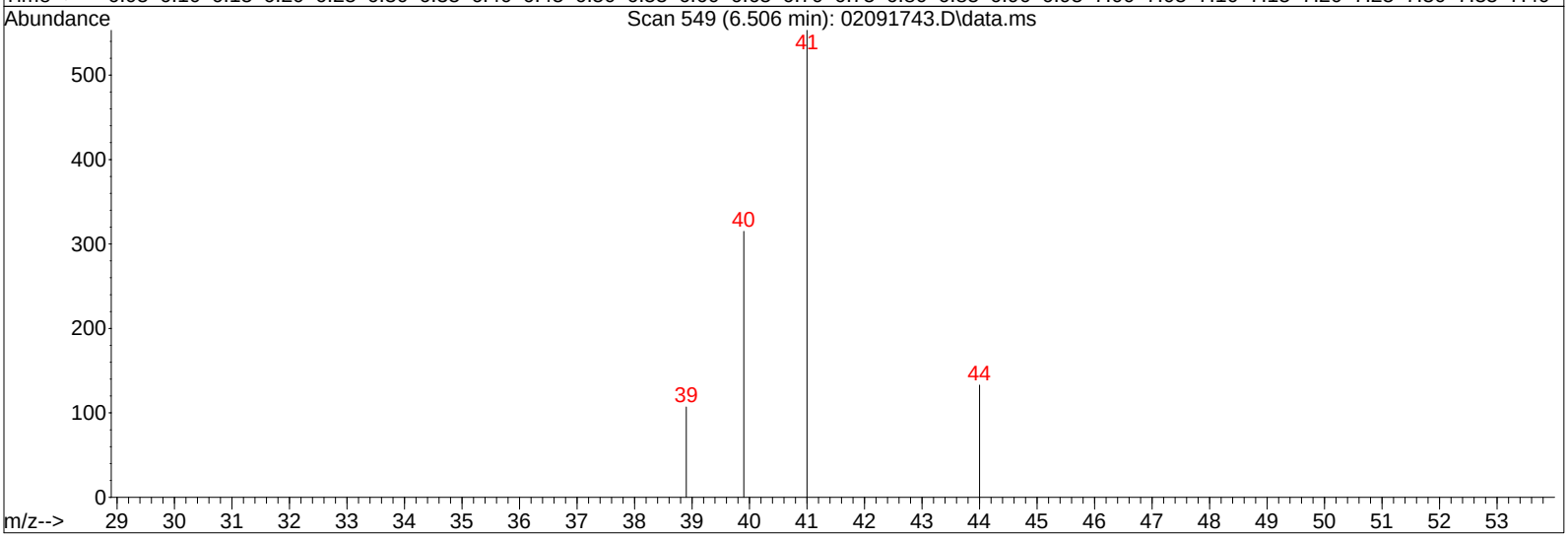
Ion	Exp%	Act%
41.00	100	100
40.00	54.60	89.30#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091743.D Vial: 13
Acq On : 10 Feb 2017 11:19 Operator: LH/AMF
Sample : 0.2ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:42:54 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091743.D\data.ms

(11) Acetonitrile (T)

6.506min (+0.115) 0.19ng m

response 3102

Ion	Exp%	Act%
41.00	100	100
40.00	54.60	79.92#
0.00	0.00	0.00
0.00	0.00	0.00

BLC

2/10/17

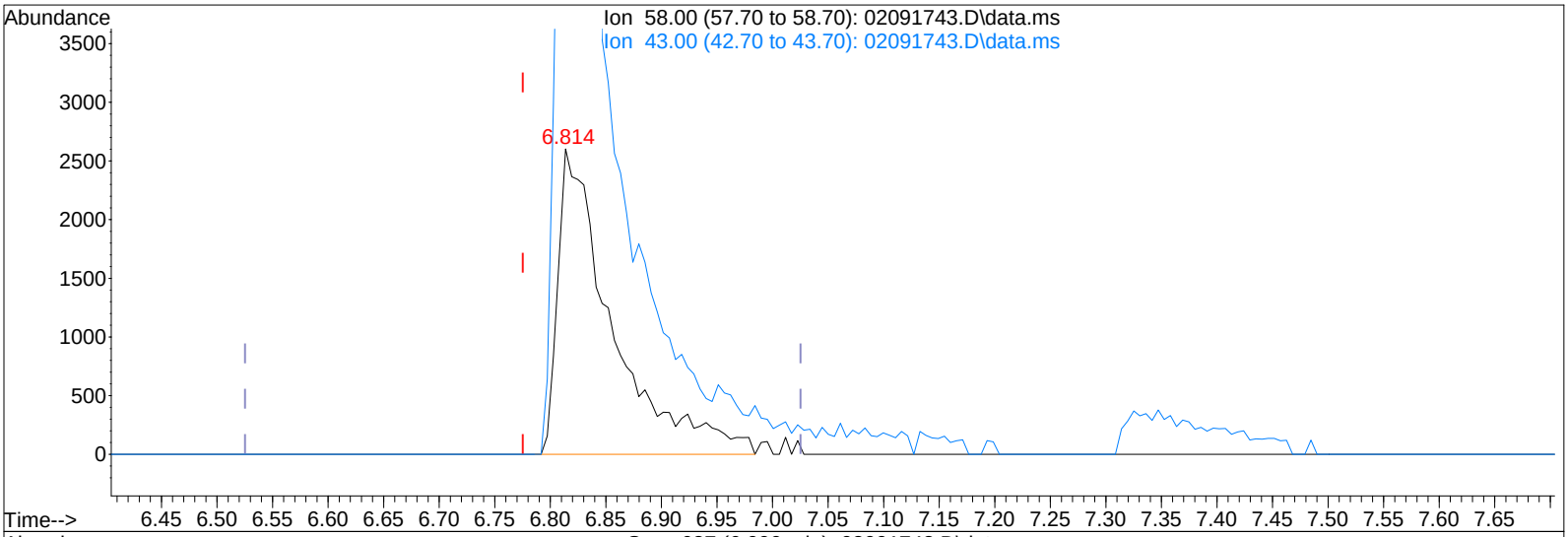
LH 2/17/17

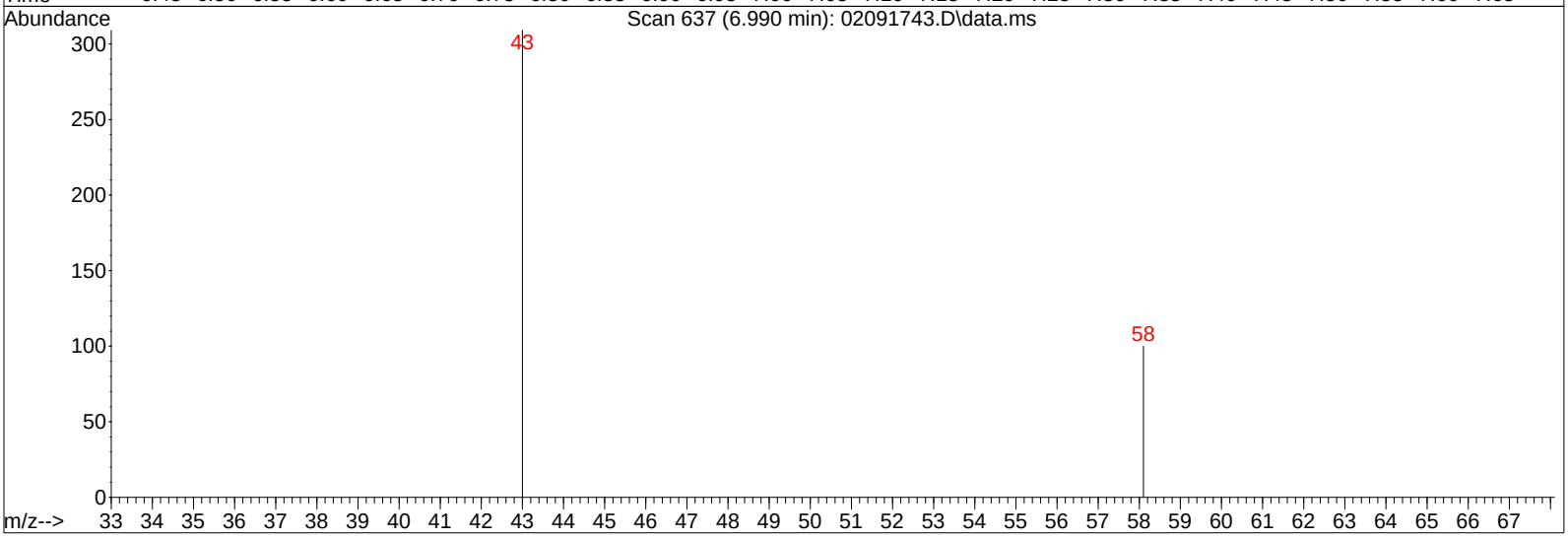
2/17/17

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091743.D Vial: 13
Acq On : 10 Feb 2017 11:19 Operator: LH/AMF
Sample : 0.2ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:42:54 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091743.D\data.ms

(13) Acetone (T)

6.814min (+0.038) 1.27ng

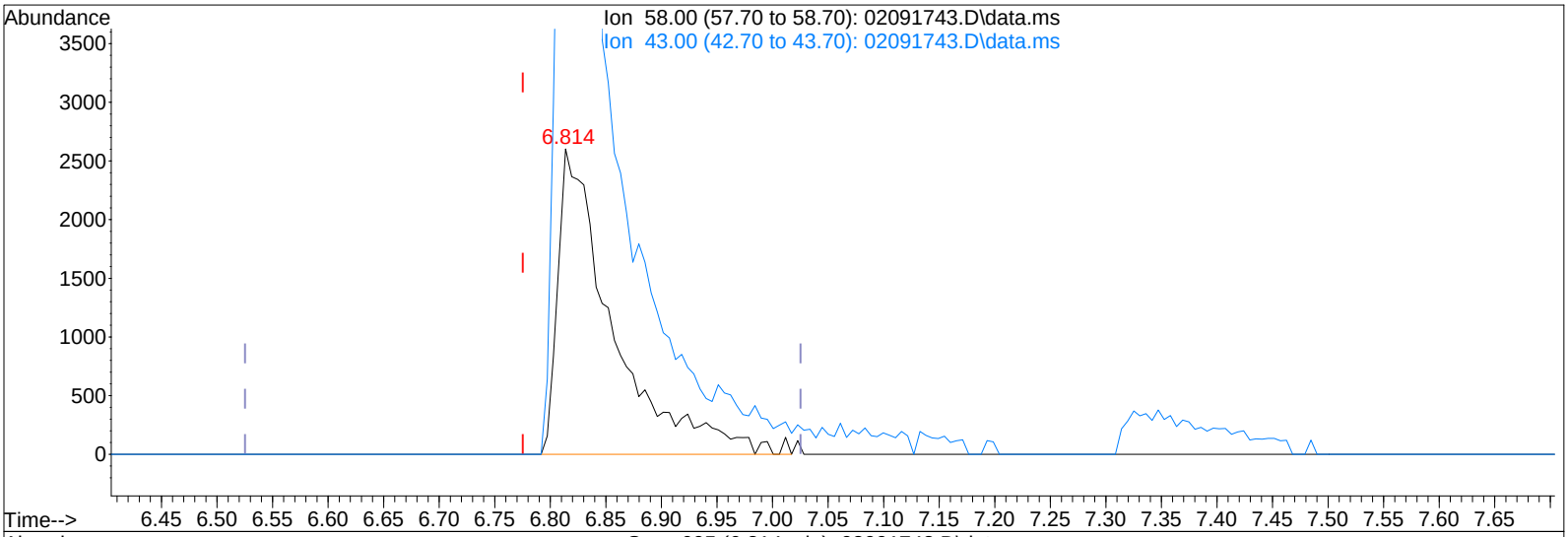
response 8838

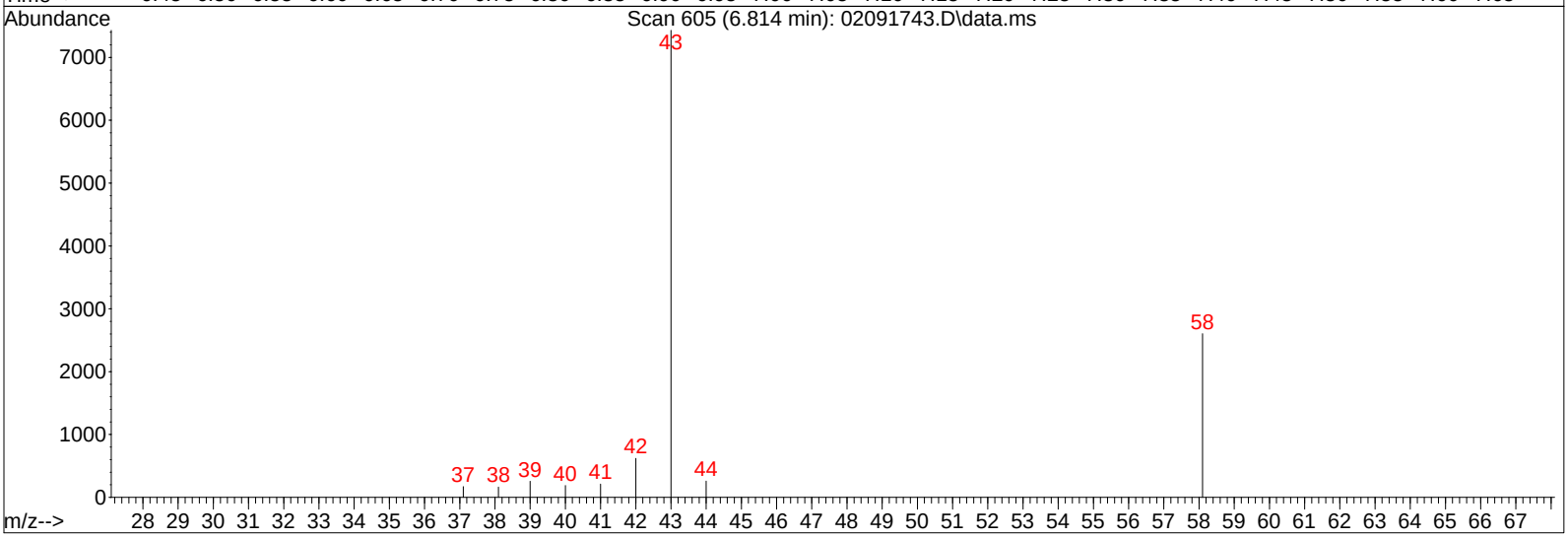
Ion	Exp%	Act%
58.00	100	100
43.00	339.70	288.18#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091743.D Vial: 13
Acq On : 10 Feb 2017 11:19 Operator: LH/AMF
Sample : 0.2ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:42:54 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091743.D\data.ms

(13) Acetone (T)

6.814min (+0.038) 1.28ng m

response 8954

Ion	Exp%	Act%
58.00	100	100
43.00	339.70	284.44#
0.00	0.00	0.00
0.00	0.00	0.00

BLC

2/10/17

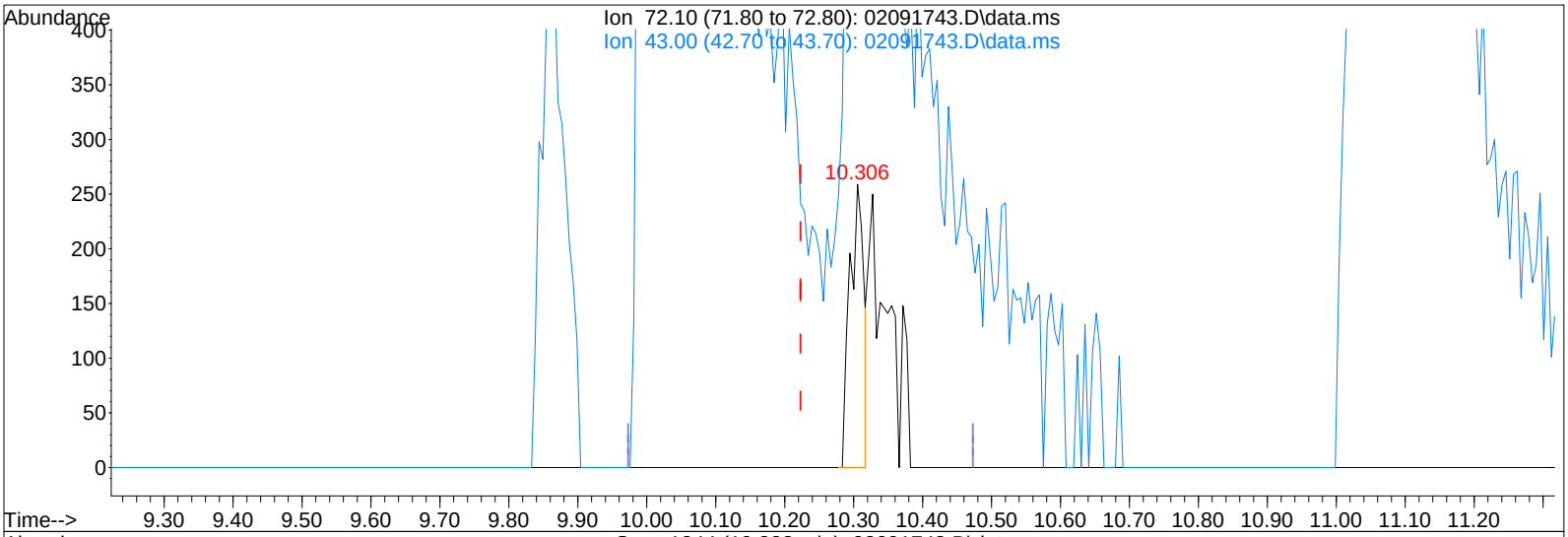
LH 2/17/17

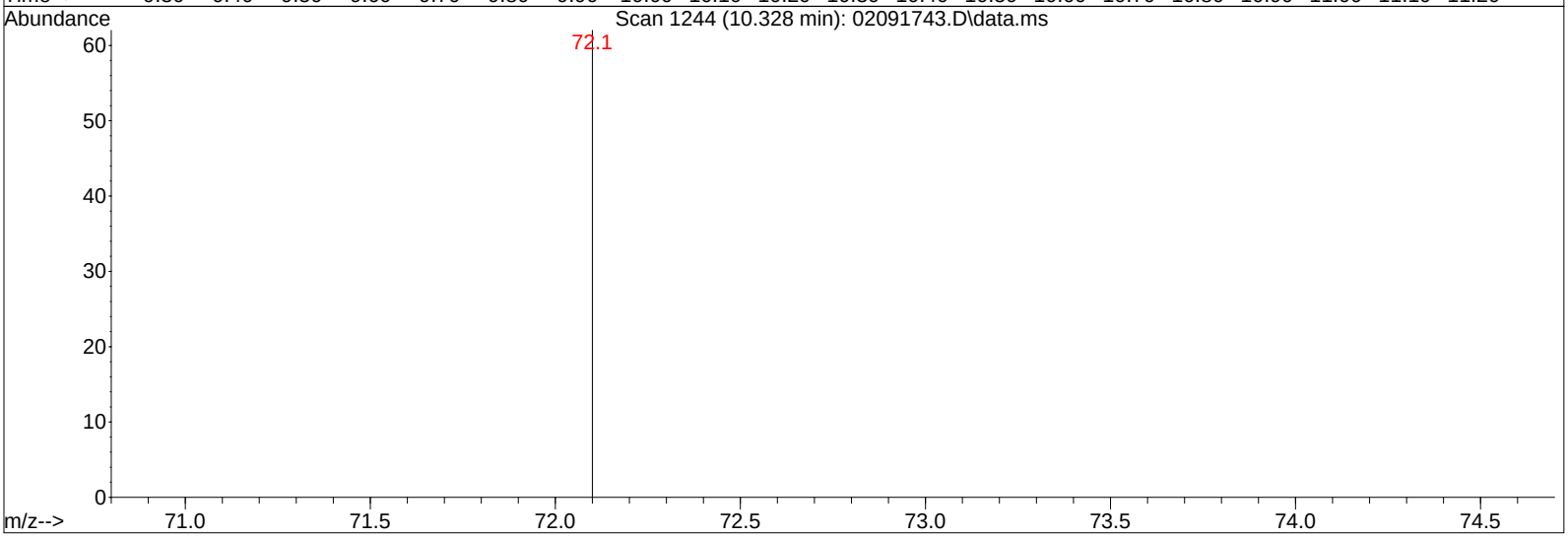
2/17/17

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091743.D Vial: 13
Acq On : 10 Feb 2017 11:19 Operator: LH/AMF
Sample : 0.2ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:42:54 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091743.D\data.ms

(27) 2-Butanone (MEK) (T)

10.306min (+0.082) 0.05ng

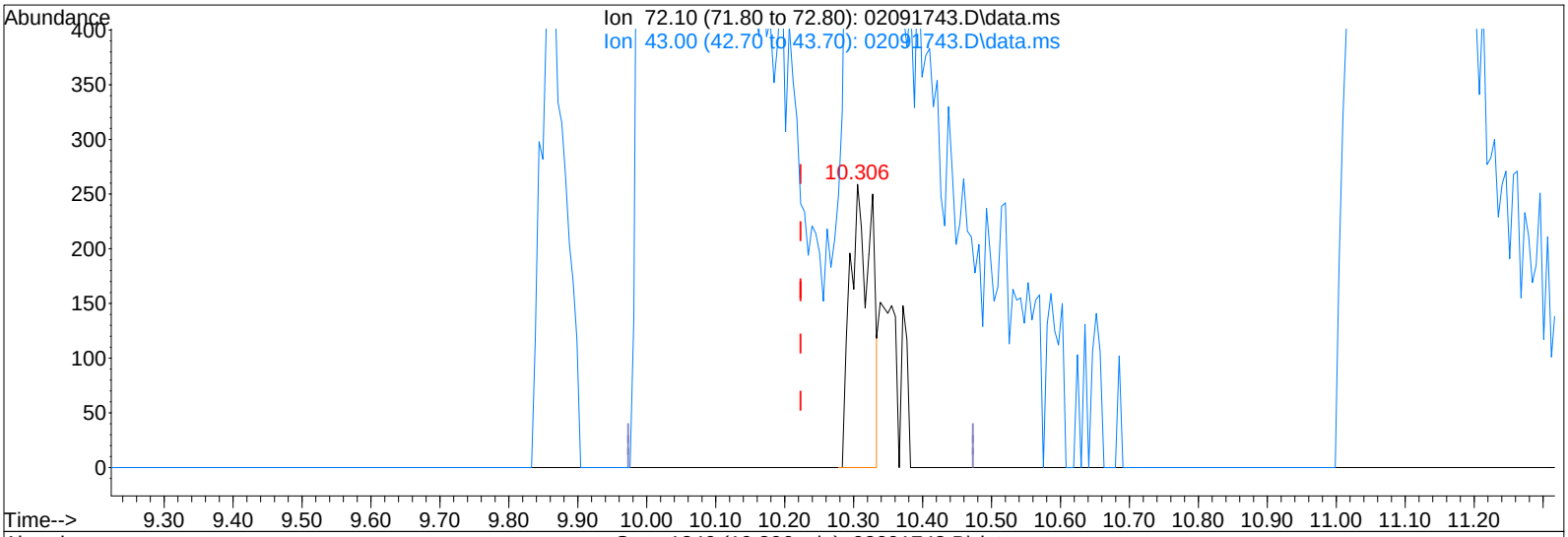
response 363

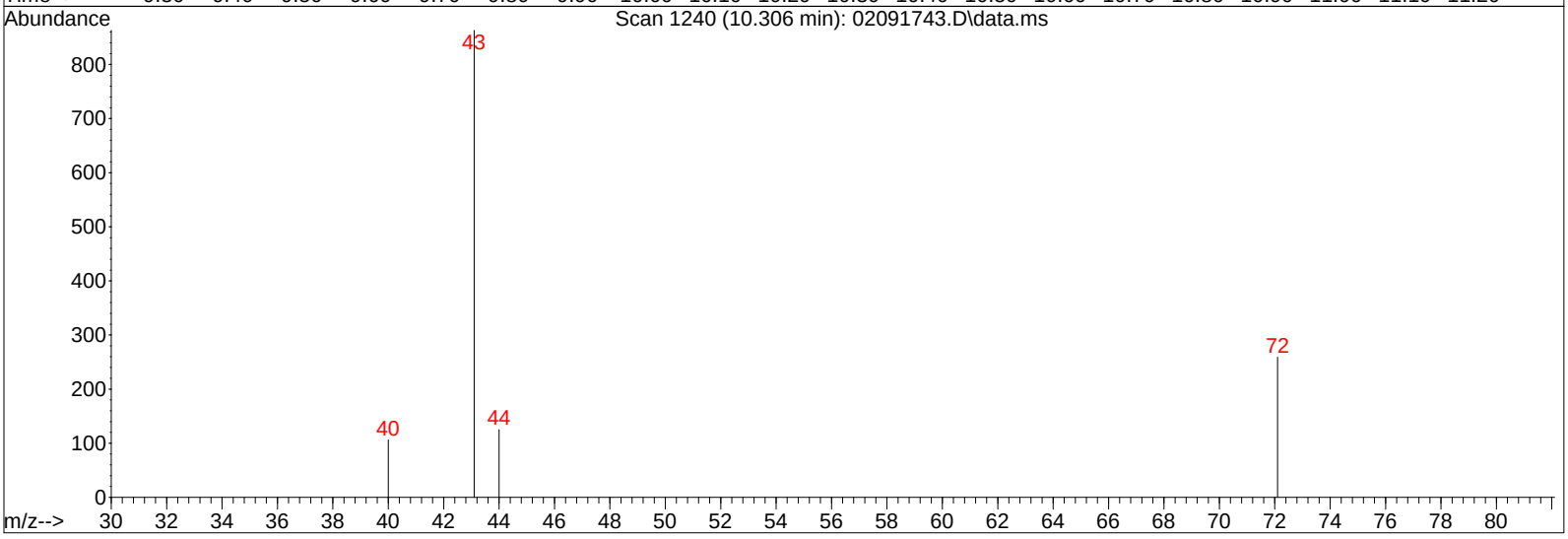
Ion	Exp%	Act%
72.10	100	100
43.00	361.20	975.21#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091743.D Vial: 13
Acq On : 10 Feb 2017 11:19 Operator: LH/AMF
Sample : 0.2ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 11:42:54 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091743.D\data.ms

(27) 2-Butanone (MEK) (T)

10.306min (+0.082) 0.07ng m

response 549

Ion	Exp%	Act%
72.10	100	100
43.00	361.20	644.81#
0.00	0.00	0.00
0.00	0.00	0.00

BLC

2/10/17

LH 2/17/17

2/17/17

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091722.D Vial: 13
Acq On : 9 Feb 2017 6:09 pm Operator: LH/AMF
Sample : 0.4ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

LH 2/17/17

Quant Time: Feb 10 08:49:00 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

AM 2/10/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	131010	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.04	114	605271	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	236984	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.76	65	191829	12.518	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.16%				
57) Toluene-d8 (SS2)	15.50	98	596033	12.433	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%				
73) Bromofluorobenzene (SS3)	18.85	174	248923	12.580	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.64%				
Target Compounds							Qvalue
2) Propene	3.98	42	5120	0.576	ng		98
3) Dichlorodifluoromethan...	4.11	85	11979	0.562	ng		98
4) Chloromethane	4.41	50	6971	0.557	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.64	135	6842	0.528	ng		98
6) Vinyl Chloride	4.80	62	6915	0.561	ng		96
7) 1,3-Butadiene	5.07	54	4106	0.540	ng		97
8) Bromomethane	5.49	94	4533	0.554	ng		100
9) Chloroethane	5.80	64	3441	0.555	ng		96
10) Ethanol	6.15	45	15577	3.060	ng		99
11) Acetonitrile	6.47	41	7008	0.528	ng		82
12) Acrolein	6.61	56	2206	0.473	ng		94
13) Acetone	6.80	58	17486	3.046	ng		94
14) Trichlorofluoromethane	7.03	101	10561	0.555	ng		100
15) 2-Propanol (Isopropanol)	7.29	45	21791	1.156	ng		92
16) Acrylonitrile	7.62	53	3719	0.354	ng		99
17) 1,1-Dichloroethene	7.98	96	4935	0.540	ng		96
18) 2-Methyl-2-Propanol (t...	8.17	59	23752	1.108	ng		98
19) Methylene Chloride	8.19	84	5293	0.539	ng		92
20) 3-Chloro-1-propene (Al...	8.36	41	5637	0.520	ng		90
21) Trichlorotrifluoroethane	8.61	151	5867	0.551	ng		97
22) Carbon Disulfide	8.48	76	19837	0.574	ng		97
23) trans-1,2-Dichloroethene	9.48	61	6456	0.565	ng		99
24) 1,1-Dichloroethane	9.71	63	8516	0.545	ng		98
25) Methyl tert-Butyl Ether	9.84	73	15357	0.534	ng		99
26) Vinyl Acetate	9.99	86	4732	2.286	ng	#	74
27) 2-Butanone (MEK)	10.27	72	2604m	0.432	ng		
28) cis-1,2-Dichloroethene	10.74	61	6853	0.584	ng		94
29) Diisopropyl Ether	11.06	87	4954	0.598	ng	#	83
30) Ethyl Acetate	11.08	61	2582	0.918	ng		100
31) n-Hexane	11.04	57	8129	0.593	ng		98
32) Chloroform	11.08	83	9890	0.575	ng		94
34) Tetrahydrofuran (THF)	11.53	72	3324	0.525	ng	#	88
35) Ethyl tert-Butyl Ether	11.65	87	5766	0.539	ng		91
36) 1,2-Dichloroethane	11.89	62	7408	0.561	ng		100
38) 1,1,1-Trichloroethane	12.16	97	9103	0.566	ng		99
39) Isopropyl Acetate	12.63	61	5752	1.150	ng	#	92
40) 1-Butanol	12.67	56	6099m	0.817	ng		
41) Benzene	12.65	78	20807	0.584	ng		98
42) Carbon Tetrachloride	12.81	117	7860	0.539	ng		100
43) Cyclohexane	12.93	84	16336	1.160	ng		96
44) tert-Amyl Methyl Ether	13.30	73	13873	0.555	ng		98
45) 1,2-Dichloropropane	13.51	63	4714	0.586	ng		96
46) Bromodichloromethane	13.70	83	6948	0.539	ng		99
47) Trichloroethene	13.75	130	6595	0.574	ng		100
48) 1,4-Dioxane	13.75	88	4274	0.616	ng		94
49) 2,2,4-Trimethylpentane...	13.82	57	20273	0.587	ng		99
50) Methyl Methacrylate	13.98	100	3282	0.873	ng	#	79

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091722.D Vial: 13
Acq On : 9 Feb 2017 6:09 pm Operator: LH/AMF
Sample : 0.4ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:49:00 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

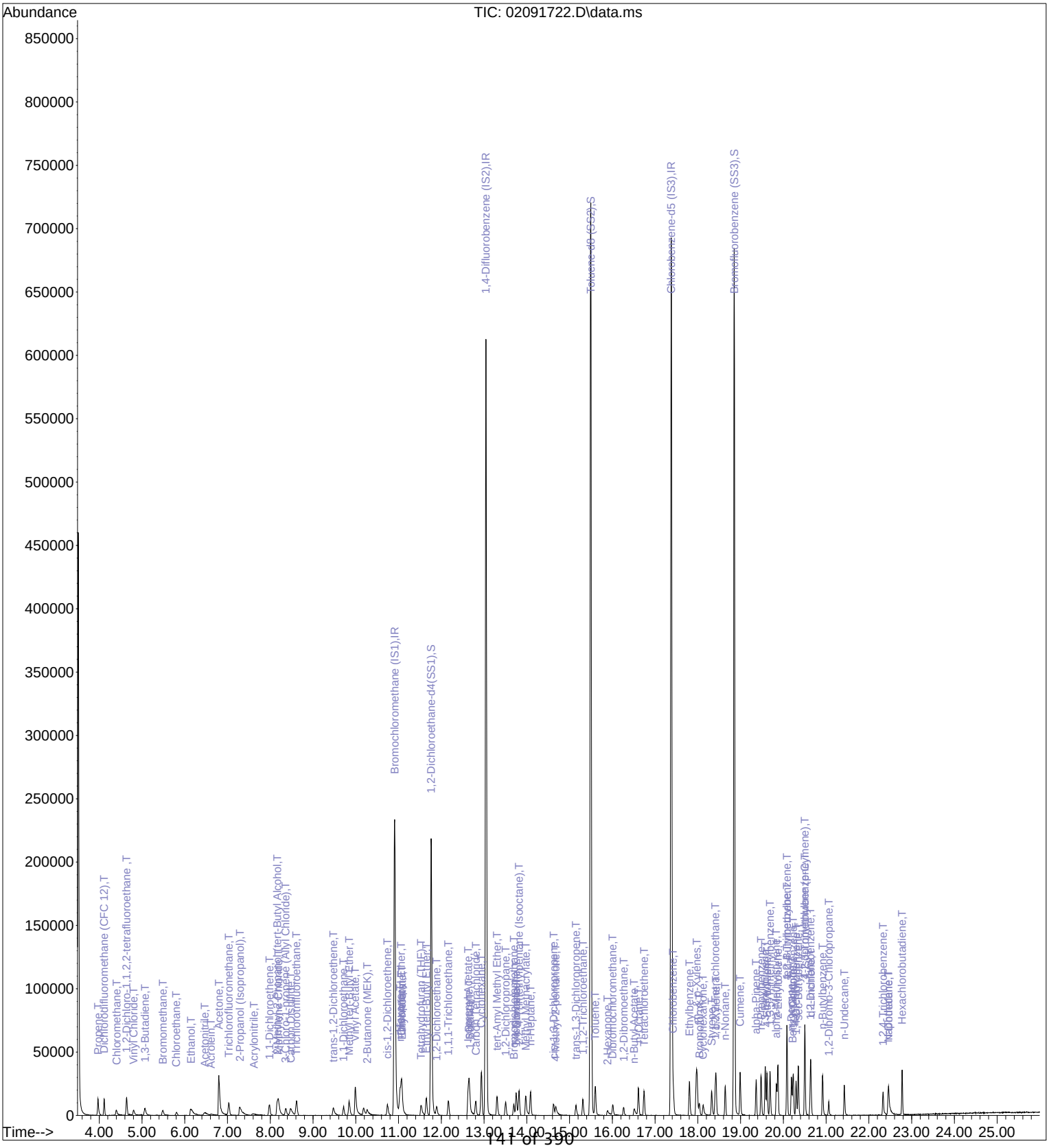
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	5068	0.590	ng	94
52) cis-1,3-Dichloropropene	14.63	75	7723	0.561	ng	99
53) 4-Methyl-2-pentanone	14.67	58	3426	0.487	ng	91
54) trans-1,3-Dichloropropene	15.15	75	6500	0.465	ng	99
55) 1,1,2-Trichloroethane	15.32	97	5181	0.558	ng	99
58) Toluene	15.60	91	21595	0.548	ng	100
59) 2-Hexanone	15.89	43	7821m	0.474	ng	
60) Dibromochloromethane	16.01	129	6453	0.548	ng	98
61) 1,2-Dibromoethane	16.27	107	5913	0.580	ng	99
62) n-Butyl Acetate	16.51	43	7000	0.412	ng	96
63) n-Octane	16.61	57	4226	0.608	ng	92
64) Tetrachloroethene	16.74	166	7550	0.570	ng	96
65) Chlorobenzene	17.42	112	15843	0.558	ng	99
66) Ethylbenzene	17.81	91	24125	0.539	ng	99
67) m- & p-Xylenes	17.97	91	38408	1.079	ng	96
68) Bromoform	18.04	173	5461	0.497	ng	100
69) Styrene	18.32	104	13364	0.510	ng	98
70) o-Xylene	18.43	91	20438	0.581	ng	97
71) n-Nonane	18.64	43	8456	0.561	ng	98
72) 1,1,2,2-Tetrachloroethane	18.41	83	8384	0.555	ng	99
74) Cumene	18.99	105	25774	0.551	ng	98
75) alpha-Pinene	19.36	93	12004	0.536	ng	100
76) n-Propylbenzene	19.48	91	29477	0.567	ng	99
77) 3-Ethyltoluene	19.58	105	25831	0.575	ng	100
78) 4-Ethyltoluene	19.62	105	23178	0.538	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	22065	0.546	ng	96
80) alpha-Methylstyrene	19.84	118	10201	0.514	ng	90
81) 2-Ethyltoluene	19.87	105	26000	0.566	ng	97
82) 1,2,4-Trimethylbenzene	20.08	105	21219	0.560	ng	97
83) n-Decane	20.19	57	9486	0.597	ng	97
84) Benzyl Chloride	20.21	91	11748	0.391	ng	93
85) 1,3-Dichlorobenzene	20.23	146	13754	0.568	ng	98
86) 1,4-Dichlorobenzene	20.30	146	14252	0.554	ng	100
87) sec-Butylbenzene	20.35	105	28701	0.563	ng	98
88) 4-Isopropyltoluene (p-...	20.50	119	27420	0.550	ng	100
89) 1,2,3-Trimethylbenzene	20.50	105	21075	0.539	ng	97
90) 1,2-Dichlorobenzene	20.63	146	13411	0.569	ng	99
91) d-Limonene	20.64	68	6278	0.549	ng	96
92) 1,2-Dibromo-3-Chloropr...	21.06	157	3819	0.432	ng	89
93) n-Undecane	21.42	57	8928	0.505	ng	97
94) 1,2,4-Trichlorobenzene	22.33	180	9899	0.551	ng	98
95) Naphthalene	22.45	128	22966	0.486	ng	95
96) n-Dodecane	22.46	57	6790	0.416	ng	93
97) Hexachlorobutadiene	22.78	225	7660	0.550	ng	97
98) Cyclohexanone	18.12	55	5281	0.524	ng	98
99) tert-Butylbenzene	20.08	119	21957	0.560	ng	98
100) n-Butylbenzene	20.92	91	20898	0.555	ng	98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091722.D Vial: 13
Acq On : 9 Feb 2017 6:09 pm Operator: LH/AMF
Sample : 0.4ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

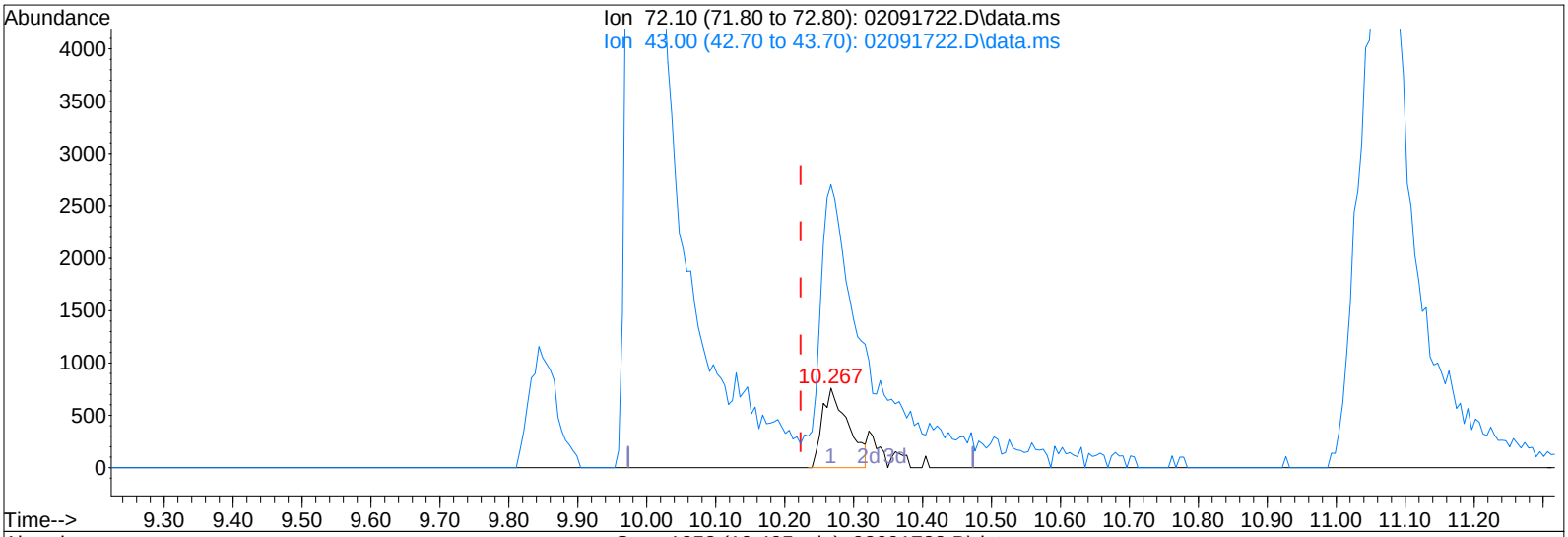
Quant Time: Feb 10 08:49:00 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

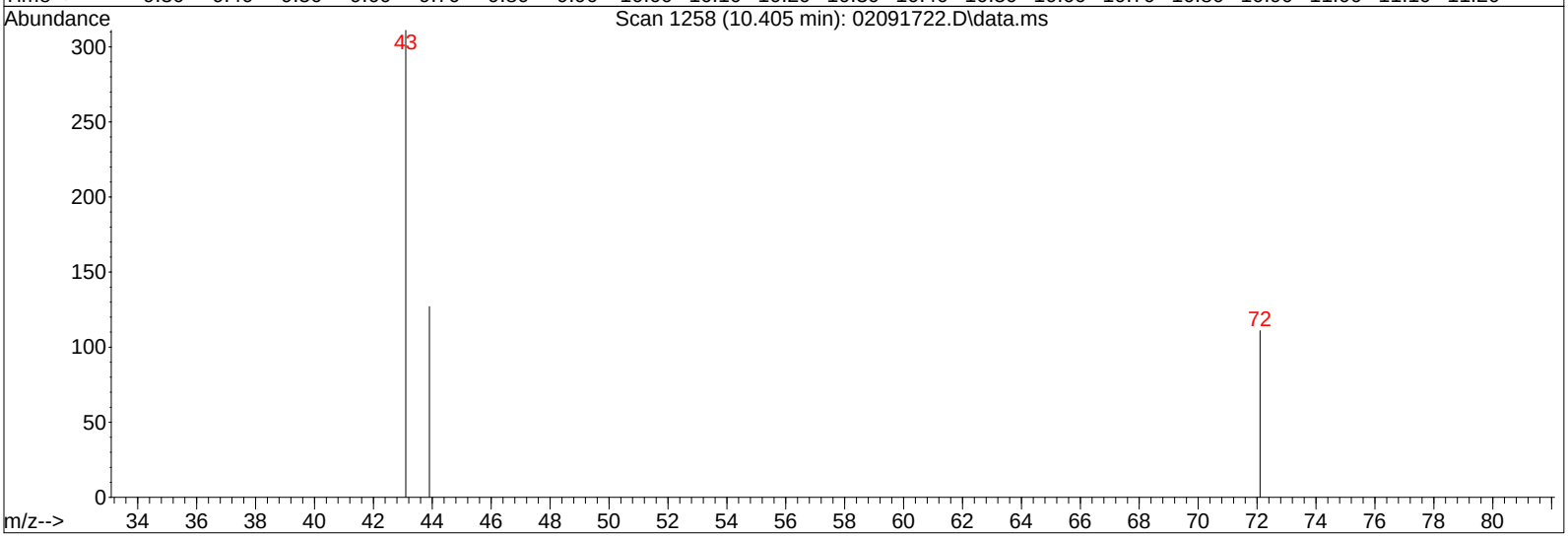


Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091722.D Vial: 13
Acq On : 9 Feb 2017 6:09 pm Operator: LH/AMF
Sample : 0.4ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:31 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091722.D\data.ms

(27) 2-Butanone (MEK) (T)

10.267min (+0.044) 0.33ng

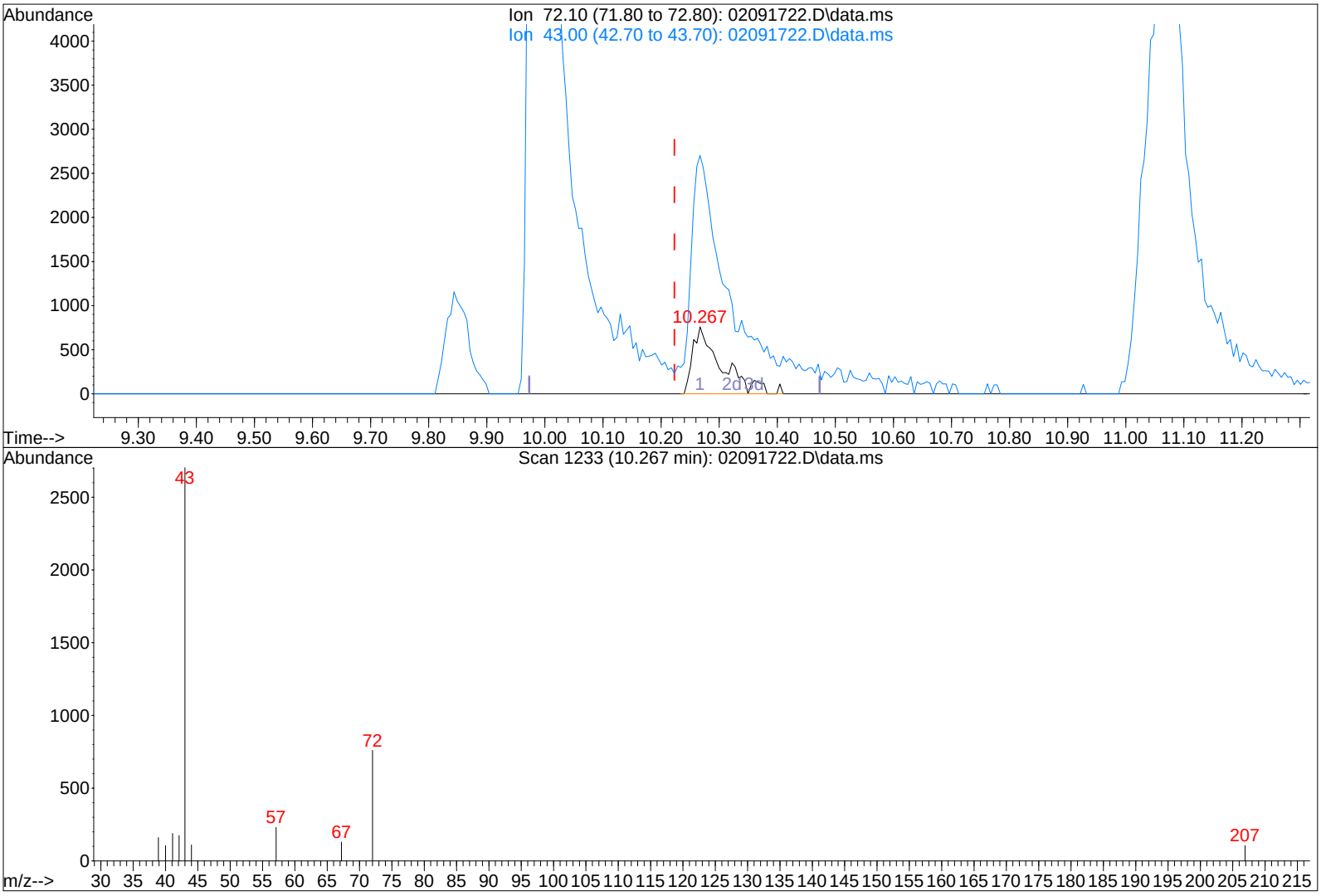
response 1973

Ion	Exp%	Act%
72.10	100	100
43.00	361.20	466.60#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091722.D Vial: 13
Acq On : 9 Feb 2017 6:09 pm Operator: LH/AMF
Sample : 0.4ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:31 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 02091722.D\data.ms

(27) 2-Butanone (MEK) (T)

10.267min (+0.044) 0.43ng m

response 2604

Ion	Exp%	Act%
72.10	100	100
43.00	361.20	353.53
0.00	0.00	0.00
0.00	0.00	0.00

BLC

2/10/17

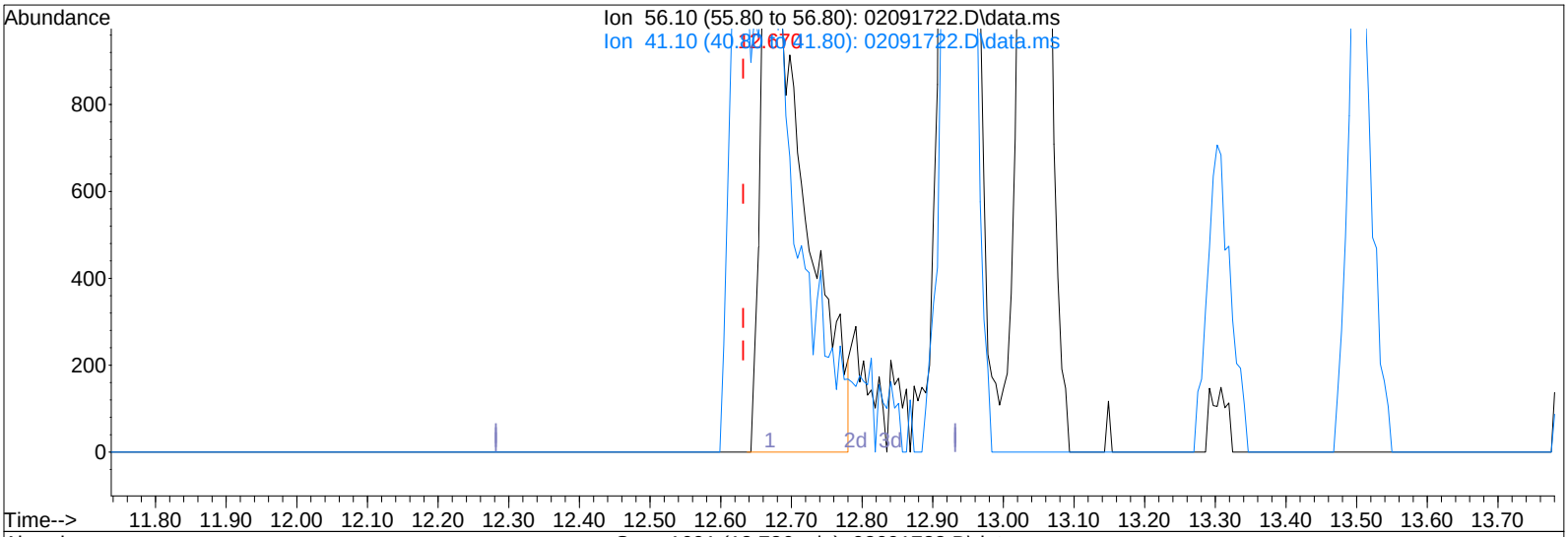
LH 2/17/17

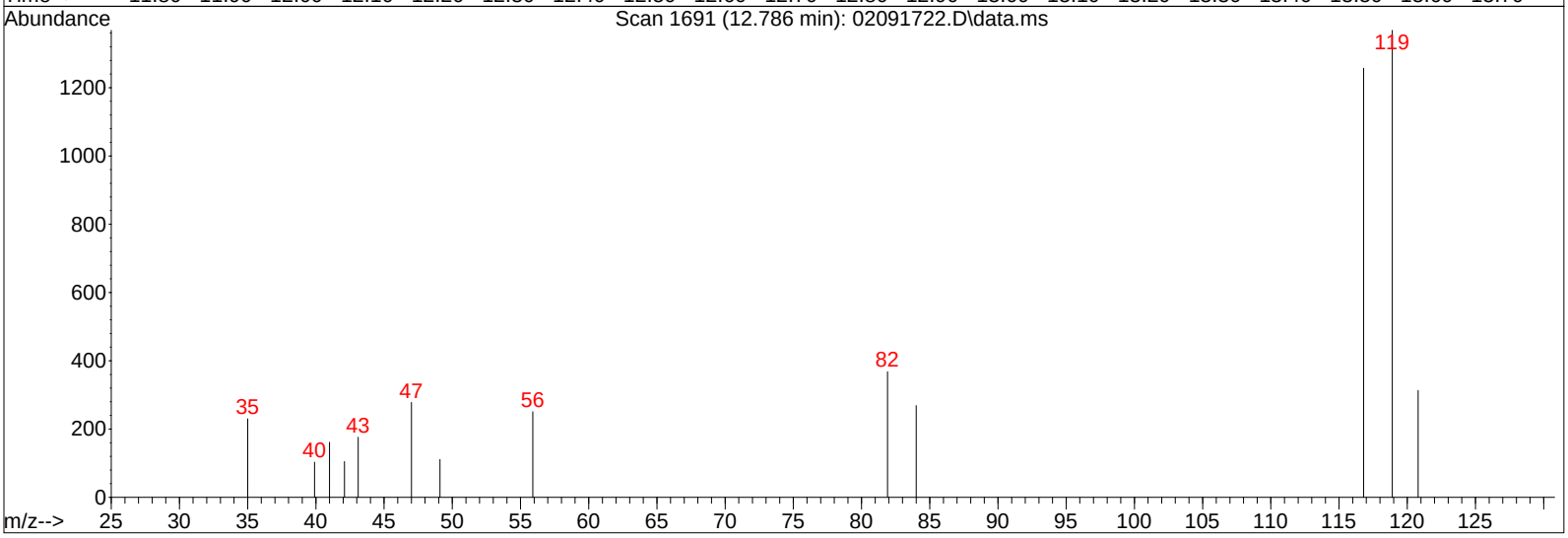
2/17/17

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091722.D Vial: 13
Acq On : 9 Feb 2017 6:09 pm Operator: LH/AMF
Sample : 0.4ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:31 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091722.D\data.ms

(40) 1-Butanol (T)

12.670min (+0.038) 0.71ng

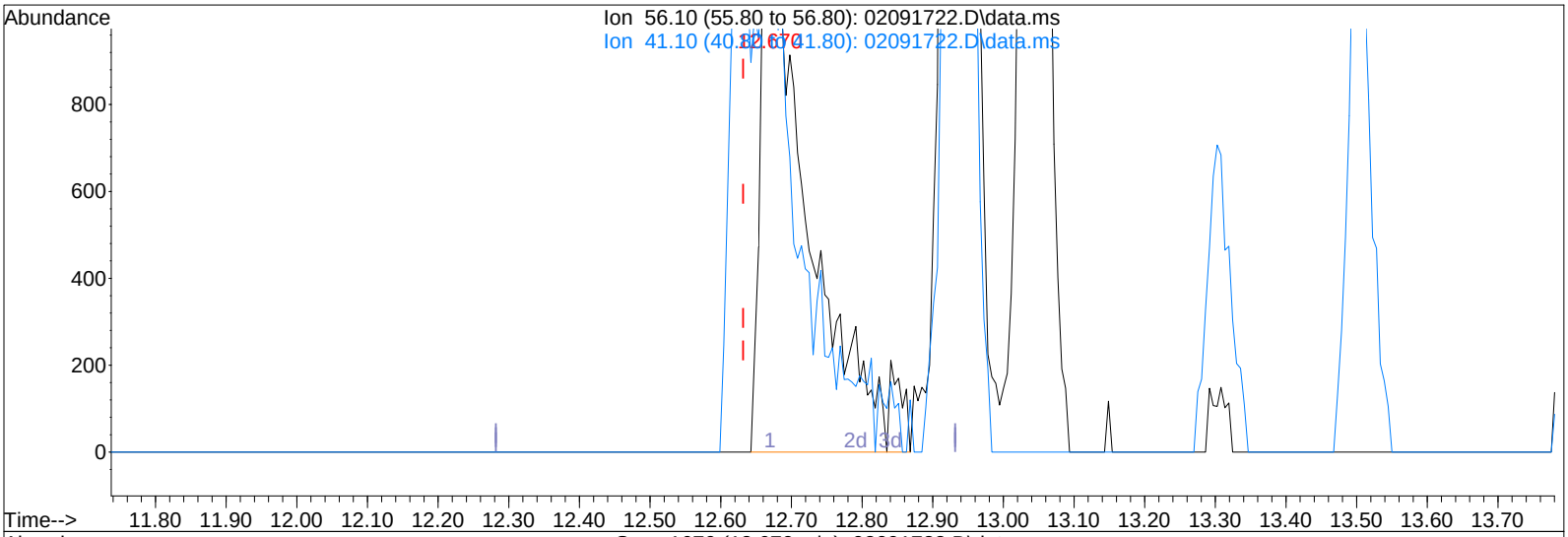
response 5327

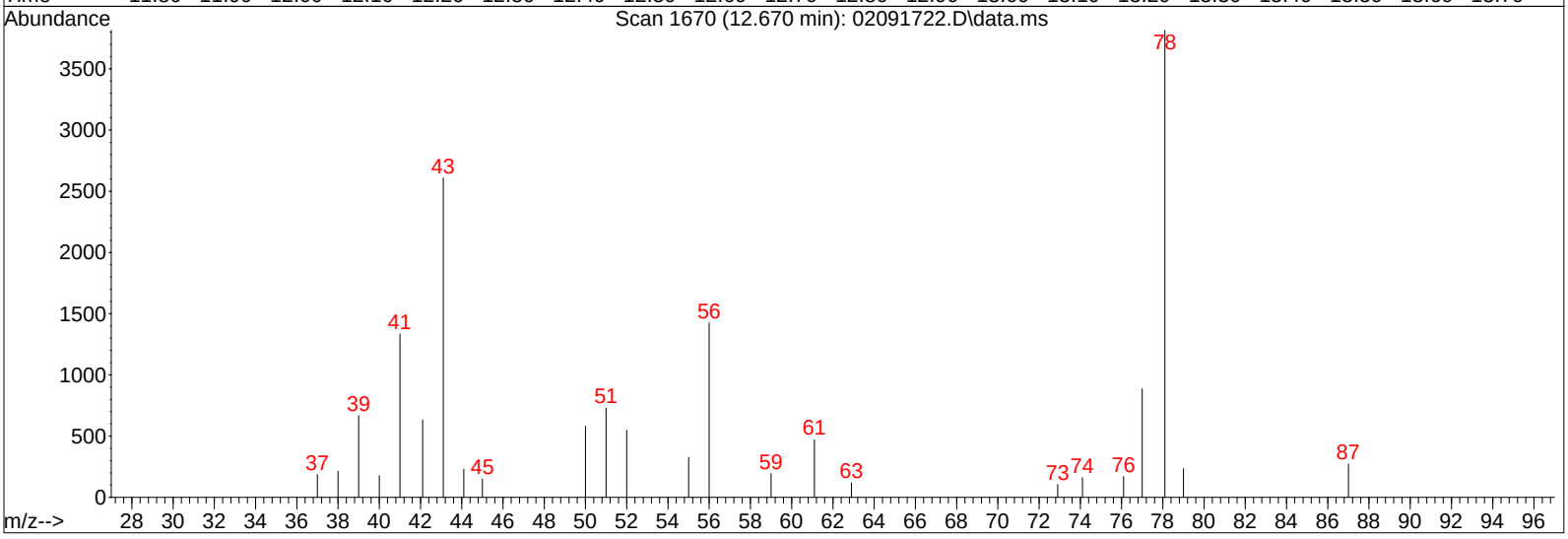
Ion	Exp%	Act%
56.10	100	100
41.10	107.40	54.42#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091722.D Vial: 13
Acq On : 9 Feb 2017 6:09 pm Operator: LH/AMF
Sample : 0.4ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:31 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091722.D\data.ms

(40) 1-Butanol (T)

12.670min (+0.038) 0.82ng m

response 6099

Ion	Exp%	Act%
56.10	100	100
41.10	107.40	47.53#
0.00	0.00	0.00
0.00	0.00	0.00

BLC

2/10/17

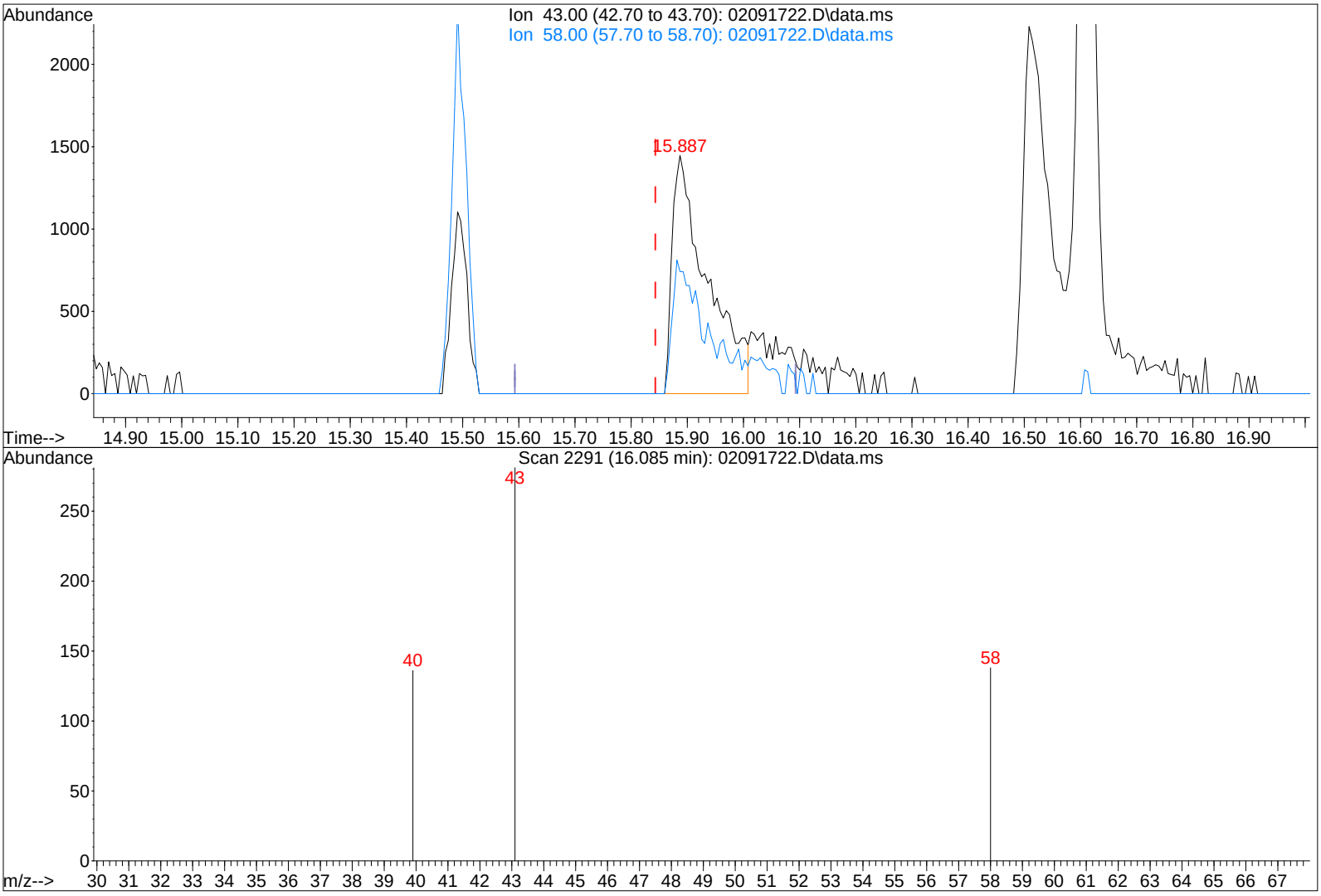
LH 2/17/17

2/17/17

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091722.D Vial: 13
Acq On : 9 Feb 2017 6:09 pm Operator: LH/AMF
Sample : 0.4ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:31 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 02091722.D\data.ms

(59) 2-Hexanone (T)

15.887min (+0.044) 0.38ng

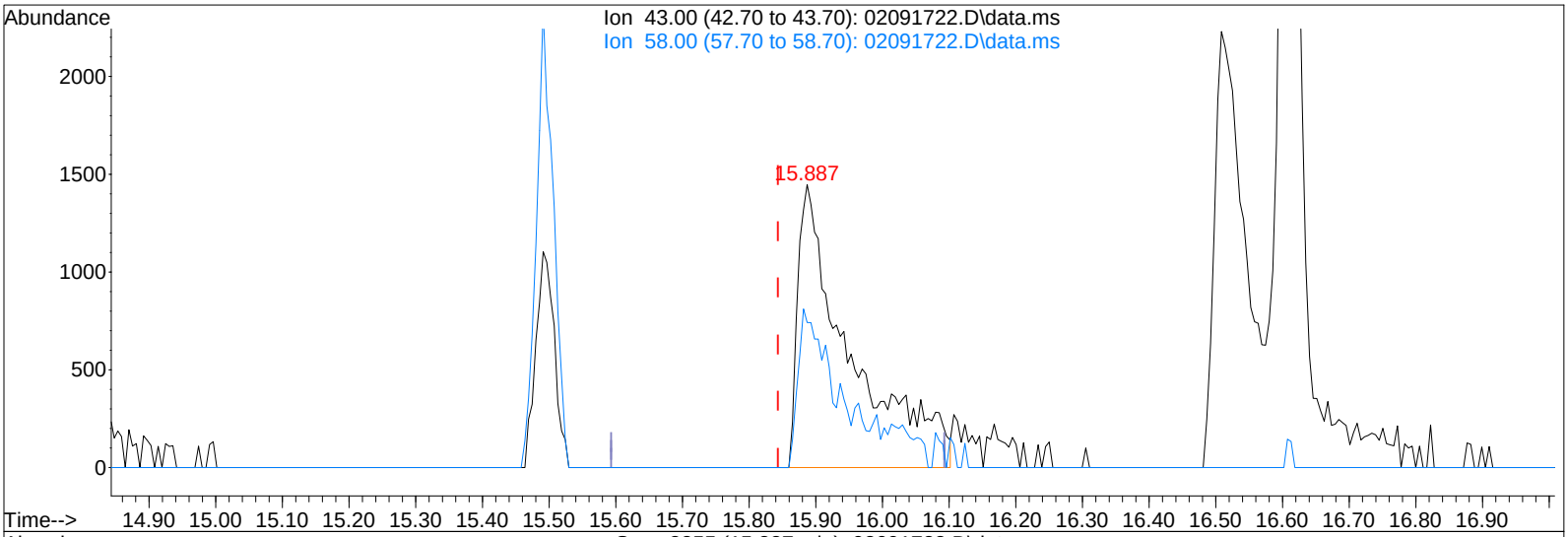
response 6279

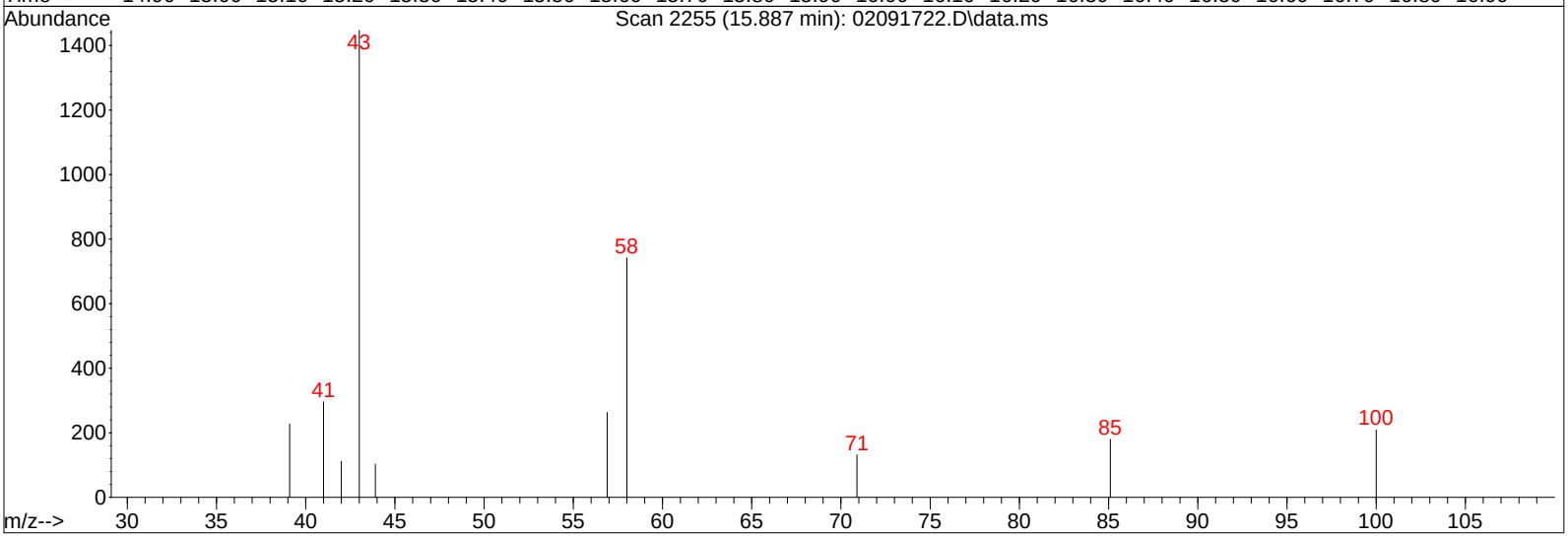
Ion	Exp%	Act%
43.00	100	100
58.00	57.40	36.96#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091722.D Vial: 13
Acq On : 9 Feb 2017 6:09 pm Operator: LH/AMF
Sample : 0.4ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:31 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091722.D\data.ms

(59) 2-Hexanone (T)

15.887min (+0.044) 0.47ng m

response 7821

Ion	Exp%	Act%
43.00	100	100
58.00	57.40	29.68#
0.00	0.00	0.00
0.00	0.00	0.00

BLC

2/10/17

LH 2/17/17

2/17/17

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091741.D Vial: 13
Acq On : 10 Feb 2017 10:09 Operator: LH/AMF
Sample : 0.08ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 10:45:35 2017 LH 2/17/17
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration AM 2/10/17
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	163538	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.04	114	772487	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	296953	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.76	65	217459	11.368	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.96%				
57) Toluene-d8 (SS2)	15.49	98	764954	12.734	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.84%				
73) Bromofluorobenzene (SS3)	18.85	174	312436	12.601	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.80%				
Target Compounds							Qvalue
2) Propene	3.99	42	882	0.079	ng		87
3) Dichlorodifluoromethan...	0.00	85	0	N.D.	d		
4) Chloromethane	4.42	50	1236	0.079	ng	#	64
5) 1,2-Dichloro-1,1,2,2-t...	4.65	135	1371	0.085	ng		91
6) Vinyl Chloride	4.84	62	1109	0.072	ng		96
7) 1,3-Butadiene	5.10	54	447	0.047	ng		91
8) Bromomethane	5.51	94	699	0.068	ng		90
9) Chloroethane	0.00	64	0	N.D.	d		
10) Ethanol	6.20	45	2571	0.405	ng		79
11) Acetonitrile	6.56	41	409	0.025	ng		79
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	6.85	58	3306	0.461	ng		92
14) Trichlorofluoromethane	7.04	101	1888	0.079	ng		98
15) 2-Propanol (Isopropanol)	7.38	45	3146	0.134	ng		77
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	7.99	96	763	0.067	ng		85
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	8.20	84	1303	0.106	ng		91
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d		
21) Trichlorotrifluoroethane	8.62	151	1188	0.089	ng		97
22) Carbon Disulfide	8.49	76	5065	0.117	ng		82
23) trans-1,2-Dichloroethene	9.49	61	1031	0.072	ng	#	31
24) 1,1-Dichloroethane	9.72	63	1481	0.076	ng		88
25) Methyl tert-Butyl Ether	9.88	73	2819	0.079	ng		83
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	0.00	72	0	N.D.			
28) cis-1,2-Dichloroethene	10.74	61	1118	0.076	ng		91
29) Diisopropyl Ether	0.00	87	0	N.D.	d		
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	11.03	57	1505	0.088	ng	#	89
32) Chloroform	11.08	83	1653	0.077	ng		100
34) Tetrahydrofuran (THF)	11.56	72	926	0.117	ng	#	85
35) Ethyl tert-Butyl Ether	11.66	87	944	0.071	ng	#	80
36) 1,2-Dichloroethane	11.89	62	1174	0.071	ng		94
38) 1,1,1-Trichloroethane	12.16	97	1577	0.077	ng		96
39) Isopropyl Acetate	12.66	61	741	0.116	ng	#	83
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	12.65	78	4033	0.089	ng		98
42) Carbon Tetrachloride	12.81	117	1328	0.071	ng		95
43) Cyclohexane	12.94	84	3082	0.171	ng		88
44) tert-Amyl Methyl Ether	13.32	73	2580	0.081	ng		87
45) 1,2-Dichloropropane	13.51	63	874	0.085	ng		88
46) Bromodichloromethane	13.70	83	1191	0.072	ng		98
47) Trichloroethene	13.75	130	1166	0.079	ng		99
48) 1,4-Dioxane	13.81	88	542	0.061	ng	#	52
49) 2,2,4-Trimethylpentane...	13.82	57	3955	0.090	ng		93
50) Methyl Methacrylate	14.02	100	170m	0.035	ng		

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091741.D Vial: 13
Acq On : 10 Feb 2017 10:09 Operator: LH/AMF
Sample : 0.08ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 10:45:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

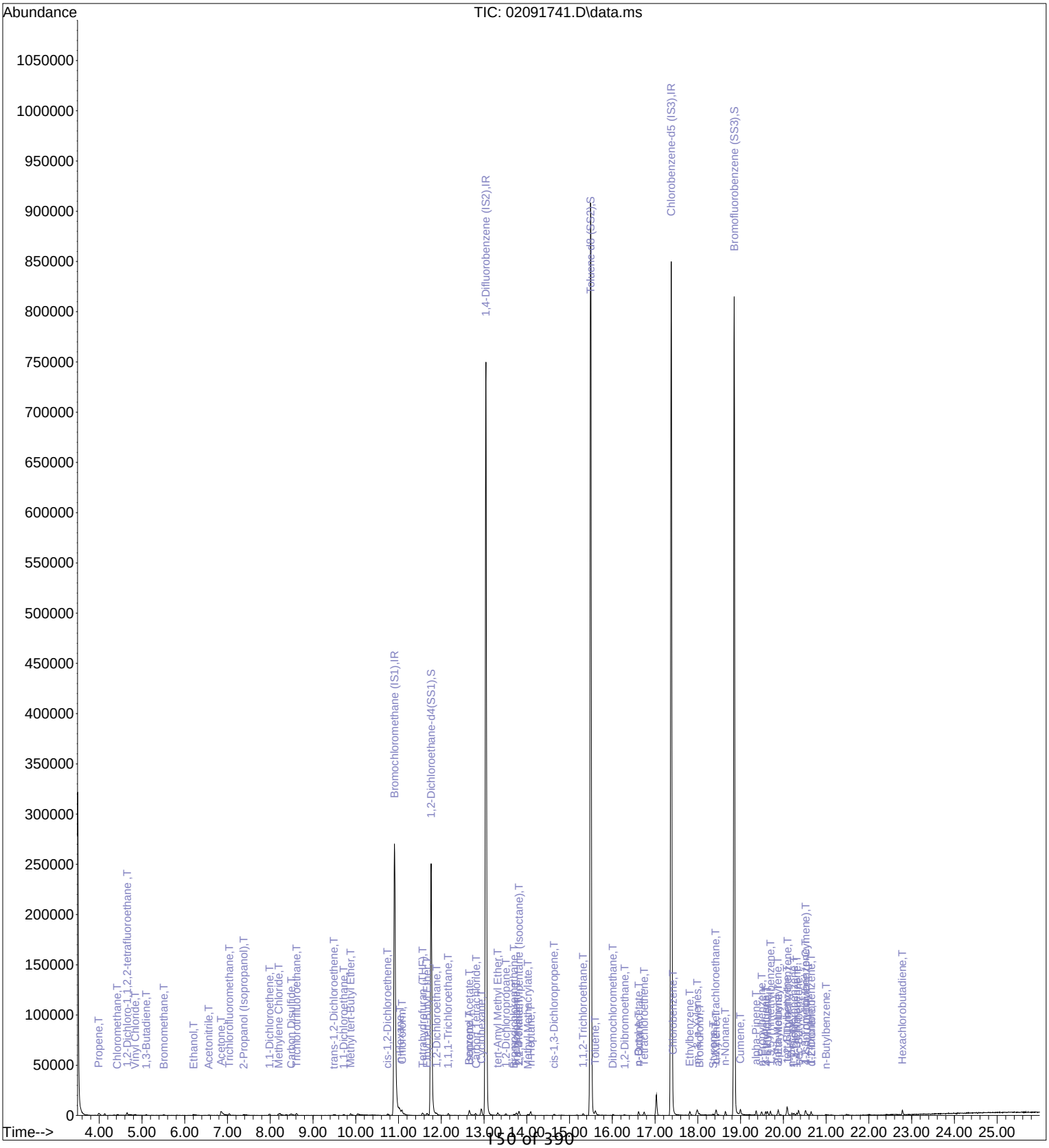
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	14.09	71	858	0.078 ng		89
52) cis-1,3-Dichloropropene	14.64	75	1247	0.071 ng		94
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D. d		
55) 1,1,2-Trichloroethane	15.32	97	861	0.073 ng		98
58) Toluene	15.60	91	4183	0.085 ng		97
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	16.01	129	1117	0.076 ng		86
61) 1,2-Dibromoethane	16.29	107	949	0.074 ng		91
62) n-Butyl Acetate	16.61	43	2152	0.101 ng	#	61
63) n-Octane	16.61	57	786	0.090 ng		89
64) Tetrachloroethene	16.75	166	1508	0.091 ng		92
65) Chlorobenzene	17.42	112	2853	0.080 ng		94
66) Ethylbenzene	17.81	91	4448	0.079 ng		98
67) m- & p-Xylenes	17.99	91	7223	0.162 ng		90
68) Bromoform	18.04	173	814	0.059 ng		77
69) Styrene	18.36	104	941	0.029 ng		90
70) o-Xylene	18.43	91	3732	0.085 ng		97
71) n-Nonane	18.64	43	1546	0.082 ng		98
72) 1,1,2,2-Tetrachloroethane	18.42	83	1424	0.075 ng		95
74) Cumene	18.99	105	4959	0.085 ng		96
75) alpha-Pinene	19.36	93	2247	0.080 ng		97
76) n-Propylbenzene	19.49	91	4779	0.073 ng		94
77) 3-Ethyltoluene	19.59	105	3351	0.060 ng		93
78) 4-Ethyltoluene	19.63	105	3549	0.066 ng		93
79) 1,3,5-Trimethylbenzene	19.70	105	4294	0.085 ng		92
80) alpha-Methylstyrene	19.87	118	814	0.033 ng	#	68
81) 2-Ethyltoluene	19.88	105	4704	0.082 ng		92
82) 1,2,4-Trimethylbenzene	20.10	105	3472	0.073 ng		92
83) n-Decane	20.20	57	1339	0.067 ng	#	71
84) Benzyl Chloride	0.00	91	0	N.D. d		
85) 1,3-Dichlorobenzene	20.24	146	1452	0.048 ng		100
86) 1,4-Dichlorobenzene	20.31	146	2015	0.063 ng		86
87) sec-Butylbenzene	20.36	105	4957	0.078 ng		91
88) 4-Isopropyltoluene (p-...	20.52	119	4012	0.064 ng		96
89) 1,2,3-Trimethylbenzene	20.52	105	3240	0.066 ng		92
90) 1,2-Dichlorobenzene	20.65	146	1627	0.055 ng		100
91) d-Limonene	20.65	68	782	0.055 ng		84
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D. d		
93) n-Undecane	0.00	57	0	N.D. d		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D. d		
95) Naphthalene	0.00	128	0	N.D. d		
96) n-Dodecane	0.00	57	0	N.D. d		
97) Hexachlorobutadiene	22.78	225	1321	0.076 ng		96
98) Cyclohexanone	0.00	55	0	N.D. d		
99) tert-Butylbenzene	20.08	119	3784	0.077 ng		94
100) n-Butylbenzene	21.00	91	2021	0.043 ng	#	80

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091741.D Vial: 13
Acq On : 10 Feb 2017 10:09 Operator: LH/AMF
Sample : 0.08ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

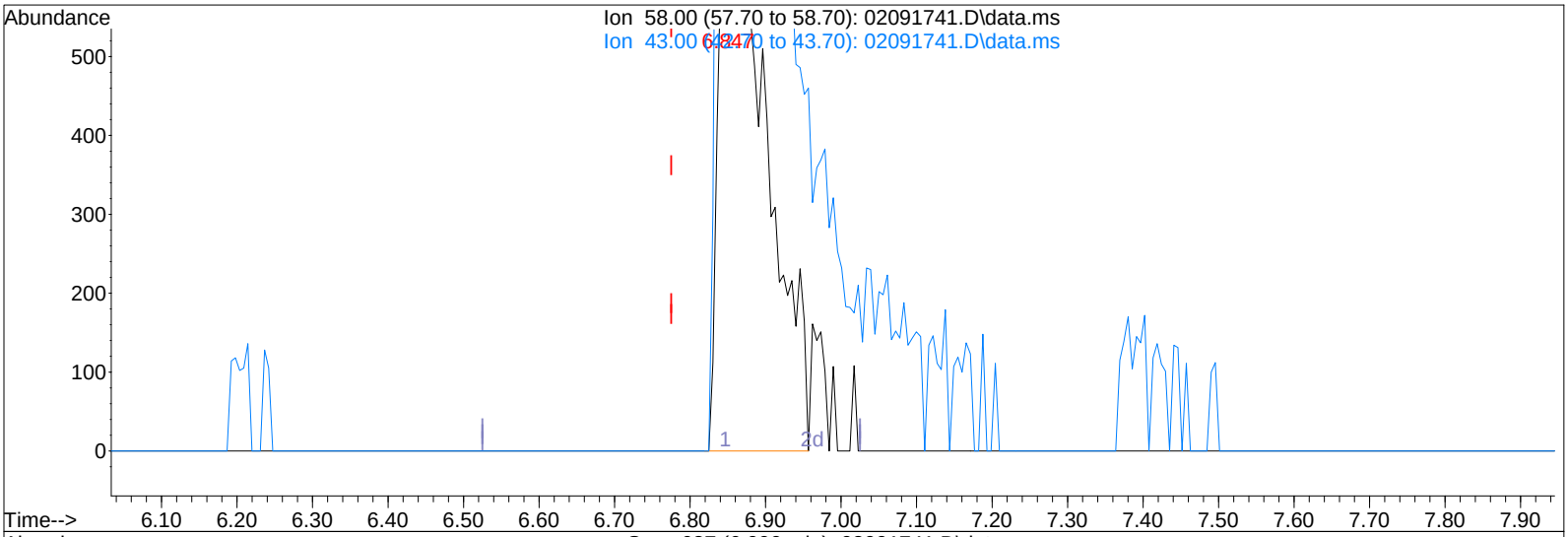
Quant Time: Feb 10 10:45:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

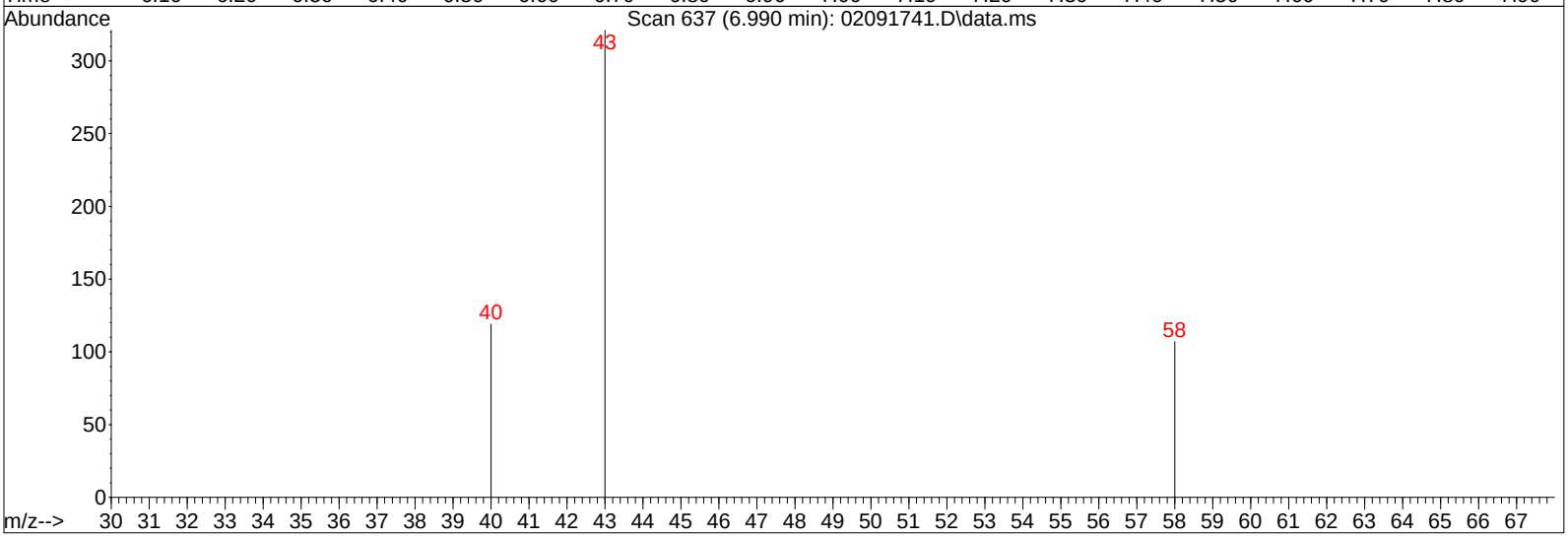


Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091741.D Vial: 13
Acq On : 10 Feb 2017 10:09 Operator: LH/AMF
Sample : 0.08ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 10:34:48 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091741.D\data.ms

(13) Acetone (T)

6.847min (+0.071) 0.46ng

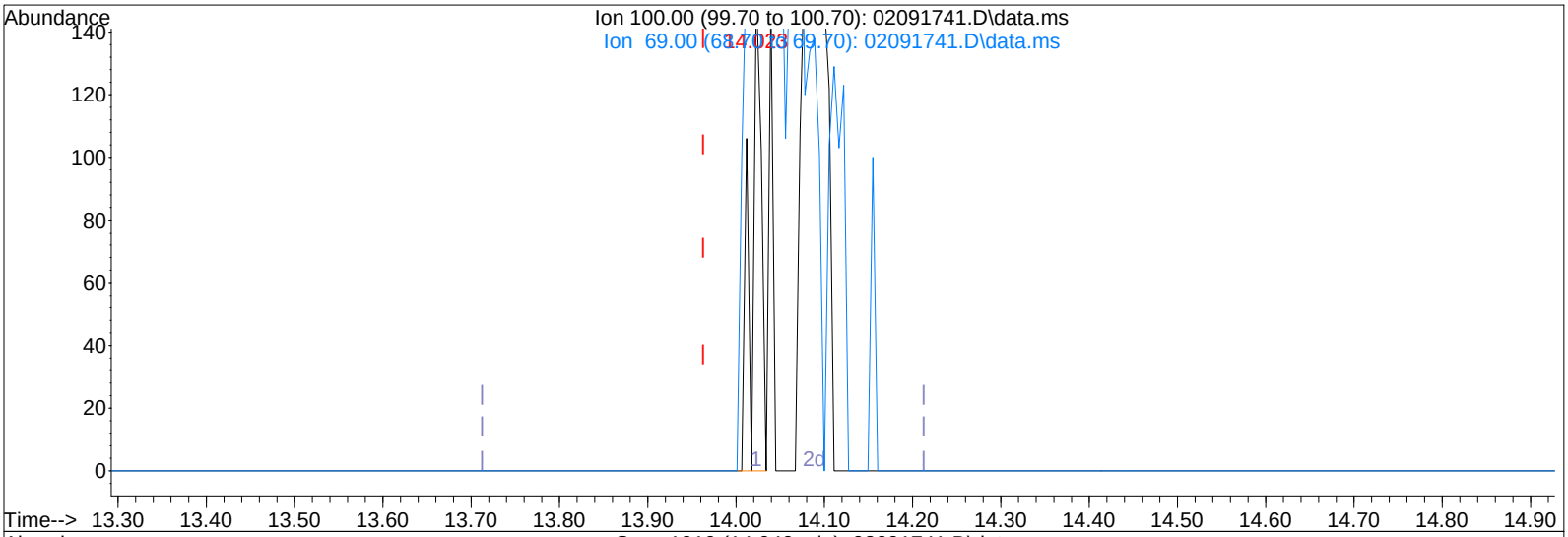
response 3306

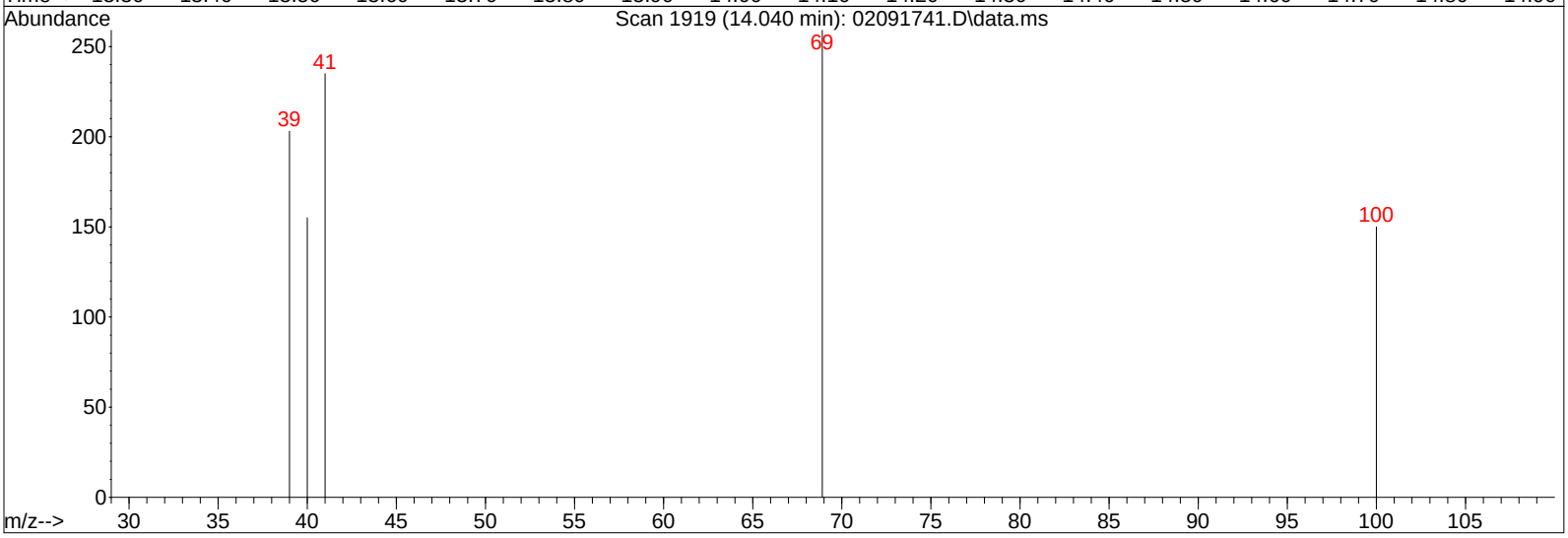
Ion	Exp%	Act%
58.00	100	100
43.00	339.70	322.96
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091741.D Vial: 13
Acq On : 10 Feb 2017 10:09 Operator: LH/AMF
Sample : 0.08ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 10:37:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091741.D\data.ms

(50) Methyl Methacrylate (T)

14.023min (+0.060) 0.03ng

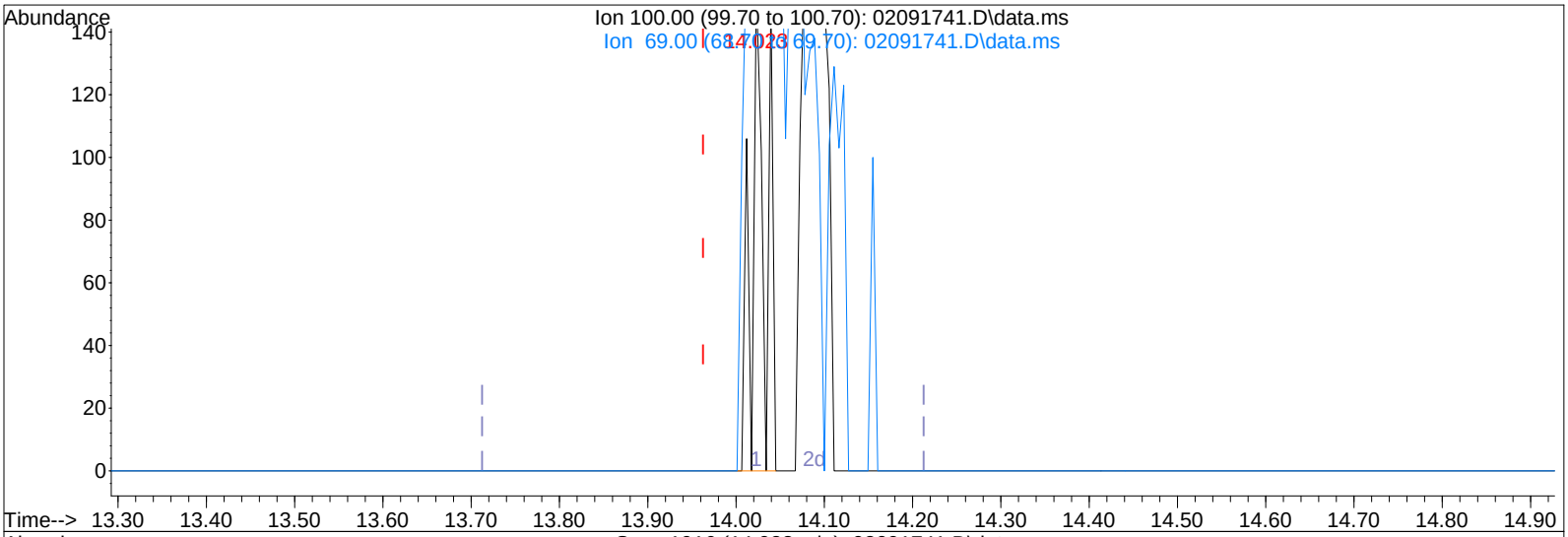
response 120

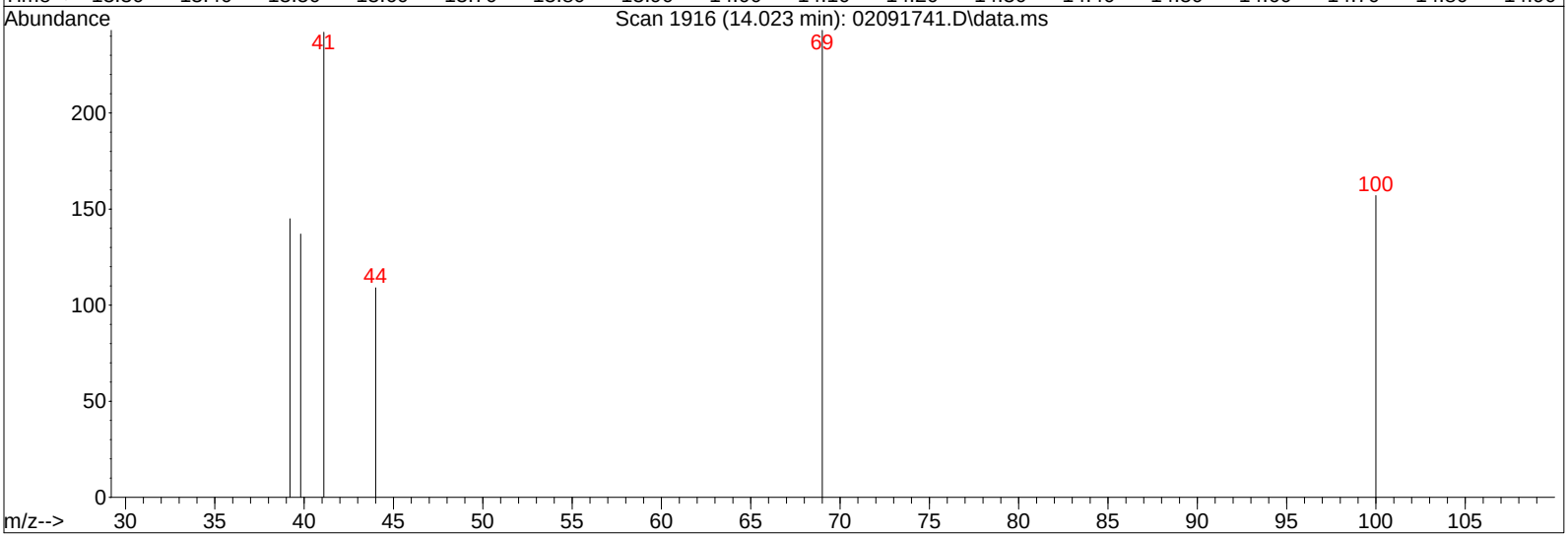
Ion	Exp%	Act%
100.00	100	100
69.00	233.20	315.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091741.D Vial: 13
Acq On : 10 Feb 2017 10:09 Operator: LH/AMF
Sample : 0.08ng ICAL S29-01301705 (2_28) Inst : MS13
Misc : S29-01311701/S29-01301705 (2/28)

Quant Time: Feb 10 10:37:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091741.D\data.ms

(50) Methyl Methacrylate (T)

14.023min (+0.060) 0.04ng m

response 170

Ion	Exp%	Act%
100.00	100	100
69.00	233.20	222.35
0.00	0.00	0.00
0.00	0.00	0.00

BLC

2/10/17

LH 2/17/17

2/17/17

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091723.D Vial: 13
Acq On : 9 Feb 2017 6:44 pm Operator: LH/AMF
Sample : 1ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:53:10 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 2/17/17

AM 2/10/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	10.90	130	127273	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.04	114	591981	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	231311	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.76	65	189253	12.713	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.68%			
57) Toluene-d8 (SS2)	15.49	98	583433	12.469	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%			
73) Bromofluorobenzene (SS3)	18.85	174	245539	12.714	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.68%			
Target Compounds						Qvalue
2) Propene	3.95	42	10233	1.184	ng	98
3) Dichlorodifluoromethan...	4.09	85	26291	1.270	ng	99
4) Chloromethane	4.37	50	15854	1.304	ng	98
5) 1,2-Dichloro-1,1,2,2-t...	4.62	135	14695	1.168	ng	98
6) Vinyl Chloride	4.77	62	16183	1.351	ng	95
7) 1,3-Butadiene	5.04	54	9046	1.225	ng	96
8) Bromomethane	5.46	94	9006	1.133	ng	95
9) Chloroethane	5.79	64	6919	1.149	ng	98
10) Ethanol	6.12	45	34550	6.987	ng	97
11) Acetonitrile	6.41	41	16069	1.245	ng	93
12) Acrolein	6.59	56	5701	1.258	ng	94
13) Acetone	6.78	58	36223	6.495	ng	97
14) Trichlorofluoromethane	7.01	101	22756	1.231	ng	99
15) 2-Propanol (Isopropanol)	7.26	45	47846	2.612	ng	94
16) Acrylonitrile	7.53	53	11632m	1.139	ng	
17) 1,1-Dichloroethene	7.96	96	10696	1.204	ng	94
18) 2-Methyl-2-Propanol (t...	8.13	59	52644	2.527	ng	98
19) Methylene Chloride	8.18	84	10775	1.129	ng	98
20) 3-Chloro-1-propene (Al...	8.35	41	12510	1.188	ng	94
21) Trichlorotrifluoroethane	8.61	151	12609	1.218	ng	96
22) Carbon Disulfide	8.46	76	40069	1.193	ng	98
23) trans-1,2-Dichloroethene	9.46	61	14600m	1.315	ng	
24) 1,1-Dichloroethane	9.71	63	18786	1.237	ng	99
25) Methyl tert-Butyl Ether	9.83	73	33959	1.216	ng	99
26) Vinyl Acetate	9.98	86	11526	5.731	ng #	79
27) 2-Butanone (MEK)	10.24	72	6152	1.050	ng	98
28) cis-1,2-Dichloroethene	10.73	61	14449	1.268	ng	99
29) Diisopropyl Ether	11.05	87	11223	1.394	ng	94
30) Ethyl Acetate	11.06	61	6967	2.549	ng	89
31) n-Hexane	11.03	57	17134	1.287	ng	99
32) Chloroform	11.08	83	19739	1.180	ng	98
34) Tetrahydrofuran (THF)	11.51	72	7200	1.172	ng	98
35) Ethyl tert-Butyl Ether	11.64	87	12917	1.243	ng	95
36) 1,2-Dichloroethane	11.89	62	16073	1.254	ng	98
38) 1,1,1-Trichloroethane	12.16	97	19549	1.243	ng	98
39) Isopropyl Acetate	12.62	61	12350	2.526	ng	95
40) 1-Butanol	12.64	56	15596	2.136	ng	92
41) Benzene	12.65	78	42776	1.227	ng	96
42) Carbon Tetrachloride	12.80	117	17447	1.223	ng	99
43) Cyclohexane	12.93	84	33596	2.438	ng	97
44) tert-Amyl Methyl Ether	13.29	73	29601	1.211	ng	98
45) 1,2-Dichloropropane	13.50	63	10267	1.305	ng	100
46) Bromodichloromethane	13.69	83	15607	1.237	ng	98
47) Trichloroethene	13.74	130	13552	1.205	ng	98
48) 1,4-Dioxane	13.74	88	8972	1.321	ng	100
49) 2,2,4-Trimethylpentane...	13.81	57	41779	1.238	ng	98
50) Methyl Methacrylate	13.97	100	8376	2.279	ng	92

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091723.D Vial: 13
Acq On : 9 Feb 2017 6:44 pm Operator: LH/AMF
Sample : 1ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:53:10 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

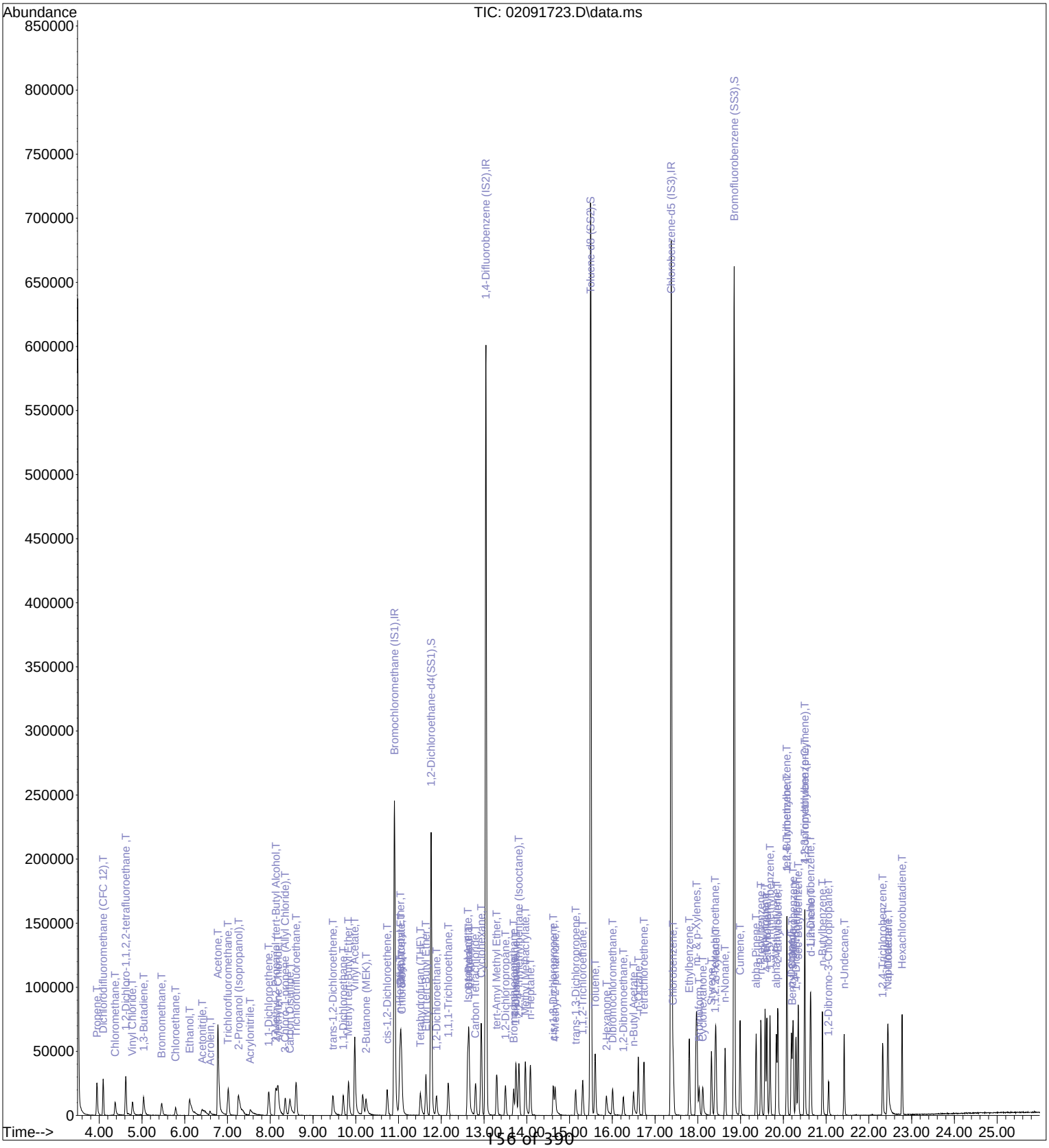
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.08	71	10271	1.223	ng	94
52) cis-1,3-Dichloropropene	14.62	75	17431	1.294	ng	100
53) 4-Methyl-2-pentanone	14.66	58	8356	1.215	ng	91
54) trans-1,3-Dichloropropene	15.14	75	14880	1.089	ng	99
55) 1,1,2-Trichloroethane	15.30	97	11195	1.232	ng	97
58) Toluene	15.60	91	44779	1.164	ng	98
59) 2-Hexanone	15.87	43	17333	1.076	ng	99
60) Dibromochloromethane	16.01	129	14367	1.249	ng	99
61) 1,2-Dibromoethane	16.26	107	12694	1.276	ng	100
62) n-Butyl Acetate	16.50	43	18410	1.109	ng	98
63) n-Octane	16.61	57	8417	1.240	ng	98
64) Tetrachloroethene	16.74	166	16321	1.263	ng	99
65) Chlorobenzene	17.42	112	33060	1.192	ng	99
66) Ethylbenzene	17.80	91	51985	1.190	ng	100
67) m- & p-Xylenes	17.97	91	83946	2.417	ng	100
68) Bromoform	18.03	173	12119	1.130	ng	99
69) Styrene	18.32	104	30126	1.178	ng	100
70) o-Xylene	18.42	91	41467	1.208	ng	100
71) n-Nonane	18.64	43	18602	1.264	ng	98
72) 1,1,2,2-Tetrachloroethane	18.40	83	18494	1.255	ng	100
74) Cumene	18.99	105	55586	1.216	ng	100
75) alpha-Pinene	19.36	93	26162	1.196	ng	100
76) n-Propylbenzene	19.47	91	63803	1.258	ng	99
77) 3-Ethyltoluene	19.57	105	53768	1.227	ng	99
78) 4-Ethyltoluene	19.62	105	51675	1.230	ng	99
79) 1,3,5-Trimethylbenzene	19.69	105	45736	1.160	ng	100
80) alpha-Methylstyrene	19.84	118	23234	1.200	ng	90
81) 2-Ethyltoluene	19.87	105	54788	1.222	ng	100
82) 1,2,4-Trimethylbenzene	20.08	105	46440	1.256	ng	98
83) n-Decane	20.19	57	20346	1.311	ng	98
84) Benzyl Chloride	20.21	91	29108	0.991	ng	99
85) 1,3-Dichlorobenzene	20.23	146	29576	1.252	ng	100
86) 1,4-Dichlorobenzene	20.30	146	30417	1.212	ng	98
87) sec-Butylbenzene	20.35	105	62453	1.256	ng	99
88) 4-Isopropyltoluene (p-...	20.50	119	58936	1.211	ng	98
89) 1,2,3-Trimethylbenzene	20.50	105	45279	1.186	ng	98
90) 1,2-Dichlorobenzene	20.63	146	28470	1.239	ng	99
91) d-Limonene	20.64	68	14171	1.270	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.06	157	9603	1.112	ng	97
93) n-Undecane	21.42	57	20860	1.208	ng	97
94) 1,2,4-Trichlorobenzene	22.32	180	22566	1.287	ng	98
95) Naphthalene	22.44	128	57942	1.255	ng	99
96) n-Dodecane	22.45	57	16864	1.058	ng	98
97) Hexachlorobutadiene	22.78	225	16489	1.212	ng	99
98) Cyclohexanone	18.11	55	12379	1.258	ng	98
99) tert-Butylbenzene	20.08	119	46713	1.221	ng	99
100) n-Butylbenzene	20.91	91	48090	1.309	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091723.D Vial: 13
Acq On : 9 Feb 2017 6:44 pm Operator: LH/AMF
Sample : 1ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

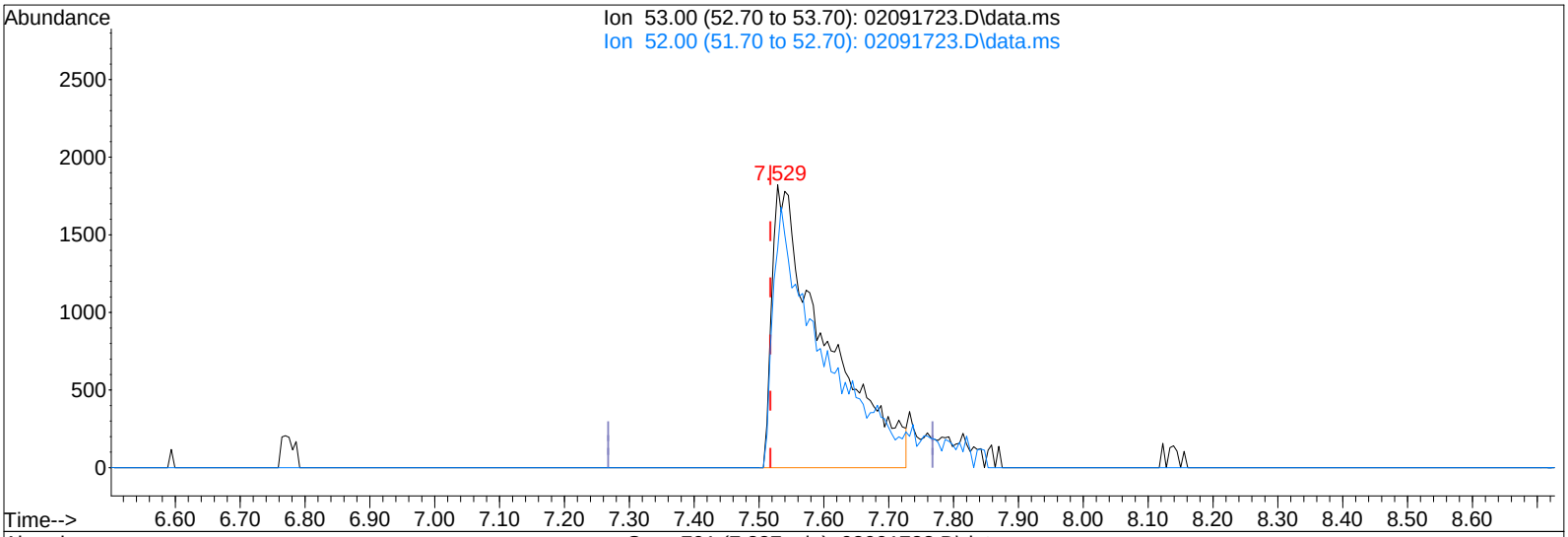
Quant Time: Feb 10 08:53:10 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

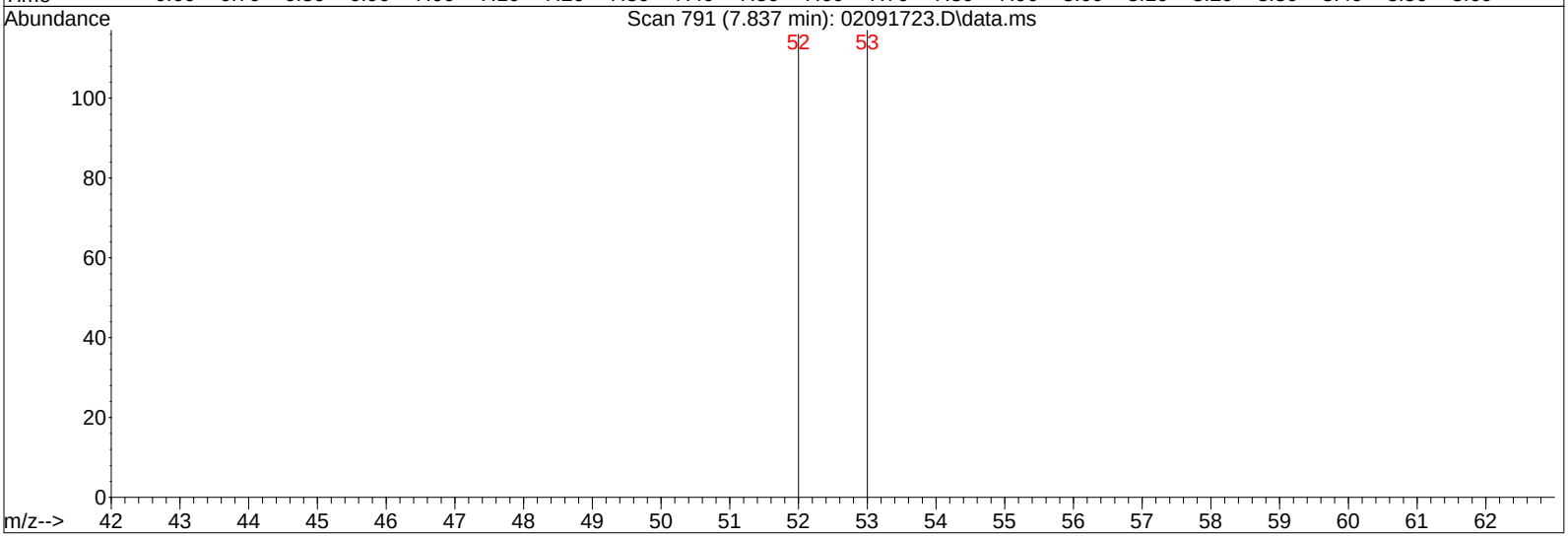


Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091723.D Vial: 13
Acq On : 9 Feb 2017 6:44 pm Operator: LH/AMF
Sample : 1ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:33 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091723.D\data.ms

(16) Acrylonitrile (T)

7.529min (+0.011) 1.01ng

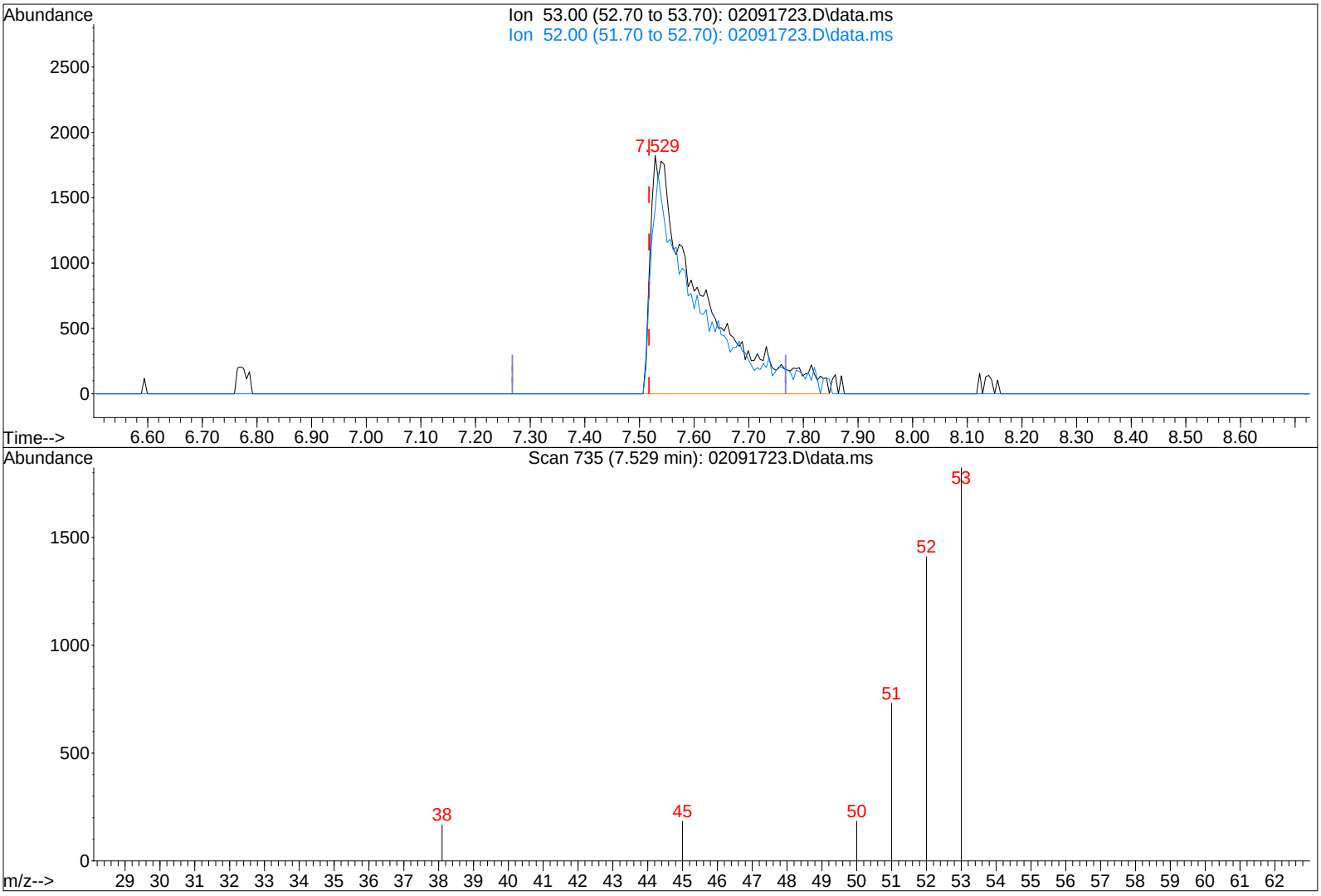
response 10361

Ion	Exp%	Act%
53.00	100	100
52.00	84.60	86.67
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091723.D Vial: 13
Acq On : 9 Feb 2017 6:44 pm Operator: LH/AMF
Sample : 1ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:33 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 02091723.D\data.ms

(16) Acrylonitrile (T)

7.529min (+0.011) 1.14ng m

response 11632

Ion	Exp%	Act%
53.00	100	100
52.00	84.60	77.20
0.00	0.00	0.00
0.00	0.00	0.00

BLC

2/10/17

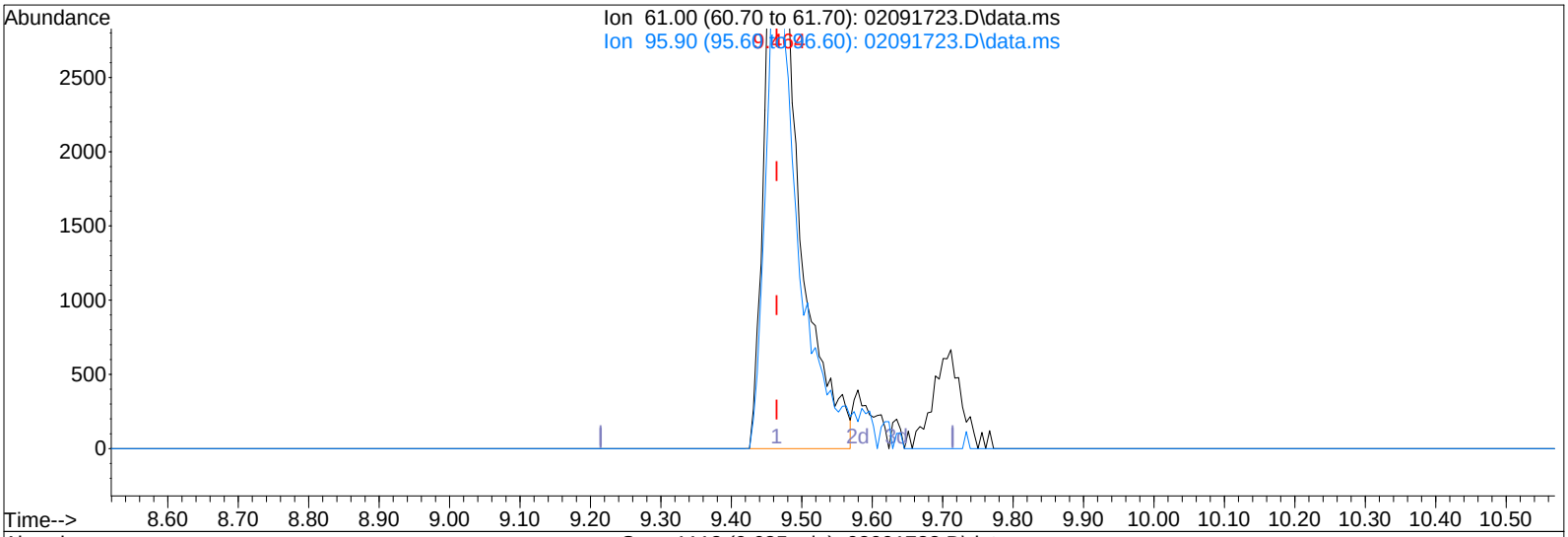
LH 2/17/17

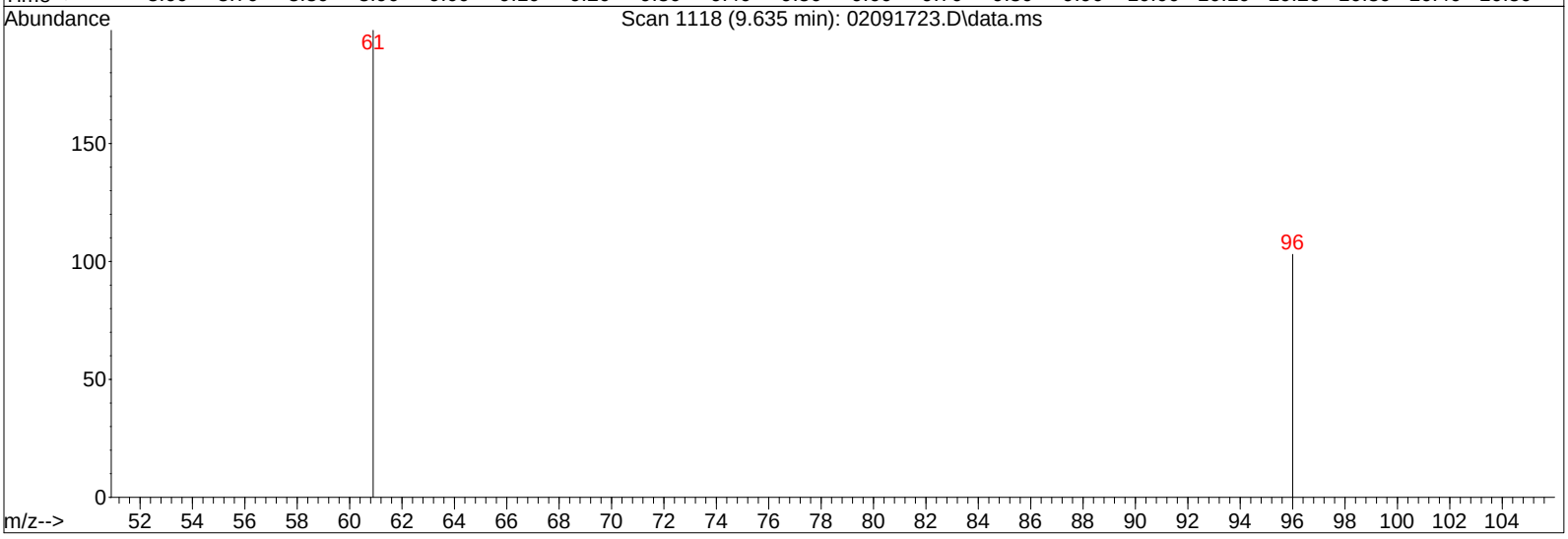
2/17/17

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091723.D Vial: 13
Acq On : 9 Feb 2017 6:44 pm Operator: LH/AMF
Sample : 1ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:33 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091723.D\data.ms

(23) trans-1,2-Dichloroethene (T)

9.464min (-0.000) 1.23ng

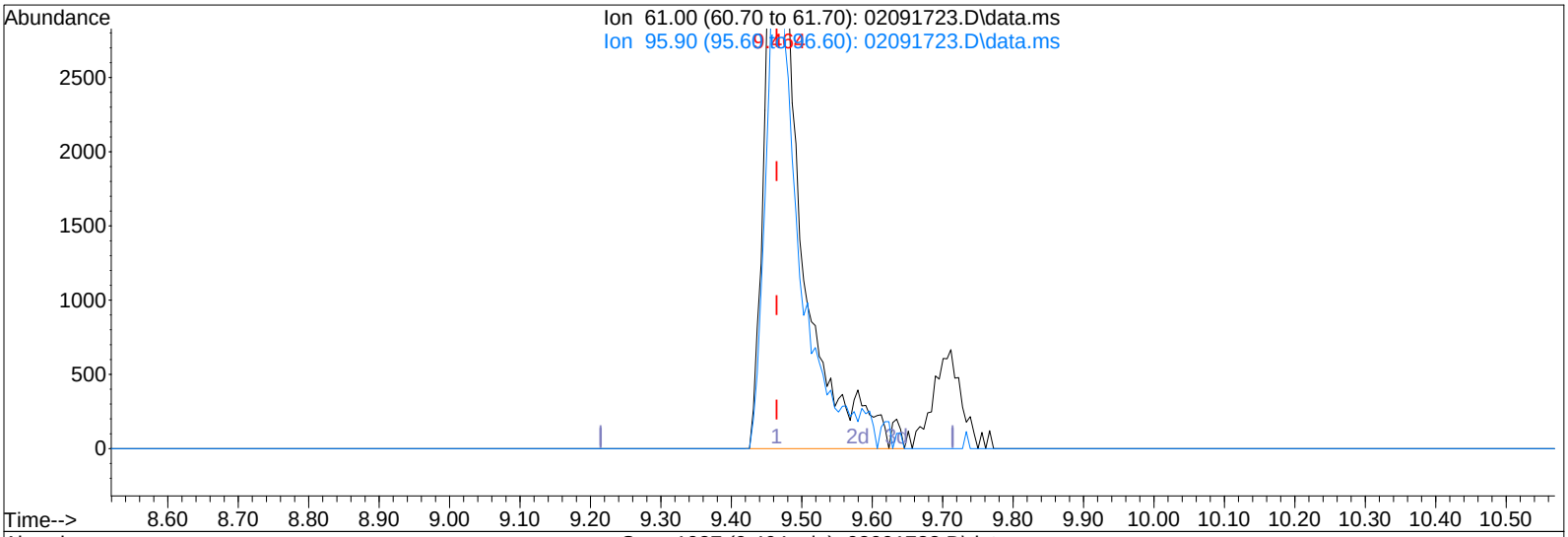
response 13665

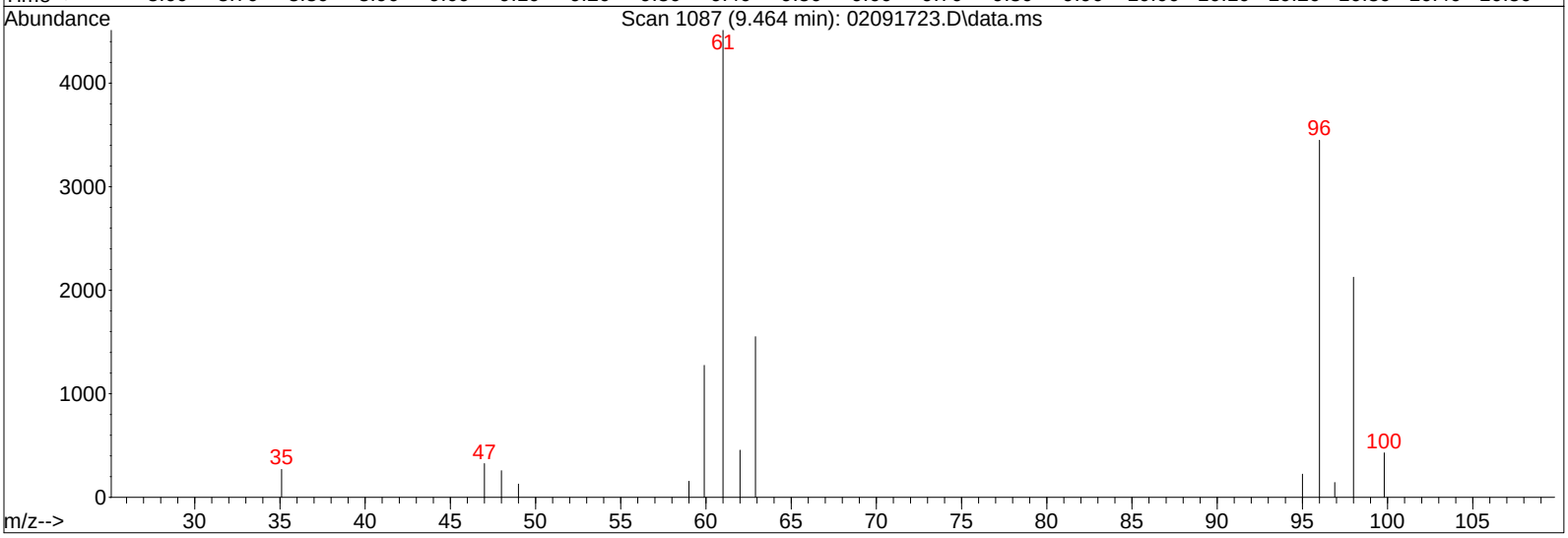
Ion	Exp%	Act%
61.00	100	100
95.90	76.50	79.11
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091723.D Vial: 13
Acq On : 9 Feb 2017 6:44 pm Operator: LH/AMF
Sample : 1ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:33 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091723.D\data.ms

(23) trans-1,2-Dichloroethene (T)

9.464min (-0.000) 1.31ng m

response 14600

Ion	Exp%	Act%
61.00	100	100
95.90	76.50	74.04
0.00	0.00	0.00
0.00	0.00	0.00

BLC

2/10/17

LH 2/17/17

2/17/17

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091724.D Vial: 3
Acq On : 9 Feb 2017 7:20 pm Operator: LH/AMF
Sample : 5ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 2/17/17

AM 2/10/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.91	130	121294	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.05	114	563085	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	223068	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	181932	12.823	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.56%				
57) Toluene-d8 (SS2)	15.50	98	556337	12.329	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.64%				
73) Bromofluorobenzene (SS3)	18.85	174	240758	12.927	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.44%				
Target Compounds							Qvalue
2) Propene	3.94	42	45676	5.547	ng		100
3) Dichlorodifluoromethan...	4.09	85	116278	5.894	ng		99
4) Chloromethane	4.36	50	67950	5.864	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.62	135	64792	5.403	ng		99
6) Vinyl Chloride	4.77	62	70574	6.182	ng		99
7) 1,3-Butadiene	5.03	54	43484	6.177	ng		99
8) Bromomethane	5.45	94	44856	5.922	ng		100
9) Chloroethane	5.77	64	31536	5.495	ng		99
10) Ethanol	6.12	45	140911	29.899	ng		100
11) Acetonitrile	6.38	41	73268	5.957	ng		99
12) Acrolein	6.57	56	27110	6.275	ng		98
13) Acetone	6.77	58	161759	30.435	ng		98
14) Trichlorofluoromethane	7.01	101	100319	5.694	ng		99
15) 2-Propanol (Isopropanol)	7.25	45	217663	12.470	ng		98
16) Acrylonitrile	7.51	53	54827	5.631	ng		97
17) 1,1-Dichloroethene	7.96	96	48025	5.672	ng		100
18) 2-Methyl-2-Propanol (t...	8.12	59	239920	12.085	ng		99
19) Methylene Chloride	8.18	84	46891	5.157	ng		98
20) 3-Chloro-1-propene (Al...	8.35	41	57873	5.767	ng		98
21) Trichlorotrifluoroethane	8.61	151	54421	5.515	ng		97
22) Carbon Disulfide	8.45	76	169441	5.295	ng		99
23) trans-1,2-Dichloroethene	9.46	61	67971	6.423	ng		96
24) 1,1-Dichloroethane	9.71	63	81524	5.635	ng		100
25) Methyl tert-Butyl Ether	9.82	73	152641	5.737	ng		100
26) Vinyl Acetate	9.98	86	55047	28.719	ng	#	85
27) 2-Butanone (MEK)	10.22	72	30521	5.467	ng		93
28) cis-1,2-Dichloroethene	10.73	61	64185	5.912	ng		98
29) Diisopropyl Ether	11.04	87	48878	6.368	ng	#	93
30) Ethyl Acetate	11.05	61	31706	12.173	ng		98
31) n-Hexane	11.03	57	73106	5.762	ng		99
32) Chloroform	11.08	83	88100	5.529	ng		100
34) Tetrahydrofuran (THF)	11.50	72	31294	5.343	ng		99
35) Ethyl tert-Butyl Ether	11.64	87	59817	6.040	ng		99
36) 1,2-Dichloroethane	11.89	62	71306	5.837	ng		100
38) 1,1,1-Trichloroethane	12.16	97	87420	5.844	ng		99
39) Isopropyl Acetate	12.61	61	55262	11.881	ng		98
40) 1-Butanol	12.63	56	81287	11.703	ng		95
41) Benzene	12.65	78	181801	5.481	ng		99
42) Carbon Tetrachloride	12.80	117	79886	5.889	ng		99
43) Cyclohexane	12.93	84	145515	11.103	ng		99
44) tert-Amyl Methyl Ether	13.29	73	134531	5.788	ng		99
45) 1,2-Dichloropropane	13.50	63	43412	5.801	ng		98
46) Bromodichloromethane	13.69	83	70459	5.871	ng		99
47) Trichloroethene	13.75	130	60994	5.703	ng		100
48) 1,4-Dioxane	13.73	88	41427	6.415	ng		99
49) 2,2,4-Trimethylpentane...	13.81	57	179690	5.596	ng		99
50) Methyl Methacrylate	13.96	100	40859	11.686	ng		96

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091724.D Vial: 3
Acq On : 9 Feb 2017 7:20 pm Operator: LH/AMF
Sample : 5ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

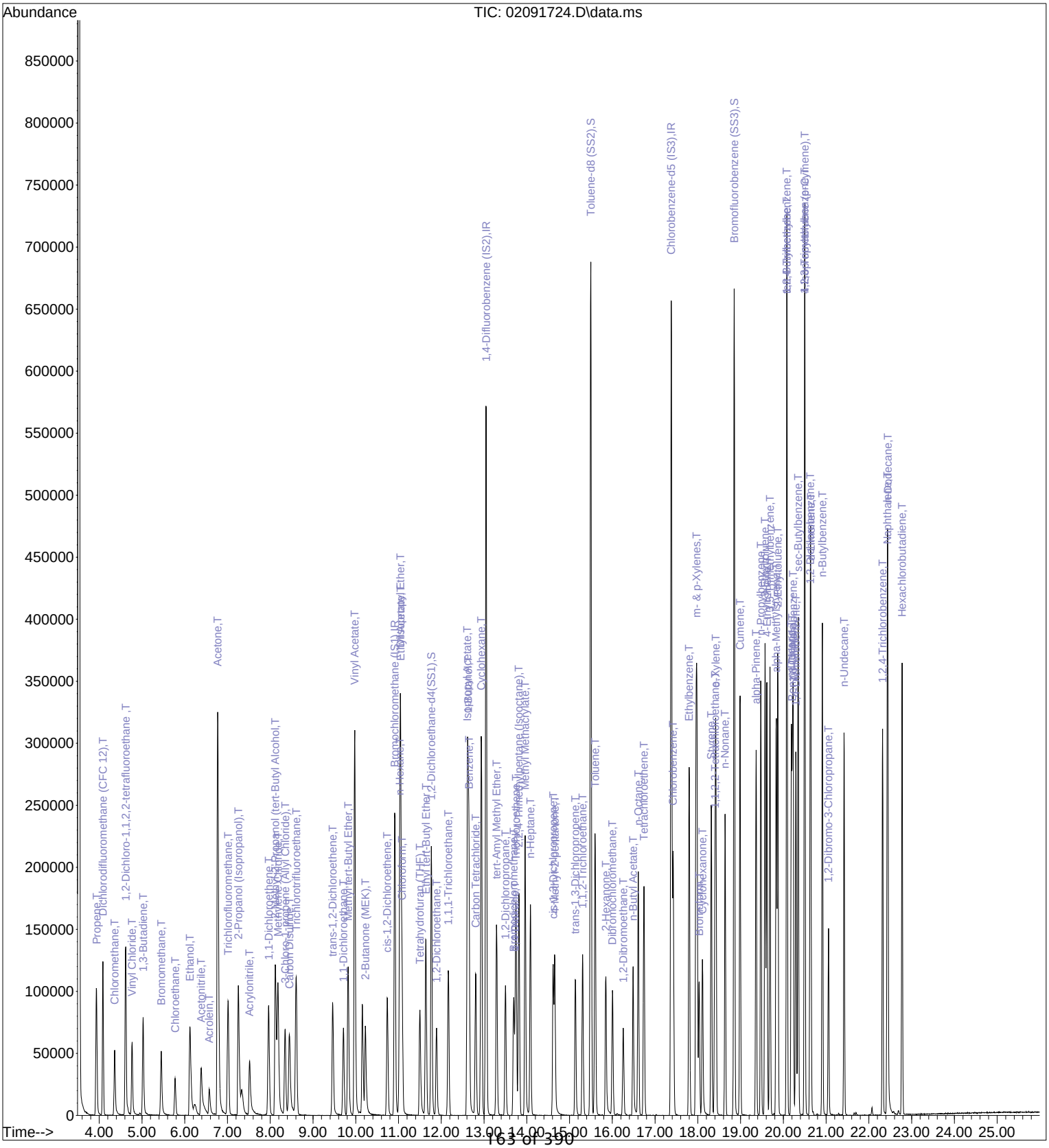
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.08	71	46253	5.791	ng	99
52) cis-1,3-Dichloropropene	14.62	75	82409	6.432	ng	100
53) 4-Methyl-2-pentanone	14.66	58	40128	6.134	ng	98
54) trans-1,3-Dichloropropene	15.13	75	73983	5.693	ng	99
55) 1,1,2-Trichloroethane	15.30	97	49801	5.763	ng	99
58) Toluene	15.60	91	201532	5.433	ng	99
59) 2-Hexanone	15.85	43	92890	5.979	ng	99
60) Dibromochloromethane	16.00	129	66336	5.980	ng	99
61) 1,2-Dibromoethane	16.26	107	58082	6.053	ng	98
62) n-Butyl Acetate	16.49	43	99948	6.246	ng	99
63) n-Octane	16.61	57	37292	5.698	ng	99
64) Tetrachloroethene	16.74	166	70364	5.645	ng	99
65) Chlorobenzene	17.42	112	145963	5.457	ng	100
66) Ethylbenzene	17.80	91	234647	5.569	ng	100
67) m- & p-Xylenes	17.97	91	378445	11.297	ng	99
68) Bromoform	18.03	173	60501	5.849	ng	99
69) Styrene	18.31	104	146226	5.931	ng	100
70) o-Xylene	18.42	91	187075	5.652	ng	100
71) n-Nonane	18.64	43	82746	5.829	ng	99
72) 1,1,2,2-Tetrachloroethane	18.40	83	81917	5.763	ng	100
74) Cumene	18.99	105	248683	5.643	ng	100
75) alpha-Pinene	19.36	93	121795	5.775	ng	97
76) n-Propylbenzene	19.47	91	288626	5.900	ng	99
77) 3-Ethyltoluene	19.57	105	252003	5.962	ng	100
78) 4-Ethyltoluene	19.62	105	232470	5.737	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	206867	5.439	ng	99
80) alpha-Methylstyrene	19.84	118	109936	5.886	ng	100
81) 2-Ethyltoluene	19.87	105	244663	5.659	ng	100
82) 1,2,4-Trimethylbenzene	20.08	105	209920	5.885	ng	98
83) n-Decane	20.19	57	93147	6.223	ng	98
84) Benzyl Chloride	20.21	91	165575	5.848	ng	99
85) 1,3-Dichlorobenzene	20.23	146	135844	5.962	ng	100
86) 1,4-Dichlorobenzene	20.29	146	137784	5.694	ng	99
87) sec-Butylbenzene	20.35	105	282110	5.883	ng	99
88) 4-Isopropyltoluene (p-...	20.50	119	270533	5.766	ng	99
89) 1,2,3-Trimethylbenzene	20.50	105	210639	5.721	ng	99
90) 1,2-Dichlorobenzene	20.63	146	131201	5.919	ng	100
91) d-Limonene	20.64	68	69020	6.415	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.06	157	48953	5.878	ng	98
93) n-Undecane	21.42	57	96840	5.817	ng	99
94) 1,2,4-Trichlorobenzene	22.32	180	109881	6.498	ng	100
95) Naphthalene	22.43	128	298709	6.711	ng	99
96) n-Dodecane	22.44	57	83905	5.456	ng	98
97) Hexachlorobutadiene	22.78	225	76553	5.837	ng	99
98) Cyclohexanone	18.11	55	60714	6.400	ng	99
99) tert-Butylbenzene	20.08	119	213826	5.794	ng	99
100) n-Butylbenzene	20.91	91	221585	6.255	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091724.D Vial: 3
Acq On : 9 Feb 2017 7:20 pm Operator: LH/AMF
Sample : 5ng ICAL S29-02061708 (3_7) Inst : MS13
Misc : S29-01311701/S29-02061708 (3/7)

Quant Time: Feb 10 08:25:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091725.D Vial: 3
Acq On : 9 Feb 2017 19:55 Operator: LH/AMF
Sample : 25ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 08:25:38 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 2/17/17

AM 2/10/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	134604	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.05	114	626789	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	251986	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.77	65	197468	12.542	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.32%			
57) Toluene-d8 (SS2)	15.50	98	622423	12.210	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.68%			
73) Bromofluorobenzene (SS3)	18.85	174	272292	12.942	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.52%			
Target Compounds						Qvalue
2) Propene	3.91	42	240407	26.306	ng	100
3) Dichlorodifluoromethan...	4.06	85	596194	27.233	ng	100
4) Chloromethane	4.34	50	378428	29.426	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.60	135	348005	26.150	ng	100
6) Vinyl Chloride	4.75	62	387064	30.554	ng	100
7) 1,3-Butadiene	5.01	54	254617	32.592	ng	100
8) Bromomethane	5.44	94	238454	28.369	ng	100
9) Chloroethane	5.76	64	169857	26.670	ng	100
10) Ethanol	6.15	45	742289	141.929	ng	100
11) Acetonitrile	6.39	41	390990	28.647	ng	100
12) Acrolein	6.57	56	139542	29.104	ng	100
13) Acetone	6.78	58	816720	138.470	ng	100
14) Trichlorofluoromethane	7.01	101	530166	27.115	ng	100
15) 2-Propanol (Isopropanol)	7.27	45	1168613	60.328	ng	100
16) Acrylonitrile	7.52	53	303925	28.127	ng	100
17) 1,1-Dichloroethene	7.95	96	262321	27.920	ng	100
18) 2-Methyl-2-Propanol (t...	8.13	59	1315540	59.713	ng	100
19) Methylene Chloride	8.19	84	254132	25.185	ng	100
20) 3-Chloro-1-propene (Al...	8.35	41	324862	29.169	ng	100
21) Trichlorotrifluoroethane	8.60	151	294468	26.893	ng	100
22) Carbon Disulfide	8.44	76	928810	26.154	ng	100
23) trans-1,2-Dichloroethene	9.46	61	363034	30.911	ng	100
24) 1,1-Dichloroethane	9.72	63	432039	26.909	ng	100
25) Methyl tert-Butyl Ether	9.82	73	831588	28.167	ng	100
26) Vinyl Acetate	9.98	86	308000	144.799	ng	100
27) 2-Butanone (MEK)	10.22	72	168755	27.238	ng	100
28) cis-1,2-Dichloroethene	10.74	61	349181	28.984	ng	100
29) Diisopropyl Ether	11.04	87	259178	30.430	ng	100
30) Ethyl Acetate	11.05	61	167006	57.780	ng	100
31) n-Hexane	11.03	57	368863	26.197	ng	100
32) Chloroform	11.09	83	481407	27.223	ng	100
34) Tetrahydrofuran (THF)	11.49	72	168538	25.932	ng	100
35) Ethyl tert-Butyl Ether	11.64	87	329436	29.974	ng	100
36) 1,2-Dichloroethane	11.89	62	384917	28.395	ng	100
38) 1,1,1-Trichloroethane	12.17	97	478833	28.755	ng	100
39) Isopropyl Acetate	12.61	61	288540	55.731	ng	100
40) 1-Butanol	12.63	56	466989	60.402	ng	100
41) Benzene	12.65	78	965706	26.154	ng	100
42) Carbon Tetrachloride	12.81	117	442263	29.288	ng	100
43) Cyclohexane	12.94	84	788286	54.036	ng	100
44) tert-Amyl Methyl Ether	13.29	73	751705	29.054	ng	100
45) 1,2-Dichloropropane	13.50	63	238127	28.586	ng	100
46) Bromodichloromethane	13.69	83	390225	29.211	ng	100
47) Trichloroethene	13.75	130	337698	28.364	ng	100
48) 1,4-Dioxane	13.73	88	233081	32.422	ng	100
49) 2,2,4-Trimethylpentane...	13.82	57	971841	27.188	ng	100
50) Methyl Methacrylate	13.96	100	232543	59.751	ng	100

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091725.D Vial: 3
Acq On : 9 Feb 2017 19:55 Operator: LH/AMF
Sample : 25ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 08:25:38 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

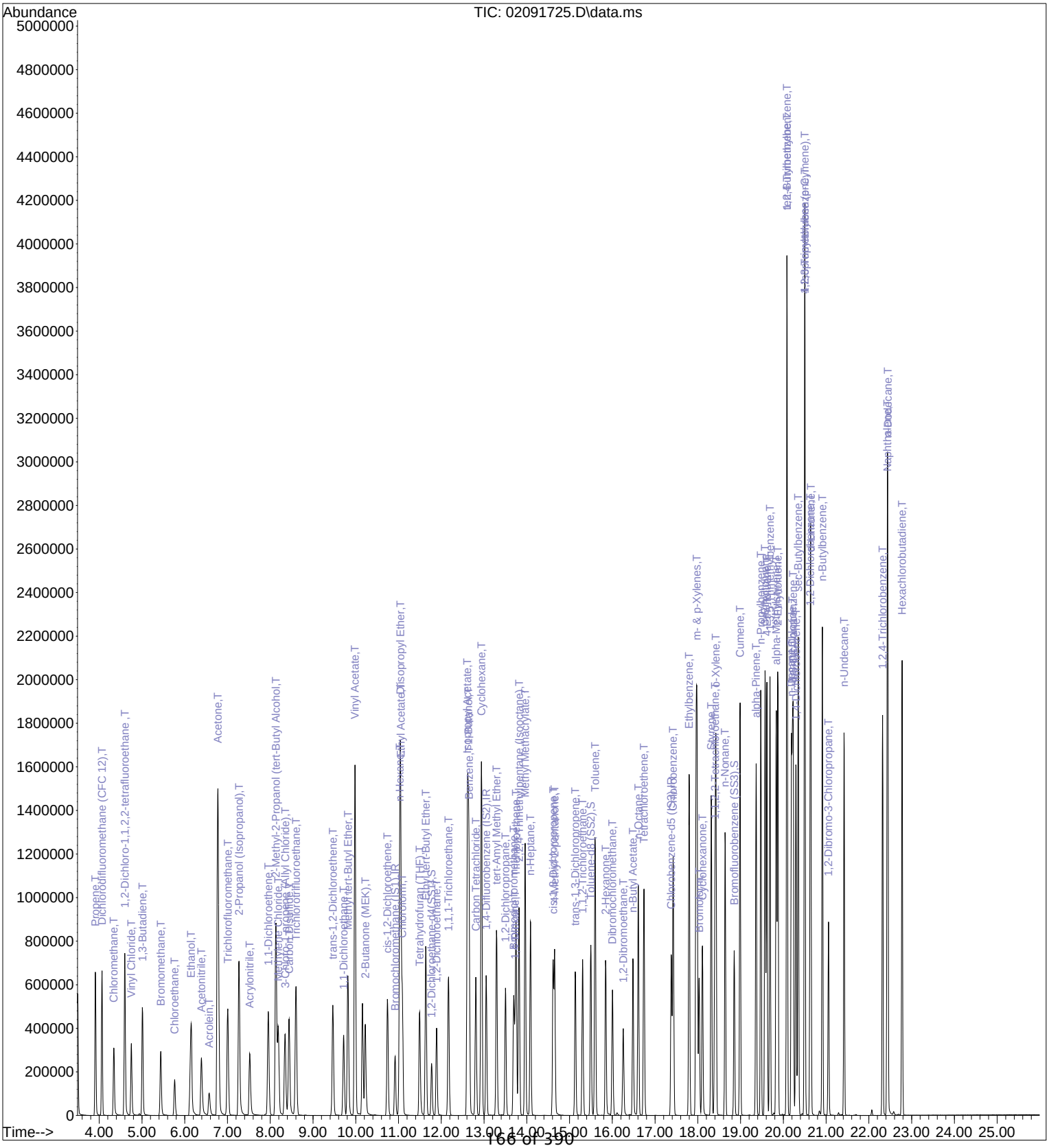
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.08	71	249835	28.099	ng	100
52) cis-1,3-Dichloropropene	14.62	75	469009	32.887	ng	100
53) 4-Methyl-2-pentanone	14.65	58	226579	31.115	ng	100
54) trans-1,3-Dichloropropene	15.13	75	428916	29.653	ng	100
55) 1,1,2-Trichloroethane	15.30	97	269969	28.066	ng	100
58) Toluene	15.60	91	1105022	26.371	ng	100
59) 2-Hexanone	15.84	43	530575	30.233	ng	100
60) Dibromochloromethane	16.00	129	379982	30.325	ng	100
61) 1,2-Dibromoethane	16.26	107	326856	30.154	ng	100
62) n-Butyl Acetate	16.48	43	580008	32.086	ng	100
63) n-Octane	16.61	57	203506	27.524	ng	100
64) Tetrachloroethene	16.74	166	392822	27.900	ng	100
65) Chlorobenzene	17.42	112	809315	26.786	ng	100
66) Ethylbenzene	17.80	91	1297387	27.260	ng	100
67) m- & p-Xylenes	17.98	91	2078745	54.930	ng	100
68) Bromoform	18.03	173	358693	30.696	ng	100
69) Styrene	18.31	104	839585	30.146	ng	100
70) o-Xylene	18.42	91	1038218	27.770	ng	100
71) n-Nonane	18.64	43	447432	27.904	ng	100
72) 1,1,2,2-Tetrachloroethane	18.40	83	461807	28.758	ng	100
74) Cumene	18.99	105	1376133	27.644	ng	100
75) alpha-Pinene	19.36	93	681014	28.587	ng	100
76) n-Propylbenzene	19.47	91	1580419	28.600	ng	100
77) 3-Ethyltoluene	19.57	105	1376707	28.833	ng	100
78) 4-Ethyltoluene	19.62	105	1305430	28.521	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1154333	26.866	ng	100
80) alpha-Methylstyrene	19.84	118	633640	30.031	ng	100
81) 2-Ethyltoluene	19.87	105	1348872	27.621	ng	100
82) 1,2,4-Trimethylbenzene	20.08	105	1176588	29.202	ng	100
83) n-Decane	20.19	57	500685	29.611	ng	100
84) Benzyl Chloride	20.21	91	1022546	31.972	ng	100
85) 1,3-Dichlorobenzene	20.23	146	750166	29.147	ng	100
86) 1,4-Dichlorobenzene	20.30	146	766642	28.046	ng	100
87) sec-Butylbenzene	20.35	105	1538538	28.401	ng	100
88) 4-Isopropyltoluene (p-...	20.50	119	1491370	28.140	ng	100
89) 1,2,3-Trimethylbenzene	20.50	105	1177077	28.299	ng	100
90) 1,2-Dichlorobenzene	20.63	146	731290	29.205	ng	100
91) d-Limonene	20.64	68	387552	31.885	ng	100
92) 1,2-Dibromo-3-Chloropr...	21.06	157	288742	30.689	ng	100
93) n-Undecane	21.42	57	553667	29.442	ng	100
94) 1,2,4-Trichlorobenzene	22.32	180	640646	33.539	ng	100
95) Naphthalene	22.43	128	1750607	34.816	ng	100
96) n-Dodecane	22.44	57	533392	30.706	ng	100
97) Hexachlorobutadiene	22.78	225	439916	29.693	ng	100
98) Cyclohexanone	18.11	55	351688	32.818	ng	100
99) tert-Butylbenzene	20.08	119	1166549	27.984	ng	100
100) n-Butylbenzene	20.91	91	1229931	30.734	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091725.D Vial: 3
Acq On : 9 Feb 2017 19:55 Operator: LH/AMF
Sample : 25ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 08:25:38 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091726.D Vial: 3
Acq On : 9 Feb 2017 8:30 pm Operator: LH/AMF
Sample : 50ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 08:25:39 2017
Quant Method : I:\MS13\METHODS\R13021017.M LH 2/17/17
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration 2/10/17
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.93	130	152902	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.06	114	720371	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.38	82	281733	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.78	65	217030	12.135	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.04%				
57) Toluene-d8 (SS2)	15.50	98	711565	12.485	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.92%				
73) Bromofluorobenzene (SS3)	18.85	174	304599	12.949	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.60%				
Target Compounds							Qvalue
2) Propene	3.92	42	540151	52.032	ng		100
3) Dichlorodifluoromethan...	4.07	85	1244277	50.035	ng		100
4) Chloromethane	4.35	50	674582	46.178	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.60	135	709777	46.952	ng		100
6) Vinyl Chloride	4.76	62	800402	55.622	ng		99
7) 1,3-Butadiene	5.02	54	514527	57.980	ng		100
8) Bromomethane	5.45	94	524097	54.891	ng		100
9) Chloroethane	5.77	64	377454	52.173	ng		100
10) Ethanol	6.18	45	1605280	270.206	ng		100
11) Acetonitrile	6.41	41	895293	57.747	ng		100
12) Acrolein	6.58	56	312511	57.380	ng		99
13) Acetone	6.79	58	1671105	249.420	ng		96
14) Trichlorofluoromethane	7.01	101	1128469	50.808	ng		99
15) 2-Propanol (Isopropanol)	7.29	45	2408658	109.464	ng		99
16) Acrylonitrile	7.53	53	693437	56.496	ng		99
17) 1,1-Dichloroethene	7.96	96	583027	54.628	ng		98
18) 2-Methyl-2-Propanol (t...	8.16	59	2868360	114.615	ng		99
19) Methylene Chloride	8.20	84	566254	49.402	ng		99
20) 3-Chloro-1-propene (Al...	8.35	41	727127	57.475	ng		98
21) Trichlorotrifluoroethane	8.61	151	654743	52.640	ng		100
22) Carbon Disulfide	8.45	76	2067339	51.246	ng		100
23) trans-1,2-Dichloroethene	9.47	61	810017	60.716	ng		100
24) 1,1-Dichloroethane	9.72	63	952915	52.248	ng		100
25) Methyl tert-Butyl Ether	9.82	73	1834042	54.687	ng		100
26) Vinyl Acetate	10.00	86	678948	280.994	ng	#	88
27) 2-Butanone (MEK)	10.23	72	375891	53.410	ng		98
28) cis-1,2-Dichloroethene	10.75	61	766990	56.046	ng		99
29) Diisopropyl Ether	11.05	87	569627	58.876	ng	#	93
30) Ethyl Acetate	11.06	61	358077	109.060	ng		98
31) n-Hexane	11.03	57	799618	49.993	ng		100
32) Chloroform	11.10	83	1041763	51.860	ng		100
34) Tetrahydrofuran (THF)	11.49	72	376346	50.977	ng		99
35) Ethyl tert-Butyl Ether	11.64	87	733491	58.750	ng		99
36) 1,2-Dichloroethane	11.89	62	820339	53.274	ng		100
38) 1,1,1-Trichloroethane	12.17	97	1030872	53.864	ng		100
39) Isopropyl Acetate	12.62	61	632763	106.339	ng		94
40) 1-Butanol	12.64	56	1024335	115.279	ng		98
41) Benzene	12.65	78	2075089	48.898	ng		100
42) Carbon Tetrachloride	12.81	117	964129	55.554	ng		100
43) Cyclohexane	12.95	84	1718789	102.515	ng		99
44) tert-Amyl Methyl Ether	13.30	73	1646786	55.381	ng		100
45) 1,2-Dichloropropane	13.51	63	529057	55.261	ng		100
46) Bromodichloromethane	13.70	83	845907	55.096	ng		100
47) Trichloroethene	13.75	130	742458	54.260	ng		100
48) 1,4-Dioxane	13.73	88	507273	61.397	ng		99
49) 2,2,4-Trimethylpentane...	13.82	57	2115374	51.491	ng		99
50) Methyl Methacrylate	13.97	100	512638	114.609	ng		99

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091726.D Vial: 3
Acq On : 9 Feb 2017 8:30 pm Operator: LH/AMF
Sample : 50ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 08:25:39 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

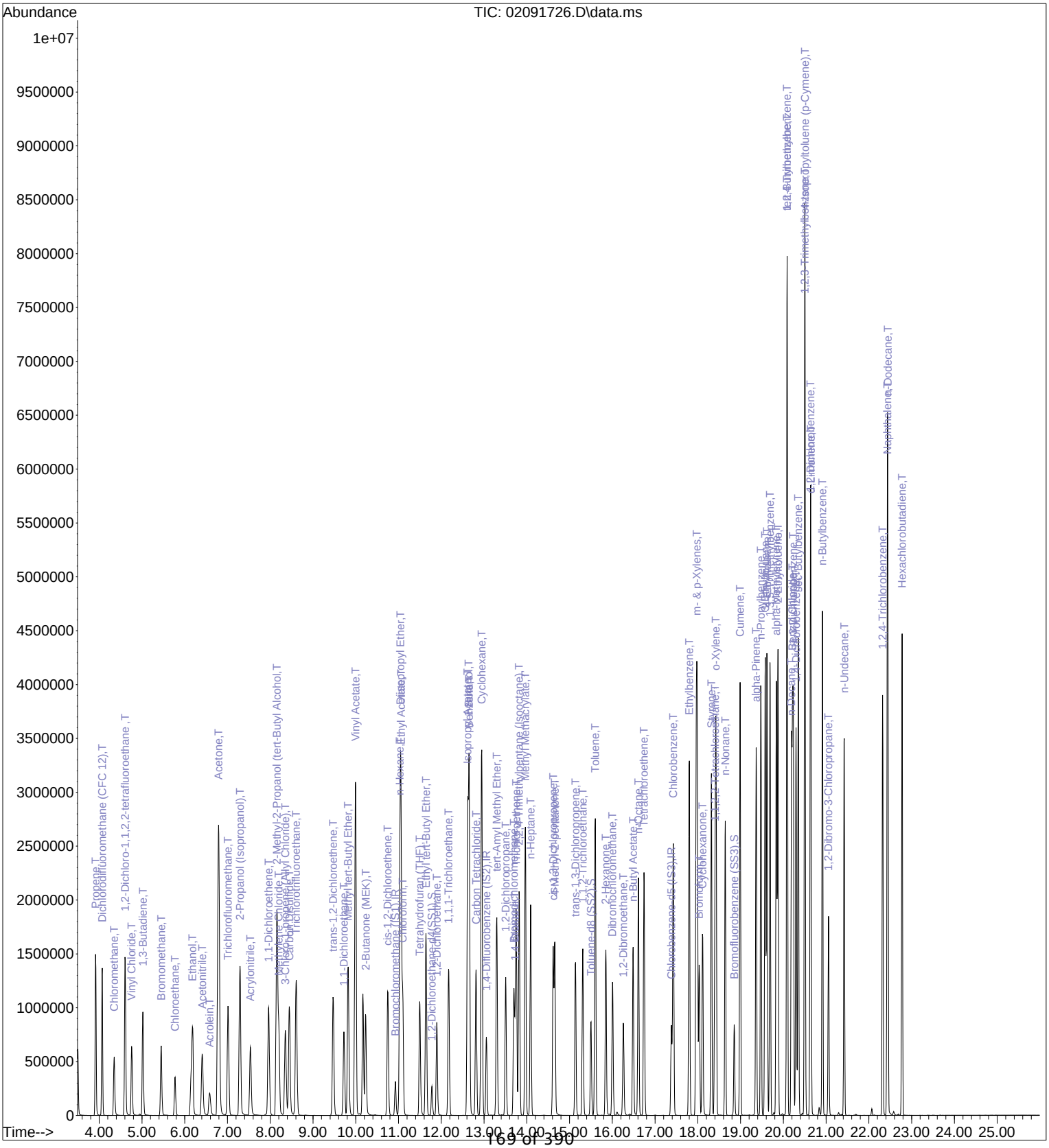
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	547012	53.531	ng	99
52) cis-1,3-Dichloropropene	14.62	75	1025708	62.579	ng	99
53) 4-Methyl-2-pentanone	14.66	58	490980	58.665	ng	98
54) trans-1,3-Dichloropropene	15.14	75	940523	56.576	ng	100
55) 1,1,2-Trichloroethane	15.31	97	590744	53.435	ng	99
58) Toluene	15.60	91	2411019	51.462	ng	100
59) 2-Hexanone	15.85	43	1145699	58.391	ng	99
60) Dibromochloromethane	16.00	129	829450	59.207	ng	100
61) 1,2-Dibromoethane	16.26	107	714131	58.925	ng	99
62) n-Butyl Acetate	16.49	43	1254557	62.074	ng	99
63) n-Octane	16.61	57	438097	52.997	ng	99
64) Tetrachloroethene	16.74	166	857607	54.480	ng	99
65) Chlorobenzene	17.43	112	1734022	51.331	ng	99
66) Ethylbenzene	17.80	91	2767378	52.006	ng	99
67) m- & p-Xylenes	17.98	91	4443692	105.024	ng	100
68) Bromoform	18.03	173	791335	60.569	ng	100
69) Styrene	18.32	104	1815503	58.305	ng	100
70) o-Xylene	18.42	91	2222767	53.176	ng	100
71) n-Nonane	18.64	43	934497	52.125	ng	98
72) 1,1,2,2-Tetrachloroethane	18.40	83	987370	54.994	ng	99
74) Cumene	18.99	105	2906361	52.219	ng	99
75) alpha-Pinene	19.36	93	1454761	54.618	ng	99
76) n-Propylbenzene	19.47	91	3310619	53.585	ng	99
77) 3-Ethyltoluene	19.58	105	2850746	53.400	ng	96
78) 4-Ethyltoluene	19.62	105	2817187	55.051	ng	97
79) 1,3,5-Trimethylbenzene	19.69	105	2459114	51.191	ng	100
80) alpha-Methylstyrene	19.84	118	1353352	57.370	ng	98
81) 2-Ethyltoluene	19.87	105	2848389	52.168	ng	99
82) 1,2,4-Trimethylbenzene	20.09	105	2461498	54.642	ng	100
83) n-Decane	20.19	57	1035414	54.770	ng	99
84) Benzyl Chloride	20.21	91	2209014	61.777	ng	99
85) 1,3-Dichlorobenzene	20.23	146	1604041	55.743	ng	100
86) 1,4-Dichlorobenzene	20.30	146	1637202	53.570	ng	100
87) sec-Butylbenzene	20.35	105	3202091	52.869	ng	99
88) 4-Isopropyltoluene (p-...	20.51	119	3040243	51.308	ng	99
89) 1,2,3-Trimethylbenzene	20.50	105	2444668	52.569	ng	100
90) 1,2-Dichlorobenzene	20.63	146	1545405	55.201	ng	99
91) d-Limonene	20.64	68	803358	59.116	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.06	157	622826	59.209	ng	98
93) n-Undecane	21.42	57	1128287	53.662	ng	99
94) 1,2,4-Trichlorobenzene	22.32	180	1360623	63.710	ng	100
95) Naphthalene	22.43	128	3619938	64.391	ng	99
96) n-Dodecane	22.44	57	1099076	56.590	ng	99
97) Hexachlorobutadiene	22.78	225	945860	57.102	ng	100
98) Cyclohexanone	18.11	55	770911	64.343	ng	100
99) tert-Butylbenzene	20.09	119	2418262	51.885	ng	100
100) n-Butylbenzene	20.91	91	2533809	56.631	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091726.D Vial: 3
Acq On : 9 Feb 2017 8:30 pm Operator: LH/AMF
Sample : 50ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 08:25:39 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091727.D Vial: 3
Acq On : 9 Feb 2017 9:05 pm Operator: LH/AMF
Sample : 100ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 09:47:26 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 2/17/17

AM 2/10/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.94	130	162081	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	13.06	114	773362	12.500	ng		0.01
56) Chlorobenzene-d5 (IS3)	17.38	82	301325	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.78	65	225679	11.904	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.20%				
57) Toluene-d8 (SS2)	15.50	98	758949	12.451	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.60%				
73) Bromofluorobenzene (SS3)	18.86	174	320249	12.729	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.84%				
Target Compounds							Qvalue
2) Propene	3.93	42	1477970	134.309	ng		98
3) Dichlorodifluoromethan...	4.08	85	2508411	95.156	ng		99
4) Chloromethane	4.36	50	1055408	68.156	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.61	135	1441653	89.964	ng		100
6) Vinyl Chloride	4.77	62	1556791	102.058	ng		99
7) 1,3-Butadiene	5.03	54	1037658	110.308	ng		100
8) Bromomethane	5.46	94	1090189	107.714	ng		99
9) Chloroethane	5.79	64	788034	102.756	ng		99
10) Ethanol	6.23	45	3282972	521.305	ng		100
11) Acetonitrile	6.44	41	1898622	115.528	ng		100
12) Acrolein	6.60	56	660245	114.362	ng		100
13) Acetone	6.82	58	3195730	449.964	ng		94
14) Trichlorofluoromethane	7.02	101	2326124	98.801	ng		99
15) 2-Propanol (Isopropanol)	7.32	45	3336927	143.061	ng		98
16) Acrylonitrile	7.56	53	1457607	112.029	ng		100
17) 1,1-Dichloroethene	7.97	96	1225396	108.314	ng		98
18) 2-Methyl-2-Propanol (t...	8.18	59	4528415	170.700	ng		99
19) Methylene Chloride	8.21	84	1176982	96.869	ng		96
20) 3-Chloro-1-propene (Al...	8.36	41	1517405	113.150	ng		99
21) Trichlorotrifluoroethane	8.61	151	1385915	105.114	ng		100
22) Carbon Disulfide	8.46	76	4321238	101.051	ng		99
23) trans-1,2-Dichloroethene	9.48	61	1697358	120.023	ng		100
24) 1,1-Dichloroethane	9.73	63	1973217	102.065	ng		99
25) Methyl tert-Butyl Ether	9.83	73	3782260	106.392	ng		99
26) Vinyl Acetate	10.01	86	1375905	537.192	ng	#	72
27) 2-Butanone (MEK)	10.25	72	790686	105.985	ng		93
28) cis-1,2-Dichloroethene	10.76	61	1595527	109.988	ng		99
29) Diisopropyl Ether	11.06	87	958458m	93.455	ng		
30) Ethyl Acetate	11.07	61	699455	200.970	ng		93
31) n-Hexane	11.04	57	1602852	94.538	ng		99
32) Chloroform	11.11	83	2145091	100.737	ng		100
34) Tetrahydrofuran (THF)	11.50	72	785668	100.394	ng		98
35) Ethyl tert-Butyl Ether	11.65	87	1512014	114.248	ng		98
36) 1,2-Dichloroethane	11.90	62	1681788	103.033	ng		99
38) 1,1,1-Trichloroethane	12.18	97	2137707	104.044	ng		100
39) Isopropyl Acetate	12.62	61	1259746	197.201	ng	#	91
40) 1-Butanol	12.67	56	2061765	216.134	ng	#	57
41) Benzene	12.66	78	4064621	89.216	ng		99
42) Carbon Tetrachloride	12.82	117	1997143	107.192	ng		100
43) Cyclohexane	12.95	84	3439344	191.079	ng		98
44) tert-Amyl Methyl Ether	13.30	73	3389831	106.188	ng		99
45) 1,2-Dichloropropane	13.51	63	1084936	105.559	ng		99
46) Bromodichloromethane	13.70	83	1751542	106.265	ng		100
47) Trichloroethene	13.76	130	1535080	104.500	ng		100
48) 1,4-Dioxane	13.74	88	1051045	118.494	ng		99
49) 2,2,4-Trimethylpentane...	13.83	57	4231238	95.937	ng		99
50) Methyl Methacrylate	13.97	100	1057468	220.216	ng		95

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091727.D Vial: 3
Acq On : 9 Feb 2017 9:05 pm Operator: LH/AMF
Sample : 100ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 09:47:26 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

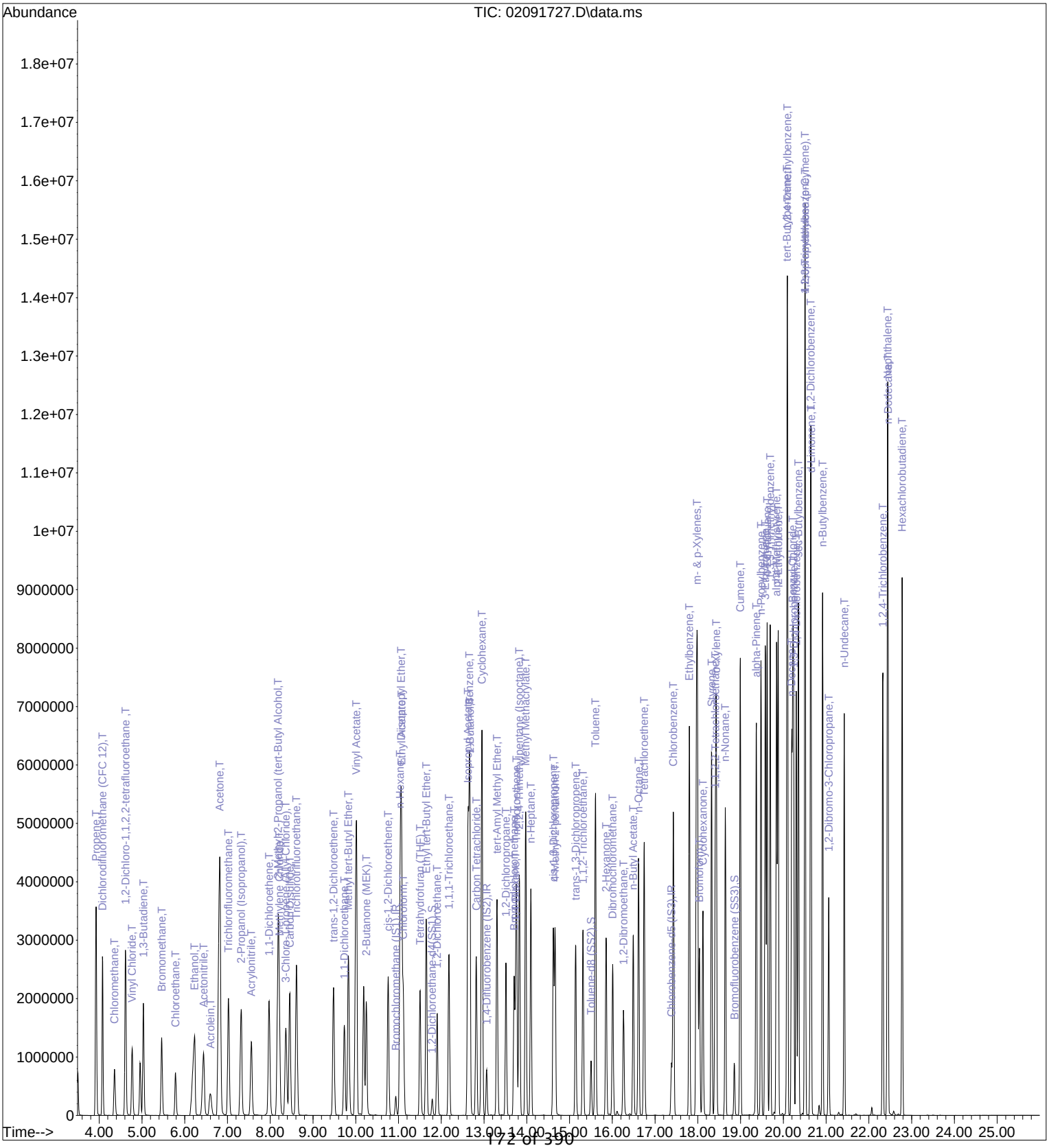
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	1118690	101.974	ng	99
52) cis-1,3-Dichloropropene	14.62	75	2121789	120.582	ng	99
53) 4-Methyl-2-pentanone	14.66	58	1007634	112.147	ng	96
54) trans-1,3-Dichloropropene	15.14	75	1956245	109.612	ng	100
55) 1,1,2-Trichloroethane	15.32	97	1235149	104.069	ng	99
58) Toluene	15.61	91	4871009	97.210	ng	99
59) 2-Hexanone	15.85	43	2304064	109.792	ng	98
60) Dibromochloromethane	16.01	129	1731359	115.550	ng	99
61) 1,2-Dibromoethane	16.26	107	1495110	115.345	ng	100
62) n-Butyl Acetate	16.49	43	2534264	117.240	ng	98
63) n-Octane	16.61	57	890376	100.706	ng	98
64) Tetrachloroethene	16.75	166	1803387	107.112	ng	99
65) Chlorobenzene	17.43	112	3563168	98.620	ng	99
66) Ethylbenzene	17.80	91	5554076	97.589	ng	98
67) m- & p-Xylenes	17.98	91	8853156	195.635	ng	99
68) Bromoform	18.04	173	1669842	119.501	ng	99
69) Styrene	18.32	104	3689284	110.777	ng	98
70) o-Xylene	18.43	91	4463879	99.848	ng	99
71) n-Nonane	18.64	43	1829627	95.419	ng	96
72) 1,1,2,2-Tetrachloroethane	18.41	83	1981957	103.213	ng	99
74) Cumene	18.99	105	5718751	96.069	ng	98
75) alpha-Pinene	19.37	93	2920821	102.531	ng	98
76) n-Propylbenzene	19.48	91	6414781	97.077	ng	97
77) 3-Ethyltoluene	19.58	105	5738170	100.499	ng	98
78) 4-Ethyltoluene	19.62	105	5418591	99.001	ng	98
79) 1,3,5-Trimethylbenzene	19.69	105	4918309	95.727	ng	99
80) alpha-Methylstyrene	19.84	118	2731482	108.261	ng	97
81) 2-Ethyltoluene	19.88	105	5609455	96.057	ng	98
82) 1,2,4-Trimethylbenzene	20.09	105	4757497	98.743	ng	100
83) n-Decane	20.19	57	1990655	98.453	ng	97
84) Benzyl Chloride	20.22	91	4406193	115.212	ng	97
85) 1,3-Dichlorobenzene	20.24	146	3253320	105.708	ng	100
86) 1,4-Dichlorobenzene	20.30	146	3344801	102.328	ng	100
87) sec-Butylbenzene	20.35	105	6176205	95.343	ng	97
88) 4-Isopropyltoluene (p-...	20.51	119	5662397	89.347	ng	96
89) 1,2,3-Trimethylbenzene	20.51	105	4725471	95.007	ng	99
90) 1,2-Dichlorobenzene	20.64	146	3073925	102.660	ng	100
91) d-Limonene	20.65	68	1536899	105.741	ng	95
92) 1,2-Dibromo-3-Chloropr...	21.06	157	1287616	114.448	ng	97
93) n-Undecane	21.42	57	2160635	96.080	ng	98
94) 1,2,4-Trichlorobenzene	22.33	180	2760092	120.836	ng	99
95) Naphthalene	22.44	128	6770130	112.597	ng	97
96) n-Dodecane	22.45	57	2044310	98.415	ng	96
97) Hexachlorobutadiene	22.78	225	1966372	110.991	ng	99
98) Cyclohexanone	18.12	55	1565088	122.135	ng	99
99) tert-Butylbenzene	20.09	119	4650217	93.286	ng	99
100) n-Butylbenzene	20.92	91	4896035	102.313	ng	97

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091727.D Vial: 3
Acq On : 9 Feb 2017 9:05 pm Operator: LH/AMF
Sample : 100ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

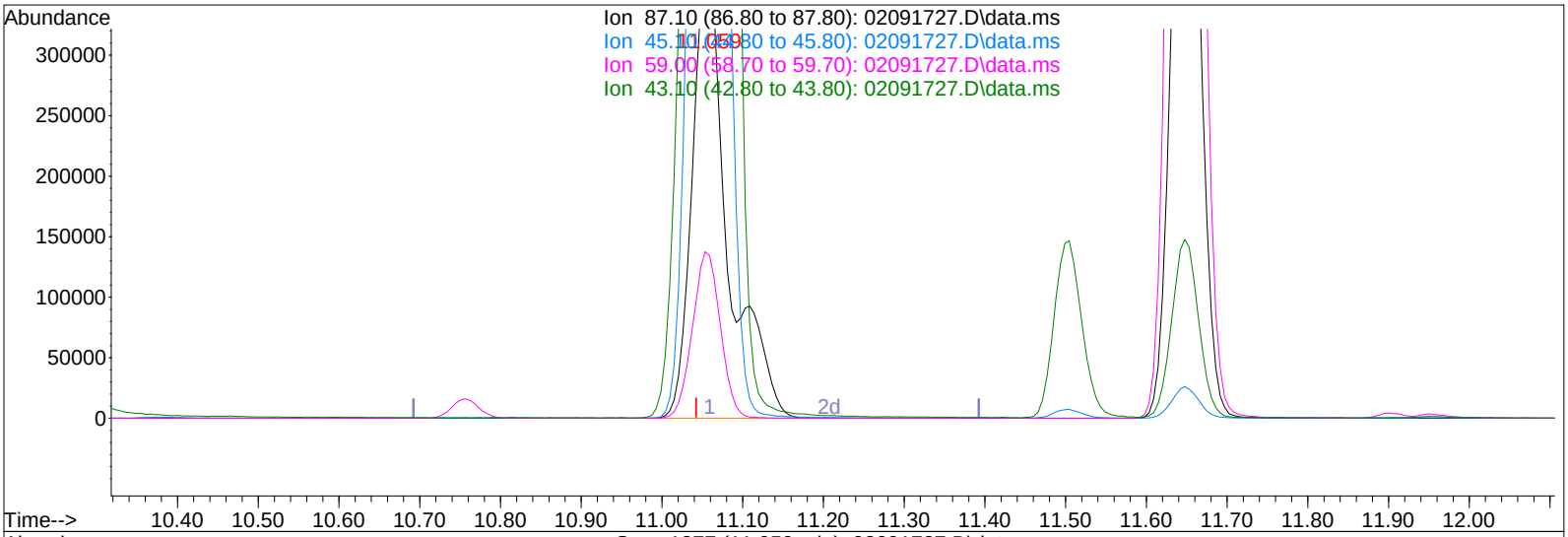
Quant Time: Feb 10 09:47:26 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

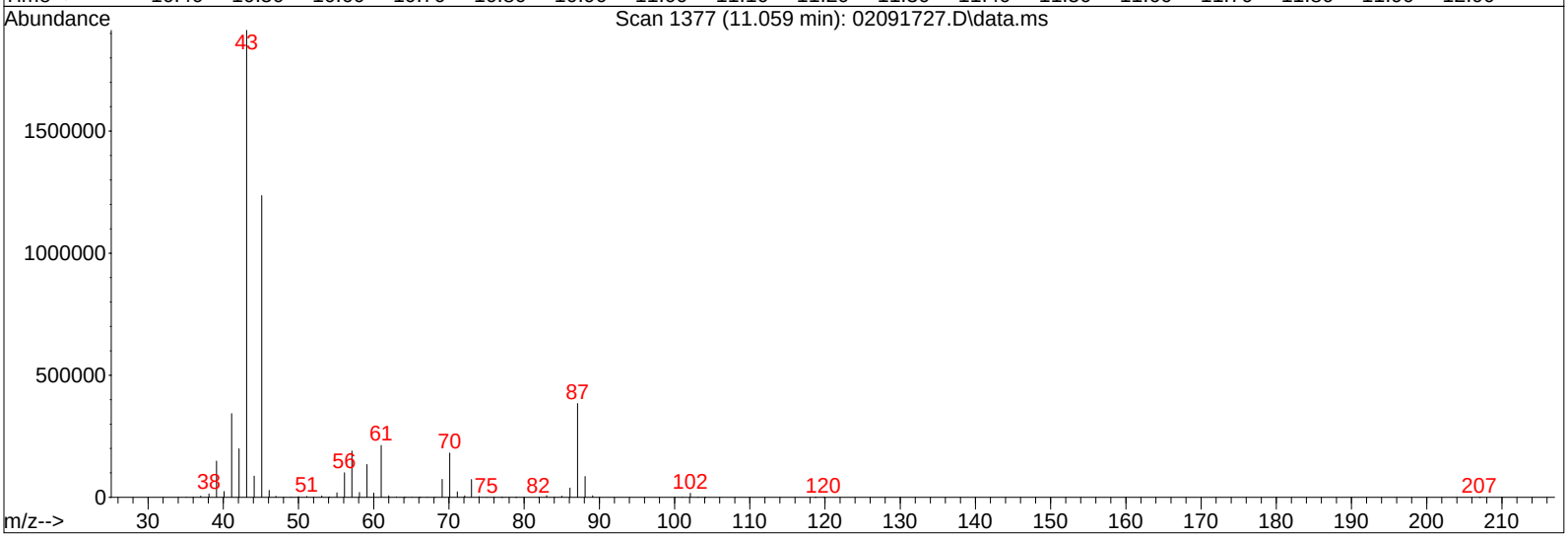


Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091727.D Vial: 3
Acq On : 9 Feb 2017 9:05 pm Operator: LH/AMF
Sample : 100ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 08:25:42 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091727.D\data.ms

(29) Diisopropyl Ether (T)

11.059min (+0.016) 112.71ng

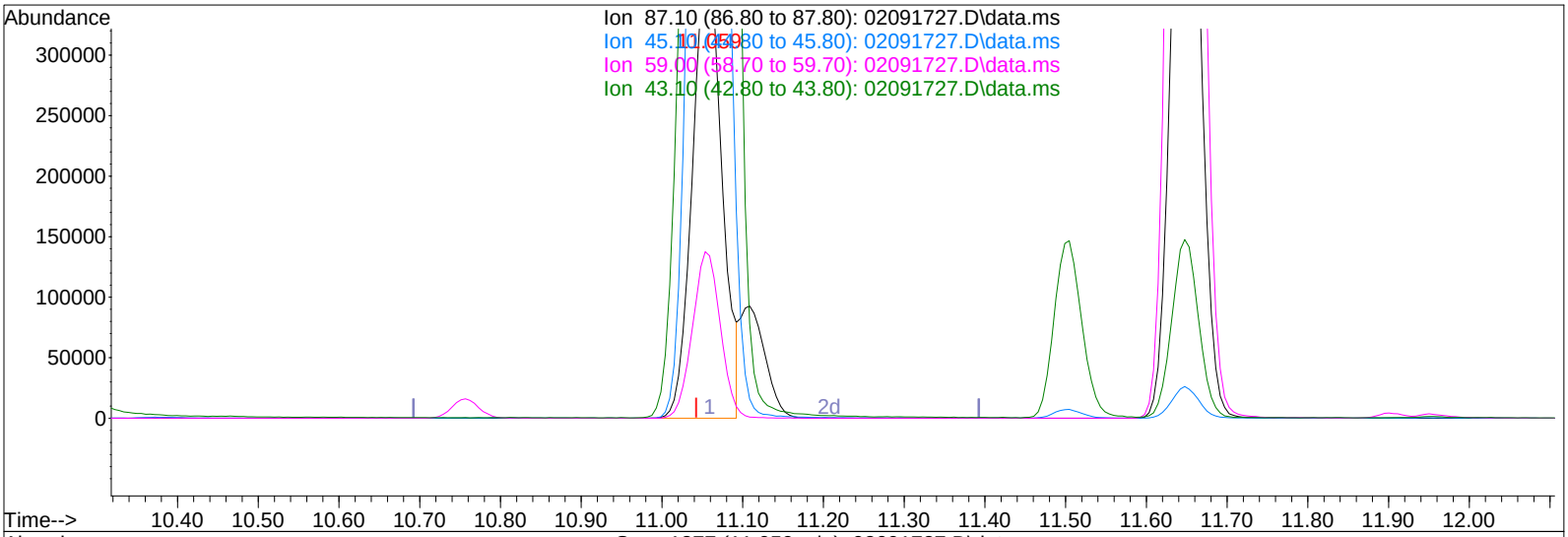
response 1155975

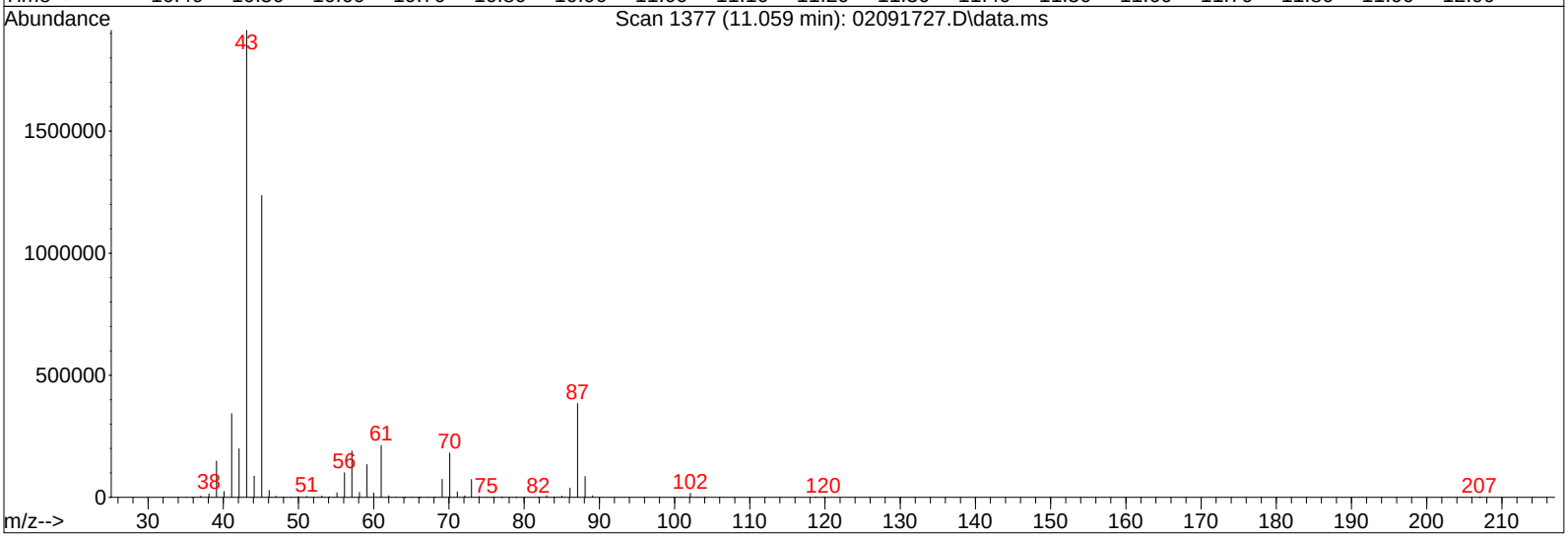
Ion	Exp%	Act%
87.10	100	100
45.10	306.50	276.94#
59.00	30.90	28.61
43.10	606.50	553.19#

Quantitation Report (Qedit)

Data File : I:\MS13\DATA\2017_02\09\02091727.D Vial: 3
Acq On : 9 Feb 2017 9:05 pm Operator: LH/AMF
Sample : 100ng ICAL S29-01241703 (2_22) Inst : MS13
Misc : S29-01311701/S29-01241703 (2/22)

Quant Time: Feb 10 08:25:42 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 08:24:34 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02091727.D\data.ms

(29) Diisopropyl Ether (T)

11.059min (+0.016) 93.45ng m

response 958458

Ion	Exp%	Act%
87.10	100	100
45.10	306.50	334.01#
59.00	30.90	34.50
43.10	606.50	667.19#

IPC

2/10/17

2/17/17

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091744.D Vial: 3
Acq On : 10 Feb 2017 11:54 Operator: LH/AMF
Sample : 25ng ICV S29-01271702 (2_25) Inst : MS13
Misc : S29-01311701/S29-01271702 (2/25)

Quant Time: Feb 10 12:48:29 2017
Quant Method : I:\MS13\METHODS\R13021017.M LH 2/17/17
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration AM 2/10/17
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	153623	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.05	114	728861	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.38	82	281917	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	210574	12.117	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.96%				
57) Toluene-d8 (SS2)	15.50	98	716397	12.582	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.64%				
73) Bromofluorobenzene (SS3)	18.85	174	303114	12.658	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.28%				
Target Compounds							Qvalue
2) Propene	3.91	42	287913	25.287	ng		99
3) Dichlorodifluoromethan...	4.06	85	646931	24.019	ng		100
4) Chloromethane	4.34	50	438393	27.339	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.60	135	401678	25.180	ng		100
6) Vinyl Chloride	4.75	62	459401	28.670	ng		100
7) 1,3-Butadiene	5.02	54	287915	29.123	ng		98
8) Bromomethane	5.44	94	296611	28.535	ng		100
9) Chloroethane	5.77	64	209394	26.382	ng		100
10) Ethanol	6.15	45	870853	131.028	ng		100
11) Acetonitrile	6.40	41	468264	26.930	ng		99
12) Acrolein	6.57	56	164906	26.327	ng		100
13) Acetone	6.78	58	940424	126.433	ng		90
14) Trichlorofluoromethane	7.01	101	573058	24.763	ng		100
15) 2-Propanol (Isopropanol)	7.27	45	1310556	58.194	ng		98
16) Acrylonitrile	7.52	53	360551	28.367	ng		99
17) 1,1-Dichloroethene	7.96	96	302872	27.556	ng		97
18) 2-Methyl-2-Propanol (t...	8.13	59	1447849	54.961	ng		99
19) Methylene Chloride	8.19	84	303281	25.042	ng		97
20) 3-Chloro-1-propene (Al...	8.35	41	390718	28.405	ng		98
21) Trichlorotrifluoroethane	8.61	151	337631	25.348	ng		100
22) Carbon Disulfide	8.44	76	1081134	25.088	ng		100
23) trans-1,2-Dichloroethene	9.46	61	414323	28.381	ng		100
24) 1,1-Dichloroethane	9.72	63	507869	26.060	ng		100
25) Methyl tert-Butyl Ether	9.82	73	925943	26.504	ng		99
26) Vinyl Acetate	9.99	86	357120	136.790	ng	#	95
27) 2-Butanone (MEK)	10.22	72	196443	27.180	ng		98
28) cis-1,2-Dichloroethene	10.75	61	388879	26.352	ng		99
29) Diisopropyl Ether	11.04	87	297192	26.562	ng		99
30) Ethyl Acetate	11.05	61	195858	55.036	ng		100
31) n-Hexane	11.03	57	433333	25.095	ng		99
32) Chloroform	11.09	83	526732	25.407	ng		100
34) Tetrahydrofuran (THF)	11.49	72	193713	23.602	ng		99
35) Ethyl tert-Butyl Ether	11.64	87	371868	27.796	ng		99
36) 1,2-Dichloroethane	11.89	62	408654	25.554	ng		100
38) 1,1,1-Trichloroethane	12.17	97	505632	25.194	ng		100
39) Isopropyl Acetate	12.61	61	337084	56.326	ng	#	90
40) 1-Butanol	12.63	56	494471	50.959	ng		100
41) Benzene	12.65	78	1133661	24.916	ng		100
42) Carbon Tetrachloride	12.81	117	473436	26.115	ng		100
43) Cyclohexane	12.94	84	906357	50.625	ng		100
44) tert-Amyl Methyl Ether	13.29	73	843360	26.322	ng		99
45) 1,2-Dichloropropane	13.50	63	277836	25.944	ng		100
46) Bromodichloromethane	13.69	83	429822	27.084	ng		100
47) Trichloroethene	13.75	130	380827	25.629	ng		100
48) 1,4-Dioxane	13.73	88	259517	28.339	ng		99
49) 2,2,4-Trimethylpentane...	13.82	57	1118714	25.167	ng		97
50) Methyl Methacrylate	13.96	100	266073	54.394	ng		100

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091744.D Vial: 3
Acq On : 10 Feb 2017 11:54 Operator: LH/AMF
Sample : 25ng ICV S29-01271702 (2_25) Inst : MS13
Misc : S29-01311701/S29-01271702 (2/25)

Quant Time: Feb 10 12:48:29 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

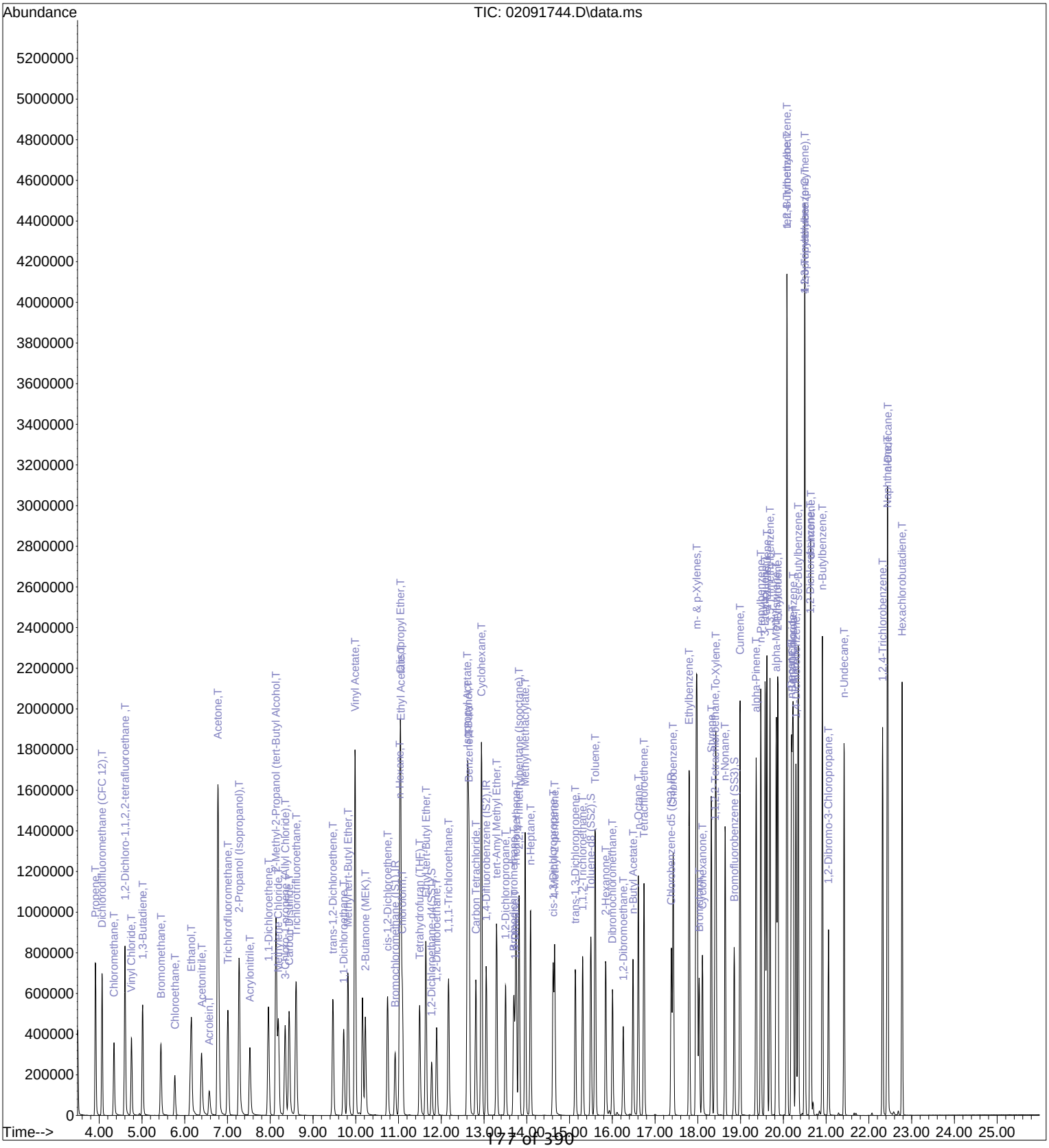
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	289605	26.087	ng	100
52) cis-1,3-Dichloropropene	14.62	75	500989	28.824	ng	100
53) 4-Methyl-2-pentanone	14.65	58	255105	26.564	ng	97
54) trans-1,3-Dichloropropene	15.13	75	475113	26.499	ng	100
55) 1,1,2-Trichloroethane	15.30	97	304329	25.982	ng	100
58) Toluene	15.60	91	1244524	25.628	ng	100
59) 2-Hexanone	15.84	43	573862	26.843	ng	98
60) Dibromochloromethane	16.00	129	412156	28.026	ng	99
61) 1,2-Dibromoethane	16.26	107	365680	28.182	ng	99
62) n-Butyl Acetate	16.49	43	633342	28.217	ng	99
63) n-Octane	16.61	57	231816	25.849	ng	100
64) Tetrachloroethene	16.74	166	435085	25.530	ng	99
65) Chlorobenzene	17.42	112	901980	26.272	ng	100
66) Ethylbenzene	17.80	91	1436266	26.573	ng	100
67) m- & p-Xylenes	17.98	91	2274111	52.964	ng	99
68) Bromoform	18.03	173	385955	29.031	ng	100
69) Styrene	18.32	104	922140	26.461	ng	99
70) o-Xylene	18.42	91	1134643	25.945	ng	100
71) n-Nonane	18.64	43	496699	26.156	ng	98
72) 1,1,2,2-Tetrachloroethane	18.40	83	508550	27.366	ng	100
74) Cumene	18.99	105	1511497	26.128	ng	100
75) alpha-Pinene	19.36	93	751991	26.771	ng	99
76) n-Propylbenzene	19.47	91	1727176	27.469	ng	100
77) 3-Ethyltoluene	19.57	105	1468242	27.782	ng	100
78) 4-Ethyltoluene	19.62	105	1479525	28.974	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1248718	25.711	ng	100
80) alpha-Methylstyrene	19.84	118	675044	25.399	ng	99
81) 2-Ethyltoluene	19.87	105	1457312	26.223	ng	100
82) 1,2,4-Trimethylbenzene	20.08	105	1253233	27.292	ng	100
83) n-Decane	20.19	57	550858	27.684	ng	100
84) Benzyl Chloride	20.21	91	1083677	28.336	ng	100
85) 1,3-Dichlorobenzene	20.23	146	815779	24.969	ng	100
86) 1,4-Dichlorobenzene	20.30	146	827141	28.815	ng	100
87) sec-Butylbenzene	20.35	105	1659508	26.425	ng	100
88) 4-Isopropyltoluene (p-...	20.50	119	1600450	26.960	ng	99
89) 1,2,3-Trimethylbenzene	20.50	105	1283335	27.792	ng	100
90) 1,2-Dichlorobenzene	20.63	146	784673	29.064	ng	99
91) d-Limonene	20.64	68	417515	29.060	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.06	157	307757	26.684	ng	96
93) n-Undecane	21.42	57	587559	25.799	ng	100
94) 1,2,4-Trichlorobenzene	22.32	180	670880	25.225	ng	99
95) Naphthalene	22.43	128	1758599	26.665	ng	100
96) n-Dodecane	22.44	57	550861	27.207	ng	99
97) Hexachlorobutadiene	22.78	225	451425	26.417	ng	100
98) Cyclohexanone	18.11	55	361986	24.944	ng	99
99) tert-Butylbenzene	20.08	119	1250131	26.071	ng	100
100) n-Butylbenzene	20.91	91	1292585	24.944	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\09\02091744.D Vial: 3
Acq On : 10 Feb 2017 11:54 Operator: LH/AMF
Sample : 25ng ICV S29-01271702 (2_25) Inst : MS13
Misc : S29-01311701/S29-01271702 (2/25)

Quant Time: Feb 10 12:48:29 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



LH 2/17/17

AMF 2/10/17

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: **02091744.D** Acq. Method File: **TO15.M**

Data File Path: **I:\MS13\DATA\2017_02\09** Sample Name: **25ng ICV S29-01271702 (2_25**

Operator: **LH/AMF** Misc Info: **S29-01311701/S29-01271702 (**

Date Acquired: **2/10/2017 11:54** Instrument Name: **MS13**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
2)	**Propene**	**3.91**	**25.287**	26.275	96	**52**	**127**	*	*
3)	**Dichlorodifluoromethane (CFC 1**	**4.06**	**24.019**	**26.250**	92	**68**	**109**	*	*
4)	**Chloromethane**	**4.34**	**27.339**	**26.225**	104	**51**	**130**	*	*
5)	**1,2-Dichloro-1,1,2,2-tetrafluoroetl**	**4.60**	**25.180**	**26.375**	95	**66**	**114**	*	*
6)	**Vinyl Chloride**	**4.75**	**28.670**	**26.250**	109	**61**	**125**	*	*
7)	**1,3-Butadiene**	**5.02**	**29.123**	**26.250**	111	**62**	**144**	*	*
8)	**Bromomethane**	**5.44**	**28.535**	**26.250**	109	**73**	**123**	*	*
9)	**Chloroethane**	**5.77**	**26.382**	**26.225**	101	**69**	**122**	*	*
10)	**Ethanol**	**6.15**	**131.028**	**132.650**	99	**62**	**124**	*	*
11)	**Acetonitrile**	**6.40**	**26.930**	**26.650**	101	**57**	**114**	*	*
12)	**Acrolein**	**6.57**	**26.327**	**26.525**	99	**62**	**116**	*	*
13)	**Acetone**	**6.78**	**126.433**	**133.050**	95	**57**	**117**	*	*
14)	**Trichlorofluoromethane**	**7.01**	**24.763**	**26.275**	94	**63**	**98**	*	*
15)	**2-Propanol (Isopropanol)**	**7.27**	**58.194**	**53.025**	110	**66**	**121**	*	*
16)	**Acrylonitrile**	**7.52**	**28.367**	**26.575**	107	**68**	**123**	*	*
17)	**1,1-Dichloroethene**	**7.96**	**27.556**	**26.575**	104	**76**	**118**	*	*
18)	2-Methyl-2-Propanol (tert-Butyl Alc	8.13	54.961	53.275	103	74	126	*	*
19)	**Methylene Chloride**	**8.19**	**25.042**	**26.550**	94	**60**	**118**	*	*
20)	**3-Chloro-1-propene (Allyl Chlorid**	**8.35**	**28.405**	**26.500**	107	**65**	**126**	*	*
21)	**Trichlorotrifluoroethane**	**8.61**	**25.348**	**26.450**	96	**73**	**114**	*	*
22)	**Carbon Disulfide**	**8.44**	**25.088**	**26.675**	94	**57**	**102**	*	*
23)	**trans-1,2-Dichloroethene**	**9.46**	**28.381**	**26.675**	106	**74**	**123**	*	*
24)	**1,1-Dichloroethane**	**9.72**	**26.060**	**26.550**	98	**69**	**111**	*	*
25)	**Methyl tert-Butyl Ether**	**9.82**	**26.504**	**26.600**	100	**69**	**113**	*	*
26)	**Vinyl Acetate**	**9.99**	**136.790**	**132.550**	103	**76**	**128**	*	*
27)	**2-Butanone (MEK)**	**10.22**	**27.180**	**26.550**	102	**63**	**127**	*	*
28)	**cis-1,2-Dichloroethene**	**10.75**	**26.352**	**26.475**	100	**72**	**117**	*	*
29)	Diisopropyl Ether	11.04	26.562	26.575	100	64	118	*	*
30)	**Ethyl Acetate**	**11.05**	**55.036**	**53.275**	103	**68**	**127**	*	*
31)	**n-Hexane**	**11.03**	**25.095**	**26.600**	94	**55**	**116**	*	*
32)	**Chloroform**	**11.09**	**25.407**	**26.475**	96	**70**	**109**	*	*
34)	**Tetrahydrofuran (THF)**	**11.49**	**23.602**	**26.575**	89	**72**	**113**	*	*
35)	Ethyl tert-Butyl Ether	11.64	27.796	26.525	105	73	117	*	*
36)	**1,2-Dichloroethane**	**11.89**	**25.554**	**26.500**	96	**69**	**113**	*	*
38)	**1,1,1-Trichloroethane**	**12.17**	**25.194**	**26.475**	95	**72**	**115**	*	*
39)	Isopropyl Acetate	12.61	56.326	53.050	106	68	122	*	*
40)	1-Butanol	12.63	50.959	53.075	96	75	141	*	*
41)	**Benzene**	**12.65**	**24.916**	**26.525**	94	**65**	**107**	*	*
42)	**Carbon Tetrachloride**	**12.81**	**26.115**	**26.600**	98	**71**	**113**	*	*
43)	**Cyclohexane**	**12.94**	**50.625**	**53.125**	95	**71**	**115**	*	*
44)	tert-Amyl Methyl Ether	13.29	26.322	**26.525**	99	73	115	*	*
45)	**1,2-Dichloropropane**	**13.50**	**25.944**	**26.525**	98	**71**	**115**	*	*
46)	**Bromodichloromethane**	**13.69**	**27.084**	**26.700**	101	**75**	**118**	*	*
47)	**Trichloroethene**	**13.75**	**25.629**	**26.550**	97	**68**	**114**	*	*
48)	**1,4-Dioxane**	**13.73**	**28.339**	**26.600**	107	**81**	**131**	*	*
49)	2,2,4-Trimethylpentane (Isooctane)	13.82	25.167	26.525	95	68	112	*	*

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: **02091744.D** **TO15.M**
Data File Path: **I:\MS13\DATA\2017_02\09** Sample Name: **25ng ICV S29-01271702 (2_25**
Operator: **LH/AMF** Misc Info: **S29-01311701/S29-01271702 (**
Date Acquired: **2/10/2017** **11:54** Instrument Name: **MS13**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
50)	**Methyl Methacrylate**	**13.96**	**54.394**	**53.000**	103	**72**	**130**	*	*
51)	**n-Heptane**	**14.09**	**26.087**	**26.600**	98	**68**	**116**	*	*
52)	**cis-1,3-Dichloropropene**	**14.62**	**28.824**	**26.275**	110	**77**	**126**	*****	*
53)	**4-Methyl-2-pentanone**	**14.65**	**26.564**	**26.575**	100	**69**	**126**	*****	*
54)	**trans-1,3-Dichloropropene**	**15.13**	**26.499**	**26.675**	99	**79**	**125**	*****	*
55)	**1,1,2-Trichloroethane**	**15.30**	**25.982**	**26.525**	98	**75**	**119**	*****	*
58)	**Toluene**	**15.60**	**25.628**	**26.450**	97	**59**	**118**	*****	*
59)	**2-Hexanone**	**15.84**	**26.843**	**26.575**	101	**69**	**129**	*****	*
60)	**Dibromochloromethane**	**16.00**	**28.026**	**26.600**	105	**74**	**136**	*****	*
61)	**1,2-Dibromoethane**	**16.26**	**28.182**	**26.450**	107	**73**	**131**	*****	*
62)	**n-Butyl Acetate**	**16.49**	**28.217**	**26.950**	105	**69**	**130**	*****	*
63)	**n-Octane**	**16.61**	**25.849**	**26.500**	98	**66**	**120**	*	*
64)	**Tetrachloroethene**	**16.74**	**25.530**	**26.575**	96	**65**	**130**	*****	*
65)	**Chlorobenzene**	**17.42**	**26.272**	**26.500**	99	**68**	**120**	*****	*
66)	**Ethylbenzene**	**17.80**	**26.573**	**26.450**	100	**68**	**122**	*****	*
67)	**m- & p-Xylenes**	**17.98**	**52.964**	**53.025**	100	**68**	**123**	*****	*
68)	**Bromoform**	**18.03**	**29.031**	**26.550**	109	**69**	**130**	*****	*
69)	**Styrene**	**18.32**	**26.461**	**26.475**	100	**71**	**133**	*****	*
70)	**o-Xylene**	**18.42**	**25.945**	**26.450**	98	**68**	**122**	*****	*
71)	**n-Nonane**	**18.64**	**26.156**	**26.475**	99	**65**	**120**	*****	*
72)	**1,1,2,2-Tetrachloroethane**	**18.40**	**27.366**	**26.500**	103	**69**	**130**	*****	*
74)	**Cumene**	**18.99**	**26.128**	**26.525**	99	**70**	**123**	*****	*
75)	**alpha-Pinene**	**19.36**	**26.771**	**26.575**	101	**70**	**128**	*****	*
76)	**n-Propylbenzene**	**19.47**	**27.469**	**26.725**	103	**69**	**125**	*	*
77)	3-Ethyltoluene	19.57	27.782	26.550	105	67	128	*	*
78)	**4-Ethyltoluene**	**19.62**	**28.974**	**26.525**	**109**	**67**	**130**	*****	*****
79)	**1,3,5-Trimethylbenzene**	**19.69**	**25.711**	**26.525**	**97**	**67**	**124**	*****	*****
80)	alpha-Methylstyrene	19.84	25.399	26.550	**96**	67	141	*	*****
81)	2-Ethyltoluene	19.87	26.223	26.550	**99**	67	124	*	*****
82)	**1,2,4-Trimethylbenzene**	**20.08**	**27.292**	**26.525**	**103**	**67**	**129**	*****	*****
83)	n-Decane	20.19	27.684	26.525	**104**	66	124	*	*****
84)	**Benzyl Chloride**	**20.21**	**28.336**	**26.550**	**107**	**79**	**138**	*****	*****
85)	**1,3-Dichlorobenzene**	**20.23**	**24.969**	**26.475**	**94**	**65**	**136**	*****	*****
86)	**1,4-Dichlorobenzene**	**20.30**	**28.815**	**26.650**	**108**	**66**	**141**	*****	*****
87)	sec-Butylbenzene	20.35	26.425	26.550	**100**	68	125	*	*****
88)	4-Isopropyltoluene (p-Cymene)	20.50	26.960	26.550	**102**	68	131	*	*****
89)	1,2,3-Trimethylbenzene	20.50	27.792	26.500	**105**	68	132	*	*****
90)	**1,2-Dichlorobenzene**	**20.63**	**29.064**	**26.550**	**109**	**67**	**136**	*****	*****
91)	**d-Limonene**	**20.64**	**29.060**	**26.550**	**109**	**71**	**134**	*****	*****
92)	**1,2-Dibromo-3-Chloropropane**	**21.06**	**26.684**	**26.475**	**101**	**73**	**136**	*****	*****
93)	n-Undecane	21.42	25.799	26.600	**97**	68	132	*	*****
94)	**1,2,4-Trichlorobenzene**	**22.32**	**25.225**	**26.500**	**95**	**64**	**134**	*****	*****
95)	**Naphthalene**	**22.43**	**26.665**	**26.700**	**100**	**62**	**136**	*****	*****
96)	n-Dodecane	22.44	27.207	26.550	**102**	61	137	*	*****
97)	**Hexachlorobutadiene**	**22.78**	**26.417**	**26.575**	**99**	60	133	*	*****
98)	Cyclohexanone	18.11	24.944	26.575	94	64	131	*	*****
99)	tert-Butylbenzene	20.08	26.071	26.500	98	67	128	*	*****
100)	n-Butylbenzene	20.91	24.944	26.500	94	68	128	*	*****

Bold = 75 Compound List
*** = Pass**

Evaluate Continuing Calibration Report

Data File: I:\MS09\Data\2017_02\15\02151701.D
Acq On : 15 Feb 2017 5:41 Operator: SC
Sample : CCV R9021517_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

2/15/17

Quant Time: Feb 15 09:16:24 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	128	0.00
2	T	Propene	1.846	1.250	32.3#	98	0.00
3	T	Dichlorodifluoromethane (CF	2.710	2.343	13.5	114	0.00
4	T	Chloromethane	2.381	1.714	28.0	93	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.386	1.243	10.3	118	0.00
6	T	Vinyl Chloride	2.205	1.746	20.8	104	0.00
7	T	1,3-Butadiene	1.502	0.973	35.2#	79	0.00
8	T	Bromomethane	1.307	1.142	12.6	118	0.00
9	T	Chloroethane	1.109	0.904	18.5	103	0.00
10	T	Ethanol	1.033	0.809	21.7	94	0.01
11	T	Acetonitrile	2.814	2.125	24.5	100	0.00
12	T	Acrolein	0.970	0.707	27.1	97	0.00
13	T	Acetone	1.183	0.825	30.3#	101	0.00
14	T	Trichlorofluoromethane	2.186	1.935	11.5	117	0.00
15	T	2-Propanol (Isopropanol)	3.545	3.009	15.1	107	0.01
16	T	Acrylonitrile	1.906	1.627	14.6	102	0.01
17	T	1,1-Dichloroethene	1.427	1.224	14.2	112	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.429	3.251	5.2	117	0.01
19	T	Methylene Chloride	1.534	1.277	16.8	112	0.00
20	T	3-Chloro-1-propene (Allyl C	2.284	1.693	25.9	101	0.00
21	T	Trichlorotrifluoroethane	1.115	1.062	4.8	119	0.00
22	T	Carbon Disulfide	5.743	4.684	18.4	111	0.00
23	T	trans-1,2-Dichloroethene	2.051	1.780	13.2	109	0.00
24	T	1,1-Dichloroethane	2.624	2.163	17.6	108	0.00
25	T	Methyl tert-Butyl Ether	4.164	3.802	8.7	124	0.00
26	T	Vinyl Acetate	0.335	0.284	15.2	101	0.00
27	T	2-Butanone (MEK)	1.012	0.898	11.3	113	0.01
28	T	cis-1,2-Dichloroethene	1.956	1.699	13.1	110	0.00
29	T	Diisopropyl Ether	1.198	1.066	11.0	118	0.00
30	T	Ethyl Acetate	0.523	0.461	11.9	108	0.00
31	T	n-Hexane	2.500	2.058	17.7	119	0.00
32	T	Chloroform	2.424	2.118	12.6	113	0.00
33	S	1,2-Dichloroethane-d4(SS1)	1.532	1.438	6.1	121	0.00
34	T	Tetrahydrofuran (THF)	1.058	0.857	19.0	111	0.00
35	T	Ethyl tert-Butyl Ether	1.704	1.543	9.4	116	0.00
36	T	1,2-Dichloroethane	1.741	1.576	9.5	115	0.00
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	128	0.00
38	T	1,1,1-Trichloroethane	0.413	0.377	8.7	119	0.00
39	T	Isopropyl Acetate	0.190	0.162	14.7	109	0.00
40	T	1-Butanol	0.307	0.274	10.7	108	0.00
41	T	Benzene	1.286	1.045	18.7	116	0.00
42	T	Carbon Tetrachloride	0.353	0.333	5.7	120	0.00
43	T	Cyclohexane	0.453	0.407	10.2	117	0.00
44	T	tert-Amyl Methyl Ether	0.882	0.764	13.4	115	0.00
45	T	1,2-Dichloropropane	0.300	0.256	14.7	110	0.00
46	T	Bromodichloromethane	0.374	0.343	8.3	114	0.00
47	T	Trichloroethene	0.303	0.292	3.6	125	0.00
48	T	1,4-Dioxane	0.237	0.224	5.5	115	0.00
49	T	2,2,4-Trimethylpentane (Iso	1.294	1.073	17.1	110	0.00
50	T	Methyl Methacrylate	0.117	0.114	2.6	119	0.00
51	T	n-Heptane	0.301	0.269	10.6	119	0.00
52	T	cis-1,3-Dichloropropene	0.485	0.443	8.7	114	0.00
53	T	4-Methyl-2-pentanone	0.283	0.247	12.7	110	0.00
54	T	trans-1,3-Dichloropropene	0.424	0.401	5.4	114	0.00

Evaluate Continuing Calibration Report

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ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 15 09:16:24 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	1,1,2-Trichloroethane	0.276	0.263	4.7	119	0.00
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	126	0.00
57	S	Toluene-d8 (SS2)	2.585	2.618	-1.3	129	0.00
58	T	Toluene	3.022	2.775	8.2	121	0.00
59	T	2-Hexanone	1.613	1.353	16.1	110	0.00
60	T	Dibromochloromethane	0.733	0.756	-3.1	123	0.00
61	T	1,2-Dibromoethane	0.753	0.735	2.4	118	0.00
62	T	n-Butyl Acetate	1.788	1.525	14.7	110	0.00
63	T	n-Octane	0.672	0.568	15.5	115	0.00
64	T	Tetrachloroethene	0.721	0.756	-4.9	131	0.00
65	T	Chlorobenzene	1.914	1.837	4.0	122	0.00
66	T	Ethylbenzene	3.325	3.134	5.7	120	0.00
67	T	m- & p-Xylenes	2.555	2.450	4.1	122	0.00
68	T	Bromoform	0.579	0.647	-11.7	126	0.00
69	T	Styrene	2.015	2.005	0.5	122	0.00
70	T	o-Xylene	2.606	2.492	4.4	122	0.00
71	T	n-Nonane	1.478	1.252	15.3	115	0.00
72	T	1,1,2,2-Tetrachloroethane	1.243	1.187	4.5	116	0.00
73	S	Bromofluorobenzene (SS3)	0.700	0.764	-9.1	136	0.00
74	T	Cumene	3.261	3.210	1.6	125	0.00
75	T	alpha-Pinene	1.708	1.682	1.5	123	0.00
76	T	n-Propylbenzene	3.935	3.861	1.9	124	0.00
77	T	3-Ethyltoluene	3.217	3.225	-0.2	122	0.00
78	T	4-Ethyltoluene	3.065	3.147	-2.7	133	0.00
79	T	1,3,5-Trimethylbenzene	2.663	2.689	-1.0	126	0.00
80	T	alpha-Methylstyrene	1.389	1.467	-5.6	127	0.00
81	T	2-Ethyltoluene	3.141	3.181	-1.3	128	0.00
82	T	1,2,4-Trimethylbenzene	2.642	2.775	-5.0	128	0.00
83	T	n-Decane	1.564	1.472	5.9	120	0.00
84	T	Benzyl Chloride	2.266	2.560	-13.0	123	0.00
85	T	1,3-Dichlorobenzene	1.445	1.616	-11.8	133	0.00
86	T	1,4-Dichlorobenzene	1.468	1.621	-10.4	132	0.00
87	T	sec-Butylbenzene	3.591	3.654	-1.8	128	0.00
88	T	4-Isopropyltoluene (p-Cymen	3.282	3.459	-5.4	130	0.00
89	T	1,2,3-Trimethylbenzene	2.648	2.805	-5.9	128	0.00
90	T	1,2-Dichlorobenzene	1.387	1.549	-11.7	132	0.00
91	T	d-Limonene	1.130	1.135	-0.4	123	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.477	0.562	-17.8	125	0.00
93	T	n-Undecane	1.553	1.591	-2.4	121	0.00
94	T	1,2,4-Trichlorobenzene	0.957	1.218	-27.3	128	0.00
95	T	Naphthalene	3.049	3.837	-25.8	126	0.00
96	T	n-Dodecane	1.334	1.619	-21.4	121	0.00
97	T	Hexachlorobutadiene	0.604	0.722	-19.5	135	0.00
98	T	Cyclohexanone	1.061	0.928	12.5	110	0.00
99	T	tert-Butylbenzene	2.545	2.647	-4.0	129	0.00
100	T	n-Butylbenzene	2.914	2.988	-2.5	126	0.00

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

Quantitation Report (QT Reviewed)

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ALS Vial : 16 Sample Multiplier: 1

2/15/17

Quant Time: Feb 15 09:16:24 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.14	130	140733	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	11.10	114	691798	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	15.45	82	281029	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.92	65	202318	11.731	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.84%				
57) Toluene-d8 (SS2)	13.54	98	735722	12.660	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.28%				
73) Bromofluorobenzene (SS3)	17.05	174	214678	13.635	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.04%				
Target Compounds							Qvalue
2) Propene	3.85	42	364622	17.546	ng		99
3) Dichlorodifluoromethan...	3.95	85	690555	22.635	ng		100
4) Chloromethane	4.16	50	484979	18.093	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.32	135	351655	22.533	ng		100
6) Vinyl Chloride	4.44	62	502709	20.245	ng		100
7) 1,3-Butadiene	4.61	54	289554	17.125	ng		98
8) Bromomethane	4.92	94	319175	21.697	ng		99
9) Chloroethane	5.14	64	256734	20.565	ng		100
10) Ethanol	5.38	45	1185472	101.893	ng		100
11) Acetonitrile	5.56	41	625643	19.751	ng		100
12) Acrolein	5.69	56	207141	18.961	ng		98
13) Acetone	5.84	58	1233912	92.616	ng		99
14) Trichlorofluoromethane	6.01	101	571234	23.214	ng		100
15) 2-Propanol (Isopropanol)	6.17	45	1782816	44.663	ng		98
16) Acrylonitrile	6.37	53	483102	22.515	ng		100
17) 1,1-Dichloroethene	6.70	96	364755	22.707	ng		93
18) 2-Methyl-2-Propanol (t...	6.82	59	1934399	50.113	ng		99
19) Methylene Chloride	6.86	84	380020	22.003	ng		94
20) 3-Chloro-1-propene (Al...	6.99	41	501207	19.495	ng		97
21) Trichlorotrifluoroethane	7.17	151	313618	24.979	ng		95
22) Carbon Disulfide	7.13	76	1398839	21.635	ng		98
23) trans-1,2-Dichloroethene	7.88	61	534589	23.150	ng		94
24) 1,1-Dichloroethane	8.10	63	620962	21.017	ng		99
25) Methyl tert-Butyl Ether	8.16	73	1140847	24.337	ng		97
26) Vinyl Acetate	8.28	86	420222	111.275	ng	#	89
27) 2-Butanone (MEK)	8.51	72	265145	23.273	ng	#	91
28) cis-1,2-Dichloroethene	8.97	61	508677	23.096	ng		96
29) Diisopropyl Ether	9.20	87	318724	23.631	ng	#	84
30) Ethyl Acetate	9.21	61	275951	46.834	ng		100
31) n-Hexane	9.21	57	615855	21.876	ng		99
32) Chloroform	9.28	83	630598	23.105	ng		100
34) Tetrahydrofuran (THF)	9.66	72	256220	21.513	ng		95
35) Ethyl tert-Butyl Ether	9.75	87	459010	23.931	ng		95
36) 1,2-Dichloroethane	10.02	62	466703	23.809	ng		100
38) 1,1,1-Trichloroethane	10.29	97	559614	24.476	ng		98
39) Isopropyl Acetate	10.66	61	471882	44.973	ng	#	88
40) 1-Butanol	10.67	56	798840	46.951	ng		89
41) Benzene	10.75	78	1521448	21.370	ng		100
42) Carbon Tetrachloride	10.90	117	486021	24.897	ng		100
43) Cyclohexane	11.02	84	1199243	47.854	ng		95
44) tert-Amyl Methyl Ether	11.34	73	1113692	22.826	ng		99
45) 1,2-Dichloropropane	11.56	63	375571	22.591	ng		99
46) Bromodichloromethane	11.75	83	505824	24.418	ng		99
47) Trichloroethene	11.80	130	428118	25.558	ng		99
48) 1,4-Dioxane	11.77	88	328644	25.006	ng		96
49) 2,2,4-Trimethylpentane...	11.86	57	1572320	21.963	ng		100

Quantitation Report (QT Reviewed)

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Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

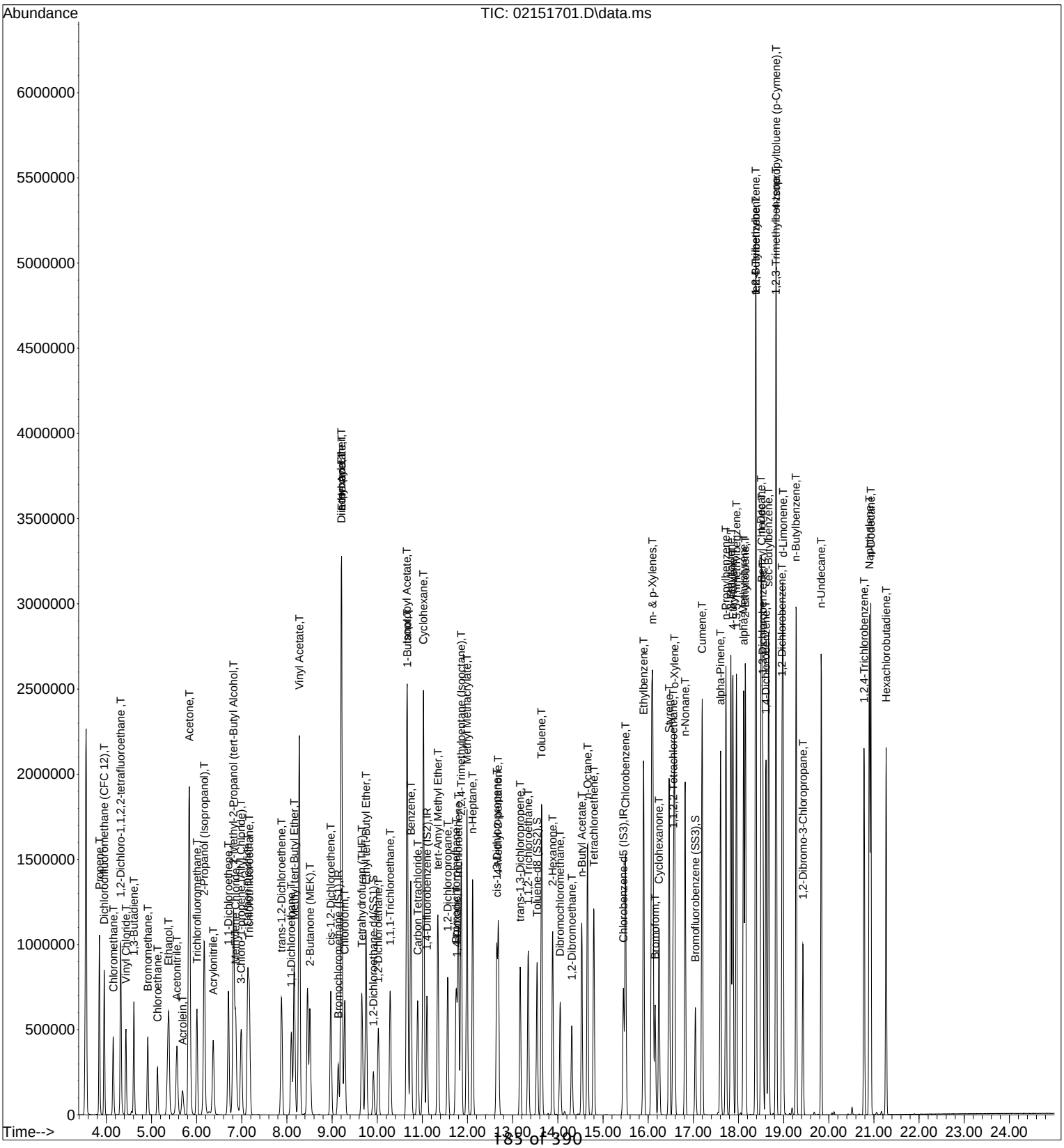
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.99	100	332412	51.145	ng	98
51) n-Heptane	12.11	71	395511	23.753	ng	96
52) cis-1,3-Dichloropropene	12.65	75	684789	25.536	ng	100
53) 4-Methyl-2-pentanone	12.68	58	361237	23.034	ng	97
54) trans-1,3-Dichloropropene	13.16	75	591014	25.185	ng	100
55) 1,1,2-Trichloroethane	13.34	97	385349	25.207	ng	98
58) Toluene	13.64	91	1642113	24.169	ng	100
59) 2-Hexanone	13.89	43	806575	22.243	ng	98
60) Dibromochloromethane	14.05	129	451131	27.373	ng	99
61) 1,2-Dibromoethane	14.31	107	436469	25.765	ng	99
62) n-Butyl Acetate	14.53	43	912038	22.685	ng	99
63) n-Octane	14.66	57	337363	22.343	ng	97
64) Tetrachloroethene	14.80	166	450638	27.810	ng	100
65) Chlorobenzene	15.50	112	1095566	25.453	ng	100
66) Ethylbenzene	15.90	91	1858560	24.864	ng	100
67) m- & p-Xylenes	16.09	91	2923267	50.895	ng	100
68) Bromoform	16.15	173	386522	29.695	ng	100
69) Styrene	16.46	104	1195495	26.387	ng	99
70) o-Xylene	16.58	91	1476213	25.195	ng	99
71) n-Nonane	16.82	43	741591	22.314	ng	97
72) 1,1,2,2-Tetrachloroethane	16.56	83	704360	25.208	ng	100
74) Cumene	17.20	105	1894659	25.845	ng	100
75) alpha-Pinene	17.60	93	986978	25.699	ng	99
76) n-Propylbenzene	17.72	91	2306690	26.073	ng	99
77) 3-Ethyltoluene	17.83	105	1903080	26.313	ng	99
78) 4-Ethyltoluene	17.88	105	1855666	26.932	ng	99
79) 1,3,5-Trimethylbenzene	17.95	105	1585510	26.480	ng	99
80) alpha-Methylstyrene	18.11	118	865593	27.711	ng	96
81) 2-Ethyltoluene	18.15	105	1898592	26.888	ng	100
82) 1,2,4-Trimethylbenzene	18.38	105	1640583	27.621	ng	98
83) n-Decane	18.50	57	871243	24.772	ng	94
84) Benzyl Chloride	18.52	91	1526580	29.963	ng	99
85) 1,3-Dichlorobenzene	18.54	146	960730	29.568	ng	99
86) 1,4-Dichlorobenzene	18.61	146	963774	29.195	ng	99
87) sec-Butylbenzene	18.67	105	2164482	26.809	ng	100
88) 4-Isopropyltoluene (p-...	18.84	119	1996509	27.056	ng	100
89) 1,2,3-Trimethylbenzene	18.83	105	1619385	27.206	ng	99
90) 1,2-Dichlorobenzene	18.97	146	921246	29.550	ng	100
91) d-Limonene	18.99	68	640900	25.230	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.43	157	332516	31.025	ng	93
93) n-Undecane	19.83	57	942770	27.002	ng	99
94) 1,2,4-Trichlorobenzene	20.78	180	713830	33.172	ng	100
95) Naphthalene	20.90	128	2335600	34.075	ng	100
96) n-Dodecane	20.93	57	951211	31.725	ng	98
97) Hexachlorobutadiene	21.27	225	429816	31.638	ng	100
98) Cyclohexanone	16.24	55	550889	23.100	ng	98
99) tert-Butylbenzene	18.38	119	1563726	27.329	ng	100
100) n-Butylbenzene	19.27	91	1773679	27.074	ng	99

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151701.D
Acq On : 15 Feb 2017 5:41 Operator: SC
Sample : CCV R9021517_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 15 09:16:24 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File: I:\MS09\Data\2017_02\16\02161701.D
Acq On : 16 Feb 2017 5:40 Operator: SC
Sample : CCV R9021617_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 08:59:26 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	144	0.00
2	T	Propene	1.846	1.228	33.5#	108	0.00
3	T	Dichlorodifluoromethane (CF	2.710	2.245	17.2	124	0.00
4	T	Chloromethane	2.381	1.763	26.0	109	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.386	1.228	11.4	132	0.00
6	T	Vinyl Chloride	2.205	1.785	19.0	120	0.00
7	T	1,3-Butadiene	1.502	1.058	29.6	97	0.00
8	T	Bromomethane	1.307	1.155	11.6	135	0.00
9	T	Chloroethane	1.109	0.916	17.4	118	0.00
10	T	Ethanol	1.033	0.836	19.1	110	0.00
11	T	Acetonitrile	2.814	2.163	23.1	115	0.00
12	T	Acrolein	0.970	0.723	25.5	112	0.00
13	T	Acetone	1.183	0.845	28.6	116	0.00
14	T	Trichlorofluoromethane	2.186	1.847	15.5	127	0.00
15	T	2-Propanol (Isopropanol)	3.545	3.013	15.0	122	0.00
16	T	Acrylonitrile	1.906	1.643	13.8	117	0.00
17	T	1,1-Dichloroethene	1.427	1.208	15.3	126	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.429	3.266	4.8	133	0.00
19	T	Methylene Chloride	1.534	1.274	16.9	126	0.00
20	T	3-Chloro-1-propene (Allyl C	2.284	1.698	25.7	115	0.00
21	T	Trichlorotrifluoroethane	1.115	1.070	4.0	136	0.00
22	T	Carbon Disulfide	5.743	4.602	19.9	123	0.00
23	T	trans-1,2-Dichloroethene	2.051	1.759	14.2	122	0.00
24	T	1,1-Dichloroethane	2.624	2.155	17.9	121	0.00
25	T	Methyl tert-Butyl Ether	4.164	3.778	9.3	139	0.00
26	T	Vinyl Acetate	0.335	0.287	14.3	116	0.00
27	T	2-Butanone (MEK)	1.012	0.887	12.4	126	0.00
28	T	cis-1,2-Dichloroethene	1.956	1.666	14.8	122	0.00
29	T	Diisopropyl Ether	1.198	1.048	12.5	132	0.00
30	T	Ethyl Acetate	0.523	0.456	12.8	122	0.00
31	T	n-Hexane	2.500	2.010	19.6	132	0.00
32	T	Chloroform	2.424	2.048	15.5	124	0.00
33	S	1,2-Dichloroethane-d4(SS1)	1.532	1.413	7.8	135	0.00
34	T	Tetrahydrofuran (THF)	1.058	0.851	19.6	125	0.00
35	T	Ethyl tert-Butyl Ether	1.704	1.519	10.9	130	0.00
36	T	1,2-Dichloroethane	1.741	1.511	13.2	125	0.00
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	144	0.00
38	T	1,1,1-Trichloroethane	0.413	0.364	11.9	129	0.00
39	T	Isopropyl Acetate	0.190	0.160	15.8	121	0.00
40	T	1-Butanol	0.307	0.274	10.7	122	0.00
41	T	Benzene	1.286	1.029	20.0	128	0.00
42	T	Carbon Tetrachloride	0.353	0.317	10.2	129	0.00
43	T	Cyclohexane	0.453	0.399	11.9	129	0.00
44	T	tert-Amyl Methyl Ether	0.882	0.752	14.7	128	0.00
45	T	1,2-Dichloropropane	0.300	0.250	16.7	121	0.00
46	T	Bromodichloromethane	0.374	0.330	11.8	124	0.00
47	T	Trichloroethene	0.303	0.283	6.6	137	0.00
48	T	1,4-Dioxane	0.237	0.219	7.6	126	0.00
49	T	2,2,4-Trimethylpentane (Iso	1.294	1.058	18.2	122	0.00
50	T	Methyl Methacrylate	0.117	0.112	4.3	131	0.00
51	T	n-Heptane	0.301	0.260	13.6	129	0.00
52	T	cis-1,3-Dichloropropene	0.485	0.427	12.0	123	0.00
53	T	4-Methyl-2-pentanone	0.283	0.242	14.5	122	0.00
54	T	trans-1,3-Dichloropropene	0.424	0.387	8.7	123	0.00

Evaluate Continuing Calibration Report

Data File: I:\MS09\Data\2017_02\16\02161701.D
Acq On : 16 Feb 2017 5:40 Operator: SC
Sample : CCV R9021617_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 16 08:59:26 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	1,1,2-Trichloroethane	0.276	0.254	8.0	129	0.00
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	139	0.00
57	S	Toluene-d8 (SS2)	2.585	2.647	-2.4	144	0.00
58	T	Toluene	3.022	2.746	9.1	132	0.00
59	T	2-Hexanone	1.613	1.320	18.2	118	0.00
60	T	Dibromochloromethane	0.733	0.735	-0.3	132	0.00
61	T	1,2-Dibromoethane	0.753	0.721	4.2	127	0.00
62	T	n-Butyl Acetate	1.788	1.493	16.5	119	0.00
63	T	n-Octane	0.672	0.554	17.6	123	0.00
64	T	Tetrachloroethene	0.721	0.739	-2.5	141	0.00
65	T	Chlorobenzene	1.914	1.794	6.3	131	0.00
66	T	Ethylbenzene	3.325	3.062	7.9	129	0.00
67	T	m- & p-Xylenes	2.555	2.384	6.7	131	0.00
68	T	Bromoform	0.579	0.625	-7.9	134	0.00
69	T	Styrene	2.015	1.955	3.0	130	0.00
70	T	o-Xylene	2.606	2.405	7.7	129	0.00
71	T	n-Nonane	1.478	1.203	18.6	122	0.00
72	T	1,1,2,2-Tetrachloroethane	1.243	1.144	8.0	122	0.00
73	S	Bromofluorobenzene (SS3)	0.700	0.760	-8.6	149	0.00
74	T	Cumene	3.261	3.077	5.6	132	0.00
75	T	alpha-Pinene	1.708	1.608	5.9	130	0.00
76	T	n-Propylbenzene	3.935	3.678	6.5	130	0.00
77	T	3-Ethyltoluene	3.217	3.083	4.2	128	0.00
78	T	4-Ethyltoluene	3.065	3.004	2.0	139	0.00
79	T	1,3,5-Trimethylbenzene	2.663	2.584	3.0	133	0.00
80	T	alpha-Methylstyrene	1.389	1.394	-0.4	132	0.00
81	T	2-Ethyltoluene	3.141	3.015	4.0	133	0.00
82	T	1,2,4-Trimethylbenzene	2.642	2.629	0.5	134	0.00
83	T	n-Decane	1.564	1.378	11.9	124	0.00
84	T	Benzyl Chloride	2.266	2.410	-6.4	127	0.00
85	T	1,3-Dichlorobenzene	1.445	1.537	-6.4	138	0.00
86	T	1,4-Dichlorobenzene	1.468	1.535	-4.6	137	0.00
87	T	sec-Butylbenzene	3.591	3.443	4.1	133	0.00
88	T	4-Isopropyltoluene (p-Cymen	3.282	3.257	0.8	135	0.00
89	T	1,2,3-Trimethylbenzene	2.648	2.638	0.4	133	0.00
90	T	1,2-Dichlorobenzene	1.387	1.459	-5.2	137	0.00
91	T	d-Limonene	1.130	1.052	6.9	125	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.477	0.530	-11.1	129	0.00
93	T	n-Undecane	1.553	1.470	5.3	123	0.00
94	T	1,2,4-Trichlorobenzene	0.957	1.144	-19.5	133	0.00
95	T	Naphthalene	3.049	3.579	-17.4	129	0.00
96	T	n-Dodecane	1.334	1.488	-11.5	122	0.00
97	T	Hexachlorobutadiene	0.604	0.676	-11.9	139	0.00
98	T	Cyclohexanone	1.061	0.908	14.4	119	0.00
99	T	tert-Butylbenzene	2.545	2.499	1.8	134	0.00
100	T	n-Butylbenzene	2.914	2.795	4.1	130	0.00

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161701.D
Acq On : 16 Feb 2017 5:40 Operator: SC
Sample : CCV R9021617_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 08:59:26 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.13	130	159285	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	11.10	114	778093	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	15.45	82	308726	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.91	65	225134	11.534	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.24%				
57) Toluene-d8 (SS2)	13.54	98	817144	12.799	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.40%				
73) Bromofluorobenzene (SS3)	17.05	174	234523	13.559	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.48%				
Target Compounds							Qvalue
2) Propene	3.84	42	405264	17.230	ng		99
3) Dichlorodifluoromethan...	3.95	85	748759	21.684	ng		100
4) Chloromethane	4.14	50	564447	18.605	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.31	135	393158	22.258	ng		100
6) Vinyl Chloride	4.42	62	581568	20.693	ng		100
7) 1,3-Butadiene	4.60	54	356211	18.614	ng		99
8) Bromomethane	4.91	94	365305	21.941	ng		99
9) Chloroethane	5.12	64	294405	20.836	ng		100
10) Ethanol	5.37	45	1387132	105.339	ng		100
11) Acetonitrile	5.56	41	720661	20.101	ng		99
12) Acrolein	5.68	56	239735	19.388	ng		98
13) Acetone	5.83	58	1429442	94.796	ng		97
14) Trichlorofluoromethane	6.00	101	617306	22.164	ng		100
15) 2-Propanol (Isopropanol)	6.16	45	2020640	44.725	ng		98
16) Acrylonitrile	6.36	53	552164	22.736	ng		100
17) 1,1-Dichloroethene	6.70	96	407537	22.415	ng		94
18) 2-Methyl-2-Propanol (t...	6.81	59	2199287	50.340	ng		100
19) Methylene Chloride	6.86	84	429160	21.954	ng		94
20) 3-Chloro-1-propene (Al...	6.98	41	569056	19.556	ng		96
21) Trichlorotrifluoroethane	7.16	151	357479	25.157	ng		94
22) Carbon Disulfide	7.13	76	1555596	21.257	ng		98
23) trans-1,2-Dichloroethene	7.87	61	597972	22.878	ng		94
24) 1,1-Dichloroethane	8.10	63	700316	20.942	ng		99
25) Methyl tert-Butyl Ether	8.16	73	1282931	24.180	ng		98
26) Vinyl Acetate	8.27	86	481690	112.696	ng	#	87
27) 2-Butanone (MEK)	8.50	72	296404	22.987	ng	#	90
28) cis-1,2-Dichloroethene	8.97	61	564606	22.650	ng		95
29) Diisopropyl Ether	9.20	87	354683	23.234	ng	#	83
30) Ethyl Acetate	9.20	61	309584	46.423	ng		98
31) n-Hexane	9.20	57	680699	21.363	ng		99
32) Chloroform	9.28	83	690184	22.343	ng		99
34) Tetrahydrofuran (THF)	9.66	72	288068	21.370	ng		94
35) Ethyl tert-Butyl Ether	9.75	87	511558	23.564	ng		95
36) 1,2-Dichloroethane	10.02	62	506398	22.825	ng		100
38) 1,1,1-Trichloroethane	10.29	97	607746	23.633	ng		98
39) Isopropyl Acetate	10.65	61	524478	44.442	ng	#	89
40) 1-Butanol	10.67	56	897368	46.892	ng		90
41) Benzene	10.74	78	1684180	21.032	ng		100
42) Carbon Tetrachloride	10.89	117	520829	23.721	ng		100
43) Cyclohexane	11.02	84	1321459	46.883	ng		96
44) tert-Amyl Methyl Ether	11.34	73	1232688	22.463	ng		99
45) 1,2-Dichloropropane	11.56	63	413299	22.103	ng		99
46) Bromodichloromethane	11.74	83	548052	23.523	ng		99
47) Trichloroethene	11.80	130	466895	24.782	ng		99
48) 1,4-Dioxane	11.77	88	361983	24.488	ng		95
49) 2,2,4-Trimethylpentane...	11.86	57	1743176	21.649	ng		99

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161701.D
Acq On : 16 Feb 2017 5:40 Operator: SC
Sample : CCV R9021617_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 16 08:59:26 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

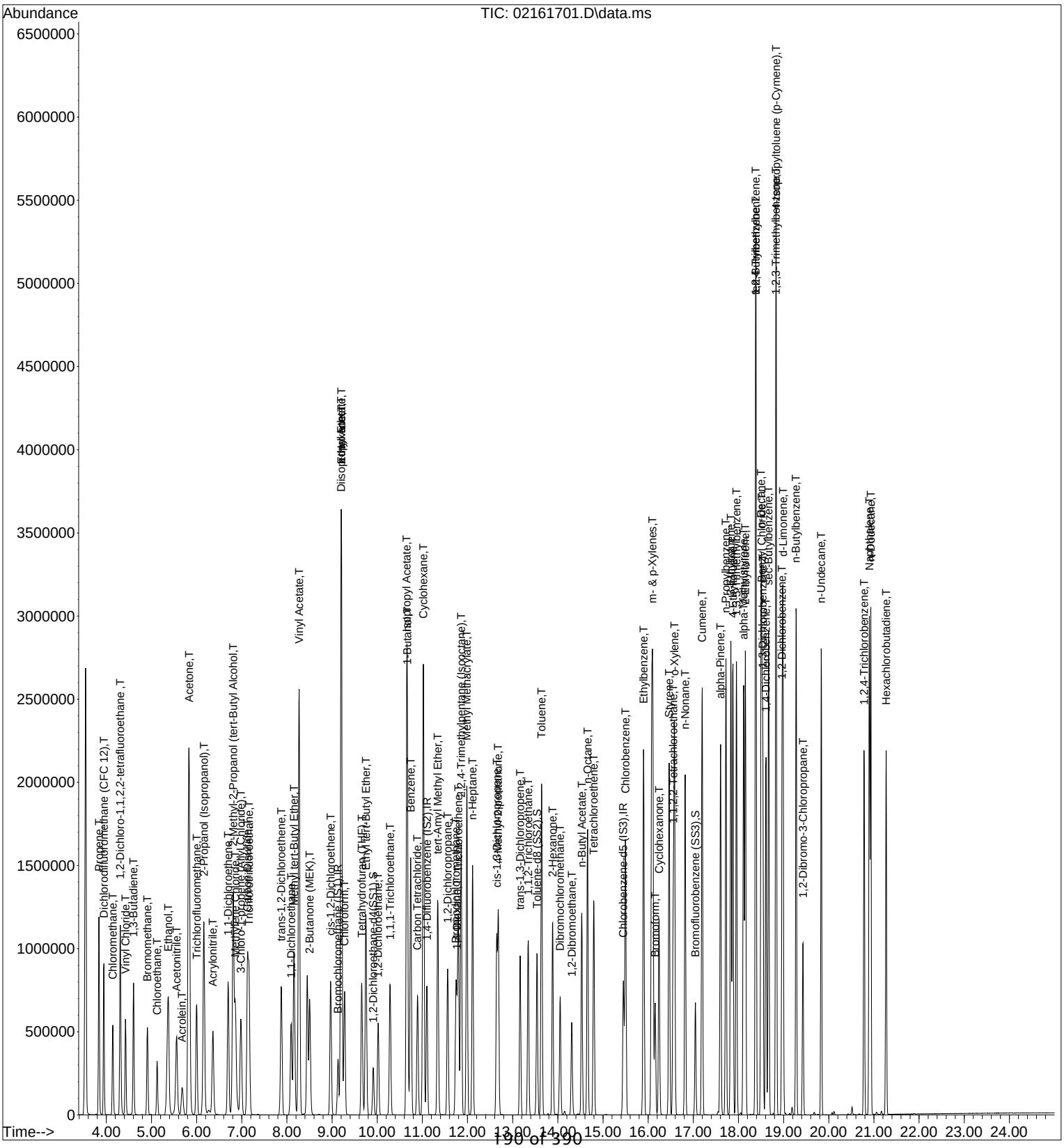
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.98	100	367858	50.321	ng	97
51) n-Heptane	12.11	71	430091	22.965	ng	96
52) cis-1,3-Dichloropropene	12.65	75	741075	24.570	ng	99
53) 4-Methyl-2-pentanone	12.68	58	398464	22.590	ng	96
54) trans-1,3-Dichloropropene	13.16	75	640043	24.250	ng	100
55) 1,1,2-Trichloroethane	13.34	97	419211	24.381	ng	98
58) Toluene	13.64	91	1785357	23.920	ng	100
59) 2-Hexanone	13.89	43	864508	21.702	ng	97
60) Dibromochloromethane	14.05	129	482170	26.632	ng	100
61) 1,2-Dibromoethane	14.31	107	470216	25.267	ng	99
62) n-Butyl Acetate	14.53	43	980926	22.209	ng	99
63) n-Octane	14.66	57	361489	21.793	ng	96
64) Tetrachloroethene	14.79	166	484136	27.196	ng	100
65) Chlorobenzene	15.49	112	1174979	24.849	ng	100
66) Ethylbenzene	15.90	91	1994923	24.294	ng	100
67) m- & p-Xylenes	16.09	91	3125273	49.530	ng	100
68) Bromoform	16.15	173	410465	28.705	ng	100
69) Styrene	16.46	104	1280777	25.734	ng	98
70) o-Xylene	16.58	91	1565412	24.320	ng	99
71) n-Nonane	16.82	43	783072	21.448	ng	97
72) 1,1,2,2-Tetrachloroethane	16.56	83	746109	24.307	ng	100
74) Cumene	17.20	105	1994658	24.768	ng	100
75) alpha-Pinene	17.60	93	1036738	24.573	ng	99
76) n-Propylbenzene	17.72	91	2414349	24.841	ng	99
77) 3-Ethyltoluene	17.83	105	1998772	25.157	ng	99
78) 4-Ethyltoluene	17.88	105	1945573	25.704	ng	99
79) 1,3,5-Trimethylbenzene	17.95	105	1673793	25.446	ng	99
80) alpha-Methylstyrene	18.11	118	903460	26.329	ng	96
81) 2-Ethyltoluene	18.15	105	1977015	25.487	ng	99
82) 1,2,4-Trimethylbenzene	18.38	105	1707398	26.167	ng	98
83) n-Decane	18.50	57	895871	23.187	ng	93
84) Benzyl Chloride	18.52	91	1578536	28.204	ng	99
85) 1,3-Dichlorobenzene	18.54	146	1003791	28.121	ng	100
86) 1,4-Dichlorobenzene	18.61	146	1002578	27.646	ng	100
87) sec-Butylbenzene	18.67	105	2240987	25.267	ng	99
88) 4-Isopropyltoluene (p-...	18.84	119	2065393	25.478	ng	100
89) 1,2,3-Trimethylbenzene	18.83	105	1672776	25.581	ng	99
90) 1,2-Dichlorobenzene	18.97	146	952840	27.821	ng	100
91) d-Limonene	18.99	68	652984	23.399	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.43	157	344621	29.270	ng	92
93) n-Undecane	19.83	57	956613	24.940	ng	98
94) 1,2,4-Trichlorobenzene	20.78	180	736886	31.172	ng	99
95) Naphthalene	20.90	128	2393132	31.782	ng	100
96) n-Dodecane	20.93	57	959975	29.145	ng	97
97) Hexachlorobutadiene	21.27	225	441851	29.606	ng	100
98) Cyclohexanone	16.24	55	591751	22.588	ng	97
99) tert-Butylbenzene	18.38	119	1621646	25.798	ng	100
100) n-Butylbenzene	19.27	91	1822268	25.320	ng	99

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161701.D
Acq On : 16 Feb 2017 5:40 Operator: SC
Sample : CCV R9021617_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 16 08:59:26 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS13\DATA\2017_02\17\02171701.D Vial: 3
Acq On : 17 Feb 2017 5:11 Operator: LH/AMF
Sample : CCV R13021717_25ng Inst : MS13
Misc : S29-01311701/S29-01241705

Quant Time: Feb 17 08:16:25 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/17/17

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	93	-0.02
2	T	Propene	0.926	0.784	15.3	85	-0.01
3	T	Dichlorodifluoromethane (CF	2.192	1.884	14.1	83	0.00
4	T	Chloromethane	1.305	1.207	7.5	80	-0.01
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.298	1.152	11.2	83	-0.01
6	T	Vinyl Chloride	1.304	1.247	4.4	83	-0.01
7	T	1,3-Butadiene	0.804	0.764	5.0	80	-0.02
8	T	Bromomethane	0.846	0.831	1.8	87	-0.02
9	T	Chloroethane	0.646	0.583	9.8	87	-0.02
10	T	Ethanol	0.541	0.485	10.4	85	-0.08
11	T	Acetonitrile	1.415	1.297	8.3	87	-0.05
12	T	Acrolein	0.510	0.414	18.8	77	-0.03
13	T	Acetone	0.605	0.527	12.9	86	-0.04
14	T	Trichlorofluoromethane	1.883	1.671	11.3	83	-0.01
15	T	2-Propanol (Isopropanol)	1.832	1.794	2.1	81	-0.05
16	T	Acrylonitrile	1.034	0.991	4.2	86	-0.03
17	T	1,1-Dichloroethene	0.894	0.860	3.8	87	-0.02
18	T	2-Methyl-2-Propanol (tert-B	2.144	1.925	10.2	78	-0.05
19	T	Methylene Chloride	0.985	0.839	14.8	88	-0.02
20	T	3-Chloro-1-propene (Allyl C	1.119	1.030	8.0	84	-0.02
21	T	Trichlorotrifluoroethane	1.084	0.976	10.0	87	0.00
22	T	Carbon Disulfide	3.507	3.026	13.7	87	-0.02
23	T	trans-1,2-Dichloroethene	1.188	1.149	3.3	85	-0.02
24	T	1,1-Dichloroethane	1.586	1.432	9.7	85	-0.02
25	T	Methyl tert-Butyl Ether	2.843	2.625	7.7	84	-0.01
26	T	Vinyl Acetate	0.212	0.171	19.3	73	-0.03
27	T	2-Butanone (MEK)	0.588	0.549	6.6	85	-0.02
28	T	cis-1,2-Dichloroethene	1.201	1.102	8.2	84	-0.01
29	T	Diisopropyl Ether	0.910	0.842	7.5	86	-0.02
30	T	Ethyl Acetate	0.290	0.265	8.6	85	-0.02
31	T	n-Hexane	1.405	1.198	14.7	87	-0.01
32	T	Chloroform	1.687	1.516	10.1	84	-0.02
33	S	1,2-Dichloroethane-d4(SS1)	1.414	1.363	3.6	87	-0.01
34	T	Tetrahydrofuran (THF)	0.668	0.540	19.2	85	-0.01
35	T	Ethyl tert-Butyl Ether	1.089	1.062	2.5	85	-0.01
36	T	1,2-Dichloroethane	1.301	1.179	9.4	81	-0.01
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	92	-0.01
38	T	1,1,1-Trichloroethane	0.344	0.318	7.6	83	-0.01
39	T	Isopropyl Acetate	0.113	0.100	11.5	85	-0.01
40	T	1-Butanol	0.166	0.132	20.5	69	-0.04
41	T	Benzene	0.780	0.684	12.3	86	-0.01
42	T	Carbon Tetrachloride	0.311	0.301	3.2	83	-0.01
43	T	Cyclohexane	0.307	0.277	9.8	87	-0.01
44	T	tert-Amyl Methyl Ether	0.549	0.516	6.0	84	-0.01
45	T	1,2-Dichloropropane	0.184	0.167	9.2	86	-0.01
46	T	Bromodichloromethane	0.272	0.262	3.7	83	-0.01
47	T	Trichloroethene	0.255	0.235	7.8	85	-0.01
48	T	1,4-Dioxane	0.157	0.157	0.0	83	-0.01
49	T	2,2,4-Trimethylpentane (Iso	0.762	0.675	11.4	85	0.00
50	T	Methyl Methacrylate	0.084	0.080	4.8	84	-0.01
51	T	n-Heptane	0.190	0.174	8.4	86	-0.01
52	T	cis-1,3-Dichloropropene	0.298	0.304	-2.0	84	0.00
53	T	4-Methyl-2-pentanone	0.165	0.148	10.3	80	-0.01
54	T	trans-1,3-Dichloropropene	0.307	0.289	5.9	83	-0.01
55	T	1,1,2-Trichloroethane	0.201	0.187	7.0	85	-0.01

Evaluate Continuing Calibration Report

Data File : I:\MS13\DATA\2017_02\17\02171701.D Vial: 3
Acq On : 17 Feb 2017 5:11 Operator: LH/AMF
Sample : CCV R13021717_25ng Inst : MS13
Misc : S29-01311701/S29-01241705

Quant Time: Feb 17 08:16:25 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	89	0.00
57	S	Toluene-d8 (SS2)	2.525	2.537	-0.5	92	0.00
58	T	Toluene	2.153	1.988	7.7	85	-0.01
59	T	2-Hexanone	0.948	0.840	11.4	76	-0.01
60	T	Dibromochloromethane	0.652	0.667	-2.3	84	0.00
61	T	1,2-Dibromoethane	0.575	0.577	-0.3	84	0.00
62	T	n-Butyl Acetate	0.995	0.873	12.3	72	0.00
63	T	n-Octane	0.398	0.361	9.3	84	0.00
64	T	Tetrachloroethene	0.756	0.705	6.7	86	0.00
65	T	Chlorobenzene	1.522	1.427	6.2	84	0.00
66	T	Ethylbenzene	2.397	2.288	4.5	84	0.00
67	T	m- & p-Xylenes	1.904	1.813	4.8	83	0.00
68	T	Bromoform	0.589	0.631	-7.1	84	0.00
69	T	Styrene	1.545	1.436	7.1	82	0.00
70	T	o-Xylene	1.939	1.820	6.1	83	-0.01
71	T	n-Nonane	0.842	0.774	8.1	82	0.00
72	T	1,1,2,2-Tetrachloroethane	0.824	0.806	2.2	83	0.00
73	S	Bromofluorobenzene (SS3)	1.062	1.123	-5.7	93	0.00
74	T	Cumene	2.565	2.443	4.8	84	0.00
75	T	alpha-Pinene	1.245	1.176	5.5	81	0.00
76	T	n-Propylbenzene	2.788	2.741	1.7	83	0.00
77	T	3-Ethyltoluene	2.343	2.413	-3.0	83	0.00
78	T	4-Ethyltoluene	2.264	2.309	-2.0	84	0.00
79	T	1,3,5-Trimethylbenzene	2.153	2.021	6.1	83	0.00
80	T	alpha-Methylstyrene	1.178	1.013	14.0	76	0.00
81	T	2-Ethyltoluene	2.464	2.342	5.0	83	0.00
82	T	1,2,4-Trimethylbenzene	2.036	2.036	0.0	82	0.00
83	T	n-Decane	0.882	0.867	1.7	82	0.00
84	T	Benzyl Chloride	1.696	1.606	5.3	75	-0.01
85	T	1,3-Dichlorobenzene	1.449	1.310	9.6	83	-0.01
86	T	1,4-Dichlorobenzene	1.273	1.323	-3.9	82	0.00
87	T	sec-Butylbenzene	2.785	2.681	3.7	83	0.00
88	T	4-Isopropyltoluene (p-Cymen	2.632	2.629	0.1	82	0.00
89	T	1,2,3-Trimethylbenzene	2.047	2.056	-0.4	81	0.00
90	T	1,2-Dichlorobenzene	1.197	1.266	-5.8	83	0.00
91	T	d-Limonene	0.637	0.658	-3.3	77	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.511	0.483	5.5	79	0.00
93	T	n-Undecane	1.010	0.915	9.4	79	0.00
94	T	1,2,4-Trichlorobenzene	1.179	1.045	11.4	77	0.00
95	T	Naphthalene	2.924	2.600	11.1	73	0.00
96	T	n-Dodecane	0.898	0.792	11.8	70	0.00
97	T	Hexachlorobutadiene	0.758	0.737	2.8	80	0.00
98	T	Cyclohexanone	0.643	0.489	24.0	66	-0.01
99	T	tert-Butylbenzene	2.126	2.032	4.4	83	0.00
100	T	n-Butylbenzene	2.298	2.067	10.1	80	0.00

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171701.D Vial: 3
Acq On : 17 Feb 2017 5:11 Operator: LH/AMF
Sample : CCV R13021717_25ng Inst : MS13
Misc : S29-01311701/S29-01241705

Quant Time: Feb 17 08:16:25 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017 2/17/17
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	125321	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.05	114	579150	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.38	82	225457	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	170875	12.053	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.40%				
57) Toluene-d8 (SS2)	15.50	98	572077	12.563	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%				
73) Bromofluorobenzene (SS3)	18.85	174	253178	13.220	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.76%				
Target Compounds							Qvalue
2) Propene	3.92	42	203553	21.916	ng		99
3) Dichlorodifluoromethan...	4.07	85	494282	22.496	ng		100
4) Chloromethane	4.34	50	304102	23.247	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.60	135	290256	22.304	ng		100
6) Vinyl Chloride	4.76	62	319859	24.470	ng		100
7) 1,3-Butadiene	5.02	54	202536	25.113	ng		98
8) Bromomethane	5.44	94	206942	24.405	ng		100
9) Chloroethane	5.77	64	147565	22.791	ng		99
10) Ethanol	6.15	45	633349	116.814	ng		100
11) Acetonitrile	6.39	41	339926	23.964	ng		99
12) Acrolein	6.57	56	108116	21.159	ng		99
13) Acetone	6.78	58	701928	115.681	ng		94
14) Trichlorofluoromethane	7.01	101	439340	23.272	ng		100
15) 2-Propanol (Isopropanol)	7.27	45	946589	51.525	ng		99
16) Acrylonitrile	7.52	53	262075	25.276	ng		99
17) 1,1-Dichloroethene	7.96	96	228165	25.447	ng		96
18) 2-Methyl-2-Propanol (t...	8.13	59	1019768	47.453	ng		99
19) Methylene Chloride	8.19	84	222390	22.509	ng		96
20) 3-Chloro-1-propene (Al...	8.35	41	271603	24.205	ng		97
21) Trichlorotrifluoroethane	8.61	151	256566	23.612	ng		100
22) Carbon Disulfide	8.44	76	804774	22.892	ng		100
23) trans-1,2-Dichloroethene	9.46	61	307175	25.793	ng		98
24) 1,1-Dichloroethane	9.72	63	366015	23.023	ng		100
25) Methyl tert-Butyl Ether	9.82	73	701282	24.606	ng		100
26) Vinyl Acetate	9.98	86	226001	106.116	ng	#	95
27) 2-Butanone (MEK)	10.22	72	144242	24.464	ng		94
28) cis-1,2-Dichloroethene	10.75	61	293979	24.420	ng		98
29) Diisopropyl Ether	11.04	87	224104	24.553	ng	#	94
30) Ethyl Acetate	11.05	61	141235	48.650	ng		99
31) n-Hexane	11.03	57	319106	22.653	ng		99
32) Chloroform	11.09	83	402098	23.776	ng		100
34) Tetrahydrofuran (THF)	11.49	72	143673	21.458	ng		98
35) Ethyl tert-Butyl Ether	11.64	87	281232	25.768	ng		98
36) 1,2-Dichloroethane	11.89	62	310835	23.826	ng		99
38) 1,1,1-Trichloroethane	12.17	97	395661	24.811	ng		100
39) Isopropyl Acetate	12.61	61	244295	46.612	ng	#	90
40) 1-Butanol	12.63	56	320827	41.611	ng		95
41) Benzene	12.65	78	832963	23.040	ng		100
42) Carbon Tetrachloride	12.81	117	368101	25.554	ng		100
43) Cyclohexane	12.94	84	683097	48.018	ng		99
44) tert-Amyl Methyl Ether	13.29	73	630404	24.761	ng		99
45) 1,2-Dichloropropane	13.50	63	204830	24.071	ng		100
46) Bromodichloromethane	13.69	83	323953	25.690	ng		100
47) Trichloroethene	13.75	130	288588	24.442	ng		99
48) 1,4-Dioxane	13.73	88	193115	26.539	ng		99
49) 2,2,4-Trimethylpentane...	13.82	57	828446	23.455	ng		98
50) Methyl Methacrylate	13.96	100	196144	50.464	ng		99

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171701.D Vial: 3
Acq On : 17 Feb 2017 5:11 Operator: LH/AMF
Sample : CCV R13021717_25ng Inst : MS13
Misc : S29-01311701/S29-01241705

Quant Time: Feb 17 08:16:25 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

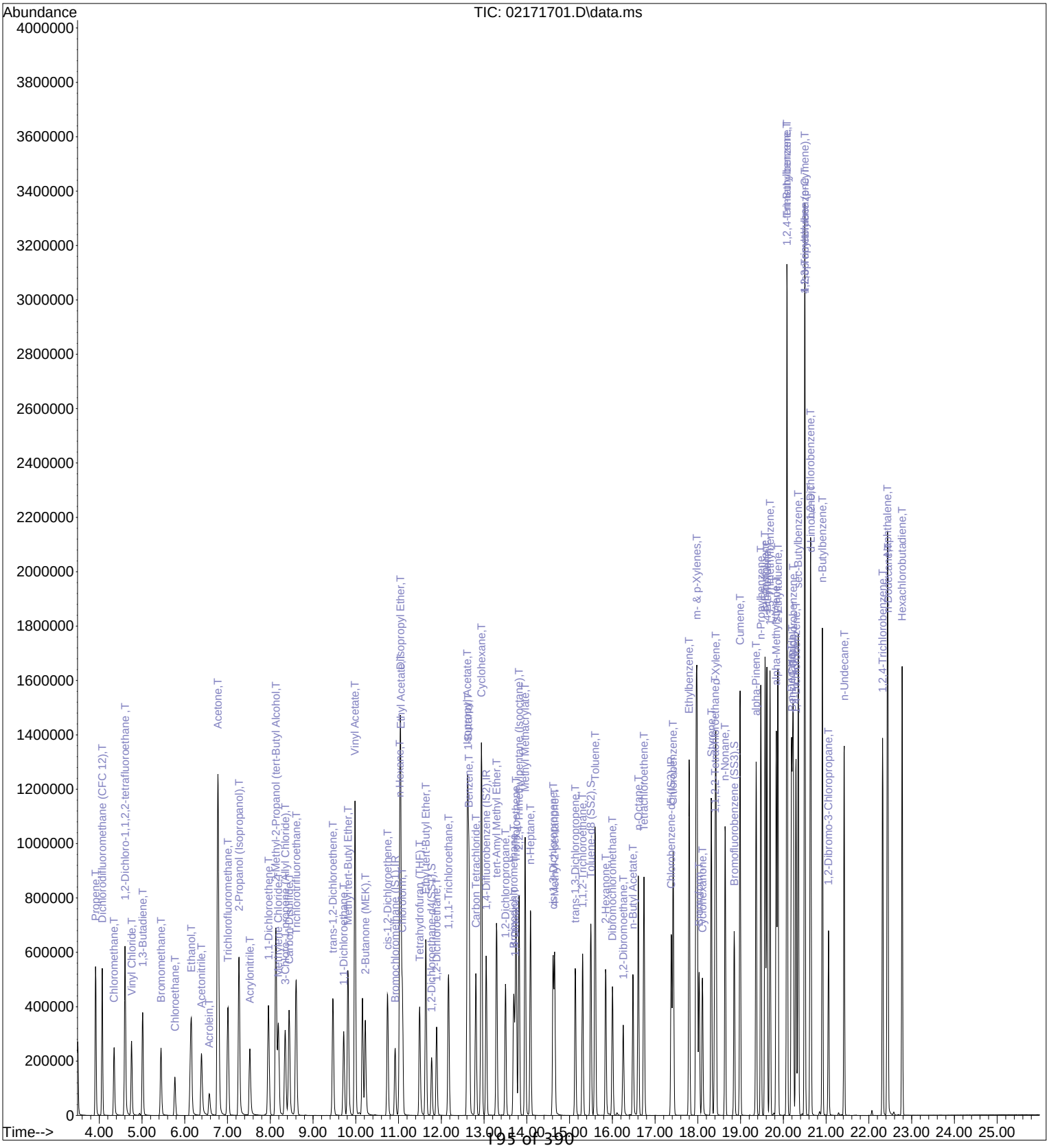
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.08	71	214326	24.297	ng	99
52) cis-1,3-Dichloropropene	14.62	75	393104	28.464	ng	100
53) 4-Methyl-2-pentanone	14.65	58	181164	23.741	ng	97
54) trans-1,3-Dichloropropene	15.13	75	355617	24.962	ng	100
55) 1,1,2-Trichloroethane	15.30	97	230336	24.748	ng	100
58) Toluene	15.60	91	943779	24.302	ng	100
59) 2-Hexanone	15.84	43	401799	23.502	ng	99
60) Dibromochloromethane	16.00	129	319543	27.170	ng	100
61) 1,2-Dibromoethane	16.26	107	274957	26.497	ng	99
62) n-Butyl Acetate	16.48	43	418859	23.334	ng	99
63) n-Octane	16.61	57	171941	23.974	ng	99
64) Tetrachloroethene	16.74	166	337400	24.756	ng	100
65) Chlorobenzene	17.42	112	682644	24.863	ng	100
66) Ethylbenzene	17.80	91	1088306	25.178	ng	99
67) m- & p-Xylenes	17.98	91	1735420	50.539	ng	99
68) Bromoform	18.03	173	302304	28.433	ng	99
69) Styrene	18.32	104	686989	24.650	ng	99
70) o-Xylene	18.42	91	864773	24.726	ng	99
71) n-Nonane	18.64	43	367693	24.212	ng	98
72) 1,1,2,2-Tetrachloroethane	18.40	83	383826	25.827	ng	100
74) Cumene	18.99	105	1156527	24.998	ng	100
75) alpha-Pinene	19.36	93	553839	24.655	ng	100
76) n-Propylbenzene	19.47	91	1313766	26.126	ng	99
77) 3-Ethyltoluene	19.57	105	1142294	27.027	ng	100
78) 4-Ethyltoluene	19.62	105	1092179	26.744	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	955924	24.611	ng	99
80) alpha-Methylstyrene	19.84	118	479495	22.559	ng	99
81) 2-Ethyltoluene	19.87	105	1121576	25.236	ng	100
82) 1,2,4-Trimethylbenzene	20.09	105	965769	26.298	ng	99
83) n-Decane	20.19	57	411836	25.881	ng	99
84) Benzyl Chloride	20.21	91	768453	25.126	ng	100
85) 1,3-Dichlorobenzene	20.23	146	625175	23.927	ng	100
86) 1,4-Dichlorobenzene	20.30	146	631207	27.496	ng	99
87) sec-Butylbenzene	20.35	105	1274175	25.370	ng	100
88) 4-Isopropyltoluene (p-...	20.50	119	1217625	25.648	ng	99
89) 1,2,3-Trimethylbenzene	20.50	105	952249	25.786	ng	99
90) 1,2-Dichlorobenzene	20.63	146	604082	27.978	ng	100
91) d-Limonene	20.64	68	298078	25.942	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.06	157	229416	24.873	ng	96
93) n-Undecane	21.42	57	434864	23.876	ng	100
94) 1,2,4-Trichlorobenzene	22.32	180	491556	23.110	ng	100
95) Naphthalene	22.43	128	1269904	24.077	ng	100
96) n-Dodecane	22.45	57	373011	23.037	ng	100
97) Hexachlorobutadiene	22.78	225	352079	25.763	ng	100
98) Cyclohexanone	18.11	55	232950	20.072	ng	99
99) tert-Butylbenzene	20.08	119	962759	25.106	ng	100
100) n-Butylbenzene	20.91	91	984236	23.750	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171701.D Vial: 3
Acq On : 17 Feb 2017 5:11 Operator: LH/AMF
Sample : CCV R13021717_25ng Inst : MS13
Misc : S29-01311701/S29-01241705

Quant Time: Feb 17 08:16:25 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



Client: **Haley & Aldrich, Inc.** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 02151701.D
Analyst: Simon Cao Date Analyzed: 2/15/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 05:41
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	140733	9.14	691798	11.10	281029	15.45
	Upper Limit	197026	9.47	968517	11.43	393441	15.78
	Lower Limit	84440	8.81	415079	10.77	168617	15.12
	Client Sample ID						
01	Method Blank	149434	9.11	737512	11.09	291206	15.45
02	Lab Control Sample	152069	9.14	738433	11.10	297103	15.45
03	SS1-020917-0900	132491	9.12	646152	11.09	270833	15.45
04	SS2-020917-1000	137162	9.12	668664	11.10	286481	15.45
05	SS3-020917-0945	150978	9.13	737007	11.11	312603	15.45
06	SS4-020917-0930	159899	9.13	791617	11.10	341719	15.45
07	SS5-020917-0915	162679	9.12	802851	11.09	332508	15.45
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

Client: **Haley & Aldrich, Inc.** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 02161701.D
Analyst: Simon Cao Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 05:40
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	159285	9.13	778093	11.10	308726	15.45
	Upper Limit	222999	9.46	1089330	11.43	432216	15.78
	Lower Limit	95571	8.80	466856	10.77	185236	15.12
	Client Sample ID						
01	Method Blank	155347	9.11	773444	11.09	304837	15.45
02	Lab Control Sample	158759	9.14	774777	11.10	311498	15.45
03	SS2-020917-1000 (Dilution)	152366	9.11	734318	11.09	299745	15.45
04	SS3-020917-0945 (Dilution)	148137	9.11	714588	11.09	292010	15.45
05	SS4-020917-0930 (Dilution)	144299	9.11	701926	11.09	285655	15.45
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
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RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

Client: **Haley & Aldrich, Inc.** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Lab File ID: 02171701.D
Analyst: Lusine Hakobyan Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 05:11
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	125321	10.92	579150	13.05	225457	17.38
	Upper Limit	175449	11.25	810810	13.38	315640	17.71
	Lower Limit	75193	10.59	347490	12.72	135274	17.05
	Client Sample ID						
01	Method Blank	120160	10.90	577399	13.04	222706	17.38
02	Lab Control Sample	120678	10.92	562692	13.05	219258	17.38
03	IA4-020917-0935 (Dilution)	137751	10.91	648929	13.04	256793	17.38
04	IA4-020917-0935	132805	10.91	621855	13.04	246398	17.38
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

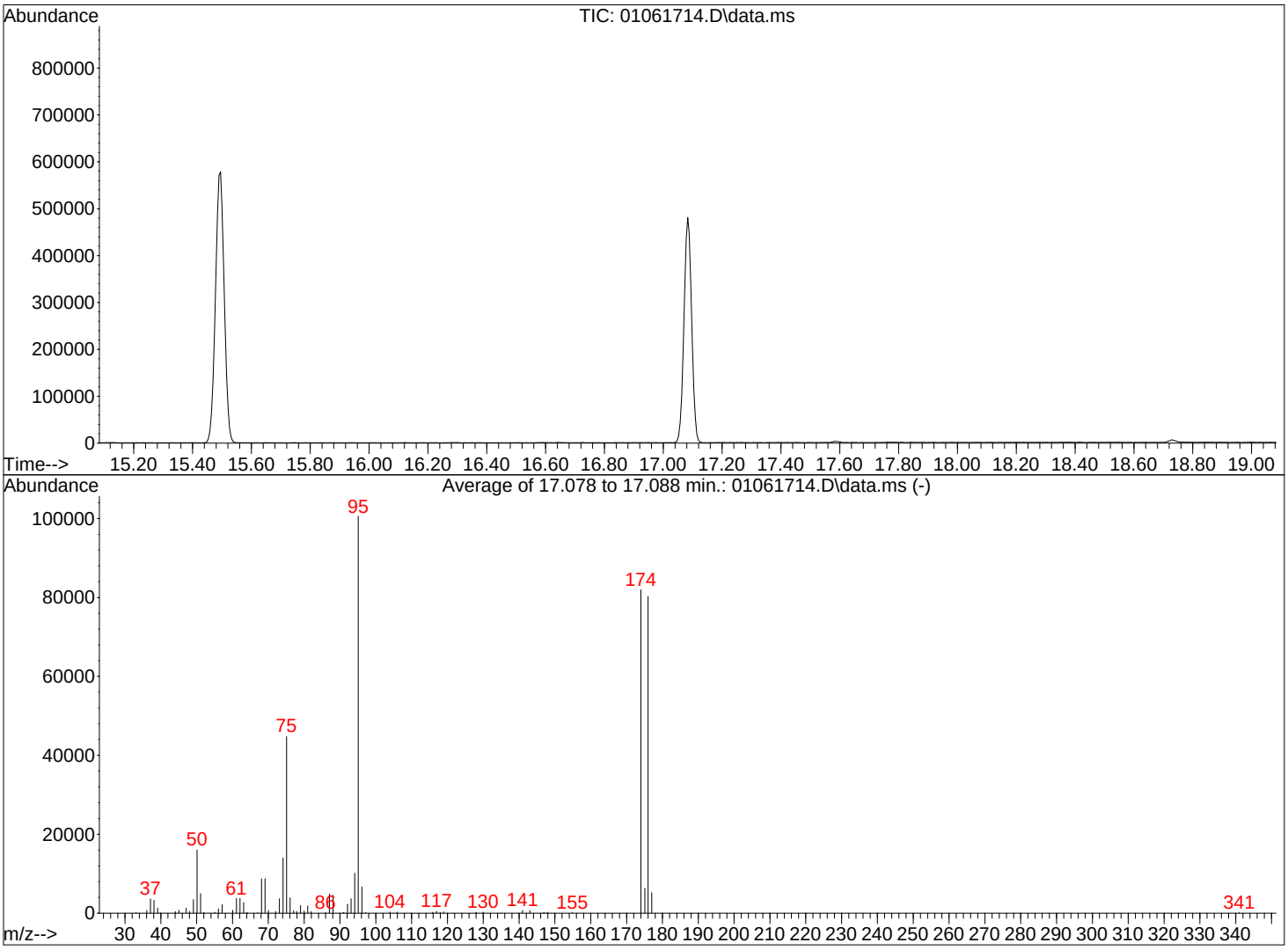
# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

Data Path : I:\MS09\Data\2017_01\06\
Data File : 01061714.D
Acq On : 6 Jan 2017 18:54
Operator : SC
Sample : 12.5ng TO-15 BFB STD
Misc : S29-12071602
ALS Vial : 2 Sample Multiplier: 1

1/9/17

Integration File: LSCINT.P

Method : I:\MS09\Methods\R9010617.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Dec 20 15:20:19 2016



AutoFind: Scans 2641, 2642, 2643; Background Corrected with Scan 2632

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.0	16059	PASS
75	95	30	66	44.5	44763	PASS
95	95	100	100	100.0	100592	PASS
96	95	5	9	6.6	6666	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	81.5	81936	PASS
175	174	4	9	7.7	6306	PASS
176	174	93	101	97.9	80245	PASS
177	176	5	9	6.5	5222	PASS

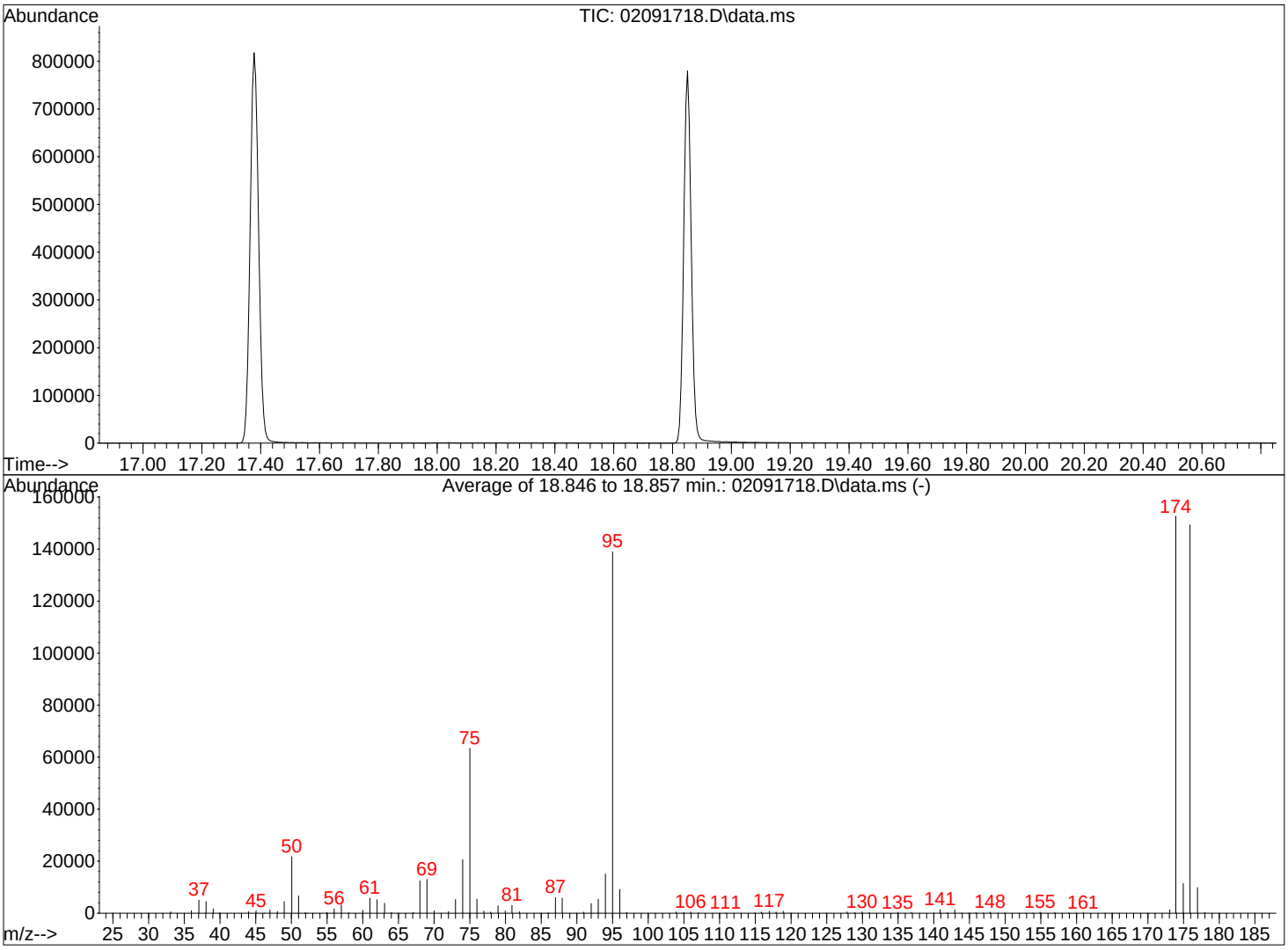
Data Path : I:\MS13\DATA\2017_02\09\
Data File : 02091718.D
Acq On : 9 Feb 2017 15:49
Operator : LH/AMF
Sample : 12.5ng BFB
Misc : S29-01311701
ALS Vial : 3 Sample Multiplier: 1

LH 2/17/17

2/10/17

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13021017.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Feb 10 12:09:18 2017



AutoFind: Scans 2793, 2794, 2795; Background Corrected with Scan 2785

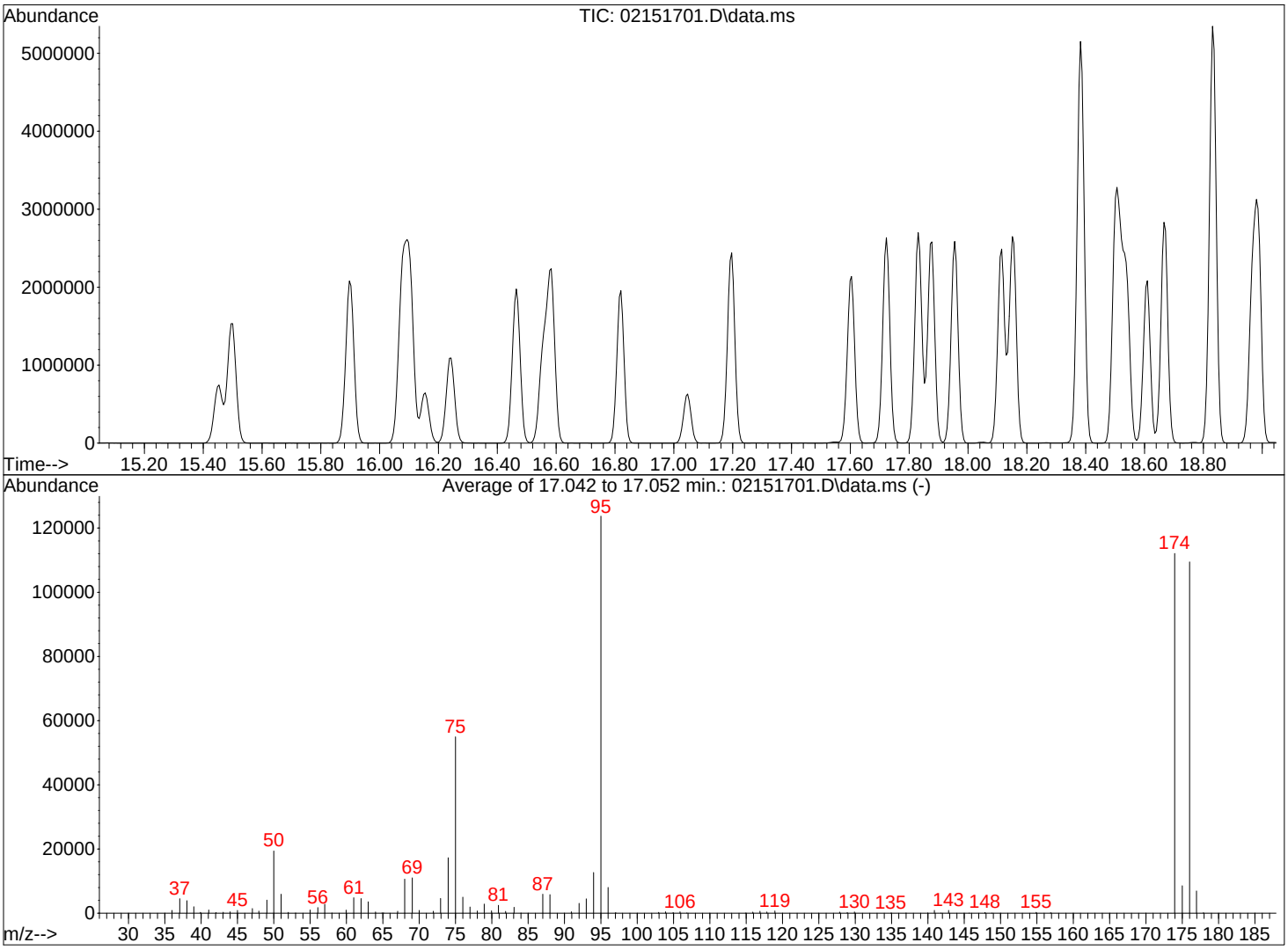
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.7	21749	PASS
75	95	30	66	45.6	63389	PASS
95	95	100	100	100.0	138965	PASS
96	95	5	9	6.6	9174	PASS
173	174	0.00	2	0.8	1286	PASS
174	95	50	120	109.9	152661	PASS
175	174	4	9	7.5	11411	PASS
176	174	93	101	97.8	149291	PASS
177	176	5	9	6.6	9867	PASS

Data Path : I:\MS09\Data\2017_02\15\
Data File : 02151701.D
Acq On : 15 Feb 2017 5:41
Operator : SC
Sample : CCV R9021517_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

2/15/17

Integration File: LSCINT.P

Method : I:\MS09\Methods\R9010617.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Feb 08 09:01:59 2017



AutoFind: Scans 2634, 2635, 2636; Background Corrected with Scan 2625

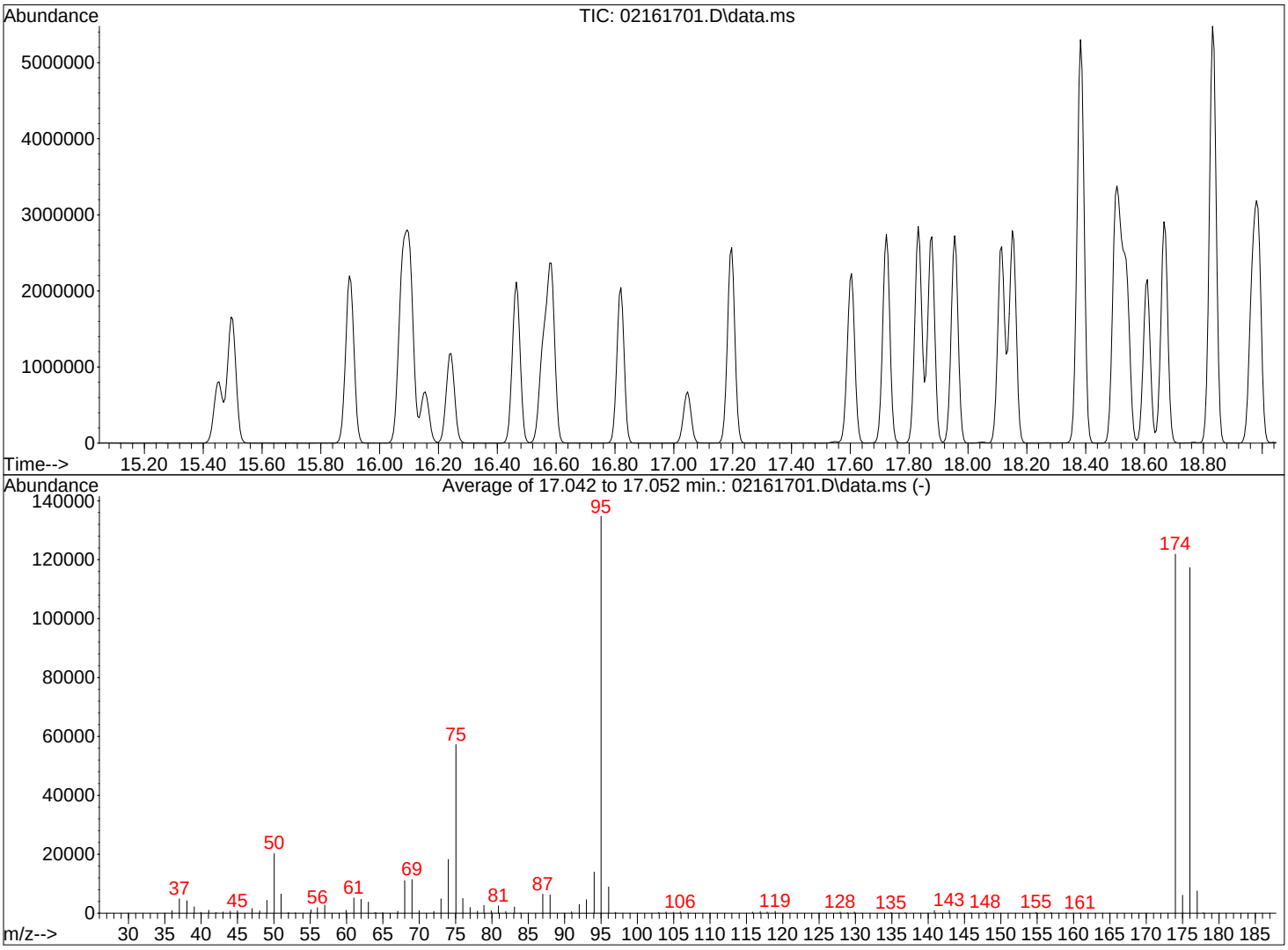
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.7	19400	PASS
75	95	30	66	44.4	54928	PASS
95	95	100	100	100.0	123699	PASS
96	95	5	9	6.5	8033	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.6	112091	PASS
175	174	4	9	7.7	8575	PASS
176	174	93	101	97.6	109453	PASS
177	176	5	9	6.3	6911	PASS

Data Path : I:\MS09\Data\2017_02\16\
Data File : 02161701.D
Acq On : 16 Feb 2017 5:40
Operator : SC
Sample : CCV R9021617_25ng
Misc : S29-01261704/S29-02061707 (3/7)
ALS Vial : 16 Sample Multiplier: 1

2/16/17

Integration File: LSCINT.P

Method : I:\MS09\Methods\R9010617.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Feb 08 09:01:59 2017



AutoFind: Scans 2634, 2635, 2636; Background Corrected with Scan 2625

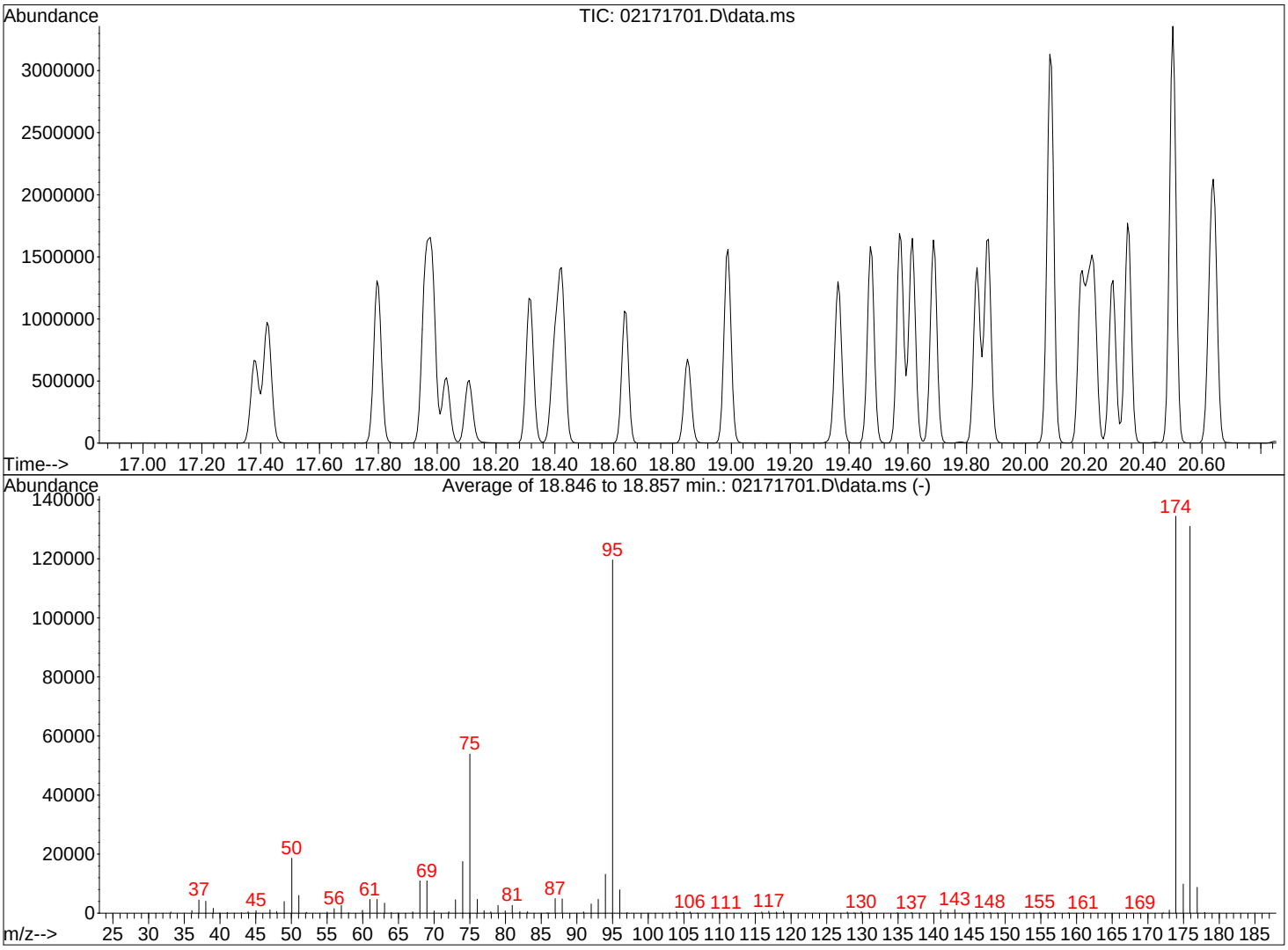
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.0	20280	PASS
75	95	30	66	42.5	57219	PASS
95	95	100	100	100.0	134779	PASS
96	95	5	9	6.6	8916	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.4	121901	PASS
175	174	4	9	5.0	6123	PASS
176	174	93	101	96.2	117304	PASS
177	176	5	9	6.4	7550	PASS

Data Path : I:\MS13\DATA\2017_02\17\
Data File : 02171701.D
Acq On : 17 Feb 2017 5:11
Operator : LH/AMF
Sample : CCV R13021717_25ng
Misc : S29-01311701/S29-01241705
ALS Vial : 3 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13021017.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Feb 10 12:09:18 2017

2/17/17



AutoFind: Scans 2793, 2794, 2795; Background Corrected with Scan 2785

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.6	18640	PASS
75	95	30	66	45.0	53888	PASS
95	95	100	100	100.0	119629	PASS
96	95	5	9	6.6	7900	PASS
173	174	0.00	2	0.8	1050	PASS
174	95	50	120	112.4	134419	PASS
175	174	4	9	7.3	9875	PASS
176	174	93	101	97.5	130997	PASS
177	176	5	9	6.7	8787	PASS

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170215-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 2/15/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.10	ND	0.039	
156-59-2	cis-1,2-Dichloroethene	ND	0.10	ND	0.025	
79-01-6	Trichloroethene	ND	0.10	ND	0.019	
127-18-4	Tetrachloroethene	ND	0.10	ND	0.015	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151703.D
Acq On : 15 Feb 2017 6:48 Operator: SC
Sample : MB R9021517_1000mL
Misc : S29-01261704
ALS Vial : 2 Sample Multiplier: 1

2/15/17

Quant Time: Feb 15 09:19:12 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.11	130	149434	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.09	114	737512	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	15.45	82	291206	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.89	65	212760	11.618	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.96%				
57) Toluene-d8 (SS2)	13.54	98	779699	12.947	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.60%				
73) Bromofluorobenzene (SS3)	17.04	174	220434	13.511	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.08%				
Target Compounds							Qvalue
2) Propene	3.89	42	764	N.D.			
3) Dichlorodifluoromethan...	0.00	85	0	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.35	45	972	N.D.			
11) Acetonitrile	5.57	41	882	N.D.			
12) Acrolein	5.70	56	560	N.D.			
13) Acetone	5.85	58	6217	0.439	ng	#	78
14) Trichlorofluoromethane	0.00	101	0	N.D.			
15) 2-Propanol (Isopropanol)	6.18	45	54	N.D.			
16) Acrylonitrile	6.36	53	49	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	7.15	76	1931	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	8.23	86	787	0.196	ng	#	50
27) 2-Butanone (MEK)	8.52	72	710	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	10.68	56	1542	N.D.			
41) Benzene	10.73	78	2835	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.			

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151703.D
Acq On : 15 Feb 2017 6:48 Operator: SC
Sample : MB R9021517_1000mL
Misc : S29-01261704
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 15 09:19:12 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

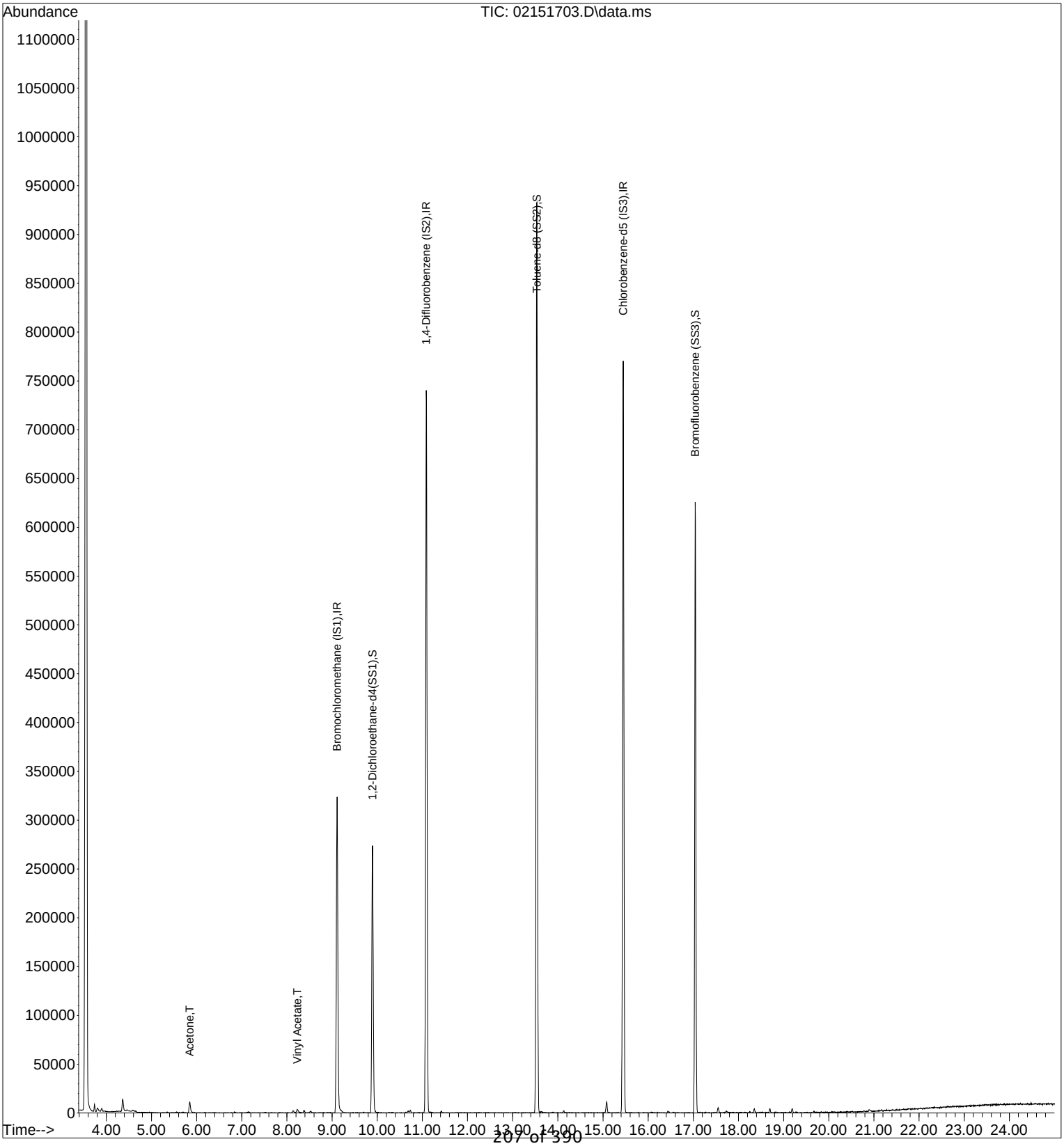
Internal Standards	R.T.	QIon	Response	Conc Units Dev(Min)
50) Methyl Methacrylate	0.00	100	0	N.D.
51) n-Heptane	0.00	71	0	N.D.
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.
58) Toluene	13.63	91	1192	N.D.
59) 2-Hexanone	13.90	43	535	N.D.
60) Dibromochloromethane	0.00	129	0	N.D.
61) 1,2-Dibromoethane	0.00	107	0	N.D.
62) n-Butyl Acetate	0.00	43	0	N.D.
63) n-Octane	0.00	57	0	N.D.
64) Tetrachloroethene	0.00	166	0	N.D.
65) Chlorobenzene	0.00	112	0	N.D.
66) Ethylbenzene	15.89	91	650	N.D.
67) m- & p-Xylenes	16.08	91	1031	N.D.
68) Bromoform	0.00	173	0	N.D.
69) Styrene	0.00	104	0	N.D.
70) o-Xylene	16.58	91	455	N.D.
71) n-Nonane	0.00	43	0	N.D.
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.
74) Cumene	17.20	105	543	N.D.
75) alpha-Pinene	0.00	93	0	N.D.
76) n-Propylbenzene	17.73	91	719	N.D.
77) 3-Ethyltoluene	17.87	105	467	N.D.
78) 4-Ethyltoluene	17.87	105	467	N.D.
79) 1,3,5-Trimethylbenzene	17.87	105	467	N.D.
80) alpha-Methylstyrene	0.00	118	0	N.D.
81) 2-Ethyltoluene	0.00	105	0	N.D.
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.
83) n-Decane	18.70	57	2345	N.D.
84) Benzyl Chloride	0.00	91	0	N.D.
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.
87) sec-Butylbenzene	0.00	105	0	N.D.
88) 4-Isopropyltoluene (p-...	18.83	119	477	N.D.
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.
91) d-Limonene	0.00	68	0	N.D.
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.
93) n-Undecane	19.68	57	559	N.D.
94) 1,2,4-Trichlorobenzene	20.78	180	556	N.D.
95) Naphthalene	20.89	128	2528	N.D.
96) n-Dodecane	0.00	57	0	N.D.
97) Hexachlorobutadiene	0.00	225	0	N.D.
98) Cyclohexanone	0.00	55	0	N.D.
99) tert-Butylbenzene	0.00	119	0	N.D.
100) n-Butylbenzene	19.27	91	655	N.D.

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151703.D
Acq On : 15 Feb 2017 6:48 Operator: SC
Sample : MB R9021517_1000mL
Misc : S29-01261704
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 15 09:19:12 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170216-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.10	ND	0.039	
156-59-2	cis-1,2-Dichloroethene	ND	0.10	ND	0.025	
79-01-6	Trichloroethene	ND	0.10	ND	0.019	
127-18-4	Tetrachloroethene	ND	0.10	ND	0.015	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161703.D
Acq On : 16 Feb 2017 6:48 Operator: SC
Sample : MB R9021617_1000mL
Misc : S29-01261704
ALS Vial : 2 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 09:01:32 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.11	130	155347	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	11.09	114	773444	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	15.45	82	304837	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.89	65	220047	11.559	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.48%				
57) Toluene-d8 (SS2)	13.54	98	814877	12.926	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.44%				
73) Bromofluorobenzene (SS3)	17.05	174	230023	13.469	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.76%				
Target Compounds							Qvalue
2) Propene	3.89	42	613	N.D.			
3) Dichlorodifluoromethan...	0.00	85	0	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.34	45	2236	0.174	ng		94
11) Acetonitrile	5.55	41	894	N.D.			
12) Acrolein	5.69	56	513	N.D.			
13) Acetone	5.85	58	5699	0.388	ng	#	80
14) Trichlorofluoromethane	0.00	101	0	N.D.			
15) 2-Propanol (Isopropanol)	6.17	45	47	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	6.85	84	429	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	7.14	76	1746	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	8.24	86	632	0.152	ng	#	53
27) 2-Butanone (MEK)	8.52	72	520	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	10.69	56	1470	N.D.			
41) Benzene	10.74	78	2223	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	0.00	84	0	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.			

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161703.D
Acq On : 16 Feb 2017 6:48 Operator: SC
Sample : MB R9021617_1000mL
Misc : S29-01261704
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 16 09:01:32 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

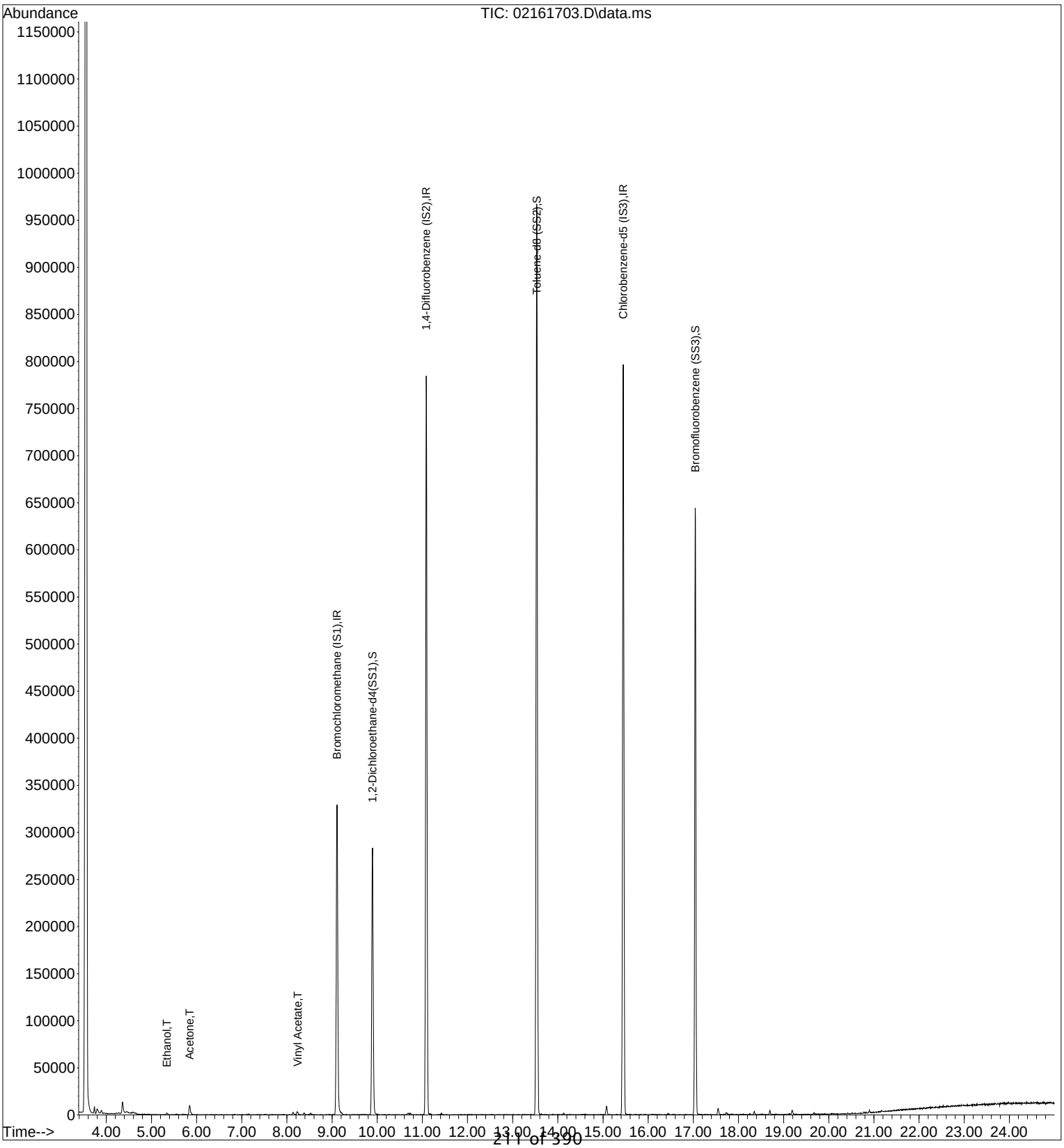
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	13.63	91	875	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.90	91	557	N.D.		
67) m- & p-Xylenes	16.10	91	850	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.75	91	598	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	18.70	57	2315	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	19.67	57	542	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.90	128	2589	N.D.		
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161703.D
Acq On : 16 Feb 2017 6:48 Operator: SC
Sample : MB R9021617_1000mL
Misc : S29-01261704
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 16 09:01:32 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170217-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.10	ND	0.039	
156-59-2	cis-1,2-Dichloroethene	ND	0.10	ND	0.025	
79-01-6	Trichloroethene	ND	0.10	ND	0.019	
127-18-4	Tetrachloroethene	ND	0.10	ND	0.015	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171703.D Vial: 3
Acq On : 17 Feb 2017 6:21 Operator: LH/AMF
Sample : MB R13021717_1000ml Inst : MS13
Misc : S29-01311701

Quant Time: Feb 17 08:22:44 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/17/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	10.90	130	120160	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.04	114	577399	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.38	82	222706	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.76	65	166489	12.248	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.00%			
57) Toluene-d8 (SS2)	15.50	98	568143	12.631	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.04%			
73) Bromofluorobenzene (SS3)	18.85	174	243047	12.848	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.80%			
Target Compounds						Qvalue
2) Propene	4.00	42	238	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.21	45	100	N.D.		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	6.87	58	1080	0.186	ng	97
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	8.19	84	208	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	8.48	76	1387	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	12.65	78	437	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	13.03	84	322	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171703.D Vial: 3
Acq On : 17 Feb 2017 6:21 Operator: LH/AMF
Sample : MB R13021717_1000ml Inst : MS13
Misc : S29-01311701

Quant Time: Feb 17 08:22:44 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

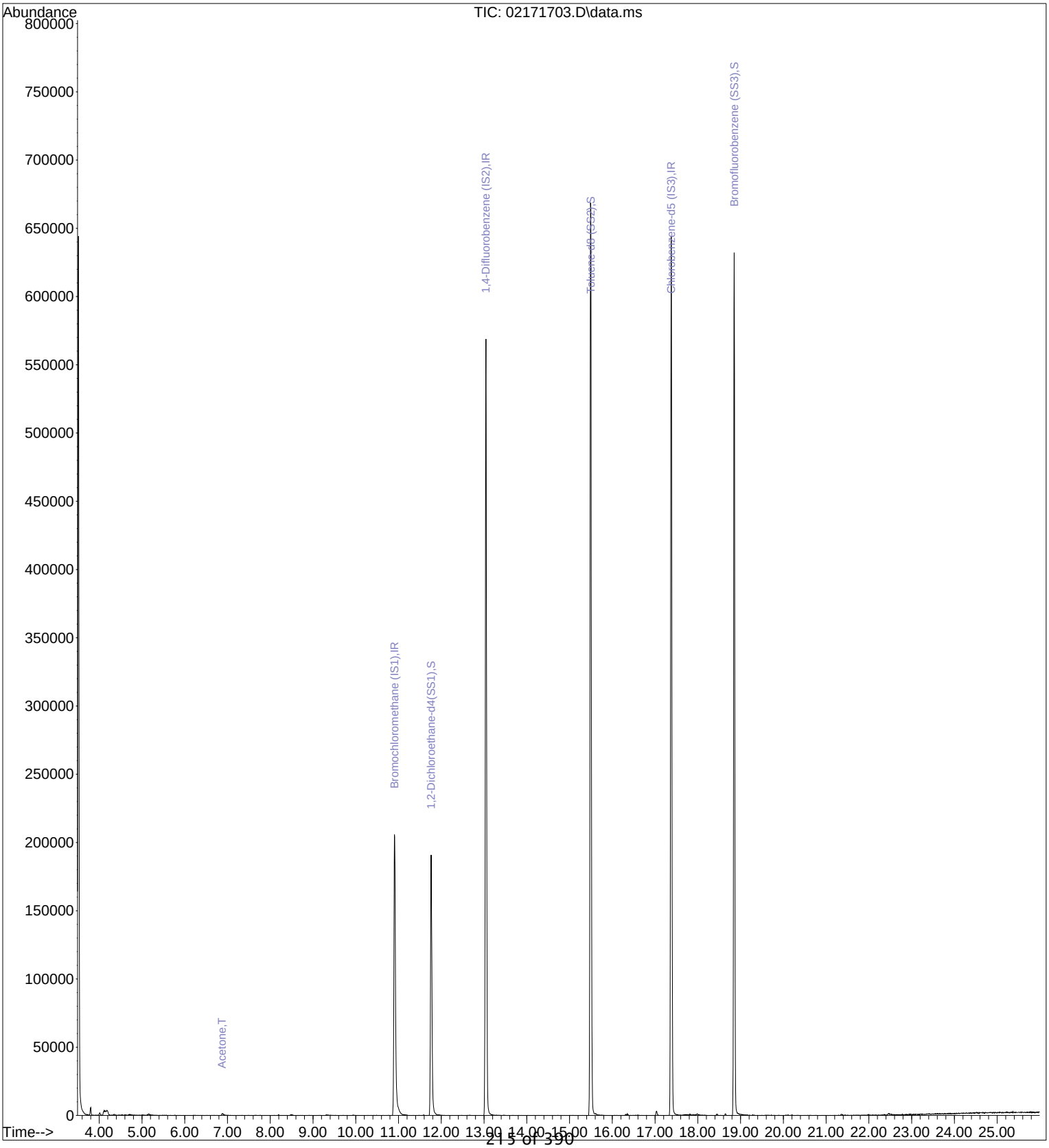
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.61	91	915	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.36	43	249	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	17.82	91	718	N.D.		
67) m- & p-Xylenes	17.98	91	1250	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	18.44	91	416	N.D.		
71) n-Nonane	18.65	43	633	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	18.85	105	288	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	19.49	91	116	N.D.		
77) 3-Ethyltoluene	19.59	105	747	N.D.		
78) 4-Ethyltoluene	19.59	105	747	N.D.		
79) 1,3,5-Trimethylbenzene	19.66	105	134	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.66	105	134	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	20.20	57	273	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	20.32	146	118	N.D.		
86) 1,4-Dichlorobenzene	20.32	146	118	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.44	57	110	N.D.		
94) 1,2,4-Trichlorobenzene	22.36	180	320	N.D.		
95) Naphthalene	22.49	128	2082	N.D.		
96) n-Dodecane	22.45	57	513	N.D.		
97) Hexachlorobutadiene	22.78	225	119	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171703.D Vial: 3
Acq On : 17 Feb 2017 6:21 Operator: LH/AMF
Sample : MB R13021717_1000ml Inst : MS13
Misc : S29-01311701

Quant Time: Feb 17 08:22:44 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170215-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 2/15/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	210	**161**	**77**	61-125	
156-59-2	cis-1,2-Dichloroethene	212	**174**	**82**	72-117	
79-01-6	Trichloroethene	212	**195**	**92**	68-114	
127-18-4	Tetrachloroethene	213	**212**	**100**	65-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151704.D
Acq On : 15 Feb 2017 7:22 Operator: SC
Sample : LCS R9021517_25ng
Misc : S29-01261704/29-02091704 (3/10)
ALS Vial : 4 Sample Multiplier: 1

2/15/17

Quant Time: Feb 15 09:21:16 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.14	130	152069	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	11.10	114	738433	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	15.45	82	297103	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.92	65	214994	11.537	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.32%				
57) Toluene-d8 (SS2)	13.54	98	785058	12.778	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.24%				
73) Bromofluorobenzene (SS3)	17.05	174	228994	13.757	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.08%				
Target Compounds							Qvalue
2) Propene	3.84	42	385936	17.187	ng		99
3) Dichlorodifluoromethan...	3.95	85	706805	21.441	ng		100
4) Chloromethane	4.15	50	520316	17.964	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.31	135	374983	22.237	ng		100
6) Vinyl Chloride	4.43	62	540276	20.136	ng		100
7) 1,3-Butadiene	4.61	54	306489	16.775	ng		99
8) Bromomethane	4.91	94	353919	22.266	ng		100
9) Chloroethane	5.13	64	279750	20.738	ng		99
10) Ethanol	5.38	45	1273687	101.314	ng		100
11) Acetonitrile	5.56	41	660022	19.283	ng		99
12) Acrolein	5.68	56	216644	18.352	ng		99
13) Acetone	5.83	58	1281001	88.983	ng		98
14) Trichlorofluoromethane	6.00	101	586179	22.045	ng		100
15) 2-Propanol (Isopropanol)	6.17	45	1847728	42.839	ng		98
16) Acrylonitrile	6.36	53	505769	21.814	ng		100
17) 1,1-Dichloroethene	6.70	96	374729	21.589	ng		94
18) 2-Methyl-2-Propanol (t...	6.82	59	1981504	47.507	ng		99
19) Methylene Chloride	6.86	84	397340	21.291	ng		94
20) 3-Chloro-1-propene (Al...	6.99	41	528689	19.031	ng		96
21) Trichlorotrifluoroethane	7.17	151	324848	23.945	ng		94
22) Carbon Disulfide	7.13	76	1436882	20.566	ng		98
23) trans-1,2-Dichloroethene	7.88	61	548192	21.969	ng		94
24) 1,1-Dichloroethane	8.10	63	663432	20.780	ng		100
25) Methyl tert-Butyl Ether	8.16	73	1166264	23.024	ng		98
26) Vinyl Acetate	8.27	86	434944	106.588	ng	#	87
27) 2-Butanone (MEK)	8.51	72	276298	22.444	ng	#	90
28) cis-1,2-Dichloroethene	8.97	61	516775	21.715	ng		96
29) Diisopropyl Ether	9.20	87	325785	22.354	ng	#	84
30) Ethyl Acetate	9.21	61	284189	44.637	ng		99
31) n-Hexane	9.21	57	626684	20.601	ng		99
32) Chloroform	9.28	83	638125	21.638	ng		100
34) Tetrahydrofuran (THF)	9.66	72	263880	20.504	ng		94
35) Ethyl tert-Butyl Ether	9.75	87	467345	22.549	ng		95
36) 1,2-Dichloroethane	10.02	62	473592	22.359	ng		100
38) 1,1,1-Trichloroethane	10.29	97	552682	22.646	ng		98
39) Isopropyl Acetate	10.66	61	481866	43.025	ng	#	87
40) 1-Butanol	10.67	56	851170	46.867	ng		91
41) Benzene	10.75	78	1571192	20.675	ng		100
42) Carbon Tetrachloride	10.90	117	486447	23.345	ng		99
43) Cyclohexane	11.02	84	1213997	45.384	ng		96
44) tert-Amyl Methyl Ether	11.34	73	1133336	21.762	ng		99
45) 1,2-Dichloropropane	11.56	63	383326	21.601	ng		99
46) Bromodichloromethane	11.75	83	514877	23.286	ng		99
47) Trichloroethene	11.80	130	434940	24.326	ng		99
48) 1,4-Dioxane	11.77	88	337354	24.048	ng		95
49) 2,2,4-Trimethylpentane...	11.86	57	1605018	21.003	ng		99

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151704.D
Acq On : 15 Feb 2017 7:22 Operator: SC
Sample : LCS R9021517_25ng
Misc : S29-01261704/29-02091704 (3/10)
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 15 09:21:16 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

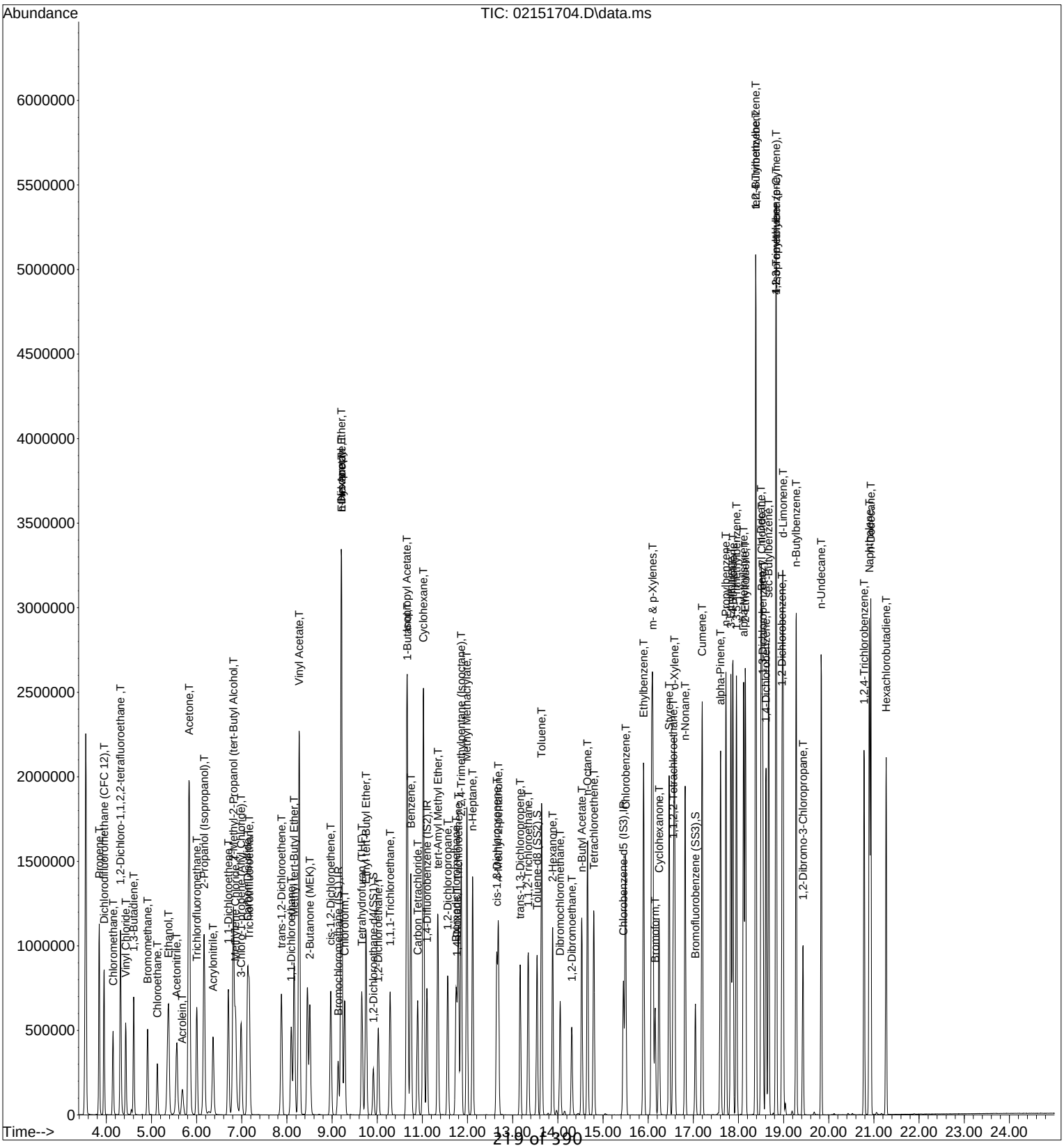
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.98	100	341641	49.245	ng	97
51) n-Heptane	12.11	71	399272	22.464	ng	97
52) cis-1,3-Dichloropropene	12.65	75	650924	22.740	ng	99
53) 4-Methyl-2-pentanone	12.68	58	369883	22.096	ng	96
54) trans-1,3-Dichloropropene	13.16	75	600351	23.968	ng	100
55) 1,1,2-Trichloroethane	13.34	97	388368	23.800	ng	98
58) Toluene	13.64	91	1654636	23.036	ng	100
59) 2-Hexanone	13.89	43	821397	21.426	ng	97
60) Dibromochloromethane	14.05	129	450251	25.842	ng	100
61) 1,2-Dibromoethane	14.31	107	439870	24.561	ng	99
62) n-Butyl Acetate	14.53	43	938991	22.092	ng	99
63) n-Octane	14.65	57	338567	21.209	ng	96
64) Tetrachloroethene	14.80	166	453153	26.452	ng	100
65) Chlorobenzene	15.50	112	1099766	24.169	ng	100
66) Ethylbenzene	15.90	91	1868081	23.640	ng	100
67) m- & p-Xylenes	16.10	91	2926024	48.187	ng	100
68) Bromoform	16.15	173	380364	27.641	ng	100
69) Styrene	16.46	104	1204624	25.150	ng	99
70) o-Xylene	16.58	91	1483752	23.954	ng	99
71) n-Nonane	16.82	43	736889	20.973	ng	96
72) 1,1,2,2-Tetrachloroethane	16.56	83	692045	23.428	ng	100
74) Cumene	17.20	105	1889588	24.381	ng	100
75) alpha-Pinene	17.60	93	998842	24.601	ng	99
76) n-Propylbenzene	17.72	91	2294231	24.529	ng	99
77) 3-Ethyltoluene	17.83	105	1842159	24.093	ng	99
78) 4-Ethyltoluene	17.88	105	1920506	26.365	ng	99
79) 1,3,5-Trimethylbenzene	17.95	105	1570812	24.815	ng	99
80) alpha-Methylstyrene	18.11	118	897950	27.192	ng	97
81) 2-Ethyltoluene	18.15	105	1880124	25.186	ng	99
82) 1,2,4-Trimethylbenzene	18.38	105	1631568	25.983	ng	98
83) n-Decane	18.50	57	864670	23.255	ng	94
84) Benzyl Chloride	18.52	91	1520244	28.225	ng	99
85) 1,3-Dichlorobenzene	18.54	146	954788	27.795	ng	100
86) 1,4-Dichlorobenzene	18.61	146	952092	27.281	ng	99
87) sec-Butylbenzene	18.67	105	2145218	25.133	ng	99
88) 4-Isopropyltoluene (p-...	18.84	119	2013872	25.815	ng	100
89) 1,2,3-Trimethylbenzene	18.83	105	1668514	26.514	ng	99
90) 1,2-Dichlorobenzene	18.97	146	911693	27.661	ng	100
91) d-Limonene	18.99	68	663771	24.716	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.43	157	334080	29.485	ng	93
93) n-Undecane	19.83	57	931198	25.228	ng	99
94) 1,2,4-Trichlorobenzene	20.78	180	727364	31.973	ng	99
95) Naphthalene	20.90	128	2333255	32.199	ng	100
96) n-Dodecane	20.93	57	967210	30.514	ng	97
97) Hexachlorobutadiene	21.27	225	425159	29.602	ng	99
98) Cyclohexanone	16.24	55	579837	22.999	ng	97
99) tert-Butylbenzene	18.38	119	1556391	25.729	ng	99
100) n-Butylbenzene	19.28	91	1752974	25.310	ng	99

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\15\02151704.D
Acq On : 15 Feb 2017 7:22 Operator: SC
Sample : LCS R9021517_25ng
Misc : S29-01261704/29-02091704 (3/10)
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 15 09:21:16 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170216-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	210	**155**	**74**	61-125	
156-59-2	cis-1,2-Dichloroethene	212	**167**	**79**	72-117	
79-01-6	Trichloroethene	212	**188**	**89**	68-114	
127-18-4	Tetrachloroethene	213	**202**	**95**	65-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161704.D
Acq On : 16 Feb 2017 7:21 Operator: SC
Sample : LCS R9021617_25ng
Misc : S29-01261704/29-02091704 (3/10)
ALS Vial : 4 Sample Multiplier: 1

2/16/17

Quant Time: Feb 16 09:04:16 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.14	130	158759	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	11.10	114	774777	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	15.45	82	311498	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.92	65	223310	11.478	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.84%				
57) Toluene-d8 (SS2)	13.54	98	816958	12.682	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.44%				
73) Bromofluorobenzene (SS3)	17.05	174	238357	13.658	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.28%				
Target Compounds							Qvalue
2) Propene	3.84	42	380497	16.231	ng		99
3) Dichlorodifluoromethan...	3.95	85	703863	20.452	ng		100
4) Chloromethane	4.15	50	532678	17.616	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.31	135	378143	21.479	ng		100
6) Vinyl Chloride	4.43	62	544205	19.428	ng		100
7) 1,3-Butadiene	4.61	54	326655	17.126	ng		98
8) Bromomethane	4.91	94	359196	21.646	ng		99
9) Chloroethane	5.13	64	281753	20.006	ng		99
10) Ethanol	5.38	45	1298718	98.952	ng		100
11) Acetonitrile	5.56	41	664266	18.589	ng		99
12) Acrolein	5.69	56	222488	18.053	ng		98
13) Acetone	5.84	58	1314357	87.453	ng		98
14) Trichlorofluoromethane	6.00	101	586611	21.132	ng		100
15) 2-Propanol (Isopropanol)	6.17	45	1859348	41.292	ng		98
16) Acrylonitrile	6.37	53	508399	21.003	ng		99
17) 1,1-Dichloroethene	6.70	96	380234	20.983	ng		94
18) 2-Methyl-2-Propanol (t...	6.82	59	2026349	46.535	ng		100
19) Methylene Chloride	6.86	84	400534	20.558	ng		93
20) 3-Chloro-1-propene (Al...	6.99	41	539473	18.601	ng		96
21) Trichlorotrifluoroethane	7.16	151	334093	23.589	ng		94
22) Carbon Disulfide	7.13	76	1452395	19.912	ng		98
23) trans-1,2-Dichloroethene	7.88	61	553575	21.250	ng		94
24) 1,1-Dichloroethane	8.09	63	671592	20.149	ng		99
25) Methyl tert-Butyl Ether	8.16	73	1184491	22.399	ng		97
26) Vinyl Acetate	8.27	86	443846	104.186	ng	#	86
27) 2-Butanone (MEK)	8.51	72	277062	21.558	ng	#	90
28) cis-1,2-Dichloroethene	8.97	61	518927	20.887	ng		95
29) Diisopropyl Ether	9.20	87	329707	21.670	ng	#	82
30) Ethyl Acetate	9.21	61	286886	43.162	ng		98
31) n-Hexane	9.21	57	627464	19.758	ng		99
32) Chloroform	9.28	83	644281	20.926	ng		100
34) Tetrahydrofuran (THF)	9.66	72	267721	19.926	ng		93
35) Ethyl tert-Butyl Ether	9.75	87	474951	21.951	ng		94
36) 1,2-Dichloroethane	10.02	62	474567	21.461	ng		100
38) 1,1,1-Trichloroethane	10.29	97	559259	21.841	ng		98
39) Isopropyl Acetate	10.66	61	486584	41.408	ng	#	89
40) 1-Butanol	10.67	56	853792	44.806	ng		91
41) Benzene	10.74	78	1586215	19.894	ng		100
42) Carbon Tetrachloride	10.89	117	491526	22.482	ng		99
43) Cyclohexane	11.02	84	1227424	43.733	ng		95
44) tert-Amyl Methyl Ether	11.34	73	1144491	20.945	ng		98
45) 1,2-Dichloropropane	11.56	63	383230	20.583	ng		99
46) Bromodichloromethane	11.75	83	517843	22.321	ng		99
47) Trichloroethene	11.80	130	439752	23.441	ng		99
48) 1,4-Dioxane	11.77	88	340209	23.114	ng		95
49) 2,2,4-Trimethylpentane...	11.86	57	1609560	20.075	ng		99

Data File: I:\MS09\Data\2017_02\16\02161704.D
Acq On : 16 Feb 2017 7:21 Operator: SC
Sample : LCS R9021617_25ng
Misc : S29-01261704/29-02091704 (3/10)
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 16 09:04:16 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

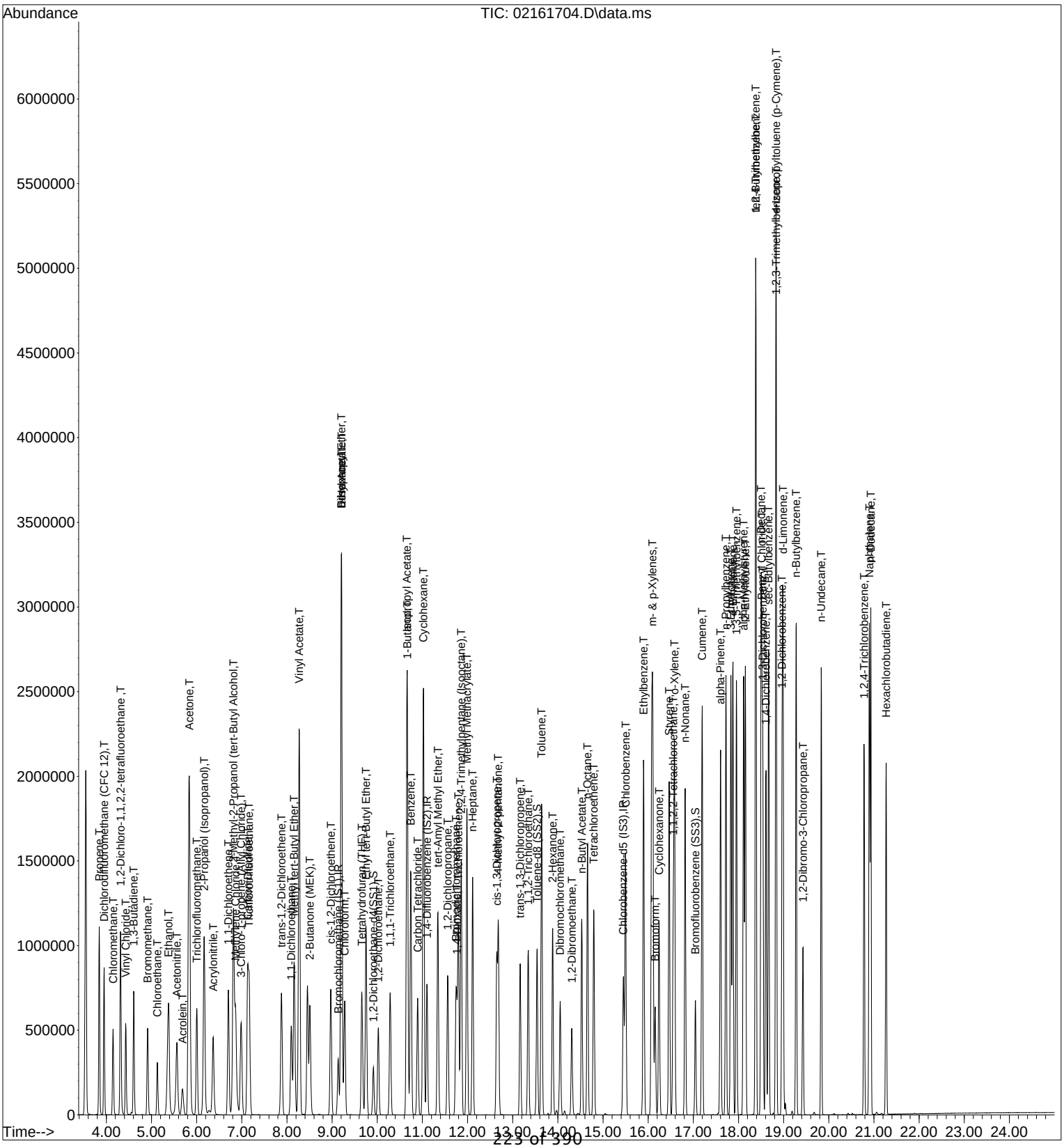
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.99	100	344128	47.277	ng	96
51) n-Heptane	12.11	71	401235	21.516	ng	96
52) cis-1,3-Dichloropropene	12.65	75	654771	21.801	ng	99
53) 4-Methyl-2-pentanone	12.68	58	368772	20.996	ng	96
54) trans-1,3-Dichloropropene	13.16	75	600628	22.854	ng	100
55) 1,1,2-Trichloroethane	13.34	97	392297	22.913	ng	97
58) Toluene	13.64	91	1657613	22.011	ng	100
59) 2-Hexanone	13.89	43	812344	20.211	ng	97
60) Dibromochloromethane	14.05	129	453014	24.799	ng	99
61) 1,2-Dibromoethane	14.31	107	441814	23.530	ng	99
62) n-Butyl Acetate	14.53	43	929778	20.864	ng	98
63) n-Octane	14.65	57	335970	20.074	ng	95
64) Tetrachloroethene	14.79	166	454024	25.278	ng	99
65) Chlorobenzene	15.50	112	1107591	23.216	ng	100
66) Ethylbenzene	15.90	91	1867951	22.546	ng	100
67) m- & p-Xylenes	16.09	91	2928100	45.993	ng	100
68) Bromoform	16.15	173	383891	26.608	ng	100
69) Styrene	16.46	104	1206818	24.032	ng	99
70) o-Xylene	16.58	91	1477276	22.747	ng	99
71) n-Nonane	16.82	43	729868	19.813	ng	96
72) 1,1,2,2-Tetrachloroethane	16.56	83	688621	22.234	ng	100
74) Cumene	17.20	105	1890800	23.269	ng	100
75) alpha-Pinene	17.60	93	996168	23.401	ng	99
76) n-Propylbenzene	17.72	91	2278089	23.231	ng	99
77) 3-Ethyltoluene	17.83	105	1837203	22.918	ng	99
78) 4-Ethyltoluene	17.88	105	1909581	25.004	ng	99
79) 1,3,5-Trimethylbenzene	17.95	105	1577204	23.765	ng	99
80) alpha-Methylstyrene	18.11	118	895580	25.867	ng	96
81) 2-Ethyltoluene	18.15	105	1878305	23.999	ng	99
82) 1,2,4-Trimethylbenzene	18.38	105	1615881	24.544	ng	98
83) n-Decane	18.50	57	842231	21.605	ng	93
84) Benzyl Chloride	18.52	91	1507183	26.689	ng	99
85) 1,3-Dichlorobenzene	18.54	146	952378	26.444	ng	100
86) 1,4-Dichlorobenzene	18.61	146	954801	26.094	ng	100
87) sec-Butylbenzene	18.67	105	2132293	23.827	ng	99
88) 4-Isopropyltoluene (p-...	18.84	119	1994729	24.388	ng	100
89) 1,2,3-Trimethylbenzene	18.83	105	1656903	25.113	ng	99
90) 1,2-Dichlorobenzene	18.97	146	907042	26.248	ng	100
91) d-Limonene	18.99	68	651695	23.145	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.43	157	332851	28.019	ng	92
93) n-Undecane	19.83	57	906580	23.426	ng	98
94) 1,2,4-Trichlorobenzene	20.78	180	725490	30.416	ng	100
95) Naphthalene	20.90	128	2313019	30.444	ng	100
96) n-Dodecane	20.93	57	936911	28.192	ng	97
97) Hexachlorobutadiene	21.27	225	421537	27.993	ng	100
98) Cyclohexanone	16.24	55	576671	21.816	ng	97
99) tert-Butylbenzene	18.38	119	1546381	24.382	ng	100
100) n-Butylbenzene	19.28	91	1732109	23.853	ng	99

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

Quantitation Report (QT Reviewed)

Data File: I:\MS09\Data\2017_02\16\02161704.D
Acq On : 16 Feb 2017 7:21 Operator: SC
Sample : LCS R9021617_25ng
Misc : S29-01261704/29-02091704 (3/10)
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 16 09:04:16 2017
Quant Method : I:\MS09\Methods\R9010617.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 08 09:01:59 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170217-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	210	**230**	**110**	61-125	
156-59-2	cis-1,2-Dichloroethene	212	**218**	**103**	72-117	
79-01-6	Trichloroethene	212	**219**	**103**	68-114	
127-18-4	Tetrachloroethene	213	**219**	**103**	65-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171705.D Vial: 3
Acq On : 17 Feb 2017 7:32 Operator: LH/AMF
Sample : LCS R13021717_25ng Inst : MS13
Misc : S29-01311701/S29-02091701 (3/10)

Quant Time: Feb 17 08:23:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/17/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	10.92	130	120678	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.05	114	562692	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.38	82	219258	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.77	65	165891	12.151	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.20%				
57) Toluene-d8 (SS2)	15.50	98	556292	12.562	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.48%				
73) Bromofluorobenzene (SS3)	18.85	174	245110	13.161	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.28%				
Target Compounds							Qvalue
2) Propene	3.92	42	222996	24.933	ng		99
3) Dichlorodifluoromethan...	4.08	85	539991	25.522	ng		100
4) Chloromethane	4.36	50	359231	28.518	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.61	135	328344	26.202	ng		100
6) Vinyl Chloride	4.76	62	361361	28.709	ng		100
7) 1,3-Butadiene	5.02	54	230127	29.632	ng		99
8) Bromomethane	5.45	94	234667	28.739	ng		99
9) Chloroethane	5.77	64	166200	26.656	ng		100
10) Ethanol	6.16	45	710143	136.017	ng		100
11) Acetonitrile	6.40	41	367559	26.909	ng		99
12) Acrolein	6.58	56	128853	26.187	ng		100
13) Acetone	6.79	58	758837	129.872	ng		94
14) Trichlorofluoromethane	7.01	101	474185	26.085	ng		99
15) 2-Propanol (Isopropanol)	7.28	45	1081657	61.142	ng		99
16) Acrylonitrile	7.53	53	286741	28.719	ng		99
17) 1,1-Dichloroethene	7.96	96	246242	28.519	ng		97
18) 2-Methyl-2-Propanol (t...	8.14	59	1203946	58.179	ng		99
19) Methylene Chloride	8.19	84	242109	25.448	ng		96
20) 3-Chloro-1-propene (Al...	8.35	41	308417	28.543	ng		98
21) Trichlorotrifluoroethane	8.61	151	279419	26.704	ng		99
22) Carbon Disulfide	8.45	76	875363	25.858	ng		100
23) trans-1,2-Dichloroethene	9.47	61	333714	29.100	ng		99
24) 1,1-Dichloroethane	9.72	63	412244	26.929	ng		100
25) Methyl tert-Butyl Ether	9.82	73	758840	27.650	ng		100
26) Vinyl Acetate	9.99	86	288506	140.677	ng	#	92
27) 2-Butanone (MEK)	10.22	72	159435	28.082	ng		94
28) cis-1,2-Dichloroethene	10.75	61	315179	27.188	ng		98
29) Diisopropyl Ether	11.04	87	242499	27.590	ng		96
30) Ethyl Acetate	11.05	61	156303	55.912	ng		99
31) n-Hexane	11.03	57	340473	25.100	ng		100
32) Chloroform	11.09	83	432698	26.569	ng		100
34) Tetrahydrofuran (THF)	11.49	72	156552	24.281	ng		98
35) Ethyl tert-Butyl Ether	11.64	87	305736	29.091	ng		98
36) 1,2-Dichloroethane	11.89	62	336596	26.794	ng		100
38) 1,1,1-Trichloroethane	12.17	97	419831	27.096	ng		99
39) Isopropyl Acetate	12.61	61	270161	53.055	ng	#	94
40) 1-Butanol	12.63	56	425117	56.750	ng		98
41) Benzene	12.65	78	909750	25.900	ng		100
42) Carbon Tetrachloride	12.81	117	399296	28.530	ng		100
43) Cyclohexane	12.94	84	732167	52.973	ng		99
44) tert-Amyl Methyl Ether	13.29	73	689673	27.882	ng		99
45) 1,2-Dichloropropane	13.50	63	221569	26.800	ng		99
46) Bromodichloromethane	13.69	83	352518	28.773	ng		100
47) Trichloroethene	13.75	130	314293	27.398	ng		100
48) 1,4-Dioxane	13.73	88	213974	30.266	ng		99
49) 2,2,4-Trimethylpentane...	13.82	57	894784	26.074	ng		98
50) Methyl Methacrylate	13.96	100	216701	57.384	ng		98

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171705.D Vial: 3
Acq On : 17 Feb 2017 7:32 Operator: LH/AMF
Sample : LCS R13021717_25ng Inst : MS13
Misc : S29-01311701/S29-02091701 (3/10)

Quant Time: Feb 17 08:23:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M

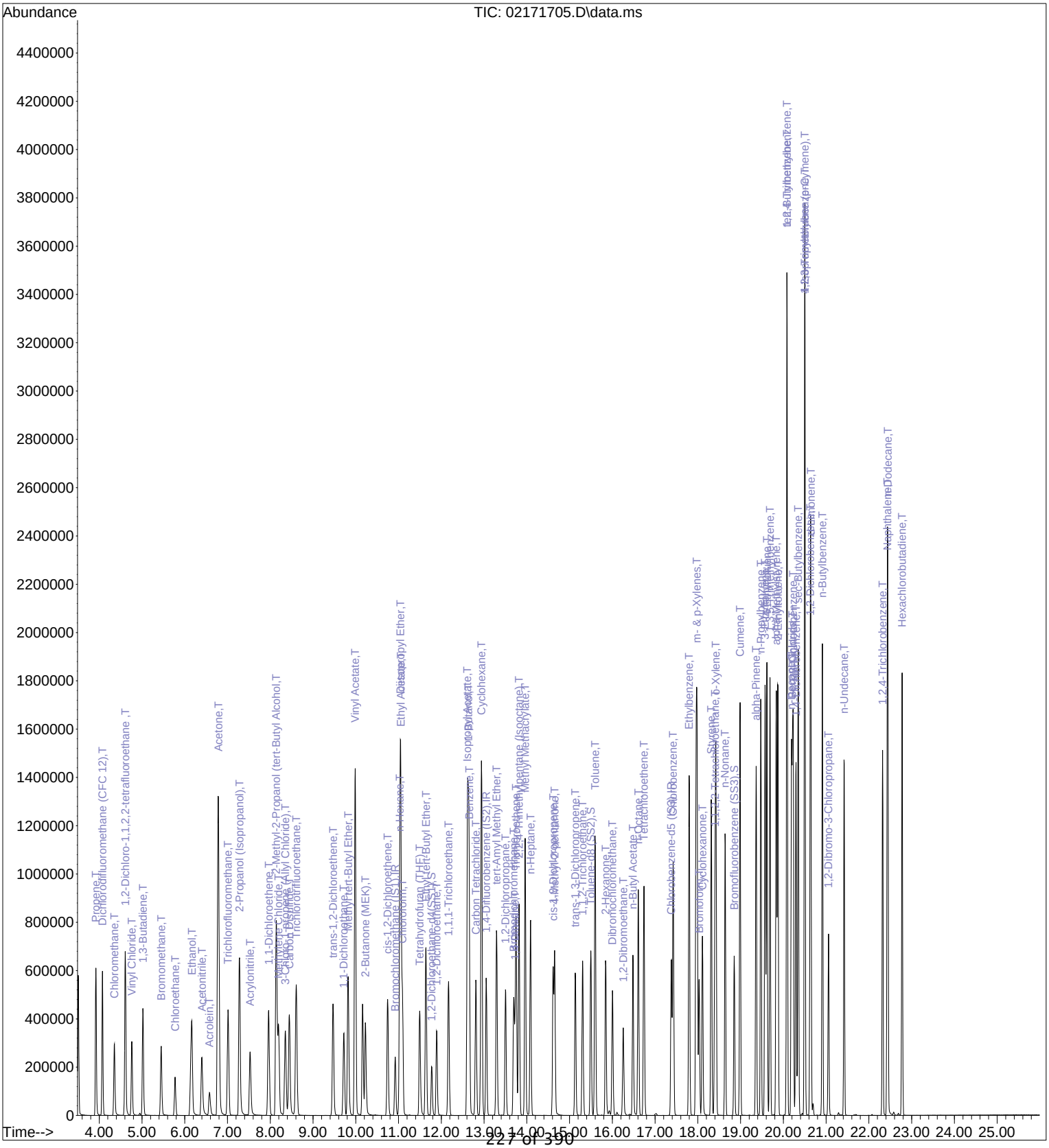
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.09	71	232853	27.169	ng	99
52) cis-1,3-Dichloropropene	14.62	75	404544	30.149	ng	100
53) 4-Methyl-2-pentanone	14.65	58	208221	28.085	ng	97
54) trans-1,3-Dichloropropene	15.13	75	386674	27.935	ng	99
55) 1,1,2-Trichloroethane	15.30	97	248448	27.475	ng	99
58) Toluene	15.60	91	1015324	26.884	ng	100
59) 2-Hexanone	15.84	43	478064	28.753	ng	99
60) Dibromochloromethane	16.00	129	343676	30.048	ng	100
61) 1,2-Dibromoethane	16.26	107	298380	29.567	ng	99
62) n-Butyl Acetate	16.48	43	529203	30.315	ng	98
63) n-Octane	16.61	57	185338	26.572	ng	99
64) Tetrachloroethene	16.74	166	363620	27.434	ng	99
65) Chlorobenzene	17.42	112	739620	27.700	ng	100
66) Ethylbenzene	17.80	91	1179973	28.070	ng	100
67) m- & p-Xylenes	17.98	91	1874054	56.119	ng	99
68) Bromoform	18.03	173	323167	31.255	ng	100
69) Styrene	18.31	104	766317	28.274	ng	99
70) o-Xylene	18.42	91	939235	27.615	ng	100
71) n-Nonane	18.64	43	397126	26.889	ng	98
72) 1,1,2,2-Tetrachloroethane	18.40	83	408879	28.290	ng	99
74) Cumene	18.99	105	1252478	27.838	ng	100
75) alpha-Pinene	19.36	93	628447	28.767	ng	99
76) n-Propylbenzene	19.47	91	1428212	29.205	ng	100
77) 3-Ethyltoluene	19.57	105	1225654	29.820	ng	100
78) 4-Ethyltoluene	19.62	105	1228761	30.940	ng	100
79) 1,3,5-Trimethylbenzene	19.69	105	1038556	27.495	ng	99
80) alpha-Methylstyrene	19.84	118	599496	29.003	ng	99
81) 2-Ethyltoluene	19.87	105	1218108	28.183	ng	100
82) 1,2,4-Trimethylbenzene	20.08	105	1046123	29.292	ng	99
83) n-Decane	20.19	57	446579	28.858	ng	99
84) Benzyl Chloride	20.21	91	897296	30.168	ng	99
85) 1,3-Dichlorobenzene	20.23	146	678506	26.703	ng	99
86) 1,4-Dichlorobenzene	20.30	146	692313	31.010	ng	99
87) sec-Butylbenzene	20.35	105	1387804	28.414	ng	100
88) 4-Isopropyltoluene (p-...	20.50	119	1353611	29.318	ng	99
89) 1,2,3-Trimethylbenzene	20.50	105	1079719	30.064	ng	99
90) 1,2-Dichlorobenzene	20.63	146	654420	31.167	ng	99
91) d-Limonene	20.64	68	363059	32.491	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.06	157	254980	28.426	ng	96
93) n-Undecane	21.42	57	473543	26.735	ng	99
94) 1,2,4-Trichlorobenzene	22.32	180	531229	25.682	ng	99
95) Naphthalene	22.43	128	1396894	27.234	ng	100
96) n-Dodecane	22.44	57	432537	27.468	ng	100
97) Hexachlorobutadiene	22.78	225	384650	28.942	ng	100
98) Cyclohexanone	18.11	55	334791	29.663	ng	99
99) tert-Butylbenzene	20.08	119	1055816	28.311	ng	100
100) n-Butylbenzene	20.91	91	1081127	26.826	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS13\DATA\2017_02\17\02171705.D Vial: 3
Acq On : 17 Feb 2017 7:32 Operator: LH/AMF
Sample : LCS R13021717_25ng Inst : MS13
Misc : S29-01311701/S29-02091701 (3/10)

Quant Time: Feb 17 08:23:35 2017
Quant Method : I:\MS13\METHODS\R13021017.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Feb 10 12:09:18 2017
Response via : Initial Calibration
DataAcq Meth:TO15.M



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Instructions for Data Validation-Method TO-15 (SCAN)

1. Determination of Pressure Dilution Factor

Upon receipt at the laboratory the pressure or vacuum of the sample canisters is measured using a digital pressure gauge. The canisters are then pressurized with humidified zero air to approximately +3.5 psig (pounds per square inch gauge).

Pressure Dilution factor is calculated as:

$$\text{PDF} = \frac{P_f + 14.7}{P_i + 14.7}$$

P_f final pressure in psig

P_i initial pressure in psig

2. Validating Initial and Continuing Calibration Results

GC/MS target compound analysis is performed using internal standard quantitation. Three internal standard compounds (Bromochloromethane, 1,4-Difluorobenzene and Chlorobenzene-d5) are added to each aliquot of sample, blank, standard and duplicate at an amount of 25 nanograms(ng). Internal standard responses are used to calculate RRFs (relative response factors) as follows:

$$\text{RRF} = \frac{A_x C_{is}}{A_{is} C_x}$$

A_x area response of the analyte quantitation ion

A_{is} area response of the corresponding internal standard quantitation ion

C_{is} internal standard concentration, ng

C_x analyte concentration, ng

The percent relative standard deviation (%RSD) for the five or six initial calibration points should be less than 30% (with a maximum of two analytes ≤40%) for the calibration to be considered valid and linear.

$$\%\text{RSD} = \frac{SD}{\overline{RRF}}(100)$$

SD standard deviation

$\overline{RRF}$ average or mean RRF (ICAL)

The initial calibration is verified once per twenty-four hour analytical sequence with the analysis of a continuing calibration standard at one of the initial calibration levels (actual analyte concentrations of the CCV are the same as the corresponding concentrations in the initial calibration). The relative response factor of each target analyte from the daily continuing calibration standard is compared to the average relative response factor from the initial multipoint calibration. The percent difference (%D) of the initial and continuing calibration relative response factors is calculated as follows:

$$\%D = \left(\frac{\overline{RRF} - RRF\ cont}{\overline{RRF}} \right) (100)$$

$\overline{RRF}$	average relative response factor from the initial calibration
$RRF\ cont$	relative response factor from the daily continuing calibration standard

Note: the percent difference (%D) should be less than 30% for an acceptable continuing calibration standard.

3. Validating GC/MS Target Analyte Quantitation Results

Target analytes are measured in nanograms using internal standard quantitation as follows:

$$ng_x = \frac{A_x ng_{is}}{A_{is}\ \overline{RRF}}$$

ng_x	nanogram concentration of analyte *x*
A_x	area response of the analyte's quantitation ion
A_{is}	area response of the corresponding internal standard's quantitation ion
ng_{is}	internal standard amount, in nanograms
$\overline{RRF}$	average or mean RRFs (ICAL)

4. Calculation of µg/m³ (microgram per cubic meter) Results

Target compound results reported on the "Results of Analysis" form in units of µg/m³ are calculated as follows:

$$\mu g/m^3 = \frac{(ng)(PDF)}{L}$$

ng nanograms of analyte (measured on the GC/MS quantitation report)

PDF pressure dilution factor (see equation 1)

L sample aliquot in Liters

5. Conversion to ppb (parts per billion) Volume

$$C_{ppbv} = C_x\left(\frac{24.46}{FW}\right)$$

FW formula weight of the target analytes (i.e. formula weight of Dichloromethane is 84.94; 1,2-Dichloropropane is 113)

24.46 molar volume of ideal gas at 25°C and 1 atmosphere

C_x final analyte concentration calculated in equation 4 (µg/m³)

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Haley & Aldrich, Inc.**
Client Project ID: **Dollinger / 129388-002** ALS Project ID: P1700672

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date(s) Collected: 2/9/17
Analyst: Cory Lewis Date(s) Received: 2/13/17
Sample Type: 6.0 L Summa Canister(s) Date(s) Analyzed: 2/16 - 2/17/17
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P170216-MB	**116**	**102**	**84**	70-130	
Method Blank	P170217-MB	**108**	**100**	**93**	70-130	
Lab Control Sample	P170216-LCS	**115**	**102**	**89**	70-130	
Lab Control Sample	P170217-LCS	**105**	**101**	**96**	70-130	
IA1-020917-0905	P1700672-002	**114**	**108**	**91**	70-130	
IA2-020917-1005	P1700672-004	**105**	**106**	**95**	70-130	
IA3-020917-0950	P1700672-006	**107**	**103**	**101**	70-130	
IA5-020917-0920	P1700672-010	**105**	**105**	**101**	70-130	
AA1-020917-1030	P1700672-011	**107**	**96**	**97**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170216-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: NA
Analyst: Cory Lewis Date Analyzed: 2/16/17
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	4.20	**4.48**	**107**	58-117	
156-59-2	cis-1,2-Dichloroethene	4.24	**4.16**	**98**	73-108	
79-01-6	Trichloroethene	4.25	**4.09**	**96**	66-101	
127-18-4	Tetrachloroethene	4.25	**3.98**	**94**	66-105	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170217-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: NA
Analyst: Cory Lewis Date Analyzed: 2/17/17
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	4.20	**4.52**	**108**	58-117	
156-59-2	cis-1,2-Dichloroethene	4.24	**4.28**	**101**	73-108	
79-01-6	Trichloroethene	4.25	**4.25**	**100**	66-101	
127-18-4	Tetrachloroethene	4.25	**4.19**	**99**	66-105	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Haley & Aldrich, Inc.**
Client Project ID: **Dollinger / 129388-002** ALS Project ID: P1700672

Method Blank Summary

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Lab File ID: 02161703.D
Analyst: Cory Lewis Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 08:20
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P170216-LCS	02161704.D	08:51
IA1-020917-0905	P1700672-002	02161706.D	10:13
IA2-020917-1005	P1700672-004	02161707.D	10:44
IA2-020917-1005 (Dilution)	P1700672-004	02161710.D	12:19
IA3-020917-0950	P1700672-006	02161711.D	12:50

Client: **Haley & Aldrich, Inc.**
Client Project ID: **Dollinger / 129388-002** ALS Project ID: P1700672

Method Blank Summary

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Lab File ID: 02171706.D
Analyst: Cory Lewis Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 09:48
Test Notes:

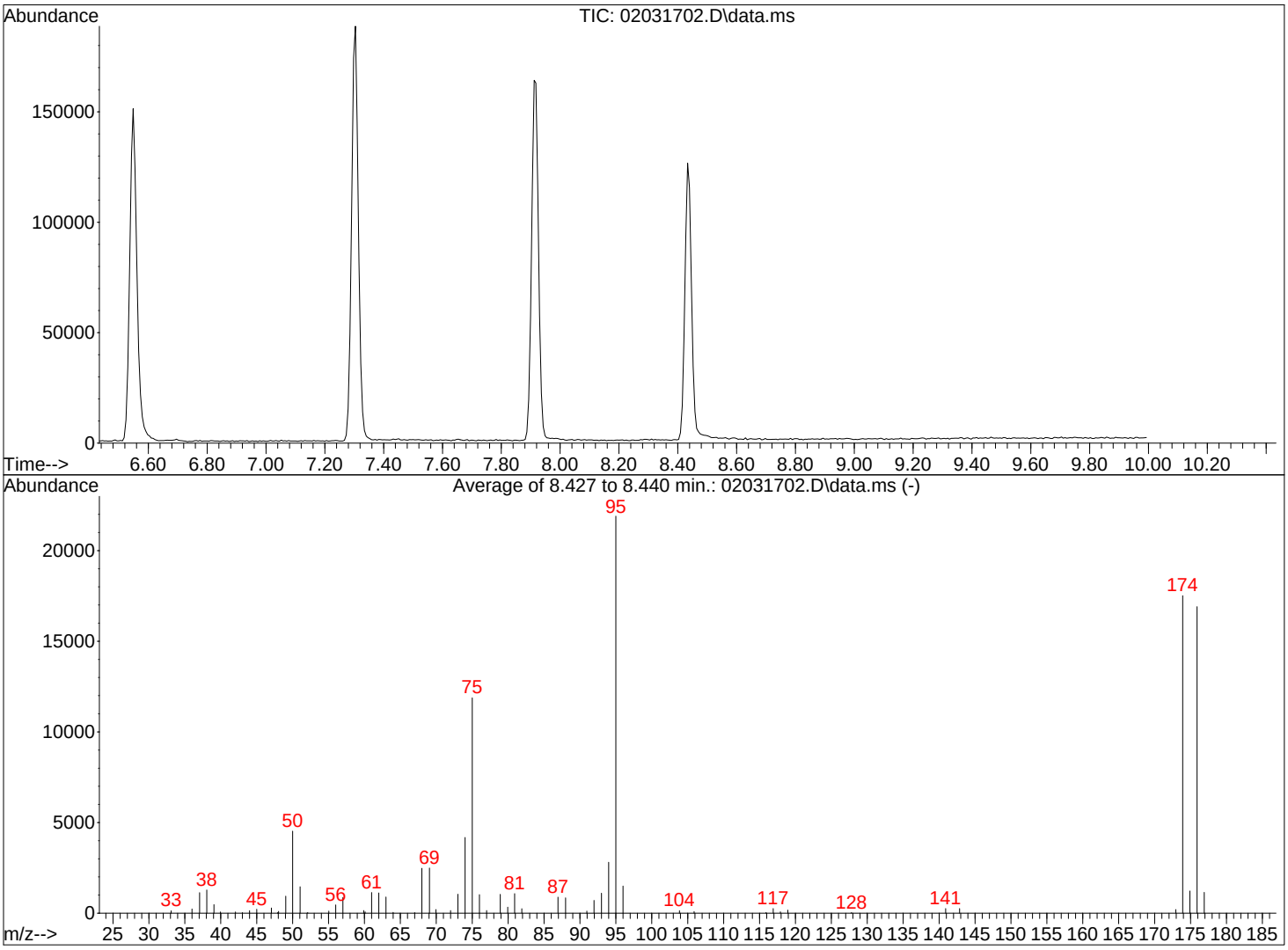
Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P170217-LCS	02171707.D	10:19
IA5-020917-0920	P1700672-010	02171710.D	12:27
AA1-020917-1030	P1700672-011	02171711.D	12:58

Data Path : I:\MS19\DATA\2017_02\03\
Data File : 02031702.D
Acq On : 3 Feb 2017 7:59
Operator : CL
Sample : BFB S19020317
Misc : S29-01241701
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19013117.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Feb 01 07:44:10 2017

CL 2/3/17



AutoFind: Scans 707, 708, 709; Background Corrected with Scan 701

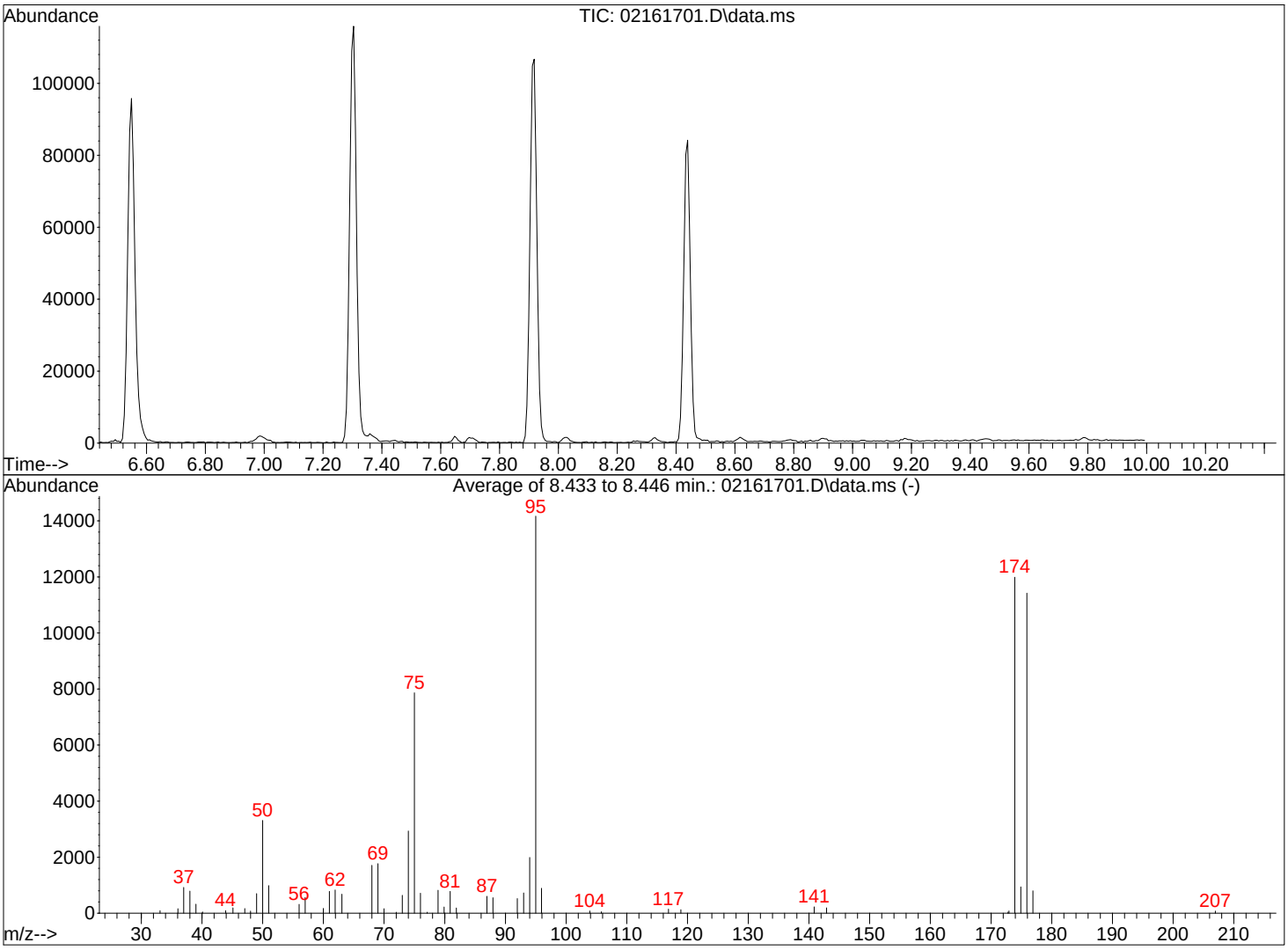
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.7	4524	PASS
75	95	30	66	54.3	11881	PASS
95	95	100	100	100.0	21899	PASS
96	95	5	9	6.8	1500	PASS
173	174	0.00	2	1.1	201	PASS
174	95	50	120	80.0	17513	PASS
175	174	4	9	7.0	1228	PASS
176	174	93	101	96.5	16905	PASS
177	176	5	9	6.8	1146	PASS

Data Path : I:\MS19\DATA\2017_02\16\
Data File : 02161701.D
Acq On : 16 Feb 2017 7:31
Operator : CL
Sample : BFB S19021617
Misc : S29-01241701
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19020317.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sat Feb 04 07:30:51 2017

CL 2/16/17



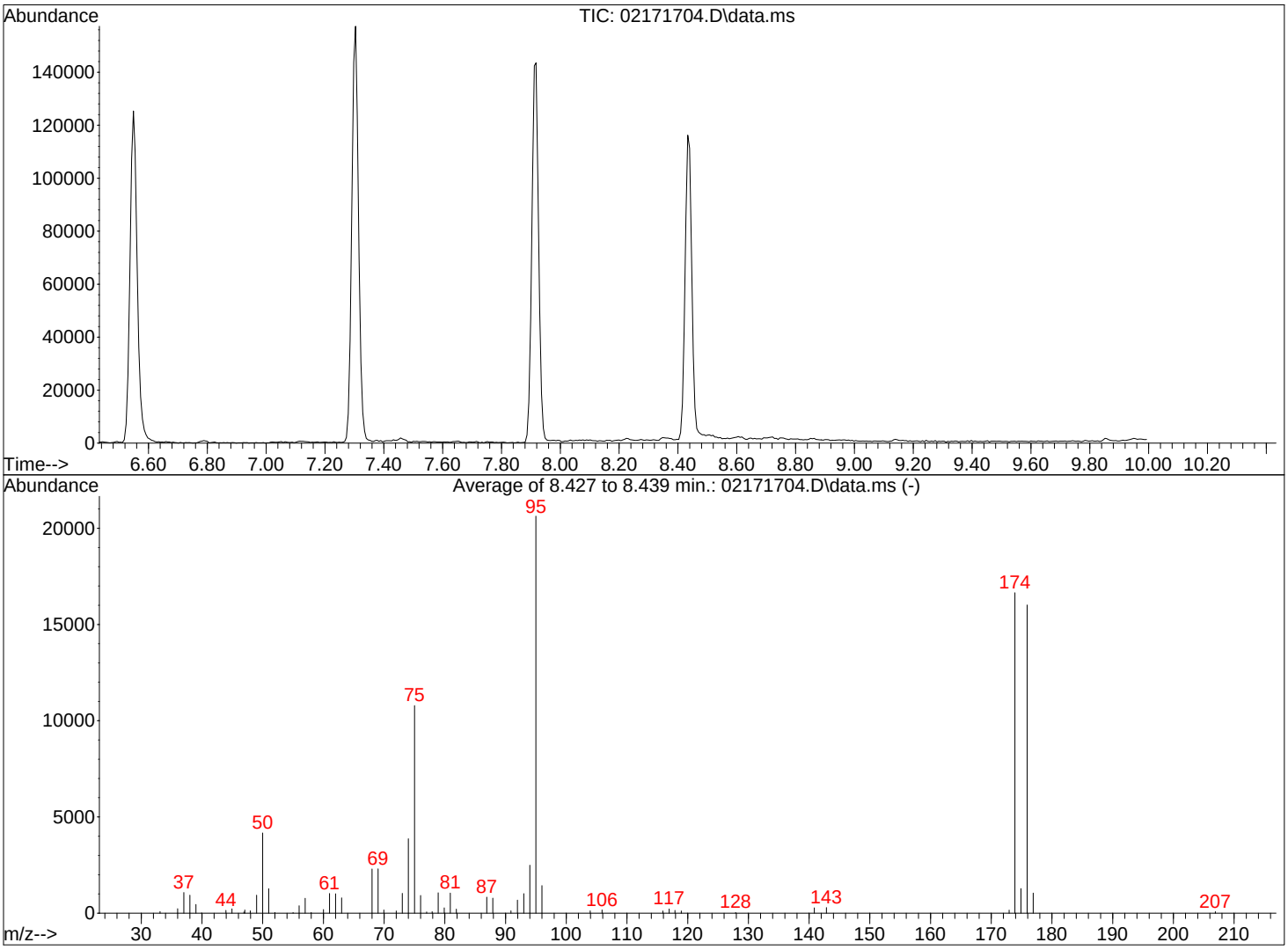
AutoFind: Scans 708, 709, 710; Background Corrected with Scan 702

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	23.4	3312	PASS
75	95	30	66	55.5	7863	PASS
95	95	100	100	100.0	14168	PASS
96	95	5	9	6.3	890	PASS
173	174	0.00	2	0.7	80	PASS
174	95	50	120	84.6	11989	PASS
175	174	4	9	7.8	938	PASS
176	174	93	101	95.3	11421	PASS
177	176	5	9	7.0	798	PASS

Data Path : I:\MS19\DATA\2017_02\17\
Data File : 02171704.D
Acq On : 17 Feb 2017 8:57
Operator : CL
Sample : BFB S19021717
Misc : S29-01241701
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19020317.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS) CL 2/17/17
Last Update : Sat Feb 04 07:30:51 2017



AutoFind: Scans 707, 708, 709; Background Corrected with Scan 701

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.2	4165	PASS
75	95	30	66	52.3	10783	PASS
95	95	100	100	100.0	20627	PASS
96	95	5	9	7.0	1435	PASS
173	174	0.00	2	1.0	160	PASS
174	95	50	120	80.7	16649	PASS
175	174	4	9	7.7	1282	PASS
176	174	93	101	96.2	16016	PASS
177	176	5	9	6.5	1048	PASS

Client: **Haley & Aldrich, Inc.**
Client Project ID: **Dollinger / 129388-002** ALS Project ID: P1700672

Internal Standard Area and RT Summary

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/7890A/MS19 Lab File ID: 02161702.D
Analyst: Cory Lewis Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 07:49
Test Notes:

		IS1 (BCM)			IS2 (DFB)			IS3 (CBZ)		
		AREA	#	RT	AREA	#	RT	AREA	#	RT
	24 Hour Standard	33215		9.76	162114		11.71	32253		16.05
	Upper Limit	46501		10.09	226960		12.04	45154		16.38
	Lower Limit	19929		9.43	97268		11.38	19352		15.72
	Client Sample ID									
01	Method Blank	31096		9.78	152666		11.72	30876		16.06
02	Lab Control Sample	33633		9.75	163979		11.71	32787		16.05
03	IA1-020917-0905	33750		9.75	164975		11.71	34390		16.05
04	IA2-020917-1005	41345		9.77	208064		11.72	47211	I	16.05
05	IA2-020917-1005 (Dilution)	42790		9.76	212806		11.71	40372		16.05
06	IA3-020917-0950	42176		9.76	207770		11.72	40718		16.05
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits. See case narrative.

Client: **Haley & Aldrich, Inc.**
Client Project ID: **Dollinger / 129388-002** ALS Project ID: P1700672

Internal Standard Area and RT Summary

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/7890A/MS19 Lab File ID: 02171705.D
Analyst: Cory Lewis Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 09:17
Test Notes:

		IS1 (BCM)			IS2 (DFB)			IS3 (CBZ)		
		AREA	#	RT	AREA	#	RT	#	AREA	#	RT	#
	24 Hour Standard	39058		9.76	190715		11.71		34452		16.05	
	Upper Limit	54681		10.09	267001		12.04		48233		16.38	
	Lower Limit	23435		9.43	114429		11.38		20671		15.72	
	Client Sample ID											
01	Method Blank	35342		9.78	176041		11.72		32819		16.06	
02	Lab Control Sample	36914		9.76	180724		11.71		33731		16.06	
03	IA5-020917-0920	37196		9.76	179811		11.71		35859		16.05	
04	AA1-020917-1030	35563		9.76	191197		11.71		33219		16.05	
05												
06												
07												
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												

IS1 (BCM) = Bromochloromethane
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RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits. See case narrative.

MDLs for TO-15 SIM

	3/4/15					FINAL	
	MS19	MAX	ROUNDUP	ROUND	MW	MDL_R	MDL_R
Compounds	MDL_C	MDL_C (pg/L)	µg/m³	ppbV		µg/m³	ppbV
Dichlorodifluoromethane	16.83592	16.8	0.017	0.0034	120.9	**0.017**	**0.0034**
Chloromethane	18.21135	18.2	0.019	0.0092	50.49	**0.019**	**0.0092**
Vinyl Chloride	7.58639	7.6	0.0076	0.0030	62.5	**0.0076**	**0.0030**
1,3-Butadiene	13.69049	13.7	0.014	0.0063	54.09	**0.014**	**0.0063**
Bromomethane	9.29658	9.3	0.0093	0.0024	94.94	**0.0093**	**0.0024**
Chloroethane	8.41831	8.4	0.0085	0.0032	64.52	**0.0085**	**0.0032**
Acrolein	38.60434	38.6	0.039	0.017	56.06	**0.039**	**0.017**
Acetone	55.50695	55.5	0.056	0.024	58.08	**0.056**	**0.024**
Freon-11	14.85012	14.9	0.015	0.0027	137.4	**0.015**	**0.0027**
1,1-Dichloroethene	8.50744	8.5	0.0086	0.0022	96.94	**0.0086**	**0.0022**
Methylene Chloride	12.49786	12.5	0.013	0.0037	84.94	**0.013**	**0.0037**
Trichlorotrifluoroethane	8.88499	8.9	0.0089	0.0012	187.38	**0.0089**	**0.0012**
trans-1,2-Dichloroethene	7.28438	7.3	0.0073	0.0018	96.94	**0.0073**	**0.0018**
1,1-Dichloroethane	6.04529	6.0	0.0061	0.0015	98.96	**0.0061**	**0.0015**
Methyl tert-Butyl Ether	9.21623	9.2	0.0093	0.0026	88.15	**0.0093**	**0.0026**
cis-1,2-Dichloroethene	9.13029	9.1	0.0092	0.0023	96.94	**0.0092**	**0.0023**
Chloroform	17.84617	17.8	0.018	0.0037	119.4	**0.018**	**0.0037**
1,2-Dichloroethane	8.30576	8.3	0.0084	0.0021	98.96	**0.0084**	**0.0021**
1,1,1-Trichloroethane	5.86490	5.9	0.0059	0.0011	133.4	**0.0059**	**0.0011**
Benzene	19.22760	19.2	0.020	0.0063	78.11	**0.020**	**0.0063**
Carbon Tetrachloride	11.68071	11.7	0.012	0.0019	153.8	**0.012**	**0.0019**
1,2-Dichloropropane	7.20823	7.2	0.0073	0.0016	113	**0.0073**	**0.0016**
Bromodichloromethane	6.86161	6.9	0.0069	0.0010	163.8	**0.0069**	**0.0010**
Trichloroethene	8.42189	8.4	0.0085	0.0016	131.4	**0.0085**	**0.0016**
1,4-Dioxane	8.46675	8.5	0.0085	0.0024	88.11	**0.0085**	**0.0024**
cis-1,3-Dichloropropene	6.10793	6.1	0.0062	0.0014	111	**0.0062**	**0.0014**
trans-1,3-Dichloropropene	5.43513	5.4	0.0055	0.0012	111	**0.0055**	**0.0012**
1,1,2-Trichloroethane	7.80181	7.8	0.0079	0.0014	133.4	**0.0079**	**0.0014**
Toluene	10.90331	10.9	0.011	0.0029	92.14	**0.011**	**0.0029**
Dibromochloromethane	8.76683	8.8	0.0088	0.0010	208.3	**0.0088**	**0.0010**
1,2-Dibromoethane	7.84155	7.8	0.0079	0.0010	187.9	**0.0079**	**0.0010**
Tetrachloroethene	8.19431	8.2	0.0082	0.0012	165.8	**0.0082**	**0.0012**
Chlorobenzene	9.14281	9.1	0.0092	0.0020	112.6	**0.0092**	**0.0020**
Ethylbenzene	9.66221	9.7	0.0097	0.0022	106.2	**0.0097**	**0.0022**
m- & p-Xylene	18.54585	18.5	0.019	0.0044	106.2	**0.019**	**0.0044**
Styrene	7.34212	7.3	0.0074	0.0017	104.1	**0.0074**	**0.0017**
o-Xylene	8.82357	8.8	0.0089	0.0020	106.2	**0.0089**	**0.0020**
1,1,2,2-Tetrachloroethane	7.10728	7.1	0.0072	0.0010	167.9	**0.0072**	**0.0010**
1,3,5-Trimethylbenzene	7.23716	7.2	0.0073	0.0015	120.2	**0.0073**	**0.0015**
1,2,4-Trimethylbenzene	8.28144	8.3	0.0083	0.0017	120.2	**0.0083**	**0.0017**
1,3-Dichlorobenzene	8.46780	8.5	0.0085	0.0014	147	**0.0085**	**0.0014**
1,4-Dichlorobenzene	8.06956	8.1	0.0081	0.0013	147	**0.0081**	**0.0013**
1,2-Dichlorobenzene	8.28388	8.3	0.0083	0.0014	147	**0.0083**	**0.0014**
1,2-Dibromo-3-Chloropropane	9.42439	9.4	0.0095	0.00098	236.33	**0.0095**	**0.00098**
1,2,4-Trichlorobenzene	12.88668	12.9	0.013	0.0018	181.5	**0.013**	**0.0018**
Naphthalene	15.63751	15.6	0.016	0.0031	128.17	**0.016**	**0.0031**
Hexachloro-1,3-butadiene	9.19503	9.2	0.0092	0.00086	260.8	**0.0092**	**0.00086**

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **IA1-020917-0905** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-002

Test Code: EPA TO-15 SIM Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 2/13/17
Analyst: Cory Lewis Date Analyzed: 2/16/17
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00269

Initial Pressure (psig): -1.42 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.035	ND	0.014	
156-59-2	cis-1,2-Dichloroethene	ND	0.035	ND	0.0087	
79-01-6	Trichloroethene	**0.085**	0.035	**0.016**	0.0064	
127-18-4	Tetrachloroethene	**16**	0.035	**2.3**	0.0051	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161706.D Vial: 1
Acq On : 16 Feb 2017 10:13 Operator: CL
Sample : P1700672-002 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:24:45 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/22/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	33750	1000.000	pg		-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	164975	1000.000	pg		-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	34390	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.53	65	67018	1137.326	pg		-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 113.73%				
33) Toluene-d8 (SS2)	14.14	98	180986	1076.270	pg		-0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 107.63%				
45) Bromofluorobenzene (SS3)	17.55	174	56975	906.290	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 90.63%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.40	85	149608	1769.806	pg		100
3) Chloromethane	4.63	52	5240	267.440	pg		91
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	7131	88.518	pg		100
5) Vinyl Chloride	4.94	62	320	N.D.			
6) 1,3-Butadiene	5.12	54	3546	67.622	pg	#	6
7) Bromomethane	5.46	94	511	N.D.			
8) Chloroethane	5.68	64	192	N.D.			
9) Acrolein	6.26	56	2000	104.508	pg		96
10) Acetone	6.38	58	788573	31508.872	pg	#	87
11) Trichlorofluoromethane	6.59	101	61856	960.261	pg		100
12) 1,1-Dichloroethene	0.00	96	0	N.D.			
13) Methylene Chloride	7.47	84	24596	625.667	pg		91
14) Trichlorotrifluoroethane	7.79	151	12182	341.253	pg		99
15) trans-1,2-Dichloroethene	8.51	96	150	N.D.			
16) 1,1-Dichloroethane	8.72	63	335	N.D.			
17) Methyl tert-Butyl Ether	8.79	73	2867	23.972	pg		93
18) cis-1,2-Dichloroethene	9.59	96	616	N.D.			
19) Chloroform	9.89	83	31688	437.053	pg		100
21) 1,2-Dichloroethane	10.64	62	3439	63.149	pg		100
22) 1,1,1-Trichloroethane	10.91	97	1721	26.054	pg		100
23) Benzene	11.36	78	134436	860.935	pg		99
24) Carbon Tetrachloride	11.52	117	20846	349.172	pg		100
26) 1,2-Dichloropropane	12.18	63	3784	102.844	pg		99
27) Bromodichloromethane	12.36	83	5344	100.614	pg		87
28) Trichloroethene	12.41	130	2450	61.447	pg		99
29) 1,4-Dioxane	12.39	88	337	N.D.			
30) cis-1,3-Dichloropropene	13.25	75	81	N.D.			
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
32) 1,1,2-Trichloroethane	13.95	83	60	N.D.			
34) Toluene	14.24	91	316399	1993.208	pg		100
35) Dibromochloromethane	14.66	129	656	N.D.			
36) 1,2-Dibromoethane	0.00	107	0	N.D.			
37) Tetrachloroethene	15.40	166	476670	11458.582	pg		99
39) Chlorobenzene	0.00	112	0	N.D.	d		
40) Ethylbenzene	16.48	91	94616	474.042	pg		99
41) m,p-Xylene	16.64	91	258220	1662.804	pg		98
42) Styrene	17.01	104	652583	5722.187	pg		99
43) o-Xylene	17.12	106	42921	561.370	pg		96
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	d		
46) 1,3,5-Trimethylbenzene	18.38	105	67003	396.158	pg		98
47) 1,2,4-Trimethylbenzene	18.77	105	253414	1505.238	pg		87
48) 1,3-Dichlorobenzene	18.92	146	195	N.D.			
49) 1,4-Dichlorobenzene	18.98	146	1972	20.855	pg		99
50) 1,2-Dichlorobenzene	19.31	146	239	N.D.			
51) 1,2-Dibromo-3-chloropr...	19.72	157	298	N.D.			
52) 1,2,4-Trichlorobenzene	20.94	182	199	N.D.			
53) Naphthalene	21.07	128	8247	41.360	pg		100

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161706.D Vial: 1
Acq On : 16 Feb 2017 10:13 Operator: CL
Sample : P1700672-002 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:24:45 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

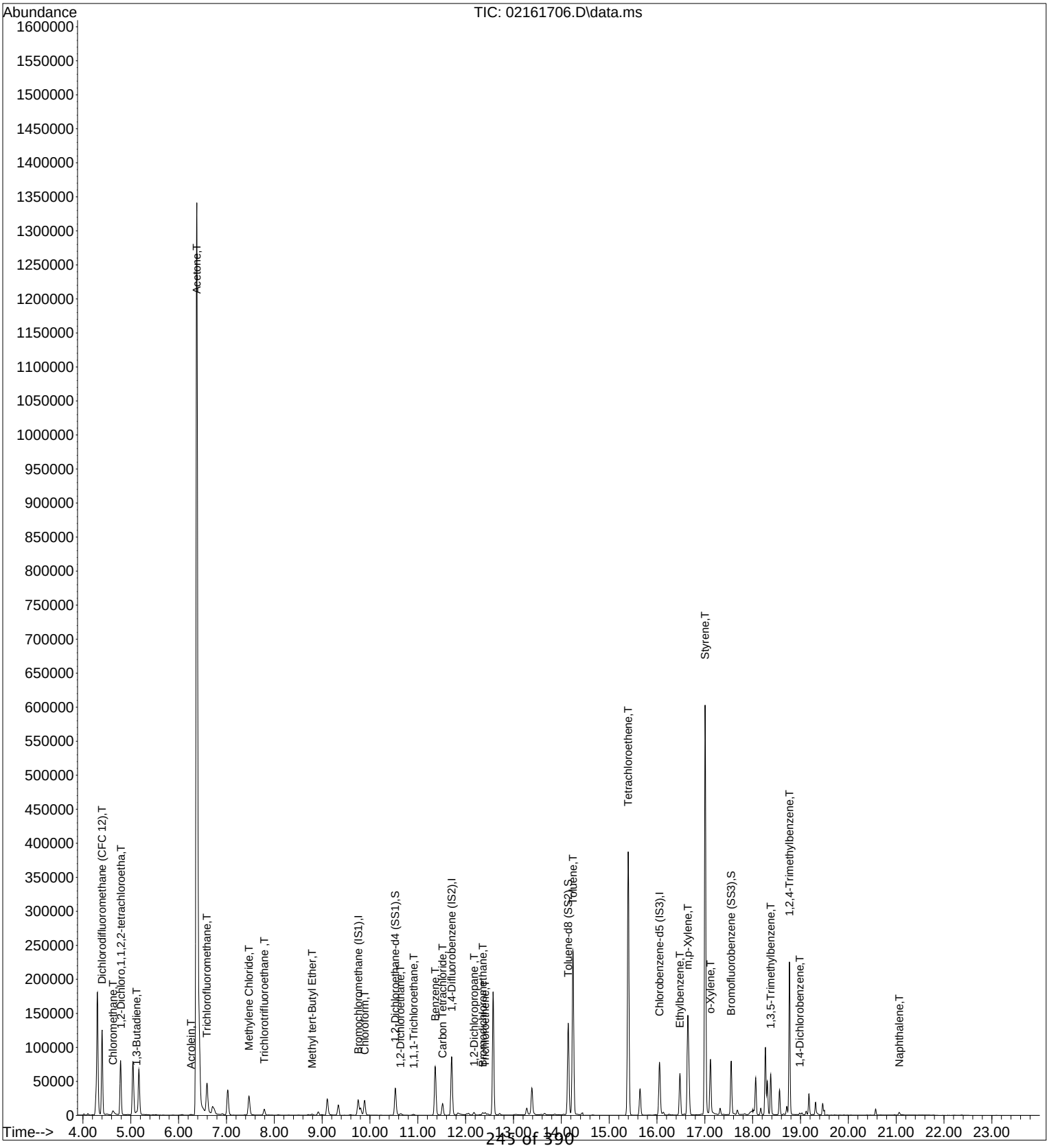
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161706.D Vial: 1
Acq On : 16 Feb 2017 10:13 Operator: CL
Sample : P1700672-002 (1000mL) Inst : MS19
Misc : S29-01241701

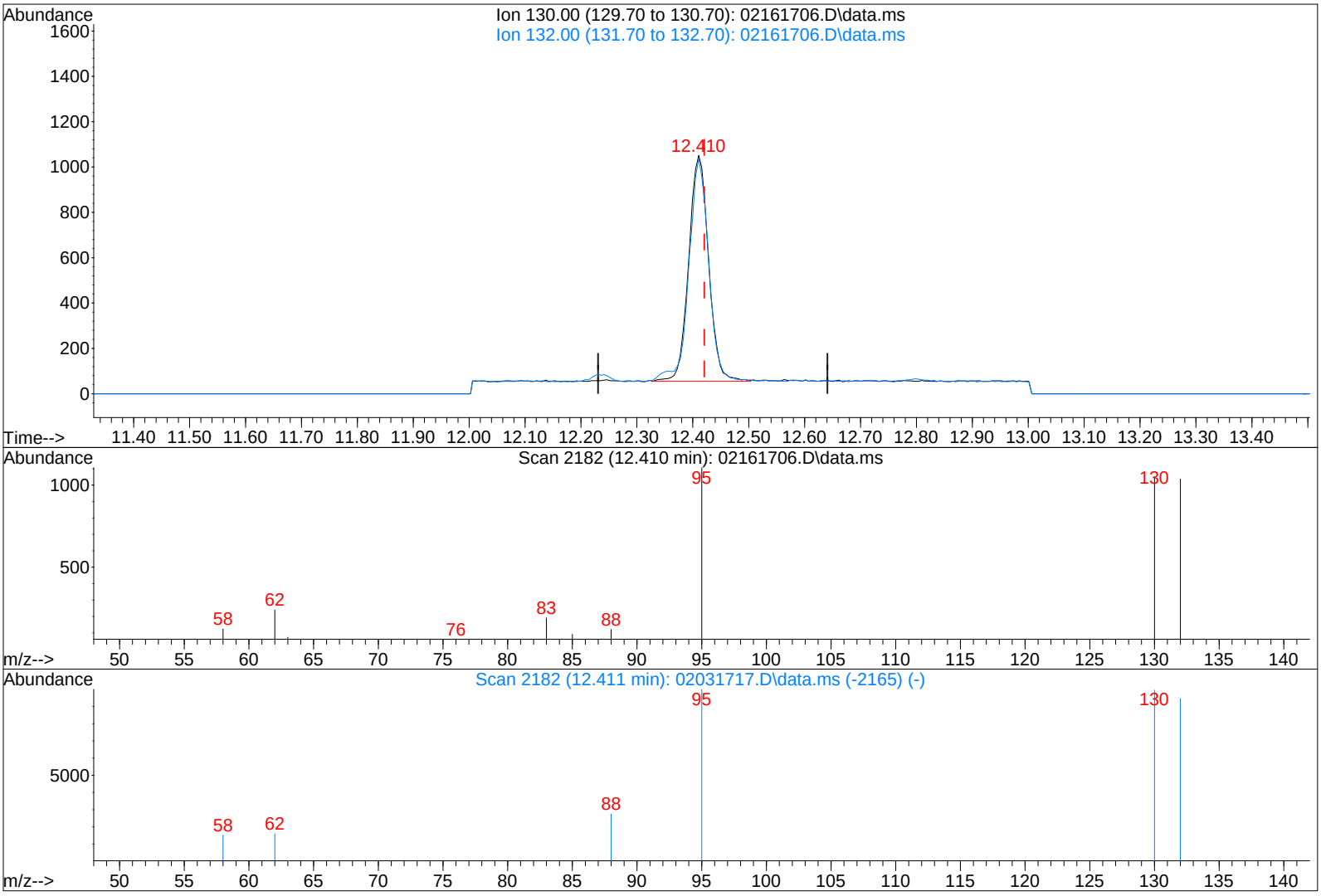
Quant Time: Feb 22 08:24:45 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\16\02161706.D Vial: 1
Acq On : 16 Feb 2017 10:13 Operator: CL
Sample : P1700672-002 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 16 10:43:15 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02161706.D\data.ms

(28) Trichloroethene (T)

12.410min (-0.010) 61.45pg

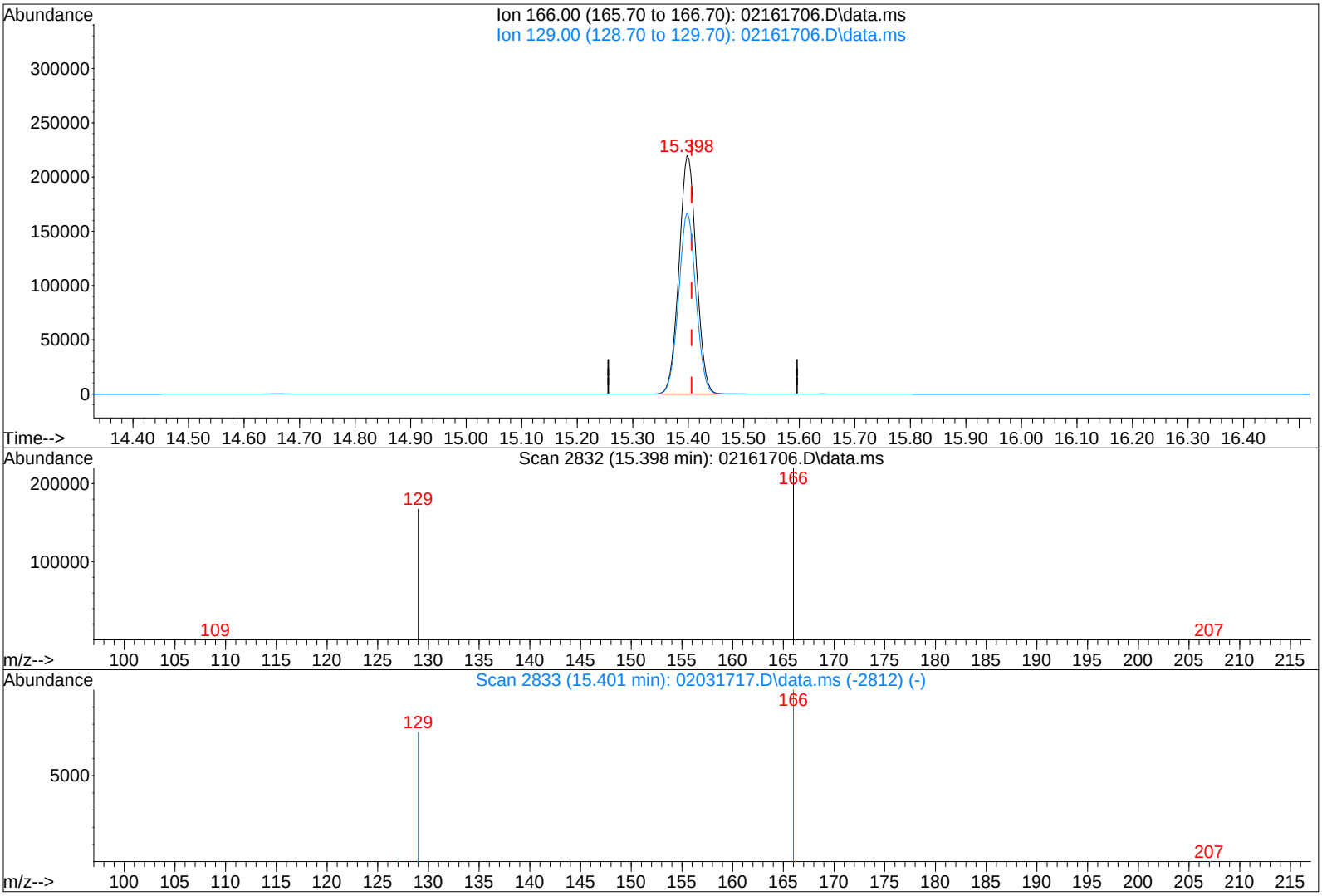
response 2450

Ion	Exp%	Act%
130.00	100	100
132.00	94.90	95.51
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\16\02161706.D Vial: 1
Acq On : 16 Feb 2017 10:13 Operator: CL
Sample : P1700672-002 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 16 10:43:15 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02161706.D\data.ms

(37) Tetrachloroethene (T)

15.398min (-0.008) 11458.58pg

response 476670

Ion	Exp%	Act%
166.00	100	100
129.00	75.20	76.04
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **IA2-020917-1005** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-004

Test Code: EPA TO-15 SIM Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 2/13/17
Analyst: Cory Lewis Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01884
Initial Pressure (psig): -5.11 Final Pressure (psig): 3.77

Canister Dilution Factor: 1.93

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.048	ND	0.019	
156-59-2	cis-1,2-Dichloroethene	**0.067**	0.048	**0.017**	0.012	
79-01-6	Trichloroethene	**0.31**	0.048	**0.057**	0.0090	
127-18-4	Tetrachloroethene	**300**	0.48	**44**	0.071	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

D = The reported result is from a dilution.

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161707.D Vial: 3
Acq On : 16 Feb 2017 10:44 Operator: CL
Sample : P1700672-004 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:26:42 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/22/17

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	9.77	130	41345	1000.000 pg		0.00
25) 1,4-Difluorobenzene (IS2)	11.72	114	208064	1000.000 pg		0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	47211	1000.000 pg		0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.54	65	75395	1044.448 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 104.45%			
33) Toluene-d8 (SS2)	14.15	98	224754	1059.753 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 105.97%			
45) Bromofluorobenzene (SS3)	17.55	174	82137	951.723 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 95.17%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.40	85	110888	1070.795 pg		100
3) Chloromethane	4.61	52	5887	245.268 pg	#	84
4) 1,2-Dichloro,1,1,2,2-t...	4.78	85	5142	52.103 pg		100
5) Vinyl Chloride	4.91	62	486	N.D.		
6) 1,3-Butadiene	5.10	54	54829	853.513 pg		85
7) Bromomethane	5.44	94	717	N.D.		
8) Chloroethane	5.67	64	328	N.D.		
9) Acrolein	6.27	56	15442	658.682 pg		96
10) Acetone	6.41	58	14388460	469305.937 pg	#	46
11) Trichlorofluoromethane	6.59	101	57603	729.967 pg		100
12) 1,1-Dichloroethene	7.33	96	520	N.D.		
13) Methylene Chloride	7.49	84	14067	292.100 pg		89
14) Trichlorotrifluoroethane	7.79	151	10575	241.818 pg		99
15) trans-1,2-Dichloroethene	8.52	96	707	N.D.		
16) 1,1-Dichloroethane	0.00	63	0	N.D. d		
17) Methyl tert-Butyl Ether	8.78	73	31210	213.017 pg		95
18) cis-1,2-Dichloroethene	9.61	96	1701	34.634 pg		99
19) Chloroform	9.90	83	389122	4381.025 pg		100
21) 1,2-Dichloroethane	10.65	62	9586	143.688 pg		99
22) 1,1,1-Trichloroethane	10.92	97	13450	166.213 pg		99
23) Benzene	11.38	78	1146414	5993.038 pg		100
24) Carbon Tetrachloride	11.53	117	19035	260.268 pg		98
26) 1,2-Dichloropropane	12.19	63	30314	653.268 pg		99
27) Bromodichloromethane	12.37	83	76518	1142.289 pg		91
28) Trichloroethene	12.42	130	8031	159.707 pg		97
29) 1,4-Dioxane	0.00	88	0	N.D. d		
30) cis-1,3-Dichloropropene	13.25	75	831	N.D.		
31) trans-1,3-Dichloropropene	13.73	75	215	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.		
34) Toluene	14.25	91	2133612	10657.469 pg		99
35) Dibromochloromethane	14.66	129	9724	183.352 pg		97
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.41	166	13127995	250226.136 pg		95
39) Chlorobenzene	0.00	112	0	N.D. d		
40) Ethylbenzene	16.48	91	945095	3449.184 pg		100
41) m,p-Xylene	16.65	91	2461091	11544.308 pg		99
42) Styrene	17.01	104	13385705	85498.112 pg		97
43) o-Xylene	17.12	106	473439	4510.584 pg		97
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D. d		
46) 1,3,5-Trimethylbenzene	18.38	105	848105	3652.686 pg		99
47) 1,2,4-Trimethylbenzene	18.77	105	3231953	13983.910 pg		91
48) 1,3-Dichlorobenzene	18.92	146	147	N.D.		
49) 1,4-Dichlorobenzene	18.98	146	2888	22.248 pg		100
50) 1,2-Dichlorobenzene	19.31	146	810	N.D.		
51) 1,2-Dibromo-3-chloropr...	19.71	157	4898	120.967 pg	#	75
52) 1,2,4-Trichlorobenzene	20.94	182	158	N.D.		
53) Naphthalene	21.06	128	95721	349.690 pg		94

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161707.D Vial: 3
Acq On : 16 Feb 2017 10:44 Operator: CL
Sample : P1700672-004 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:26:42 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

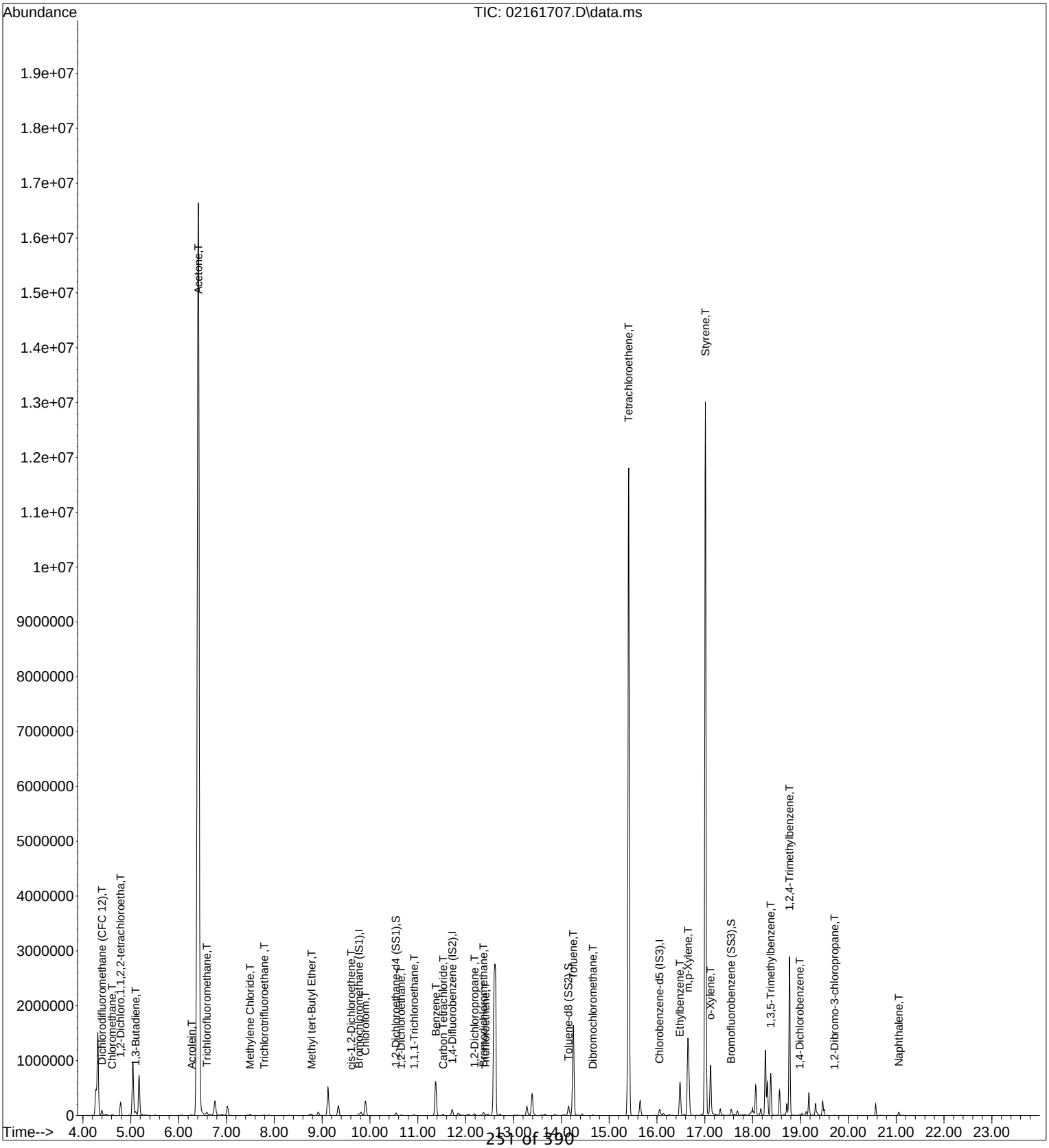
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161707.D Vial: 3
Acq On : 16 Feb 2017 10:44 Operator: CL
Sample : P1700672-004 (1000mL) Inst : MS19
Misc : S29-01241701

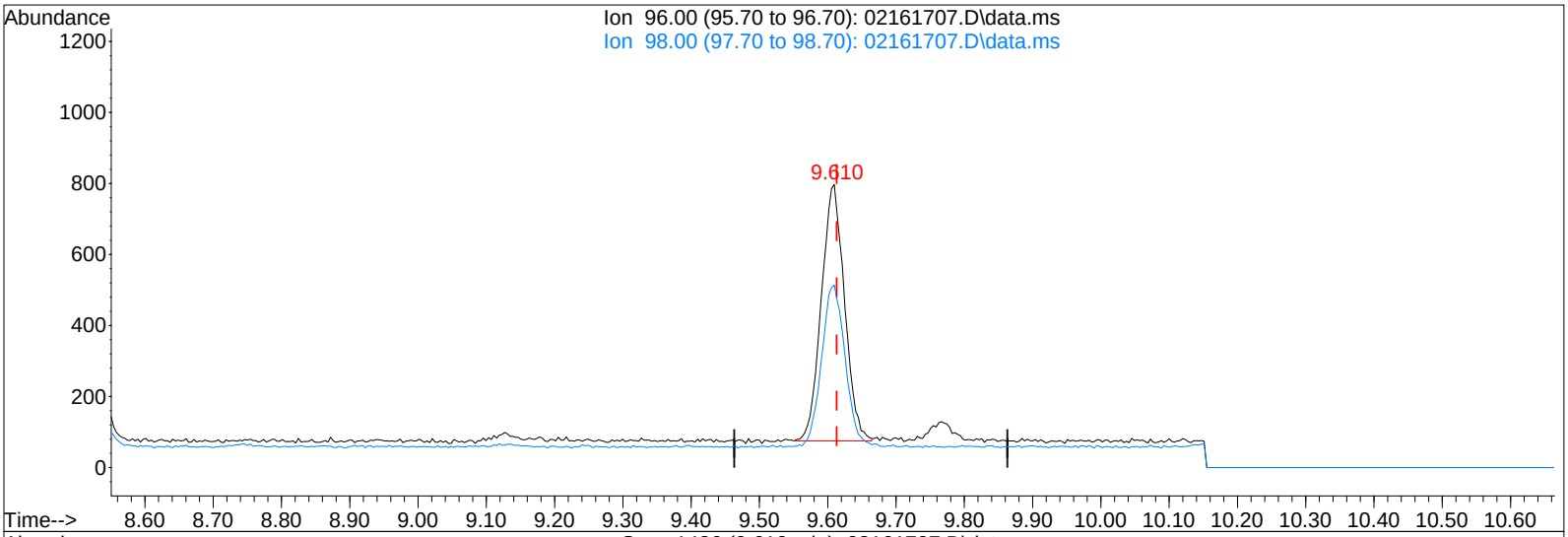
Quant Time: Feb 22 08:26:42 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

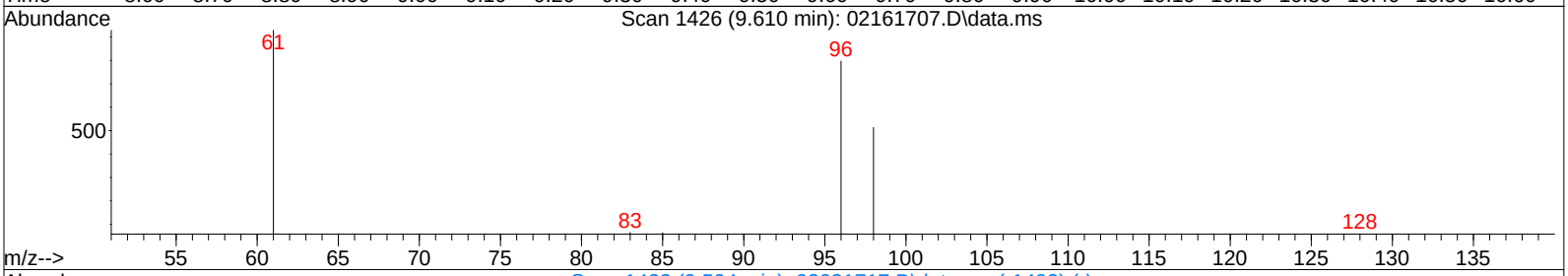


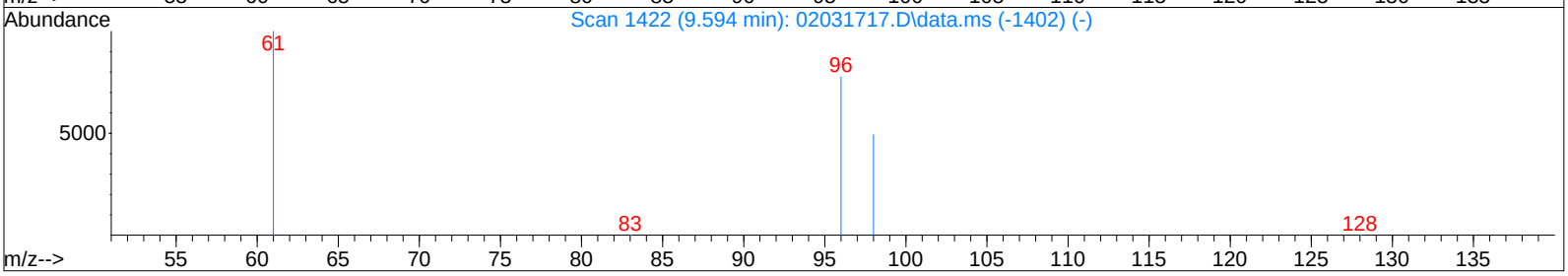
Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\16\02161707.D Vial: 3
Acq On : 16 Feb 2017 10:44 Operator: CL
Sample : P1700672-004 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 16 11:23:06 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M







TIC: 02161707.D\data.ms

(18) cis-1,2-Dichloroethene (T)

9.610min (-0.003) 34.63pg

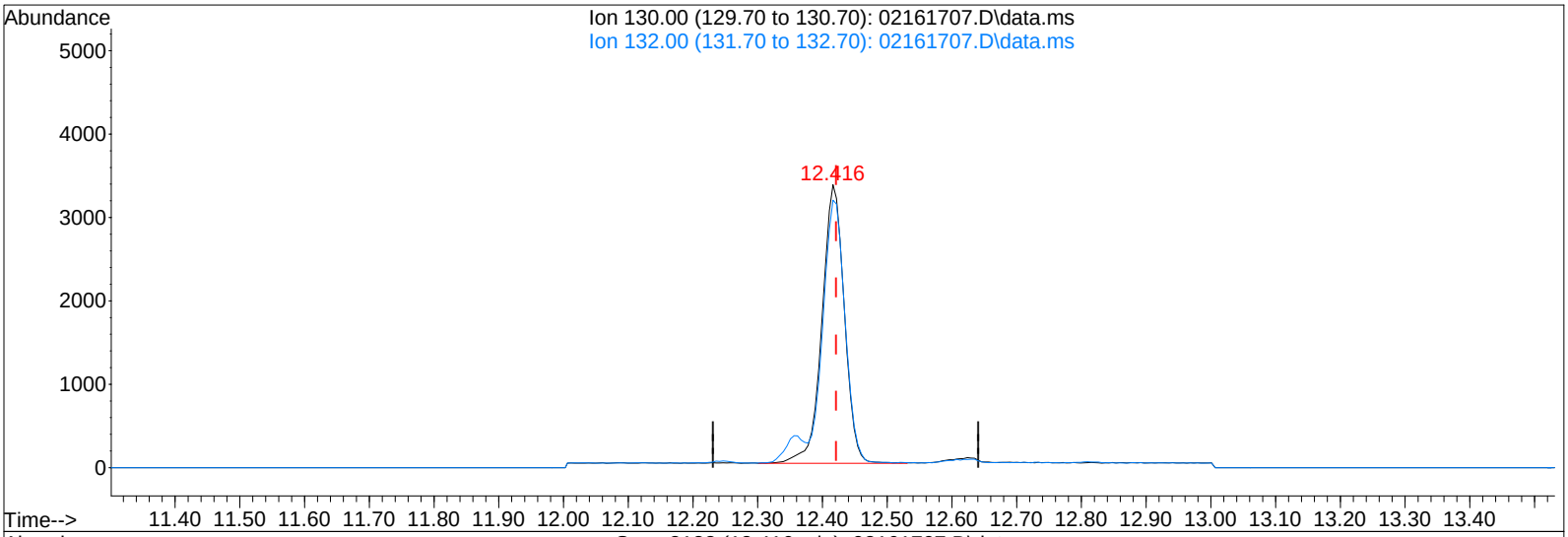
response 1701

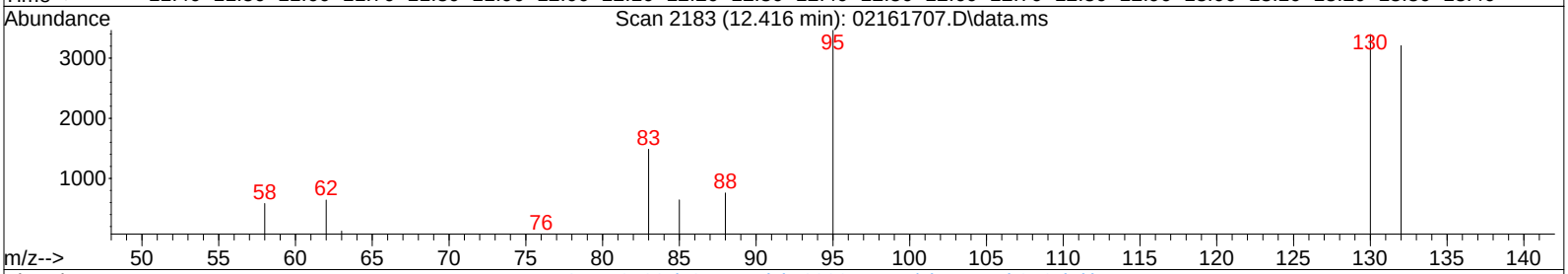
Ion	Exp%	Act%
96.00	100	100
98.00	64.00	63.02
0.00	0.00	0.00
0.00	0.00	0.00

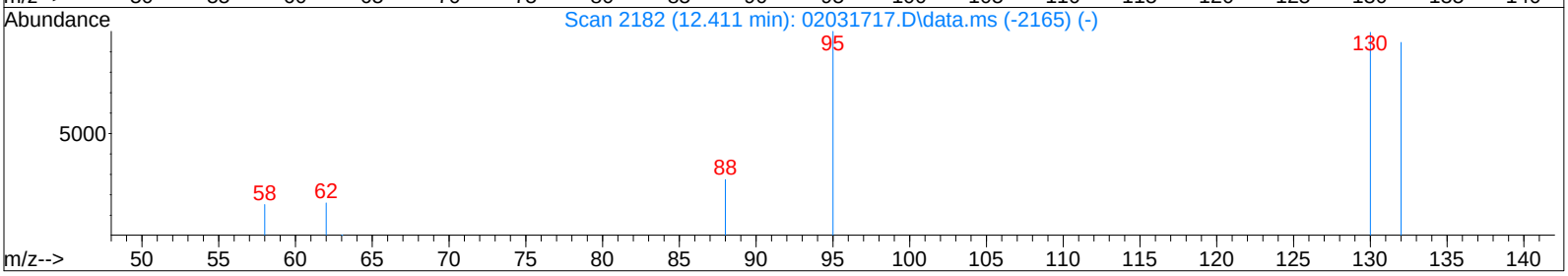
Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\16\02161707.D Vial: 3
Acq On : 16 Feb 2017 10:44 Operator: CL
Sample : P1700672-004 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 16 11:23:06 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M







TIC: 02161707.D\data.ms

(28) Trichloroethene (T)

12.416min (-0.005) 159.71pg

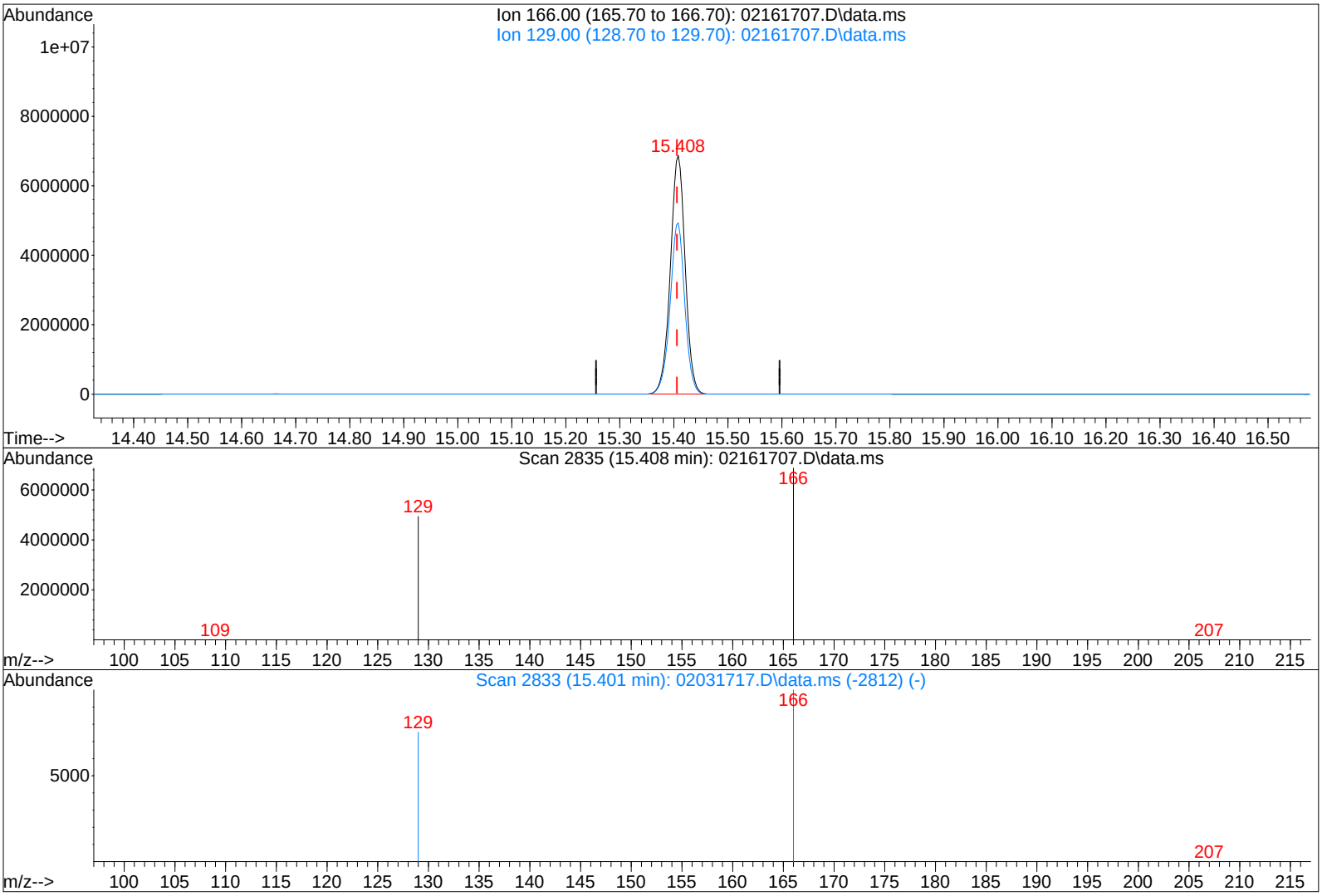
response 8031

Ion	Exp%	Act%
130.00	100	100
132.00	94.90	92.09
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\16\02161707.D Vial: 3
Acq On : 16 Feb 2017 10:44 Operator: CL
Sample : P1700672-004 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 16 11:23:06 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02161707.D\data.ms

(37) Tetrachloroethene (T)

15.408min (+0.002) 250226.14pg

response 13127995

Ion	Exp%	Act%
166.00	100	100
129.00	75.20	71.11
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161710.D Vial: 3
Acq On : 16 Feb 2017 12:19 Operator: CL
Sample : P1700672-004dil (100mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:28:05 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/22/17

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	42790	1000.000 pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	212806	1000.000 pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	40372	1000.000 pg	0.00
System Monitoring Compounds					
20) 1,2-Dichloroethane-d4 ...	10.54	65	79976	1070.495 pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 107.05%		
33) Toluene-d8 (SS2)	14.15	98	222721	1026.766 pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 102.68%		
45) Bromofluorobenzene (SS3)	17.55	174	72026	975.942 pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 97.59%		
Target Compounds					Qvalue
2) Dichlorodifluoromethan...	4.41	85	13661	127.463 pg	100
3) Chloromethane	4.65	52	2640	106.275 pg	93
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	619	N.D.	
5) Vinyl Chloride	0.00	62	0	N.D.	
6) 1,3-Butadiene	0.00	54	0	N.D. d	
7) Bromomethane	5.48	94	104	N.D.	
8) Chloroethane	0.00	64	0	N.D.	
9) Acrolein	6.27	56	1679	69.200 pg	94
10) Acetone	6.39	58	1120741	35320.570 pg	99
11) Trichlorofluoromethane	6.61	101	5721	70.050 pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.	
13) Methylene Chloride	7.48	84	1557	31.239 pg	89
14) Trichlorotrifluoroethane	7.80	151	1120	24.746 pg	99
15) trans-1,2-Dichloroethene	8.51	96	85	N.D.	
16) 1,1-Dichloroethane	8.72	63	70	N.D.	
17) Methyl tert-Butyl Ether	8.79	73	2722	N.D.	
18) cis-1,2-Dichloroethene	9.60	96	161	N.D.	
19) Chloroform	9.89	83	42273	459.869 pg	99
21) 1,2-Dichloroethane	10.65	62	955	N.D.	
22) 1,1,1-Trichloroethane	10.92	97	1413	N.D.	
23) Benzene	11.37	78	123441	623.513 pg	100
24) Carbon Tetrachloride	11.52	117	1960	25.894 pg	100
26) 1,2-Dichloropropane	12.18	63	2995	63.104 pg	98
27) Bromodichloromethane	12.36	83	7013	102.360 pg	91
28) Trichloroethene	12.41	130	829	N.D.	
29) 1,4-Dioxane	12.40	88	449	N.D.	
30) cis-1,3-Dichloropropene	13.24	75	64	N.D.	
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
32) 1,1,2-Trichloroethane	13.92	83	73	N.D.	
34) Toluene	14.25	91	214375	1046.950 pg	100
35) Dibromochloromethane	14.67	129	839	N.D.	
36) 1,2-Dibromoethane	0.00	107	0	N.D.	
37) Tetrachloroethene	15.40	166	833679	15536.250 pg	100
39) Chlorobenzene	0.00	112	0	N.D. d	
40) Ethylbenzene	16.48	91	90398	385.800 pg	99
41) m,p-Xylene	16.65	91	237640	1303.535 pg	99
42) Styrene	17.01	104	1062535	7936.362 pg	100
43) o-Xylene	17.12	106	40348	449.525 pg	99
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D. d	
46) 1,3,5-Trimethylbenzene	18.38	105	76885	387.228 pg	99
47) 1,2,4-Trimethylbenzene	18.77	105	295488	1495.087 pg	87
48) 1,3-Dichlorobenzene	18.99	146	260	N.D.	
49) 1,4-Dichlorobenzene	18.99	146	260	N.D.	
50) 1,2-Dichlorobenzene	19.31	146	84	N.D.	
51) 1,2-Dibromo-3-chloropr...	19.72	157	319	N.D.	
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.	
53) Naphthalene	21.08	128	7525	32.147 pg	96

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161710.D Vial: 3
Acq On : 16 Feb 2017 12:19 Operator: CL
Sample : P1700672-004dil (100mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:28:05 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

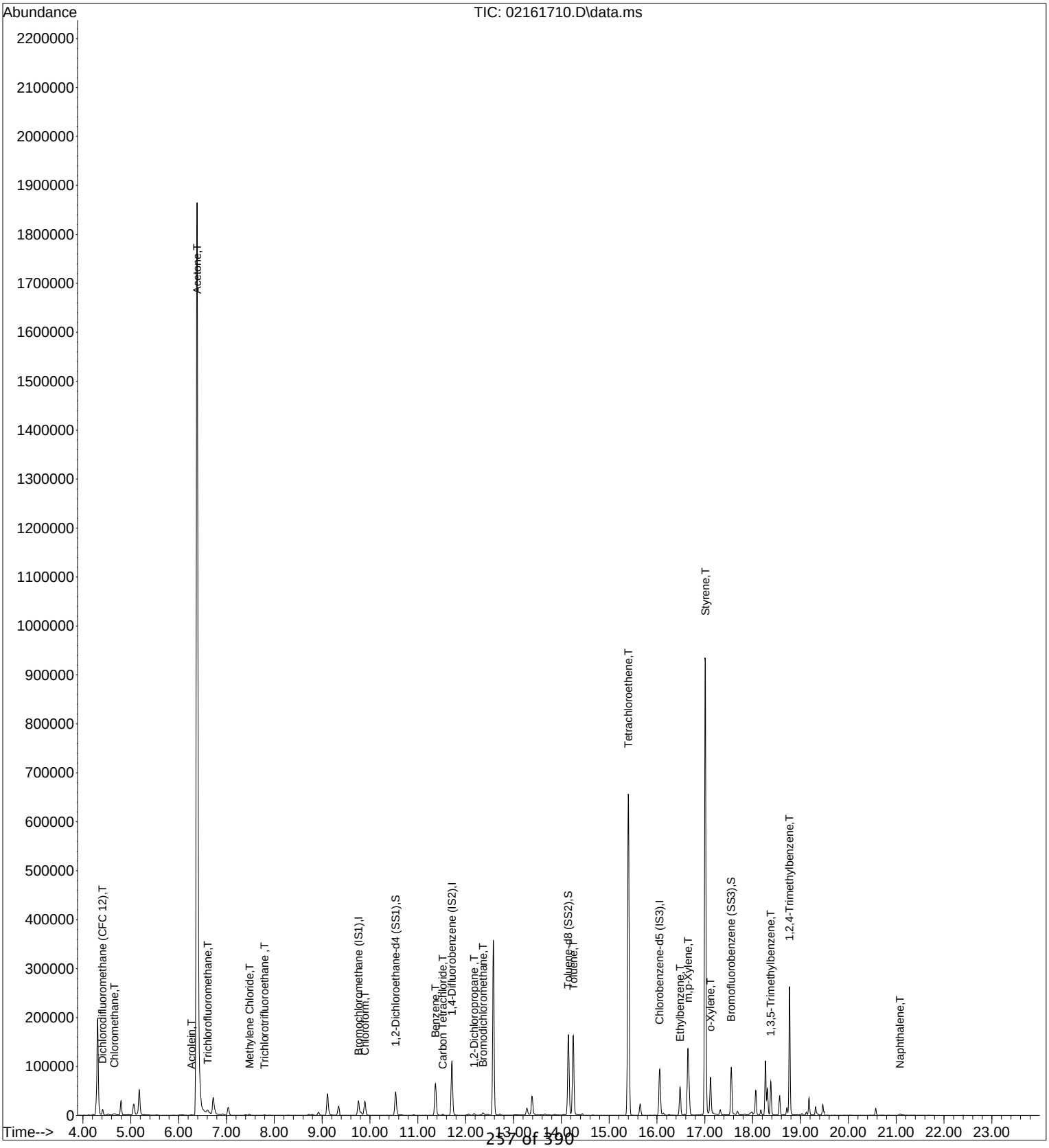
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161710.D Vial: 3
Acq On : 16 Feb 2017 12:19 Operator: CL
Sample : P1700672-004dil (100mL) Inst : MS19
Misc : S29-01241701

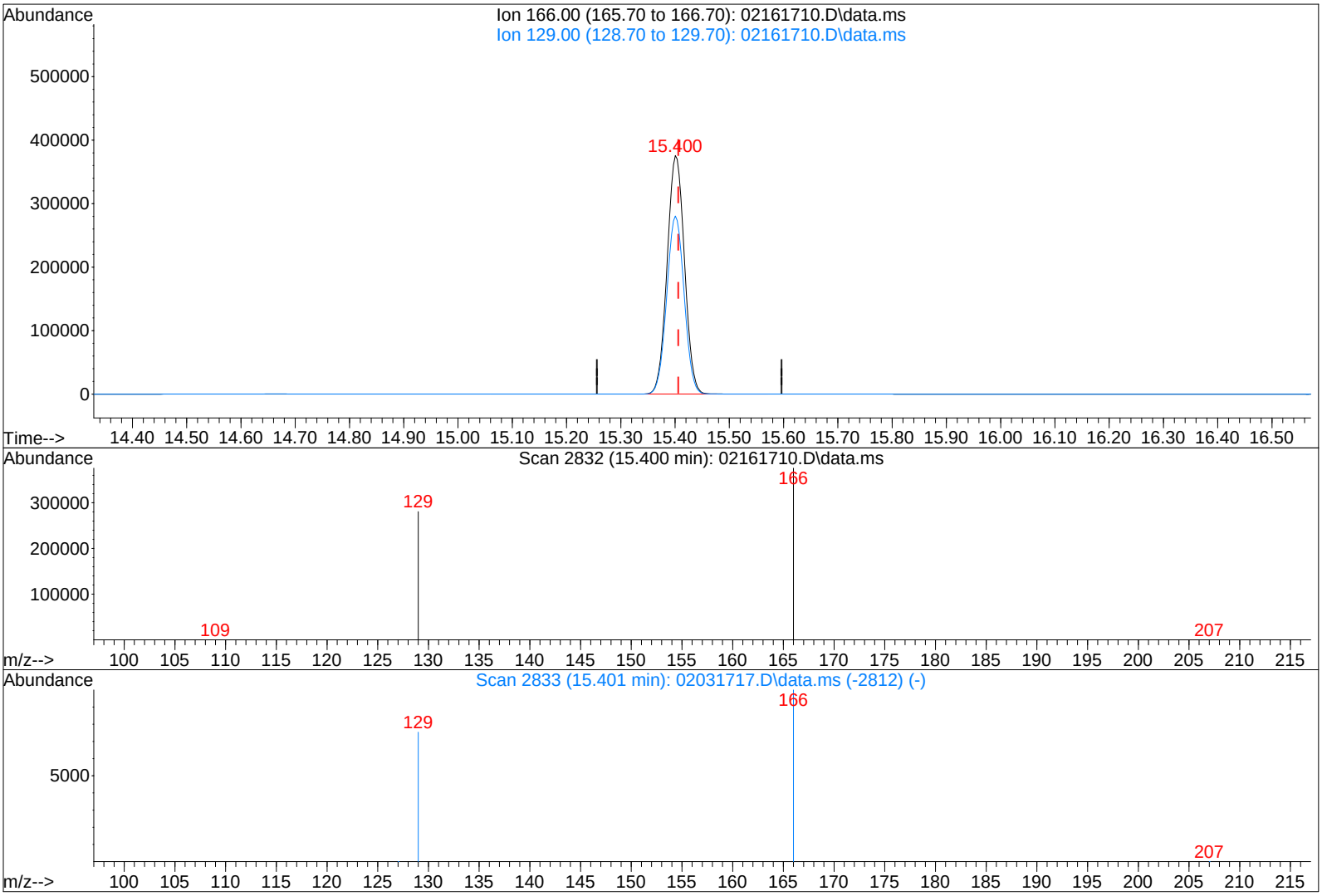
Quant Time: Feb 22 08:28:05 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\16\02161710.D Vial: 3
Acq On : 16 Feb 2017 12:19 Operator: CL
Sample : P1700672-004dil (100mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 16 13:53:06 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02161710.D\data.ms

(37) Tetrachloroethene (T)

15.400min (-0.006) 15536.25pg

response 833679

Ion	Exp%	Act%
166.00	100	100
129.00	75.20	75.15
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **IA3-020917-0950** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-006

Test Code: EPA TO-15 SIM Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 2/13/17
Analyst: Cory Lewis Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes:
Container ID: SC01692
Initial Pressure (psig): -2.04 Final Pressure (psig): 3.80

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.37	ND	0.14	
156-59-2	cis-1,2-Dichloroethene	ND	0.37	ND	0.092	
79-01-6	Trichloroethene	**0.38**	0.37	**0.071**	0.068	
127-18-4	Tetrachloroethene	**270**	0.37	**40**	0.054	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161711.D Vial: 4
Acq On : 16 Feb 2017 12:50 Operator: CL
Sample : P1700672-006 (100mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:28:56 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/22/17

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	42176	1000.000 pg		-0.02
25) 1,4-Difluorobenzene (IS2)	11.72	114	207770	1000.000 pg		0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	40718	1000.000 pg		0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.54	65	78482	1065.791 pg		-0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 106.58%			
33) Toluene-d8 (SS2)	14.15	98	218623	1032.303 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 103.23%			
45) Bromofluorobenzene (SS3)	17.55	174	75244	1010.882 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 101.09%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.41	85	17486	165.527 pg		100
3) Chloromethane	4.64	52	5274	215.399 pg		93
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	800	N.D.		
5) Vinyl Chloride	4.95	62	109	N.D.		
6) 1,3-Butadiene	5.13	54	7224	110.239 pg	#	68
7) Bromomethane	5.47	94	126	N.D.		
8) Chloroethane	5.69	64	120	N.D.		
9) Acrolein	6.26	56	3524	147.355 pg		95
10) Acetone	6.39	58	2052364	65622.645 pg		97
11) Trichlorofluoromethane	6.60	101	7759	96.388 pg		100
12) 1,1-Dichloroethene	7.33	96	120	N.D.		
13) Methylene Chloride	7.48	84	3061	62.309 pg		85
14) Trichlorotrifluoroethane	7.80	151	1520	34.073 pg		99
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.72	63	51	N.D.		
17) Methyl tert-Butyl Ether	8.79	73	3977	26.609 pg		92
18) cis-1,2-Dichloroethene	9.60	96	238	N.D.		
19) Chloroform	9.90	83	53035	585.343 pg		99
21) 1,2-Dichloroethane	10.65	62	1632	23.981 pg		98
22) 1,1,1-Trichloroethane	10.91	97	2377	28.796 pg		100
23) Benzene	11.37	78	178461	914.548 pg		99
24) Carbon Tetrachloride	11.52	117	4789	64.190 pg		100
26) 1,2-Dichloropropane	12.18	63	5809	125.361 pg		99
27) Bromodichloromethane	12.37	83	8973	134.142 pg		89
28) Trichloroethene	12.42	130	1310	26.088 pg		98
29) 1,4-Dioxane	12.39	88	588	N.D.		
30) cis-1,3-Dichloropropene	13.25	75	61	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.92	83	113	N.D.		
34) Toluene	14.25	91	391393	1957.789 pg		100
35) Dibromochloromethane	14.66	129	972	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.40	166	984842	18798.142 pg		100
39) Chlorobenzene	0.00	112	0	N.D. d		
40) Ethylbenzene	16.48	91	146798	621.181 pg		99
41) m,p-Xylene	16.65	91	386527	2102.214 pg		99
42) Styrene	17.01	104	2809930	20809.782 pg		100
43) o-Xylene	17.12	106	67238	742.746 pg		100
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D. d		
46) 1,3,5-Trimethylbenzene	18.38	105	104776	523.216 pg		99
47) 1,2,4-Trimethylbenzene	18.77	105	383182	1922.319 pg		88
48) 1,3-Dichlorobenzene	18.92	146	52	N.D.		
49) 1,4-Dichlorobenzene	18.98	146	1045	N.D.		
50) 1,2-Dichlorobenzene	19.31	146	153	N.D.		
51) 1,2-Dibromo-3-chloropr...	19.72	157	445	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	21.06	128	19183	81.255 pg		98

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161711.D Vial: 4
Acq On : 16 Feb 2017 12:50 Operator: CL
Sample : P1700672-006 (100mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:28:56 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

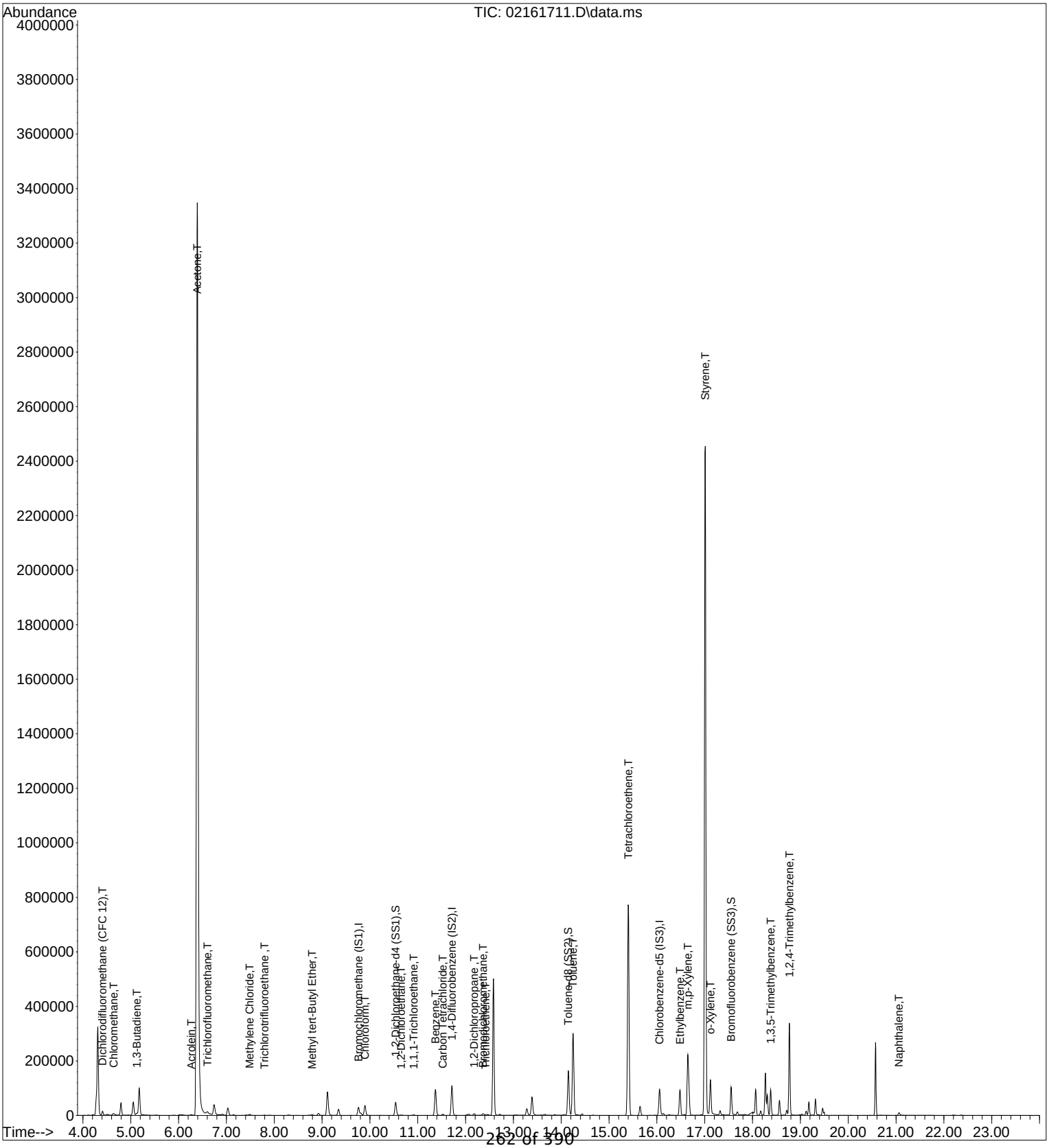
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161711.D Vial: 4
Acq On : 16 Feb 2017 12:50 Operator: CL
Sample : P1700672-006 (100mL) Inst : MS19
Misc : S29-01241701

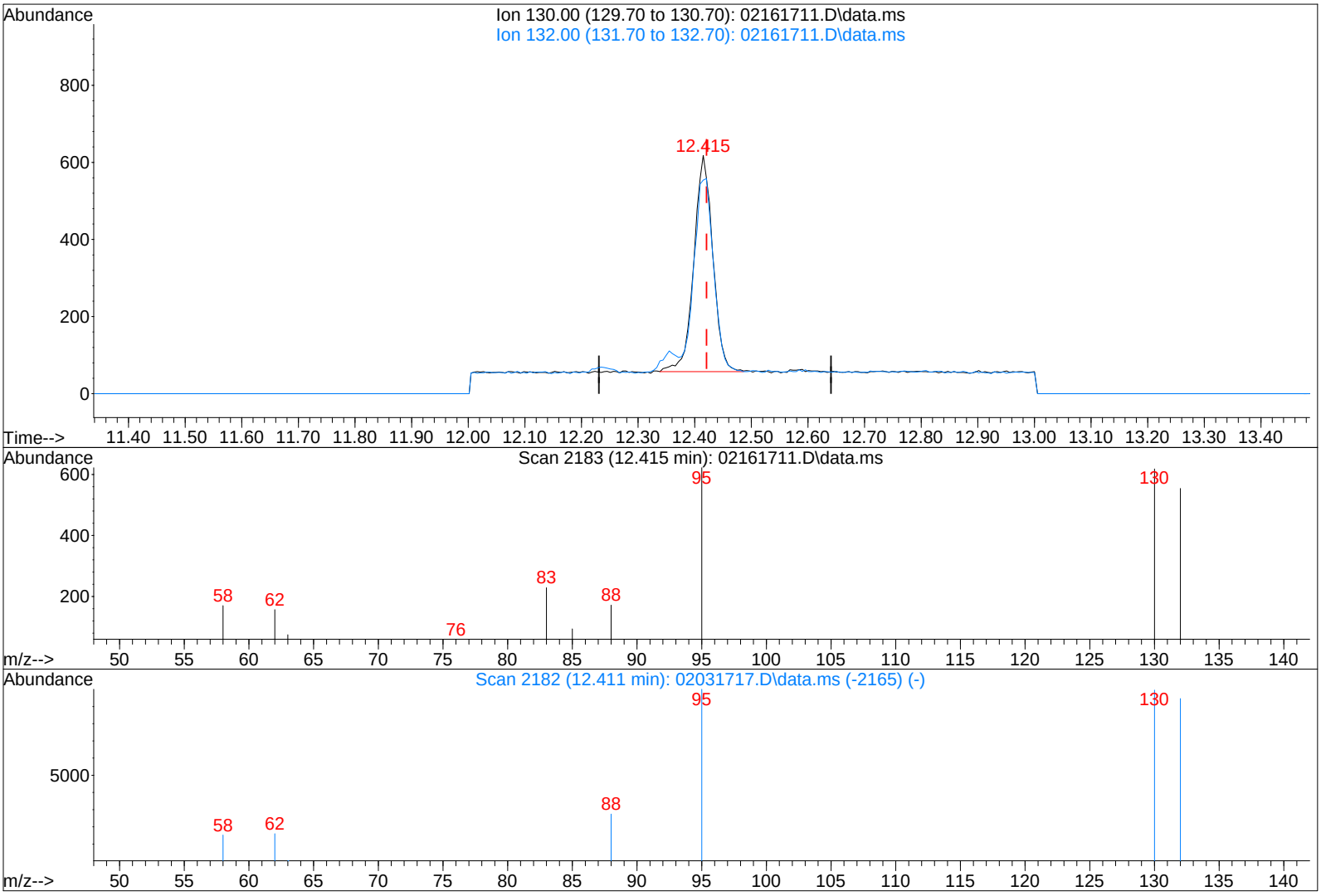
Quant Time: Feb 22 08:28:56 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\16\02161711.D Vial: 4
Acq On : 16 Feb 2017 12:50 Operator: CL
Sample : P1700672-006 (100mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 16 13:53:37 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02161711.D\data.ms

(28) Trichloroethene (T)

12.415min (-0.006) 26.09pg

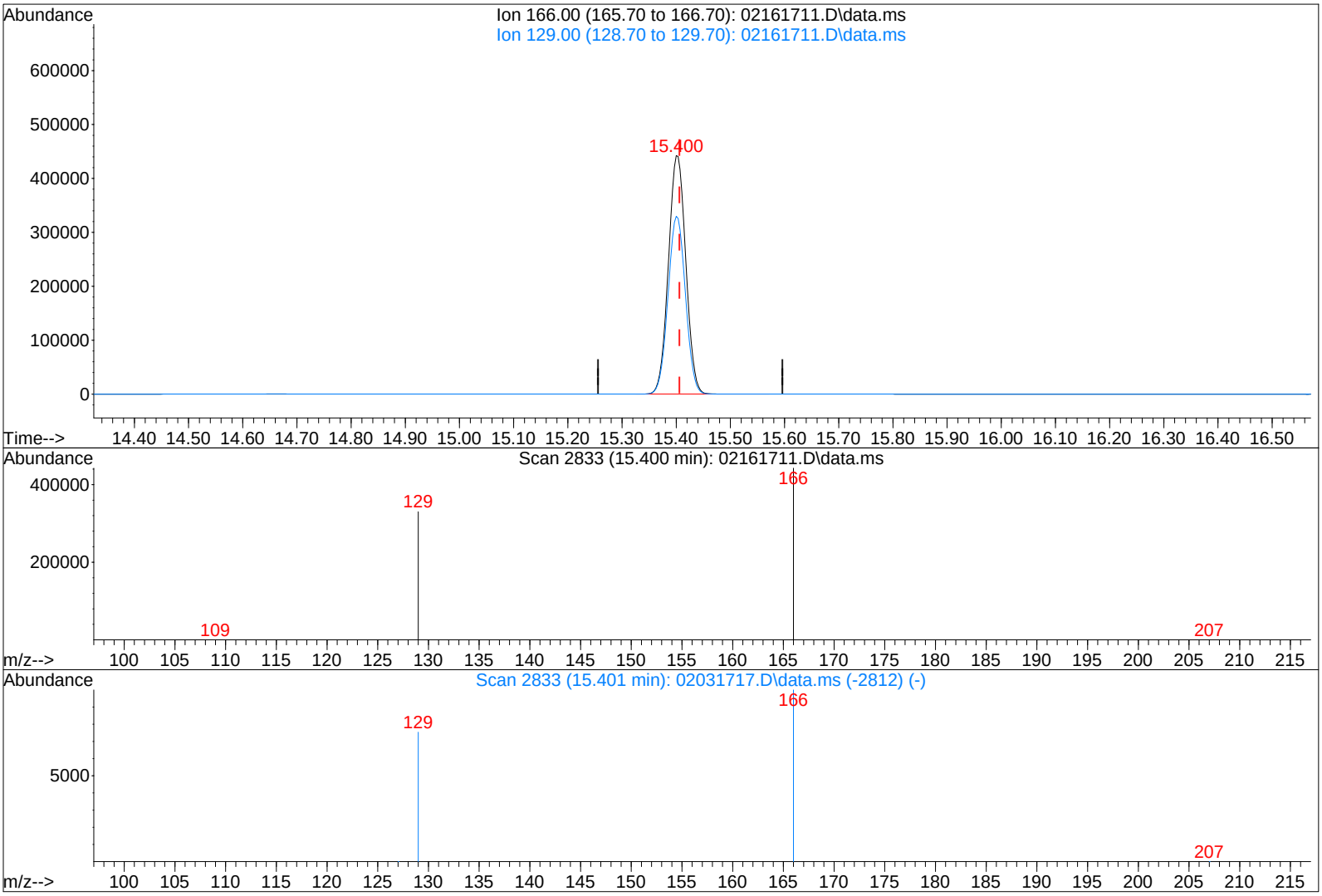
response 1310

Ion	Exp%	Act%
130.00	100	100
132.00	94.90	93.13
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\16\02161711.D Vial: 4
Acq On : 16 Feb 2017 12:50 Operator: CL
Sample : P1700672-006 (100mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 16 13:53:37 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02161711.D\data.ms

(37) Tetrachloroethene (T)

15.400min (-0.006) 18798.14pg

response 984842

Ion	Exp%	Act%
166.00	100	100
129.00	75.20	74.97
0.00	0.00	0.00
0.00	0.00	0.00

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **IA5-020917-0920** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-010

Test Code: EPA TO-15 SIM Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 2/13/17
Analyst: Cory Lewis Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01788

Initial Pressure (psig): -3.48 Final Pressure (psig): 3.66
Initial Pressure 2 (psig): -8.03 Final Pressure 2 (psig): 2.03

Canister Dilution Factor: 4.10

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.10	ND	0.040	
156-59-2	cis-1,2-Dichloroethene	ND	0.10	ND	0.026	
79-01-6	Trichloroethene	**0.16**	0.10	**0.030**	0.019	
127-18-4	Tetrachloroethene	**170**	0.10	**25**	0.015	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171710.D Vial: 6
Acq On : 17 Feb 2017 12:27 Operator: CL
Sample : P1700672-010 PF2 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:30:33 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/22/17

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	37196	1000.000 pg		-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	179811	1000.000 pg		0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	35859	1000.000 pg		0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.54	65	68296	1051.638 pg		-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 105.16%			
33) Toluene-d8 (SS2)	14.15	98	192495	1050.262 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 105.03%			
45) Bromofluorobenzene (SS3)	17.55	174	65872	1004.888 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.49%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.40	85	23596	253.272 pg		100
3) Chloromethane	4.62	52	2176	100.770 pg		90
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	1233	N.D.		
5) Vinyl Chloride	4.94	62	60	N.D.		
6) 1,3-Butadiene	5.11	54	7690	133.062 pg		95
7) Bromomethane	5.46	94	188	N.D.		
8) Chloroethane	5.68	64	50	N.D.		
9) Acrolein	6.26	56	3360	159.308 pg		97
10) Acetone	6.40	58	2538162	92021.187 pg		95
11) Trichlorofluoromethane	6.60	101	13991	197.076 pg		100
12) 1,1-Dichloroethene	7.33	96	235	N.D.		
13) Methylene Chloride	7.49	84	6501	150.050 pg		93
14) Trichlorotrifluoroethane	7.79	151	1559	39.626 pg		98
15) trans-1,2-Dichloroethene	8.51	96	89	N.D.		
16) 1,1-Dichloroethane	8.72	63	100	N.D.		
17) Methyl tert-Butyl Ether	8.79	73	3018	22.896 pg		93
18) cis-1,2-Dichloroethene	9.60	96	207	N.D.		
19) Chloroform	9.90	83	26132	327.031 pg		100
21) 1,2-Dichloroethane	10.65	62	1468	24.459 pg		100
22) 1,1,1-Trichloroethane	10.92	97	1544	21.209 pg		100
23) Benzene	11.37	78	144686	840.734 pg		100
24) Carbon Tetrachloride	11.52	117	2779	42.236 pg		100
26) 1,2-Dichloropropane	12.18	63	6273	156.424 pg		99
27) Bromodichloromethane	12.37	83	5926	102.366 pg	#	78
28) Trichloroethene	12.42	130	1707	39.280 pg		100
29) 1,4-Dioxane	0.00	88	0	N.D. d		
30) cis-1,3-Dichloropropene	13.24	75	86	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.92	83	132	N.D.		
34) Toluene	14.25	91	415678	2402.572 pg		100
35) Dibromochloromethane	14.67	129	858	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.40	166	1869955	41242.607 pg		98
39) Chlorobenzene	0.00	112	0	N.D. d		
40) Ethylbenzene	16.48	91	175555	843.527 pg		99
41) m,p-Xylene	16.65	91	428224	2644.577 pg		99
42) Styrene	17.01	104	1629088	13699.504 pg		100
43) o-Xylene	17.12	106	69440	871.011 pg		100
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D. d		
46) 1,3,5-Trimethylbenzene	18.38	105	77245	438.004 pg		99
47) 1,2,4-Trimethylbenzene	18.77	105	310817	1770.571 pg		87
48) 1,3-Dichlorobenzene	18.92	146	151	N.D.		
49) 1,4-Dichlorobenzene	18.98	146	1991	20.193 pg		98
50) 1,2-Dichlorobenzene	19.31	146	395	N.D.		
51) 1,2-Dibromo-3-chloropr...	19.72	157	754	24.517 pg	#	71
52) 1,2,4-Trichlorobenzene	20.95	182	148	N.D.		
53) Naphthalene	21.06	128	85346	410.492 pg		100

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171710.D Vial: 6
Acq On : 17 Feb 2017 12:27 Operator: CL
Sample : P1700672-010 PF2 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 22 08:30:33 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

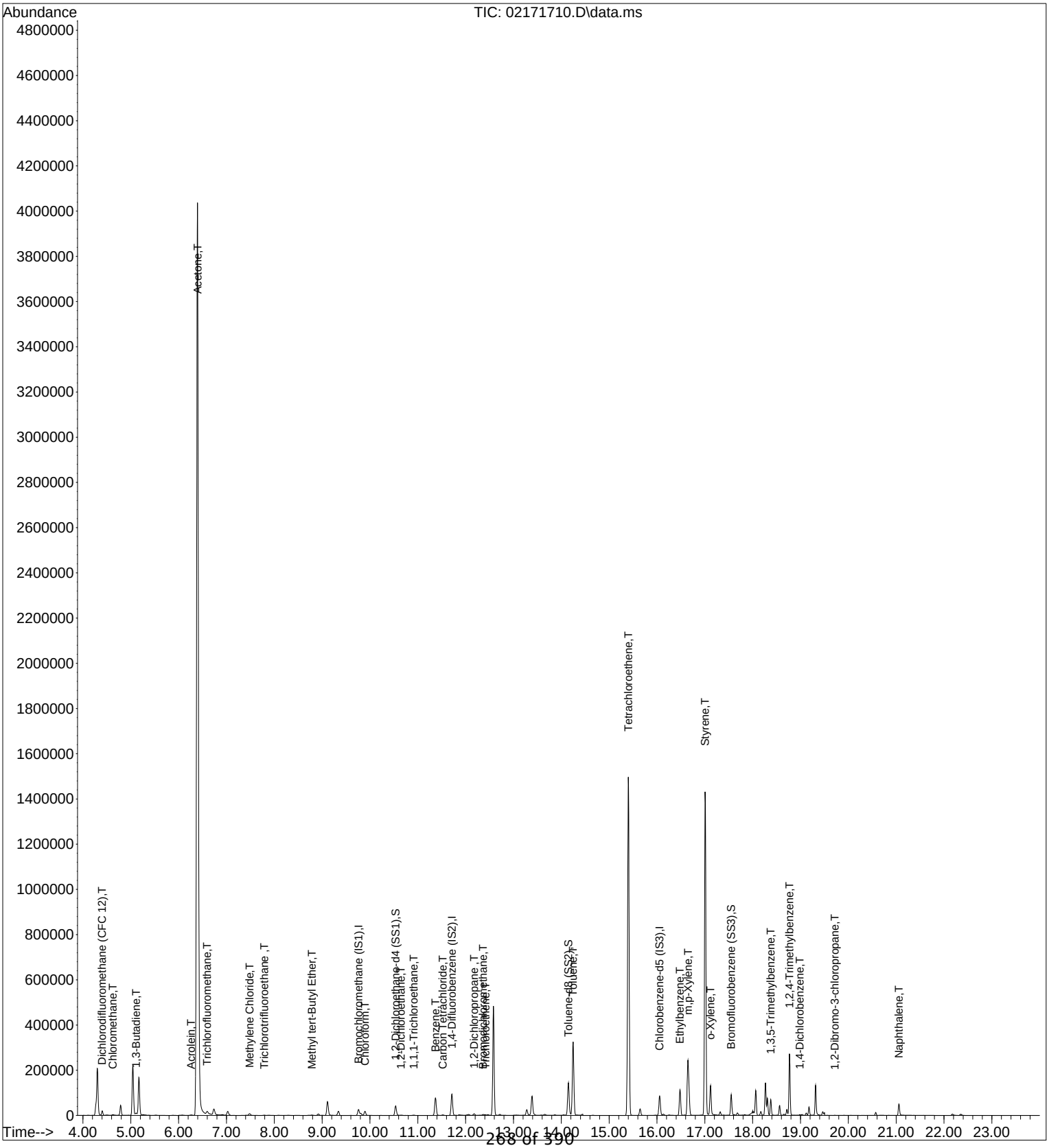
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171710.D Vial: 6
Acq On : 17 Feb 2017 12:27 Operator: CL
Sample : P1700672-010 PF2 (1000mL) Inst : MS19
Misc : S29-01241701

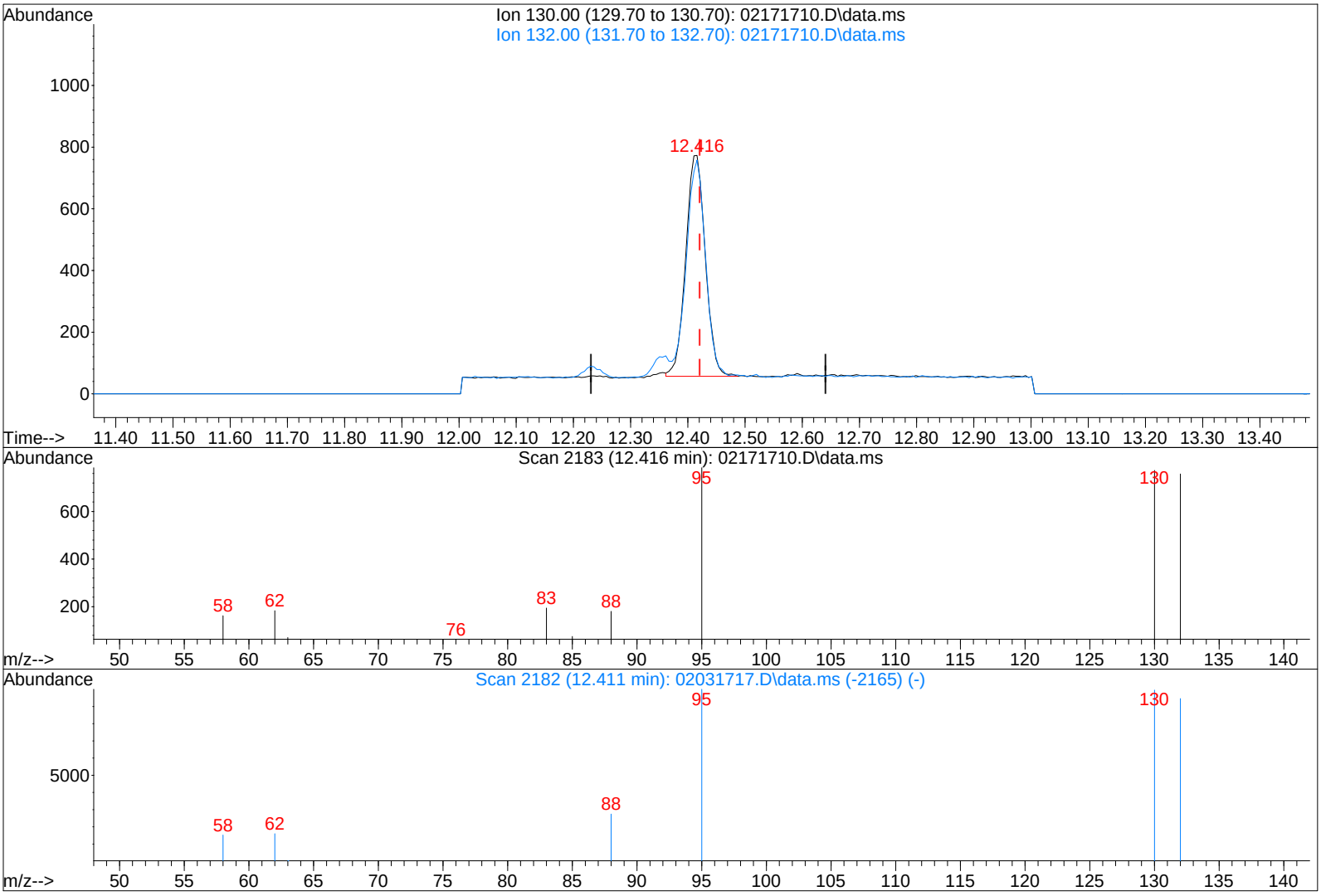
Quant Time: Feb 22 08:30:33 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\17\02171710.D Vial: 6
Acq On : 17 Feb 2017 12:27 Operator: CL
Sample : P1700672-010 PF2 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 17 14:45:52 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02171710.D\data.ms

(28) Trichloroethene (T)

12.416min (-0.005) 39.28pg

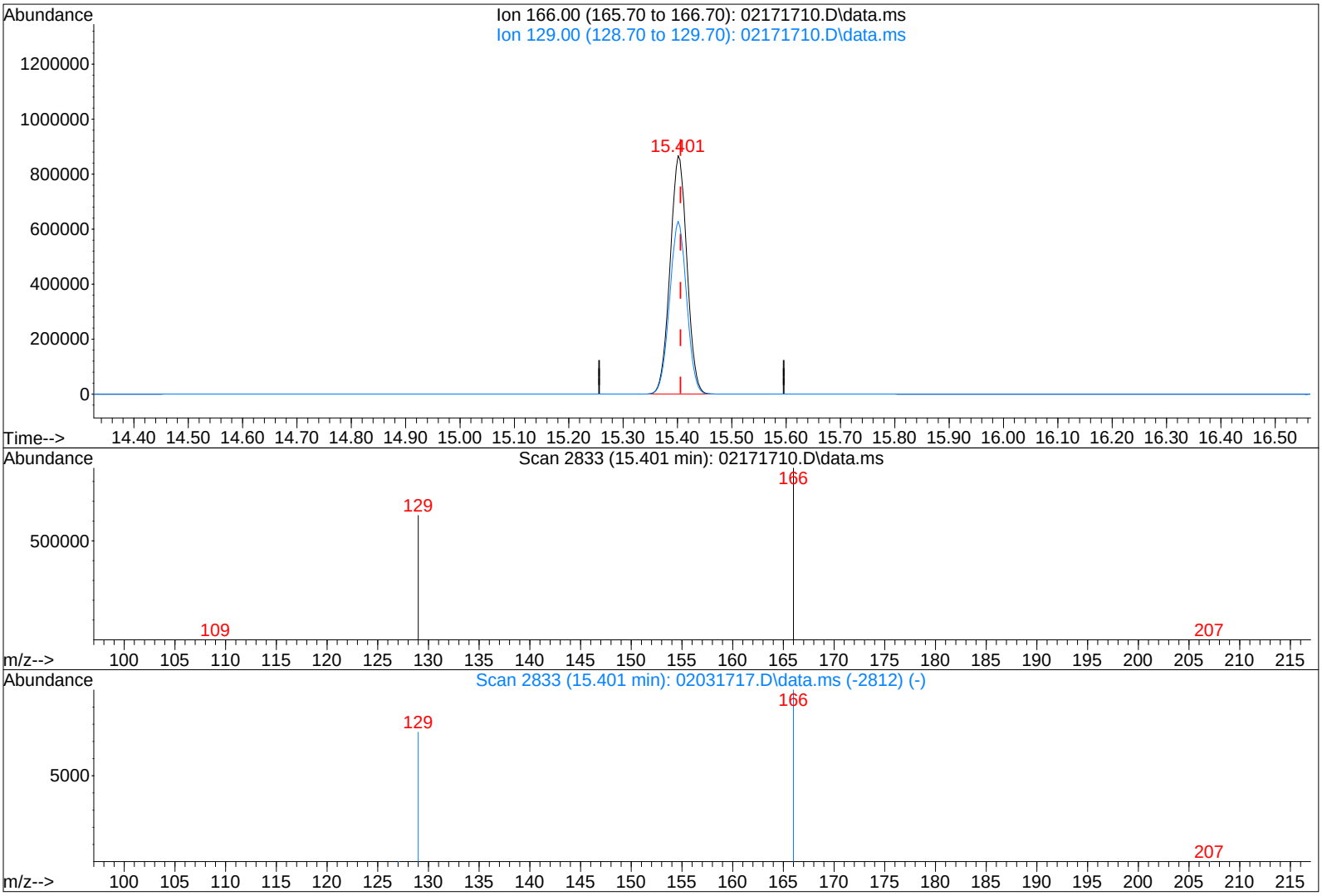
response 1707

Ion	Exp%	Act%
130.00	100	100
132.00	94.90	95.20
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\17\02171710.D Vial: 6
Acq On : 17 Feb 2017 12:27 Operator: CL
Sample : P1700672-010 PF2 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 17 14:45:52 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02171710.D\data.ms

(37) Tetrachloroethene (T)

15.401min (-0.005) 41242.61pg

response 1869955

Ion	Exp%	Act%
166.00	100	100
129.00	75.20	73.20
0.00	0.00	0.00
0.00	0.00	0.00

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **AA1-020917-1030** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P1700672-011

Test Code: EPA TO-15 SIM Date Collected: 2/9/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 2/13/17
Analyst: Cory Lewis Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01765
Initial Pressure (psig): -5.91 Final Pressure (psig): 3.72

Canister Dilution Factor: 2.10

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.053	ND	0.021	
156-59-2	cis-1,2-Dichloroethene	ND	0.053	ND	0.013	
79-01-6	Trichloroethene	**0.061**	0.053	**0.011**	0.0098	
127-18-4	Tetrachloroethene	**0.15**	0.053	**0.023**	0.0077	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171711.D Vial: 7
Acq On : 17 Feb 2017 12:58 Operator: CL
Sample : P1700672-011 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 17 14:46:01 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/22/17

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	35563	1000.000 pg		-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	191197	1000.000 pg		-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	33219	1000.000 pg		0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	66168	1065.656 pg		-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 106.57%			
33) Toluene-d8 (SS2)	14.15	98	186356	956.217 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 95.62%			
45) Bromofluorobenzene (SS3)	17.55	174	58854	969.180 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 96.92%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.41	85	111011	1246.271 pg		100
3) Chloromethane	4.67	52	3724	180.377 pg		91
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	4836	56.969 pg		99
5) Vinyl Chloride	4.97	62	148	N.D.		
6) 1,3-Butadiene	5.08	54	457	N.D.		
7) Bromomethane	5.48	94	348	N.D.		
8) Chloroethane	5.70	64	157	N.D.		
9) Acrolein	6.28	56	1598	79.245 pg		95
10) Acetone	6.40	58	66995	2540.439 pg	#	48
11) Trichlorofluoromethane	6.60	101	42638	628.174 pg		100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.48	84	27524	664.455 pg		93
14) Trichlorotrifluoroethane	7.80	151	8453	224.721 pg		99
15) trans-1,2-Dichloroethene	8.52	96	107	N.D.		
16) 1,1-Dichloroethane	8.72	63	210	N.D.		
17) Methyl tert-Butyl Ether	8.81	73	904	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.89	83	4088	53.509 pg		98
21) 1,2-Dichloroethane	10.65	62	1877	32.709 pg		96
22) 1,1,1-Trichloroethane	10.92	97	440	N.D.		
23) Benzene	11.37	78	45465	276.317 pg		100
24) Carbon Tetrachloride	11.52	117	14408	229.032 pg		100
26) 1,2-Dichloropropane	12.18	63	973	22.818 pg		99
27) Bromodichloromethane	12.38	83	309	N.D.		
28) Trichloroethene	12.42	130	1348	29.172 pg		98
29) 1,4-Dioxane	12.39	88	2145	58.554 pg		100
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.94	83	100	N.D.		
34) Toluene	14.25	91	175536	954.159 pg		100
35) Dibromochloromethane	0.00	129	0	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.40	166	3549	73.613 pg		99
39) Chlorobenzene	16.11	112	798	N.D.		
40) Ethylbenzene	16.48	91	17253	89.487 pg		98
41) m,p-Xylene	16.65	91	36914	246.087 pg		98
42) Styrene	17.01	104	9418	85.493 pg		98
43) o-Xylene	17.12	106	6484	87.795 pg		97
44) 1,1,2,2-Tetrachloroethane	17.12	83	215	N.D.		
46) 1,3,5-Trimethylbenzene	18.38	105	4637	28.383 pg		100
47) 1,2,4-Trimethylbenzene	18.77	105	14464	88.942 pg		87
48) 1,3-Dichlorobenzene	18.93	146	107	N.D.		
49) 1,4-Dichlorobenzene	18.99	146	3372	36.917 pg		99
50) 1,2-Dichlorobenzene	19.31	146	152	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.95	182	54	N.D.		
53) Naphthalene	21.07	128	6314	32.782 pg		100

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171711.D Vial: 7
Acq On : 17 Feb 2017 12:58 Operator: CL
Sample : P1700672-011 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 17 14:46:01 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

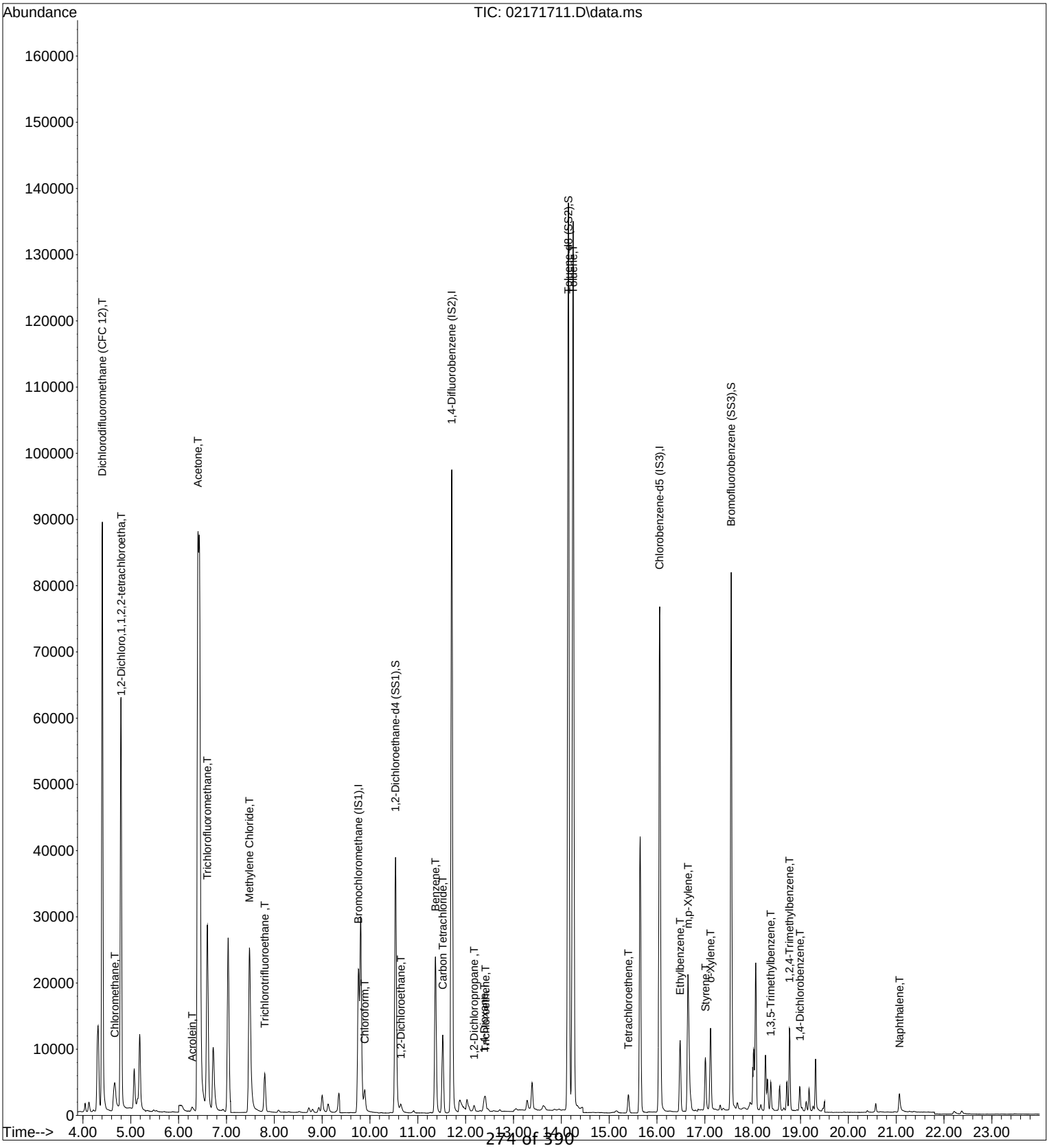
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.37	225	76	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171711.D Vial: 7
Acq On : 17 Feb 2017 12:58 Operator: CL
Sample : P1700672-011 (1000mL) Inst : MS19
Misc : S29-01241701

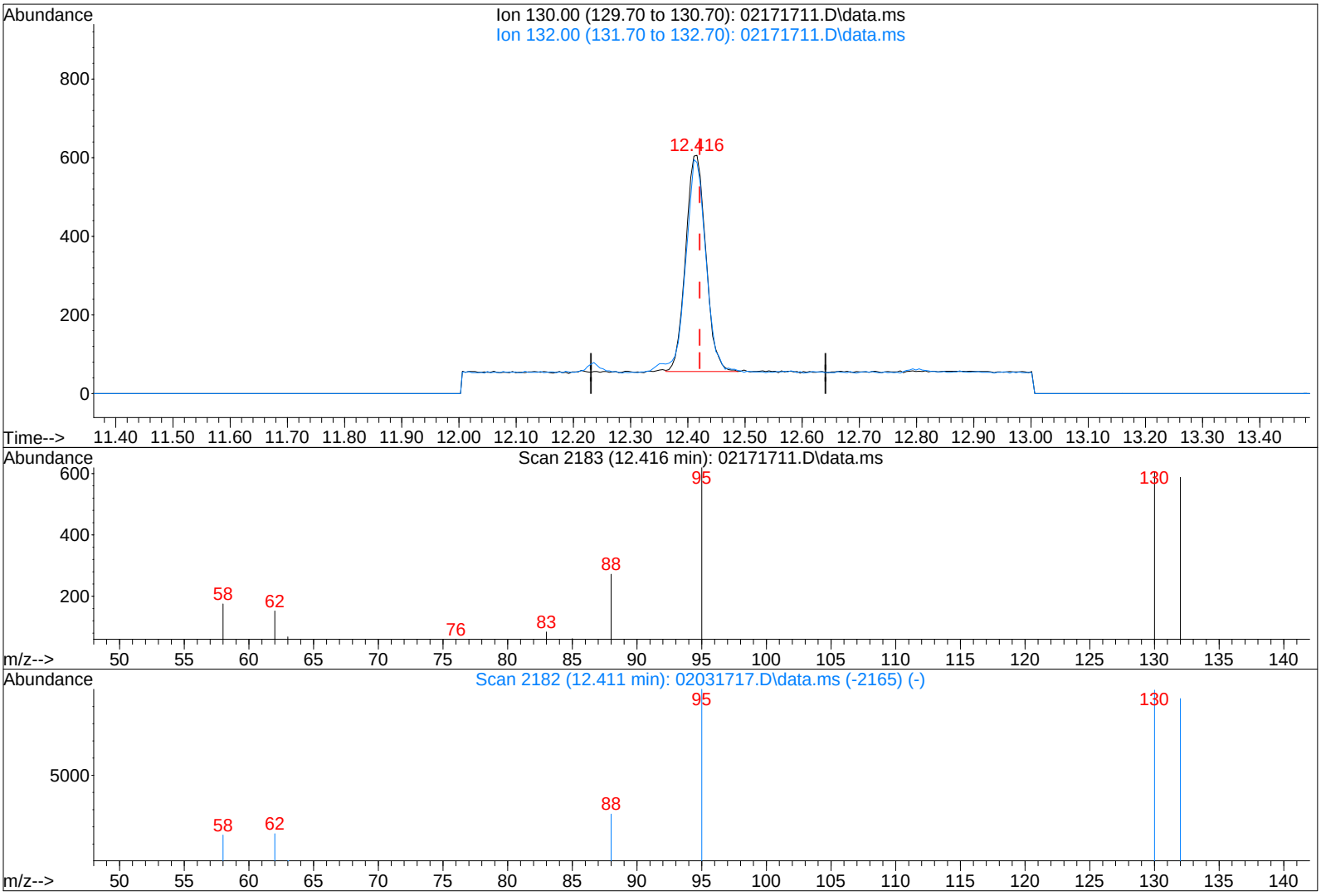
Quant Time: Feb 17 14:46:01 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\17\02171711.D Vial: 7
Acq On : 17 Feb 2017 12:58 Operator: CL
Sample : P1700672-011 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 17 14:46:01 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02171711.D\data.ms

(28) Trichloroethene (T)

12.416min (-0.005) 29.17pg

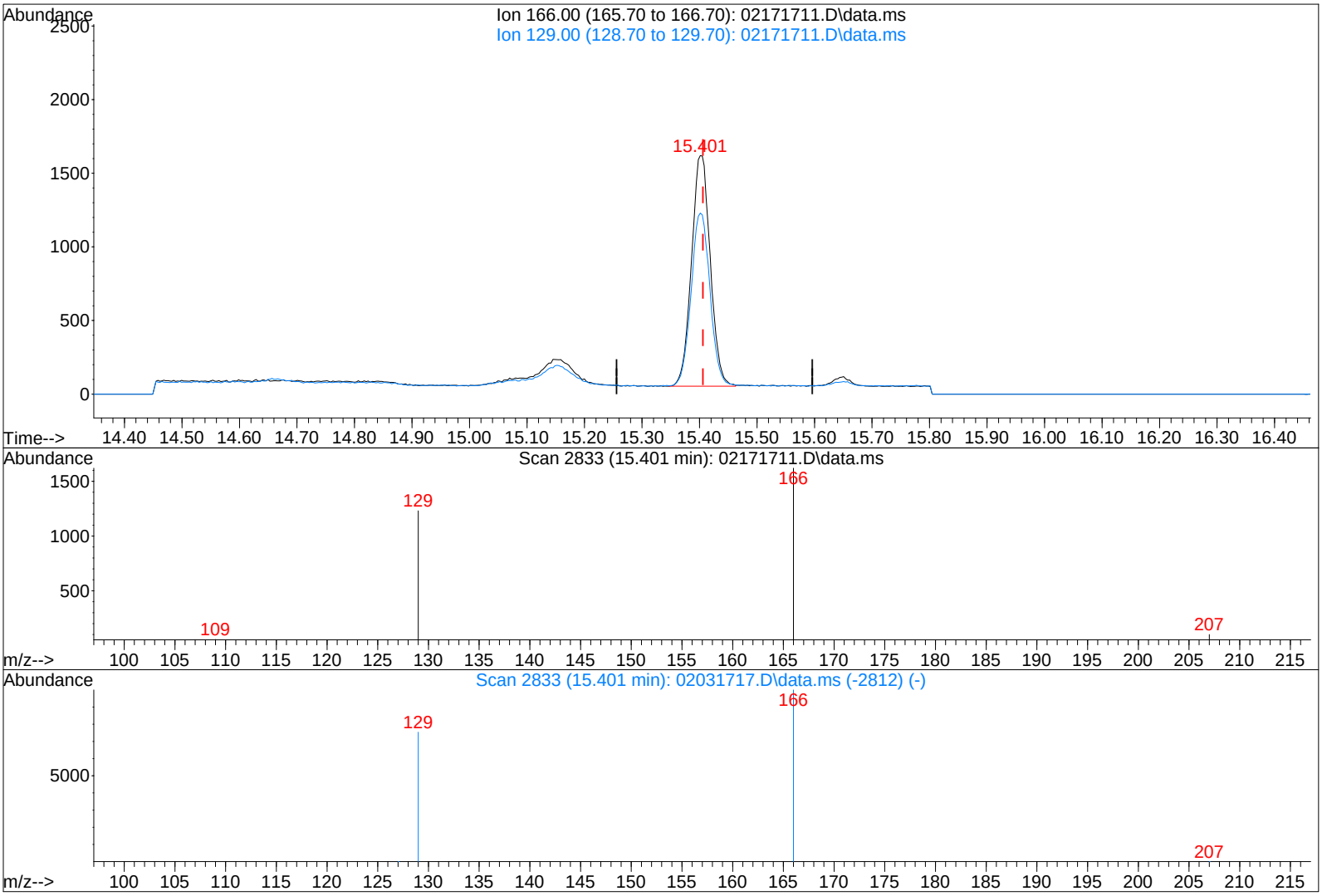
response 1348

Ion	Exp%	Act%
130.00	100	100
132.00	94.90	92.95
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\17\02171711.D Vial: 7
Acq On : 17 Feb 2017 12:58 Operator: CL
Sample : P1700672-011 (1000mL) Inst : MS19
Misc : S29-01241701

Quant Time: Feb 17 14:46:01 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 02171711.D\data.ms

(37) Tetrachloroethene (T)

15.401min (-0.005) 73.61pg

response 3549

Ion	Exp%	Act%
166.00	100	100
129.00	75.20	75.74
0.00	0.00	0.00
0.00	0.00	0.00

Response Factor Report MS19

Method Path : I:\MS19\METHODS\
Method File : S19020317.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sat Feb 04 07:30:51 2017
Response Via : Initial Calibration

CL 2/4/17

Calibration Files
10 =02031713.D 20 =02031714.D 50 =02031715.D 100 =02031716.D 500 =02031717.D 1000=02031718.D 2000=02031719.D
5000=02031720.D 10K =02031721.D 50K =02031723.D

		Compound	10	20	50	100	500	1000	2000	5000	10K	50K	Avg	%RSD
1)	I	Bromochloromethane...	----------	ISTD	----------									
2)	T	Dichlorodifluo...	2.602	2.623	2.694	2.516	2.484	2.874	2.642	2.410	2.269	1.934	2.505	10.35
3)	T	Chloromethane	0.653	0.756	0.612	0.536	0.599	0.731	0.634	0.495	0.301	0.487	0.581	22.92
4)	T	1,2-Dichloro,1...	2.719	2.562	2.524	2.318	2.330	2.655	2.394	2.226	2.144	1.999	2.387	9.63
5)	T	Vinyl Chloride	2.091	2.251	2.310	2.155	2.151	2.472	2.269	2.115	2.058	1.920	2.179	7.03
6)	T	1,3-Butadiene		1.033	1.573	1.427	1.532	1.840	1.717	1.634	1.581	1.647	1.554	14.61
7)	T	Bromomethane	0.903	0.835	0.842	0.835	0.851	0.975	0.899	0.890	1.050	0.790	0.887	8.64
8)	T	Chloroethane	0.663	0.694	0.714	0.676	0.666	0.782	0.723	0.685	0.679	0.632	0.692	5.94
9)	T	Acrolein			0.659	0.562	0.492	0.587	0.568	0.567	0.567	0.533	0.567	8.32
10)	T	Acetone				1.086	0.665	0.747	0.682	0.643	0.628		0.742	23.40
11)	T	Trichlorofluor...	1.926	2.002	2.027	1.871	1.841	2.119	1.934	1.847	1.800	1.720	1.909	6.18
12)	T	1,1-Dichloroet...	0.988	1.061	1.056	1.036	1.036	1.210	1.126	1.085	1.059	1.025	1.068	5.80
13)	T	Methylene Chlo...		1.361	1.249	1.129	1.086	1.249	1.158	1.109	1.083	1.059	1.165	8.66
14)	T	Trichlorotrifl...	1.079	1.061	1.087	0.977	0.989	1.172	1.096	1.056	1.011	1.049	1.058	5.40
15)	T	trans-1,2-Dich...		1.013	1.100	0.921	1.105	1.285	1.210	1.156	1.118	1.077	1.109	9.54
16)	T	1,1-Dichloroet...	2.001	1.988	2.005	1.872	1.948	2.261	2.084	1.966	1.901	1.814	1.984	6.23
17)	T	Methyl tert-Bu...	3.550	3.512	3.625	3.389	3.442	3.987	3.682	3.489	3.407	3.354	3.544	5.28
18)	T	cis-1,2-Dichlo...	1.136	1.032	1.185	1.111	1.164	1.357	1.288	1.239	1.204	1.161	1.188	7.72
19)	T	Chloroform			2.560	2.191	2.024	2.331	2.163	2.042	1.970	1.904	2.148	10.00
20)	S	1,2-Dichloroet...	1.744	1.758	1.772	1.778	1.761	1.756	1.754	1.741	1.729	1.666	1.746	1.81
21)	T	1,2-Dichloroet...	1.469	1.529	1.613	1.520	1.582	1.865	1.751	1.668	1.611	1.528	1.614	7.45
22)	T	1,1,1-Trichlor...	1.967	1.929	1.987	1.843	1.890	2.209	2.068	1.959	1.892	1.830	1.957	5.79
23)	T	Benzene			5.252	4.583	4.379	5.071	4.699	4.462	4.329	4.240	4.627	7.85
24)	T	Carbon Tetrach...	1.929	1.720	1.770	1.630	1.663	1.948	1.833	1.771	1.728	1.697	1.769	6.00
25)	I	1,4-Difluorobenzen...	----------	ISTD	----------									
26)	T	1,2-Dichloropr...	0.232	0.211	0.220	0.206	0.213	0.251	0.236	0.225	0.219	0.217	0.223	6.05
27)	T	Bromodichlorom...	0.302	0.318	0.315	0.299	0.303	0.362	0.343	0.328	0.318	0.330	0.322	6.14
28)	T	Trichloroethene	0.247	0.232	0.237	0.227	0.231	0.272	0.254	0.241	0.233	0.243	0.242	5.50
29)	T	1,4-Dioxane	0.191	0.178	0.182	0.179	0.184	0.217	0.204	0.194	0.188	0.198	0.192	6.32
30)	T	cis-1,3-Dichlo...	0.317	0.302	0.324	0.309	0.332	0.404	0.390	0.382	0.375	0.398	0.353	11.34
31)	T	trans-1,3-Dich...	0.267	0.231	0.264	0.270	0.288	0.358	0.352	0.353	0.350	0.355	0.309	15.89
32)	T	1,1,2-Trichlor...	0.177	0.172	0.184	0.173	0.179	0.212	0.199	0.190	0.184	0.188	0.186	6.63
33)	S	Toluene-d8 (SS2)	1.013	1.019	1.022	1.025	1.029	1.028	1.022	1.015	1.009	1.012	1.019	0.69
34)	T	Toluene	1.105	1.016	0.990	0.899	0.880	1.039	0.975	0.927	0.900	0.890	0.962	7.84
35)	T	Dibromochlorom...	0.221	0.232	0.242	0.231	0.233	0.284	0.275	0.274	0.274	0.284	0.255	9.86
36)	T	1,2-Dibromoethane	0.224	0.205	0.225	0.217	0.228	0.274	0.264	0.258	0.253	0.254	0.240	9.69
37)	T	Tetrachloroethene	0.249	0.238	0.242	0.229	0.234	0.278	0.265	0.260	0.257	0.270	0.252	6.54
38)	I	Chlorobenzene-d5 (...	----------	ISTD	----------									
39)	T	Chlorobenzene	3.581	3.412	3.488	3.160	3.197	3.836	3.646	3.538	3.439	3.019	3.432	7.18
40)	T	Ethylbenzene	5.940	5.559	5.768	5.398	5.562	6.664	6.299	6.027	5.811	5.009	5.804	8.06
41)	T	m,p-Xylene	4.712	4.368	4.522	4.108	4.260	5.105	4.813	4.648	4.550	4.071	4.516	7.17

Method Path : I:\MS19\METHODS\
Method File : S19020317.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

42)	T	Styrene	2.704	2.639	2.901	2.858	3.070	3.891	3.847	3.901	3.898	3.453	3.316	16.17
43)	T	o-Xylene	2.267	2.039	2.127	2.016	2.066	2.479	2.359	2.316	2.297	2.267	2.223	6.91
44)	T	1,1,2,2-Tetrac...	2.221	2.001	2.066	1.939	2.013	2.418	2.316	2.264	2.222	2.085	2.155	7.25
45)	S	Bromofluoroben...	1.727	1.741	1.762	1.749	1.794	1.822	1.905	1.991	2.017	1.771	1.828	5.79
46)	T	1,3,5-Trimethy...	5.522	4.160	4.492	4.303	4.596	5.563	5.362	5.295	5.290	4.597	4.918	10.92
47)	T	1,2,4-Trimethy...	4.117	4.149	4.432	4.335	4.613	5.697	5.529	5.503	5.523	5.056	4.895	12.93
48)	T	1,3-Dichlorobe...	2.054	2.001	2.429	2.346	2.440	3.061	3.037	3.093	3.118	2.926	2.651	16.74
49)	T	1,4-Dichlorobe...	2.552	2.473	2.526	2.494	2.432	3.071	3.033	3.067	3.064	2.783	2.750	10.26
50)	T	1,2-Dichlorobe...	2.339	2.165	2.440	2.312	2.381	2.992	2.950	2.991	2.991	3.021	2.658	13.39
51)	T	1,2-Dibromo-3-...	0.614	0.509	0.668	0.666	0.757	1.012	1.065	1.129	1.161	0.996	0.858	27.91
52)	T	1,2,4-Trichlor...	1.814	1.320	1.493	1.466	1.470	1.976	2.015	2.043	2.039	1.802	1.744	16.08
53)	T	Naphthalene		3.711	4.969	5.093	5.014	6.840	6.930	6.892	6.936		5.798	21.63
54)	T	Hexachlorobuta...	1.172	0.821	1.005	0.950	1.005	1.246	1.242	1.247	1.239	1.193	1.112	13.83

(#) = Out of Range

Primary Source Standards Concentrations (Working & Initial Calibration)

CL 2/4/17

0.2ng/L Std. ID:	S29-01171712		20ng/L Std. ID:	S29-01301702		
1ng/L Std. ID:	S29-01301707		200ng/L Std. ID:	S29-01241705		
4ng/L Std. ID:	S29-01301704					
Dilution Factors:		5	50	250	1000	5000

	Source Std.	Primary Working Standards				
Compounds	mg/m^3	200ng/L	20ng/L	4ng/L	1ng/L	0.2ng/L
Propene	1.036	207.2	20.72	4.144	1.036	0.2072
Dichlorodifluoromethane	1.047	209.4	20.94	4.188	1.047	0.2094
Chloromethane	1.005	201.0	20.10	4.020	1.005	0.2010
Freon-114	1.005	201.0	20.10	4.020	1.005	0.2010
Vinyl Chloride	1.023	204.6	20.46	4.092	1.023	0.2046
1,3-Butadiene	1.057	211.4	21.14	4.228	1.057	0.2114
Bromomethane	0.993	198.6	19.86	3.972	0.993	0.1986
Chloroethane	1.009	201.8	20.18	4.036	1.009	0.2018
Ethanol	5.207	1041.4	104.14	20.828	5.207	1.0414
Acetonitrile	1.046	209.2	20.92	4.184	1.046	0.2092
Acrolein	1.041	208.2	20.82	4.164	1.041	0.2082
Acetone	5.313	1062.6	106.26	21.252	5.313	1.0626
Trichlorofluoromethane	1.049	209.8	20.98	4.196	1.049	0.2098
Isopropanol	2.105	421.0	42.10	8.420	2.105	0.4210
Acrylonitrile	1.055	211.0	21.10	4.220	1.055	0.2110
1,1-Dichloroethene	1.059	211.8	21.18	4.236	1.059	0.2118
tert-Butanol	2.114	422.8	42.28	8.456	2.114	0.4228
Methylene Chloride	1.057	211.4	21.14	4.228	1.057	0.2114
Allyl Chloride	1.052	210.4	21.04	4.208	1.052	0.2104
Trichlorotrifluoroethane	1.049	209.8	20.98	4.196	1.049	0.2098
Carbon Disulfide	1.061	212.2	21.22	4.244	1.061	0.2122
trans-1,2-Dichloroethene	1.067	213.4	21.34	4.268	1.067	0.2134
1,1-Dichloroethane	1.020	204.0	20.40	4.080	1.020	0.2040
Methyl tert-Butyl Ether	1.066	213.2	21.32	4.264	1.066	0.2132
Vinyl Acetate	5.265	1053.0	105.30	21.060	5.265	1.0530
2-Butanone	1.049	209.8	20.98	4.196	1.049	0.2098
cis-1,2-Dichloroethene	1.064	212.8	21.28	4.256	1.064	0.2128
Diisopropyl Ether	1.062	212.4	21.24	4.248	1.062	0.2124
Ethyl Acetate	2.129	425.8	42.58	8.516	2.129	0.4258
n-Hexane	1.063	212.6	21.26	4.252	1.063	0.2126
Chloroform	1.058	211.6	21.16	4.232	1.058	0.2116
Tetrahydrofuran	1.062	212.4	21.24	4.248	1.062	0.2124
Ethyl tert-Butyl Ether	1.057	211.4	21.14	4.228	1.057	0.2114
1,2-Dichloroethane	1.052	210.4	21.04	4.208	1.052	0.2104
1,1,1-Trichloroethane	1.074	214.8	21.48	4.296	1.074	0.2148
Isopropyl Acetate	2.104	420.8	42.08	8.416	2.104	0.4208
1-Butanol	2.105	421.0	42.10	8.420	2.105	0.4210
Benzene	1.052	210.4	21.04	4.208	1.052	0.2104
Carbon Tetrachloride	1.055	211.0	21.10	4.220	1.055	0.2110
Cyclohexane	2.130	426.0	42.60	8.520	2.130	0.4260
tert-Amyl Methyl Ether	1.054	210.8	21.08	4.216	1.054	0.2108
1,2-Dichloropropane	1.062	212.4	21.24	4.248	1.062	0.2124
Bromodichloromethane	1.066	213.2	21.32	4.264	1.066	0.2132
Trichloroethene	1.060	212.0	21.20	4.240	1.060	0.2120
1,4-Dioxane	1.062	212.4	21.24	4.248	1.062	0.2124
Isooctane	1.059	211.8	21.18	4.236	1.059	0.2118
Methyl Methacrylate	2.110	422.0	42.20	8.440	2.110	0.4220
n-Heptane	1.062	212.4	21.24	4.248	1.062	0.2124
cis-1,3-Dichloropropene	1.116	223.2	22.32	4.464	1.116	0.2232

Working STD Conc.(ng/L):	0.2	1	1	1	4	20	20	20	20		200
Injection (L):	0.050	0.020	0.050	0.100	0.125	0.050	0.100	0.250	0.500	NA	0.250
ICAL Points:	0.01ng	0.02ng	0.05ng	0.1ng	0.5ng	1ng	2ng	5ng	10ng	20ng	50ng
Propene	0.01036	0.02072	0.05180	0.1036	0.5180	1.036	2.072	5.180	10.36	NA	51.80
Dichlorodifluoromethane	0.01047	0.02094	0.05235	0.1047	0.5235	1.047	2.094	5.235	10.47	NA	52.35
Chloromethane	0.01005	0.02010	0.05025	0.1005	0.5025	1.005	2.010	5.025	10.05	NA	50.25
Freon-114	0.01005	0.02010	0.05025	0.1005	0.5025	1.005	2.010	5.025	10.05	NA	50.25
Vinyl Chloride	0.01023	0.02046	0.05115	0.1023	0.5115	1.023	2.046	5.115	10.23	NA	51.15
1,3-Butadiene	0.01057	0.02114	0.05285	0.1057	0.5285	1.057	2.114	5.285	10.57	NA	52.85
Bromomethane	0.00993	0.01986	0.04965	0.0993	0.4965	0.993	1.986	4.965	9.93	NA	49.65
Chloroethane	0.01009	0.02018	0.05045	0.1009	0.5045	1.009	2.018	5.045	10.09	NA	50.45
Ethanol	0.05207	0.10414	0.26035	0.5207	2.6035	5.207	10.414	26.035	52.07	NA	260.35
Acetonitrile	0.01046	0.02092	0.05230	0.1046	0.5230	1.046	2.092	5.230	10.46	NA	52.30
Acrolein	0.01041	0.02082	0.05205	0.1041	0.5205	1.041	2.082	5.205	10.41	NA	52.05
Acetone	0.05313	0.10626	0.26565	0.5313	2.6565	5.313	10.626	26.565	53.13	NA	265.65
Trichlorofluoromethane	0.01049	0.02098	0.05245	0.1049	0.5245	1.049	2.098	5.245	10.49	NA	52.45
Isopropanol	0.02105	0.04210	0.10525	0.2105	1.0525	2.105	4.210	10.525	21.05	NA	105.25
Acrylonitrile	0.01055	0.02110	0.05275	0.1055	0.5275	1.055	2.110	5.275	10.55	NA	52.75
1,1-Dichloroethene	0.01059	0.02118	0.05295	0.1059	0.5295	1.059	2.118	5.295	10.59	NA	52.95
tert-Butanol	0.02114	0.04228	0.10570	0.2114	1.0570	2.114	4.228	10.570	21.14	NA	105.70
Methylene Chloride	0.01057	0.02114	0.05285	0.1057	0.5285	1.057	2.114	5.285	10.57	NA	52.85
Allyl Chloride	0.01052	0.02104	0.05260	0.1052	0.5260	1.052	2.104	5.260	10.52	NA	52.60
Trichlorotrifluoroethane	0.01049	0.02098	0.05245	0.1049	0.5245	1.049	2.098	5.245	10.49	NA	52.45
Carbon Disulfide	0.01061	0.02122	0.05305	0.1061	0.5305	1.061	2.122	5.305	10.61	NA	53.05
trans-1,2-Dichloroethene	0.01067	0.02134	0.05335	0.1067	0.5335	1.067	2.134	5.335	10.67	NA	53.35
1,1-Dichloroethane	0.01020	0.02040	0.05100	0.1020	0.5100	1.020	2.040	5.100	10.20	NA	51.00
Methyl tert-Butyl Ether	0.01066	0.02132	0.05330	0.1066	0.5330	1.066	2.132	5.330	10.66	NA	53.30
Vinyl Acetate	0.05265	0.10530	0.26325	0.5265	2.6325	5.265	10.530	26.325	52.65	NA	263.25
2-Butanone	0.01049	0.02098	0.05245	0.1049	0.5245	1.049	2.098	5.245	10.49	NA	52.45
cis-1,2-Dichloroethene	0.01064	0.02128	0.05320	0.1064	0.5320	1.064	2.128	5.320	10.64	NA	53.20
Diisopropyl Ether	0.01062	0.02124	0.05310	0.1062	0.5310	1.062	2.124	5.310	10.62	NA	53.10
Ethyl Acetate	0.02129	0.04258	0.10645	0.2129	1.0645	2.129	4.258	10.645	21.29	NA	106.45
n-Hexane	0.01063	0.02126	0.05315	0.1063	0.5315	1.063	2.126	5.315	10.63	NA	53.15
Chloroform	0.01058	0.02116	0.05290	0.1058	0.5290	1.058	2.116	5.290	10.58	NA	52.90
Tetrahydrofuran	0.01062	0.02124	0.05310	0.1062	0.5310	1.062	2.124	5.310	10.62	NA	53.10
Ethyl tert-Butyl Ether	0.01057	0.02114	0.05285	0.1057	0.5285	1.057	2.114	5.285	10.57	NA	52.85
1,2-Dichloroethane	0.01052	0.02104	0.05260	0.1052	0.5260	1.052	2.104	5.260	10.52	NA	52.60
1,1,1-Trichloroethane	0.01074	0.02148	0.05370	0.1074	0.5370	1.074	2.148	5.370	10.74	NA	53.70
Isopropyl Acetate	0.02104	0.04208	0.10520	0.2104	1.0520	2.104	4.208	10.520	21.04	NA	105.20
1-Butanol	0.02105	0.04210	0.10525	0.2105	1.0525	2.105	4.210	10.525	21.05	NA	105.25
Benzene	0.01052	0.02104	0.05260	0.1052	0.5260	1.052	2.104	5.260	10.52	NA	52.60
Carbon Tetrachloride	0.01055	0.02110	0.05275	0.1055	0.5275	1.055	2.110	5.275	10.55	NA	52.75
Cyclohexane	0.02130	0.04260	0.10650	0.2130	1.0650	2.130	4.260	10.650	21.30	NA	106.50
tert-Amyl Methyl Ether	0.01054	0.02108	0.05270	0.1054	0.5270	1.054	2.108	5.270	10.54	NA	52.70
1,2-Dichloropropane	0.01062	0.02124	0.05310	0.1062	0.5310	1.062	2.124	5.310	10.62	NA	53.10
Bromodichloromethane	0.01066	0.02132	0.05330	0.1066	0.5330	1.066	2.132	5.330	10.66	NA	53.30
Trichloroethene	0.01060	0.02120	0.05300	0.1060	0.5300	1.060	2.120	5.300	10.60	NA	53.00
1,4-Dioxane	0.01062	0.02124	0.05310	0.1062	0.5310	1.062	2.124	5.310	10.62	NA	53.10
Isooctane	0.01059	0.02118	0.05295	0.1059	0.5295	1.059	2.118	5.295	10.59	NA	52.95
Methyl Methacrylate	0.02110	0.04220	0.10550	0.2110	1.0550	2.110	4.220	10.550	21.10	NA	105.50
n-Heptane	0.01062	0.02124	0.05310	0.1062	0.5310	1.062	2.124	5.310	10.62	NA	53.10
cis-1,3-Dichloropropene	0.01116	0.02232	0.05580	0.1116	0.5580	1.116	2.232	5.580	11.16	NA	55.80

Primary Source Standards Concentrations (Working & Initial Calibration)

0.2ng/L Std. ID:	S29-01171712		20ng/L Std. ID:	S29-01301702		
1ng/L Std. ID:	S29-01301707		200ng/L Std. ID:	S29-01241705		
4ng/L Std. ID:	S29-01301704					
Dilution Factors:	5	50	250	1000	5000	

	Source Std.	Primary Working Standards					Working STD Conc.(ng/L):	0.2	1	1	1	4	20	20	20	20		200
							Injection (L):	0.050	0.020	0.050	0.100	0.125	0.050	0.100	0.250	0.500	NA	0.250
Compounds	mg/m^3	200ng/L	20ng/L	4ng/L	1ng/L	0.2ng/L	ICAL Points:	0.01ng	0.02ng	0.05ng	0.1ng	0.5ng	1ng	2ng	5ng	10ng	20ng	50ng
4-Methyl-2-pentanone	1.058	211.6	21.16	4.232	1.058	0.2116		0.01058	0.02116	0.05290	0.1058	0.5290	1.058	2.116	5.290	10.58	NA	52.90
trans-1,3-Dichloropropene	1.064	212.8	21.28	4.256	1.064	0.2128		0.01064	0.02128	0.05320	0.1064	0.5320	1.064	2.128	5.320	10.64	NA	53.20
1,1,2-Trichloroethane	1.061	212.2	21.22	4.244	1.061	0.2122		0.01061	0.02122	0.05305	0.1061	0.5305	1.061	2.122	5.305	10.61	NA	53.05
Toluene	1.053	210.6	21.06	4.212	1.053	0.2106		0.01053	0.02106	0.05265	0.1053	0.5265	1.053	2.106	5.265	10.53	NA	52.65
2-Hexanone	1.061	212.2	21.22	4.244	1.061	0.2122		0.01061	0.02122	0.05305	0.1061	0.5305	1.061	2.122	5.305	10.61	NA	53.05
Dibromochloromethane	1.062	212.4	21.24	4.248	1.062	0.2124		0.01062	0.02124	0.05310	0.1062	0.5310	1.062	2.124	5.310	10.62	NA	53.10
1,2-Dibromoethane	1.056	211.2	21.12	4.224	1.056	0.2112		0.01056	0.02112	0.05280	0.1056	0.5280	1.056	2.112	5.280	10.56	NA	52.80
n-Butyl Acetate	1.064	212.8	21.28	4.256	1.064	0.2128		0.01064	0.02128	0.05320	0.1064	0.5320	1.064	2.128	5.320	10.64	NA	53.20
n-Octane	1.057	211.4	21.14	4.228	1.057	0.2114		0.01057	0.02114	0.05285	0.1057	0.5285	1.057	2.114	5.285	10.57	NA	52.85
Tetrachloroethene	1.061	212.2	21.22	4.244	1.061	0.2122		0.01061	0.02122	0.05305	0.1061	0.5305	1.061	2.122	5.305	10.61	NA	53.05
Chlorobenzene	1.061	212.2	21.22	4.244	1.061	0.2122		0.01061	0.02122	0.05305	0.1061	0.5305	1.061	2.122	5.305	10.61	NA	53.05
Ethylbenzene	1.055	211.0	21.10	4.220	1.055	0.2110		0.01055	0.02110	0.05275	0.1055	0.5275	1.055	2.110	5.275	10.55	NA	52.75
m-&p-Xylene	2.123	424.6	42.46	8.492	2.123	0.4246		0.02123	0.04246	0.10615	0.2123	1.0615	2.123	4.246	10.615	21.23	NA	106.15
Bromoform	1.063	212.6	21.26	4.252	1.063	0.2126		0.01063	0.02126	0.05315	0.1063	0.5315	1.063	2.126	5.315	10.63	NA	53.15
Styrene	1.061	212.2	21.22	4.244	1.061	0.2122		0.01061	0.02122	0.05305	0.1061	0.5305	1.061	2.122	5.305	10.61	NA	53.05
o-Xylene	1.054	210.8	21.08	4.216	1.054	0.2108		0.01054	0.02108	0.05270	0.1054	0.5270	1.054	2.108	5.270	10.54	NA	52.70
n-Nonane	1.054	210.8	21.08	4.216	1.054	0.2108		0.01054	0.02108	0.05270	0.1054	0.5270	1.054	2.108	5.270	10.54	NA	52.70
1,1,2,2-Tetrachloroethane	1.056	211.2	21.12	4.224	1.056	0.2112		0.01056	0.02112	0.05280	0.1056	0.5280	1.056	2.112	5.280	10.56	NA	52.80
Cumene	1.050	210.0	21.00	4.200	1.050	0.2100		0.01050	0.02100	0.05250	0.1050	0.5250	1.050	2.100	5.250	10.50	NA	52.50
alpha-Pinene	1.044	208.8	20.88	4.176	1.044	0.2088		0.01044	0.02088	0.05220	0.1044	0.5220	1.044	2.088	5.220	10.44	NA	52.20
n-Propylbenzene	1.063	212.6	21.26	4.252	1.063	0.2126		0.01063	0.02126	0.05315	0.1063	0.5315	1.063	2.126	5.315	10.63	NA	53.15
3-Ethyltoluene	1.050	210.0	21.00	4.200	1.050	0.2100		0.01050	0.02100	0.05250	0.1050	0.5250	1.050	2.100	5.250	10.50	NA	52.50
4-Ethyltoluene	1.049	209.8	20.98	4.196	1.049	0.2098		0.01049	0.02098	0.05245	0.1049	0.5245	1.049	2.098	5.245	10.49	NA	52.45
1,3,5-Trimethylbenzene	1.049	209.8	20.98	4.196	1.049	0.2098		0.01049	0.02098	0.05245	0.1049	0.5245	1.049	2.098	5.245	10.49	NA	52.45
alpha-Methylstyrene	1.050	210.0	21.00	4.200	1.050	0.2100		0.01050	0.02100	0.05250	0.1050	0.5250	1.050	2.100	5.250	10.50	NA	52.50
2-Ethyltoluene	1.062	212.4	21.24	4.248	1.062	0.2124		0.01062	0.02124	0.05310	0.1062	0.5310	1.062	2.124	5.310	10.62	NA	53.10
1,2,4-Trimethylbenzene	1.052	210.4	21.04	4.208	1.052	0.2104		0.01052	0.02104	0.05260	0.1052	0.5260	1.052	2.104	5.260	10.52	NA	52.60
n-Decane	1.053	210.6	21.06	4.212	1.053	0.2106		0.01053	0.02106	0.05265	0.1053	0.5265	1.053	2.106	5.265	10.53	NA	52.65
Benzyl Chloride	1.061	212.2	21.22	4.244	1.061	0.2122		0.01061	0.02122	0.05305	0.1061	0.5305	1.061	2.122	5.305	10.61	NA	53.05
1,3-Dichlorobenzene	1.058	211.6	21.16	4.232	1.058	0.2116		0.01058	0.02116	0.05290	0.1058	0.5290	1.058	2.116	5.290	10.58	NA	52.90
1,4-Dichlorobenzene	1.058	211.6	21.16	4.232	1.058	0.2116		0.01058	0.02116	0.05290	0.1058	0.5290	1.058	2.116	5.290	10.58	NA	52.90
sec-Butylbenzene	1.054	210.8	21.08	4.216	1.054	0.2108		0.01054	0.02108	0.05270	0.1054	0.5270	1.054	2.108	5.270	10.54	NA	52.70
p-Isopropyltoluene	1.027	205.4	20.54	4.108	1.027	0.2054		0.01027	0.02054	0.05135	0.1027	0.5135	1.027	2.054	5.135	10.27	NA	51.35
1,2,3-Trimethylbenzene	1.027	205.4	20.54	4.108	1.027	0.2054		0.01027	0.02054	0.05135	0.1027	0.5135	1.027	2.054	5.135	10.27	NA	51.35
1,2-Dichlorobenzene	1.058	211.6	21.16	4.232	1.058	0.2116		0.01058	0.02116	0.05290	0.1058	0.5290	1.058	2.116	5.290	10.58	NA	52.90
d-Limonene	1.005	201.0	20.10	4.020	1.005	0.2010		0.01005	0.02010	0.05025	0.1005	0.5025	1.005	2.010	5.025	10.05	NA	50.25
1,2-Dibromo-3-chloropropane	1.053	210.6	21.06	4.212	1.053	0.2106		0.01053	0.02106	0.05265	0.1053	0.5265	1.053	2.106	5.265	10.53	NA	52.65
n-Undecane	1.054	210.8	21.08	4.216	1.054	0.2108		0.01054	0.02108	0.05270	0.1054	0.5270	1.054	2.108	5.270	10.54	NA	52.70
1,2,4-Trichlorobenzene	1.043	208.6	20.86	4.172	1.043	0.2086		0.01043	0.02086	0.05215	0.1043	0.5215	1.043	2.086	5.215	10.43	NA	52.15
Naphthalene	1.083	216.6	21.66	4.332	1.083	0.2166		0.01083	0.02166	0.05415	0.1083	0.5415	1.083	2.166	5.415	10.83	NA	54.15
n-Dodecane	1.045	209.0	20.90	4.180	1.045	0.2090		0.01045	0.02090	0.05225	0.1045	0.5225	1.045	2.090	5.225	10.45	NA	52.25
Hexachloro-1,3-butadiene	1.059	211.8	21.18	4.236	1.059	0.2118		0.01059	0.02118	0.05295	0.1059	0.5295	1.059	2.118	5.295	10.59	NA	52.95
Methacrylonitrile	1.065	213.0	21.30	4.260	1.065	0.2130		0.01065	0.02130	0.05325	0.1065	0.5325	1.065	2.130	5.325	10.65	NA	53.25
Cyclohexanone	1.056	211.2	21.12	4.224	1.056	0.2112		0.01056	0.02112	0.05280	0.1056	0.5280	1.056	2.112	5.280	10.56	NA	52.80
tert-Butylbenzene	1.051	210.2	21.02	4.204	1.051	0.2102		0.01051	0.02102	0.05255	0.1051	0.5255	1.051	2.102	5.255	10.51	NA	52.55
n-Butylbenzene	1.056	211.2	21.12	4.224	1.056	0.2112		0.01056	0.02112	0.05280	0.1056	0.5280	1.056	2.112	5.280	10.56	NA	52.80

Calibration Status Report MS19

Method   : I:\MS19\METHODS\S19020317.M (RTE Integrator)
Title   : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration

CL 2/4/17

#	ID	Conc	ISTD Conc	Path\File
1	10	10	1000	I:\MS19\DATA\2017_02\03\02031713.D
2	20	21	1000	I:\MS19\DATA\2017_02\03\02031714.D
3	50	52	1000	I:\MS19\DATA\2017_02\03\02031715.D
4	100	105	1000	I:\MS19\DATA\2017_02\03\02031716.D
5	500	524	1000	I:\MS19\DATA\2017_02\03\02031717.D
6	1000	1047	1000	I:\MS19\DATA\2017_02\03\02031718.D
7	2000	2094	1000	I:\MS19\DATA\2017_02\03\02031719.D
8	5000	5235	1000	I:\MS19\DATA\2017_02\03\02031720.D
9	10K	10470	1000	I:\MS19\DATA\2017_02\03\02031721.D
10	50K	52350	1000	I:\MS19\DATA\2017_02\03\02031723.D

#	ID	Update Time	Quant Time	Acquisition Time
1	10	Feb 04 07:27 2017	Feb 04 07:11 2017	3 Feb 2017 14:51
2	20	Feb 04 07:27 2017	Feb 04 07:13 2017	3 Feb 2017 15:22
3	50	Feb 04 07:27 2017	Feb 04 07:15 2017	3 Feb 2017 15:54
4	100	Feb 04 07:27 2017	Feb 04 07:16 2017	3 Feb 2017 16:25
5	500	Feb 04 07:27 2017	Feb 04 07:09 2017	3 Feb 2017 16:57
6	1000	Feb 04 07:27 2017	Feb 04 07:09 2017	3 Feb 2017 17:28
7	2000	Feb 04 07:27 2017	Feb 04 07:09 2017	3 Feb 2017 17:59
8	5000	Feb 04 07:27 2017	Feb 04 07:09 2017	3 Feb 2017 18:30
9	10K	Feb 04 07:27 2017	Feb 04 07:09 2017	3 Feb 2017 19:01
10	50K	Feb 04 07:28 2017	Feb 04 07:09 2017	3 Feb 2017 20:04

S19020317.M Sat Feb 04 07:48:54 2017

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:11:09 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.78	130	49044	1000.000	pg		0.02
25) 1,4-Difluorobenzene (IS2)	11.72	114	242869	1000.000	pg		0.00
38) Chlorobenzene-d5 (IS3)	16.06	54	42558	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.55	65	85551	1112.594	pg		0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 111.26%				
33) Toluene-d8 (SS2)	14.15	98	245965	1007.434	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.74%				
45) Bromofluorobenzene (SS3)	17.56	174	73508	808.254	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 80.83%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.43	85	1336	11.538	pg		99
3) Chloromethane	4.69	52	322m	12.433	pg		
4) 1,2-Dichloro,1,1,2,2-t...	4.84	85	1340	12.258	pg		93
5) Vinyl Chloride	5.01	62	1049	10.265	pg		96
6) 1,3-Butadiene	5.20	54	583m	9.365	pg		
7) Bromomethane	5.52	94	440m	10.861	pg		
8) Chloroethane	5.74	64	328	10.176	pg		88
9) Acrolein	6.36	56	906m	34.191	pg		
10) Acetone	6.47	58	10917	331.930	pg	#	70
11) Trichlorofluoromethane	6.65	101	991	11.121	pg		99
12) 1,1-Dichloroethene	7.38	96	513	9.816	pg	#	77
13) Methylene Chloride	7.51	84	920	17.079	pg		96
14) Trichlorotrifluoroethane	7.82	151	555	10.342	pg		100
15) trans-1,2-Dichloroethene	8.55	96	385	7.289	pg	#	61
16) 1,1-Dichloroethane	8.74	63	1001	10.922	pg		99
17) Methyl tert-Butyl Ether	8.83	73	1856	11.023	pg		98
18) cis-1,2-Dichloroethene	9.62	96	593	10.421	pg		100
19) Chloroform	9.90	83	2989	30.172	pg		98
21) 1,2-Dichloroethane	10.66	62	758	10.398	pg	#	64
22) 1,1,1-Trichloroethane	10.92	97	1036	11.100	pg		99
23) Benzene	11.38	78	4165	19.350	pg		96
24) Carbon Tetrachloride	11.53	117	998	11.481	pg		98
26) 1,2-Dichloropropane	12.19	63	598	11.062	pg		95
27) Bromodichloromethane	12.37	83	783	9.937	pg		99
28) Trichloroethene	12.42	130	636	10.247	pg		92
29) 1,4-Dioxane	12.42	88	492	10.395	pg		99
30) cis-1,3-Dichloropropene	13.28	75	860	9.788	pg		97
31) trans-1,3-Dichloropropene	13.80	75	690	9.081	pg	#	86
32) 1,1,2-Trichloroethane	13.96	83	456	9.963	pg		92
34) Toluene	14.26	91	2826	12.147	pg		95
35) Dibromochloromethane	14.67	129	570	8.439	pg		97
36) 1,2-Dibromoethane	14.94	107	574	9.444	pg		97
37) Tetrachloroethene	15.40	166	641	9.665	pg		97
39) Chlorobenzene	16.11	112	1617	10.062	pg		95
40) Ethylbenzene	16.49	91	2667	9.919	pg		100
41) m,p-Xylene	16.67	91	4257	20.305	pg		97
42) Styrene	17.04	104	1221	7.602	pg		97
43) o-Xylene	17.13	106	1017	9.758	pg		91
44) 1,1,2,2-Tetrachloroethane	17.10	83	998	10.025	pg		90
46) 1,3,5-Trimethylbenzene	18.39	105	2465	10.901	pg	#	85
47) 1,2,4-Trimethylbenzene	18.78	105	1843	8.096	pg		91
48) 1,3-Dichlorobenzene	18.93	146	925	7.398	pg		98
49) 1,4-Dichlorobenzene	19.00	146	1149	8.708	pg		97
50) 1,2-Dichlorobenzene	19.32	146	1053	8.350	pg		97
51) 1,2-Dibromo-3-chloropr...	19.74	157	275	6.061	pg		88
52) 1,2,4-Trichlorobenzene	20.99	182	805	8.992	pg		86
53) Naphthalene	21.13	128	2562	8.944	pg		91

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:11:09 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

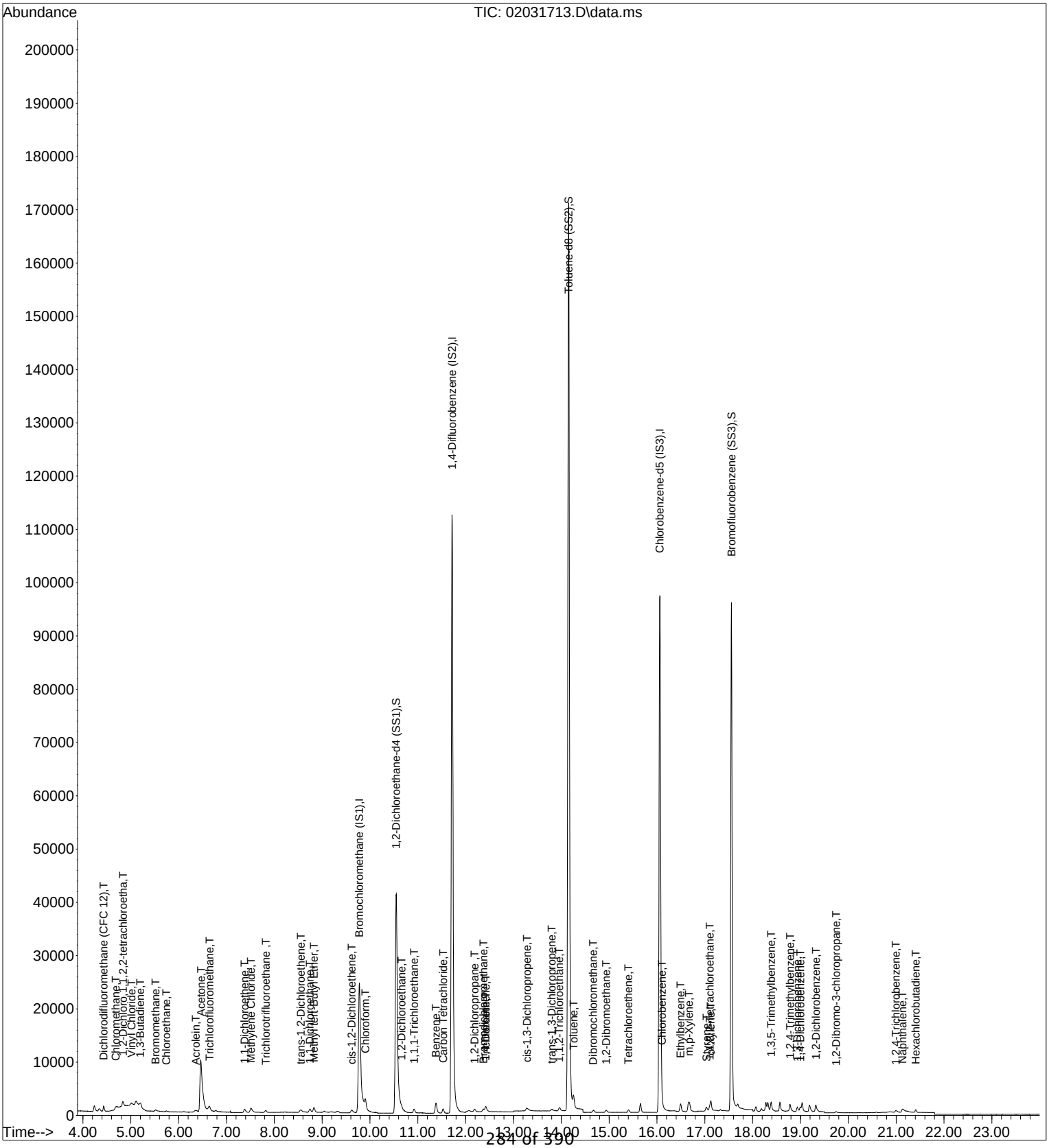
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.41	225	528	9.051	pg	96

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

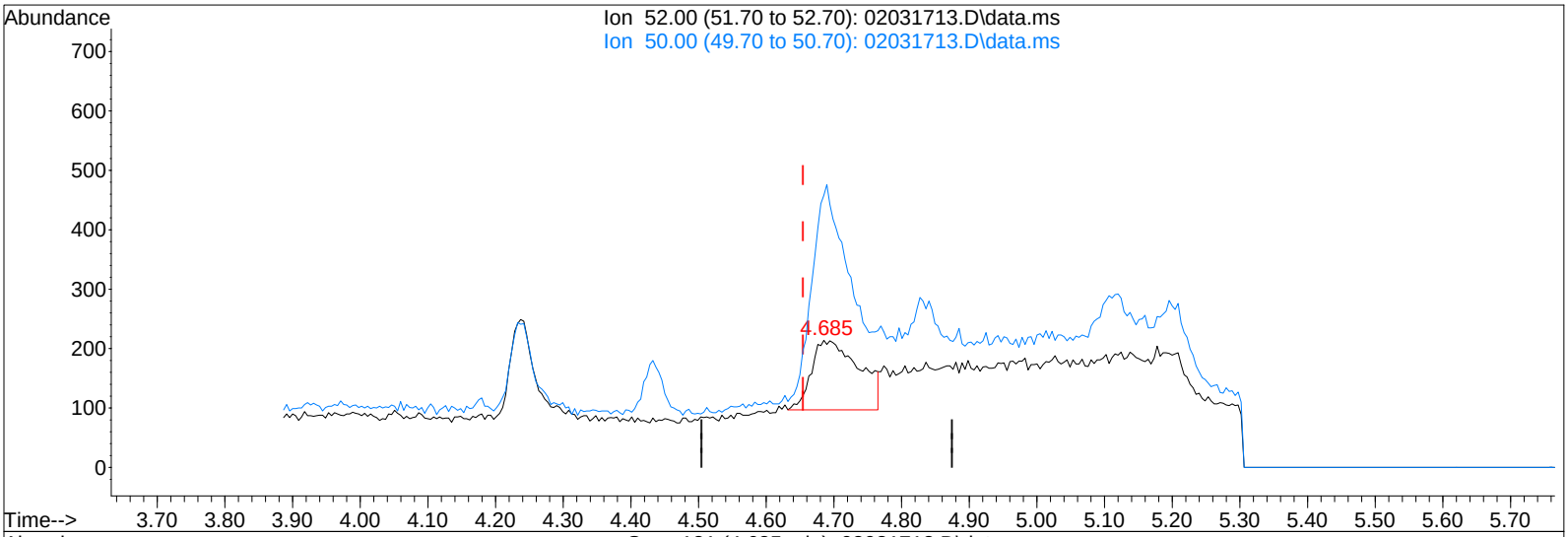
Quant Time: Feb 04 07:11:09 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

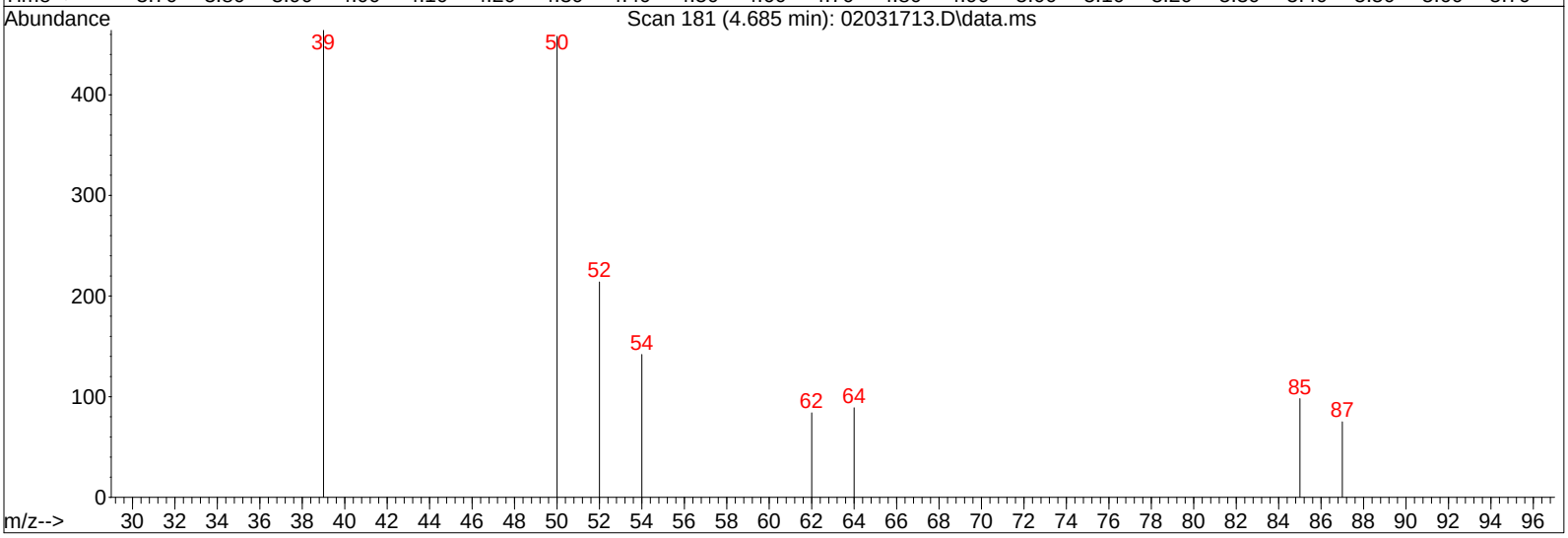


Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:09:20 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031713.D\data.ms

(3) Chloromethane (T)

4.685min (+0.031) 22.16pg

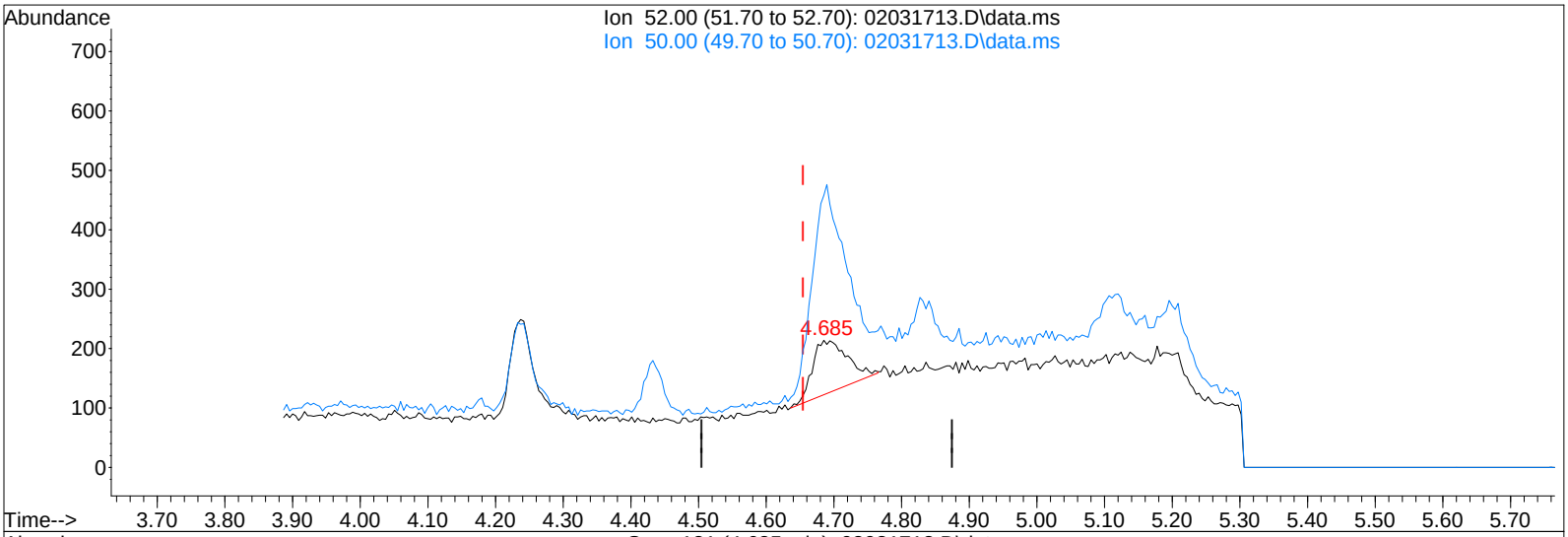
response 574

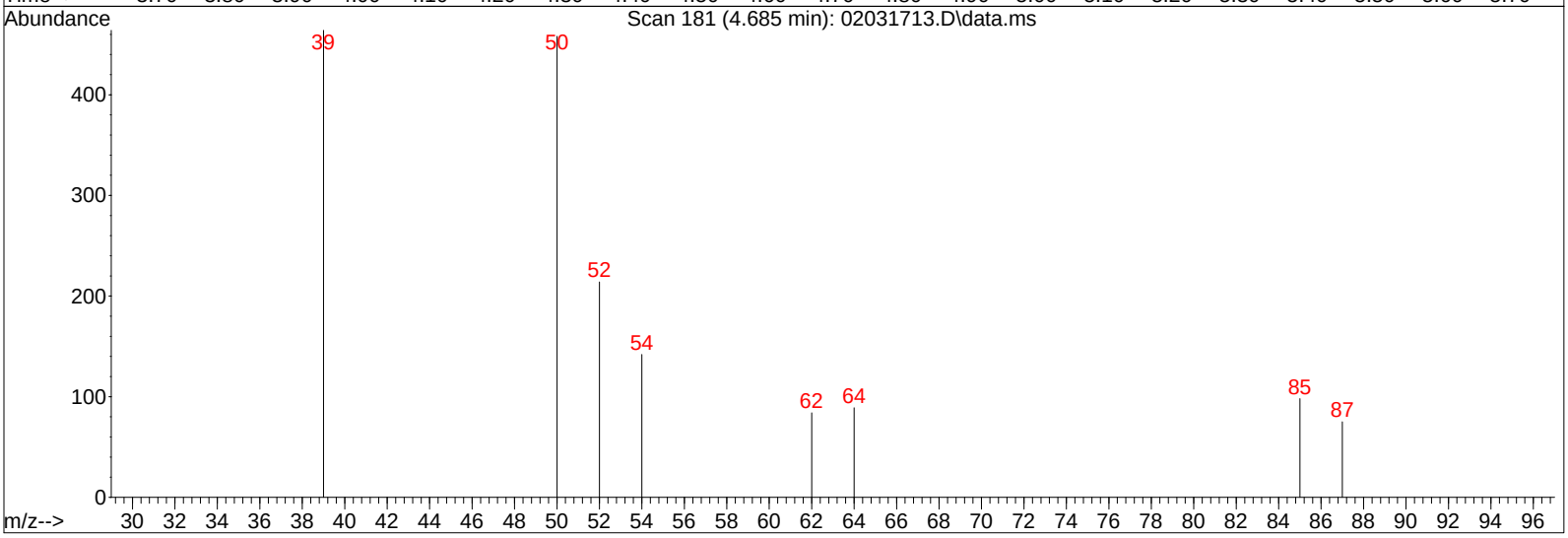
Ion	Exp%	Act%
52.00	100	100
50.00	289.00	290.24
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:09:20 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031713.D\data.ms

(3) Chloromethane (T)

4.685min (+0.031) 12.43pg m

response 322

Ion	Exp%	Act%
52.00	100	100
50.00	289.00	517.39#
0.00	0.00	0.00
0.00	0.00	0.00

BLC

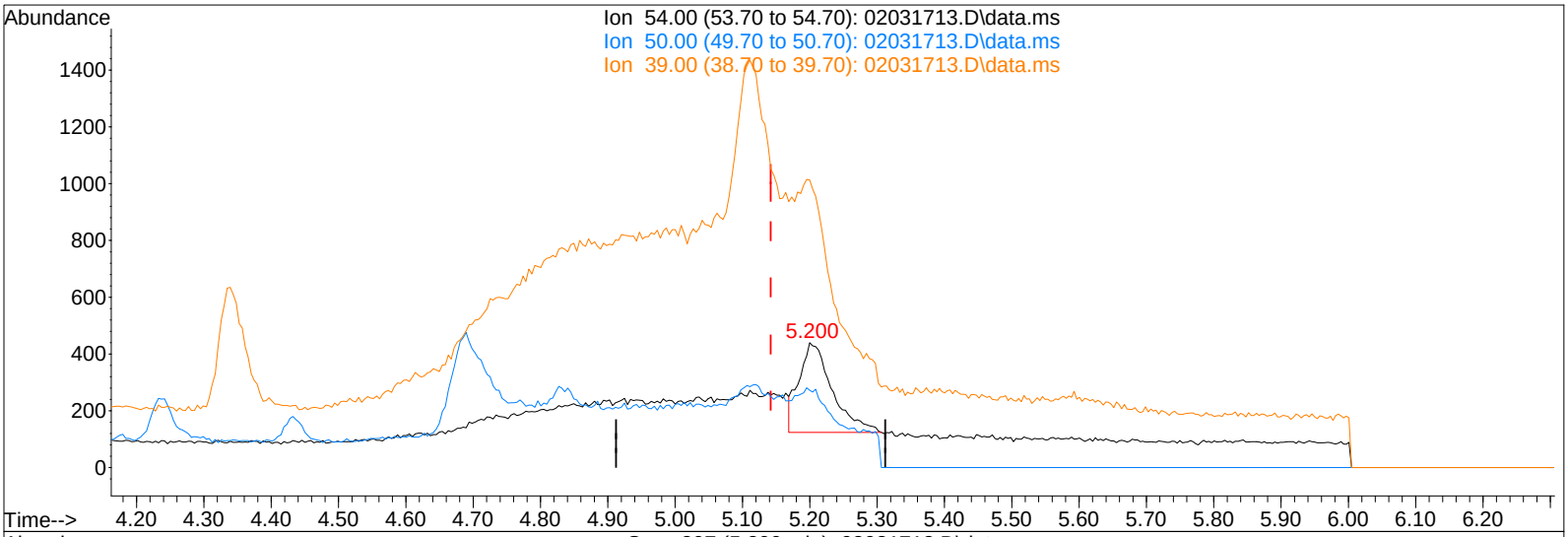
CL 2/4/17

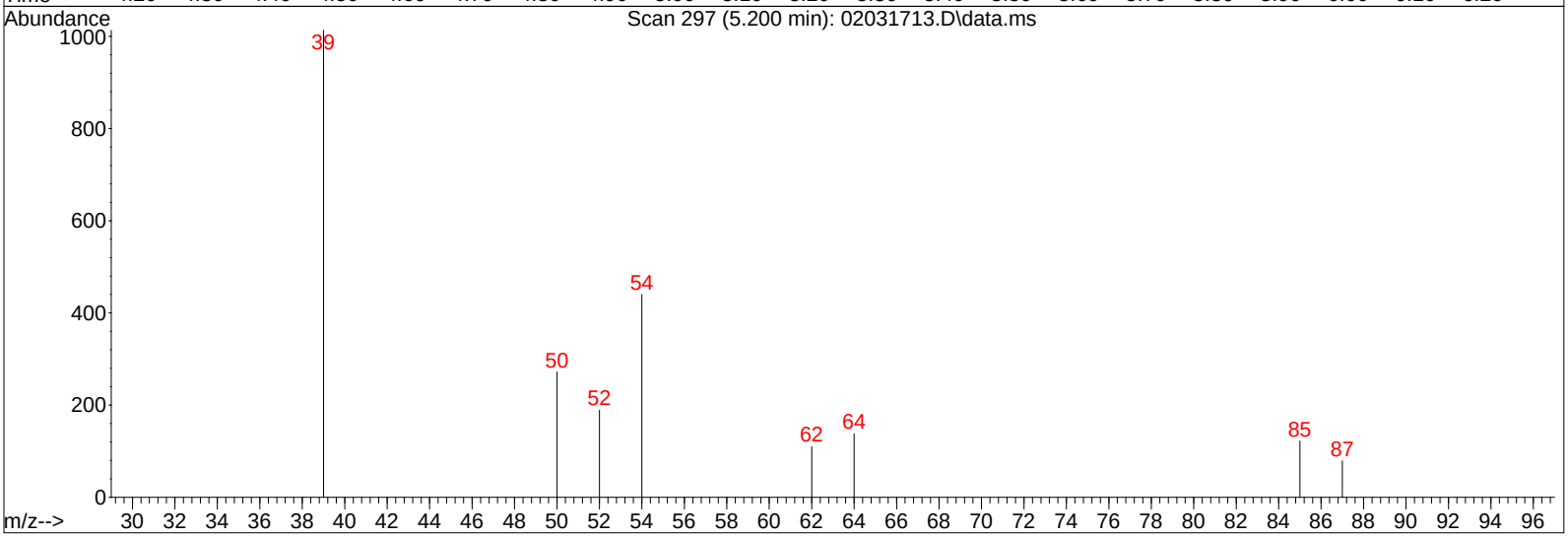
VOA 2/7/17

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:09:20 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031713.D\data.ms

(6) 1,3-Butadiene (T)

5.200min (+0.057) 17.38pg

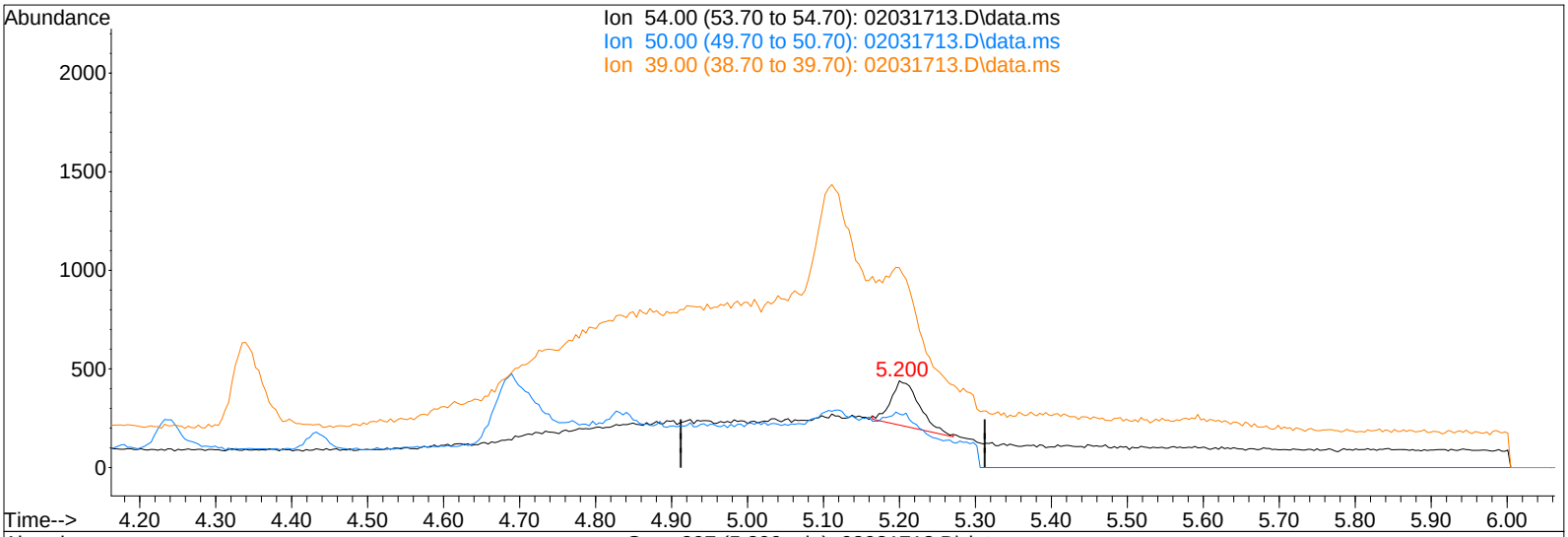
response 1082

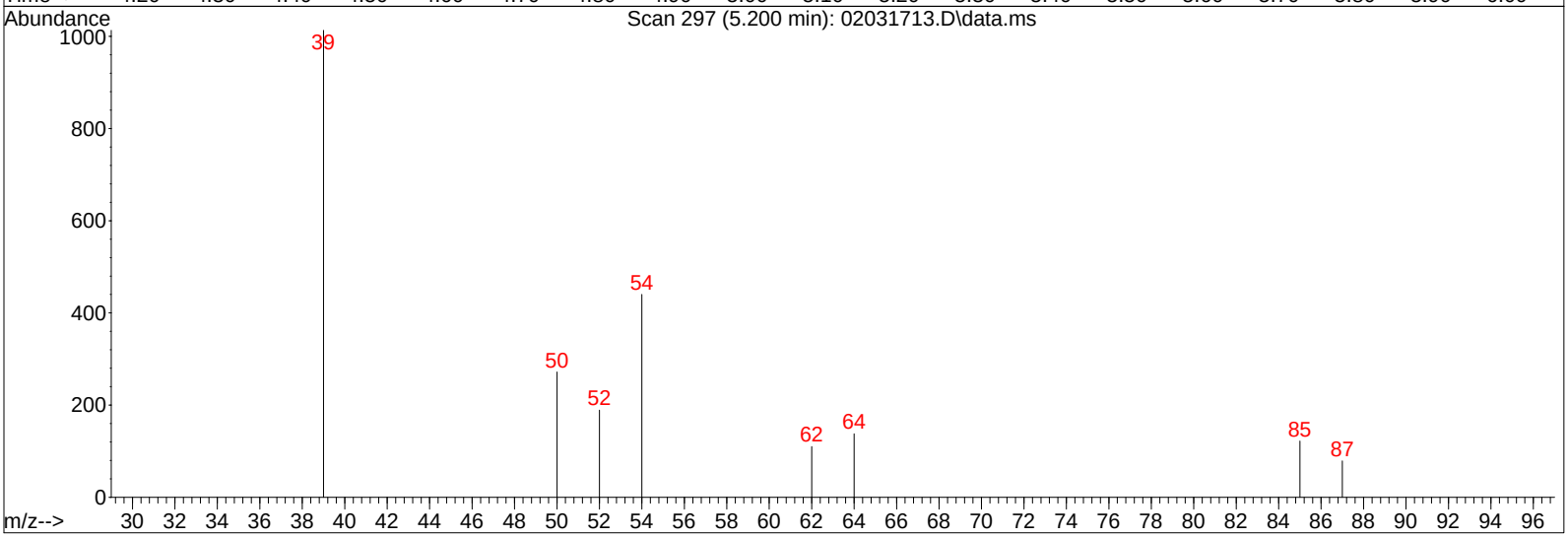
Ion	Exp%	Act%
54.00	100	100
50.00	33.50	113.68#
39.00	111.40	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:09:20 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031713.D\data.ms

(6) 1,3-Butadiene (T)

5.200min (+0.057) 9.36pg m

response 583

Ion	Exp%	Act%
54.00	100	100
50.00	33.50	0.00#
39.00	111.40	0.00#
0.00	0.00	0.00

BLC

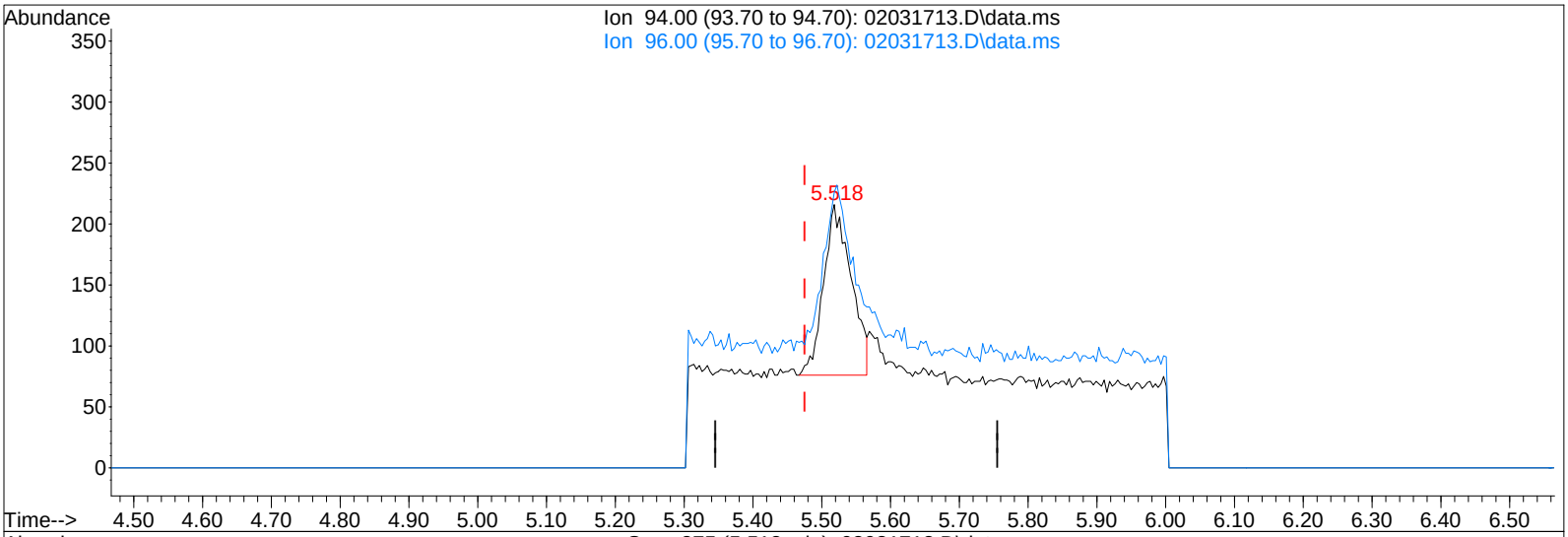
CL 2/4/17

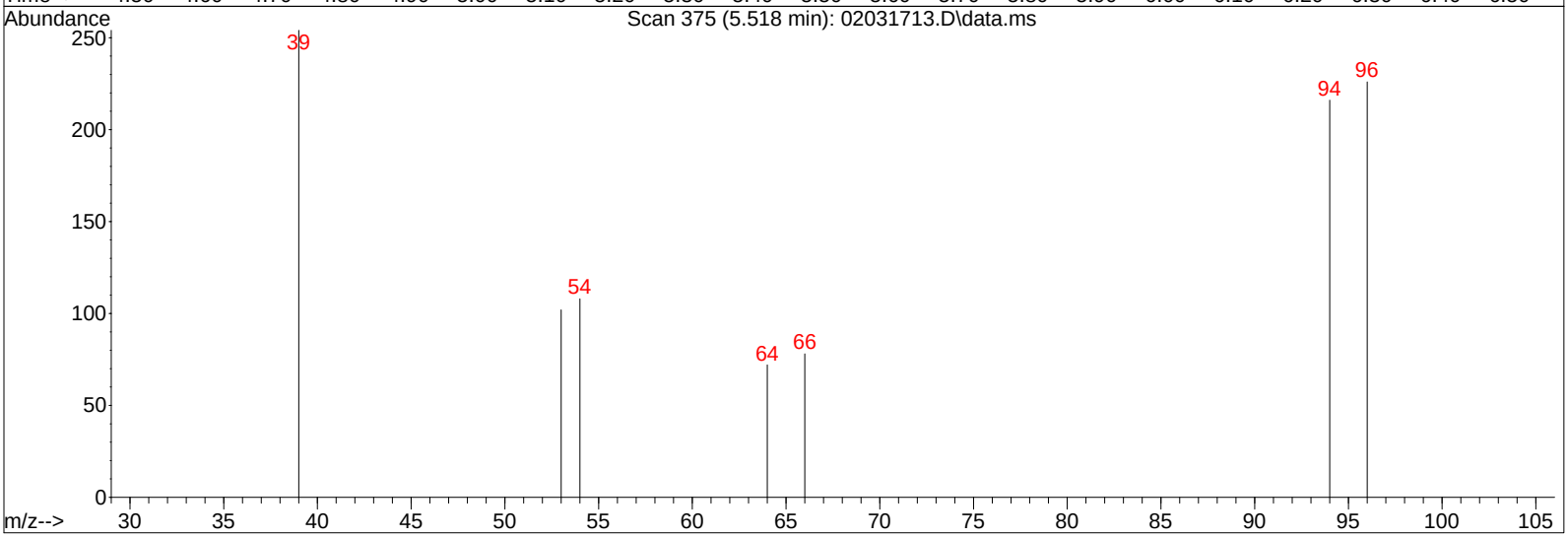
WA 2/7/17

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:09:20 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031713.D\data.ms

(7) Bromomethane (T)

5.518min (+0.043) 9.65pg

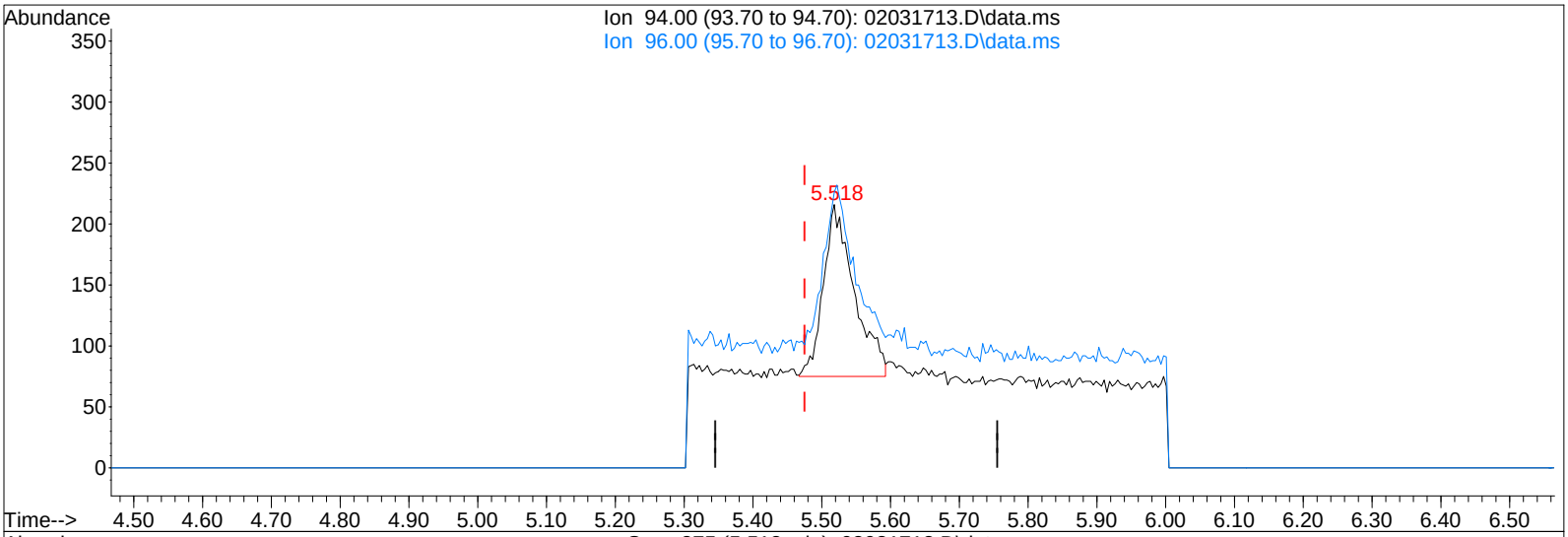
response 391

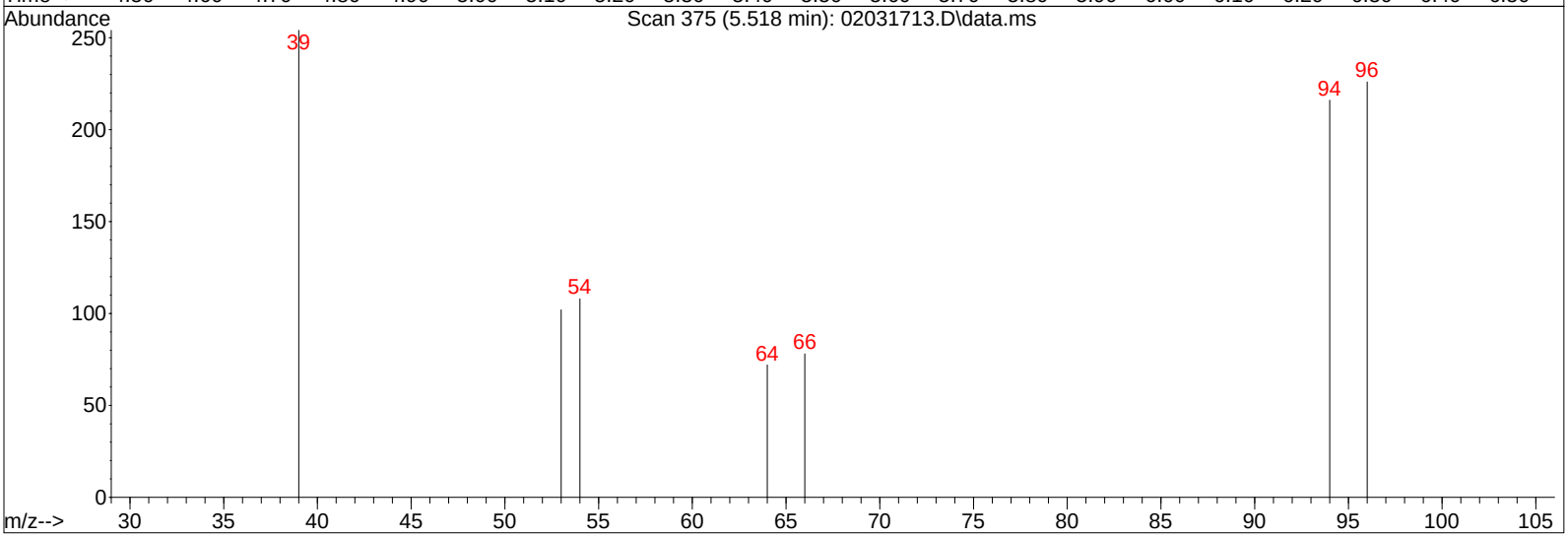
Ion	Exp%	Act%
94.00	100	100
96.00	93.00	87.98
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:09:20 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031713.D\data.ms

(7) Bromomethane (T)

5.518min (+0.043) 10.86pg m

response 440

Ion	Exp%	Act%
94.00	100	100
96.00	93.00	78.18
0.00	0.00	0.00
0.00	0.00	0.00

BLC

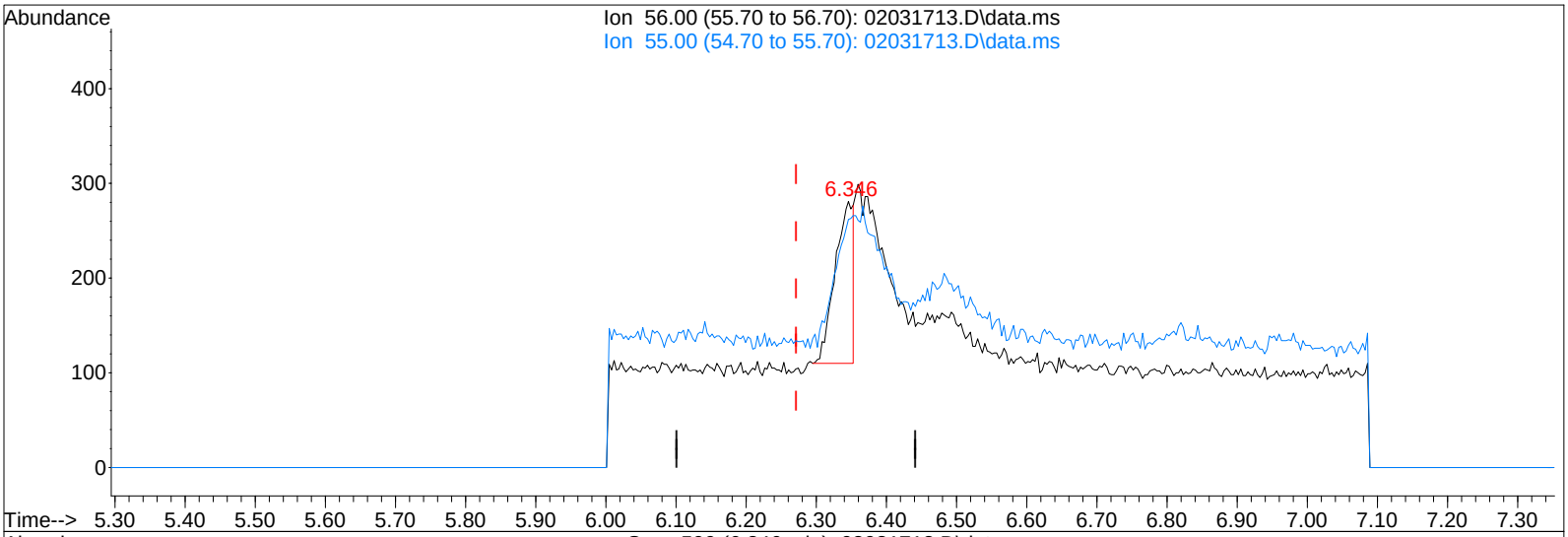
CL 2/4/17

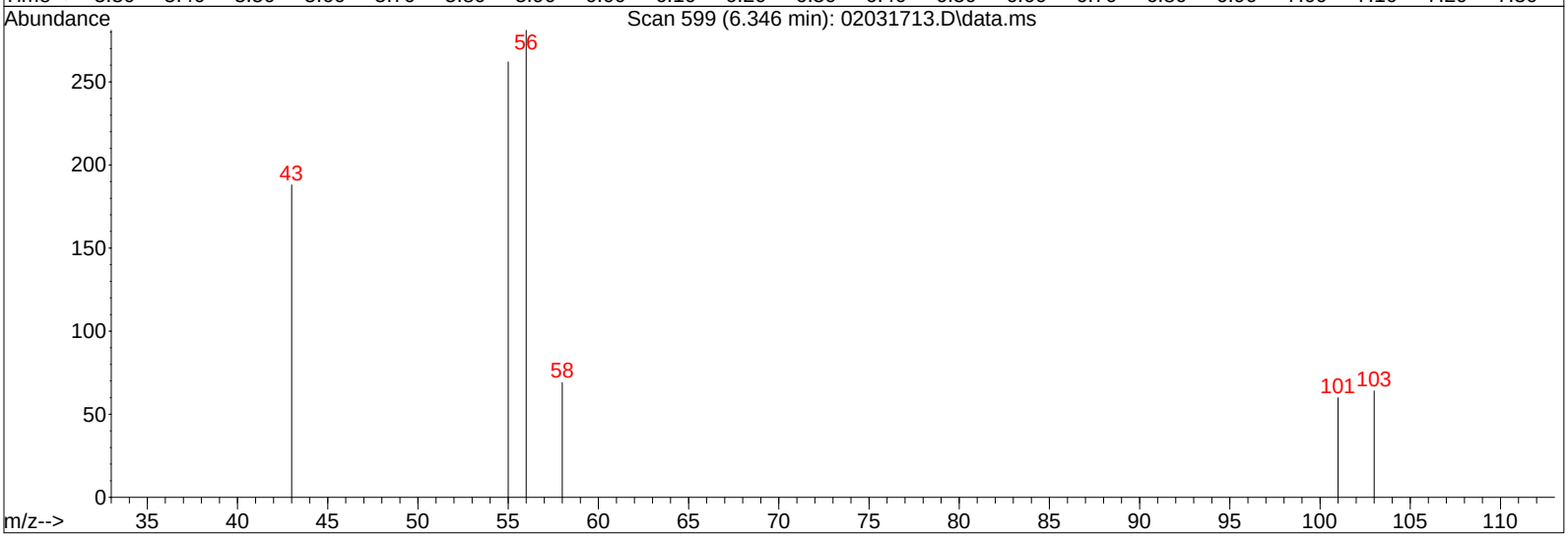
VOA 2/7/17

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:09:20 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031713.D\data.ms

(9) Acrolein (T)

6.346min (+0.075) 11.66pg

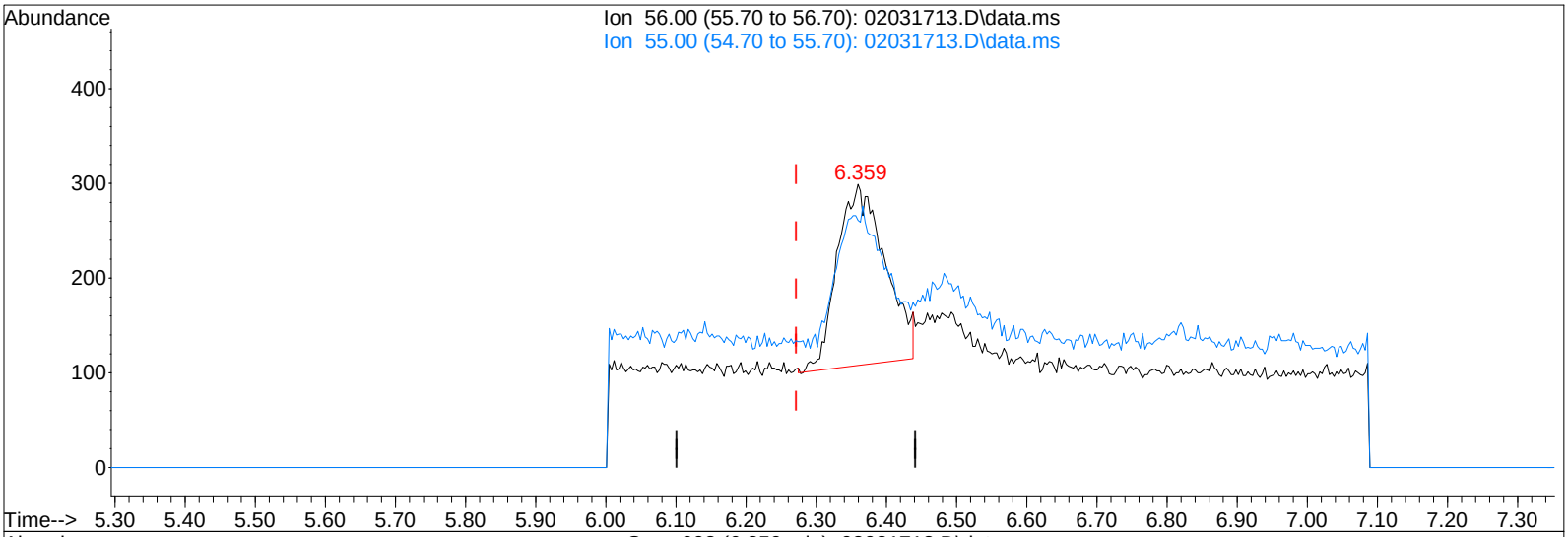
response 309

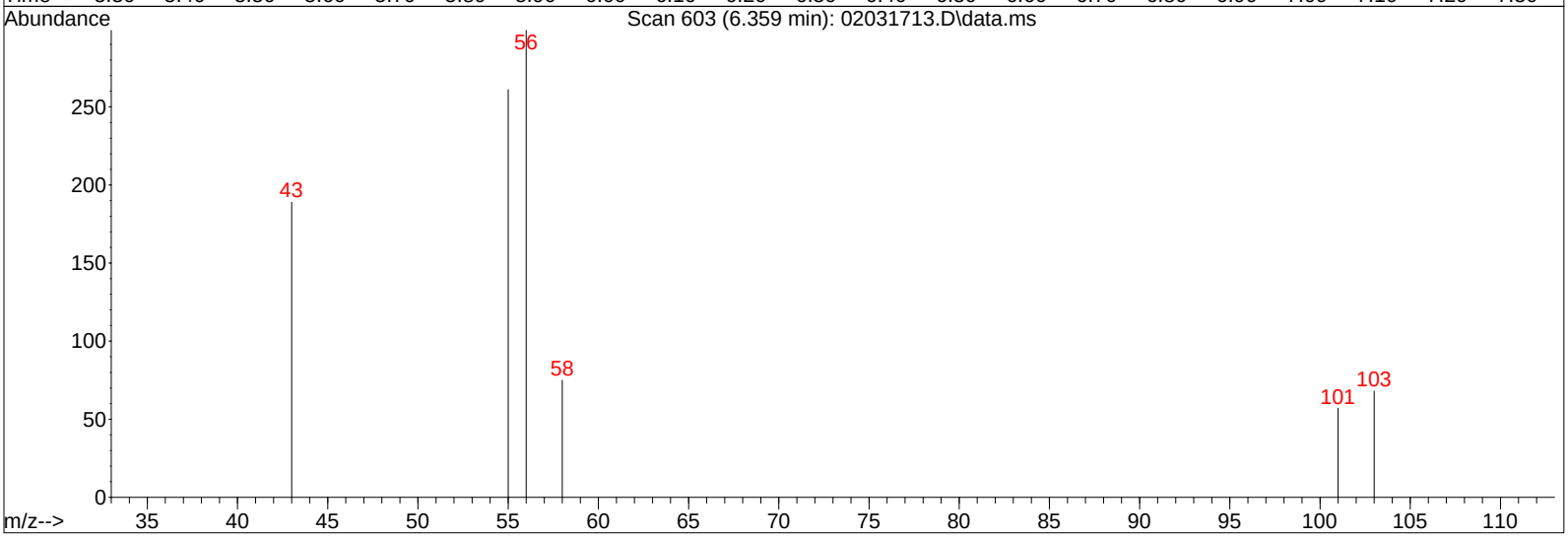
Ion	Exp%	Act%
56.00	100	100
55.00	74.00	108.41#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031713.D Vial: 12
Acq On : 3 Feb 2017 14:51 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01171712 (2/15)

Quant Time: Feb 04 07:09:20 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031713.D\data.ms

(9) Acrolein (T)

6.359min (+0.088) 34.19pg m

response 906

Ion	Exp%	Act%
56.00	100	100
55.00	74.00	36.98#
0.00	0.00	0.00
0.00	0.00	0.00

SP

CL 2/4/17

WH 2/7/17

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031714.D Vial: 13
Acq On : 3 Feb 2017 15:22 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:13:35 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.79	130	48491	1000.000	pg	0.03
25) 1,4-Difluorobenzene (IS2)	11.72	114	240179	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.06	54	42539	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.55	65	85268	1121.559	pg	0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 112.16%			
33) Toluene-d8 (SS2)	14.15	98	244738	1013.636	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 101.36%			
45) Bromofluorobenzene (SS3)	17.55	174	74065	814.743	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 81.47%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.45	85	2663	23.260	pg	100
3) Chloromethane	4.70	52	737m	28.780	pg	
4) 1,2-Dichloro,1,1,2,2-t...	4.84	85	2497	23.102	pg	97
5) Vinyl Chloride	5.02	62	2233	22.101	pg	100
6) 1,3-Butadiene	5.22	54	1059m	17.205	pg	
7) Bromomethane	5.54	94	804	20.072	pg	93
8) Chloroethane	5.75	64	679	21.306	pg	75
9) Acrolein	6.36	56	744m	28.398	pg	
10) Acetone	6.48	58	6522	200.562	pg	92
11) Trichlorofluoromethane	6.65	101	2037	23.119	pg	100
12) 1,1-Dichloroethene	7.39	96	1090	21.095	pg	96
13) Methylene Chloride	7.53	84	1395	26.193	pg	93
14) Trichlorotrifluoroethane	7.82	151	1079	20.336	pg	99
15) trans-1,2-Dichloroethene	8.57	96	1048	20.067	pg	95
16) 1,1-Dichloroethane	8.75	63	1967	21.707	pg	99
17) Methyl tert-Butyl Ether	8.83	73	3631	21.810	pg	98
18) cis-1,2-Dichloroethene	9.63	96	1065	18.930	pg	98
19) Chloroform	9.91	83	3149	32.150	pg	99
21) 1,2-Dichloroethane	10.67	62	1560	21.643	pg	85
22) 1,1,1-Trichloroethane	10.92	97	2009	21.771	pg	98
23) Benzene	11.38	78	7074	33.239	pg	100
24) Carbon Tetrachloride	11.53	117	1760	20.478	pg	99
26) 1,2-Dichloropropane	12.19	63	1076	20.128	pg	97
27) Bromodichloromethane	12.37	83	1630	20.919	pg	99
28) Trichloroethene	12.42	130	1182	19.256	pg	99
29) 1,4-Dioxane	12.42	88	910	19.442	pg	95
30) cis-1,3-Dichloropropene	13.28	75	1618	18.621	pg	94
31) trans-1,3-Dichloropropene	13.80	75	1183	15.743	pg	93
32) 1,1,2-Trichloroethane	13.97	83	877	19.377	pg	96
34) Toluene	14.26	91	5141	22.345	pg	99
35) Dibromochloromethane	14.67	129	1185	17.742	pg	98
36) 1,2-Dibromoethane	14.93	107	1041	17.320	pg	98
37) Tetrachloroethene	15.41	166	1213	18.494	pg	99
39) Chlorobenzene	16.11	112	3080	19.173	pg	100
40) Ethylbenzene	16.49	91	4990	18.567	pg	99
41) m,p-Xylene	16.67	91	7889	37.646	pg	97
42) Styrene	17.03	104	2382	14.836	pg	96
43) o-Xylene	17.13	106	1828	17.547	pg	97
44) 1,1,2,2-Tetrachloroethane	17.10	83	1798	18.068	pg	97
46) 1,3,5-Trimethylbenzene	18.39	105	3713	16.427	pg	100
47) 1,2,4-Trimethylbenzene	18.78	105	3713	16.317	pg	99
48) 1,3-Dichlorobenzene	18.93	146	1801	14.411	pg	100
49) 1,4-Dichlorobenzene	18.99	146	2226	16.878	pg	97
50) 1,2-Dichlorobenzene	19.32	146	1949	15.462	pg	97
51) 1,2-Dibromo-3-chloropr...	19.74	157	456	10.054	pg	82
52) 1,2,4-Trichlorobenzene	20.99	182	1171	13.085	pg	97
53) Naphthalene	21.13	128	3419	11.941	pg	82

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031714.D Vial: 13
Acq On : 3 Feb 2017 15:22 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:13:35 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

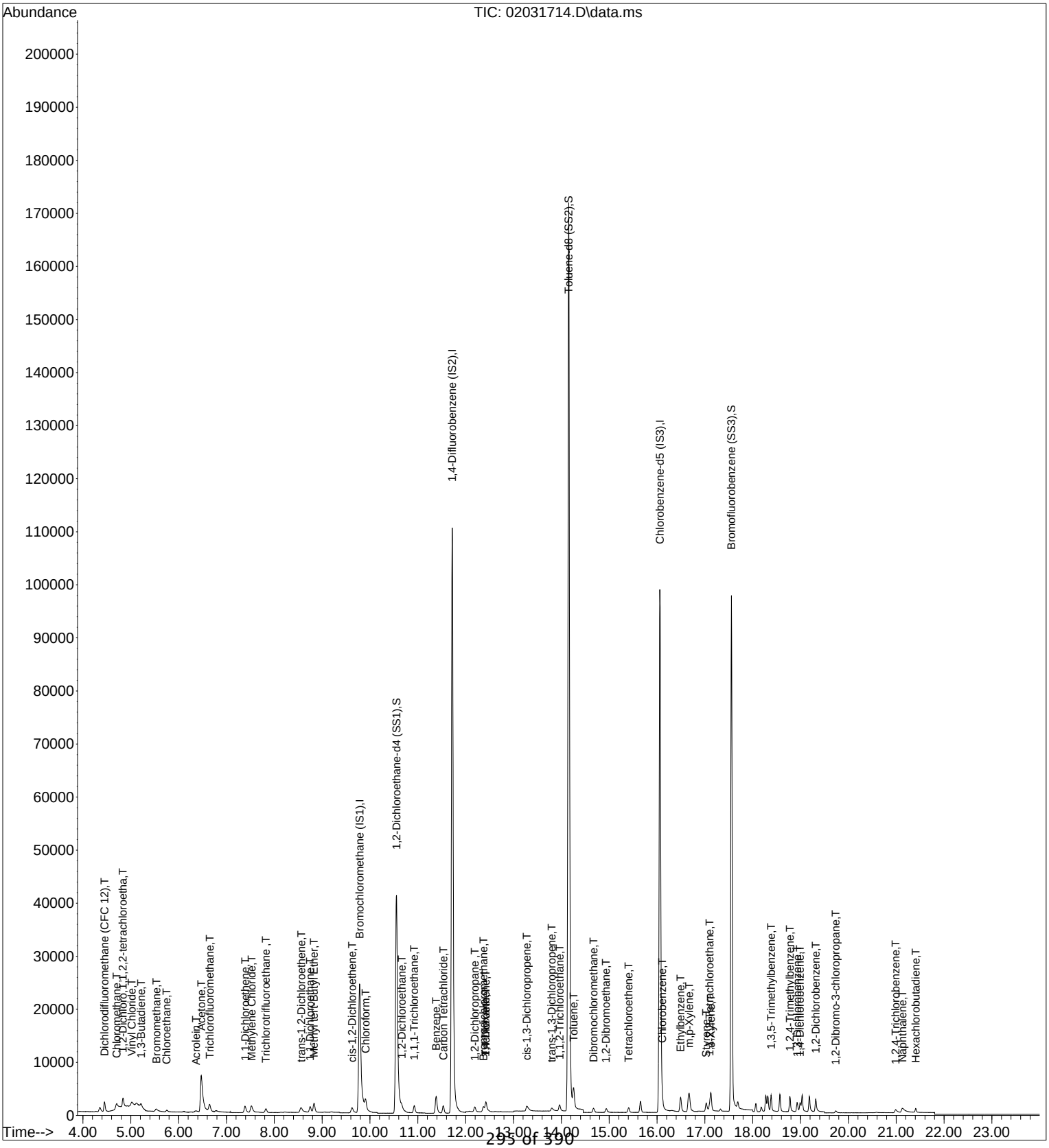
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.41	225	740	12.690	pg	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031714.D Vial: 13
Acq On : 3 Feb 2017 15:22 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

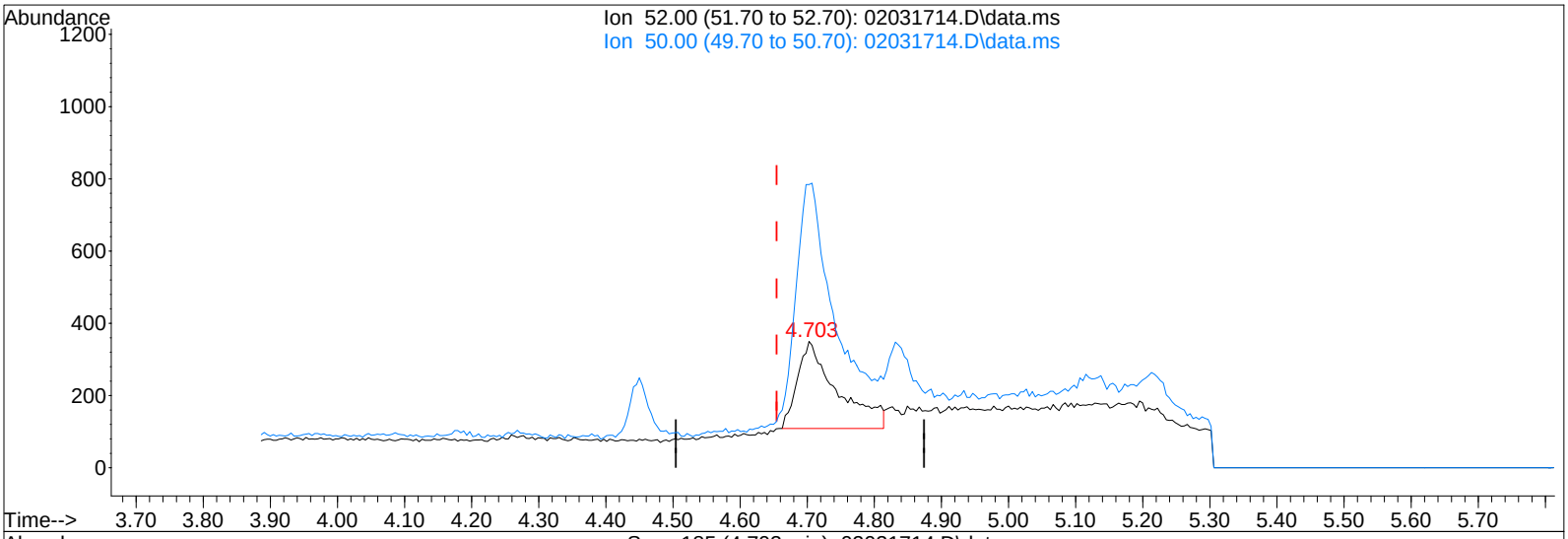
Quant Time: Feb 04 07:13:35 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

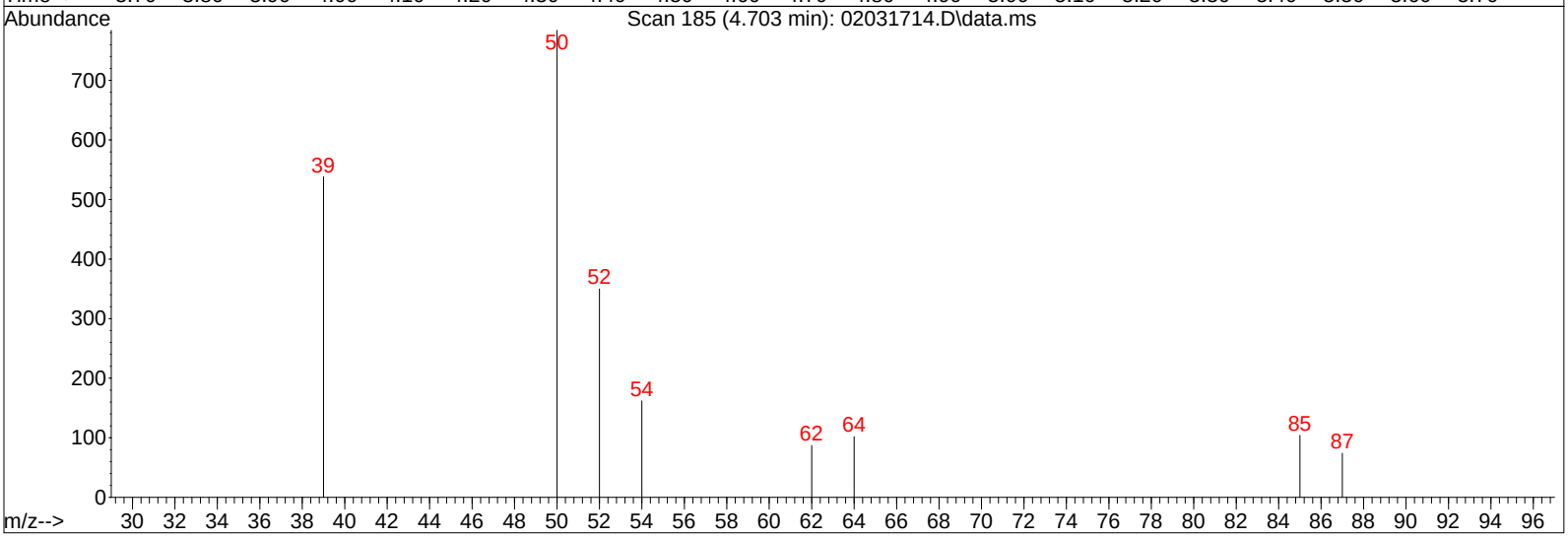


Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031714.D Vial: 13
Acq On : 3 Feb 2017 15:22 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:21 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031714.D\data.ms

(3) Chloromethane (T)

4.703min (+0.048) 38.66pg

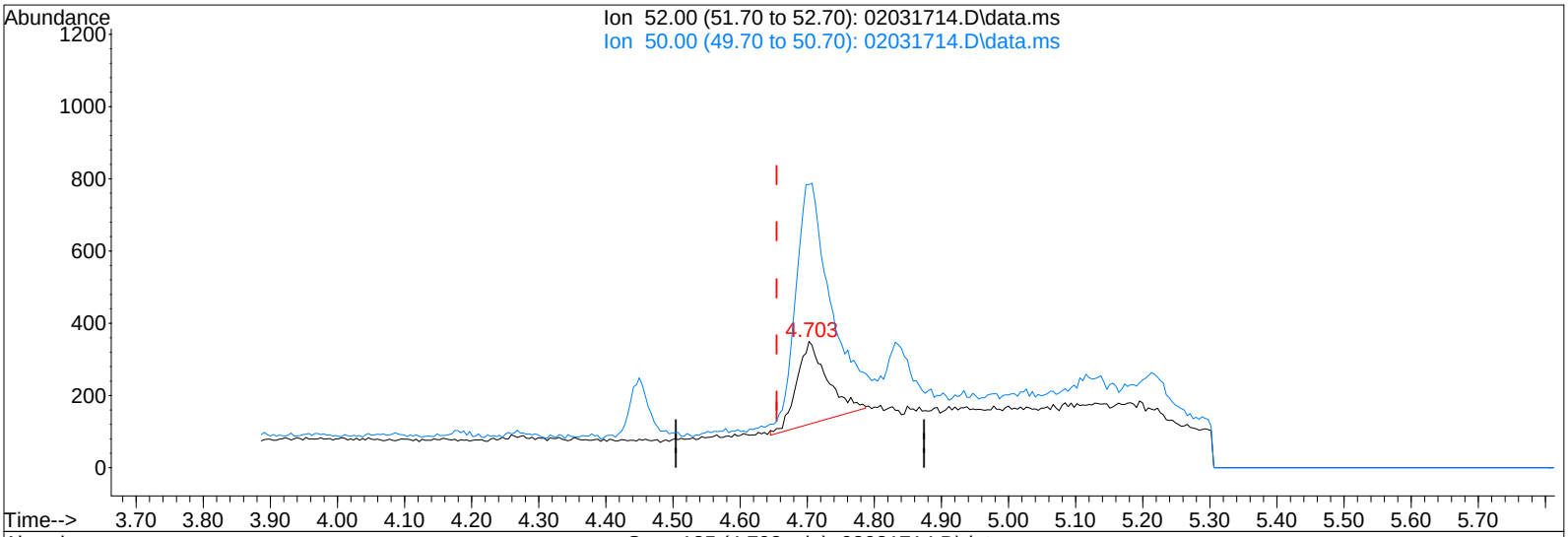
response 990

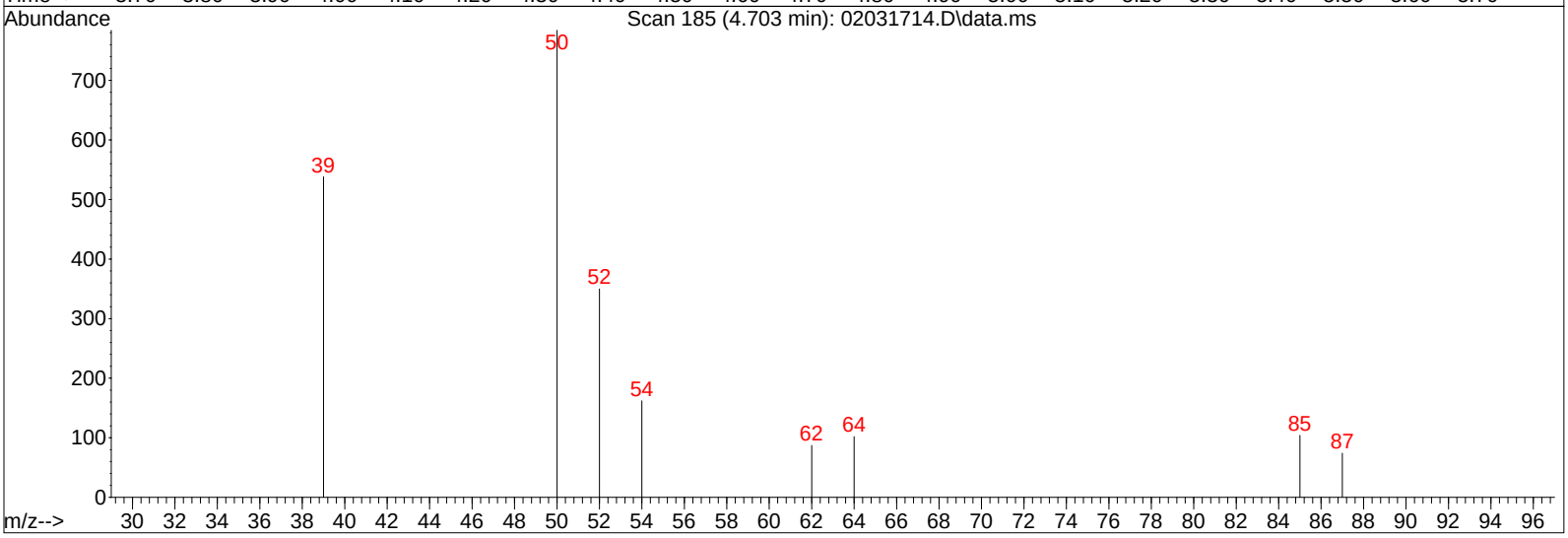
Ion	Exp%	Act%
52.00	100	100
50.00	289.00	284.85
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031714.D Vial: 13
Acq On : 3 Feb 2017 15:22 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:21 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031714.D\data.ms

(3) Chloromethane (T)

4.703min (+0.048) 28.78pg m

response 737

Ion	Exp%	Act%
52.00	100	100
50.00	289.00	382.63#
0.00	0.00	0.00
0.00	0.00	0.00

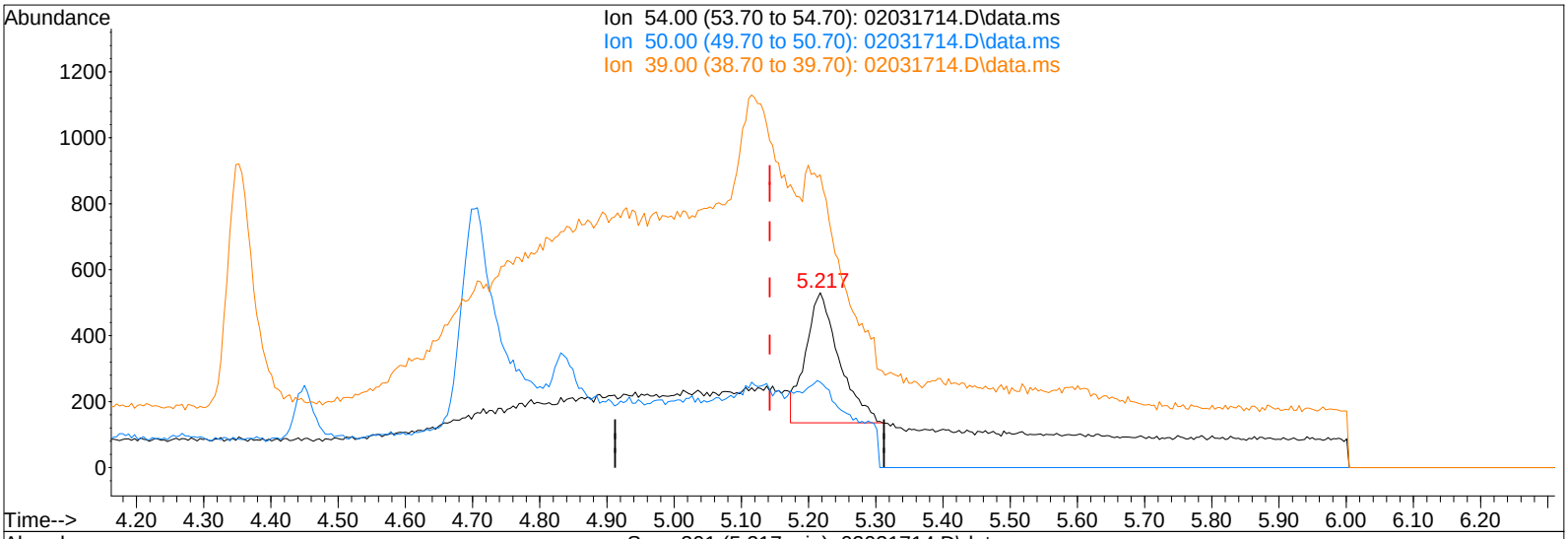
BLC

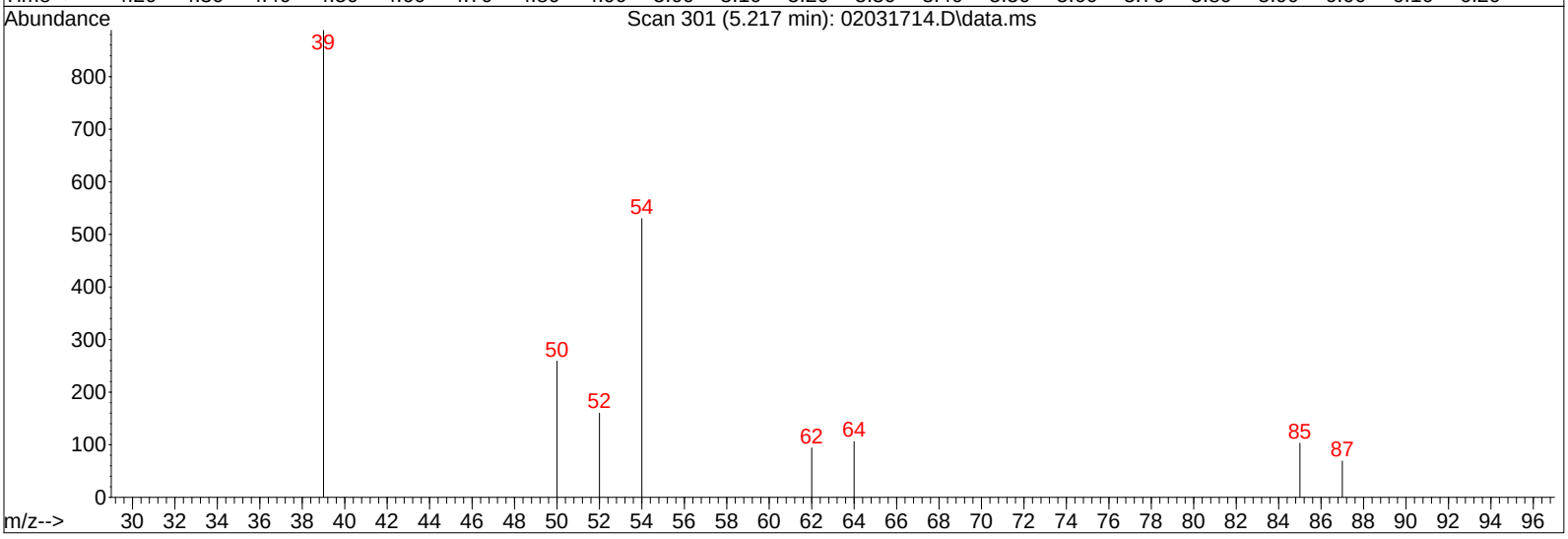
CL 2/4/17 2/7/17

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031714.D Vial: 13
Acq On : 3 Feb 2017 15:22 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:21 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031714.D\data.ms

(6) 1,3-Butadiene (T)

5.217min (+0.075) 22.11pg

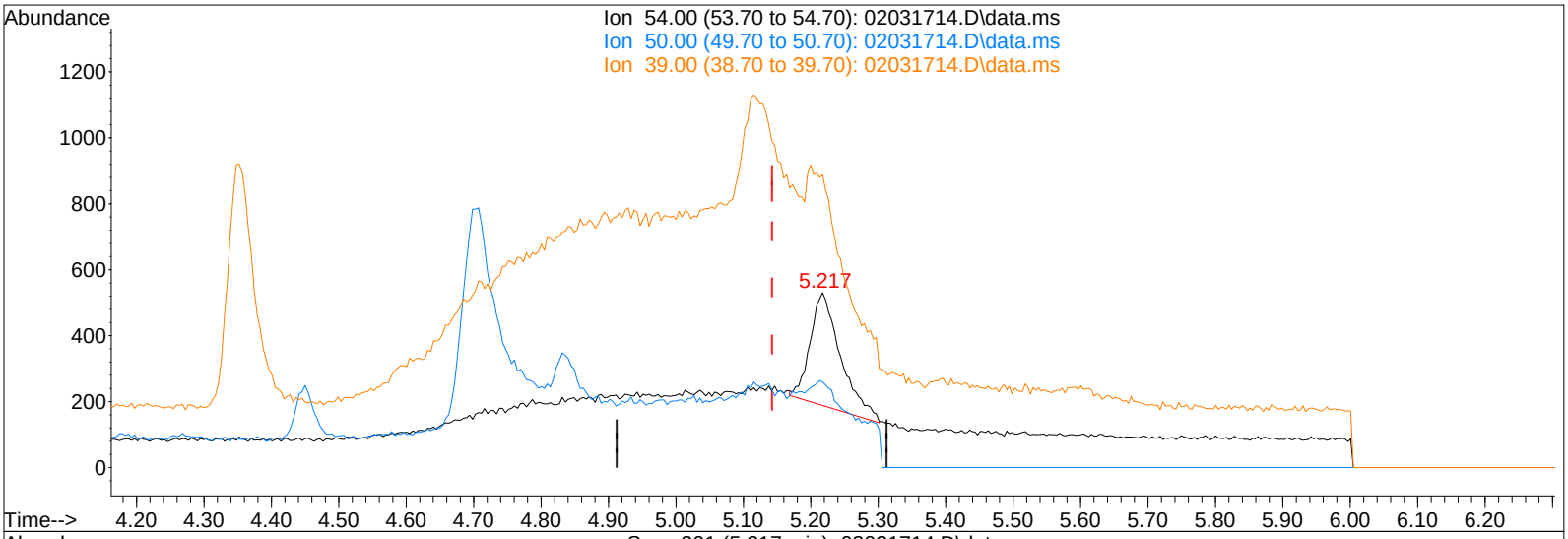
response 1361

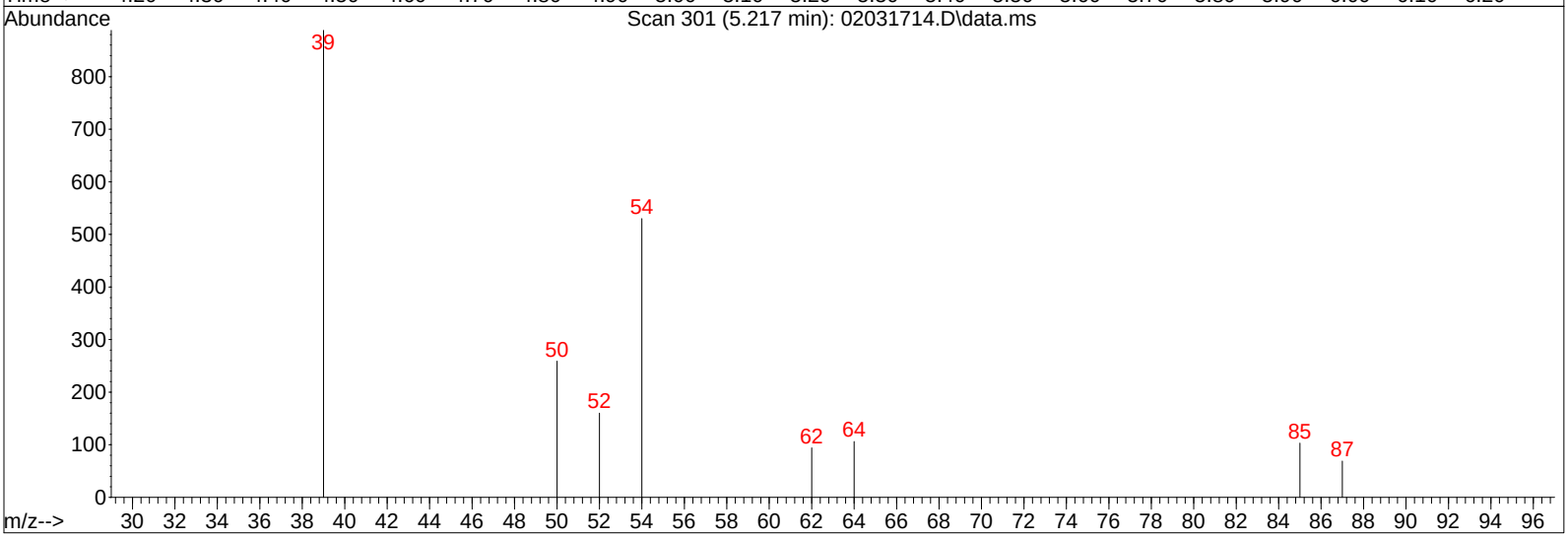
Ion	Exp%	Act%
54.00	100	100
50.00	33.50	118.66#
39.00	111.40	160.40#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031714.D Vial: 13
Acq On : 3 Feb 2017 15:22 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:21 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031714.D\data.ms

(6) 1,3-Butadiene (T)

5.217min (+0.075) 17.20pg m

response 1059

BLC

Ion	Exp%	Act%
54.00	100	100
50.00	33.50	0.00#
39.00	111.40	0.00#
0.00	0.00	0.00

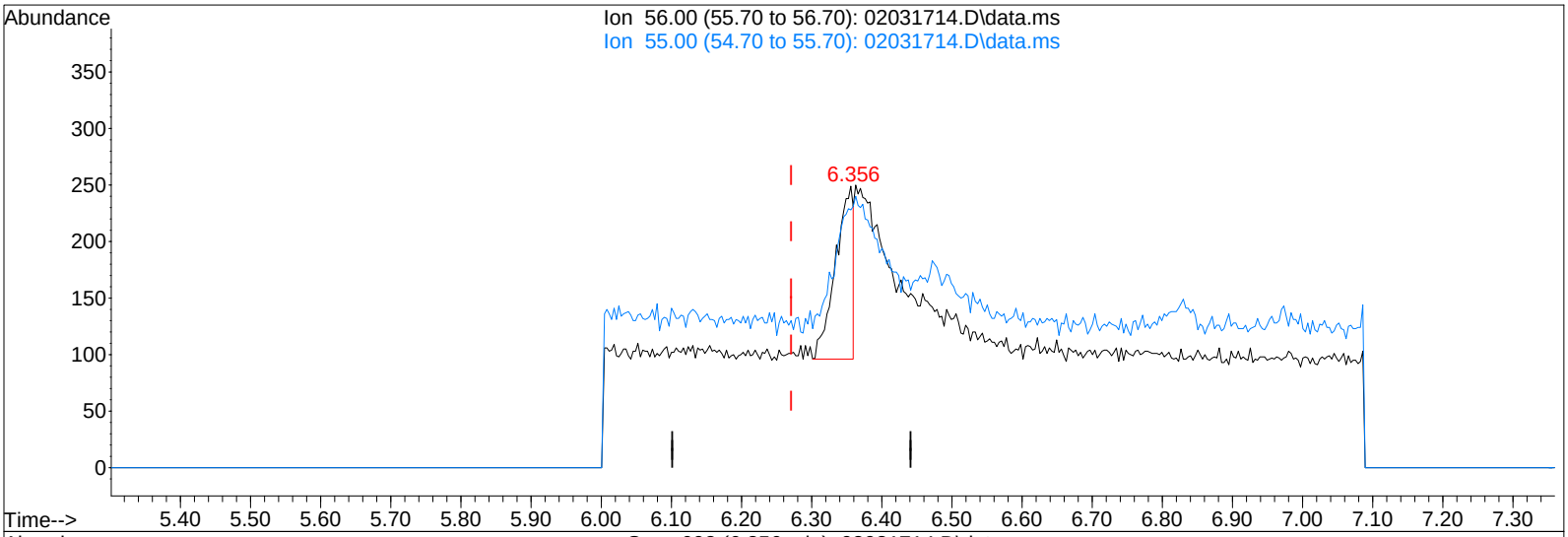
CL 2/4/17

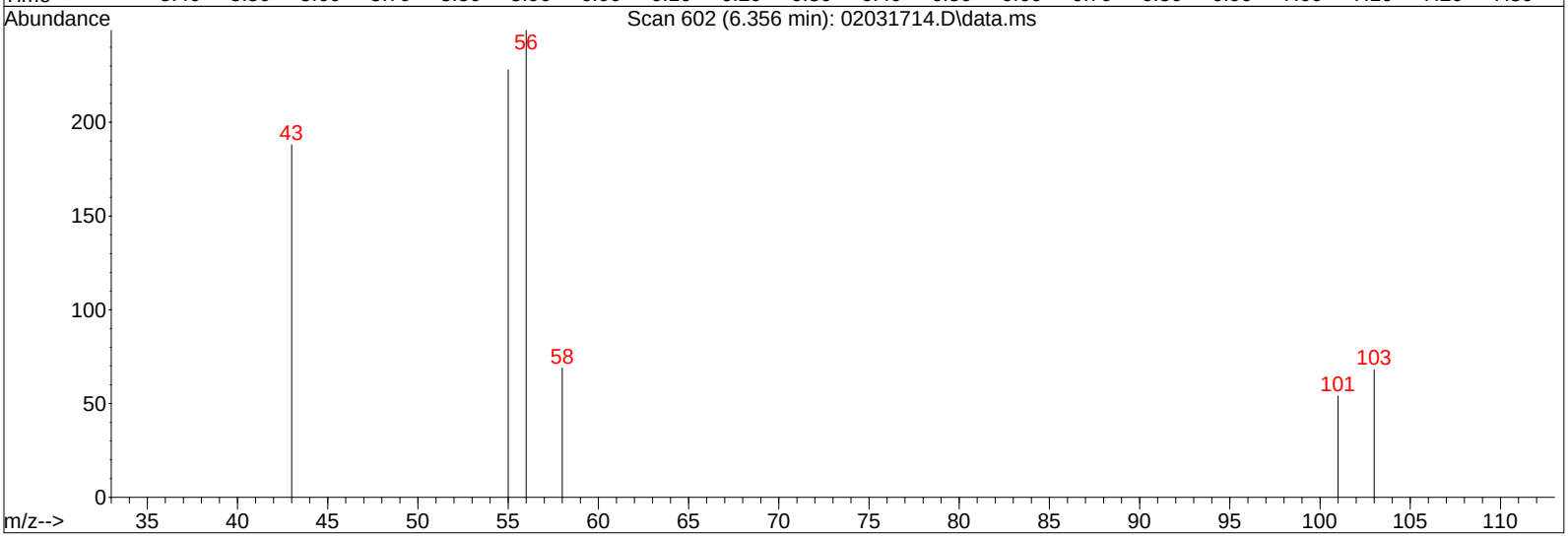
VOA 2/7/17

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031714.D Vial: 13
Acq On : 3 Feb 2017 15:22 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:21 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031714.D\data.ms

(9) Acrolein (T)

6.356min (+0.085) 10.34pg

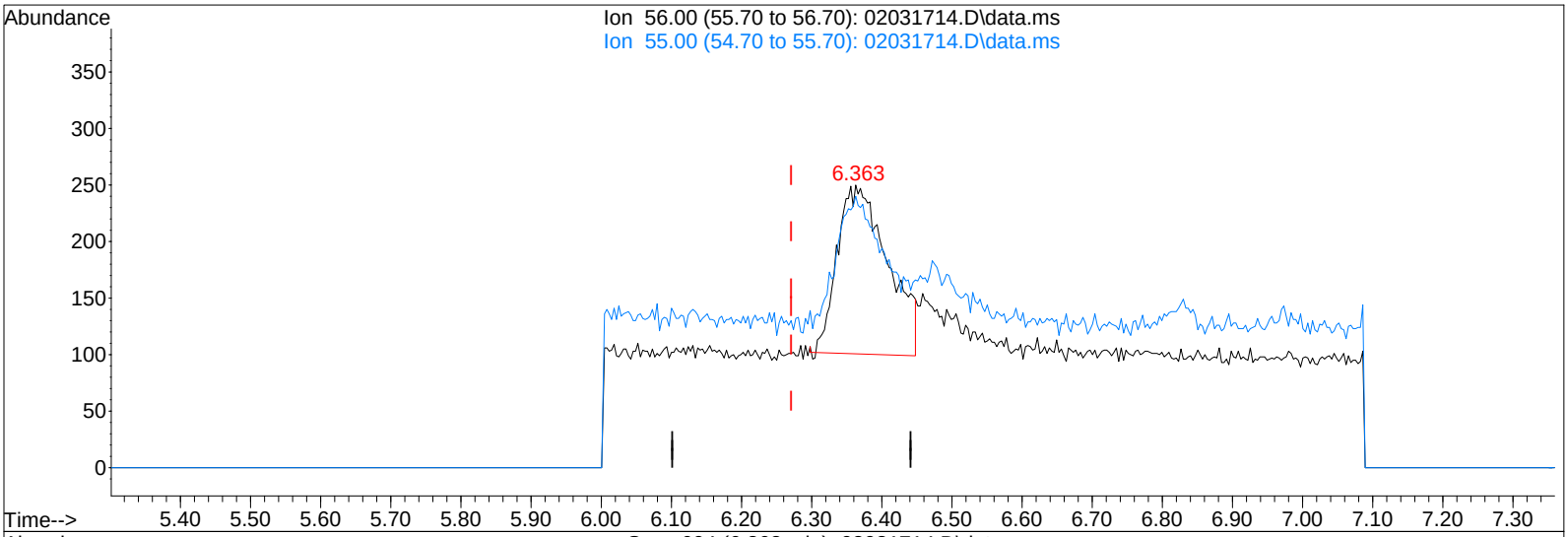
response 271

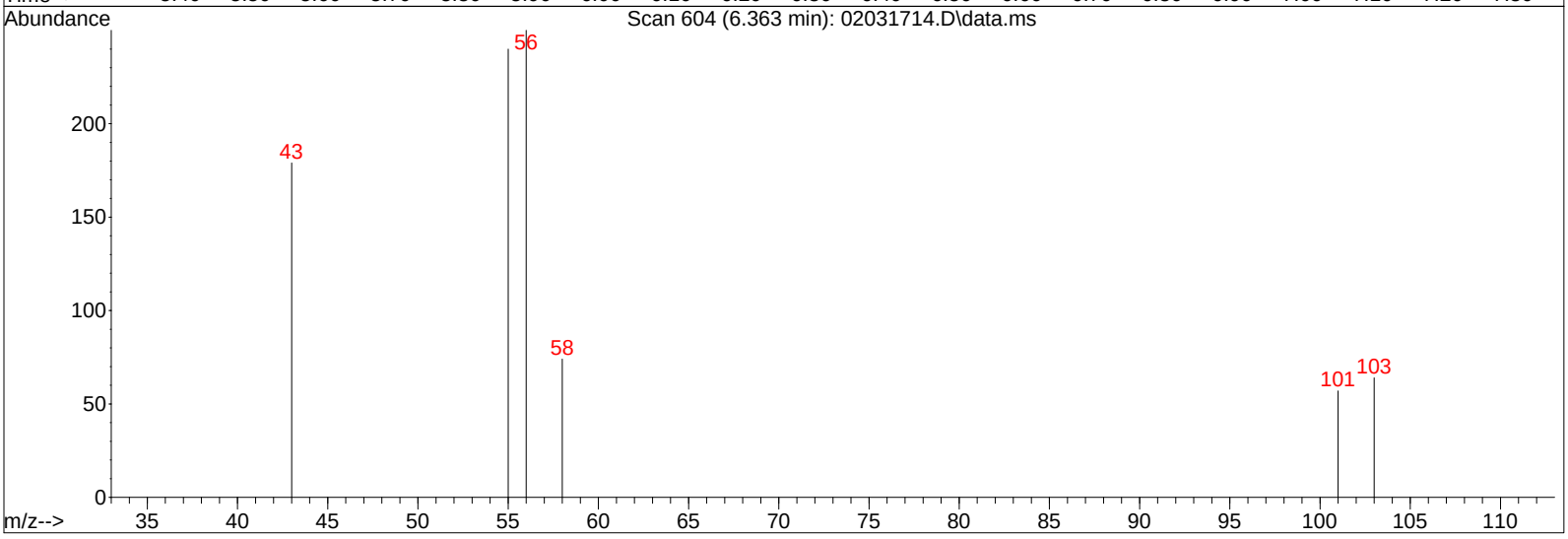
Ion	Exp%	Act%
56.00	100	100
55.00	74.00	26.57#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031714.D Vial: 13
Acq On : 3 Feb 2017 15:22 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:21 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031714.D\data.ms

(9) Acrolein (T)

6.363min (+0.092) 28.40pg m

response 744

Ion	Exp%	Act%
56.00	100	100
55.00	74.00	9.68#
0.00	0.00	0.00
0.00	0.00	0.00

SP

CL 2/4/17

2/7/17

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031715.D Vial: 13
Acq On : 3 Feb 2017 15:54 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:15:32 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.78	130	46447	1000.000	pg		0.02
25) 1,4-Difluorobenzene (IS2)	11.72	114	230528	1000.000	pg		0.01
38) Chlorobenzene-d5 (IS3)	16.06	54	41150	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.55	65	82290	1130.022	pg		0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 113.00%				
33) Toluene-d8 (SS2)	14.15	98	235665	1016.920	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 101.69%				
45) Bromofluorobenzene (SS3)	17.56	174	72508	824.538	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 82.45%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.45	85	6551	59.738	pg		99
3) Chloromethane	4.69	52	1429m	58.259	pg		
4) 1,2-Dichloro,1,1,2,2-t...	4.83	85	5890	56.893	pg		100
5) Vinyl Chloride	5.00	62	5489	56.719	pg		99
6) 1,3-Butadiene	5.20	54	3862m	65.504	pg		
7) Bromomethane	5.52	94	1941	50.589	pg		100
8) Chloroethane	5.74	64	1674	54.840	pg		96
9) Acrolein	6.35	56	1592	63.439	pg	#	60
10) Acetone	6.46	58	15358	493.068	pg	#	82
11) Trichlorofluoromethane	6.64	101	4937	58.499	pg		100
12) 1,1-Dichloroethene	7.38	96	2598	52.492	pg		97
13) Methylene Chloride	7.51	84	3067	60.121	pg		97
14) Trichlorotrifluoroethane	7.82	151	2649	52.123	pg		100
15) trans-1,2-Dichloroethene	8.55	96	2725	54.475	pg		100
16) 1,1-Dichloroethane	8.74	63	4750	54.726	pg		99
17) Methyl tert-Butyl Ether	8.82	73	8974	56.276	pg		100
18) cis-1,2-Dichloroethene	9.62	96	2929	54.352	pg		99
19) Chloroform	9.90	83	6291	67.055	pg		98
21) 1,2-Dichloroethane	10.66	62	3941	57.083	pg		98
22) 1,1,1-Trichloroethane	10.93	97	4955	56.059	pg		100
23) Benzene	11.38	78	12832	62.949	pg		99
24) Carbon Tetrachloride	11.53	117	4337	52.683	pg		99
26) 1,2-Dichloropropane	12.19	63	2690	52.426	pg		99
27) Bromodichloromethane	12.37	83	3869	51.732	pg		99
28) Trichloroethene	12.42	130	2898	49.189	pg		97
29) 1,4-Dioxane	12.40	88	2232	49.684	pg		98
30) cis-1,3-Dichloropropene	13.27	75	4166	49.952	pg		99
31) trans-1,3-Dichloropropene	13.79	75	3242	44.951	pg		94
32) 1,1,2-Trichloroethane	13.96	83	2248	51.747	pg		99
34) Toluene	14.25	91	12020	54.430	pg		99
35) Dibromochloromethane	14.67	129	2963	46.219	pg		99
36) 1,2-Dibromoethane	14.93	107	2734	47.392	pg		99
37) Tetrachloroethene	15.41	166	2957	46.971	pg		100
39) Chlorobenzene	16.11	112	7614	48.998	pg		100
40) Ethylbenzene	16.49	91	12521	48.161	pg		100
41) m,p-Xylene	16.66	91	19753	97.442	pg		98
42) Styrene	17.02	104	6333	40.776	pg		100
43) o-Xylene	17.13	106	4613	45.775	pg		100
44) 1,1,2,2-Tetrachloroethane	17.10	83	4489	46.633	pg		98
46) 1,3,5-Trimethylbenzene	18.38	105	9696	44.344	pg		99
47) 1,2,4-Trimethylbenzene	18.77	105	9594	43.585	pg		99
48) 1,3-Dichlorobenzene	18.93	146	5288	43.742	pg		100
49) 1,4-Dichlorobenzene	18.99	146	5499	43.102	pg		98
50) 1,2-Dichlorobenzene	19.31	146	5312	43.565	pg		99
51) 1,2-Dibromo-3-chloropr...	19.73	157	1447	32.981	pg		96
52) 1,2,4-Trichlorobenzene	20.96	182	3204	37.012	pg		98
53) Naphthalene	21.09	128	11072	39.974	pg		97

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031715.D Vial: 13
Acq On : 3 Feb 2017 15:54 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:15:32 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

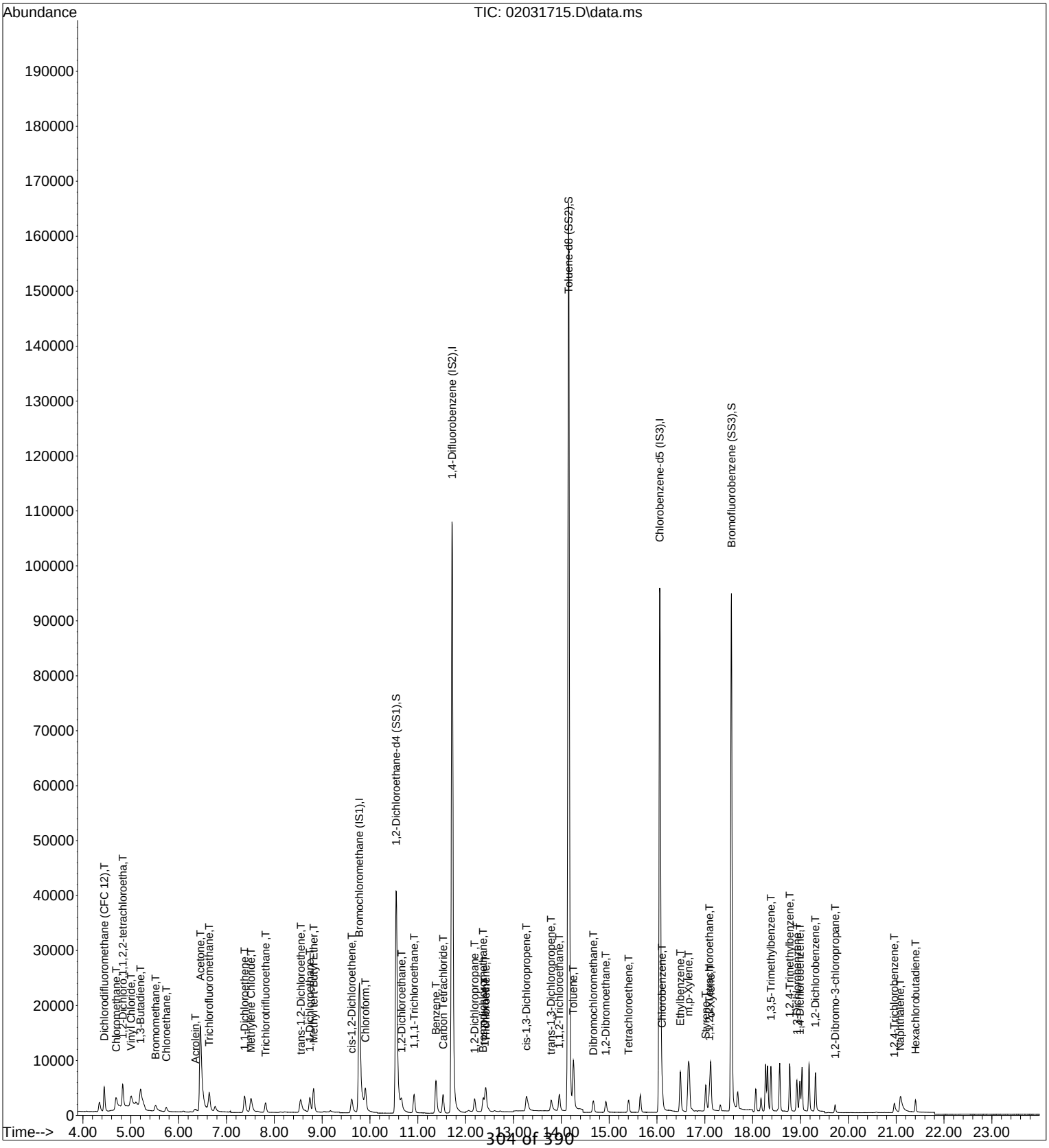
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	2190	38.824	pg	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031715.D Vial: 13
Acq On : 3 Feb 2017 15:54 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

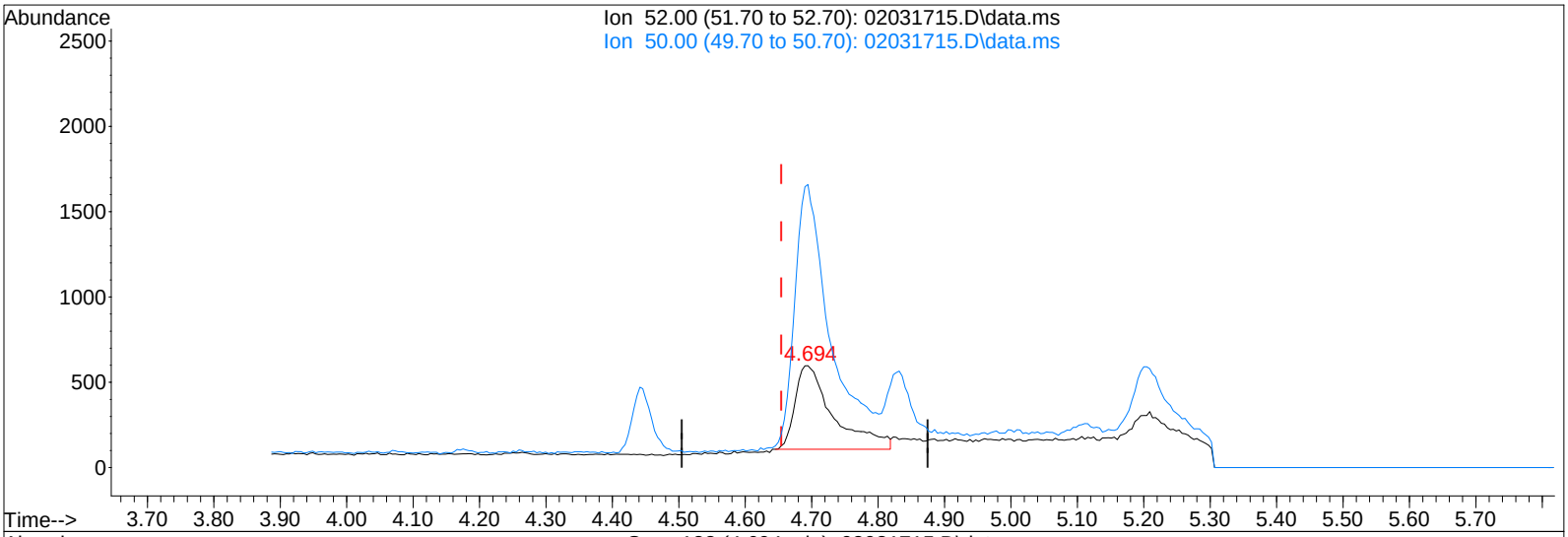
Quant Time: Feb 04 07:15:32 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

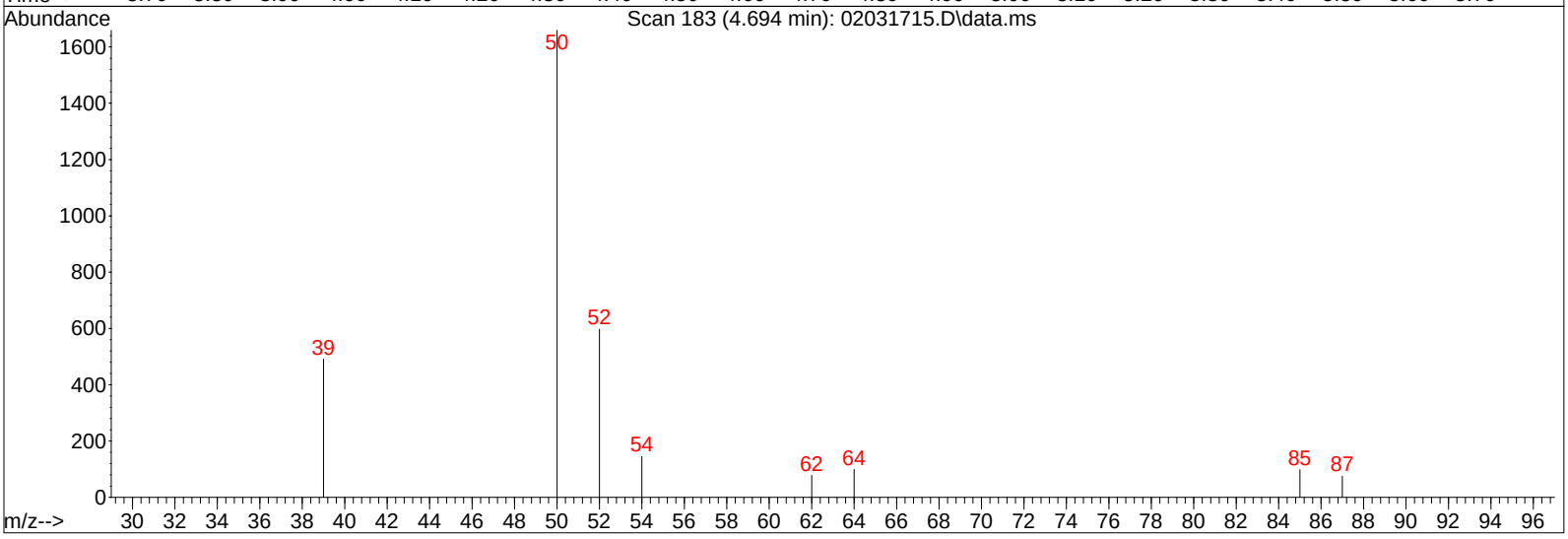


Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031715.D Vial: 13
Acq On : 3 Feb 2017 15:54 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:22 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031715.D\data.ms

(3) Chloromethane (T)

4.694min (+0.040) 80.32pg

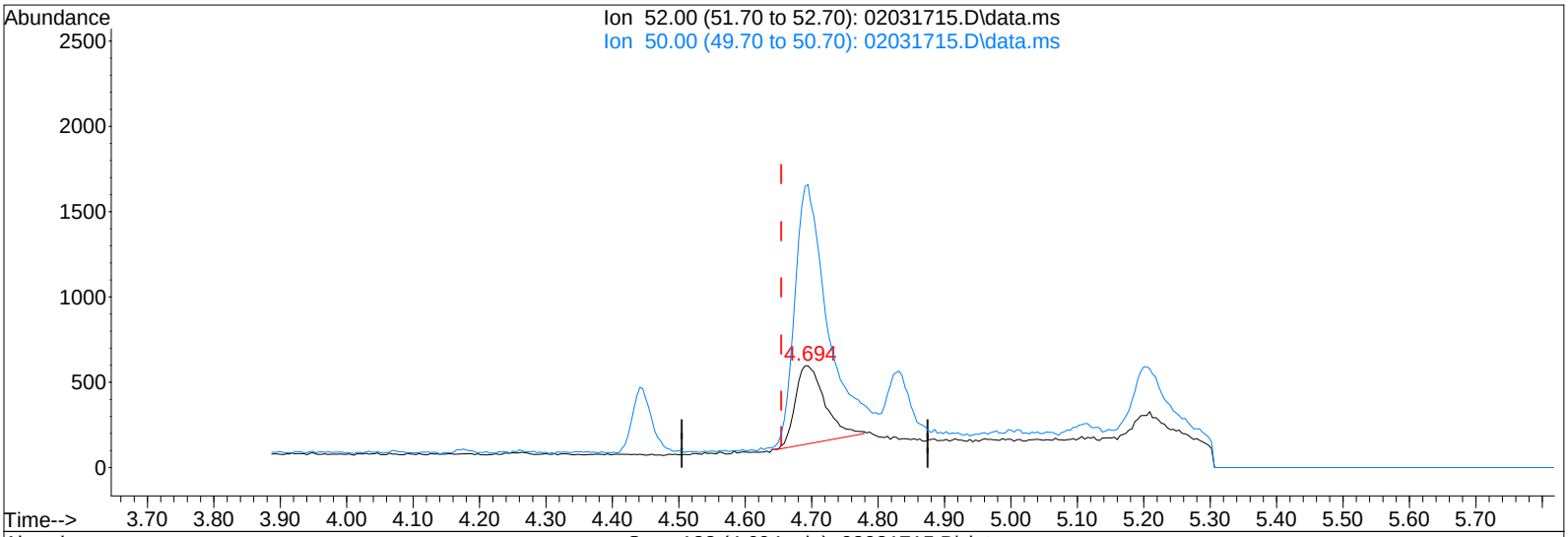
response 1970

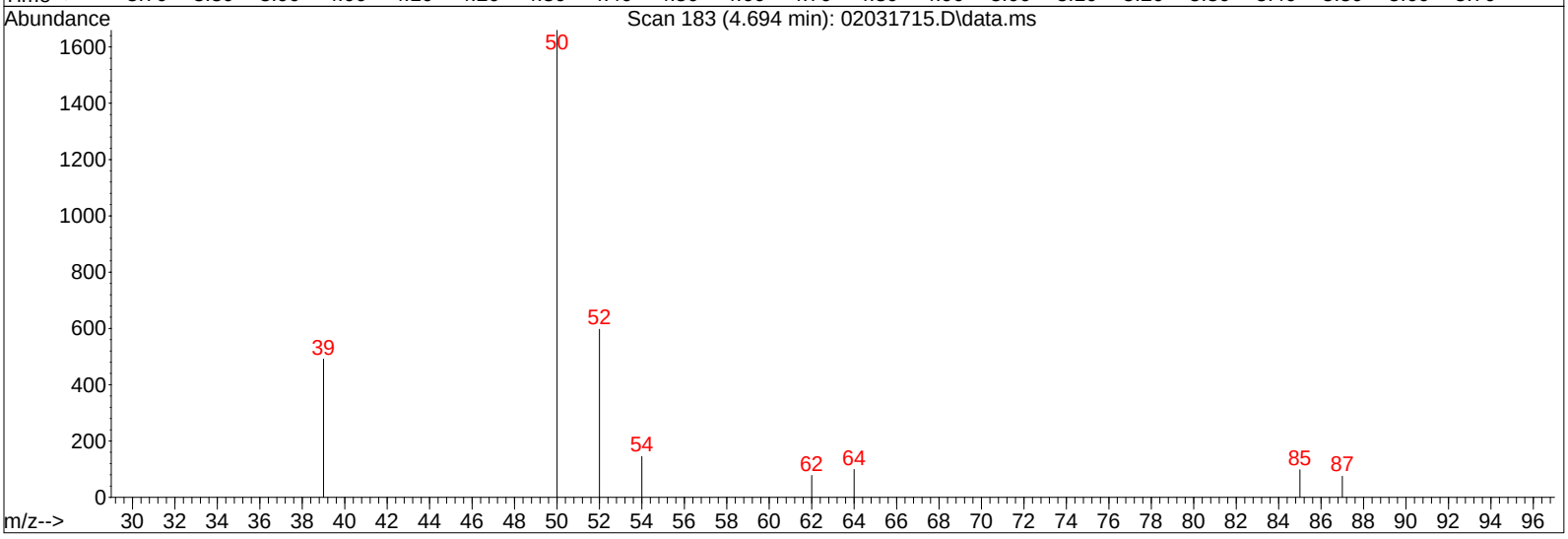
Ion	Exp%	Act%
52.00	100	100
50.00	289.00	295.48
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031715.D Vial: 13
Acq On : 3 Feb 2017 15:54 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:22 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031715.D\data.ms

(3) Chloromethane (T)

4.694min (+0.040) 58.26pg m

response 1429

Ion	Exp%	Act%
52.00	100	100
50.00	289.00	407.35#
0.00	0.00	0.00
0.00	0.00	0.00

BLC

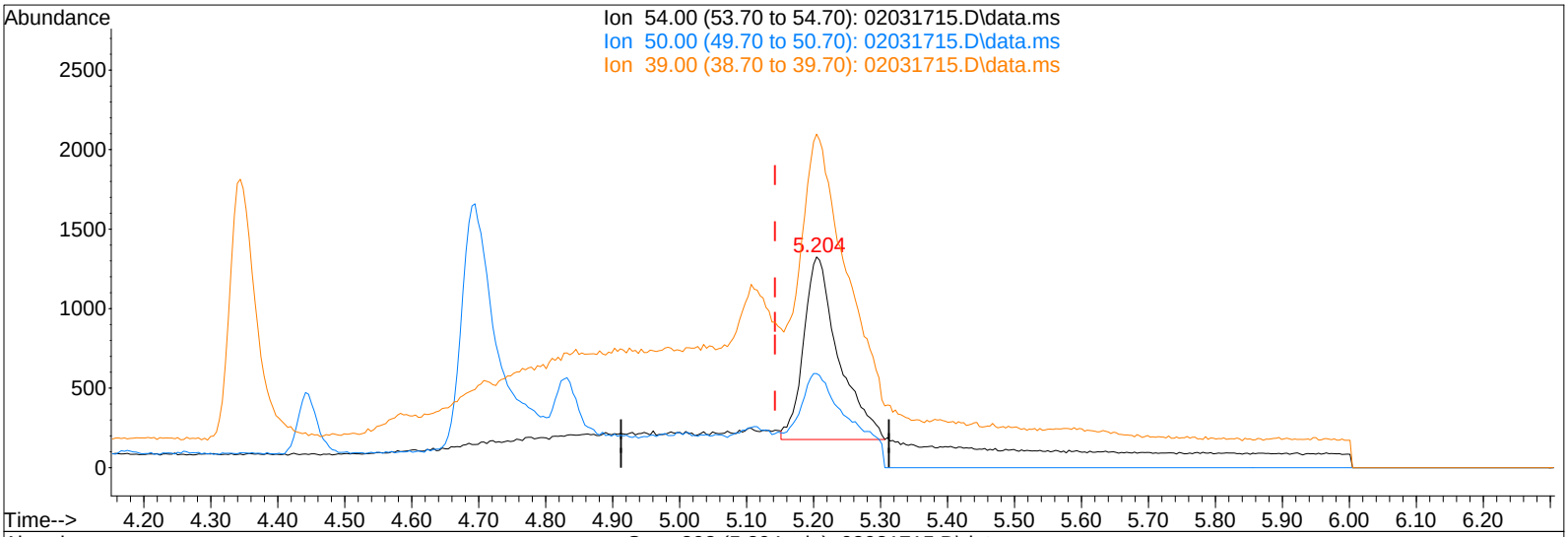
CL 2/4/17

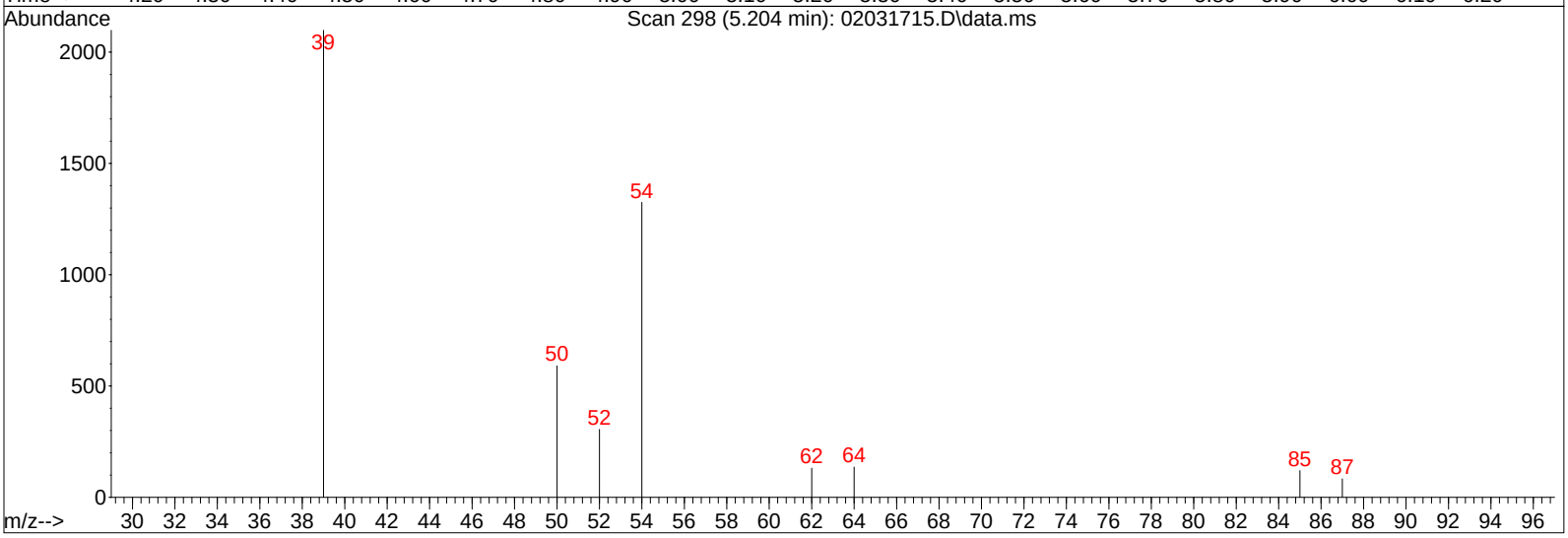
VOA 2/7/17

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031715.D Vial: 13
Acq On : 3 Feb 2017 15:54 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:22 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031715.D\data.ms

(6) 1,3-Butadiene (T)

5.204min (+0.062) 70.42pg

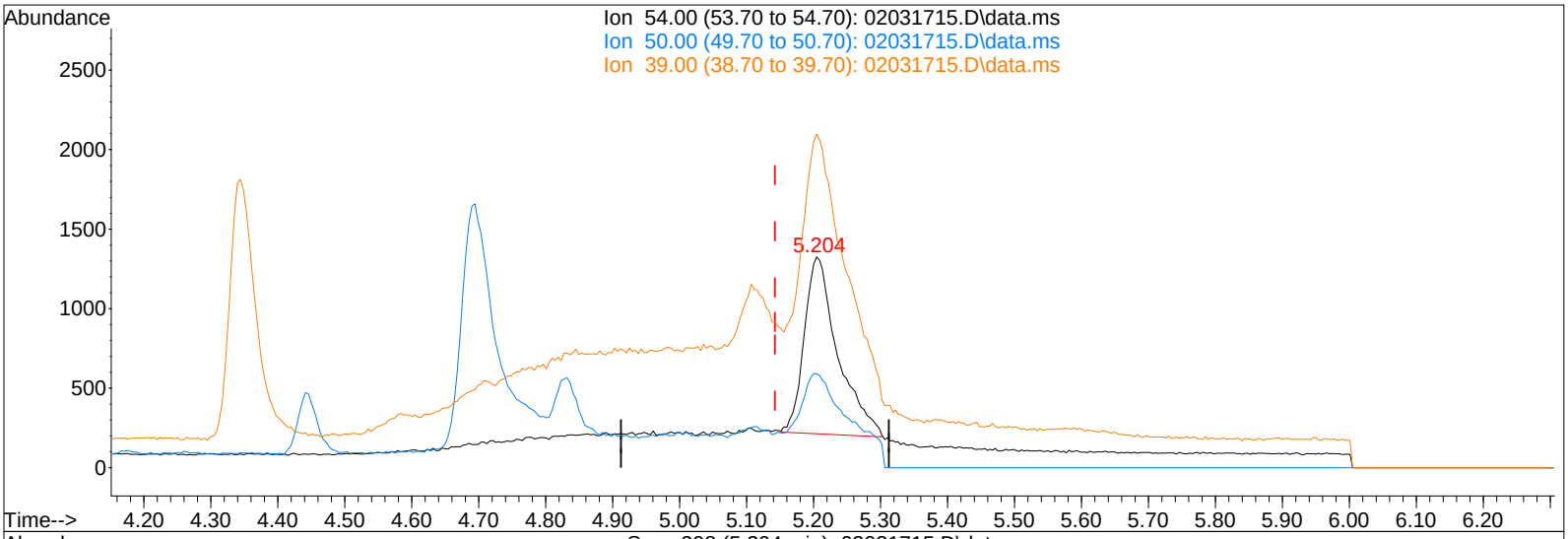
response 4152

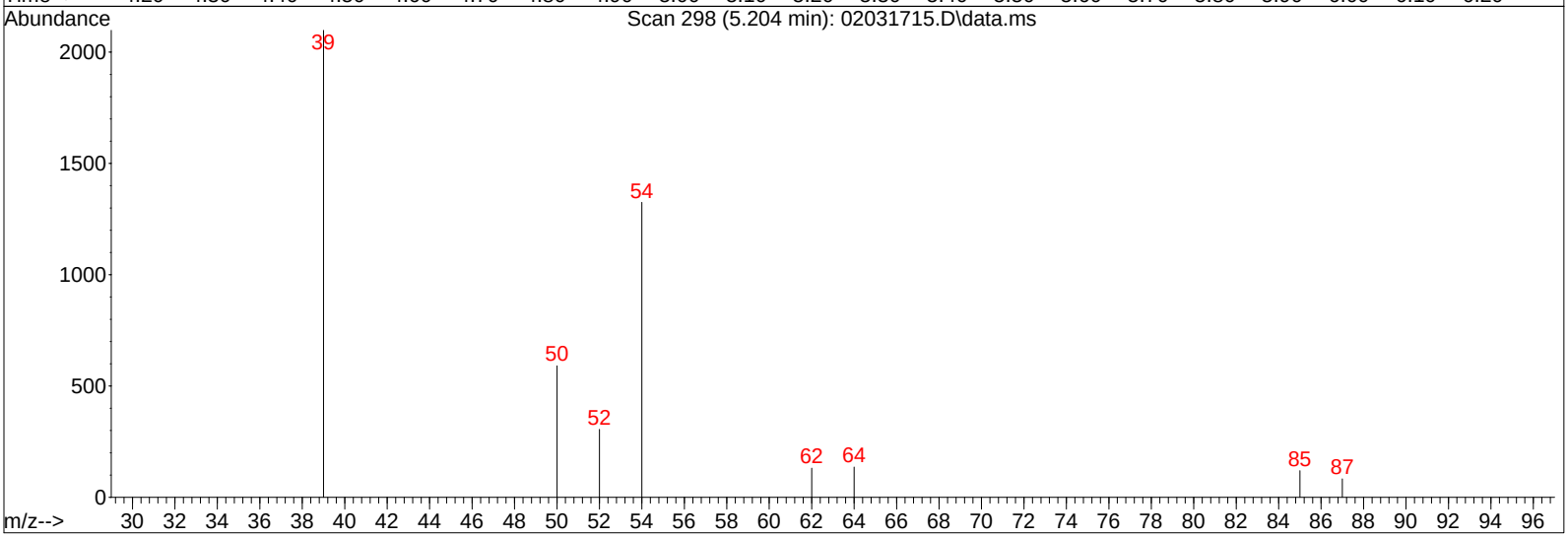
Ion	Exp%	Act%
54.00	100	100
50.00	33.50	74.83#
39.00	111.40	188.49#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031715.D Vial: 13
Acq On : 3 Feb 2017 15:54 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:22 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031715.D\data.ms

(6) 1,3-Butadiene (T)

5.204min (+0.062) 65.50pg m

response 3862

BLC

Ion	Exp%	Act%
54.00	100	100
50.00	33.50	80.45#
39.00	111.40	202.64#
0.00	0.00	0.00

CL 2/4/17 WH 2/7/17

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031716.D Vial: 13
Acq On : 3 Feb 2017 16:25 Operator: CL
Sample : 100pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:16:44 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.77	130	50327	1000.000	pg		0.01
25) 1,4-Difluorobenzene (IS2)	11.71	114	249940	1000.000	pg		0.00
38) Chlorobenzene-d5 (IS3)	16.06	54	45065	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.54	65	89496	1134.227	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 113.42%				
33) Toluene-d8 (SS2)	14.15	98	256212	1019.716	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 101.97%				
45) Bromofluorobenzene (SS3)	17.56	174	78831	818.563	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 81.86%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.43	85	13256	111.561	pg		100
3) Chloromethane	4.68	52	2711m	102.004	pg		
4) 1,2-Dichloro,1,1,2,2-t...	4.82	85	11724	104.514	pg		99
5) Vinyl Chloride	4.99	62	11097	105.827	pg		97
6) 1,3-Butadiene	5.18	54	7593	118.858	pg	#	63
7) Bromomethane	5.50	94	4171	100.330	pg		98
8) Chloroethane	5.72	64	3433	103.793	pg		98
9) Acrolein	6.33	56	2946	108.344	pg		87
10) Acetone	6.43	58	29026	860.034	pg	#	86
11) Trichlorofluoromethane	6.63	101	9878	108.022	pg		99
12) 1,1-Dichloroethene	7.37	96	5524	103.006	pg		98
13) Methylene Chloride	7.50	84	6007	108.674	pg		97
14) Trichlorotrifluoroethane	7.81	151	5160	93.704	pg		100
15) trans-1,2-Dichloroethene	8.54	96	4943	91.197	pg		87
16) 1,1-Dichloroethane	8.73	63	9611	102.193	pg		99
17) Methyl tert-Butyl Ether	8.81	73	18180	105.217	pg		100
18) cis-1,2-Dichloroethene	9.61	96	5948	101.865	pg		99
19) Chloroform	9.90	83	11664	114.740	pg		99
21) 1,2-Dichloroethane	10.65	62	8050	107.610	pg		100
22) 1,1,1-Trichloroethane	10.92	97	9962	104.017	pg		99
23) Benzene	11.38	78	24264	109.853	pg		100
24) Carbon Tetrachloride	11.53	117	8653	97.007	pg		99
26) 1,2-Dichloropropane	12.18	63	5472	98.361	pg		99
27) Bromodichloromethane	12.36	83	7955	98.104	pg		100
28) Trichloroethene	12.42	130	6020	94.244	pg		100
29) 1,4-Dioxane	12.40	88	4760	97.727	pg		97
30) cis-1,3-Dichloropropene	13.26	75	8631	95.452	pg		100
31) trans-1,3-Dichloropropene	13.78	75	7170	91.693	pg		96
32) 1,1,2-Trichloroethane	13.95	83	4595	97.559	pg		100
34) Toluene	14.25	91	23657	98.806	pg		99
35) Dibromochloromethane	14.67	129	6126	88.136	pg		100
36) 1,2-Dibromoethane	14.93	107	5723	91.499	pg		98
37) Tetrachloroethene	15.40	166	6061	88.799	pg		100
39) Chlorobenzene	16.11	112	15109	88.783	pg		99
40) Ethylbenzene	16.48	91	25666	90.145	pg		100
41) m,p-Xylene	16.66	91	39301	177.030	pg		100
42) Styrene	17.02	104	13667	80.353	pg		99
43) o-Xylene	17.12	106	9575	86.759	pg		100
44) 1,1,2,2-Tetrachloroethane	17.10	83	9228	87.535	pg		99
46) 1,3,5-Trimethylbenzene	18.38	105	20344	84.959	pg		100
47) 1,2,4-Trimethylbenzene	18.77	105	20552	85.255	pg		100
48) 1,3-Dichlorobenzene	18.92	146	11187	84.499	pg		100
49) 1,4-Dichlorobenzene	18.98	146	11892	85.113	pg		99
50) 1,2-Dichlorobenzene	19.31	146	11024	82.557	pg		99
51) 1,2-Dibromo-3-chloropr...	19.72	157	3160	65.769	pg		99
52) 1,2,4-Trichlorobenzene	20.95	182	6892	72.699	pg		100
53) Naphthalene	21.07	128	24857	81.947	pg		99

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031716.D Vial: 13
Acq On : 3 Feb 2017 16:25 Operator: CL
Sample : 100pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:16:44 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

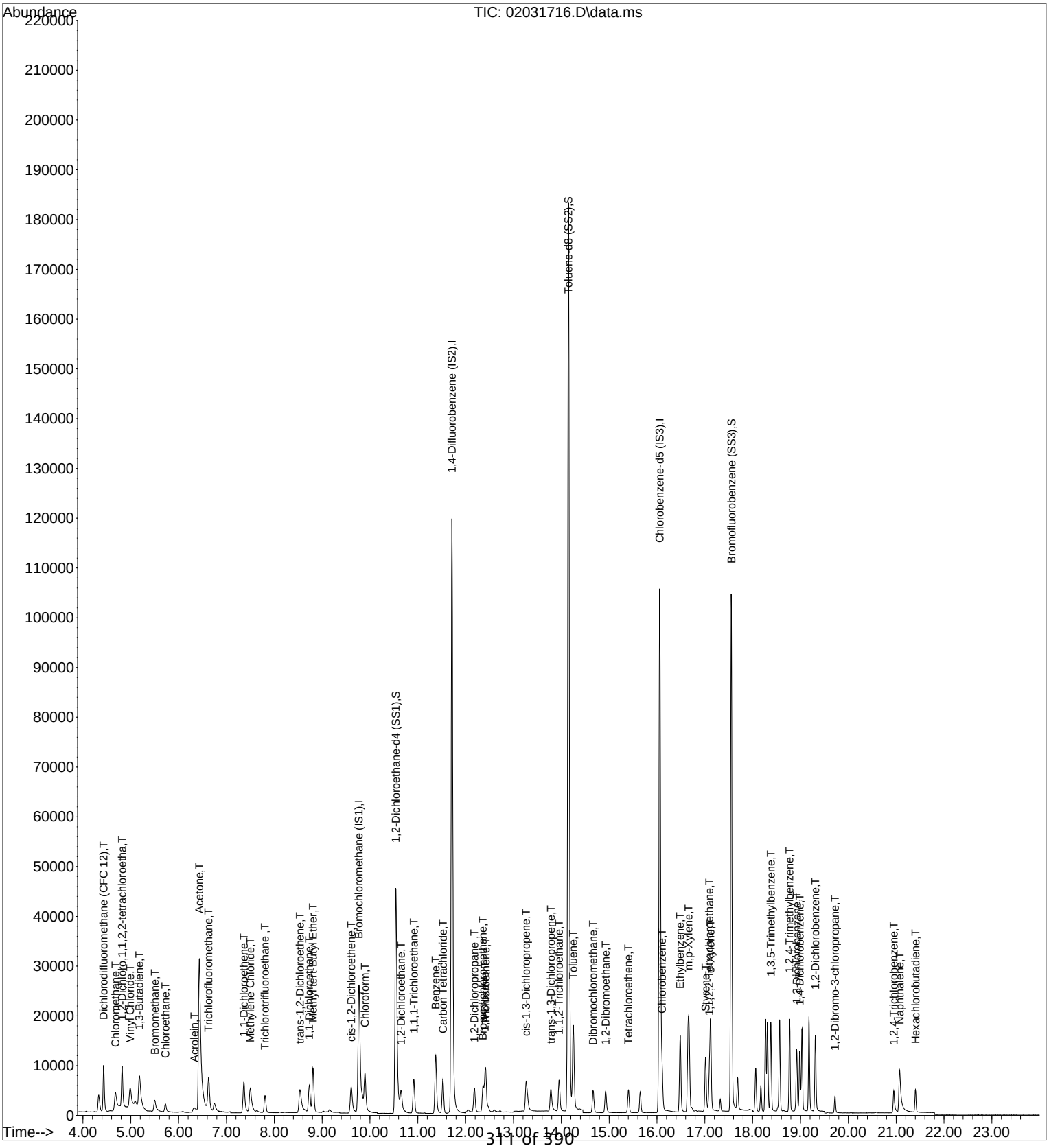
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	4534	73.395	pg	98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031716.D Vial: 13
Acq On : 3 Feb 2017 16:25 Operator: CL
Sample : 100pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

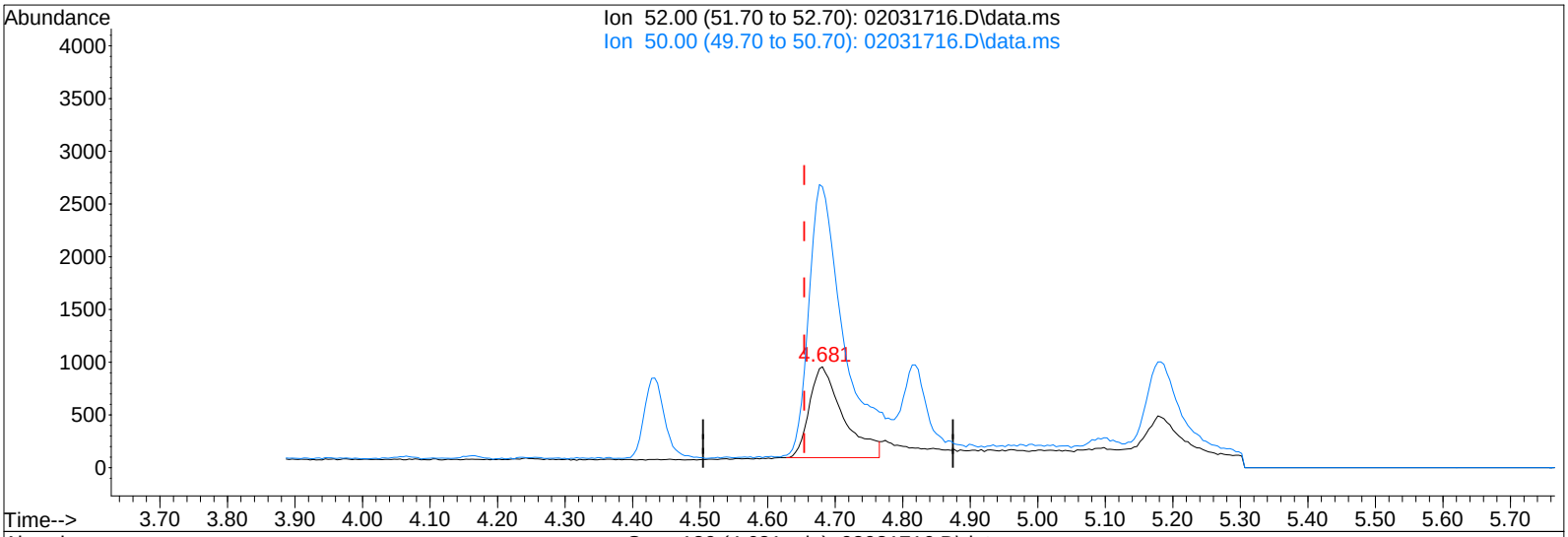
Quant Time: Feb 04 07:16:44 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

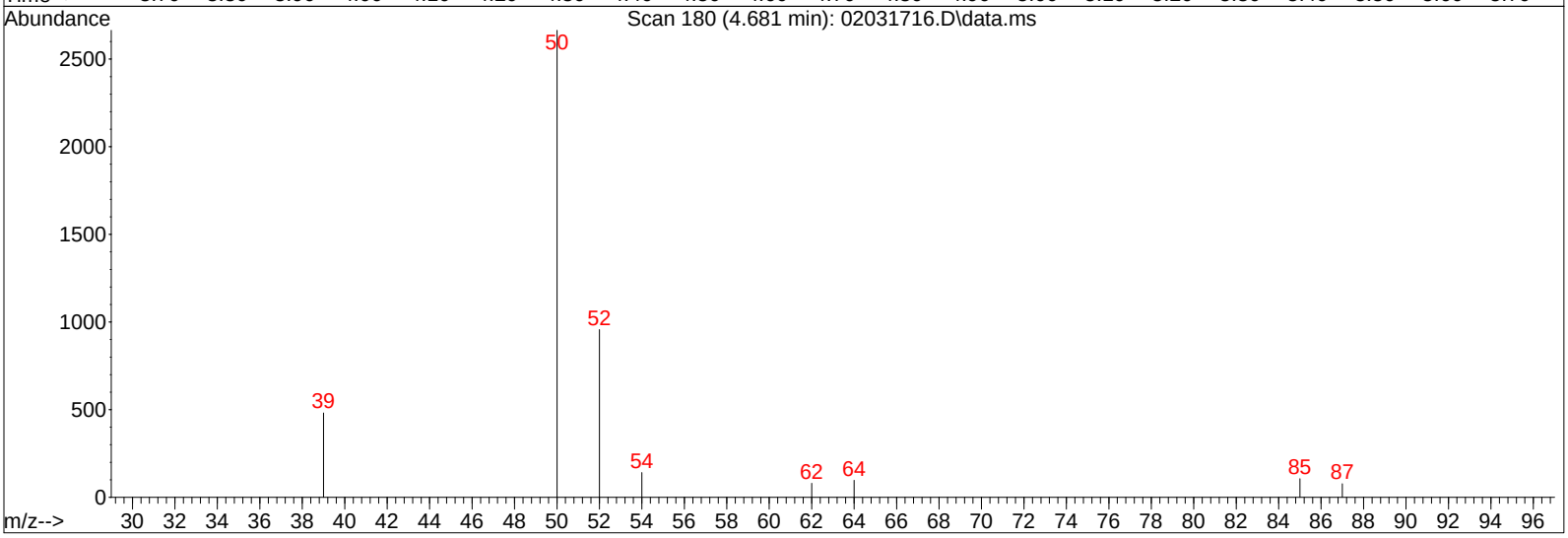


Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031716.D Vial: 13
Acq On : 3 Feb 2017 16:25 Operator: CL
Sample : 100pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:23 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031716.D\data.ms

(3) Chloromethane (T)

4.681min (+0.027) 113.29pg

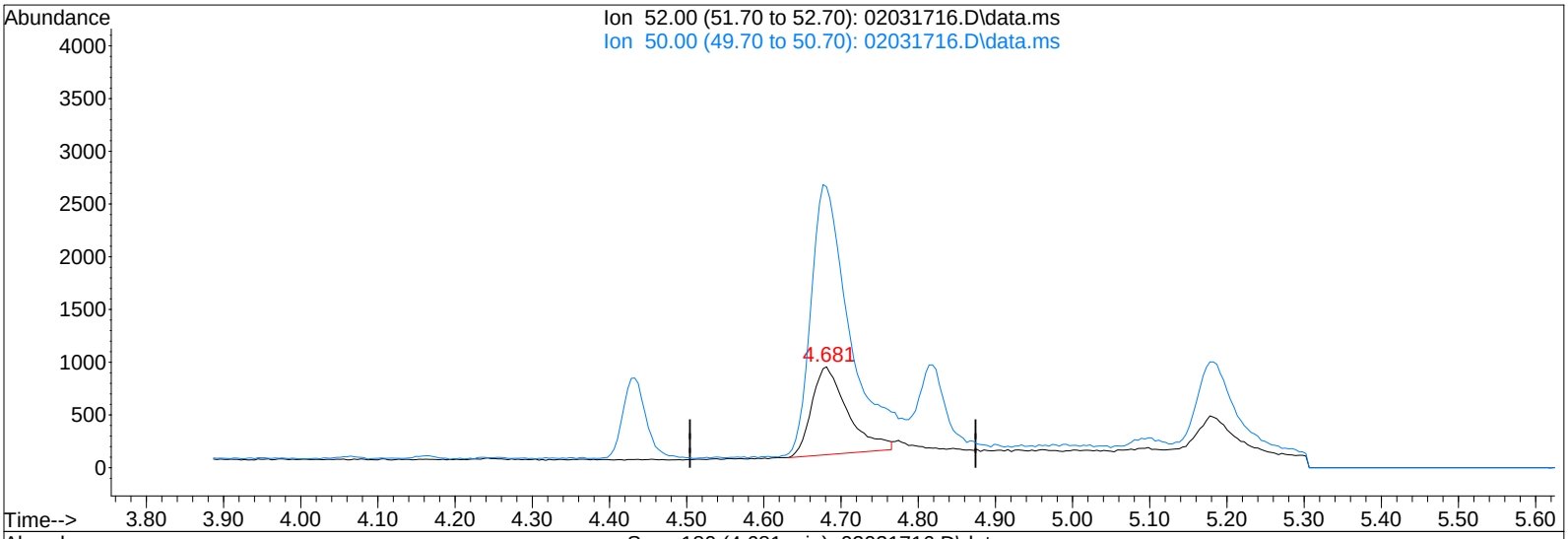
response 3011

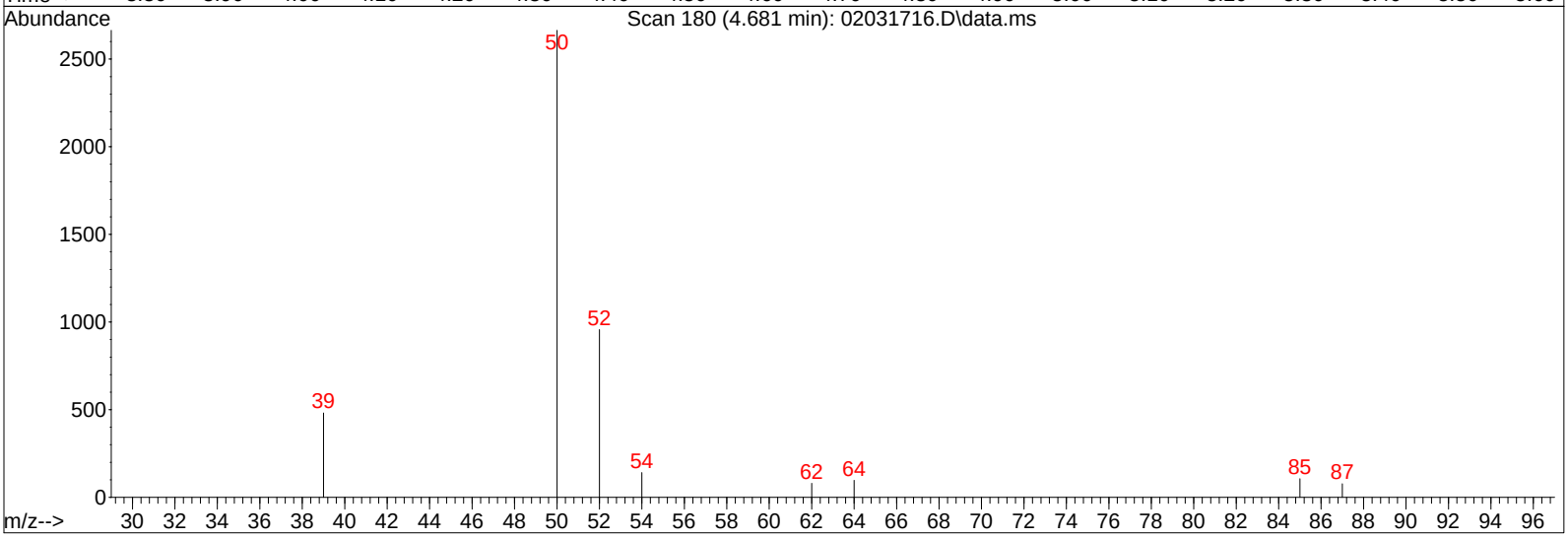
Ion	Exp%	Act%
52.00	100	100
50.00	289.00	316.77#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2017_02\03\02031716.D Vial: 13
Acq On : 3 Feb 2017 16:25 Operator: CL
Sample : 100pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301707 (2/28)

Quant Time: Feb 04 07:09:23 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 02031716.D\data.ms

(3) Chloromethane (T)

4.681min (+0.027) 102.00pg m

response 2711

Ion	Exp%	Act%
52.00	100	100
50.00	289.00	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

BLC

CL 2/4/17

WA 2/7/17

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031717.D Vial: 16
Acq On : 3 Feb 2017 16:57 Operator: CL
Sample : 500pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 04 07:09:24 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	50348	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.71	114	251786	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	45586	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	88670	1123.290	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 112.33%			
33) Toluene-d8 (SS2)	14.15	98	259046	1023.436	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 102.34%			
45) Bromofluorobenzene (SS3)	17.55	174	81767	839.346	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 83.94%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.42	85	65472	550.777	pg	100
3) Chloromethane	4.65	52	15167	570.436	pg	96
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	58942	525.220	pg	100
5) Vinyl Chloride	4.96	62	55387	527.978	pg	100
6) 1,3-Butadiene	5.14	54	40759	637.759	pg	97
7) Bromomethane	5.48	94	21263	511.251	pg	99
8) Chloroethane	5.70	64	16920	511.346	pg	100
9) Acrolein	6.27	56	12899	474.184	pg	99
10) Acetone	6.40	58	88916	2633.464	pg	100
11) Trichlorofluoromethane	6.61	101	48615	531.413	pg	100
12) 1,1-Dichloroethene	7.35	96	27624	514.891	pg	100
13) Methylene Chloride	7.48	84	28895	522.528	pg	100
14) Trichlorotrifluoroethane	7.80	151	26124	474.203	pg	100
15) trans-1,2-Dichloroethene	8.52	96	29680	547.361	pg	100
16) 1,1-Dichloroethane	8.72	63	50010	531.533	pg	100
17) Methyl tert-Butyl Ether	8.79	73	92370	534.369	pg	100
18) cis-1,2-Dichloroethene	9.59	96	31187	533.882	pg	100
19) Chloroform	9.89	83	53909	530.088	pg	100
21) 1,2-Dichloroethane	10.64	62	41894	559.795	pg	99
22) 1,1,1-Trichloroethane	10.91	97	51096	533.291	pg	100
23) Benzene	11.37	78	115967	524.809	pg	100
24) Carbon Tetrachloride	11.52	117	44175	495.033	pg	100
26) 1,2-Dichloropropane	12.18	63	28496	508.472	pg	100
27) Bromodichloromethane	12.36	83	40701	498.258	pg	100
28) Trichloroethene	12.41	130	30814	478.861	pg	100
29) 1,4-Dioxane	12.38	88	24563	500.604	pg	100
30) cis-1,3-Dichloropropene	13.26	75	46599	511.570	pg	100
31) trans-1,3-Dichloropropene	13.77	75	38634	490.444	pg	100
32) 1,1,2-Trichloroethane	13.95	83	23911	503.944	pg	100
34) Toluene	14.25	91	116685	483.774	pg	100
35) Dibromochloromethane	14.66	129	31100	444.161	pg	100
36) 1,2-Dibromoethane	14.92	107	30296	480.819	pg	100
37) Tetrachloroethene	15.40	166	31258	454.599	pg	100
39) Chlorobenzene	16.10	112	77315	449.124	pg	100
40) Ethylbenzene	16.48	91	133736	464.343	pg	100
41) m,p-Xylene	16.66	91	206142	917.948	pg	100
42) Styrene	17.01	104	74237	431.476	pg	100
43) o-Xylene	17.12	106	49638	444.630	pg	100
44) 1,1,2,2-Tetrachloroethane	17.09	83	48442	454.260	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	109890	453.671	pg	100
47) 1,2,4-Trimethylbenzene	18.77	105	110612	453.603	pg	100
48) 1,3-Dichlorobenzene	18.92	146	58838	439.344	pg	100
49) 1,4-Dichlorobenzene	18.98	146	58652	414.985	pg	100
50) 1,2-Dichlorobenzene	19.31	146	57412	425.033	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	18164	373.724	pg	100
52) 1,2,4-Trichlorobenzene	20.95	182	34937	364.313	pg	100
53) Naphthalene	21.07	128	123772	403.382	pg	100

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031717.D Vial: 16
Acq On : 3 Feb 2017 16:57 Operator: CL
Sample : 500pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 04 07:09:24 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

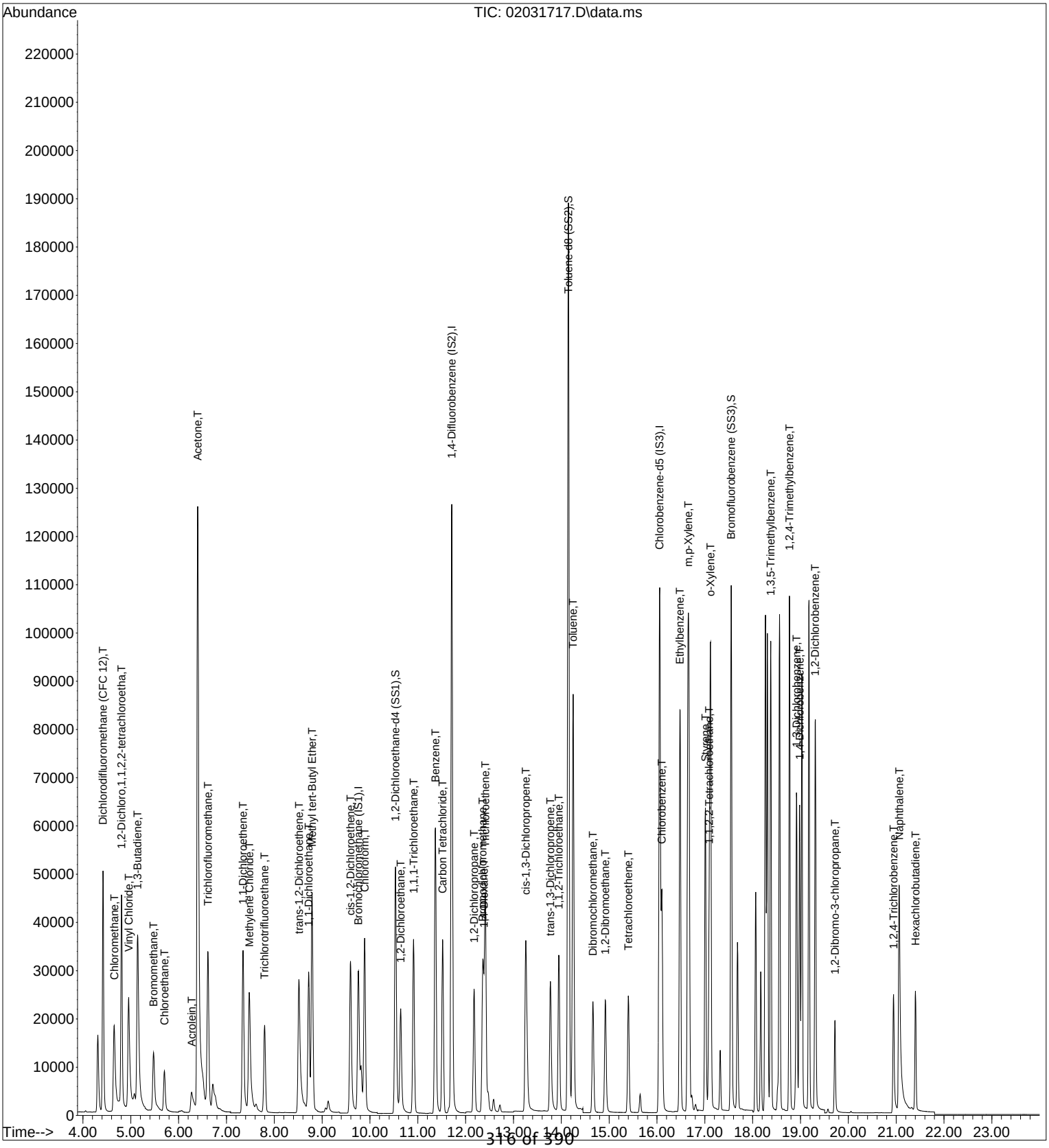
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	24248	388.035	pg	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031717.D Vial: 16
Acq On : 3 Feb 2017 16:57 Operator: CL
Sample : 500pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 04 07:09:24 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031718.D Vial: 14
Acq On : 3 Feb 2017 17:28 Operator: CL
Sample : 1000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:25 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	46127	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.71	114	230585	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	41847	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	81012	1120.189	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 112.02%			
33) Toluene-d8 (SS2)	14.15	98	237052	1022.653	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 102.27%			
45) Bromofluorobenzene (SS3)	17.55	174	76263	852.794	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 85.28%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.42	85	138788	1274.380	pg	100
3) Chloromethane	4.64	52	33901	1391.703	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	123094	1197.238	pg	100
5) Vinyl Chloride	4.94	62	116631	1213.526	pg	100
6) 1,3-Butadiene	5.13	54	89727	1532.440	pg	99
7) Bromomethane	5.47	94	44650	1171.812	pg	99
8) Chloroethane	5.70	64	36419	1201.349	pg	99
9) Acrolein	6.26	56	28207	1131.813	pg	88
10) Acetone	6.39	58	182995	5915.802	pg	100
11) Trichlorofluoromethane	6.61	101	102523	1223.235	pg	100
12) 1,1-Dichloroethene	7.34	96	59130	1202.995	pg	100
13) Methylene Chloride	7.47	84	60909	1202.253	pg	99
14) Trichlorotrifluoroethane	7.80	151	56734	1124.075	pg	100
15) trans-1,2-Dichloroethene	8.51	96	63269	1273.585	pg	99
16) 1,1-Dichloroethane	8.72	63	106379	1234.117	pg	99
17) Methyl tert-Butyl Ether	8.79	73	196065	1238.047	pg	100
18) cis-1,2-Dichloroethene	9.59	96	66613	1244.680	pg	99
19) Chloroform	9.89	83	113774	1221.115	pg	100
21) 1,2-Dichloroethane	10.64	62	90515	1320.154	pg	100
22) 1,1,1-Trichloroethane	10.91	97	109441	1246.765	pg	100
23) Benzene	11.37	78	246065	1215.469	pg	100
24) Carbon Tetrachloride	11.52	117	94793	1159.473	pg	100
26) 1,2-Dichloropropane	12.18	63	61527	1198.807	pg	100
27) Bromodichloromethane	12.36	83	89007	1189.799	pg	100
28) Trichloroethene	12.41	130	66384	1126.484	pg	100
29) 1,4-Dioxane	12.38	88	53073	1181.100	pg	100
30) cis-1,3-Dichloropropene	13.25	75	104069	1247.529	pg	100
31) trans-1,3-Dichloropropene	13.77	75	87787	1216.888	pg	100
32) 1,1,2-Trichloroethane	13.95	83	51922	1194.913	pg	100
34) Toluene	14.25	91	252283	1142.130	pg	100
35) Dibromochloromethane	14.66	129	69437	1082.857	pg	100
36) 1,2-Dibromoethane	14.92	107	66833	1158.212	pg	99
37) Tetrachloroethene	15.40	166	68053	1080.726	pg	100
39) Chlorobenzene	16.10	112	170321	1077.800	pg	100
40) Ethylbenzene	16.48	91	294223	1112.845	pg	100
41) m,p-Xylene	16.66	91	453535	2200.036	pg	100
42) Styrene	17.01	104	172756	1093.798	pg	100
43) o-Xylene	17.12	106	109339	1066.908	pg	99
44) 1,1,2,2-Tetrachloroethane	17.09	83	106874	1091.746	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	244198	1098.228	pg	99
47) 1,2,4-Trimethylbenzene	18.77	105	250812	1120.441	pg	100
48) 1,3-Dichlorobenzene	18.92	146	135518	1102.327	pg	100
49) 1,4-Dichlorobenzene	18.98	146	135953	1047.866	pg	100
50) 1,2-Dichlorobenzene	19.31	146	132484	1068.441	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	44607	999.793	pg	96
52) 1,2,4-Trichlorobenzene	20.94	182	86260	979.863	pg	100
53) Naphthalene	21.06	128	309990	1100.549	pg	100

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031718.D Vial: 14
Acq On : 3 Feb 2017 17:28 Operator: CL
Sample : 1000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:25 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

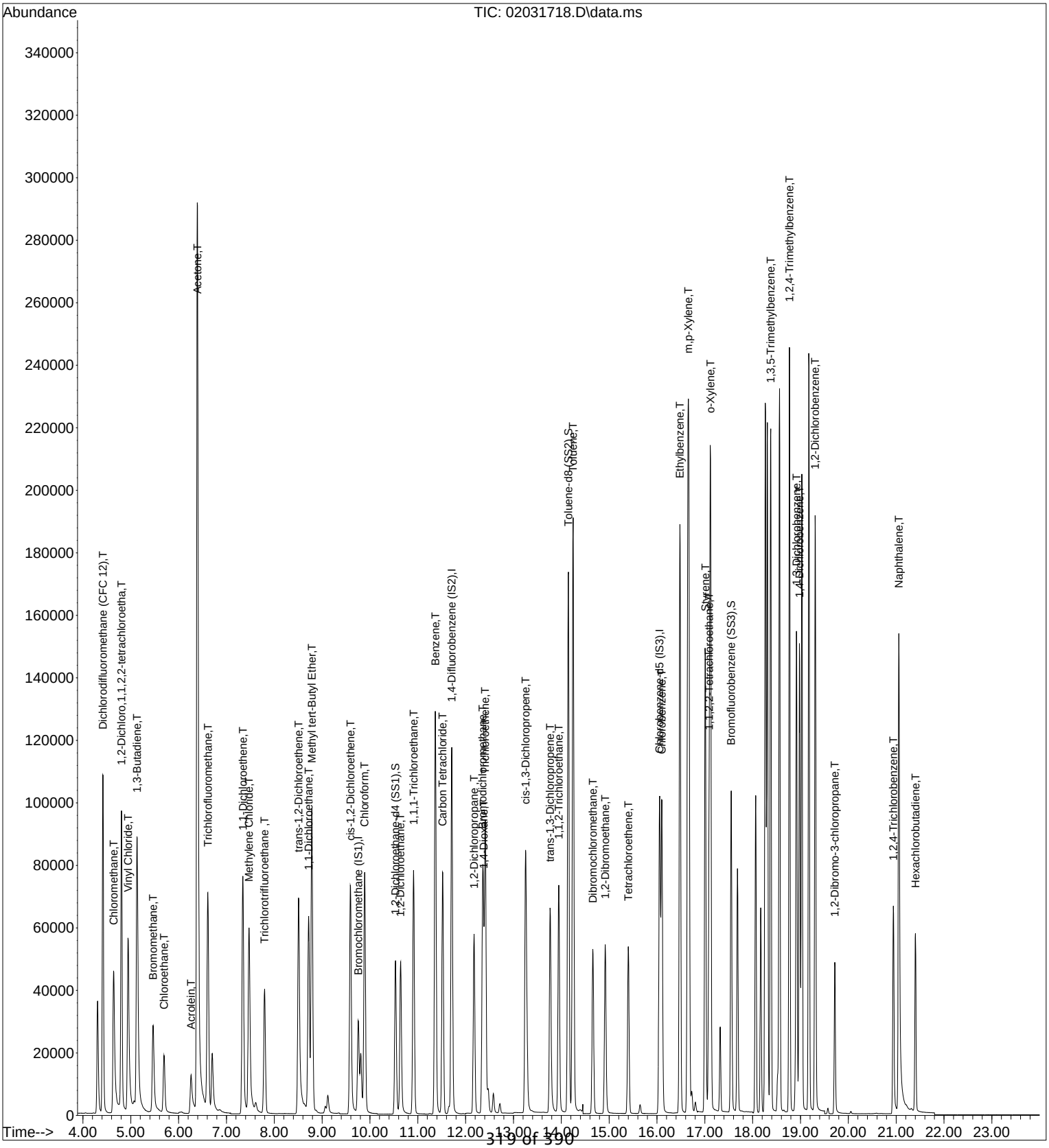
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	55196	962.211	pg	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031718.D Vial: 14
Acq On : 3 Feb 2017 17:28 Operator: CL
Sample : 1000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:25 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031719.D Vial: 14
Acq On : 3 Feb 2017 17:59 Operator: CL
Sample : 2000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:26 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	47524	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.71	114	238738	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	43162	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	83367	1118.867	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 111.89%			
33) Toluene-d8 (SS2)	14.15	98	243978	1016.587	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 101.66%			
45) Bromofluorobenzene (SS3)	17.55	174	82236	891.569	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 89.16%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.41	85	262900	2343.041	pg	100
3) Chloromethane	4.63	52	60567	2413.305	pg	98
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	228680	2158.808	pg	100
5) Vinyl Chloride	4.93	62	220662	2228.460	pg	99
6) 1,3-Butadiene	5.12	54	172462	2858.880	pg	99
7) Bromomethane	5.46	94	84847	2161.301	pg	99
8) Chloroethane	5.68	64	69331	2219.785	pg	99
9) Acrolein	6.25	56	56233	2190.036	pg	91
10) Acetone	6.39	58	344291	10802.949	pg	99
11) Trichlorofluoromethane	6.61	101	192848	2233.295	pg	100
12) 1,1-Dichloroethene	7.34	96	113296	2237.240	pg	99
13) Methylene Chloride	7.47	84	116385	2229.736	pg	98
14) Trichlorotrifluoroethane	7.80	151	109229	2100.546	pg	100
15) trans-1,2-Dichloroethene	8.50	96	122707	2397.445	pg	99
16) 1,1-Dichloroethane	8.72	63	202053	2275.138	pg	99
17) Methyl tert-Butyl Ether	8.78	73	373032	2286.258	pg	100
18) cis-1,2-Dichloroethene	9.59	96	130250	2362.211	pg	100
19) Chloroform	9.89	83	217545	2266.234	pg	100
21) 1,2-Dichloroethane	10.64	62	175076	2478.408	pg	100
22) 1,1,1-Trichloroethane	10.91	97	211082	2333.984	pg	100
23) Benzene	11.36	78	469839	2252.607	pg	100
24) Carbon Tetrachloride	11.52	117	183822	2182.348	pg	100
26) 1,2-Dichloropropane	12.18	63	119606	2250.846	pg	100
27) Bromodichloromethane	12.36	83	174545	2253.546	pg	100
28) Trichloroethene	12.41	130	128553	2106.946	pg	99
29) 1,4-Dioxane	12.37	88	103515	2224.979	pg	100
30) cis-1,3-Dichloropropene	13.25	75	207840	2406.400	pg	100
31) trans-1,3-Dichloropropene	13.77	75	178914	2395.379	pg	100
32) 1,1,2-Trichloroethane	13.95	83	100733	2239.062	pg	99
34) Toluene	14.25	91	490232	2143.576	pg	99
35) Dibromochloromethane	14.66	129	139504	2101.244	pg	100
36) 1,2-Dibromoethane	14.92	107	133212	2229.719	pg	99
37) Tetrachloroethene	15.40	166	134391	2061.332	pg	99
39) Chlorobenzene	16.10	112	333959	2048.925	pg	100
40) Ethylbenzene	16.48	91	573628	2103.541	pg	99
41) m,p-Xylene	16.66	91	882068	4148.430	pg	99
42) Styrene	17.01	104	352391	2163.174	pg	100
43) o-Xylene	17.12	106	214590	2030.132	pg	98
44) 1,1,2,2-Tetrachloroethane	17.09	83	211167	2091.406	pg	99
46) 1,3,5-Trimethylbenzene	18.38	105	485519	2116.993	pg	99
47) 1,2,4-Trimethylbenzene	18.77	105	502124	2174.775	pg	99
48) 1,3-Dichlorobenzene	18.92	146	277340	2187.202	pg	100
49) 1,4-Dichlorobenzene	18.98	146	277005	2069.985	pg	99
50) 1,2-Dichlorobenzene	19.31	146	269435	2106.706	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	96771	2102.883	pg	92
52) 1,2,4-Trichlorobenzene	20.94	182	181384	1997.642	pg	99
53) Naphthalene	21.06	128	647832	2229.908	pg	99

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031719.D Vial: 14
Acq On : 3 Feb 2017 17:59 Operator: CL
Sample : 2000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:26 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

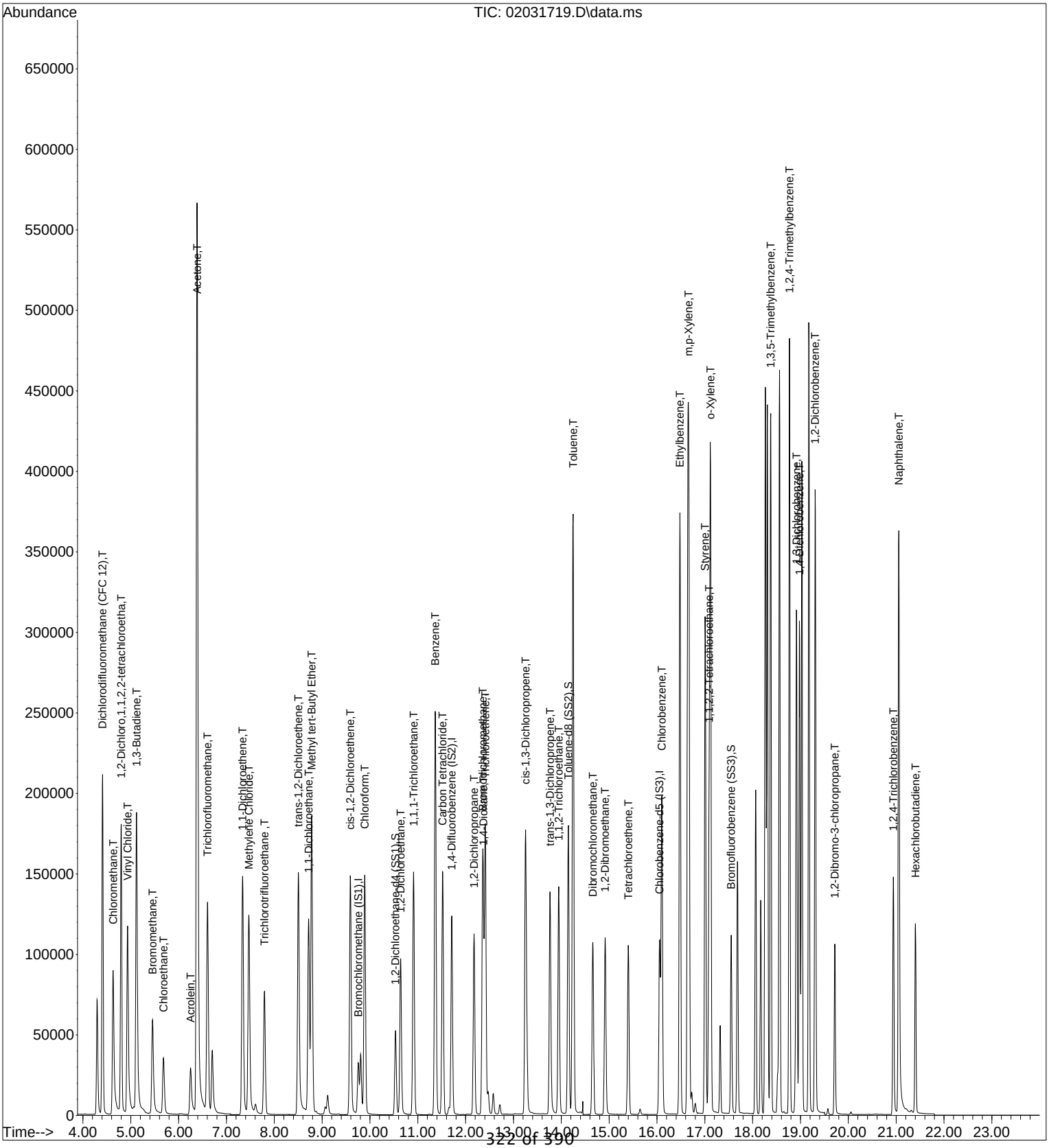
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	113538	1918.963	pg	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031719.D Vial: 14
Acq On : 3 Feb 2017 17:59 Operator: CL
Sample : 2000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:26 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031720.D Vial: 14
Acq On : 3 Feb 2017 18:30 Operator: CL
Sample : 5000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:27 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	49244	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.71	114	250982	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	45061	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.54	65	85715	1110.199	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 111.02%			
33) Toluene-d8 (SS2)	14.15	98	254643	1009.264	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.93%			
45) Bromofluorobenzene (SS3)	17.55	174	89728	931.798	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 93.18%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.40	85	621163	5342.623	pg	100
3) Chloromethane	4.62	52	122419	4707.439	pg	96
4) 1,2-Dichloro,1,1,2,2-t...	4.79	85	550802	5018.121	pg	100
5) Vinyl Chloride	4.92	62	532611	5190.953	pg	100
6) 1,3-Butadiene	5.11	54	425148	6801.464	pg	99
7) Bromomethane	5.44	94	217640	5350.289	pg	99
8) Chloroethane	5.67	64	170280	5261.465	pg	100
9) Acrolein	6.24	56	145386	5464.396	pg	92
10) Acetone	6.39	58	840600	25454.566	pg	97
11) Trichlorofluoromethane	6.60	101	477020	5331.228	pg	100
12) 1,1-Dichloroethene	7.33	96	283032	5393.781	pg	98
13) Methylene Chloride	7.47	84	288520	5334.480	pg	97
14) Trichlorotrifluoroethane	7.79	151	272815	5063.165	pg	100
15) trans-1,2-Dichloroethene	8.50	96	303790	5728.124	pg	98
16) 1,1-Dichloroethane	8.72	63	493636	5364.250	pg	99
17) Methyl tert-Butyl Ether	8.78	73	915773	5416.599	pg	100
18) cis-1,2-Dichloroethene	9.59	96	324720	5683.420	pg	100
19) Chloroform	9.89	83	531905	5347.484	pg	100
21) 1,2-Dichloroethane	10.64	62	431962	5901.351	pg	99
22) 1,1,1-Trichloroethane	10.91	97	517958	5527.146	pg	100
23) Benzene	11.37	78	1155650	5347.150	pg	100
24) Carbon Tetrachloride	11.52	117	460160	5272.240	pg	100
26) 1,2-Dichloropropane	12.17	63	300328	5376.105	pg	100
27) Bromodichloromethane	12.35	83	439298	5395.073	pg	100
28) Trichloroethene	12.41	130	320311	4993.696	pg	99
29) 1,4-Dioxane	12.37	88	258974	5294.899	pg	100
30) cis-1,3-Dichloropropene	13.25	75	535242	5894.783	pg	100
31) trans-1,3-Dichloropropene	13.76	75	470941	5997.572	pg	100
32) 1,1,2-Trichloroethane	13.95	83	252644	5341.734	pg	98
34) Toluene	14.25	91	1225067	5095.373	pg	99
35) Dibromochloromethane	14.66	129	365510	5236.825	pg	100
36) 1,2-Dibromoethane	14.91	107	342139	5447.388	pg	99
37) Tetrachloroethene	15.40	166	346260	5051.950	pg	98
39) Chlorobenzene	16.10	112	845751	4970.225	pg	100
40) Ethylbenzene	16.48	91	1432672	5032.320	pg	98
41) m,p-Xylene	16.66	91	2223117	10014.856	pg	98
42) Styrene	17.01	104	932447	5482.662	pg	100
43) o-Xylene	17.12	106	550003	4984.028	pg	96
44) 1,1,2,2-Tetrachloroethane	17.09	83	538560	5109.132	pg	99
46) 1,3,5-Trimethylbenzene	18.38	105	1251479	5226.819	pg	97
47) 1,2,4-Trimethylbenzene	18.77	105	1304220	5410.720	pg	98
48) 1,3-Dichlorobenzene	18.92	146	737200	5568.809	pg	99
49) 1,4-Dichlorobenzene	18.98	146	731197	5233.770	pg	100
50) 1,2-Dichlorobenzene	19.31	146	713040	5340.287	pg	99
51) 1,2-Dibromo-3-chloropr...	19.72	157	267867	5575.578	pg	88
52) 1,2,4-Trichlorobenzene	20.94	182	480019	5063.815	pg	99
53) Naphthalene	21.06	128	1681801	5544.978	pg	99

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031720.D Vial: 14
Acq On : 3 Feb 2017 18:30 Operator: CL
Sample : 5000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:27 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

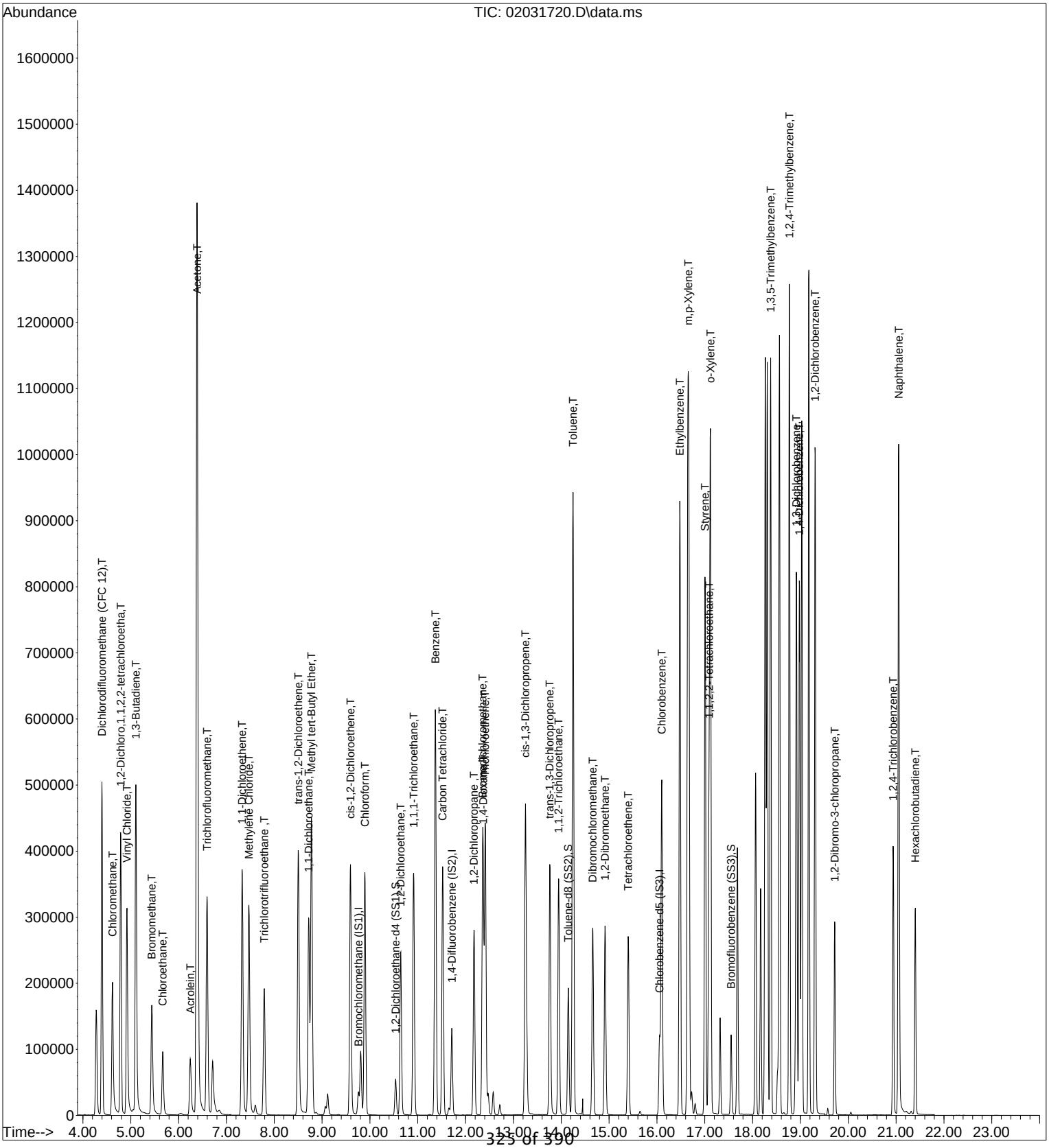
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	297468	4815.777	pg	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031720.D Vial: 14
Acq On : 3 Feb 2017 18:30 Operator: CL
Sample : 5000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:27 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031721.D Vial: 14
Acq On : 3 Feb 2017 19:01 Operator: CL
Sample : 10000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:28 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.77	130	51177	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.72	114	262540	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	47306	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.54	65	88470	1102.601	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 110.26%			
33) Toluene-d8 (SS2)	14.15	98	264917	1003.760	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.38%			
45) Bromofluorobenzene (SS3)	17.55	174	95400	943.684	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 94.37%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.39	85	1215961	10063.455	pg	99
3) Chloromethane	4.61	52	154773	5726.767	pg	95
4) 1,2-Dichloro,1,1,2,2-t...	4.79	85	1102638	9666.228	pg	99
5) Vinyl Chloride	4.92	62	1077522	10105.123	pg	100
6) 1,3-Butadiene	5.10	54	855209	13164.762	pg	99
7) Bromomethane	5.44	94	533640	12623.081	pg	98
8) Chloroethane	5.67	64	350713	10427.337	pg	100
9) Acrolein	6.25	56	302274	10931.982	pg	93
10) Acetone	6.39	58	1707166	49742.837	pg	93
11) Trichlorofluoromethane	6.59	101	966069	10389.084	pg	99
12) 1,1-Dichloroethene	7.33	96	574134	10528.088	pg	98
13) Methylene Chloride	7.48	84	585588	10418.060	pg	97
14) Trichlorotrifluoroethane	7.79	151	542590	9689.562	pg	99
15) trans-1,2-Dichloroethene	8.51	96	610288	11072.667	pg	97
16) 1,1-Dichloroethane	8.73	63	992285	10375.692	pg	99
17) Methyl tert-Butyl Ether	8.78	73	1858590	10577.936	pg	100
18) cis-1,2-Dichloroethene	9.60	96	655601	11041.264	pg	99
19) Chloroform	9.90	83	1066895	10320.853	pg	100
21) 1,2-Dichloroethane	10.64	62	867186	11399.786	pg	99
22) 1,1,1-Trichloroethane	10.92	97	1039690	10675.512	pg	99
23) Benzene	11.37	78	2330466	10375.697	pg	100
24) Carbon Tetrachloride	11.52	117	932913	10285.039	pg	99
26) 1,2-Dichloropropane	12.18	63	610391	10445.449	pg	100
27) Bromodichloromethane	12.35	83	891064	10461.502	pg	100
28) Trichloroethene	12.42	130	648523	9665.465	pg	99
29) 1,4-Dioxane	12.37	88	525504	10271.282	pg	99
30) cis-1,3-Dichloropropene	13.25	75	1100154	11582.924	pg	99
31) trans-1,3-Dichloropropene	13.76	75	978461	11912.409	pg	99
32) 1,1,2-Trichloroethane	13.95	83	512329	10355.457	pg	98
34) Toluene	14.25	91	2489082	9896.974	pg	98
35) Dibromochloromethane	14.66	129	763245	10453.937	pg	99
36) 1,2-Dibromoethane	14.92	107	702683	10695.284	pg	98
37) Tetrachloroethene	15.40	166	716553	9994.295	pg	97
39) Chlorobenzene	16.10	112	1726053	9662.117	pg	99
40) Ethylbenzene	16.48	91	2900180	9703.558	pg	97
41) m,p-Xylene	16.66	91	4569420	19607.765	pg	96
42) Styrene	17.01	104	1956671	10958.970	pg	99
43) o-Xylene	17.12	106	1145204	9885.142	pg	94
44) 1,1,2,2-Tetrachloroethane	17.09	83	1109802	10028.666	pg	99
46) 1,3,5-Trimethylbenzene	18.38	105	2625354	10444.468	pg	95
47) 1,2,4-Trimethylbenzene	18.77	105	2748808	10862.585	pg	96
48) 1,3-Dichlorobenzene	18.92	146	1560654	11229.703	pg	99
49) 1,4-Dichlorobenzene	18.98	146	1533759	10457.358	pg	99
50) 1,2-Dichlorobenzene	19.31	146	1496849	10678.574	pg	99
51) 1,2-Dibromo-3-chloropr...	19.72	157	578263	11465.174	pg	85
52) 1,2,4-Trichlorobenzene	20.94	182	1006015	10109.006	pg	98
53) Naphthalene	21.06	128	3553258	11159.291	pg	98

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031721.D Vial: 14
Acq On : 3 Feb 2017 19:01 Operator: CL
Sample : 10000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:28 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

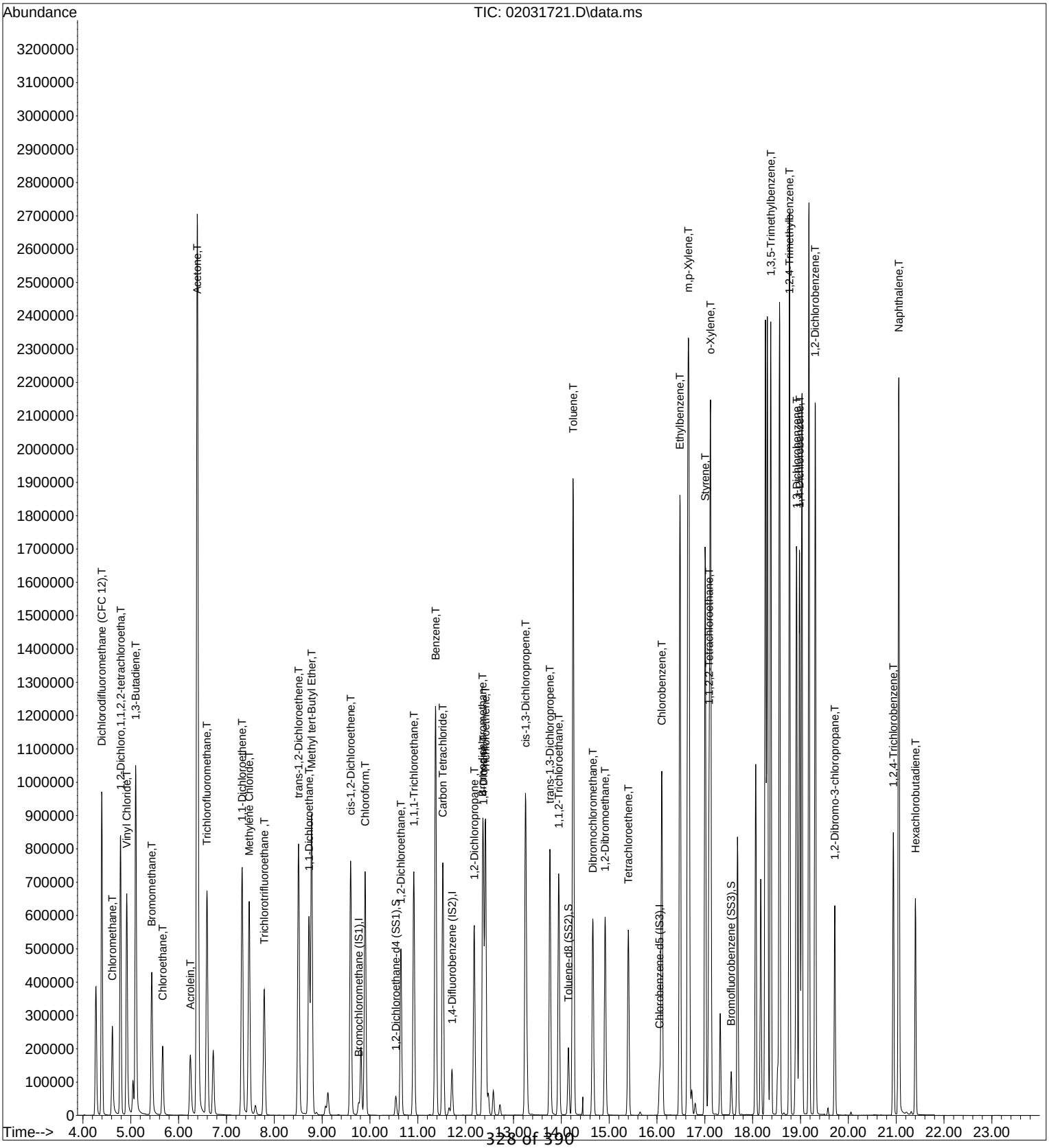
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	620599	9570.217	pg	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031721.D Vial: 14
Acq On : 3 Feb 2017 19:01 Operator: CL
Sample : 10000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01301702 (2/28)

Quant Time: Feb 04 07:09:28 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031723.D Vial: 15
Acq On : 3 Feb 2017 20:04 Operator: CL
Sample : 50000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01241705 (2/22)

Quant Time: Feb 04 07:09:30 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.78	130	57143	1000.000	pg		0.02
25) 1,4-Difluorobenzene (IS2)	11.72	114	287880	1000.000	pg		0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	59542	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.55	65	95188	1062.470	pg		0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 106.25%				
33) Toluene-d8 (SS2)	14.15	98	291193	1006.202	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.62%				
45) Bromofluorobenzene (SS3)	17.55	174	105472	828.912	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 82.89%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.40	85	5785852	42885.113	pg		97
3) Chloromethane	4.62	52	1398966	46358.918	pg		97
4) 1,2-Dichloro,1,1,2,2-t...	4.79	85	5739405	45061.199	pg		97
5) Vinyl Chloride	4.92	62	5611305	47129.314	pg		98
6) 1,3-Butadiene	5.11	54	4972791	68557.146	pg		97
7) Bromomethane	5.45	94	2242432	47505.956	pg		98
8) Chloroethane	5.68	64	1823357	48551.766	pg		99
9) Acrolein	6.26	56	1584820	51332.195	pg		95
10) Acetone	6.42	58	11074045	288983.384	pg	#	68
11) Trichlorofluoromethane	6.60	101	5154084	49640.073	pg		98
12) 1,1-Dichloroethene	7.33	96	3100490	50918.824	pg		96
13) Methylene Chloride	7.49	84	3197690	50949.839	pg		94
14) Trichlorotrifluoroethane	7.80	151	3143237	50271.434	pg		98
15) trans-1,2-Dichloroethene	8.52	96	3284229	53365.751	pg		96
16) 1,1-Dichloroethane	8.74	63	5286862	49509.714	pg		97
17) Methyl tert-Butyl Ether	8.79	73	10215229	52068.761	pg		98
18) cis-1,2-Dichloroethene	9.61	96	3530359	53248.804	pg		98
19) Chloroform	9.92	83	5755905	49867.696	pg		98
21) 1,2-Dichloroethane	10.66	62	4591713	54059.366	pg		98
22) 1,1,1-Trichloroethane	10.93	97	5614278	51628.624	pg		98
23) Benzene	11.38	78	12742886	50810.575	pg		99
24) Carbon Tetrachloride	11.53	117	5114307	50496.742	pg		98
26) 1,2-Dichloropropane	12.19	63	3317899	51780.486	pg		99
27) Bromodichloromethane	12.37	83	5066866	54251.102	pg		98
28) Trichloroethene	12.42	130	3706139	50373.607	pg		98
29) 1,4-Dioxane	12.38	88	3023747	53898.669	pg		100
30) cis-1,3-Dichloropropene	13.26	75	6387384	61329.827	pg		97
31) trans-1,3-Dichloropropene	13.77	75	5429946	60288.651	pg		98
32) 1,1,2-Trichloroethane	13.95	83	2864504	52802.413	pg		98
34) Toluene	14.25	91	13484447	48896.791	pg		91
35) Dibromochloromethane	14.66	129	4334489	54142.439	pg		98
36) 1,2-Dibromoethane	14.92	107	3863171	53624.195	pg		97
37) Tetrachloroethene	15.41	166	4118777	52390.929	pg		95
39) Chlorobenzene	16.10	112	9535266	42407.607	pg		95
40) Ethylbenzene	16.49	91	15733577	41824.074	pg		89
41) m,p-Xylene	16.66	91	25730893	87723.242	pg		86
42) Styrene	17.02	104	10905490	48527.726	pg		100
43) o-Xylene	17.12	106	7113888	48786.525	pg	#	85
44) 1,1,2,2-Tetrachloroethane	17.09	83	6555121	47062.087	pg		96
46) 1,3,5-Trimethylbenzene	18.38	105	14355154	45373.172	pg		86
47) 1,2,4-Trimethylbenzene	18.77	105	15836347	49720.625	pg	#	83
48) 1,3-Dichlorobenzene	18.92	146	9217533	52694.967	pg		96
49) 1,4-Dichlorobenzene	18.99	146	8766449	47487.726	pg		96
50) 1,2-Dichlorobenzene	19.31	146	9516818	53941.107	pg		96
51) 1,2-Dibromo-3-chloropr...	19.72	157	3123646	49205.071	pg		87
52) 1,2,4-Trichlorobenzene	20.94	182	5596696	44681.578	pg		98
53) Naphthalene	21.05	128	17298313	43162.481	pg		87

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031723.D Vial: 15
Acq On : 3 Feb 2017 20:04 Operator: CL
Sample : 50000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01241705 (2/22)

Quant Time: Feb 04 07:09:30 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

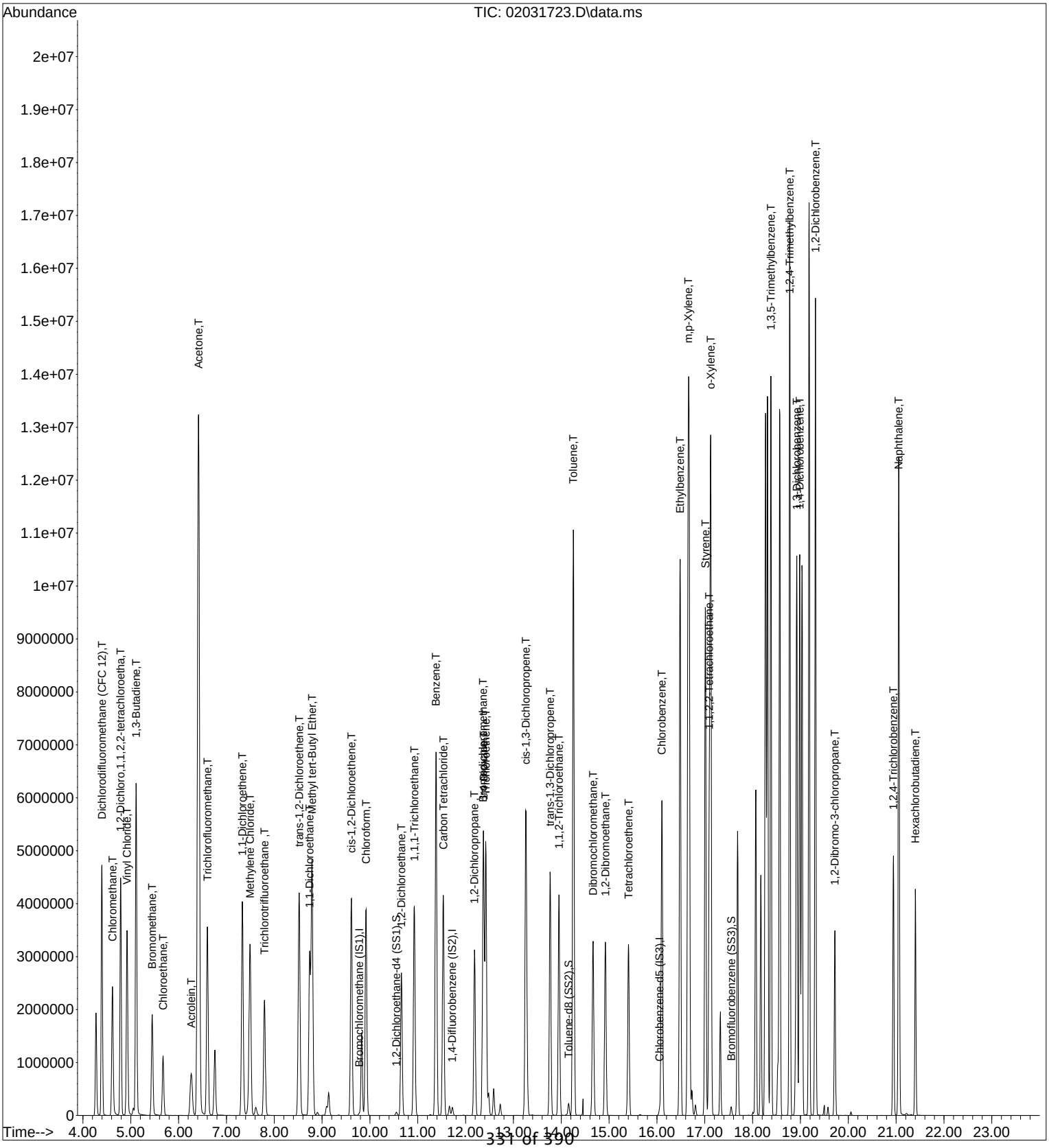
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	3759798	46064.678	pg	98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031723.D Vial: 15
Acq On : 3 Feb 2017 20:04 Operator: CL
Sample : 50000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-01241701/S29-01241705 (2/22)

Quant Time: Feb 04 07:09:30 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:09:01 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031725.D Vial: 2
Acq On : 3 Feb 2017 21:06 Operator: CL
Sample : 500pg TO15SIM ICV Inst : MS19
Misc : S29-01241701/S29-01271703 (2/25)

Quant Time: Feb 04 07:33:06 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/4/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	48649	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	243981	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	43674	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	85172	1002.745	pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.27%			
33) Toluene-d8 (SS2)	14.15	98	249815	1004.516	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.45%			
45) Bromofluorobenzene (SS3)	17.55	174	79948	1001.382	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.41	85	74191	608.866	pg	100
3) Chloromethane	4.65	52	18992	672.459	pg	98
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	65609	564.993	pg	100
5) Vinyl Chloride	4.95	62	64487	608.290	pg	100
6) 1,3-Butadiene	5.14	54	47807	632.471	pg	96
7) Bromomethane	5.47	94	25386	588.321	pg	99
8) Chloroethane	5.69	64	20334	604.378	pg	98
9) Acrolein	6.26	56	14183	514.149	pg	89
10) Acetone	6.39	58	132546	3674.155	pg	95
11) Trichlorofluoromethane	6.61	101	55317	595.753	pg	100
12) 1,1-Dichloroethene	7.34	96	31319	602.580	pg	100
13) Methylene Chloride	7.47	84	32790	578.656	pg	100
14) Trichlorotrifluoroethane	7.79	151	30453	591.818	pg	99
15) trans-1,2-Dichloroethene	8.51	96	33770	625.703	pg	100
16) 1,1-Dichloroethane	8.71	63	58745	608.625	pg	99
17) Methyl tert-Butyl Ether	8.79	73	105598	612.528	pg	99
18) cis-1,2-Dichloroethene	9.59	96	35529	614.797	pg	99
19) Chloroform	9.89	83	60519	579.070	pg	100
21) 1,2-Dichloroethane	10.64	62	47917	610.409	pg	99
22) 1,1,1-Trichloroethane	10.91	97	56941	598.022	pg	100
23) Benzene	11.36	78	140166	622.726	pg	100
24) Carbon Tetrachloride	11.52	117	49812	578.829	pg	100
26) 1,2-Dichloropropane	12.18	63	32322	594.001	pg	100
27) Bromodichloromethane	12.36	83	46329	589.802	pg	100
28) Trichloroethene	12.41	130	35149	596.086	pg	100
29) 1,4-Dioxane	12.38	88	27518	588.664	pg	99
30) cis-1,3-Dichloropropene	13.25	75	50858	589.870	pg	99
31) trans-1,3-Dichloropropene	13.77	75	45180	599.600	pg	99
32) 1,1,2-Trichloroethane	13.95	83	27109	598.192	pg	100
34) Toluene	14.25	91	134232	571.789	pg	100
35) Dibromochloromethane	14.66	129	35101	564.417	pg	100
36) 1,2-Dibromoethane	14.92	107	34779	593.252	pg	99
37) Tetrachloroethene	15.40	166	35907	583.652	pg	99
39) Chlorobenzene	16.10	112	89152	594.856	pg	100
40) Ethylbenzene	16.48	91	153915	607.214	pg	100
41) m,p-Xylene	16.66	91	237278	1203.145	pg	100
42) Styrene	17.01	104	85349	589.297	pg	99
43) o-Xylene	17.12	106	56834	585.325	pg	100
44) 1,1,2,2-Tetrachloroethane	17.09	83	53922	573.055	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	124481	579.543	pg	100
47) 1,2,4-Trimethylbenzene	18.77	105	125829	588.525	pg	100
48) 1,3-Dichlorobenzene	18.92	146	68341	590.369	pg	100
49) 1,4-Dichlorobenzene	18.98	146	69385	577.791	pg	100
50) 1,2-Dichlorobenzene	19.31	146	66540	573.135	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	20455	546.093	pg	99
52) 1,2,4-Trichlorobenzene	20.94	182	39982	525.010	pg	100
53) Naphthalene	21.06	128	144250	569.655	pg	99

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031725.D Vial: 2
Acq On : 3 Feb 2017 21:06 Operator: CL
Sample : 500pg TO15SIM ICV Inst : MS19
Misc : S29-01241701/S29-01271703 (2/25)

Quant Time: Feb 04 07:33:06 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

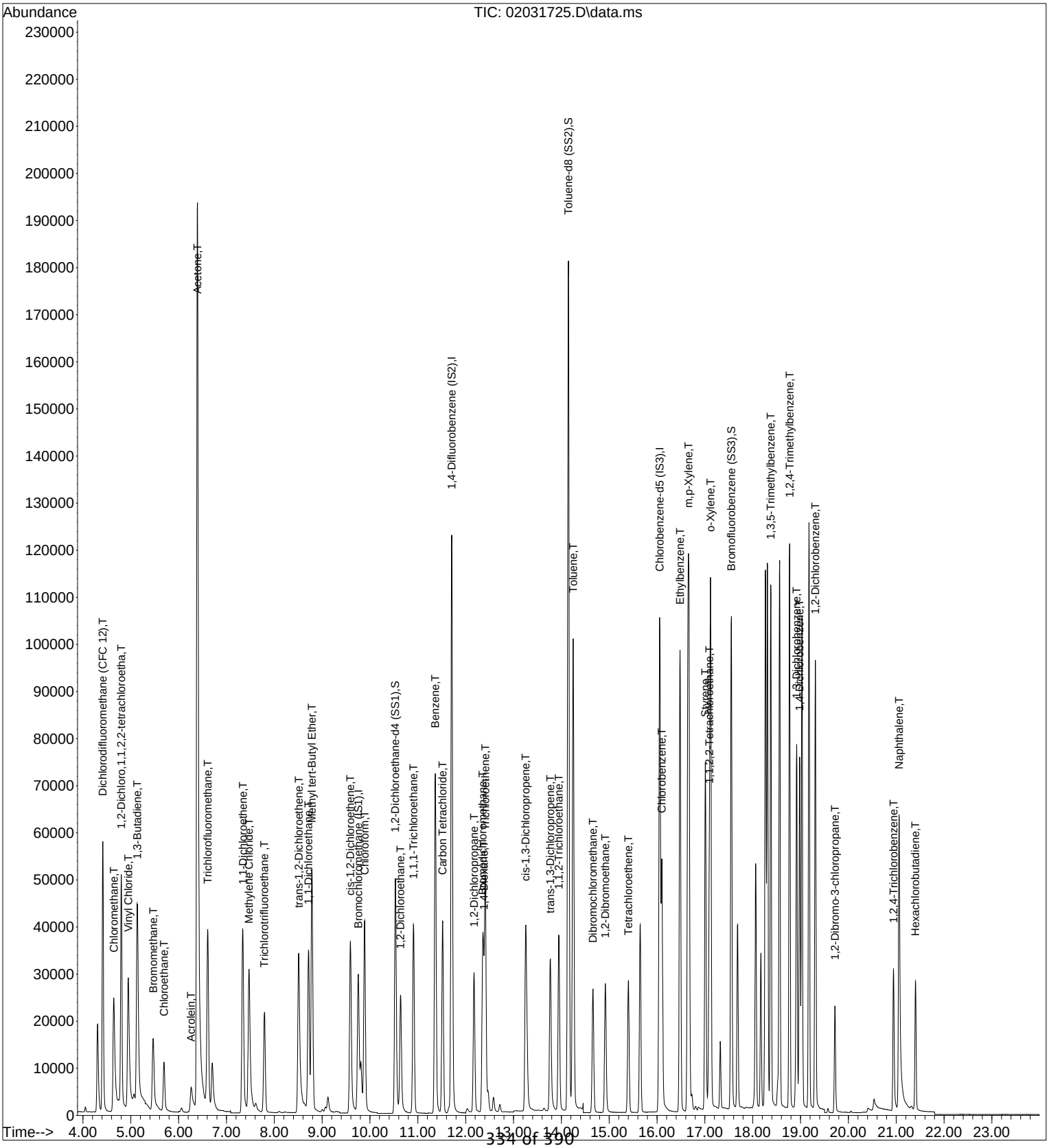
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	27038	556.826	pg	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\03\02031725.D Vial: 2
Acq On : 3 Feb 2017 21:06 Operator: CL
Sample : 500pg TO15SIM ICV Inst : MS19
Misc : S29-01241701/S29-01271703 (2/25)

Quant Time: Feb 04 07:33:06 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File Name: 02031725.D
Data File Path: I:\MS19\DATA\2017_02\03\
Operator: CL
Instrument Name: MS19
Sample Name: 500pg TO15SIM ICV
Misc Info: S29-01241701/S29-01271703 (2/25)
Date Acquired: 2/3/17 21:06
Acq. Method File: TO15SIM.M

CL 2/13/17

#	Compound Name	Ret. Time	Amount Spiked (pg)	Amount Found (pg)	Percent Recovery	Lower Limit	Upper Limit	Flag
2)	Dichlorodifluoromethane (CFC 12)	4.41	525	608.9	116.0	70	130	*
3)	Chloromethane	4.65	524.5	672.5	128.2	70	130	*
4)	*1,2-Dichloro,1,1,2,2-tetrachloroetha*	4.80	527.5	565.0	107.1	70	130	*
5)	Vinyl Chloride	4.95	525	608.3	115.9	70	130	*
6)	*1,3-Butadiene*	5.14	525	632.5	120.5	70	130	*
7)	Bromomethane	5.47	525	588.3	112.1	70	130	*
8)	Chloroethane	5.69	524.5	604.4	115.2	70	130	*
9)	*Acrolein*	6.26	530.5	514.1	96.9	70	130	*
10)	Acetone	6.39	2661	3674.2	138.1	70	130	Fail
11)	Trichlorofluoromethane	6.61	525.5	595.8	113.4	70	130	*
12)	1,1-Dichloroethene	7.34	531.5	602.6	113.4	70	130	*
13)	Methylene Chloride	7.47	531	578.7	109.0	70	130	*
14)	Trichlorotrifluoroethane	7.79	529	591.8	111.9	70	130	*
15)	trans-1,2-Dichloroethene	8.51	533.5	625.7	117.3	70	130	*
16)	1,1-Dichloroethane	8.71	531	608.6	114.6	70	130	*
17)	Methyl tert-Butyl Ether	8.79	532	612.5	115.1	70	130	*
18)	cis-1,2-Dichloroethene	9.59	529.5	614.8	116.1	70	130	*
19)	Chloroform	9.89	529.5	579.1	109.4	70	130	*
21)	1,2-Dichloroethane	10.64	530	610.4	115.2	70	130	*
22)	1,1,1-Trichloroethane	10.91	529.5	598.0	112.9	70	130	*
25)	Benzene	11.36	530.5	622.7	117.4	70	130	*
24)	Carbon Tetrachloride	11.52	532	578.8	108.8	70	130	*
26)	1,2-Dichloropropane	12.18	530.5	594.0	112.0	70	130	*
27)	Bromodichloromethane	12.36	534	589.8	110.4	70	130	*
28)	Trichloroethene	12.41	531	596.1	112.3	70	130	*
29)	1,4-Dioxane	12.38	532	588.7	110.7	70	130	*
30)	cis-1,3-Dichloropropene	13.25	525.5	589.9	112.2	70	130	*
31)	trans-1,3-Dichloropropene	13.77	533.5	599.6	112.4	70	130	*
32)	1,1,2-Trichloroethane	13.95	530.5	598.2	112.8	70	130	*
34)	Toluene	14.15	529	571.8	108.1	70	130	*
35)	*Dibromochloromethane*	14.66	532	564.4	106.1	70	130	*
36)	1,2-Dibromoethane	14.92	529	593.3	112.1	70	130	*
37)	Tetrachloroethene	15.40	531.5	495.0	93.1	70	130	*
39)	Chlorobenzene	16.10	530	594.9	112.2	70	130	*
40)	Ethylbenzene	16.48	529	607.2	114.8	70	130	*
41)	m,p-Xylene	16.66	1060.5	1203.1	113.5	70	130	*
42)	*Styrene*	17.01	529.5	589.3	111.3	70	130	*
43)	o-Xylene	17.12	529	585.3	110.6	70	130	*
44)	1,1,2,2-Tetrachloroethane	17.09	530	573.1	108.1	70	130	*
46)	*1,3,5-Trimethylbenzene*	18.38	530.5	579.5	109.2	70	130	*
47)	*1,2,4-Trimethylbenzene*	18.77	530.5	588.5	110.9	70	130	*
48)	1,3-Dichlorobenzene	18.92	529.5	590.4	111.5	70	130	*
49)	1,4-Dichlorobenzene	18.98	533	577.8	108.4	70	130	*
50)	1,2-Dichlorobenzene	19.31	531	573.1	107.9	70	130	*
51)	*1,2-Dibromo-3-chloropropane*	19.72	529.5	546.1	103.1	70	130	*
52)	1,2,4-Trichlorobenzene	20.94	530	525.0	99.1	70	130	*
53)	Naphthalene	19.31	534	569.7	106.7	70	130	*
54)	Hexachlorobutadiene	21.40	531.5	556.8	104.8	70	130	*

Evaluate Continuing Calibration Report

Data File : I:\MS19\DATA\2017_02\16\02161702.D Vial: 16
Acq On : 16 Feb 2017 7:49 Operator: CL
Sample : CCV S19021617_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 16 08:19:39 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/16/17

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	66	-0.02
2	T	Dichlorodifluoromethane (CF	2.505	2.343	6.5	62	0.03
3	T	Chloromethane	0.581	0.414	28.7	46#	0.04
4	T	1,2-Dichloro,1,1,2,2-tetrac	2.387	2.382	0.2	67	0.03
5	T	Vinyl Chloride	2.179	2.098	3.7	64	0.04
6	T	1,3-Butadiene	1.554	1.382	11.1	60	0.04
7	T	Bromomethane	0.887	0.763	14.0	59	0.04
8	T	Chloroethane	0.692	0.576	16.8	57	0.03
9	T	Acrolein	0.567	0.406	28.4	54	0.02
10	T	Acetone	0.742	0.603	18.7	60	-0.01
11	T	Trichlorofluoromethane	1.909	1.698	11.1	61	0.01
12	T	1,1-Dichloroethene	1.068	0.895	16.2	57	0.02
13	T	Methylene Chloride	1.165	1.029	11.7	63	-0.01
14	T	Trichlorotrifluoroethane	1.058	0.838	20.8	56	0.00
15	T	trans-1,2-Dichloroethene	1.109	0.989	10.8	59	0.00
16	T	1,1-Dichloroethane	1.984	1.803	9.1	61	-0.02
17	T	Methyl tert-Butyl Ether	3.544	3.025	14.6	58	0.00
18	T	cis-1,2-Dichloroethene	1.188	1.054	11.3	60	-0.02
19	T	Chloroform	2.148	1.959	8.8	64	-0.03
20	S	1,2-Dichloroethane-d4 (SS1)	1.746	2.004	-14.8	75	-0.02
21	T	1,2-Dichloroethane	1.614	1.568	2.9	65	-0.02
22	T	1,1,1-Trichloroethane	1.957	1.751	10.5	61	-0.02
23	T	Benzene	4.627	3.954	14.5	60	-0.01
24	T	Carbon Tetrachloride	1.769	1.514	14.4	60	-0.02
25	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	64	-0.01
26	T	1,2-Dichloropropane	0.223	0.201	9.9	61	-0.01
27	T	Bromodichloromethane	0.322	0.283	12.1	60	-0.01
28	T	Trichloroethene	0.242	0.209	13.6	58	-0.01
29	T	1,4-Dioxane	0.192	0.163	15.1	57	0.00
30	T	cis-1,3-Dichloropropene	0.353	0.287	18.7	56	0.00
31	T	trans-1,3-Dichloropropene	0.309	0.246	20.4	55	0.00
32	T	1,1,2-Trichloroethane	0.186	0.169	9.1	61	0.00
33	S	Toluene-d8 (SS2)	1.019	1.031	-1.2	65	-0.01
34	T	Toluene	0.962	0.809	15.9	59	0.00
35	T	Dibromochloromethane	0.255	0.196	23.1	54	0.00
36	T	1,2-Dibromoethane	0.240	0.204	15.0	58	0.00
37	T	Tetrachloroethene	0.252	0.211	16.3	58	0.00
38	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	71	0.00
39	T	Chlorobenzene	3.432	2.607	24.0	58	0.00
40	T	Ethylbenzene	5.804	4.535	21.9	58	0.00
41	T	m,p-Xylene	4.516	3.497	22.6	58	0.00
42	T	Styrene	3.316	2.262	31.8#	52	0.00
43	T	o-Xylene	2.223	1.656	25.5	57	0.00
44	T	1,1,2,2-Tetrachloroethane	2.155	1.729	19.8	61	0.00
45	S	Bromofluorobenzene (SS3)	1.828	1.612	11.8	64	0.00
46	T	1,3,5-Trimethylbenzene	4.918	3.679	25.2	57	0.00
47	T	1,2,4-Trimethylbenzene	4.895	3.687	24.7	57	0.00
48	T	1,3-Dichlorobenzene	2.651	1.906	28.1	55	0.00
49	T	1,4-Dichlorobenzene	2.750	1.856	32.5#	54	0.00
50	T	1,2-Dichlorobenzene	2.658	1.886	29.0	56	0.00
51	T	1,2-Dibromo-3-chloropropane	0.858	0.548	36.1#	51	0.00
52	T	1,2,4-Trichlorobenzene	1.744	1.046	40.0#	50	0.00
53	T	Naphthalene	5.798	3.296	43.2#	47#	0.02
54	T	Hexachlorobutadiene	1.112	0.828	25.5	58	0.00

Evaluate Continuing Calibration Report

Data File : I:\MS19\DATA\2017_02\16\02161702.D Vial: 16
Acq On : 16 Feb 2017 7:49 Operator: CL
Sample : CCV S19021617_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 16 08:19:39 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161702.D Vial: 16
Acq On : 16 Feb 2017 7:49 Operator: CL
Sample : CCV S19021617_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 16 08:19:39 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/16/17

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	33215	1000.000	pg		-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	162114	1000.000	pg		-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	32253	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.53	65	66552	1147.610	pg		-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 114.76%				
33) Toluene-d8 (SS2)	14.14	98	167182	1011.727	pg		-0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 101.17%				
45) Bromofluorobenzene (SS3)	17.55	174	51989	881.772	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 88.18%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.43	85	40741	489.714	pg		100
3) Chloromethane	4.66	52	6912	358.458	pg	#	82
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	39756	501.443	pg		100
5) Vinyl Chloride	4.96	62	35650	492.536	pg		100
6) 1,3-Butadiene	5.15	54	24252	469.933	pg		97
7) Bromomethane	5.48	94	12575	426.843	pg		100
8) Chloroethane	5.71	64	9656	420.361	pg		99
9) Acrolein	6.28	56	7013	372.361	pg		91
10) Acetone	6.40	58	53197	2159.820	pg	#	88
11) Trichlorofluoromethane	6.62	101	29590	466.758	pg		100
12) 1,1-Dichloroethene	7.35	96	15746	443.728	pg		94
13) Methylene Chloride	7.48	84	18060	466.806	pg		95
14) Trichlorotrifluoroethane	7.80	151	14591	415.320	pg		100
15) trans-1,2-Dichloroethene	8.52	96	17529	475.701	pg		96
16) 1,1-Dichloroethane	8.72	63	30546	463.525	pg		99
17) Methyl tert-Butyl Ether	8.79	73	53545	454.914	pg		100
18) cis-1,2-Dichloroethene	9.59	96	18627	472.097	pg		99
19) Chloroform	9.89	83	34413	482.282	pg		100
21) 1,2-Dichloroethane	10.64	62	27392	511.087	pg		98
22) 1,1,1-Trichloroethane	10.91	97	31224	480.308	pg		100
23) Benzene	11.37	78	69073	449.472	pg		99
24) Carbon Tetrachloride	11.52	117	26520	451.367	pg		100
26) 1,2-Dichloropropane	12.18	63	17279	477.907	pg		99
27) Bromodichloromethane	12.36	83	24420	467.880	pg		100
28) Trichloroethene	12.41	130	17924	457.474	pg		100
29) 1,4-Dioxane	12.38	88	14043	452.112	pg		98
30) cis-1,3-Dichloropropene	13.25	75	25991	453.687	pg		100
31) trans-1,3-Dichloropropene	13.77	75	21187	423.175	pg		100
32) 1,1,2-Trichloroethane	13.95	83	14506	481.737	pg		96
34) Toluene	14.25	91	69055	442.701	pg		99
35) Dibromochloromethane	14.66	129	16834	407.384	pg		100
36) 1,2-Dibromoethane	14.92	107	17460	448.231	pg		100
37) Tetrachloroethene	15.40	166	18185	444.861	pg		99
39) Chlorobenzene	16.10	112	44603	402.993	pg		100
40) Ethylbenzene	16.48	91	77154	412.166	pg		98
41) m,p-Xylene	16.66	91	119717	821.995	pg		98
42) Styrene	17.01	104	38707	361.891	pg		99
43) o-Xylene	17.12	106	28150	392.573	pg		96
44) 1,1,2,2-Tetrachloroethane	17.09	83	29452	423.836	pg		100
46) 1,3,5-Trimethylbenzene	18.38	105	62230	392.316	pg		98
47) 1,2,4-Trimethylbenzene	18.77	105	62554	396.179	pg		98
48) 1,3-Dichlorobenzene	18.92	146	32517	380.370	pg		100
49) 1,4-Dichlorobenzene	18.98	146	31665	357.057	pg		100
50) 1,2-Dichlorobenzene	19.31	146	32179	375.318	pg		100
51) 1,2-Dibromo-3-chloropr...	19.72	157	9310	336.565	pg		92
52) 1,2,4-Trichlorobenzene	20.95	182	17595	312.857	pg		99
53) Naphthalene	21.07	128	57571	307.860	pg		100

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161702.D Vial: 16
Acq On : 16 Feb 2017 7:49 Operator: CL
Sample : CCV S19021617_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 16 08:19:39 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

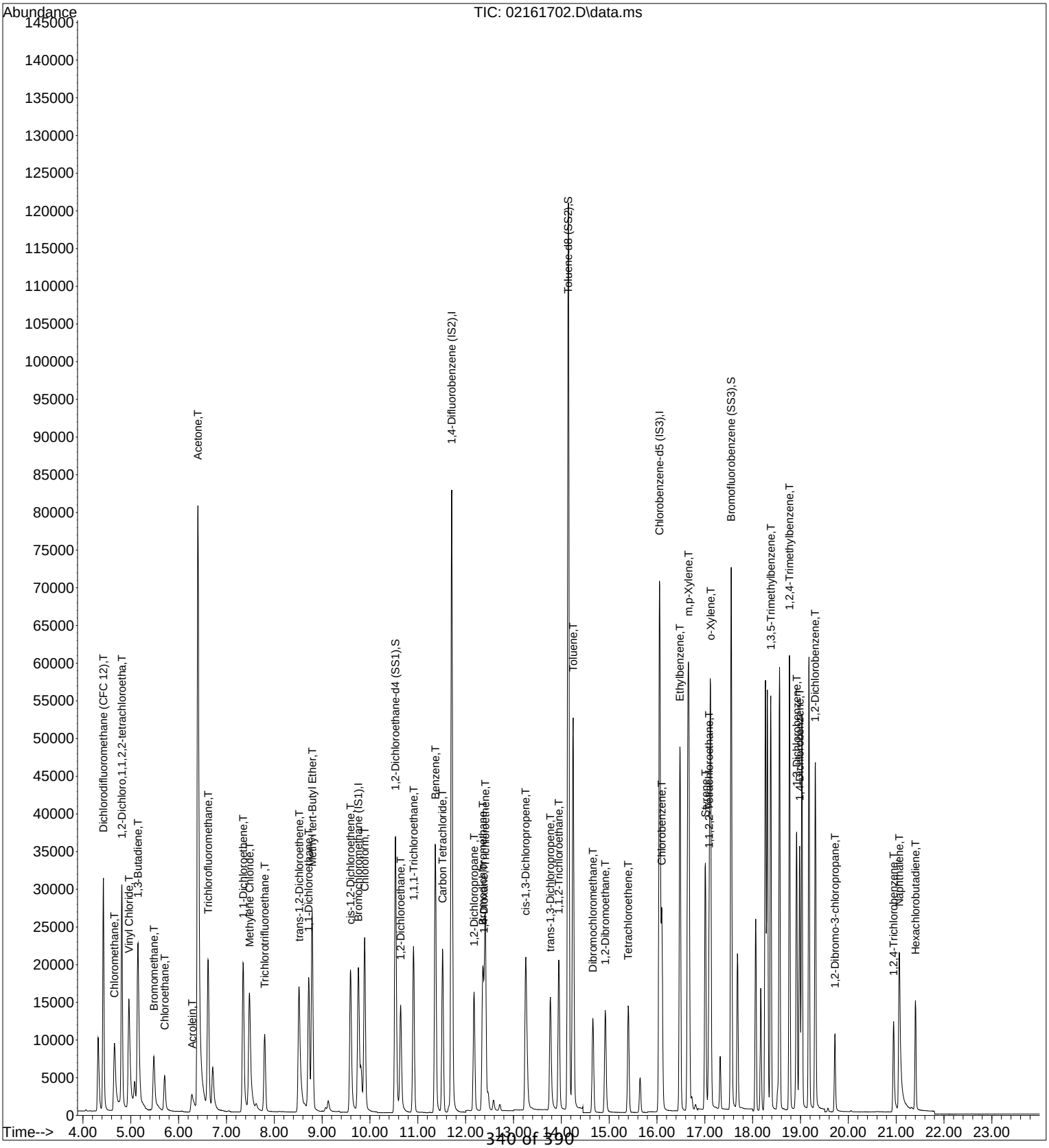
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	14146	394.486	pg	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161702.D Vial: 16
Acq On : 16 Feb 2017 7:49 Operator: CL
Sample : CCV S19021617_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 16 08:19:39 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Evaluate Continuing Calibration Report

Data File : I:\MS19\DATA\2017_02\17\02171705.D Vial: 16
Acq On : 17 Feb 2017 9:17 Operator: CL
Sample : CCV S19021717_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 17 09:57:28 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/17/17

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	78	-0.02
2	T	Dichlorodifluoromethane (CF	2.505	2.286	8.7	71	0.03
3	T	Chloromethane	0.581	0.481	17.2	62	0.04
4	T	1,2-Dichloro,1,1,2,2-tetrac	2.387	2.081	12.8	69	0.02
5	T	Vinyl Chloride	2.179	1.866	14.4	67	0.04
6	T	1,3-Butadiene	1.554	1.385	10.9	70	0.04
7	T	Bromomethane	0.887	0.741	16.5	68	0.03
8	T	Chloroethane	0.692	0.587	15.2	68	0.03
9	T	Acrolein	0.567	0.424	25.2	67	0.01
10	T	Acetone	0.742	0.616	17.0	72	-0.01
11	T	Trichlorofluoromethane	1.909	1.705	10.7	72	0.01
12	T	1,1-Dichloroethene	1.068	0.919	14.0	69	0.02
13	T	Methylene Chloride	1.165	0.982	15.7	70	-0.01
14	T	Trichlorotrifluoroethane	1.058	0.893	15.6	70	0.00
15	T	trans-1,2-Dichloroethene	1.109	0.978	11.8	69	0.00
16	T	1,1-Dichloroethane	1.984	1.709	13.9	68	-0.02
17	T	Methyl tert-Butyl Ether	3.544	3.091	12.8	70	0.00
18	T	cis-1,2-Dichloroethene	1.188	1.053	11.4	70	-0.02
19	T	Chloroform	2.148	1.868	13.0	72	-0.03
20	S	1,2-Dichloroethane-d4 (SS1)	1.746	1.762	-0.9	78	-0.02
21	T	1,2-Dichloroethane	1.614	1.423	11.8	70	-0.02
22	T	1,1,1-Trichloroethane	1.957	1.664	15.0	68	-0.02
23	T	Benzene	4.627	3.855	16.7	68	-0.01
24	T	Carbon Tetrachloride	1.769	1.429	19.2	67	-0.01
25	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	76	-0.01
26	T	1,2-Dichloropropane	0.223	0.189	15.2	67	0.00
27	T	Bromodichloromethane	0.322	0.264	18.0	66	0.00
28	T	Trichloroethene	0.242	0.210	13.2	69	0.00
29	T	1,4-Dioxane	0.192	0.164	14.6	68	0.00
30	T	cis-1,3-Dichloropropene	0.353	0.280	20.7	64	0.00
31	T	trans-1,3-Dichloropropene	0.309	0.238	23.0	63	0.00
32	T	1,1,2-Trichloroethane	0.186	0.161	13.4	68	0.00
33	S	Toluene-d8 (SS2)	1.019	1.020	-0.1	75	0.00
34	T	Toluene	0.962	0.801	16.7	69	0.00
35	T	Dibromochloromethane	0.255	0.192	24.7	63	0.00
36	T	1,2-Dibromoethane	0.240	0.202	15.8	67	0.00
37	T	Tetrachloroethene	0.252	0.225	10.7	73	0.00
38	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	76	0.00
39	T	Chlorobenzene	3.432	2.829	17.6	67	0.00
40	T	Ethylbenzene	5.804	4.961	14.5	67	0.00
41	T	m,p-Xylene	4.516	3.796	15.9	67	0.00
42	T	Styrene	3.316	2.546	23.2	63	0.00
43	T	o-Xylene	2.223	1.819	18.2	67	0.00
44	T	1,1,2,2-Tetrachloroethane	2.155	1.781	17.4	67	0.00
45	S	Bromofluorobenzene (SS3)	1.828	1.812	0.9	76	0.00
46	T	1,3,5-Trimethylbenzene	4.918	4.006	18.5	66	0.00
47	T	1,2,4-Trimethylbenzene	4.895	4.006	18.2	66	0.00
48	T	1,3-Dichlorobenzene	2.651	2.075	21.7	64	0.00
49	T	1,4-Dichlorobenzene	2.750	2.024	26.4	63	0.00
50	T	1,2-Dichlorobenzene	2.658	2.059	22.5	65	0.00
51	T	1,2-Dibromo-3-chloropropane	0.858	0.602	29.8	60	0.00
52	T	1,2,4-Trichlorobenzene	1.744	1.179	32.4#	61	0.00
53	T	Naphthalene	5.798	3.724	35.8#	56	0.02
54	T	Hexachlorobutadiene	1.112	0.901	19.0	68	0.00

Evaluate Continuing Calibration Report

Data File : I:\MS19\DATA\2017_02\17\02171705.D Vial: 16
Acq On : 17 Feb 2017 9:17 Operator: CL
Sample : CCV S19021717_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 17 09:57:28 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171705.D Vial: 16
Acq On : 17 Feb 2017 9:17 Operator: CL
Sample : CCV S19021717_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 17 09:57:28 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/17/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	39058	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	190715	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	34452	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	68805	1008.968	pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.90%			
33) Toluene-d8 (SS2)	14.15	98	194553	1000.800	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.08%			
45) Bromofluorobenzene (SS3)	17.55	174	62437	991.386	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 99.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.42	85	46750	477.877	pg	100
3) Chloromethane	4.66	52	9440	416.324	pg	98
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	40845	438.109	pg	100
5) Vinyl Chloride	4.96	62	37283	438.039	pg	99
6) 1,3-Butadiene	5.15	54	28588	471.082	pg	96
7) Bromomethane	5.48	94	14366	414.687	pg	99
8) Chloroethane	5.71	64	11558	427.890	pg	99
9) Acrolein	6.28	56	8612	388.856	pg	92
10) Acetone	6.40	58	63928	2207.221	pg	98
11) Trichlorofluoromethane	6.62	101	34923	468.471	pg	100
12) 1,1-Dichloroethene	7.35	96	18998	455.280	pg	99
13) Methylene Chloride	7.48	84	20276	445.682	pg	98
14) Trichlorotrifluoroethane	7.80	151	18287	442.654	pg	99
15) trans-1,2-Dichloroethene	8.52	96	20381	470.356	pg	99
16) 1,1-Dichloroethane	8.72	63	34034	439.193	pg	99
17) Methyl tert-Butyl Ether	8.79	73	64350	464.925	pg	99
18) cis-1,2-Dichloroethene	9.59	96	21881	471.607	pg	99
19) Chloroform	9.89	83	38602	460.058	pg	100
21) 1,2-Dichloroethane	10.64	62	29226	463.729	pg	100
22) 1,1,1-Trichloroethane	10.91	97	34911	456.687	pg	100
23) Benzene	11.37	78	79191	438.222	pg	100
24) Carbon Tetrachloride	11.52	117	29439	426.092	pg	100
26) 1,2-Dichloropropane	12.18	63	19119	449.496	pg	99
27) Bromodichloromethane	12.36	83	26804	436.540	pg	100
28) Trichloroethene	12.41	130	21277	461.612	pg	100
29) 1,4-Dioxane	12.38	88	16627	455.026	pg	99
30) cis-1,3-Dichloropropene	13.26	75	29770	441.720	pg	99
31) trans-1,3-Dichloropropene	13.77	75	24164	410.256	pg	99
32) 1,1,2-Trichloroethane	13.95	83	16330	460.983	pg	100
34) Toluene	14.25	91	80470	438.515	pg	100
35) Dibromochloromethane	14.66	129	19484	400.802	pg	100
36) 1,2-Dibromoethane	14.92	107	20342	443.902	pg	99
37) Tetrachloroethene	15.40	166	22746	472.989	pg	100
39) Chlorobenzene	16.10	112	51710	437.385	pg	100
40) Ethylbenzene	16.48	91	90159	450.898	pg	99
41) m,p-Xylene	16.66	91	138813	892.276	pg	99
42) Styrene	17.01	104	46535	407.309	pg	99
43) o-Xylene	17.12	106	33034	431.279	pg	98
44) 1,1,2,2-Tetrachloroethane	17.09	83	32405	436.567	pg	99
46) 1,3,5-Trimethylbenzene	18.38	105	72384	427.203	pg	99
47) 1,2,4-Trimethylbenzene	18.77	105	72595	430.427	pg	99
48) 1,3-Dichlorobenzene	18.92	146	37815	414.109	pg	100
49) 1,4-Dichlorobenzene	18.98	146	36888	389.402	pg	100
50) 1,2-Dichlorobenzene	19.31	146	37522	409.703	pg	99
51) 1,2-Dibromo-3-chloropr...	19.72	157	10914	369.368	pg	99
52) 1,2,4-Trichlorobenzene	20.95	182	21175	352.481	pg	100
53) Naphthalene	21.07	128	69477	347.813	pg	99

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171705.D Vial: 16
Acq On : 17 Feb 2017 9:17 Operator: CL
Sample : CCV S19021717_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 17 09:57:28 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

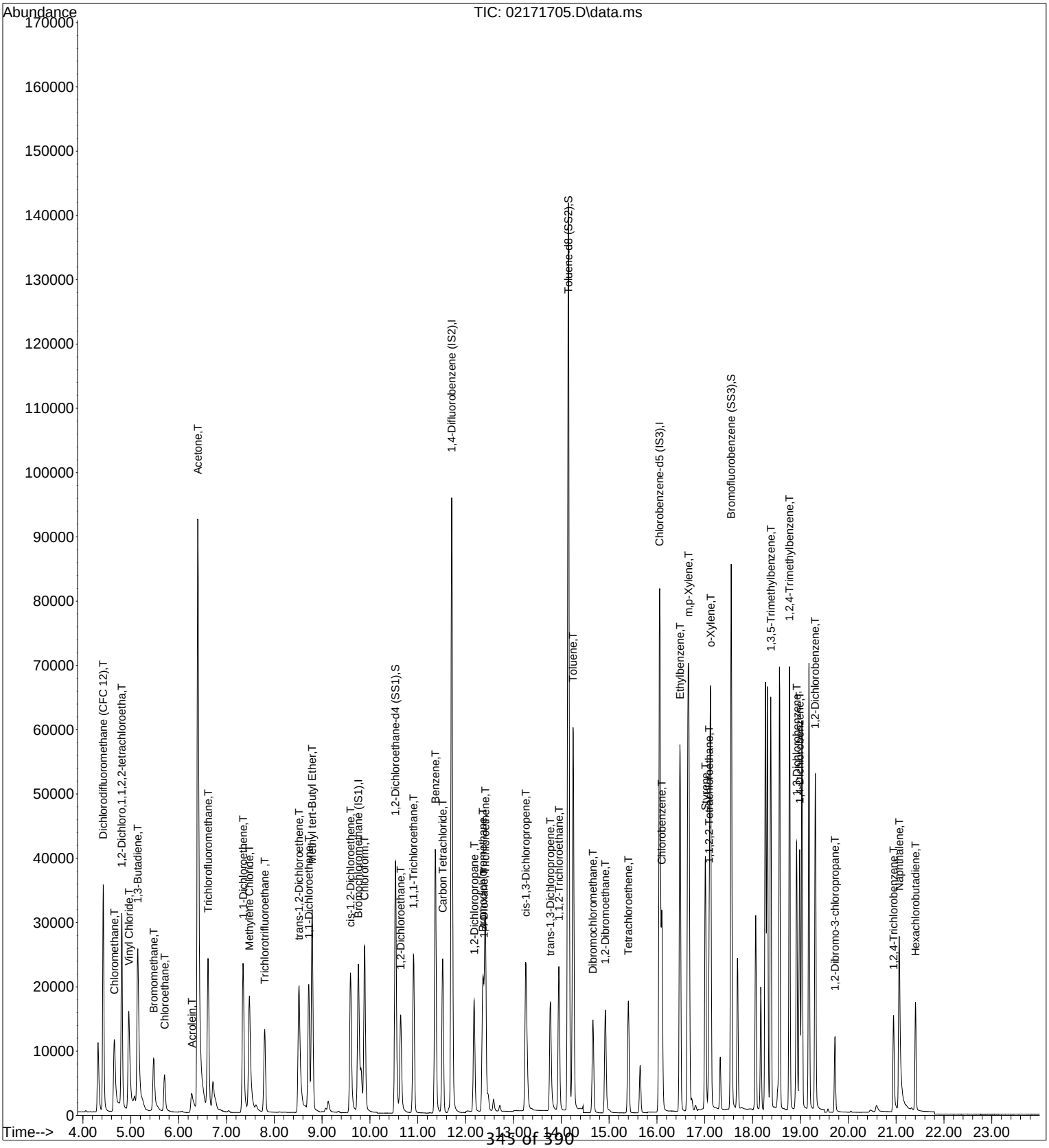
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	16435	429.065	pg	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171705.D Vial: 16
Acq On : 17 Feb 2017 9:17 Operator: CL
Sample : CCV S19021717_500pg Inst : MS19
Misc : S29-01241701/S29-01301704 (2/28)

Quant Time: Feb 17 09:57:28 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Client: **Haley & Aldrich, Inc.**
Client Project ID: **Dollinger / 129388-002** ALS Project ID: P1700672

Internal Standard Area and RT Summary

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/7890A/MS19 Lab File ID: 02161702.D
Analyst: Cory Lewis Date Analyzed: 2/16/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 07:49
Test Notes:

		IS1 (BCM)			IS2 (DFB)			IS3 (CBZ)		
		AREA	#	RT	AREA	#	RT	#	AREA	#	RT	#
	24 Hour Standard	33215		9.76	162114		11.71		32253		16.05	
	Upper Limit	46501		10.09	226960		12.04		45154		16.38	
	Lower Limit	19929		9.43	97268		11.38		19352		15.72	
	Client Sample ID											
01	Method Blank	31096		9.78	152666		11.72		30876		16.06	
02	Lab Control Sample	33633		9.75	163979		11.71		32787		16.05	
03	IA1-020917-0905	33750		9.75	164975		11.71		34390		16.05	
04	IA2-020917-1005	41345		9.77	208064		11.72		47211	I	16.05	
05	IA2-020917-1005 (Dilution)	42790		9.76	212806		11.71		40372		16.05	
06	IA3-020917-0950	42176		9.76	207770		11.72		40718		16.05	
07												
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits. See case narrative.

Client: **Haley & Aldrich, Inc.**
Client Project ID: **Dollinger / 129388-002** ALS Project ID: P1700672

Internal Standard Area and RT Summary

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/7890A/MS19 Lab File ID: 02171705.D
Analyst: Cory Lewis Date Analyzed: 2/17/17
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 09:17
Test Notes:

		IS1 (BCM)			IS2 (DFB)			IS3 (CBZ)		
		AREA	#	RT	AREA	#	RT	#	AREA	#	RT	#
	24 Hour Standard	39058		9.76	190715		11.71		34452		16.05	
	Upper Limit	54681		10.09	267001		12.04		48233		16.38	
	Lower Limit	23435		9.43	114429		11.38		20671		15.72	
	Client Sample ID											
01	Method Blank	35342		9.78	176041		11.72		32819		16.06	
02	Lab Control Sample	36914		9.76	180724		11.71		33731		16.06	
03	IA5-020917-0920	37196		9.76	179811		11.71		35859		16.05	
04	AA1-020917-1030	35563		9.76	191197		11.71		33219		16.05	
05												
06												
07												
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

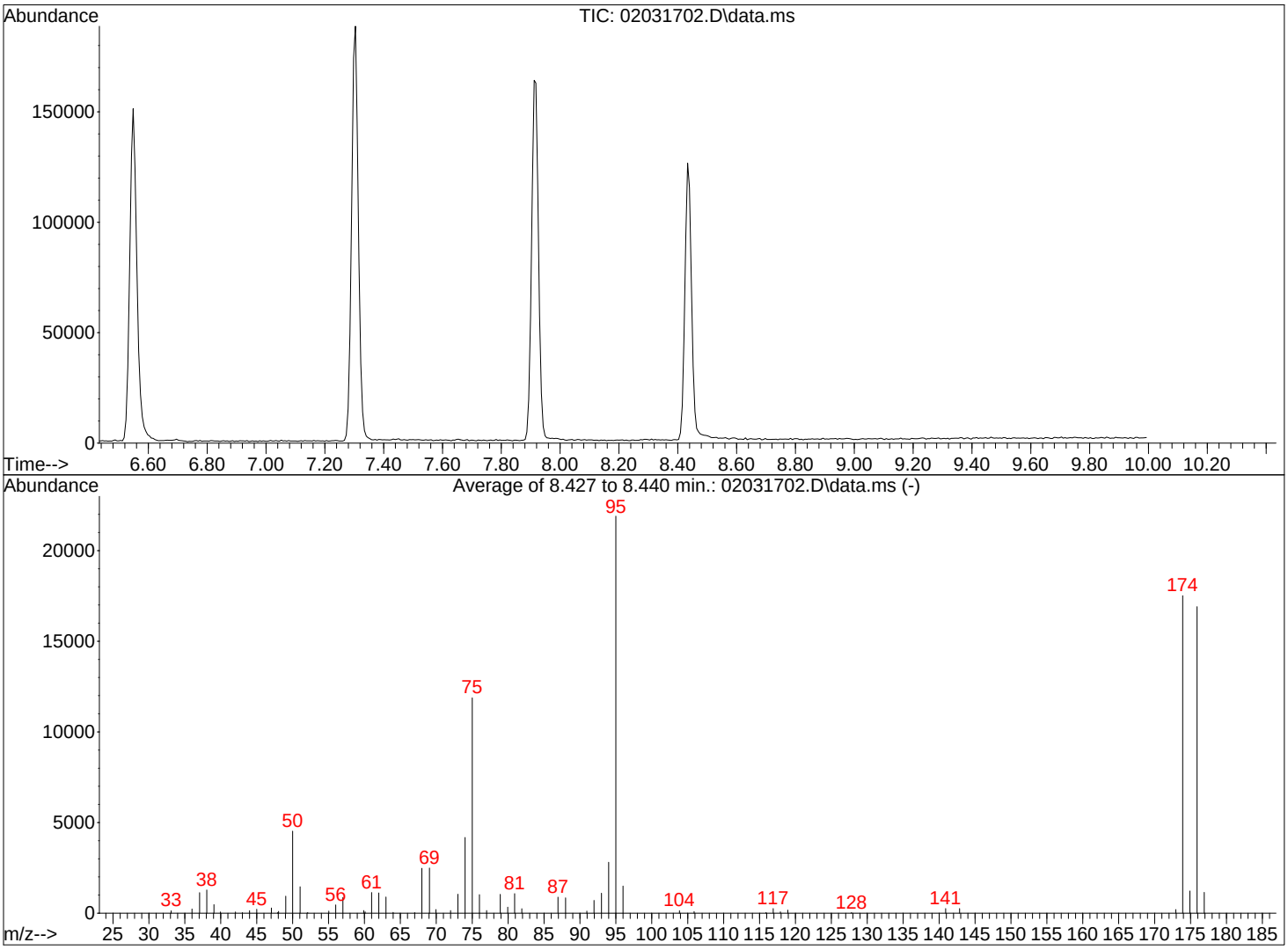
# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits. See case narrative.

Data Path : I:\MS19\DATA\2017_02\03\
Data File : 02031702.D
Acq On : 3 Feb 2017 7:59
Operator : CL
Sample : BFB S19020317
Misc : S29-01241701
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19013117.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Feb 01 07:44:10 2017

CL 2/3/17



AutoFind: Scans 707, 708, 709; Background Corrected with Scan 701

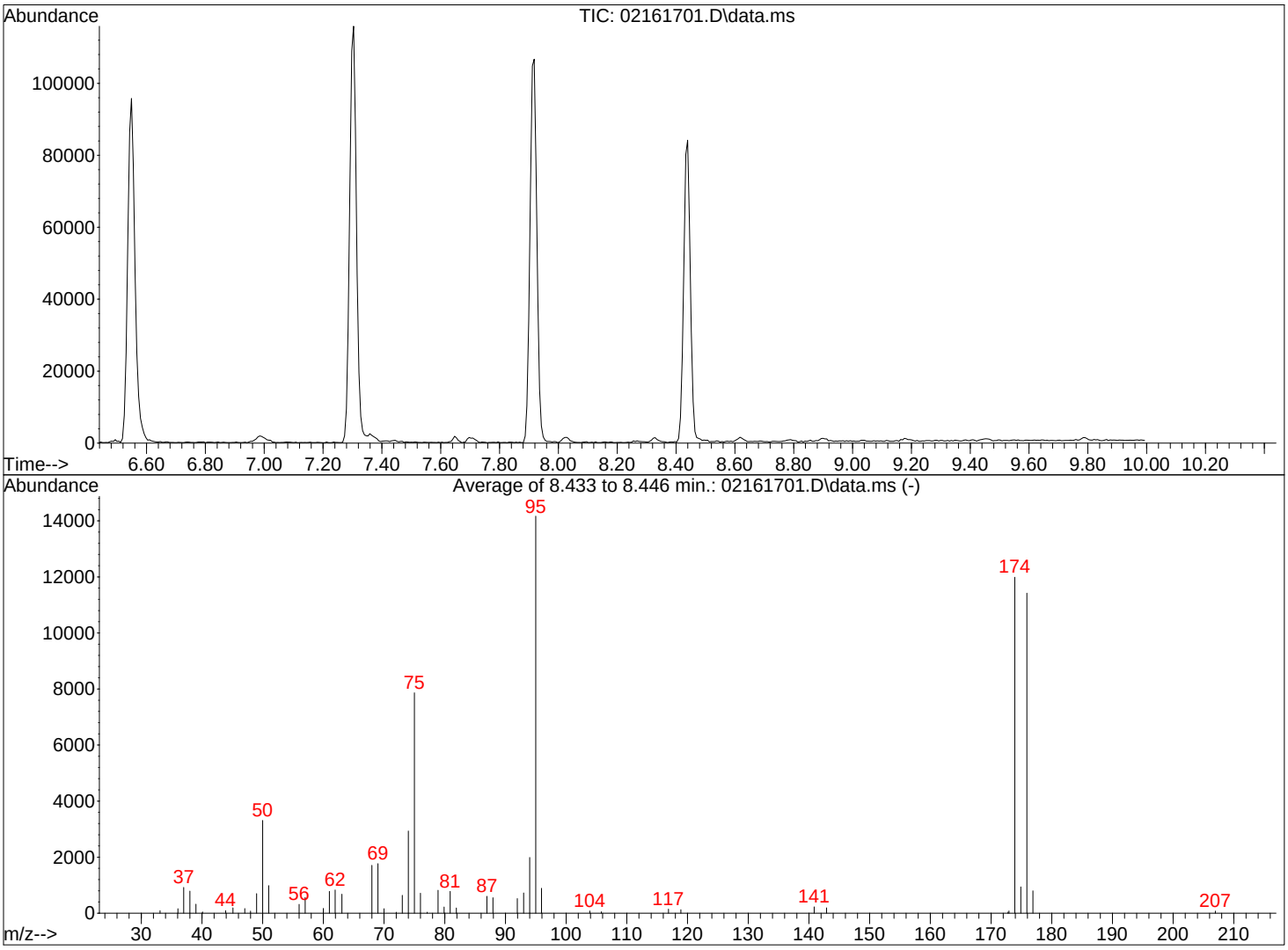
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.7	4524	PASS
75	95	30	66	54.3	11881	PASS
95	95	100	100	100.0	21899	PASS
96	95	5	9	6.8	1500	PASS
173	174	0.00	2	1.1	201	PASS
174	95	50	120	80.0	17513	PASS
175	174	4	9	7.0	1228	PASS
176	174	93	101	96.5	16905	PASS
177	176	5	9	6.8	1146	PASS

Data Path : I:\MS19\DATA\2017_02\16\
Data File : 02161701.D
Acq On : 16 Feb 2017 7:31
Operator : CL
Sample : BFB S19021617
Misc : S29-01241701
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19020317.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sat Feb 04 07:30:51 2017

CL 2/16/17



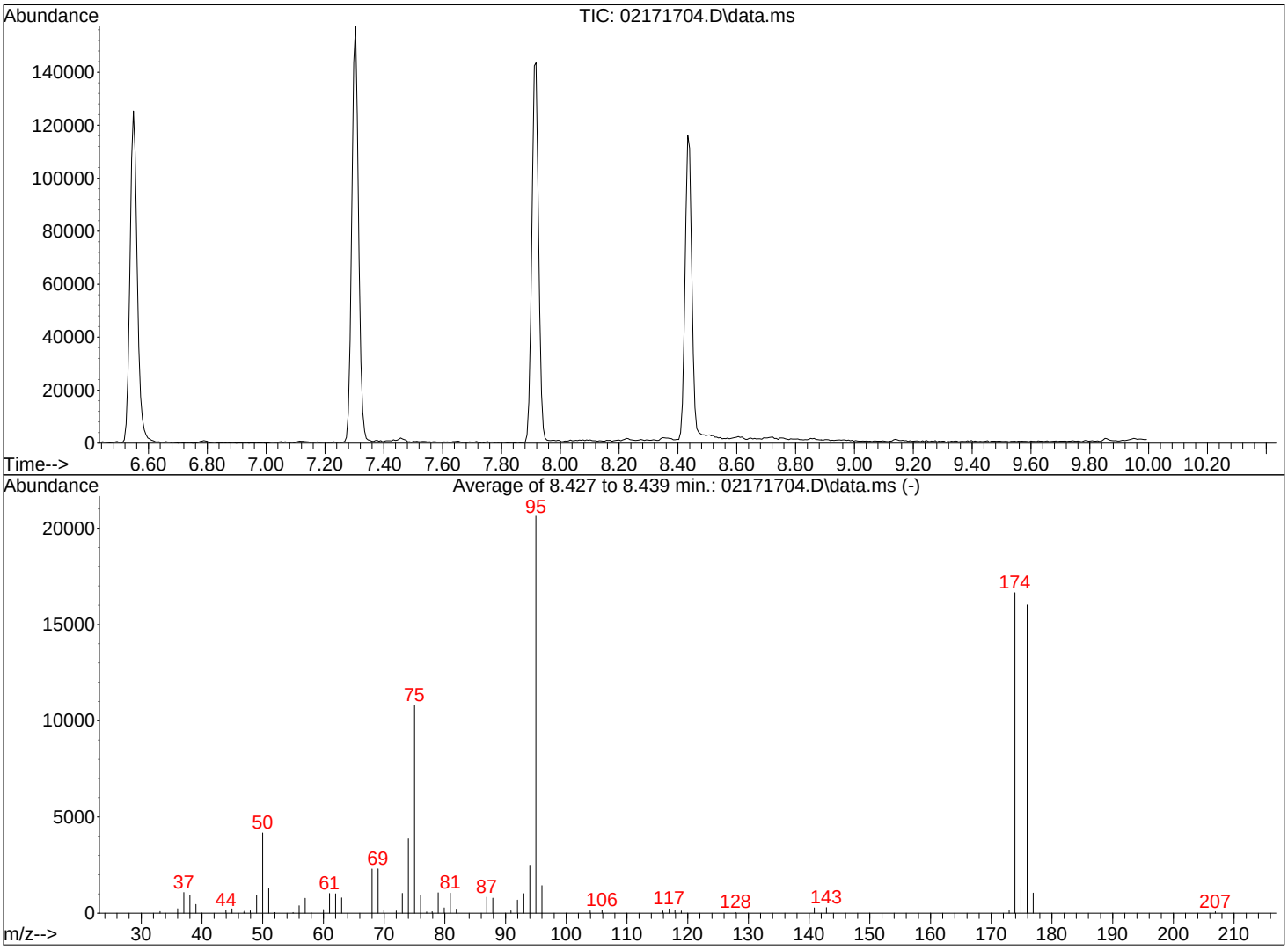
AutoFind: Scans 708, 709, 710; Background Corrected with Scan 702

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	23.4	3312	PASS
75	95	30	66	55.5	7863	PASS
95	95	100	100	100.0	14168	PASS
96	95	5	9	6.3	890	PASS
173	174	0.00	2	0.7	80	PASS
174	95	50	120	84.6	11989	PASS
175	174	4	9	7.8	938	PASS
176	174	93	101	95.3	11421	PASS
177	176	5	9	7.0	798	PASS

Data Path : I:\MS19\DATA\2017_02\17\
Data File : 02171704.D
Acq On : 17 Feb 2017 8:57
Operator : CL
Sample : BFB S19021717
Misc : S29-01241701
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19020317.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS) CL 2/17/17
Last Update : Sat Feb 04 07:30:51 2017



AutoFind: Scans 707, 708, 709; Background Corrected with Scan 701

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.2	4165	PASS
75	95	30	66	52.3	10783	PASS
95	95	100	100	100.0	20627	PASS
96	95	5	9	7.0	1435	PASS
173	174	0.00	2	1.0	160	PASS
174	95	50	120	80.7	16649	PASS
175	174	4	9	7.7	1282	PASS
176	174	93	101	96.2	16016	PASS
177	176	5	9	6.5	1048	PASS

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170216-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: NA
Analyst: Cory Lewis Date Analyzed: 2/16/17
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
156-59-2	cis-1,2-Dichloroethene	ND	0.025	ND	0.0063	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161703.D Vial: 2
Acq On : 16 Feb 2017 8:20 Operator: CL
Sample : MB S19021617_1000mL Inst : MS19
Misc : S29-01241701/AC01205

Quant Time: Feb 16 08:47:50 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/16/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.78	130	31096	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.72	114	152666	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.06	54	30876	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.55	65	63086	1161.973	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 116.20%			
33) Toluene-d8 (SS2)	14.15	98	158134	1016.196	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 101.62%			
45) Bromofluorobenzene (SS3)	17.56	174	47481	841.228	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 84.12%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.45	85	68	N.D.		
3) Chloromethane	0.00	52	0	N.D.		
4) 1,2-Dichloro,1,1,2,2-t...	0.00	85	0	N.D.		
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D.		
7) Bromomethane	0.00	94	0	N.D.		
8) Chloroethane	0.00	64	0	N.D.		
9) Acrolein	0.00	56	0	N.D.		
10) Acetone	6.48	58	2947	127.803	pg	96
11) Trichlorofluoromethane	0.00	101	0	N.D.		
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.52	84	183	N.D.		
14) Trichlorotrifluoroethane	0.00	151	0	N.D.		
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	0.00	63	0	N.D.		
17) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.90	83	826	N.D.		
21) 1,2-Dichloroethane	0.00	62	0	N.D.		
22) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
23) Benzene	11.38	78	1601	N.D.		
24) Carbon Tetrachloride	0.00	117	0	N.D.		
26) 1,2-Dichloropropane	0.00	63	0	N.D.		
27) Bromodichloromethane	0.00	83	0	N.D.		
28) Trichloroethene	0.00	130	0	N.D.		
29) 1,4-Dioxane	0.00	88	0	N.D.		
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.		
34) Toluene	14.25	91	558	N.D.		
35) Dibromochloromethane	0.00	129	0	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	0.00	166	0	N.D.		
39) Chlorobenzene	0.00	112	0	N.D.		
40) Ethylbenzene	16.49	91	86	N.D.		
41) m,p-Xylene	16.67	91	167	N.D.		
42) Styrene	17.04	104	185	N.D.		
43) o-Xylene	0.00	106	0	N.D.		
44) 1,1,2,2-Tetrachloroethane	17.13	83	64	N.D.		
46) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
47) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
48) 1,3-Dichlorobenzene	18.93	146	54	N.D.		
49) 1,4-Dichlorobenzene	19.00	146	87	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	0.00	128	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161703.D Vial: 2
Acq On : 16 Feb 2017 8:20 Operator: CL
Sample : MB S19021617_1000mL Inst : MS19
Misc : S29-01241701/AC01205

Quant Time: Feb 16 08:47:50 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

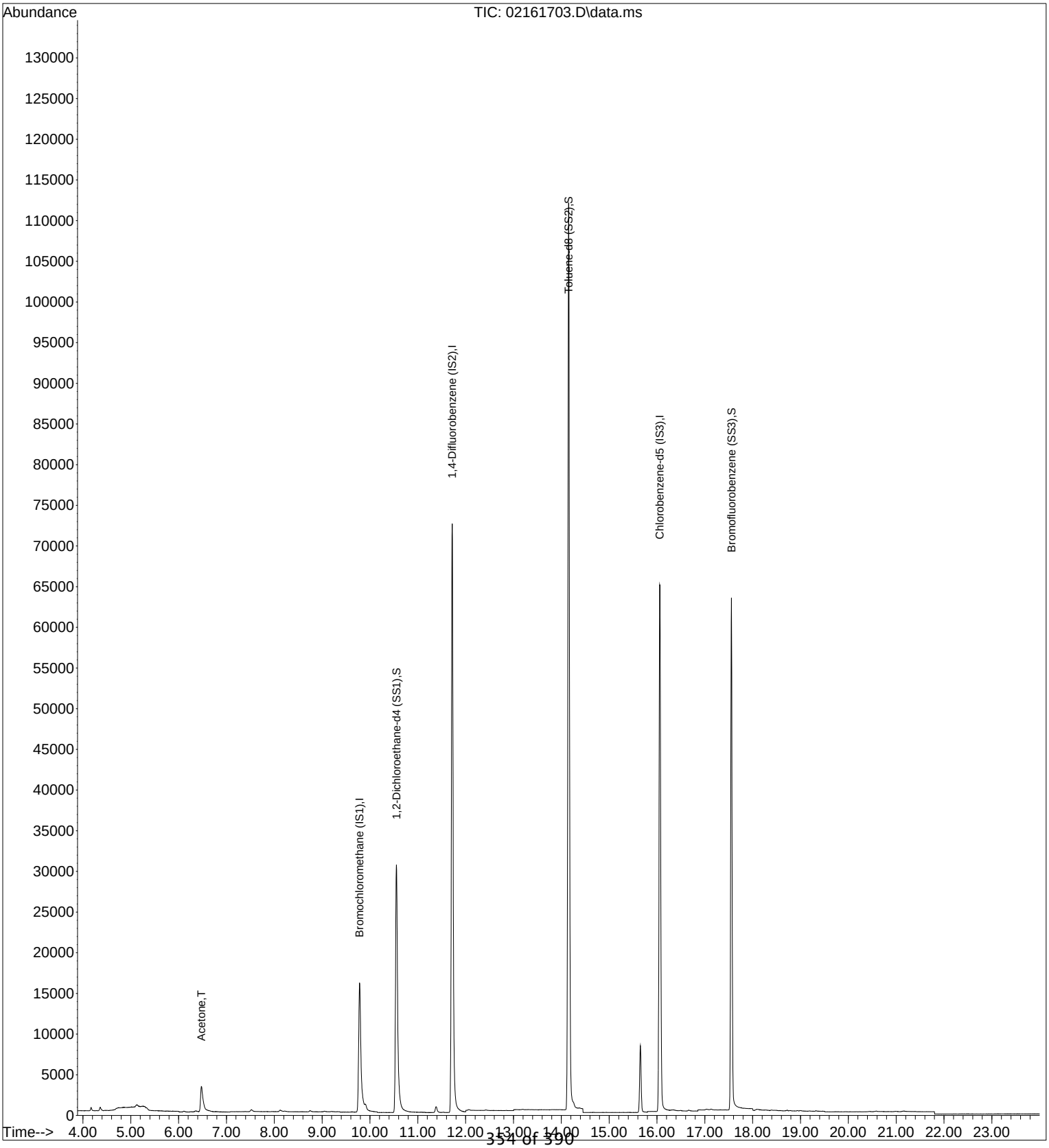
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161703.D Vial: 2
Acq On : 16 Feb 2017 8:20 Operator: CL
Sample : MB S19021617_1000mL Inst : MS19
Misc : S29-01241701/AC01205

Quant Time: Feb 16 08:47:50 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170217-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: NA
Analyst: Cory Lewis Date Analyzed: 2/17/17
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
156-59-2	cis-1,2-Dichloroethene	ND	0.025	ND	0.0063	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171706.D Vial: 2
Acq On : 17 Feb 2017 9:48 Operator: CL
Sample : MB S19021717_1000mL Inst : MS19
Misc : S29-01241701/AC01205

Quant Time: Feb 17 10:23:07 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/17/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.78	130	35342	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.72	114	176041	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.06	54	32819	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.55	65	66426	1076.501	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 107.65%			
33) Toluene-d8 (SS2)	14.15	98	179771	1001.844	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.18%			
45) Bromofluorobenzene (SS3)	17.56	174	55507	925.204	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 92.52%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.46	85	59	N.D.		
3) Chloromethane	0.00	52	0	N.D.		
4) 1,2-Dichloro,1,1,2,2-t...	0.00	85	0	N.D.		
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D.		
7) Bromomethane	0.00	94	0	N.D.		
8) Chloroethane	0.00	64	0	N.D.		
9) Acrolein	0.00	56	0	N.D.		
10) Acetone	6.47	58	4666	178.040	pg	98
11) Trichlorofluoromethane	0.00	101	0	N.D.		
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.53	84	199	N.D.		
14) Trichlorotrifluoroethane	0.00	151	0	N.D.		
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	0.00	63	0	N.D.		
17) Methyl tert-Butyl Ether	8.76	73	102	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.91	83	1019	N.D.		
21) 1,2-Dichloroethane	0.00	62	0	N.D.		
22) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
23) Benzene	11.38	78	2704	N.D.		
24) Carbon Tetrachloride	0.00	117	0	N.D.		
26) 1,2-Dichloropropane	0.00	63	0	N.D.		
27) Bromodichloromethane	0.00	83	0	N.D.		
28) Trichloroethene	0.00	130	0	N.D.		
29) 1,4-Dioxane	12.41	88	65	N.D.		
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.		
34) Toluene	14.26	91	661	N.D.		
35) Dibromochloromethane	0.00	129	0	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.41	166	756	N.D.		
39) Chlorobenzene	16.11	112	116	N.D.		
40) Ethylbenzene	16.49	91	114	N.D.		
41) m,p-Xylene	16.67	91	327	N.D.		
42) Styrene	17.02	104	514	N.D.		
43) o-Xylene	17.13	106	56	N.D.		
44) 1,1,2,2-Tetrachloroethane	17.13	83	275	N.D.		
46) 1,3,5-Trimethylbenzene	18.39	105	72	N.D.		
47) 1,2,4-Trimethylbenzene	18.78	105	163	N.D.		
48) 1,3-Dichlorobenzene	18.93	146	142	N.D.		
49) 1,4-Dichlorobenzene	18.99	146	169	N.D.		
50) 1,2-Dichlorobenzene	19.32	146	119	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.96	182	205	N.D.		
53) Naphthalene	21.11	128	1411	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171706.D Vial: 2
Acq On : 17 Feb 2017 9:48 Operator: CL
Sample : MB S19021717_1000mL Inst : MS19
Misc : S29-01241701/AC01205

Quant Time: Feb 17 10:23:07 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

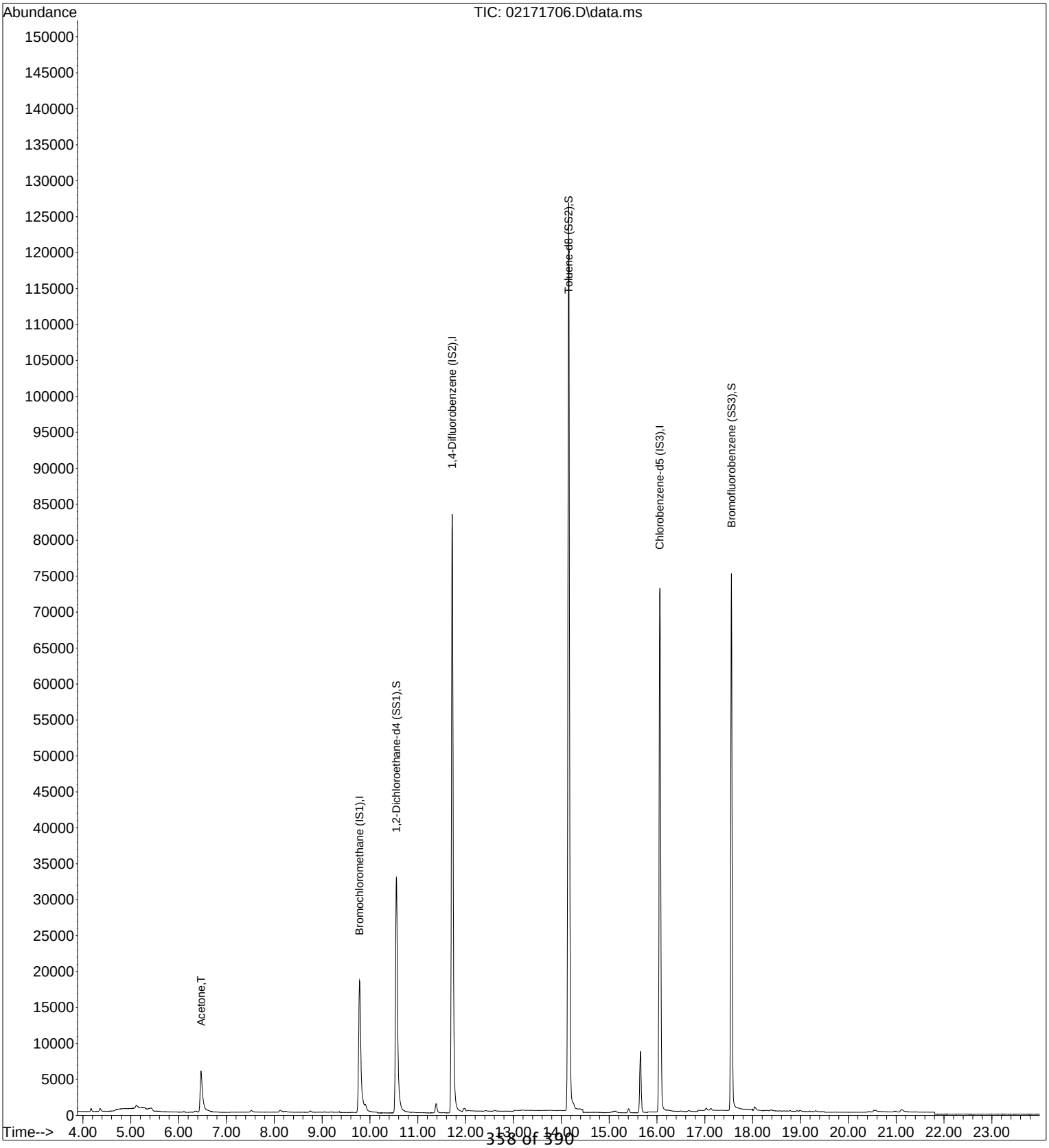
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171706.D Vial: 2
Acq On : 17 Feb 2017 9:48 Operator: CL
Sample : MB S19021717_1000mL Inst : MS19
Misc : S29-01241701/AC01205

Quant Time: Feb 17 10:23:07 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170216-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: NA
Analyst: Cory Lewis Date Analyzed: 2/16/17
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	4.20	**4.48**	**107**	58-117	
156-59-2	cis-1,2-Dichloroethene	4.24	**4.16**	**98**	73-108	
79-01-6	Trichloroethene	4.25	**4.09**	**96**	66-101	
127-18-4	Tetrachloroethene	4.25	**3.98**	**94**	66-105	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161704.D Vial: 2
Acq On : 16 Feb 2017 8:51 Operator: CL
Sample : LCS S19021617_500pg Inst : MS19
Misc : S29-01241701/S29-01271703 (2/25)

Quant Time: Feb 16 09:28:33 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/16/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	33633	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	163979	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	32787	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	67417	1148.078	pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 114.81%			
33) Toluene-d8 (SS2)	14.15	98	169867	1016.284	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 101.63%			
45) Bromofluorobenzene (SS3)	17.55	174	53121	886.298	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 88.63%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.41	85	45177	536.286	pg	100
3) Chloromethane	4.65	52	10202	522.503	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	43142	537.388	pg	100
5) Vinyl Chloride	4.95	62	41079	560.488	pg	100
6) 1,3-Butadiene	5.13	54	19930	381.386	pg	94
7) Bromomethane	5.47	94	14461	484.760	pg	99
8) Chloroethane	5.69	64	11235	483.022	pg	99
9) Acrolein	6.27	56	6577	344.871	pg	89
10) Acetone	6.39	58	94740	3798.678	pg	97
11) Trichlorofluoromethane	6.61	101	33804	526.604	pg	100
12) 1,1-Dichloroethene	7.34	96	18290	509.013	pg	95
13) Methylene Chloride	7.47	84	19976	509.912	pg	96
14) Trichlorotrifluoroethane	7.80	151	16990	477.595	pg	100
15) trans-1,2-Dichloroethene	8.51	96	19652	526.687	pg	99
16) 1,1-Dichloroethane	8.71	63	36442	546.122	pg	100
17) Methyl tert-Butyl Ether	8.79	73	60284	505.802	pg	100
18) cis-1,2-Dichloroethene	9.59	96	20782	520.169	pg	100
19) Chloroform	9.89	83	38881	538.127	pg	99
21) 1,2-Dichloroethane	10.64	62	31302	576.782	pg	100
22) 1,1,1-Trichloroethane	10.91	97	34594	525.534	pg	100
23) Benzene	11.36	78	86320	554.721	pg	99
24) Carbon Tetrachloride	11.52	117	28725	482.819	pg	100
26) 1,2-Dichloropropane	12.18	63	19659	537.549	pg	99
27) Bromodichloromethane	12.36	83	27645	523.646	pg	100
28) Trichloroethene	12.41	130	20264	511.315	pg	99
29) 1,4-Dioxane	12.38	88	15291	486.692	pg	99
30) cis-1,3-Dichloropropene	13.26	75	28059	484.214	pg	100
31) trans-1,3-Dichloropropene	13.77	75	24149	476.850	pg	99
32) 1,1,2-Trichloroethane	13.95	83	16531	542.743	pg	96
34) Toluene	14.25	91	77930	493.915	pg	99
35) Dibromochloromethane	14.66	129	19001	454.595	pg	100
36) 1,2-Dibromoethane	14.92	107	20055	508.994	pg	99
37) Tetrachloroethene	15.40	166	20571	497.506	pg	99
39) Chlorobenzene	16.10	112	51215	455.197	pg	100
40) Ethylbenzene	16.48	91	87741	461.089	pg	98
41) m,p-Xylene	16.65	91	136330	920.817	pg	98
42) Styrene	17.01	104	42425	390.192	pg	99
43) o-Xylene	17.12	106	31901	437.638	pg	95
44) 1,1,2,2-Tetrachloroethane	17.09	83	32297	457.208	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	69611	431.700	pg	98
47) 1,2,4-Trimethylbenzene	18.77	105	69159	430.878	pg	98
48) 1,3-Dichlorobenzene	18.92	146	37848	435.519	pg	100
49) 1,4-Dichlorobenzene	18.98	146	37485	415.799	pg	100
50) 1,2-Dichlorobenzene	19.31	146	36619	420.148	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	9443	335.814	pg	92
52) 1,2,4-Trichlorobenzene	20.94	182	18617	325.638	pg	98
53) Naphthalene	21.06	128	59736	314.234	pg	99

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161704.D Vial: 2
Acq On : 16 Feb 2017 8:51 Operator: CL
Sample : LCS S19021617_500pg Inst : MS19
Misc : S29-01241701/S29-01271703 (2/25)

Quant Time: Feb 16 09:28:33 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

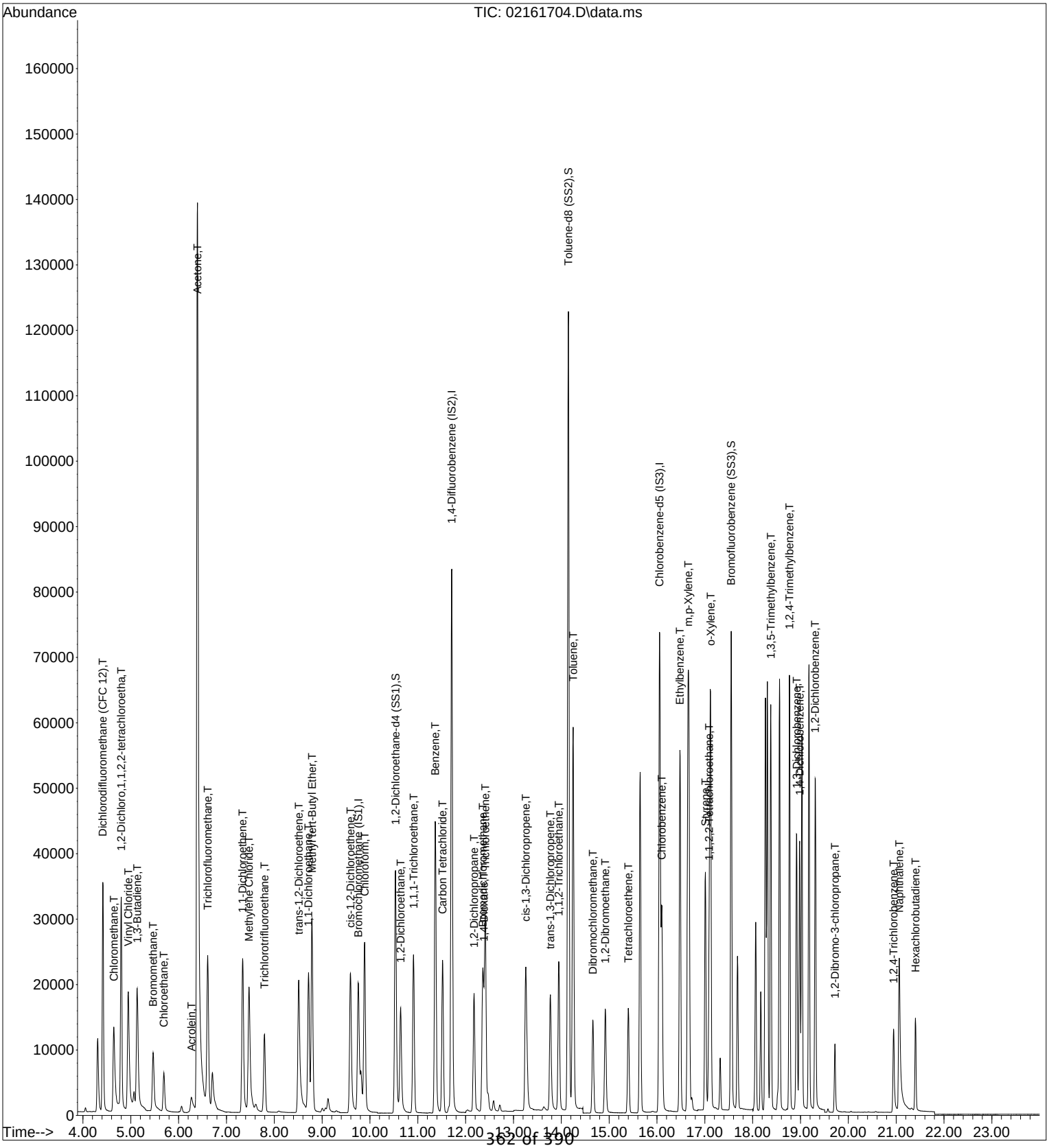
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	13650	374.454	pg	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\16\02161704.D Vial: 2
Acq On : 16 Feb 2017 8:51 Operator: CL
Sample : LCS S19021617_500pg Inst : MS19
Misc : S29-01241701/S29-01271703 (2/25)

Quant Time: Feb 16 09:28:33 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Haley & Aldrich, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1700672
Client Project ID: **Dollinger / 129388-002** ALS Sample ID: P170217-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: NA
Analyst: Cory Lewis Date Analyzed: 2/17/17
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	4.20	**4.52**	**108**	58-117	
156-59-2	cis-1,2-Dichloroethene	4.24	**4.28**	**101**	73-108	
79-01-6	Trichloroethene	4.25	**4.25**	**100**	66-101	
127-18-4	Tetrachloroethene	4.25	**4.19**	**99**	66-105	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171707.D Vial: 2
Acq On : 17 Feb 2017 10:19 Operator: CL
Sample : LCS S19021717_500pg Inst : MS19
Misc : S29-01241701/S29-01271703 (2/25)

Quant Time: Feb 17 10:46:02 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 2/17/17

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	36914	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	180724	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	16.06	54	33731	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.54	65	67403	1045.817	pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 104.58%			
33) Toluene-d8 (SS2)	14.15	98	186293	1011.289	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 101.13%			
45) Bromofluorobenzene (SS3)	17.56	174	59049	957.632	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 95.76%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.42	85	49646	536.955	pg	100
3) Chloromethane	4.65	52	10707	499.627	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	46476	527.462	pg	100
5) Vinyl Chloride	4.95	62	45488	565.481	pg	100
6) 1,3-Butadiene	5.14	54	32029	558.438	pg	97
7) Bromomethane	5.47	94	16645	508.378	pg	99
8) Chloroethane	5.69	64	13113	513.654	pg	99
9) Acrolein	6.27	56	7607	363.427	pg	91
10) Acetone	6.40	58	107201	3916.269	pg	97
11) Trichlorofluoromethane	6.61	101	37952	538.673	pg	100
12) 1,1-Dichloroethene	7.34	96	21011	532.766	pg	99
13) Methylene Chloride	7.48	84	21969	510.942	pg	98
14) Trichlorotrifluoroethane	7.80	151	19443	497.971	pg	100
15) trans-1,2-Dichloroethene	8.51	96	22519	549.881	pg	100
16) 1,1-Dichloroethane	8.72	63	39598	540.673	pg	99
17) Methyl tert-Butyl Ether	8.79	73	70086	535.777	pg	99
18) cis-1,2-Dichloroethene	9.60	96	23451	534.802	pg	99
19) Chloroform	9.89	83	42298	533.386	pg	100
21) 1,2-Dichloroethane	10.64	62	33302	559.093	pg	99
22) 1,1,1-Trichloroethane	10.91	97	38044	526.576	pg	100
23) Benzene	11.37	78	95010	556.297	pg	100
24) Carbon Tetrachloride	11.52	117	30933	473.719	pg	100
26) 1,2-Dichloropropane	12.17	63	21473	532.748	pg	99
27) Bromodichloromethane	12.35	83	29947	514.691	pg	100
28) Trichloroethene	12.41	130	23219	531.593	pg	100
29) 1,4-Dioxane	12.38	88	17591	508.021	pg	99
30) cis-1,3-Dichloropropene	13.26	75	31346	490.817	pg	100
31) trans-1,3-Dichloropropene	13.77	75	26895	481.867	pg	99
32) 1,1,2-Trichloroethane	13.95	83	18321	545.779	pg	99
34) Toluene	14.25	91	88185	507.124	pg	99
35) Dibromochloromethane	14.66	129	21037	456.672	pg	100
36) 1,2-Dibromoethane	14.92	107	22726	523.342	pg	99
37) Tetrachloroethene	15.40	166	23862	523.627	pg	99
39) Chlorobenzene	16.10	112	57723	498.682	pg	100
40) Ethylbenzene	16.48	91	99663	509.083	pg	99
41) m,p-Xylene	16.66	91	153710	1009.151	pg	99
42) Styrene	17.01	104	49194	439.786	pg	99
43) o-Xylene	17.12	106	36319	484.302	pg	97
44) 1,1,2,2-Tetrachloroethane	17.09	83	35146	483.615	pg	99
46) 1,3,5-Trimethylbenzene	18.38	105	78236	471.610	pg	99
47) 1,2,4-Trimethylbenzene	18.77	105	77370	468.544	pg	99
48) 1,3-Dichlorobenzene	18.92	146	41898	468.629	pg	100
49) 1,4-Dichlorobenzene	18.98	146	42110	454.029	pg	100
50) 1,2-Dichlorobenzene	19.31	146	40665	453.512	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	10449	361.190	pg	96
52) 1,2,4-Trichlorobenzene	20.95	182	21313	362.361	pg	99
53) Naphthalene	21.06	128	69704	356.408	pg	100

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171707.D Vial: 2
Acq On : 17 Feb 2017 10:19 Operator: CL
Sample : LCS S19021717_500pg Inst : MS19
Misc : S29-01241701/S29-01271703 (2/25)

Quant Time: Feb 17 10:46:02 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

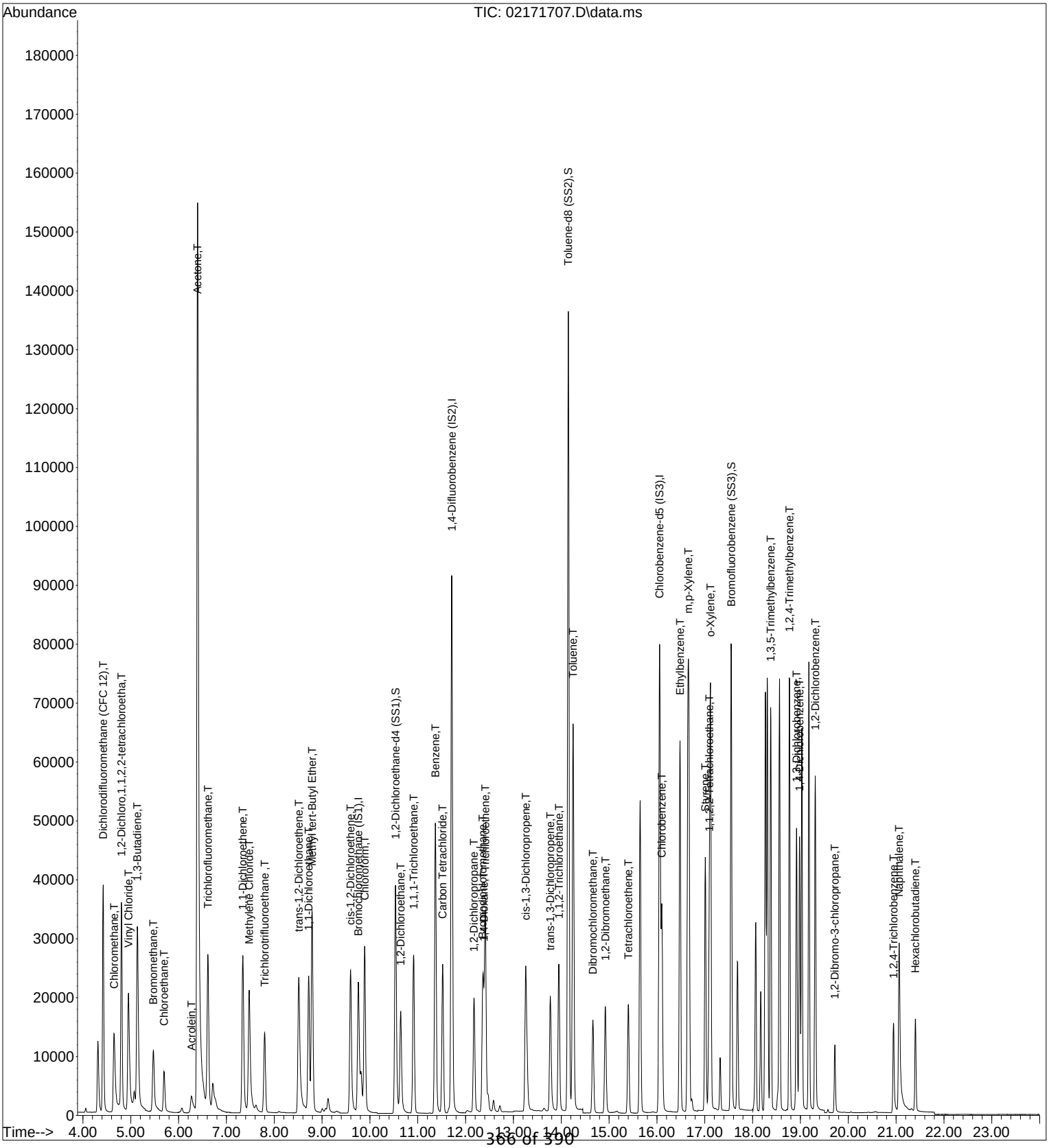
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	15359	409.545	pg	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2017_02\17\02171707.D Vial: 2
Acq On : 17 Feb 2017 10:19 Operator: CL
Sample : LCS S19021717_500pg Inst : MS19
Misc : S29-01241701/S29-01271703 (2/25)

Quant Time: Feb 17 10:46:02 2017
Quant Method : I:\MS19\METHODS\S19020317.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Sat Feb 04 07:30:51 2017
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



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Instructions for Data Validation-Method TO-15 (SIM)

1. Determination of Pressure Dilution Factor

Upon receipt at the laboratory the pressure or vacuum of the sample canisters is measured using a digital pressure gauge. The canisters are then pressurized with humidified zero air to approximately +3.5 psig (pounds per square inch gauge).

Pressure Dilution factor is calculated as:

$$\text{PDF} = \frac{P_f + 14.7}{P_i + 14.7}$$

P_f final pressure in psig

P_i initial pressure in psig

2. Validating Initial and Continuing Calibration Results

GC/MS target compound analysis is performed using internal standard quantitation. Three internal standard compounds (Bromochloromethane, 1,4-Difluorobenzene and Chlorobenzene-d5) are added to each aliquot of sample, blank, standard and duplicate at an amount of 1000 picograms(pg). Internal standard responses are used to calculate RRFs (relative response factors) as follows:

$$\text{RRF} = \frac{A_x C_{is}}{A_{is} C_x}$$

A_x area response of the analyte quantitation ion

A_{is} area response of the corresponding internal standard quantitation ion

C_{is} internal standard concentration, pg

C_x analyte concentration, pg

The percent relative standard deviation (%RSD) for the five or six initial calibration points should be less than 30% for the calibration to be considered valid and linear.

$$\%\text{RSD} = \frac{SD}{\overline{RRF}}(100)$$

SD standard deviation

$\overline{RRF}$ average or mean RRF (ICAL)

The initial calibration is verified once per twenty-four hour analytical sequence with the analysis of a continuing calibration standard at one of the initial calibration levels (actual analyte concentrations of the CCV are the same as the corresponding concentrations in the initial calibration). The relative response factor of each target analyte from the daily continuing calibration standard is compared to the average relative response factor from the initial multipoint calibration. The percent difference (%D) of the initial and continuing calibration relative response factors is calculated as follows:

$$\%D = \left(\frac{\overline{RRF} - RRF\ cont}{\overline{RRF}} \right)(100)$$

$\overline{RRF}$ average relative response factor from the initial calibration

$RRF\ cont$ relative response factor from the daily continuing calibration standard

Note: the percent difference (%D) should be less than 30% for an acceptable continuing calibration standard.

3. Validating GC/MS Target Analyte Quantitation Results

Target analytes are measured in picograms using internal standard quantitation as follows:

$$pg_x = \frac{A_x pg_{is}}{A_{is}\,\overline{RRF}}$$

pg_x picogram concentration of analyte *x*

A_x area response of the analyte's quantitation ion

A_{is} area response of the corresponding internal standard's quantitation ion

pg_{is} internal standard amount, in picograms

$\overline{RRF}$ average or mean RRFs (ICAL)

4. Calculation of µg/m³ (microgram per cubic meter) Results

Target compound results reported on the "Results of Analysis" form in units of µg/m³ are calculated as follows:

$$\mu g/m^3 = \frac{\frac{(pg)(PDF)}{L}}{1000}$$

pg picograms of analyte (measured on the GC/MS quantitation report)

PDF pressure dilution factor (see equation 1)

L sample aliquot in Liters

5. Conversion to ppb (parts per billion) Volume

$$C_{ppbv} = C_x\left(\frac{24.46}{FW}\right)$$

FW formula weight of the target analytes (i.e. formula weight of Dichloromethane is 84.94; 1,2-Dichloropropane is 113)

24.46 molar volume of ideal gas at 25°C and 1 atmosphere

C_x final analyte concentration calculated in equation 4 (µg/m³)

SIMIVALLEY QC Certification

Conditioner: P-Conditioner-02
Cycles: 99
Batch: 20265

Batch Started By: KPAZ on 1/20/17 0905
Finished Cleaning By: JMAULDIN on 2/2/17 1141

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum			Final Vacuum			Comments
				Vacuum	Date/Time	User	Vacuum	Date/Time	User	
SC02176	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1141	JMAULDIN	-14.0	2/6/17 0148	KPAZ	
SC01035	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1141	JMAULDIN	-14.0	2/6/17 0111	KPAZ	
SC01709	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1141	JMAULDIN	-14.0	2/6/17 0111	KPAZ	
SSC00433	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1142	JMAULDIN	-14.0	2/6/17 0140	KPAZ	
SC02179	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1142	JMAULDIN	-14.0	2/6/17 0111	KPAZ	
SC02171	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1142	JMAULDIN	-14.0	2/6/17 0111	KPAZ	
SC02175	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1142	JMAULDIN	-14.0	2/6/17 0111	KPAZ	
SC00999	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1142	JMAULDIN	-14.0	2/6/17 0148	KPAZ	
SC02184	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1142	JMAULDIN	-14.0	2/6/17 0111	KPAZ	
SC00151	1/20/17	2/2/17	Pass w/ Conditions	-14.3	2/2/17 1141	JMAULDIN	-14.0	2/6/17 0140	KPAZ	MS21_02/02/17-04.D

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

*** QC Canister**

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_02\02\
Data File : 02021704.D
Acq On : 2 Feb 2017 11:07
Operator : JM
Sample : 020217_SC00151_20265
Misc : LL+TICS (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 201 Sample Multiplier: 1

Quant Time: Feb 02 11:34:40 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

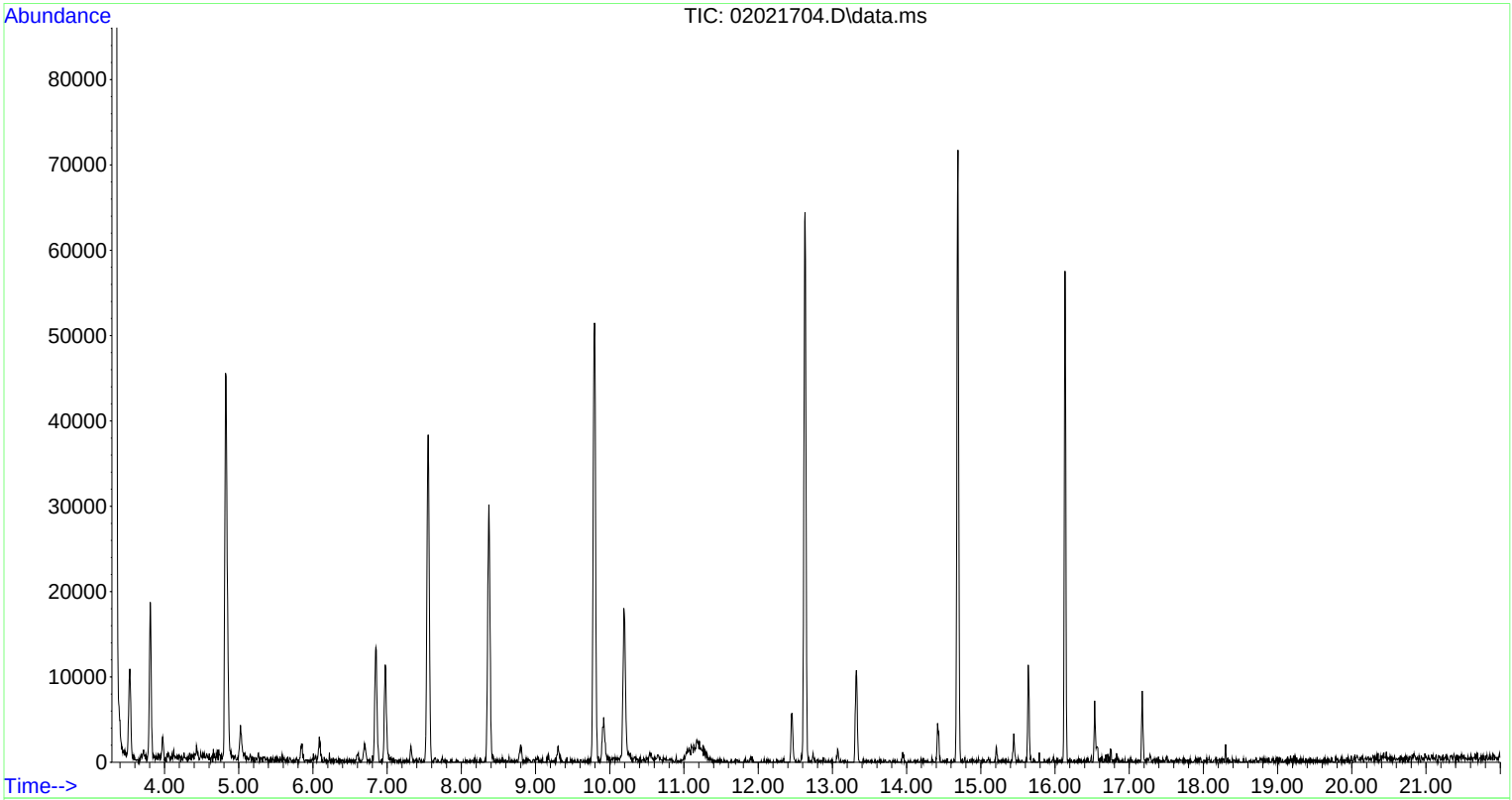
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.56	130	21549	1000.000 pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.80	114	65495	1000.000 pg		0.00
56) Chlorobenzene-d5 (IS3)	14.69	117	49738	1000.000 pg		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.37	65	28841	917.044 pg		0.00
Spiked Amount 1000.000			Recovery = 91.70%			
57) Toluene-d8 (SS2)	12.63	98	53155	951.903 pg		0.00
Spiked Amount 1000.000			Recovery = 95.19%			
74) Bromofluorobenzene (SS3)	16.14	174	22204	1139.845 pg		0.00
Spiked Amount 1000.000			Recovery = 113.98%			
Target Compounds						Qvalue
2) * Propene	3.52	42	1980	76.021 pg		81
9) * Chloroethane	4.35	64	268	17.030 pg		100
10) * Ethanol	4.44	45	1007	81.223 pg		98
12) * Acrolein	4.71	56	497	39.816 pg		99
13) * Acetone	4.83	58	29725	1374.472 pg	#	49
15) * 2-Propanol (Isopropa...	5.03	45	3933	81.397 pg		100
19) * Methylene Chloride	5.58	84	436	14.721 pg		97
22) * Carbon Disulfide	5.85	76	3051	30.325 pg		99
26) * Vinyl Acetate	6.71	86	484	107.167 pg	#	1
27) * 2-Butanone (MEK)	6.98	72	4472	336.633 pg		78
41) 1-Butanol	9.31	56	1039	99.945 pg	#	44
48) * 1,4-Dioxane	10.66	88	392	31.413 pg		100
53) * 4-Methyl-2-pentanone	11.73	58	155	14.803 pg	#	80
59) * 2-Hexanone	13.07	58	647	84.529 pg	#	85
69) Cyclohexanone	15.44	98	198	46.884 pg		84
88) n-Decane	17.37	85	83	15.809 pg		86
96) n-Undecane	18.42	85	78	26.141 pg	#	38

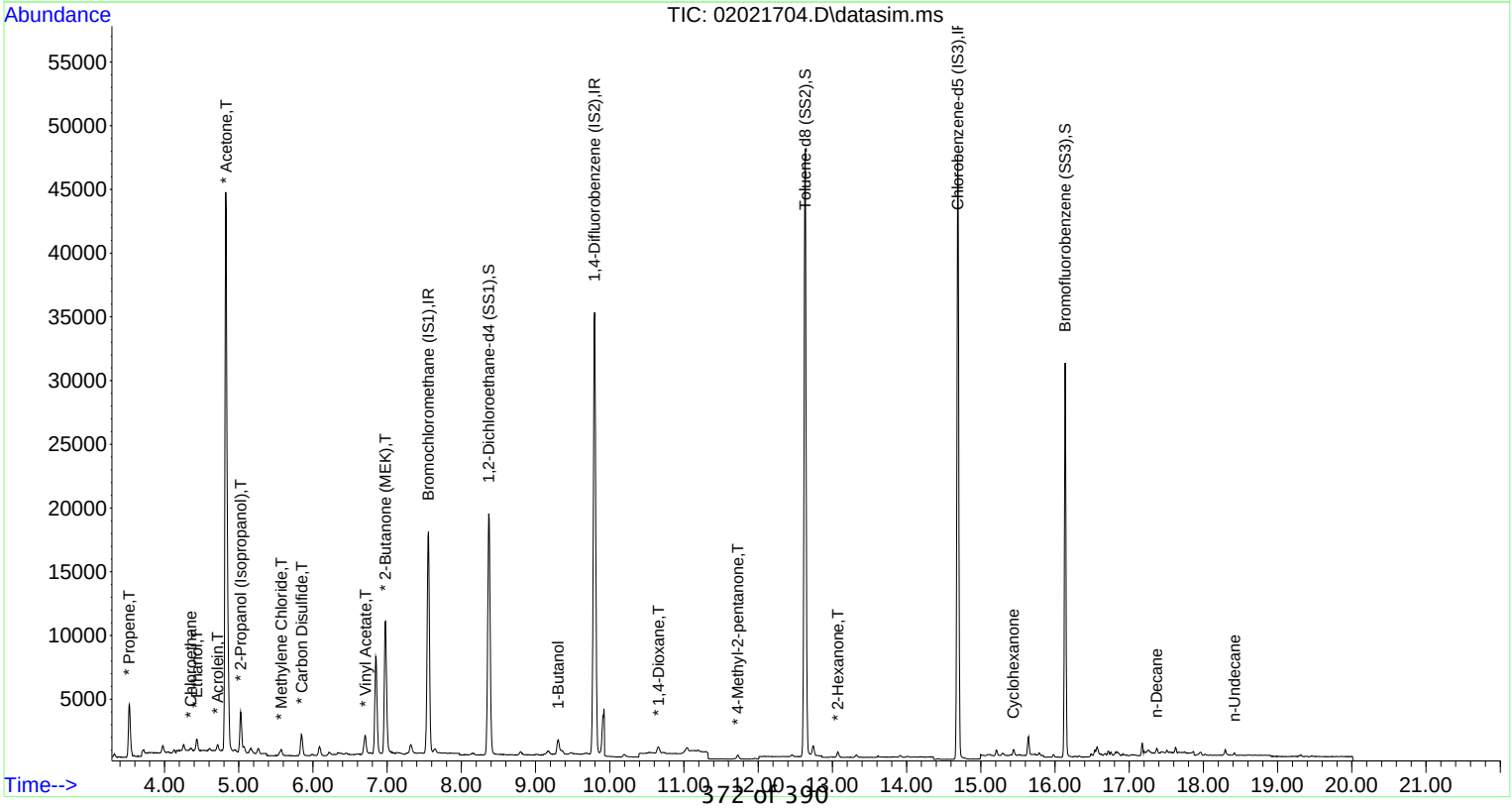
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_02\02\
Data File : 02021704.D
Acq On : 2 Feb 2017 11:07
Operator : JM
Sample : 020217_SC00151_20265
Misc : LL+TICS (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 201 Sample Multiplier: 1

Quant Time: Feb 02 11:34:40 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241727.D
Acq On : 25 Jan 2017 3:46
Operator : JM
Sample : AS00269_FCA00686
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 25 12:18:04 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.55	130	21661	1000.000	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.79	114	67138	1000.000	pg		0.00
56) Chlorobenzene-d5 (IS3)	14.69	117	50035	1000.000	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.36	65	32641	1032.504	pg		0.00
Spiked Amount 1000.000			Recovery = 103.25%				
57) Toluene-d8 (SS2)	12.63	98	56532	1006.369	pg		0.00
Spiked Amount 1000.000			Recovery = 100.64%				
74) Bromofluorobenzene (SS3)	16.14	174	19735	1007.085	pg		0.00
Spiked Amount 1000.000			Recovery = 100.71%				
Target Compounds							Qvalue
2) * Propene	3.53	42	1533	58.554	pg	#	49
3) * Dichlorodifluoromethane	3.58	85	2558	37.090	pg		99
4) * Chloromethane	3.71	50	483	14.120	pg	#	73
5) * 1,2-Dichloro-1,1,2,2...	3.80	85	84	1.935	pg	#	42
7) * 1,3-Butadiene	3.99	54	15	0.640	pg	#	6
10) * Ethanol	4.44	45	930	74.625	pg		99
11) * Acetonitrile	4.61	41	380	12.985	pg		99
12) * Acrolein	4.72	56	202	16.099	pg	#	48
13) * Acetone	4.84	58	3628	166.890	pg		89
14) * Trichlorofluoromethane	4.97	101	1417	26.985	pg		99
15) * 2-Propanol (Isopropa...	5.03	45	1406	28.948	pg		97
16) * Acrylonitrile	5.18	53	50	1.531	pg	#	8
18) tert-Butanol	5.56	59	154	4.589	pg	#	1
19) * Methylene Chloride	5.57	84	5034	169.090	pg		98
21) * Trichlorotrifluoroet...	5.82	151	329	13.389	pg		90
22) * Carbon Disulfide	5.84	76	1375	13.596	pg		98
26) * Vinyl Acetate	6.72	86	130	28.636	pg	#	29
27) * 2-Butanone (MEK)	6.98	72	176	13.180	pg		80
29) DIPE	7.64	45	883	15.078	pg	#	45
30) * Ethyl Acetate	7.64	61	908	147.526	pg		95
31) * n-Hexane	7.65	57	227	7.993	pg	#	69
32) * Chloroform	7.69	83	119	2.639	pg	#	79
36) * 1,2-Dichloroethane	8.48	62	70	2.119	pg	#	43
39) * Benzene	9.35	78	1093	15.190	pg	#	74
41) 1-Butanol	9.31	56	657	61.653	pg	#	36
42) * Carbon Tetrachloride	9.54	117	398	13.468	pg		99
49) Isooctane	10.72	56	179	6.027	pg		75
51) * n-Heptane	11.04	71	101	4.140	pg	#	39
58) * Toluene	12.74	91	3723	55.326	pg		97
63) * n-Octane	13.91	85	52	6.089	pg		90
64) * Tetrachloroethene	14.01	166	97	3.611	pg		87
66) * Ethylbenzene	15.12	91	334	6.327	pg	#	87
67) * m- & p-Xylenes	15.29	91	793	21.373	pg		93
70) * Styrene	15.63	104	70	3.307	pg	#	28
71) * o-Xylene	15.73	91	247	6.318	pg		96
72) * n-Nonane	15.98	57	51	3.404	pg	#	36
76) * alpha-Pinene	16.61	93	131	5.012	pg		87
77) * n-Propylbenzene	16.72	91	56	1.205	pg	#	54
78) 3-Ethyltoluene	16.81	105	116	3.470	pg	#	42
79) * 4-Ethyltoluene	16.81	105	116	4.019	pg	#	45
80) * 1,3,5-Trimethylbenzene	16.91	105	87	2.758	pg	#	82
82) 2-Ethyltoluene	17.07	105	50	1.282	pg	#	43
84) * 1,2,4-Trimethylbenzene	17.26	105	172	6.044	pg	#	85
90) 1,2,3-Trimethylbenzene	17.62	105	55	1.753	pg	#	25
93) * D-Limonene	17.75	68	207	17.309	pg		86

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241727.D
Acq On : 25 Jan 2017 3:46
Operator : JM
Sample : AS00269_FCA00686
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 25 12:18:04 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

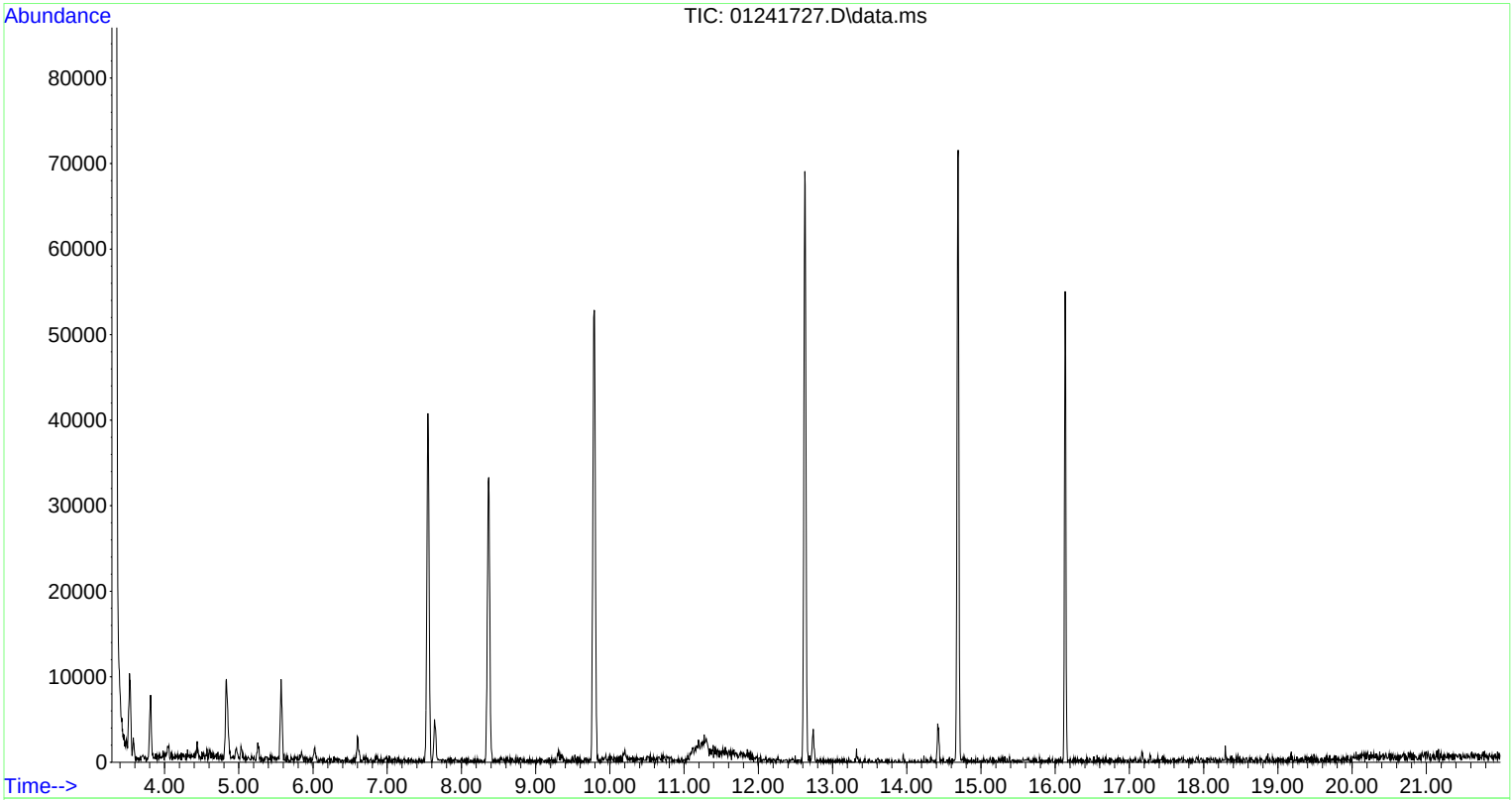
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
98) * Naphthalene	19.29	128	139	12.608	pg	#	67

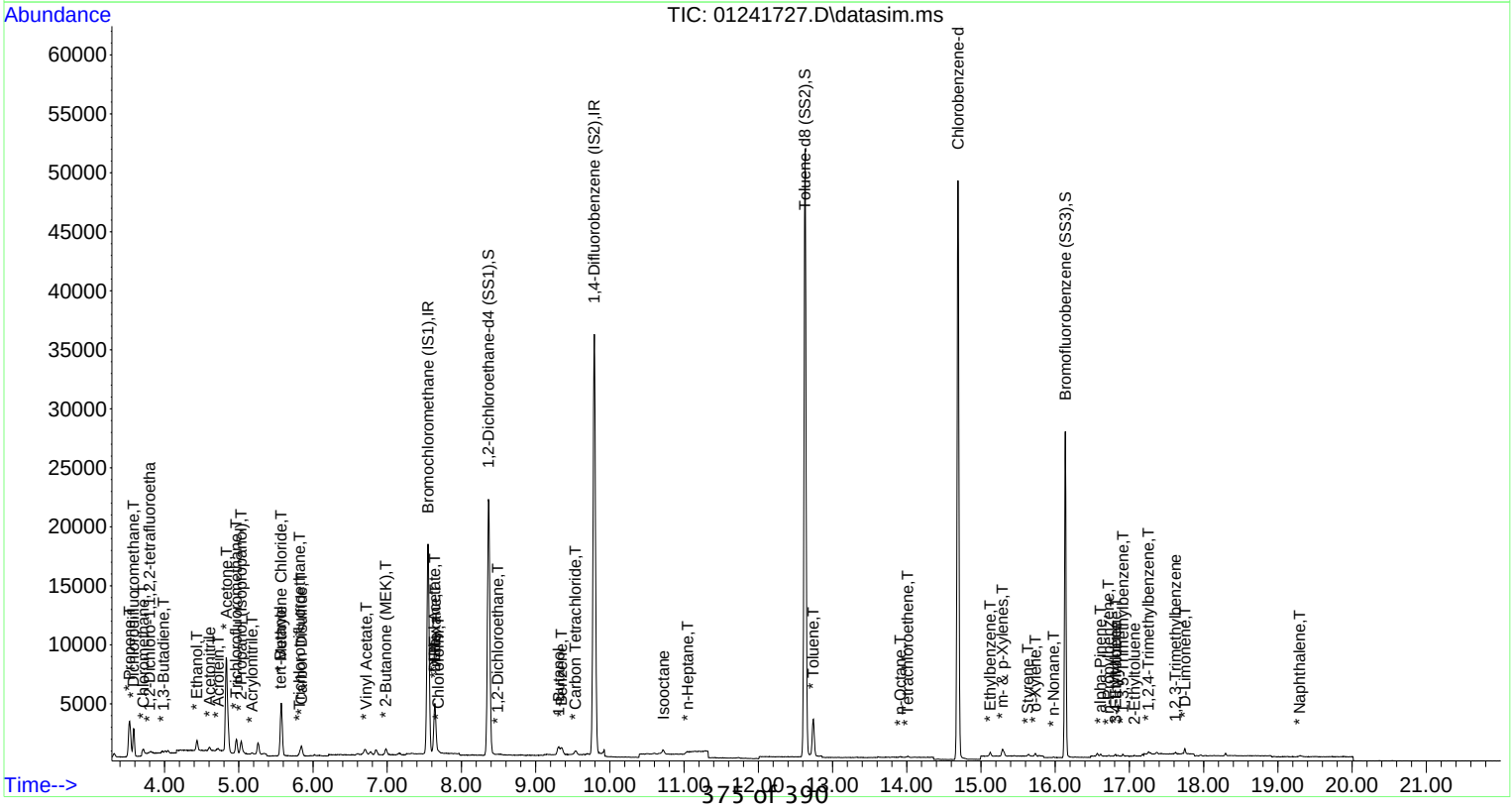
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241727.D
Acq On : 25 Jan 2017 3:46
Operator : JM
Sample : AS00269_FCA00686
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 25 12:18:04 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_02\01\
Data File : 02011710.D
Acq On : 1 Feb 2017 17:00
Operator : JM
Sample : AC01884_FCA00973
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 213 Sample Multiplier: 1

Quant Time: Feb 02 10:14:09 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

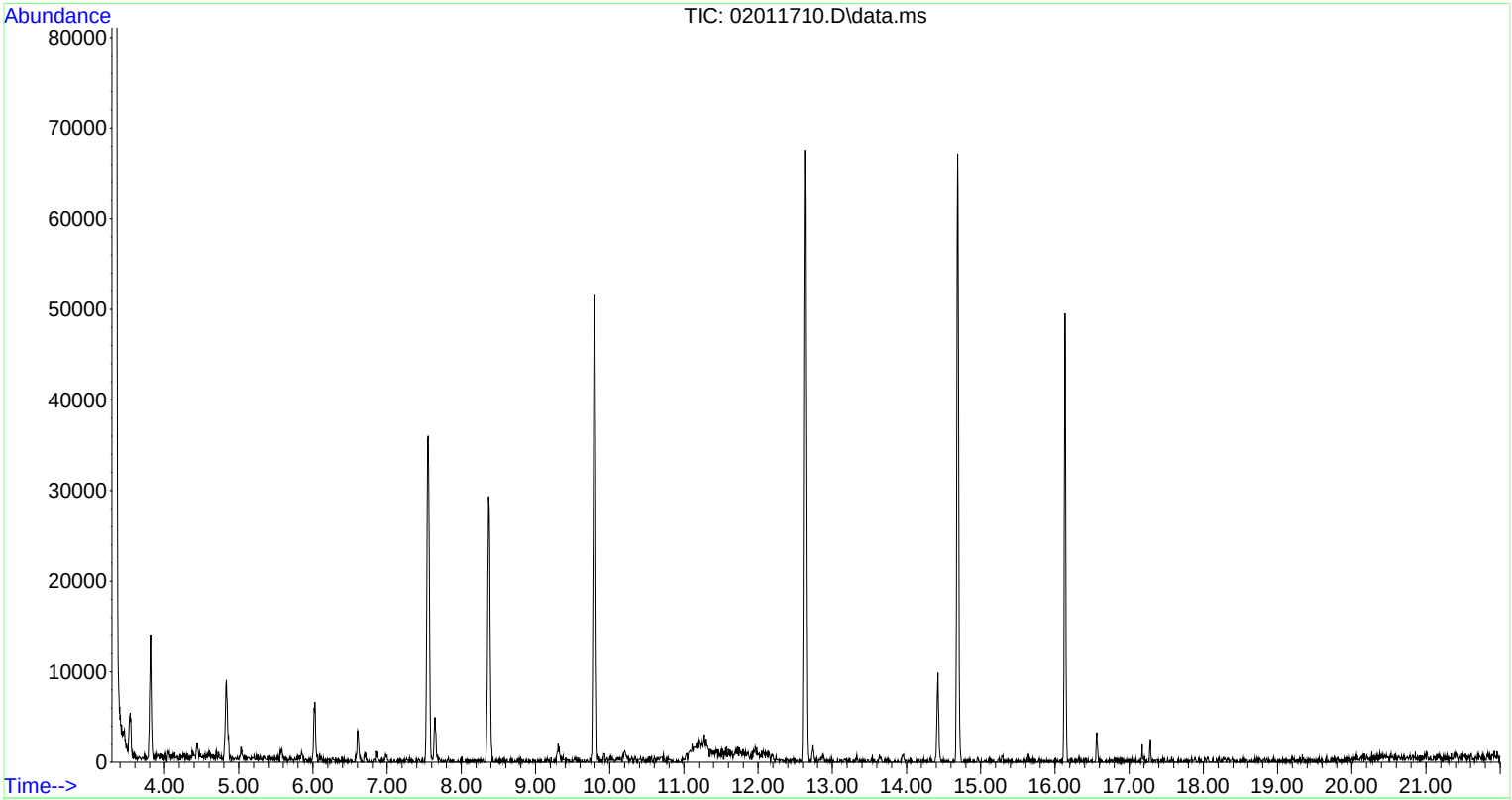
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.56	130	21068	1000.000	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.80	114	61755	1000.000	pg		0.00
56) Chlorobenzene-d5 (IS3)	14.69	117	47816	1000.000	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.37	65	29095	946.241	pg		0.00
Spiked Amount 1000.000			Recovery = 94.62%				
57) Toluene-d8 (SS2)	12.63	98	56242	1047.669	pg		0.00
Spiked Amount 1000.000			Recovery = 104.77%				
74) Bromofluorobenzene (SS3)	16.14	174	18685	997.752	pg		0.00
Spiked Amount 1000.000			Recovery = 99.78%				
Target Compounds							Qvalue
2) * Propene	3.53	42	597	23.445	pg	#	41
10) * Ethanol	4.44	45	1624	133.980	pg		98
12) * Acrolein	4.72	56	258	21.141	pg		98
13) * Acetone	4.84	58	4386	207.437	pg		80
15) * 2-Propanol (Isopropa...	5.03	45	1192	25.233	pg		88
19) * Methylene Chloride	5.58	84	910	31.427	pg		98
26) * Vinyl Acetate	6.71	86	194	43.936	pg	#	1
27) * 2-Butanone (MEK)	6.99	72	348	26.794	pg		67
29) DIPE	7.64	45	881	15.467	pg	#	45
30) * Ethyl Acetate	7.65	61	882	147.335	pg		96
41) 1-Butanol	9.31	56	1134	115.690	pg	#	42
58) * Toluene	12.74	91	1928	29.981	pg		98
67) * m- & p-Xylenes	15.29	91	672	18.952	pg		86
85) * Benzyl Chloride	17.36	126	53	17.172	pg	#	50
96) n-Undecane	18.42	85	79	27.540	pg	#	10
98) * Naphthalene	19.29	128	251	23.823	pg	#	67

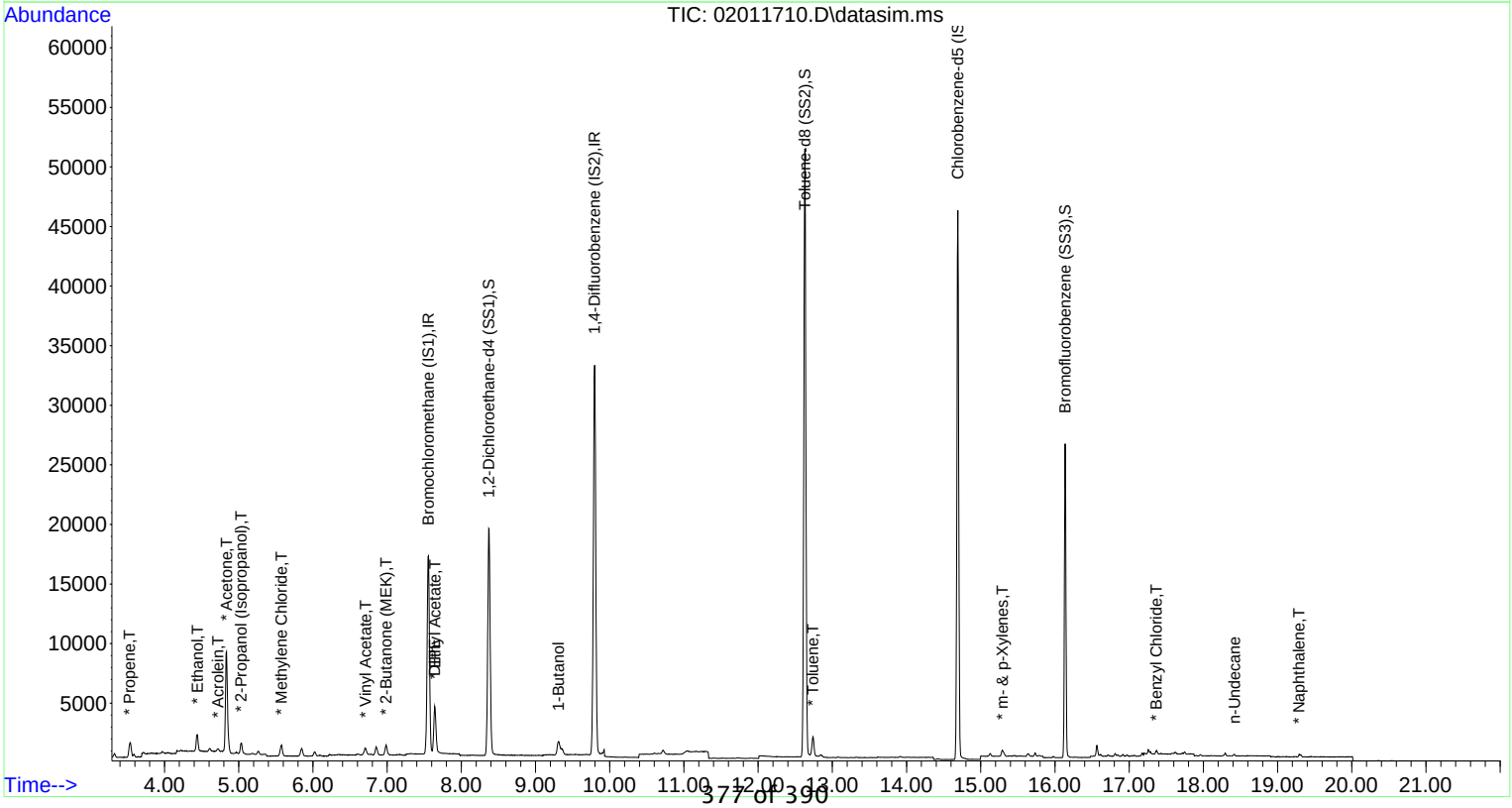
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_02\01\
Data File : 02011710.D
Acq On : 1 Feb 2017 17:00
Operator : JM
Sample : AC01884_FCA00973
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 213 Sample Multiplier: 1

Quant Time: Feb 02 10:14:09 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241726.D
Acq On : 25 Jan 2017 3:05
Operator : JM
Sample : SC01692_FCA00709
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 25 12:17:58 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.55	130	22231	1000.000	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.79	114	72346	1000.000	pg		0.00
56) Chlorobenzene-d5 (IS3)	14.69	117	52666	1000.000	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.36	65	33070	1019.253	pg		0.00
Spiked Amount 1000.000			Recovery = 101.93%				
57) Toluene-d8 (SS2)	12.63	98	61870	1046.373	pg		0.00
Spiked Amount 1000.000			Recovery = 104.64%				
74) Bromofluorobenzene (SS3)	16.14	174	22686	1099.843	pg		0.00
Spiked Amount 1000.000			Recovery = 109.98%				
Target Compounds							Qvalue
2) * Propene	3.53	42	1564	58.206	pg	#	44
3) * Dichlorodifluoromethane	3.58	85	2179	30.785	pg		99
4) * Chloromethane	3.71	50	523	14.898	pg		100
7) * 1,3-Butadiene	4.01	54	9	0.374	pg	#	6
10) * Ethanol	4.43	45	1664	130.098	pg		94
11) * Acetonitrile	4.60	41	809	26.936	pg	#	81
12) * Acrolein	4.72	56	180	13.978	pg		83
13) * Acetone	4.83	58	10493	470.307	pg		93
14) * Trichlorofluoromethane	4.97	101	1193	22.137	pg		99
15) * 2-Propanol (Isopropa...	5.03	45	2827	56.712	pg		99
16) * Acrylonitrile	5.18	53	116	3.462	pg	#	81
18) tert-Butanol	5.55	59	1125	32.664	pg		98
19) * Methylene Chloride	5.57	84	5015	164.133	pg		96
21) * Trichlorotrifluoroet...	5.82	151	258	10.230	pg		94
22) * Carbon Disulfide	5.84	76	21287	205.091	pg		99
26) * Vinyl Acetate	6.70	86	1411	302.838	pg	#	1
27) * 2-Butanone (MEK)	6.97	72	3391	247.429	pg		94
29) DIPE	7.63	45	1264	21.030	pg	#	45
30) * Ethyl Acetate	7.64	61	1314	208.016	pg		100
31) * n-Hexane	7.65	57	277	9.503	pg		93
32) * Chloroform	7.69	83	122	2.637	pg	#	75
34) * Tetrahydrofuran	8.15	71	52	6.223	pg		99
36) * 1,2-Dichloroethane	8.49	62	55	1.623	pg	#	43
39) * Benzene	9.35	78	1085	13.993	pg		97
41) 1-Butanol	9.30	56	2018	175.736	pg	#	43
42) * Carbon Tetrachloride	9.53	117	222	6.972	pg		84
43) * Cyclohexane	9.70	84	65	2.911	pg	#	1
49) Isooctane	10.71	56	196	6.125	pg		85
51) * n-Heptane	11.04	71	101	3.842	pg	#	39
53) * 4-Methyl-2-pentanone	11.73	58	133	11.499	pg	#	81
58) * Toluene	12.74	91	3849	54.341	pg		99
59) * 2-Hexanone	13.08	58	215	26.527	pg	#	58
62) * n-Butyl Acetate	13.81	56	103	17.260	pg		92
64) * Tetrachloroethene	14.01	166	85	3.007	pg	#	10
66) * Ethylbenzene	15.12	91	347	6.245	pg		98
67) * m- & p-Xylenes	15.29	91	871	22.302	pg		93
69) Cyclohexanone	15.44	98	115	25.717	pg		93
70) * Styrene	15.63	104	105	4.713	pg	#	28
71) * o-Xylene	15.73	91	263	6.391	pg		96
72) * n-Nonane	15.98	57	51	3.234	pg	#	36
77) * n-Propylbenzene	16.72	91	87	1.779	pg	#	54
78) 3-Ethyltoluene	16.80	105	168	4.774	pg	#	66
79) * 4-Ethyltoluene	16.84	105	72	2.370	pg	#	45
80) * 1,3,5-Trimethylbenzene	16.91	105	113	3.403	pg	#	85
82) 2-Ethyltoluene	17.07	105	72	1.754	pg	#	43

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241726.D
Acq On : 25 Jan 2017 3:05
Operator : JM
Sample : SC01692_FCA00709
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 25 12:17:58 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

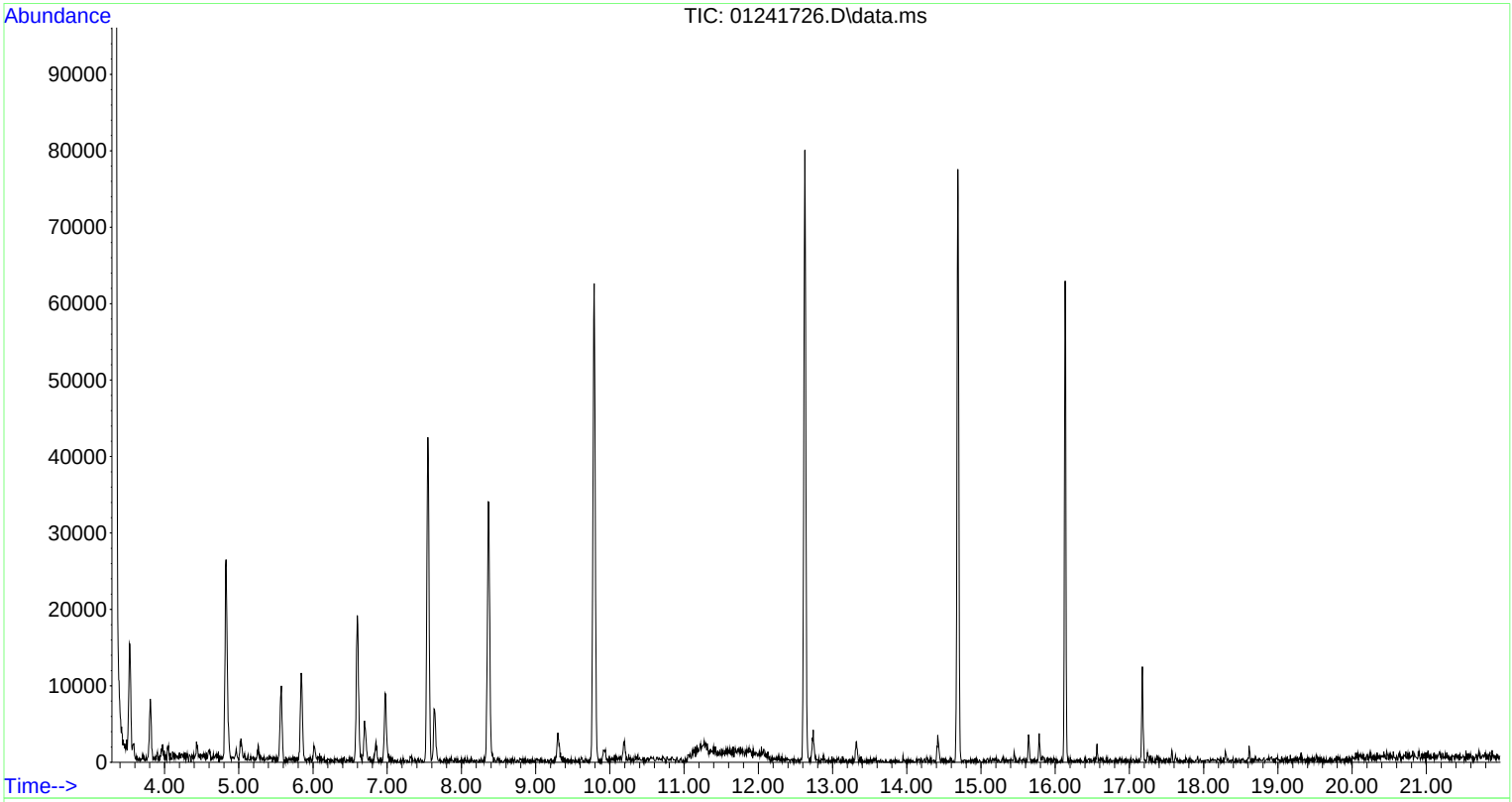
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
84) * 1,2,4-Trimethylbenzene	17.26	105	305	10.182	pg		100
90) 1,2,3-Trimethylbenzene	17.61	105	95	2.876	pg	#	38
91) p-Isopropyltoluene	17.63	134	119	11.949	pg	#	53
93) * D-Limonene	17.75	68	172	13.664	pg		96
96) n-Undecane	18.41	85	53	16.775	pg	#	33
98) * Naphthalene	19.29	128	661	56.959	pg		94
99) n-Dodecane	19.31	85	82	57.126	pg		89

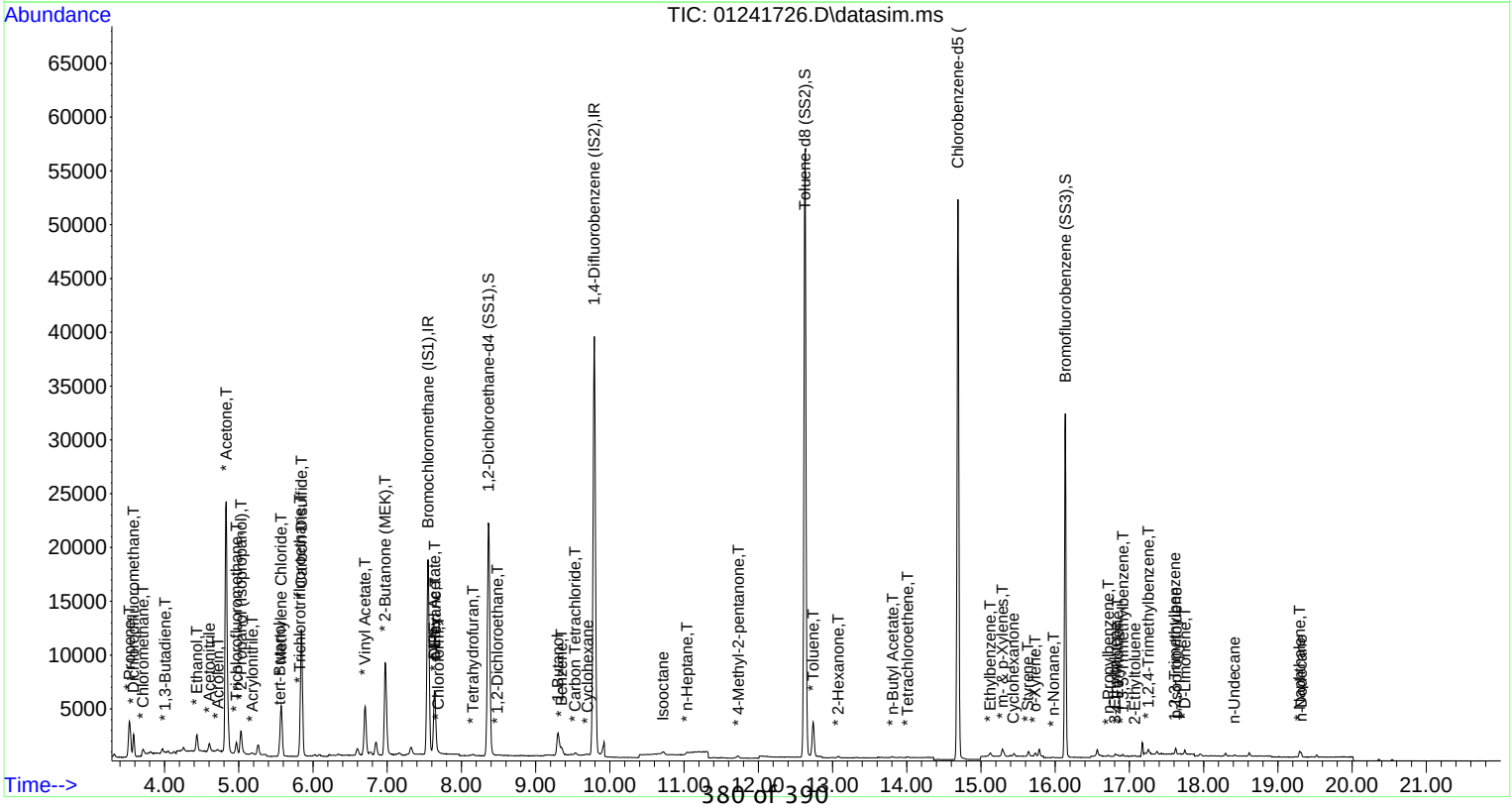
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241726.D
Acq On : 25 Jan 2017 3:05
Operator : JM
Sample : SC01692_FCA00709
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jan 25 12:17:58 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_02\01\
Data File : 02011709.D
Acq On : 1 Feb 2017 16:18
Operator : JM
Sample : AC02273_FCA00813
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 212 Sample Multiplier: 1

Quant Time: Feb 02 10:13:05 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

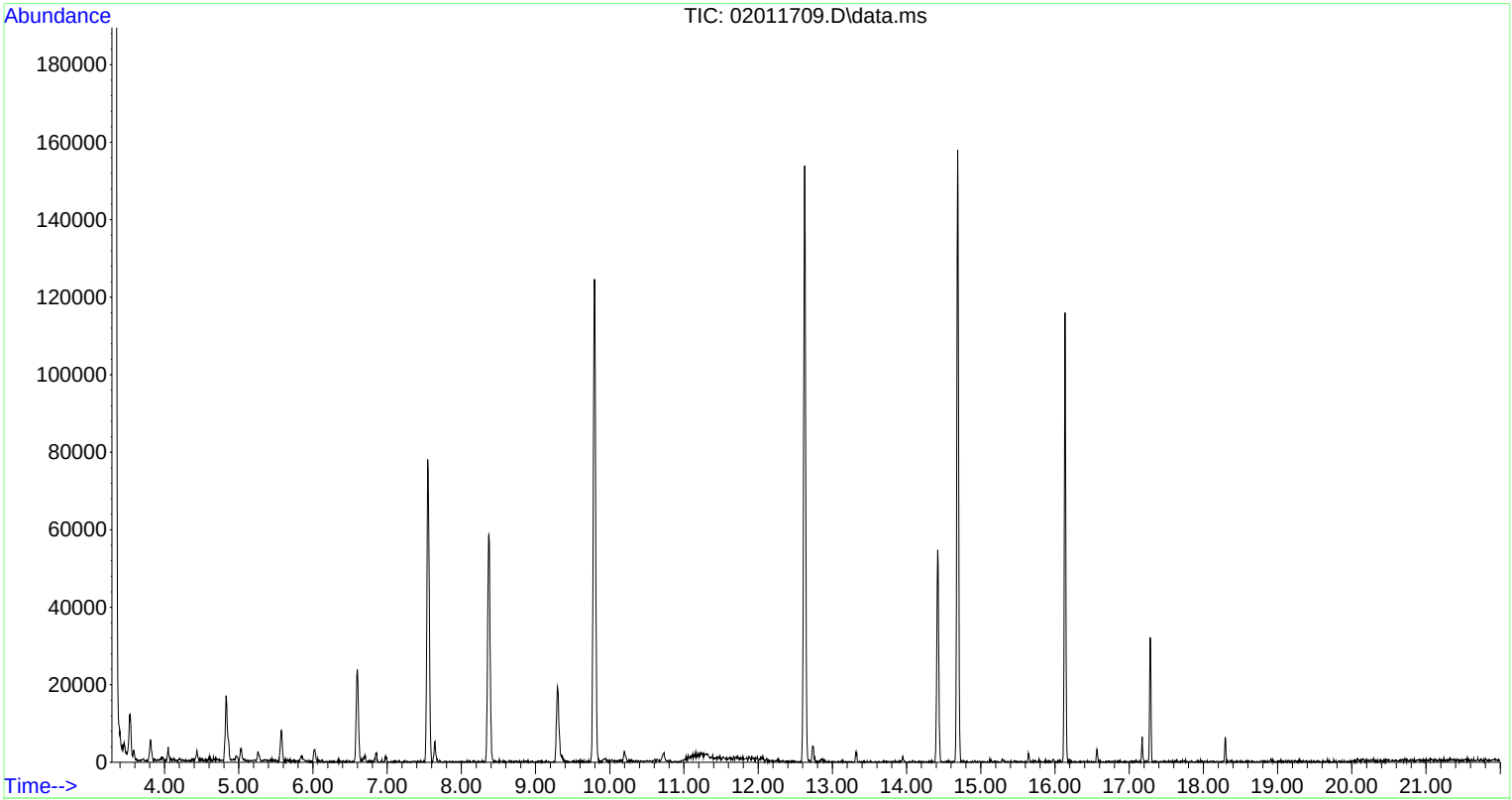
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.55	130	42167	1000.000	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.80	114	152064	1000.000	pg		0.00
56) Chlorobenzene-d5 (IS3)	14.69	117	107437	1000.000	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.37	65	57809	939.355	pg		0.00
Spiked Amount 1000.000			Recovery = 93.94%				
57) Toluene-d8 (SS2)	12.63	98	122416	1014.895	pg		0.00
Spiked Amount 1000.000			Recovery = 101.49%				
74) Bromofluorobenzene (SS3)	16.14	174	42735	1015.624	pg		0.00
Spiked Amount 1000.000			Recovery = 101.56%				
Target Compounds							Qvalue
2) * Propene	3.53	42	2007	39.379	pg	#	49
3) * Dichlorodifluoromethane	3.59	85	2708	20.170	pg		98
10) * Ethanol	4.44	45	2198	90.601	pg		97
13) * Acetone	4.83	58	8077	190.862	pg		87
14) * Trichlorofluoromethane	4.97	101	1589	15.545	pg		98
15) * 2-Propanol (Isopropa...	5.03	45	3585	37.916	pg		99
19) * Methylene Chloride	5.58	84	4742	81.822	pg		98
26) * Vinyl Acetate	6.71	86	234	26.478	pg	#	14
27) * 2-Butanone (MEK)	6.98	72	540	20.773	pg		89
30) * Ethyl Acetate	7.64	61	795	66.352	pg		90
41) 1-Butanol	9.30	56	12036	498.666	pg	#	41
58) * Toluene	12.74	91	4645	32.147	pg		97
83) tert-Butylbenzene	17.28	134	617	37.690	pg	#	1

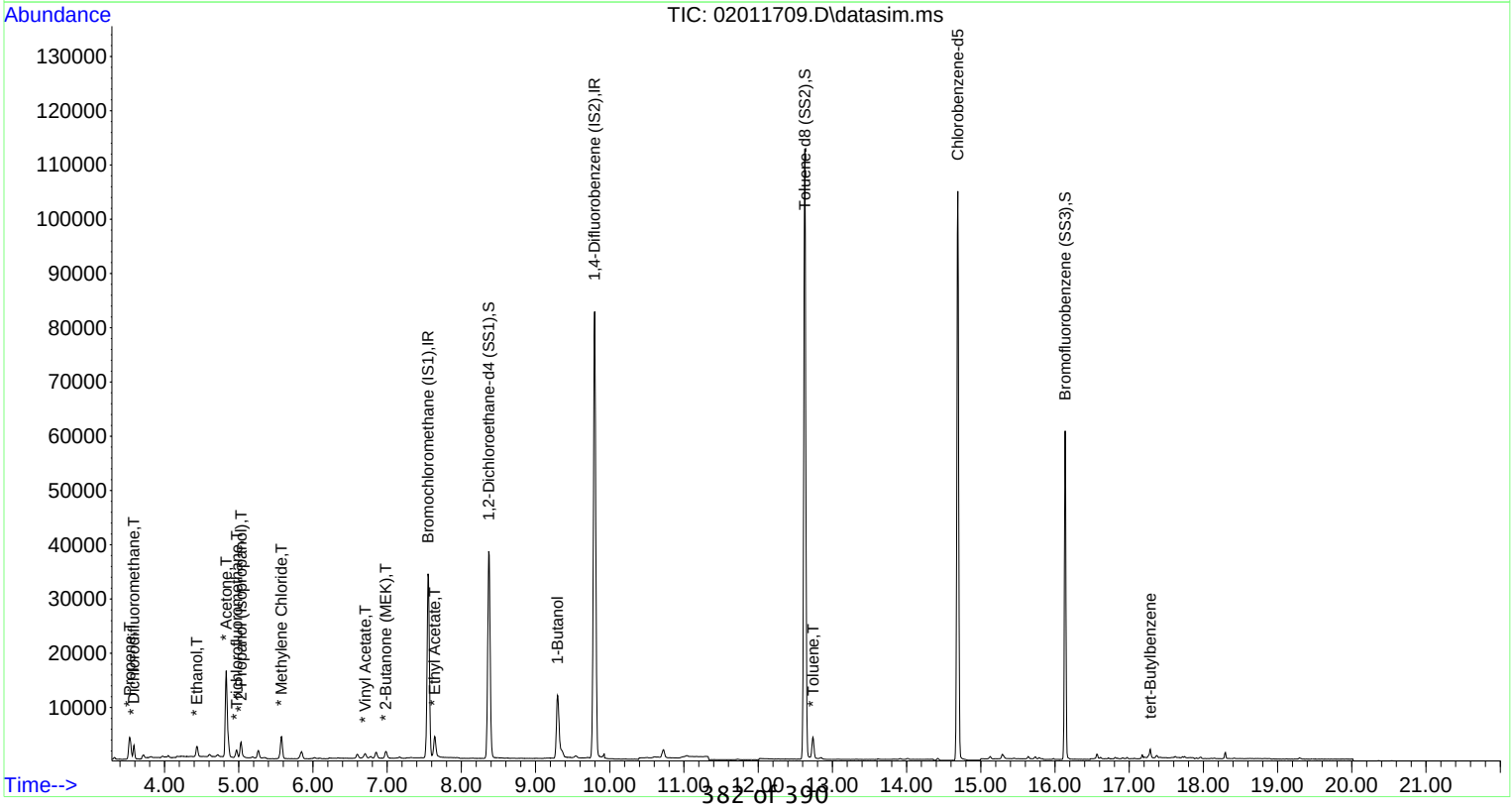
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_02\01\
Data File : 02011709.D
Acq On : 1 Feb 2017 16:18
Operator : JM
Sample : AC02273_FCA00813
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 212 Sample Multiplier: 1

Quant Time: Feb 02 10:13:05 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\31\
Data File : 01311738.D
Acq On : 1 Feb 2017 8:57
Operator : JM
Sample : AC01788_FCA00966
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 211 Sample Multiplier: 1

Quant Time: Feb 01 09:43:16 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.55	130	21102	1000.000	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.80	114	62044	1000.000	pg		0.00
56) Chlorobenzene-d5 (IS3)	14.69	117	47782	1000.000	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.37	65	29066	943.775	pg		0.00
Spiked Amount 1000.000			Recovery = 94.38%				
57) Toluene-d8 (SS2)	12.63	98	58233	1085.529	pg		0.00
Spiked Amount 1000.000			Recovery = 108.55%				
74) Bromofluorobenzene (SS3)	16.14	174	18514	989.325	pg		0.00
Spiked Amount 1000.000			Recovery = 98.93%				
Target Compounds							Qvalue
2) * Propene	3.53	42	530	20.780	pg	#	27
3) * Dichlorodifluoromethane	3.58	85	201	2.992	pg		95
4) * Chloromethane	3.71	50	152	4.561	pg	#	40
7) * 1,3-Butadiene	4.00	54	7	0.307	pg	#	6
8) * Bromomethane	4.22	94	73	2.833	pg		100
10) * Ethanol	4.44	45	2683	220.991	pg		100
11) * Acetonitrile	4.61	41	574	20.134	pg	#	8
12) * Acrolein	4.72	56	354	28.960	pg		98
13) * Acetone	4.84	58	5751	271.557	pg		94
14) * Trichlorofluoromethane	4.97	101	128	2.502	pg		88
15) * 2-Propanol (Isopropa...	5.03	45	9366	197.943	pg		100
16) * Acrylonitrile	5.19	53	470	14.777	pg		86
18) tert-Butanol	5.56	59	211	6.454	pg	#	76
19) * Methylene Chloride	5.58	84	807	27.825	pg		97
22) * Carbon Disulfide	5.84	76	945	9.592	pg	#	92
26) * Vinyl Acetate	6.71	86	123	27.811	pg	#	29
27) * 2-Butanone (MEK)	6.98	72	118	9.071	pg	#	1
29) DIPE	7.64	45	2491	43.661	pg	#	51
30) * Ethyl Acetate	7.64	61	2696	449.632	pg		100
31) * n-Hexane	7.65	57	84	3.036	pg	#	1
32) * Chloroform	7.68	83	64	1.457	pg	#	17
39) * Benzene	9.35	78	734	11.038	pg	#	90
41) 1-Butanol	9.31	56	1315	133.530	pg	#	42
49) Isooctane	10.73	56	111	4.044	pg		77
51) * n-Heptane	11.04	71	282	12.507	pg		95
58) * Toluene	12.74	91	2080	32.368	pg		99
63) * n-Octane	13.92	85	73	8.951	pg		84
66) * Ethylbenzene	15.12	91	416	8.252	pg		89
67) * m- & p-Xylenes	15.29	91	418	11.797	pg		86
68) * Bromoform	15.33	173	102	6.227	pg		95
71) * o-Xylene	15.73	91	104	2.786	pg	#	29
72) * n-Nonane	15.98	57	109	7.618	pg	#	86
77) * n-Propylbenzene	16.72	91	181	4.079	pg	#	85
78) 3-Ethyltoluene	16.81	105	73	2.287	pg	#	42
79) * 4-Ethyltoluene	16.85	105	91	3.302	pg	#	45
80) * 1,3,5-Trimethylbenzene	16.92	105	197	6.539	pg		90
83) tert-Butylbenzene	17.28	134	67	9.202	pg	#	1
84) * 1,2,4-Trimethylbenzene	17.26	105	450	16.557	pg		89
89) sec-Butylbenzene	17.49	105	63	1.424	pg	#	58
90) 1,2,3-Trimethylbenzene	17.62	105	110	3.670	pg		87
93) * D-Limonene	17.75	68	55	4.816	pg	#	67
94) n-Butylbenzene	17.97	134	59	10.910	pg	#	1
98) * Naphthalene	19.29	128	235	22.320	pg	#	67

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\31\
Data File : 01311738.D
Acq On : 1 Feb 2017 8:57
Operator : JM
Sample : AC01788_FCA00966
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 211 Sample Multiplier: 1

Quant Time: Feb 01 09:43:16 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

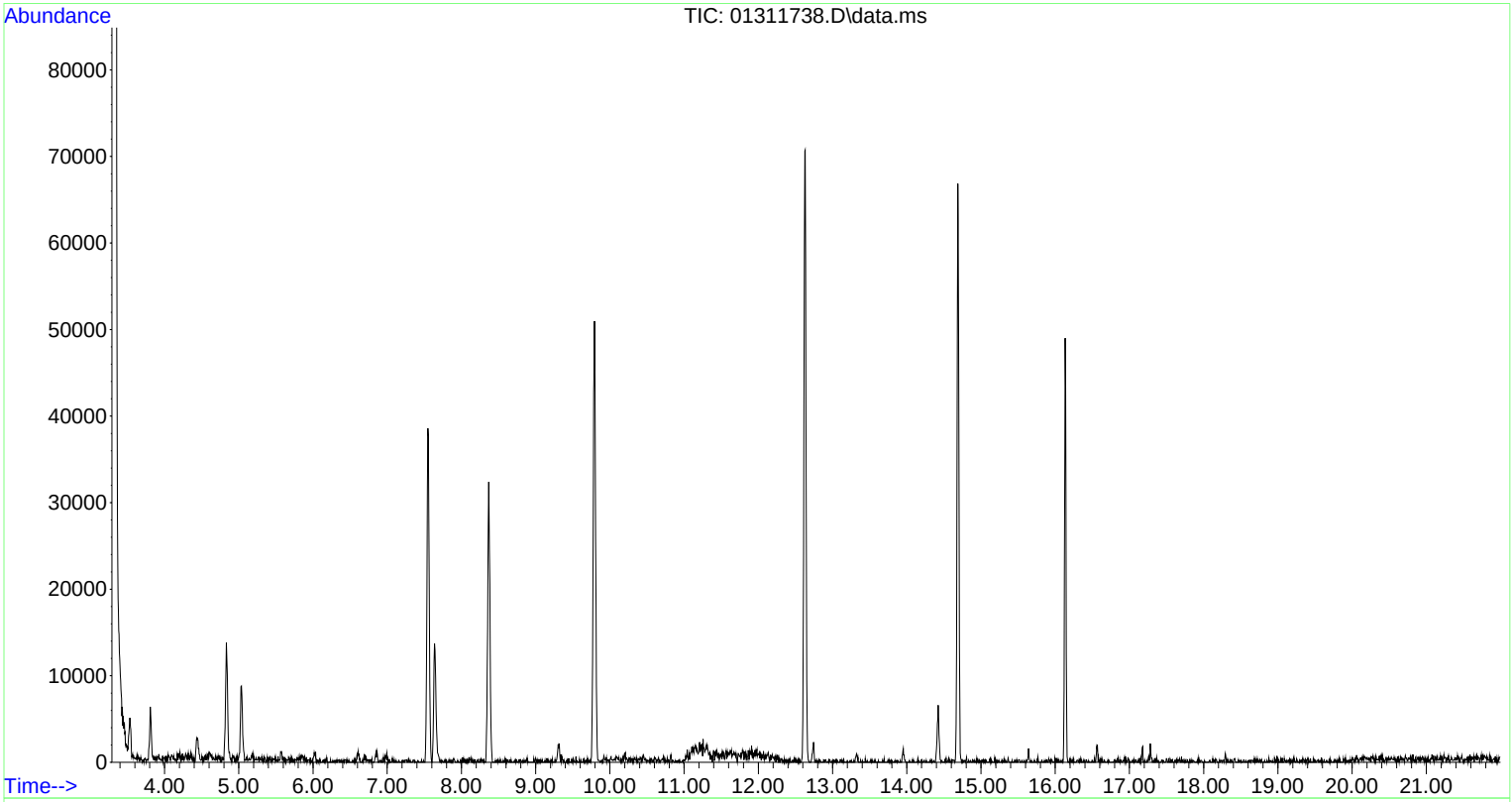
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)

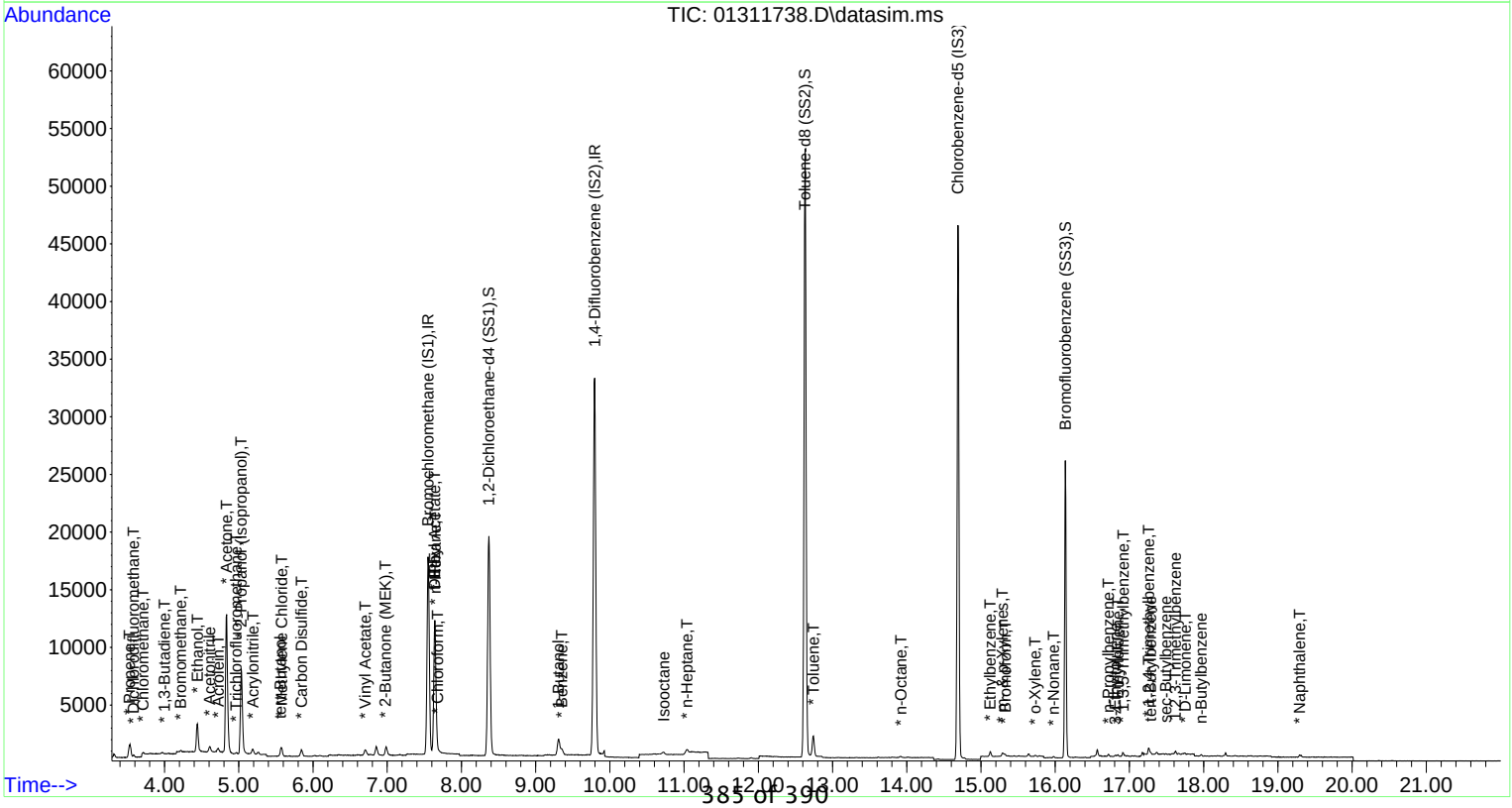
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\31\
Data File : 01311738.D
Acq On : 1 Feb 2017 8:57
Operator : JM
Sample : AC01788_FCA00966
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 211 Sample Multiplier: 1

Quant Time: Feb 01 09:43:16 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241723.D
Acq On : 25 Jan 2017 1:00
Operator : JM
Sample : AC01765_FCA01038
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 25 12:17:40 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

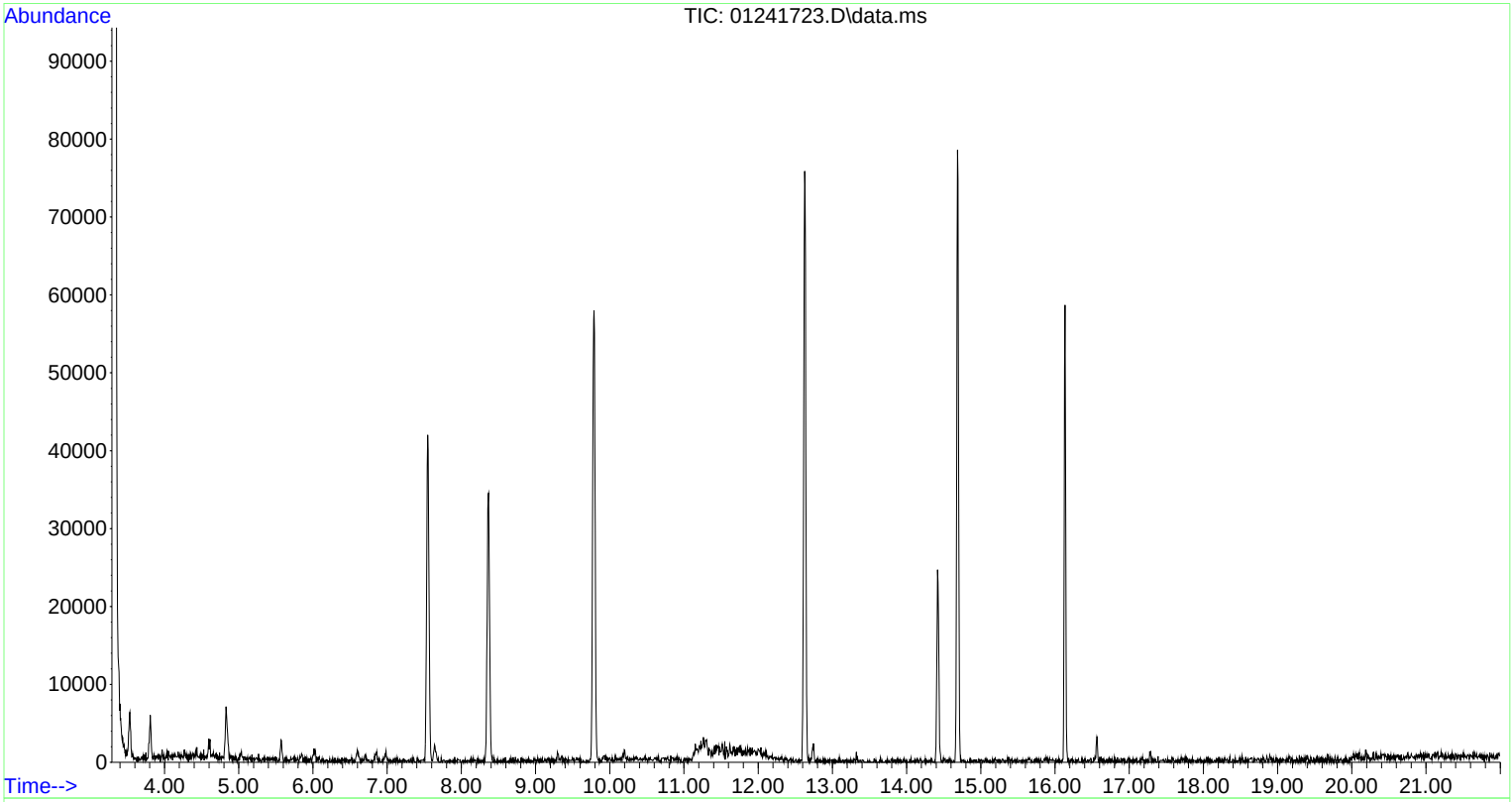
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	7.55	130	22471	1000.000 pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.79	114	71518	1000.000 pg		-0.01
56) Chlorobenzene-d5 (IS3)	14.69	117	53921	1000.000 pg		0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.36	65	33275	1014.618 pg		0.00
Spiked Amount 1000.000			Recovery = 101.46%			
57) Toluene-d8 (SS2)	12.63	98	62358	1030.080 pg		0.00
Spiked Amount 1000.000			Recovery = 103.01%			
74) Bromofluorobenzene (SS3)	16.14	174	20909	990.098 pg		0.00
Spiked Amount 1000.000			Recovery = 99.01%			
Target Compounds						Qvalue
2) * Propene	3.52	42	781	28.756 pg	#	38
3) * Dichlorodifluoromethane	3.58	85	486	6.793 pg		96
4) * Chloromethane	3.71	50	463	13.048 pg	#	86
7) * 1,3-Butadiene	3.99	54	44	1.811 pg	#	6
10) * Ethanol	4.43	45	538	41.614 pg	#	84
11) * Acetonitrile	4.60	41	1609	53.000 pg		99
12) * Acrolein	4.71	56	132	10.141 pg	#	58
13) * Acetone	4.84	58	3206	142.162 pg		73
14) * Trichlorofluoromethane	4.97	101	276	5.067 pg		95
15) * 2-Propanol (Isopropa...	5.03	45	1096	21.752 pg		99
16) * Acrylonitrile	5.19	53	418	12.341 pg		94
18) tert-Butanol	5.55	59	245	7.038 pg	#	71
19) * Methylene Chloride	5.58	84	1378	44.618 pg		98
22) * Carbon Disulfide	5.85	76	1176	11.209 pg	#	73
26) * Vinyl Acetate	6.71	86	61	12.952 pg	#	36
27) * 2-Butanone (MEK)	6.98	72	282	20.357 pg		73
29) DIPE	7.64	45	481	7.917 pg	#	45
30) * Ethyl Acetate	7.64	61	479	75.020 pg		97
31) * n-Hexane	7.65	57	77	2.613 pg	#	56
32) * Chloroform	7.69	83	278	5.944 pg		89
39) * Benzene	9.35	78	802	10.463 pg		94
41) 1-Butanol	9.31	56	752	66.246 pg	#	43
42) * Carbon Tetrachloride	9.54	117	57	1.811 pg	#	2
58) * Toluene	12.74	91	2117	29.193 pg		98
59) * 2-Hexanone	13.08	58	61	7.351 pg	#	58
66) * Ethylbenzene	15.13	91	198	3.480 pg		94
67) * m- & p-Xylenes	15.29	91	464	11.604 pg	#	78
70) * Styrene	15.63	104	67	2.938 pg	#	28
71) * o-Xylene	15.73	91	146	3.465 pg		99
77) * n-Propylbenzene	16.72	91	72	1.438 pg	#	54
78) 3-Ethyltoluene	16.81	105	63	1.749 pg	#	42
79) * 4-Ethyltoluene	16.81	105	63	2.026 pg	#	45
80) * 1,3,5-Trimethylbenzene	16.91	105	182	5.353 pg		93
83) tert-Butylbenzene	17.29	134	90	10.954 pg	#	1
84) * 1,2,4-Trimethylbenzene	17.26	105	153	4.989 pg		90
93) * D-Limonene	17.75	68	78	6.052 pg	#	71
98) * Naphthalene	19.29	128	123	10.352 pg	#	67

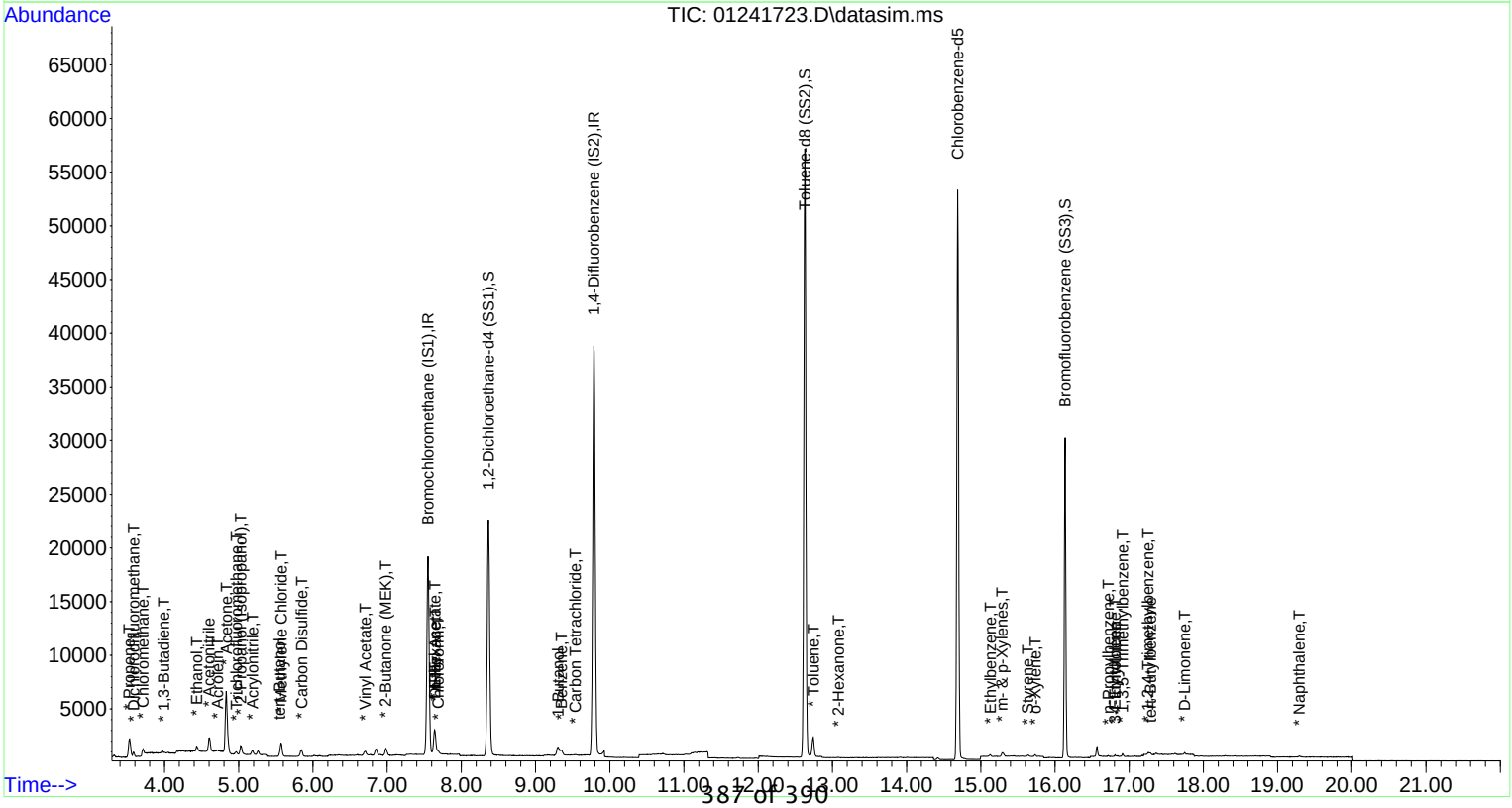
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241723.D
Acq On : 25 Jan 2017 1:00
Operator : JM
Sample : AC01765_FCA01038
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jan 25 12:17:40 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241725.D
Acq On : 25 Jan 2017 2:23
Operator : JM
Sample : SC02205_FCA01053
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 25 12:17:52 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.55	130	21912	1000.000	pg		0.00
37) 1,4-Difluorobenzene (IS2)	9.79	114	68940	1000.000	pg		0.00
56) Chlorobenzene-d5 (IS3)	14.69	117	61025	1000.000	pg		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4 ...	8.36	65	32773	1024.805	pg		0.00
Spiked Amount 1000.000			Recovery = 102.48%				
57) Toluene-d8 (SS2)	12.63	98	57169	834.429	pg		0.00
Spiked Amount 1000.000			Recovery = 83.44%				
74) Bromofluorobenzene (SS3)	16.14	174	25501	1066.970	pg		0.00
Spiked Amount 1000.000			Recovery = 106.70%				
Target Compounds							Qvalue
2) * Propene	3.53	42	1716	64.793	pg	#	50
3) * Dichlorodifluoromethane	3.58	85	1773	25.413	pg		98
4) * Chloromethane	3.71	50	599	17.311	pg		93
7) * 1,3-Butadiene	4.00	54	21	0.886	pg	#	6
10) * Ethanol	4.43	45	1467	116.366	pg		99
11) * Acetonitrile	4.60	41	1780	60.128	pg		98
12) * Acrolein	4.71	56	230	18.121	pg		92
13) * Acetone	4.83	58	12077	549.184	pg		89
14) * Trichlorofluoromethane	4.97	101	972	18.299	pg		97
15) * 2-Propanol (Isopropa...	5.03	45	12670	257.872	pg		94
16) * Acrylonitrile	5.18	53	86	2.604	pg	#	80
18) tert-Butanol	5.56	59	514	15.141	pg	#	78
19) * Methylene Chloride	5.57	84	3220	106.920	pg		97
21) * Trichlorotrifluoroet...	5.82	151	218	8.770	pg		98
22) * Carbon Disulfide	5.84	76	5084	49.695	pg		98
26) * Vinyl Acetate	6.70	86	337	73.382	pg	#	21
27) * 2-Butanone (MEK)	6.98	72	585	43.307	pg		91
29) DIPE	7.64	45	900	15.192	pg	#	45
30) * Ethyl Acetate	7.63	61	921	147.924	pg		97
31) * n-Hexane	7.64	57	509	17.717	pg		95
32) * Chloroform	7.69	83	224	4.911	pg		93
39) * Benzene	9.35	78	1123	15.199	pg	#	89
41) 1-Butanol	9.31	56	1242	113.502	pg	#	43
42) * Carbon Tetrachloride	9.54	117	269	8.865	pg		96
43) * Cyclohexane	9.70	84	261	12.267	pg	#	30
46) * Bromodichloromethane	10.59	83	98	2.868	pg	#	19
48) * 1,4-Dioxane	10.66	88	56	4.263	pg	#	11
49) Isooctane	10.69	56	588	19.281	pg	#	16
51) * n-Heptane	11.04	71	1203	48.018	pg		89
53) * 4-Methyl-2-pentanone	11.73	58	89	8.075	pg	#	43
58) * Toluene	12.74	91	2924	35.627	pg		96
59) * 2-Hexanone	13.07	58	137	14.588	pg	#	58
63) * n-Octane	13.91	85	440	42.245	pg		89
64) * Tetrachloroethene	14.01	166	65	1.984	pg		92
65) * Chlorobenzene	14.78	112	592	10.236	pg	#	43
66) * Ethylbenzene	15.12	91	1620	25.161	pg		97
67) * m- & p-Xylenes	15.30	91	2237	49.433	pg		94
70) * Styrene	15.64	104	54	2.092	pg	#	28
71) * o-Xylene	15.73	91	318	6.669	pg		94
72) * n-Nonane	15.98	57	226	12.368	pg		94
73) * 1,1,2,2-Tetrachloroe...	15.67	83	164	3.400	pg	#	59
75) * Cumene	16.27	105	494	8.163	pg		94
76) * alpha-Pinene	16.59	93	144	4.518	pg	#	24
77) * n-Propylbenzene	16.72	91	822	14.504	pg		99
78) 3-Ethyltoluene	16.81	105	351	8.609	pg		97

Quantitation Report (QT Reviewed)

Data Path : I:\MS21\DATA\2017_01\24\
Data File : 01241725.D
Acq On : 25 Jan 2017 2:23
Operator : JM
Sample : SC02205_FCA01053
Misc : 76398 (Sig #1); S29-01111701 (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 25 12:17:52 2017
Quant Method : I:\MS21\Methods\F21011717.M
Quant Title : EPA TO-15
QLast Update : Wed Jan 18 09:24:05 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
79) * 4-Ethyltoluene	16.81	105	351	9.972	pg		98
80) * 1,3,5-Trimethylbenzene	16.92	105	1716	44.598	pg		96
81) alpha-Methylstyrene	17.04	118	64	3.901	pg	#	20
82) 2-Ethyltoluene	17.07	105	290	6.097	pg		93
83) tert-Butylbenzene	17.28	134	414	44.523	pg	#	29
84) * 1,2,4-Trimethylbenzene	17.26	105	4729	136.240	pg		88
87) * 1,4-Dichlorobenzene	17.43	146	50	2.596	pg	#	18
88) n-Decane	17.37	85	149	23.131	pg		74
89) sec-Butylbenzene	17.49	105	646	11.435	pg	#	91
90) 1,2,3-Trimethylbenzene	17.62	105	1341	35.036	pg	#	80
91) p-Isopropyltoluene	17.63	134	993	86.048	pg		79
93) * D-Limonene	17.71	68	206	14.123	pg	#	67
94) n-Butylbenzene	17.97	134	569	82.385	pg	#	1
96) n-Undecane	18.38	85	289	78.940	pg	#	30
98) * Naphthalene	19.29	128	1907	141.819	pg	#	93
99) n-Dodecane	19.36	85	227	136.479	pg	#	50

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

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