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# Cover Page

**Order ID :** P5292

**Project ID :** R36719

**Client :** Tetra Tech, EMI

| Lab Sample Number | Client Sample Number |
|---|---|
| P5292-01 | C0AC5 |
| P5292-02 | C0AC6 |

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 12/23/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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# CASE NARRATIVE

**Tetra Tech, EMI**
**Project Name: R36719**
**Project # N/A**
**Chemtech Project # P5292**
**Test Name: TO-15**

**A. Number of Samples and Date of Receipt:**
2 Air samples were received on 12/13/2024.

**B. Parameters**
According to the Chain of Custody document, the following analyses were requested: TO-15. This data package contains results for TO-15.

**C. Analytical Techniques:**
The analysis performed on instrument MSVOA_L were done using GC column RTX-1, which is 60 meters, 0.32 mm id, 1.0 um df, Restek Cat. #10157. The Trap was supplied by Entech, glass bead and Tenax , Entech 7100A Preconcentrator.The analysis of TO-15 was based on method TO-15.

**D. QA/ QC Samples:**
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.

The RPD for {P5293-01DUP} with File ID: VL041798.D met criteria except for Hexane[33.3%], m/p-Xylene[200%] due to difference in results of Original and DUP.

The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .
The Tuning criteria met requirements.

**E. Additional Comments:**
The Form 6 is not included in the data package because the Initial Calibration was performed using 7 points.
The not QT review data is reported in the Miscellaneous.

The Manual Integrations are performed for the followings.

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# Manual Integration Report

| Sequence | VL121624 | Instrument | MSVOA_I |
|---|---|---|---|

| Sample ID | File ID | Parameter | Review By | Review On | Supervised By | Supervised On | Reason |
|---|---|---|---|---|---|---|---|
| VSTDICCC010 | VL041752.D | m/p-Xylene | SAM | 12/20/2024 4:34:05 AM | MMDadoda | 12/20/2024 4:37:21 AM | Peak Integrated by Software incorrectly |
| VSTDICC002 | VL041753.D | 1,4-Dioxane | SAM | 12/20/2024 4:34:06 AM | MMDadoda | 12/20/2024 4:37:23 AM | Peak Integrated by Software incorrectly |
| VSTDICC002 | VL041753.D | cis-1,3-Dichloropropene | SAM | 12/20/2024 4:34:06 AM | MMDadoda | 12/20/2024 4:37:23 AM | Peak Integrated by Software incorrectly |
| VSTDICC002 | VL041753.D | m/p-Xylene | SAM | 12/20/2024 4:34:06 AM | MMDadoda | 12/20/2024 4:37:23 AM | Peak Integrated by Software incorrectly |
| VSTDICC001 | VL041754.D | 1,1,2-Trichloroethane | SAM | 12/20/2024 4:34:08 AM | MMDadoda | 12/20/2024 4:37:25 AM | Peak Integrated by Software incorrectly |
| VSTDICC001 | VL041754.D | Carbon Tetrachloride | SAM | 12/20/2024 4:34:08 AM | MMDadoda | 12/20/2024 4:37:25 AM | Peak Integrated by Software incorrectly |
| VSTDICC001 | VL041754.D | cis-1,3-Dichloropropene | SAM | 12/20/2024 4:34:08 AM | MMDadoda | 12/20/2024 4:37:25 AM | Peak Integrated by Software incorrectly |
| VSTDICC001 | VL041754.D | Ethanol | SAM | 12/20/2024 4:34:08 AM | MMDadoda | 12/20/2024 4:37:25 AM | Peak Integrated by |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | Software incorrectly |
| VSTDICC001 | VL041754.D | m/p-Xylene | SAM | 12/20/2024 4:34:08 AM | MMDadoda | 12/20/2024 4:37:25 AM | Peak Integrated by Software incorrectly |
| VSTDICC001 | VL041754.D | Methyl Methacrylate | SAM | 12/20/2024 4:34:08 AM | MMDadoda | 12/20/2024 4:37:25 AM | Peak Integrated by Software incorrectly |
| VSTDICC001 | VL041754.D | Tetrachloroethene | SAM | 12/20/2024 4:34:08 AM | MMDadoda | 12/20/2024 4:37:25 AM | Peak Integrated by Software incorrectly |
| STDICC001 | VL041754.D | Trichloroethene | SAM | 12/20/2024 4:34:08 AM | MMDadoda | 12/20/2024 4:37:25 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | 1,1,1,2-Tetrachloroethane | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | 1,1,2-Trichloroethane | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | 1,2-Dibromoethane | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | 1,2-Dichloropropane | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | 1,4-Dioxane | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectl |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | y |
| VSTDICC0.5 | VL041755.D | 2,2,4-Trimethylpentane | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | 4-Methyl-2-Pentanone | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | Benzyl Chloride | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | Bromodichloromethane | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | Bromoform | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | Chlorobenzene | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | cis-1,3-Dichloropropene | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | Ethanol | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | Heptane | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755. | m/p-Xylene | SA | 12/20/202 | MMDadod | 12/20/202 | Peak |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | D | | M | 4 4:34:10 AM | a | 4 4:37:27 AM | Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | t-1,3-Dichloropropene | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.5 | VL041755.D | Trichloroethene | SAM | 12/20/2024 4:34:10 AM | MMDadoda | 12/20/2024 4:37:27 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.1 | VL041756.D | 1,1,2,2-Tetrachloroethane | SAM | 12/20/2024 4:34:11 AM | MMDadoda | 12/20/2024 4:37:28 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.1 | VL041756.D | 1,2-Dibromoethane | SAM | 12/20/2024 4:34:11 AM | MMDadoda | 12/20/2024 4:37:28 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.1 | VL041756.D | Tetrachloroethene | SAM | 12/20/2024 4:34:11 AM | MMDadoda | 12/20/2024 4:37:28 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.1 | VL041756.D | Trichloroethene | SAM | 12/20/2024 4:34:11 AM | MMDadoda | 12/20/2024 4:37:28 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.03 | VL041757.D | 1,1,1-Trichloroethane | SAM | 12/20/2024 4:34:12 AM | MMDadoda | 12/20/2024 4:37:30 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.03 | VL041757.D | Carbon Tetrachloride | SAM | 12/20/2024 4:34:12 AM | MMDadoda | 12/20/2024 4:37:30 AM | Peak Integrated by Software incorrectly |
| VSTDICC0.03 | VL041757.D | Tetrachloroethene | SAM | 12/20/2024 4:34:12 AM | MMDadoda | 12/20/2024 4:37:30 AM | Peak Integrated by |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | Software incorrectly |
| VSTDICC0.03 | VL041757.D | Trichloroethene | SAM | 12/20/2024 4:34:12 AM | MMDadoda | 12/20/2024 4:37:30 AM | Peak Integrated by Software incorrectly |
| VSTDICC015 | VL041758.D | m/p-Xylene | SAM | 12/20/2024 4:34:14 AM | MMDadoda | 12/20/2024 4:37:32 AM | Peak Integrated by Software incorrectly |
| VSTDICV010 | VL041759.D | 1,1,2-Trichloroethane | SAM | 12/20/2024 4:34:16 AM | MMDadoda | 12/20/2024 4:37:35 AM | Peak Integrated by Software incorrectly |
| VSTDICV010 | VL041759.D | Ethanol | SAM | 12/20/2024 4:34:16 AM | MMDadoda | 12/20/2024 4:37:35 AM | Peak Integrated by Software incorrectly |
| VSTDICV010 | VL041759.D | m/p-Xylene | SAM | 12/20/2024 4:34:16 AM | MMDadoda | 12/20/2024 4:37:35 AM | Peak Integrated by Software incorrectly |

## Manual Integration Report

| | | | |
|---|---|---|---|
| Sequence | vl121824 | Instrument | MSVOA_l |

| Sample ID | File ID | Parameter | Review By | Review On | Supervised By | Supervised On | Reason |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| VSTDCCC010 | VL041788.D | cis-1,3-Dichloropropene | SAM | 12/19/2024 12:18:09 PM | MMDadoda | 12/19/2024 2:45:22 PM | Peak Integrated by Software incorrectly |
| VSTDCCC010 | VL041788.D | Ethanol | SAM | 12/19/2024 12:18:09 PM | MMDadoda | 12/19/2024 2:45:22 PM | Peak Integrated by Software incorrectly |
| VSTDCCC010 | VL041788.D | m/p-Xylene | SAM | 12/19/2024 12:18:09 | MMDadoda | 12/19/2024 2:45:22 | Peak Integrate |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | PM | | PM | d by Software incorrectly |
| VL1218ABS01 | VL041795.D | m/p-Xylene | SAM | 12/19/2024 12:19:16 PM | MMDadoda | 12/19/2024 2:45:27 PM | Peak Integrated by Software incorrectly |
| P5292-01 | VL041812.D | m/p-Xylene | SAM | 12/23/2024 5:30:48 AM | MMDadoda | 12/23/2024 5:32:44 AM | Peak Integrated by Software incorrectly |
| P5292-01 | VL041812.D | Toluene | SAM | 12/23/2024 5:30:48 AM | MMDadoda | 12/23/2024 5:32:44 AM | Peak Integrated by Software incorrectly |
| P5292-02 | VL041813.D | Benzene | SAM | 12/23/2024 5:30:51 AM | MMDadoda | 12/23/2024 5:32:47 AM | Peak Integrated by Software incorrectly |
| P5292-02 | VL041813.D | Carbon Tetrachloride | SAM | 12/23/2024 5:30:51 AM | MMDadoda | 12/23/2024 5:32:47 AM | Peak Integrated by Software incorrectly |
| P5292-02 | VL041813.D | Cyclohexane | SAM | 12/23/2024 5:30:51 AM | MMDadoda | 12/23/2024 5:32:47 AM | Peak Integrated by Software incorrectly |
| P5292-02 | VL041813.D | Heptane | SAM | 12/23/2024 5:30:51 AM | MMDadoda | 12/23/2024 5:32:47 AM | Peak Integrated by Software incorrectly |
| P5292-02 | VL041813.D | tert-Butyl alcohol | SAM | 12/23/2024 5:30:51 AM | MMDadoda | 12/23/2024 5:32:47 AM | Peak Integrated by Software incorrectly |
| P5292-02 | VL041813.D | Tetrachloroethene | SAM | 12/23/2024 5:30:51 AM | MMDadoda | 12/23/2024 5:32:47 AM | Peak Integrated by Software incorrectly |

**F. Manual Integration Comments:**

Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

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I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

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# DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

| | |
|---|---|
| Value | If the result is a value greater than or equal to the detection limit, report the value |
| **U** | Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required. |
| **ND** | Indicates the analyte was analyzed for, but not detected |
| **J** | Indicates an estimated value**.** This flag is used:<br>(1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.)<br>(2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others. |
| **B** | Indicates the analyte was found in the blank as well as the sample report as "12 B". |
| **E** | Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis. |
| **D** | This flag identifies all compounds identified in an analysis at a secondary dilution factor. |
| **P** | This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P". |
| **N** | This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used. |
| **A** | This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product. |
| **Q** | Indicates the LCS did not meet the control limits requirements |

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**APPENDIX A**

**QA REVIEW GENERAL DOCUMENTATION**

**Project #:** **P5292**

| | Completed |
|---|---|
| **For thorough review, the report must have the following:** | |
| **GENERAL:** | |
| **Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)** | ✓ |
| **Check chain-of-custody for proper relinquish/return of samples** | ✓ |
| **Is the chain of custody signed and complete** | ✓ |
| **Check internal chain-of-custody for proper relinquish/return of samples /sample extracts** | ✓ |
| **Collect information for each project id from server. Were all requirements followed** | ✓ |
| **COVER PAGE:** | |
| **Do numbers of samples correspond to the number of samples in the Chain of Custody on login page** | ✓ |
| **Do lab numbers and client Ids on cover page agree with the Chain of Custody** | ✓ |
| **CHAIN OF CUSTODY:** | |
| **Do requested analyses on Chain of Custody agree with form I results** | ✓ |
| **Do requested analyses on Chain of Custody agree with the log-in page** | ✓ |
| **Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody** | ✓ |
| **Were the samples received within hold time** | ✓ |
| **Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle** | ✓ |
| **ANALYTICAL:** | |
| **Was method requirement followed?** | ✓ |
| **Was client requirement followed?** | ✓ |
| **Does the case narrative summarize all QC failure?** | ✓ |
| **All runlogs and manual integration are reviewed for requirements** | ✓ |
| **All manual calculations and /or hand notations verified** | ✓ |

**QA Review Signature:** **SOHIL JODHANI** **Date:** **12/23/2024**