

Technical Report for

Providence Engineering

Valero-CAMS, Baton Rouge, LA

712-001

SGS Accutest Job Number: JC19977

Sampling Date: 04/29/16

Report to:

Providence Engineering
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Baton Rouge, LA 70802
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ATTN: Paul Hollis

Total number of pages in report: 35



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TN, TX, VA, WV, DoD ELAP (L-A-B L2248)

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Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Sample Results	4
2.1: JC19977-1: CAMS 286	5
Section 3: Misc. Forms	7
3.1: Chain of Custody	8
3.2: Summa Canister and Flow Controller Log	10
Section 4: GC/MS Volatiles - QC Data Summaries	11
4.1: Method Blank Summary	12
4.2: Blank Spike/Blank Spike Duplicate Summary	18
4.3: Duplicate Summary	24
4.4: Summa Cleaning Certification	27
4.5: Instrument Performance Checks (BFB)	30
4.6: Surrogate Recovery Summaries	35

1

2

3

4



Sample Summary

Providence Engineering

Job No: JC19977

Valero-CAMS, Baton Rouge, LA
Project No: 712-001

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
JC19977-1	04/29/16	13:00 KH	05/10/16	AIR	Ambient Air Grab	CAMS 286



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: CAMS 286		
Lab Sample ID: JC19977-1		Date Sampled: 04/29/16
Matrix: AIR - Ambient Air Grab	Summa ID: A356	Date Received: 05/10/16
Method: TO-15		Percent Solids: n/a
Project: Valero-CAMS, Baton Rouge, LA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W53891.D	1	05/11/16	YMH	n/a	n/a	V3W2033
Run #2							

Run #	Initial Volume
Run #1	400 ml
Run #2	

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	6.8	0.20	0.036	ppbv		16	0.48	0.086	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.028	ppbv		ND	0.44	0.062	ug/m3
71-43-2	78.11	Benzene	0.22	0.20	0.031	ppbv		0.70	0.64	0.099	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.039	ppbv		ND	1.3	0.26	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.016	ppbv		ND	2.1	0.17	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.018	ppbv		ND	0.78	0.070	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	0.079	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.027	ppbv		ND	1.0	0.14	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.031	ppbv		ND	0.62	0.097	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.056	ppbv		ND	0.92	0.26	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.036	ppbv		ND	0.53	0.095	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.017	ppbv		ND	0.98	0.083	ug/m3
74-87-3	50.49	Chloromethane	0.85	0.20	0.052	ppbv		1.8	0.41	0.11	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.027	ppbv		ND	0.63	0.085	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.017	ppbv		ND	1.0	0.088	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.031	ppbv		ND	1.3	0.20	ug/m3
110-82-7	84.16	Cyclohexane	0.68	0.20	0.016	ppbv		2.3	0.69	0.055	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.015	ppbv		ND	0.81	0.061	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	0.083	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.042	ppbv		ND	1.5	0.32	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.018	ppbv		ND	0.81	0.073	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.022	ppbv		ND	0.92	0.10	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.045	ppbv		ND	0.72	0.16	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.55	0.20	0.019	ppbv		2.7	0.99	0.094	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.053	ppbv		ND	1.7	0.45	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	0.11	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	0.083	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.015	ppbv		ND	0.91	0.068	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.020	ppbv		ND	1.2	0.12	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.016	ppbv		ND	1.2	0.096	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	0.16	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.018	ppbv		ND	0.91	0.082	ug/m3

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CAMS 286		
Lab Sample ID: JC19977-1		Date Sampled: 04/29/16
Matrix: AIR - Ambient Air Grab	Summa ID: A356	Date Received: 05/10/16
Method: TO-15		Percent Solids: n/a
Project: Valero-CAMS, Baton Rouge, LA		

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46.07	Ethanol	3.2	0.50	0.075	ppbv		6.0	0.94	0.14	ug/m3
100-41-4	106.2	Ethylbenzene	0.13	0.20	0.042	ppbv	J	0.56	0.87	0.18	ug/m3
141-78-6	88	Ethyl Acetate	0.89	0.20	0.075	ppbv		3.2	0.72	0.27	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.017	ppbv		ND	0.98	0.084	ug/m3
76-13-1	187.4	Freon 113	ND	0.20	0.021	ppbv		ND	1.5	0.16	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.031	ppbv		ND	1.4	0.22	ug/m3
142-82-5	100.2	Heptane	0.49	0.20	0.020	ppbv		2.0	0.82	0.082	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.020	ppbv		ND	2.1	0.21	ug/m3
110-54-3	86.17	Hexane	1.8	0.20	0.023	ppbv		6.3	0.70	0.081	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.045	ppbv		ND	0.82	0.18	ug/m3
67-63-0	60.1	Isopropyl Alcohol	0.74	0.20	0.16	ppbv		1.8	0.49	0.39	ug/m3
75-09-2	84.94	Methylene chloride	2.0	0.20	0.025	ppbv		6.9	0.69	0.087	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.55	0.20	0.048	ppbv		1.6	0.59	0.14	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.055	ppbv		ND	0.82	0.23	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.20	0.020	ppbv		ND	0.72	0.072	ug/m3
80-62-6	100.12	Methylmethacrylate	ND	0.20	0.040	ppbv		ND	0.82	0.16	ug/m3
115-07-1	42	Propylene	ND	0.50	0.032	ppbv		ND	0.86	0.055	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.015	ppbv		ND	0.85	0.064	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.024	ppbv		ND	1.1	0.13	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.016	ppbv		ND	1.4	0.11	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.039	ppbv		ND	1.1	0.21	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.056	ppbv		ND	1.5	0.42	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.16	0.20	0.015	ppbv	J	0.79	0.98	0.074	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.045	ppbv		ND	0.98	0.22	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.28	0.20	0.023	ppbv		1.3	0.93	0.11	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	0.23	0.20	0.053	ppbv		0.70	0.61	0.16	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.038	0.040	0.023	ppbv	J	0.26	0.27	0.16	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.045	ppbv		ND	0.59	0.13	ug/m3
108-88-3	92.14	Toluene	0.71	0.20	0.012	ppbv		2.7	0.75	0.045	ug/m3
79-01-6	131.4	Trichloroethylene	0.036	0.040	0.019	ppbv	J	0.19	0.21	0.10	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.31	0.20	0.022	ppbv		1.7	1.1	0.12	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.021	ppbv		ND	0.51	0.054	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.054	ppbv		ND	0.70	0.19	ug/m3
	106.2	m,p-Xylene	0.50	0.20	0.068	ppbv		2.2	0.87	0.30	ug/m3
95-47-6	106.2	o-Xylene	0.20	0.20	0.051	ppbv		0.87	0.87	0.22	ug/m3
1330-20-7	106.2	Xylenes (total)	0.70	0.20	0.051	ppbv		3.0	0.87	0.22	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	80%		65-128%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms**Custody Documents and Other Forms**

Includes the following where applicable:

- Chain of Custody
- Summa Canister and Flow Controller Log



ACCUTEST

AIR CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking # 651491673910	Bottle Order Control #
Lab Quote #	Lab Job # JC19977

PAGE 1 OF 1

31
3

Client / Reporting Information			Project Information					Weather Parameters					Requested Analysis					
Company Name: Providence Engr			Project Name: Valero Refining					Temperature (Fahrenheit)										
Address: 1201 Main St			Street					Start: Maximum:										
City: BR State: LA Zip: 70802			City: Meraux State: LA					Stop: Minimum:										
Project Contact: Paul Hollis@providenceeng.com			Project #: 712-001					Atmospheric Pressure (inches of Hg)										
Phone #: 225-766-7400 Fax #: -7440			Client Purchase Order #					Start: Maximum:					10-15					
Sampler(s) Name(s): K. Hudson								Stop: Minimum:										
Other weather comment:																		
		Air Type		Sampling Equipment Info			Start Sampling Information					Stop Sampling Information						
Lab Sample #	Field ID / Point of Collection	Indoor(I) Soil Vap(SV) Ambient(A)	Canister Serial #	Canister Size 6L or 1L	Flow Controller Serial #	Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.	Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.			
-1	CAMS 286	A	A356	6L	-	4-28	1300	0.06	75	124	4-29	1300	11.23	75	124			
<div style="display: flex; justify-content: space-between;"> INITIAL ASSESSMENT <i>YH/CL</i> LABEL VERIFICATION <i>CL</i> </div>																		
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks										
Standard - 15 Days <input type="checkbox"/> 10 Day <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 1 Day <input type="checkbox"/> Other				Approved By: _____ Date: _____				All NJDEP TO-15 is mandatory Full T1 Comm A <input type="checkbox"/> Comm B <input type="checkbox"/> Reduced T2 <input type="checkbox"/> Full T1 Other: _____ DKQP reporting				<i>Summer</i> COC Seal #32 Fed Ex Sample inventory is verified upon receipt in the Laboratory						
Sample Custody must be documented below each time samples change possession, including courier delivery.																		
Relinquished by Laboratory:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:				
1				<i>[Signature]</i>		2				<i>[Signature]</i>		3		<i>[Signature]</i>				
Relinquished by: <i>fedex</i>		Date Time: <i>5/16/16 1930</i>		Received By: <i>[Signature]</i>		Relinquished By: <i>[Signature]</i>		Date Time:		Received By: <i>[Signature]</i>		Date Time:		Received By: <i>[Signature]</i>				
3				4		5				Custody Seal #								
Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:				
5																		

JC19977: Chain of Custody

Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC19977

Client: _____

Project: _____

Date / Time Received: 5/10/2016 7:30:00 PM

Delivery Method: _____

Airbill #s: _____

Cooler Temps (Raw Measured) °C:

Cooler Temps (Corrected) °C:

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. SmpI Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|--------------------------|--------------------------|
| 1. Temp criteria achieved: | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | _____ N/A | |
| 3. Cooler media: | _____ N/A | |
| 4. No. Coolers: | _____ N/A | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | _____ Intact | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments

JC19977: Chain of Custody

Page 2 of 2

Summa Canister and Flow Controller Log

Job Number: JC19977
Account: PROVLABR Providence Engineering
Project: Valero-CAMS, Baton Rouge, LA
Received: 05/10/16

32
3

SUMMA CANISTERS													
Shipping							Receiving						
Summa ID	Vac L	Date " Hg	Date Out	By	SCC Batch	SCC FileID	Sample Number	Date In	By	Vac " Hg	Pres psig	Final psig	Dil Fact
A356	6	29.4	04/13/16	RC	CP8399	5W17567.D	JC19977-1	05/11/16	RD	7			1

SGS Accutest Bottle Order(s):
 VP-4/13/2016-6

Prep Date **Room Temp(F)** **Bar Pres "Hg**
 04/13/16 70 29.92

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2033-MB	3W53882.D	1	05/11/16	YMH	n/a	n/a	V3W2033

The QC reported here applies to the following samples:

Method: TO-15

JC19977-1

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.036	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.028	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.031	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.039	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.016	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.018	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.027	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.031	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.056	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.036	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.017	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.052	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.027	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.017	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.031	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.016	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.015	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.042	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.018	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.022	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.045	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.019	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.053	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.015	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.020	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.016	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.018	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.075	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.042	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.075	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.017	ppbv		ND	0.98	ug/m3

4.1.1
4

Method Blank Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2033-MB	3W53882.D	1	05/11/16	YMH	n/a	n/a	V3W2033

The QC reported here applies to the following samples:

Method: TO-15

JC19977-1

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.031	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.020	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.020	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.023	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.16	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.048	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.055	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.020	ppbv		ND	0.72	ug/m3
80-62-6	Methylmethacrylate	ND	0.20	0.040	ppbv		ND	0.82	ug/m3
115-07-1	Propylene	ND	0.50	0.032	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.015	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.024	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.016	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.039	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.056	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.015	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.045	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.023	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.053	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.023	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.045	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.012	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.022	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.021	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.054	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.068	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.051	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.051	ppbv		ND	0.87	ug/m3

4.1.1
4

Method Blank Summary

Job Number: JC19977
Account: PROVLABR Providence Engineering
Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2033-MB	3W53882.D	1	05/11/16	YMH	n/a	n/a	V3W2033

The QC reported here applies to the following samples:

Method: TO-15

JC19977-1

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	84% 65-128%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

4.1.1
4

Method Blank Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W700-MB	5W17556.D	1	04/07/16	TCH	n/a	n/a	V5W700

The QC reported here applies to the following samples:

Method: TO-15

V5W700-SCC

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.036	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.028	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.031	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.039	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.016	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.018	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.027	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.031	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.056	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.036	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.017	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.052	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.027	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.017	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.031	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.016	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.015	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.042	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.018	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.022	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.045	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.019	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.053	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.015	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.020	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.016	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.018	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.075	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.042	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.075	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.017	ppbv		ND	0.98	ug/m3

4.1.2
4

Method Blank Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W700-MB	5W17556.D	1	04/07/16	TCH	n/a	n/a	V5W700

The QC reported here applies to the following samples:

Method: TO-15

V5W700-SCC

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.031	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.020	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.020	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.023	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.16	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.048	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.055	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.020	ppbv		ND	0.72	ug/m3
80-62-6	Methylmethacrylate	ND	0.20	0.040	ppbv		ND	0.82	ug/m3
115-07-1	Propylene	ND	0.50	0.032	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.015	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.024	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.016	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.039	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.056	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.015	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.045	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.023	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.053	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.023	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.045	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.012	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.022	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.021	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.054	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.068	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.051	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.051	ppbv		ND	0.87	ug/m3

4.1.2
4

Method Blank Summary

Job Number: JC19977
Account: PROVLABR Providence Engineering
Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W700-MB	5W17556.D	1	04/07/16	TCH	n/a	n/a	V5W700

The QC reported here applies to the following samples:

Method: TO-15

V5W700-SCC

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	96% 65-128%

4.1.2
4

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2033-BS	3W53878.D	1	05/11/16	YMH	n/a	n/a	V3W2033
V3W2033-BSD	3W53879.D	1	05/11/16	YMH	n/a	n/a	V3W2033

The QC reported here applies to the following samples:

Method: TO-15

JC19977-1

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	9.5	95	9.6	96	1	70-130/30
106-99-0	1,3-Butadiene	10	9.9	99	10.4	104	5	70-130/30
71-43-2	Benzene	10	10.5	105	10.9	109	4	70-130/30
75-27-4	Bromodichloromethane	10	10	100	10.3	103	3	70-130/30
75-25-2	Bromoform	10	11.8	118	12.0	120	2	70-130/30
74-83-9	Bromomethane	10	10.3	103	10.8	108	5	70-130/30
593-60-2	Bromoethene	10	10.6	106	11.0	110	4	70-130/30
100-44-7	Benzyl Chloride	10	10.9	109	11.1	111	2	70-130/30
75-15-0	Carbon disulfide	10	10.1	101	10.6	106	5	70-130/30
108-90-7	Chlorobenzene	10	11.1	111	11.5	115	4	70-130/30
75-00-3	Chloroethane	10	10.2	102	10.5	105	3	70-130/30
67-66-3	Chloroform	10	10.8	108	11.2	112	4	70-130/30
74-87-3	Chloromethane	10	10.3	103	10.9	109	6	70-130/30
107-05-1	3-Chloropropene	10	10.3	103	10.7	107	4	70-130/30
95-49-8	2-Chlorotoluene	10	11.3	113	11.5	115	2	70-130/30
56-23-5	Carbon tetrachloride	10	10.8	108	11.3	113	5	70-130/30
110-82-7	Cyclohexane	10	10.2	102	10.6	106	4	70-130/30
75-34-3	1,1-Dichloroethane	10	10.5	105	10.9	109	4	70-130/30
75-35-4	1,1-Dichloroethylene	10	9.6	96	10	100	4	70-130/30
106-93-4	1,2-Dibromoethane	10	11.4	114	11.7	117	3	70-130/30
107-06-2	1,2-Dichloroethane	10	10.7	107	11.1	111	4	70-130/30
78-87-5	1,2-Dichloropropane	10	10.5	105	10.9	109	4	70-130/30
123-91-1	1,4-Dioxane	10	9.6	96	10.4	104	8	70-130/30
75-71-8	Dichlorodifluoromethane	10	11.0	110	11.7	117	6	70-130/30
124-48-1	Dibromochloromethane	10	11.2	112	11.5	115	3	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	10.5	105	10.8	108	3	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	10.6	106	11.0	110	4	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	10.0	100	10.3	103	3	70-130/30
541-73-1	m-Dichlorobenzene	10	11.1	111	11.3	113	2	70-130/30
95-50-1	o-Dichlorobenzene	10	11.5	115	11.7	117	2	70-130/30
106-46-7	p-Dichlorobenzene	10	11.1	111	11.2	112	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	10.7	107	10.9	109	2	70-130/30
64-17-5	Ethanol	10	8.5	85	8.9	89	5	70-130/30
100-41-4	Ethylbenzene	10	10.9	109	11.0	110	1	70-130/30
141-78-6	Ethyl Acetate	10	11.4	114	11.7	117	3	70-130/30
622-96-8	4-Ethyltoluene	10	11.3	113	11.4	114	1	70-130/30

* = Outside of Control Limits.

4.2.1
 4

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2033-BS	3W53878.D	1	05/11/16	YMH	n/a	n/a	V3W2033
V3W2033-BSD	3W53879.D	1	05/11/16	YMH	n/a	n/a	V3W2033

The QC reported here applies to the following samples:

Method: TO-15

JC19977-1

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	10.6	106	10.9	109	3	70-130/30
76-14-2	Freon 114	10	10.9	109	11.5	115	5	70-130/30
142-82-5	Heptane	10	10	100	10.1	101	1	70-130/30
87-68-3	Hexachlorobutadiene	10	11.6	116	11.7	117	1	70-130/30
110-54-3	Hexane	10	9.7	97	10.1	101	4	70-130/30
591-78-6	2-Hexanone	10	10.1	101	10.4	104	3	70-130/30
67-63-0	Isopropyl Alcohol	10	8.7	87	9.1	91	4	70-130/30
75-09-2	Methylene chloride	10	9.3	93	9.7	97	4	70-130/30
78-93-3	Methyl ethyl ketone	10	10.4	104	10.8	108	4	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	10	100	10.3	103	3	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	10.3	103	10.6	106	3	70-130/30
80-62-6	Methylmethacrylate	10	9.6	96	9.8	98	2	70-130/30
115-07-1	Propylene	10	10.5	105	11.2	112	6	70-130/30
100-42-5	Styrene	10	11.1	111	11.2	112	1	70-130/30
71-55-6	1,1,1-Trichloroethane	10	10.5	105	11.0	110	5	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	10.8	108	11.0	110	2	70-130/30
79-00-5	1,1,2-Trichloroethane	10	10.6	106	10.8	108	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	12.0	120	12.2	122	2	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	11.0	110	11.1	111	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	10.8	108	10.9	109	1	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	9.9	99	10.2	102	3	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	9.4	94	9.8	98	4	70-130/30
127-18-4	Tetrachloroethylene	10	10.8	108	11.1	111	3	70-130/30
109-99-9	Tetrahydrofuran	10	10.8	108	11.2	112	4	70-130/30
108-88-3	Toluene	10	10.9	109	11.2	112	3	70-130/30
79-01-6	Trichloroethylene	10	10.2	102	10.6	106	4	70-130/30
75-69-4	Trichlorofluoromethane	10	10.4	104	10.8	108	4	70-130/30
75-01-4	Vinyl chloride	10	11.1	111	11.8	118	6	70-130/30
108-05-4	Vinyl Acetate	10	11.6	116	11.8	118	2	70-130/30
	m,p-Xylene	20	23.0	115	22.8	114	1	70-130/30
95-47-6	o-Xylene	10	11.6	116	11.4	114	2	70-130/30
1330-20-7	Xylenes (total)	30	34.6	115	34.2	114	1	70-130/30

* = Outside of Control Limits.

4.2.1
 4

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC19977
Account: PROVLABR Providence Engineering
Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2033-BS	3W53878.D	1	05/11/16	YMH	n/a	n/a	V3W2033
V3W2033-BSD	3W53879.D	1	05/11/16	YMH	n/a	n/a	V3W2033

The QC reported here applies to the following samples:

Method: TO-15

JC19977-1

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	91%	88%	65-128%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W700-BS	5W17553.D	1	04/07/16	TCH	n/a	n/a	V5W700
V5W700-BSD	5W17554.D	1	04/07/16	TCH	n/a	n/a	V5W700

The QC reported here applies to the following samples:

Method: TO-15

V5W700-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	10.3	103	10.0	100	3	70-130/30
106-99-0	1,3-Butadiene	10	10.0	100	9.8	98	2	70-130/30
71-43-2	Benzene	10	10.6	106	10.4	104	2	70-130/30
75-27-4	Bromodichloromethane	10	9.6	96	9.5	95	1	70-130/30
75-25-2	Bromoform	10	9.2	92	9.1	91	1	70-130/30
74-83-9	Bromomethane	10	9.4	94	9.2	92	2	70-130/30
593-60-2	Bromoethene	10	9.8	98	9.6	96	2	70-130/30
100-44-7	Benzyl Chloride	10	8.8	88	8.7	87	1	70-130/30
75-15-0	Carbon disulfide	10	11.0	110	10.7	107	3	70-130/30
108-90-7	Chlorobenzene	10	9.3	93	9.2	92	1	70-130/30
75-00-3	Chloroethane	10	10.7	107	10.5	105	2	70-130/30
67-66-3	Chloroform	10	10.3	103	10.1	101	2	70-130/30
74-87-3	Chloromethane	10	10.6	106	10.3	103	3	70-130/30
107-05-1	3-Chloropropene	10	10.9	109	10.6	106	3	70-130/30
95-49-8	2-Chlorotoluene	10	9.4	94	9.2	92	2	70-130/30
56-23-5	Carbon tetrachloride	10	9.9	99	9.7	97	2	70-130/30
110-82-7	Cyclohexane	10	10.3	103	10.0	100	3	70-130/30
75-34-3	1,1-Dichloroethane	10	10.9	109	10.7	107	2	70-130/30
75-35-4	1,1-Dichloroethylene	10	10.8	108	10.6	106	2	70-130/30
106-93-4	1,2-Dibromoethane	10	10.0	100	9.9	99	1	70-130/30
107-06-2	1,2-Dichloroethane	10	10.3	103	10.1	101	2	70-130/30
78-87-5	1,2-Dichloropropane	10	11.0	110	10.9	109	1	70-130/30
123-91-1	1,4-Dioxane	10	10.5	105	10.4	104	1	70-130/30
75-71-8	Dichlorodifluoromethane	10	10.1	101	9.8	98	3	70-130/30
124-48-1	Dibromochloromethane	10	9.7	97	9.7	97	0	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	10.9	109	10.7	107	2	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	10.7	107	10.5	105	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	9.8	98	9.7	97	1	70-130/30
541-73-1	m-Dichlorobenzene	10	8.9	89	8.8	88	1	70-130/30
95-50-1	o-Dichlorobenzene	10	8.9	89	8.7	87	2	70-130/30
106-46-7	p-Dichlorobenzene	10	8.3	83	8.2	82	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	10.5	105	10.4	104	1	70-130/30
64-17-5	Ethanol	10	10.1	101	9.6	96	5	70-130/30
100-41-4	Ethylbenzene	10	9.4	94	9.3	93	1	70-130/30
141-78-6	Ethyl Acetate	10	11.7	117	11.6	116	1	70-130/30
622-96-8	4-Ethyltoluene	10	9.6	96	9.4	94	2	70-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W700-BS	5W17553.D	1	04/07/16	TCH	n/a	n/a	V5W700
V5W700-BSD	5W17554.D	1	04/07/16	TCH	n/a	n/a	V5W700

The QC reported here applies to the following samples:

Method: TO-15

V5W700-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	10.9	109	10.6	106	3	70-130/30
76-14-2	Freon 114	10	10.5	105	10.2	102	3	70-130/30
142-82-5	Heptane	10	10.1	101	9.9	99	2	70-130/30
87-68-3	Hexachlorobutadiene	10	8.5	85	8.4	84	1	70-130/30
110-54-3	Hexane	10	9.6	96	9.5	95	1	70-130/30
591-78-6	2-Hexanone	10	10.8	108	10.8	108	0	70-130/30
67-63-0	Isopropyl Alcohol	10	8.9	89	8.7	87	2	70-130/30
75-09-2	Methylene chloride	10	10.1	101	9.8	98	3	70-130/30
78-93-3	Methyl ethyl ketone	10	11.1	111	10.8	108	3	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	11.5	115	11.4	114	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	9.9	99	9.7	97	2	70-130/30
80-62-6	Methylmethacrylate	10	9.8	98	9.6	96	2	70-130/30
115-07-1	Propylene	10	11.1	111	10.7	107	4	70-130/30
100-42-5	Styrene	10	9.6	96	9.5	95	1	70-130/30
71-55-6	1,1,1-Trichloroethane	10	9.7	97	9.5	95	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	10.1	101	9.9	99	2	70-130/30
79-00-5	1,1,2-Trichloroethane	10	10.0	100	9.9	99	1	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	7.1	71	7.1	71	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	9.4	94	9.2	92	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	9.2	92	9.1	91	1	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	10.6	106	10.4	104	2	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	10.8	108	10.5	105	3	70-130/30
127-18-4	Tetrachloroethylene	10	9.6	96	9.4	94	2	70-130/30
109-99-9	Tetrahydrofuran	10	11.6	116	11.4	114	2	70-130/30
108-88-3	Toluene	10	9.9	99	9.8	98	1	70-130/30
79-01-6	Trichloroethylene	10	9.7	97	9.6	96	1	70-130/30
75-69-4	Trichlorofluoromethane	10	9.7	97	9.6	96	1	70-130/30
75-01-4	Vinyl chloride	10	11.5	115	11.2	112	3	70-130/30
108-05-4	Vinyl Acetate	10	11.5	115	11.3	113	2	70-130/30
	m,p-Xylene	20	19.1	96	18.9	95	1	70-130/30
95-47-6	o-Xylene	10	9.5	95	9.4	94	1	70-130/30
1330-20-7	Xylenes (total)	30	28.6	95	28.2	94	1	70-130/30

* = Outside of Control Limits.

4.2.2
 4

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W700-BS	5W17553.D	1	04/07/16	TCH	n/a	n/a	V5W700
V5W700-BSD	5W17554.D	1	04/07/16	TCH	n/a	n/a	V5W700

The QC reported here applies to the following samples:

Method: TO-15

V5W700-SCC

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	95%	96%	65-128%

* = Outside of Control Limits.

4.2.2
 4

Duplicate Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC19993-1DUP	3W53886.D	1	05/11/16	YMH	n/a	n/a	V3W2033
JC19993-1	3W53885.D	1	05/11/16	YMH	n/a	n/a	V3W2033

The QC reported here applies to the following samples:

Method: TO-15

JC19977-1

CAS No.	Compound	JC19993-1 ppbv	DUP Q	ppbv	Q	RPD	Limits
67-64-1	Acetone	8.4		8.0		5	27
106-99-0	1,3-Butadiene	ND		ND		nc	20
71-43-2	Benzene	0.28		0.27		4	17
75-27-4	Bromodichloromethane	ND		ND		nc	20
75-25-2	Bromoform	ND		ND		nc	20
74-83-9	Bromomethane	ND		ND		nc	20
593-60-2	Bromoethene	ND		ND		nc	30
100-44-7	Benzyl Chloride	ND		ND		nc	20
75-15-0	Carbon disulfide	ND		ND		nc	11
108-90-7	Chlorobenzene	ND		ND		nc	20
75-00-3	Chloroethane	ND		ND		nc	20
67-66-3	Chloroform	ND		ND		nc	12
74-87-3	Chloromethane	0.70		0.63		11	22
107-05-1	3-Chloropropene	ND		ND		nc	10
95-49-8	2-Chlorotoluene	ND		ND		nc	20
56-23-5	Carbon tetrachloride	ND		ND		nc	10
110-82-7	Cyclohexane	ND		ND		nc	12
75-34-3	1,1-Dichloroethane	ND		ND		nc	20
75-35-4	1,1-Dichloroethylene	ND		ND		nc	20
106-93-4	1,2-Dibromoethane	ND		ND		nc	20
107-06-2	1,2-Dichloroethane	ND		ND		nc	20
78-87-5	1,2-Dichloropropane	ND		ND		nc	20
123-91-1	1,4-Dioxane	ND		ND		nc	20
75-71-8	Dichlorodifluoromethane	0.62		0.56		10	22
124-48-1	Dibromochloromethane	ND		ND		nc	20
156-60-5	trans-1,2-Dichloroethylene	ND		ND		nc	10
156-59-2	cis-1,2-Dichloroethylene	ND		ND		nc	10
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	20
541-73-1	m-Dichlorobenzene	ND		ND		nc	20
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	ND		ND		nc	20
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	20
64-17-5	Ethanol	83.0	E	80.1	E	4	33
100-41-4	Ethylbenzene	0.11	J	0.11	J	0	15
141-78-6	Ethyl Acetate	1.7		1.8		6	20
622-96-8	4-Ethyltoluene	ND		ND		nc	13

* = Outside of Control Limits.

4.3.1
 4

Duplicate Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC19993-1DUP	3W53886.D	1	05/11/16	YMH	n/a	n/a	V3W2033
JC19993-1	3W53885.D	1	05/11/16	YMH	n/a	n/a	V3W2033

The QC reported here applies to the following samples:

Method: TO-15

JC19977-1

CAS No.	Compound	JC19993-1 ppbv	DUP Q	ppbv	Q	RPD	Limits
76-13-1	Freon 113	ND		ND		nc	10
76-14-2	Freon 114	ND		ND		nc	20
142-82-5	Heptane	0.21		0.21		0	20
87-68-3	Hexachlorobutadiene	ND		ND		nc	20
110-54-3	Hexane	0.24		0.24		0	17
591-78-6	2-Hexanone	ND		ND		nc	20
67-63-0	Isopropyl Alcohol	6.4		6.4		0	26
75-09-2	Methylene chloride	0.35		0.37		6	26
78-93-3	Methyl ethyl ketone	0.81		0.81		0	21
108-10-1	Methyl Isobutyl Ketone	0.11	J	0.11	J	0	20
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	20
80-62-6	Methylmethacrylate	ND		ND		nc	20
115-07-1	Propylene	1.2		1.1		9	16
100-42-5	Styrene	ND		ND		nc	11
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	20
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	20
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	20
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	20
95-63-6	1,2,4-Trimethylbenzene	0.11	J	0.10	J	10	19
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	13
540-84-1	2,2,4-Trimethylpentane	0.14	J	0.15	J	7	18
75-65-0	Tertiary Butyl Alcohol	ND		ND		nc	21
127-18-4	Tetrachloroethylene	0.067		0.068		1	17
109-99-9	Tetrahydrofuran	ND		ND		nc	20
108-88-3	Toluene	2.6		2.6		0	20
79-01-6	Trichloroethylene	ND		ND		nc	13
75-69-4	Trichlorofluoromethane	0.29		0.28		4	21
75-01-4	Vinyl chloride	ND		ND		nc	20
108-05-4	Vinyl Acetate	ND		ND		nc	20
	m,p-Xylene	0.36		0.32		12	26
95-47-6	o-Xylene	0.12	J	0.11	J	9	20
1330-20-7	Xylenes (total)	0.48		0.43		11	26

* = Outside of Control Limits.

4.3.1
 4

Duplicate Summary

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC19993-1DUP	3W53886.D	1	05/11/16	YMH	n/a	n/a	V3W2033
JC19993-1	3W53885.D	1	05/11/16	YMH	n/a	n/a	V3W2033

The QC reported here applies to the following samples:

Method: TO-15

JC19977-1

CAS No.	Surrogate Recoveries	DUP	JC19993-1	Limits
460-00-4	4-Bromofluorobenzene	84%	83%	65-128%

* = Outside of Control Limits.

Summa Cleaning Certification

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W700-SCC	5W17567.D	1	04/07/16	TCH	n/a	n/a	V5W700

The QC reported here (Summa A1018) applies to the following samples: Method: TO-15

Batch CP8399 cleaned 04/04/16: JC19977-1(A356)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.036	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.028	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.031	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.039	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.016	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.018	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.027	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.031	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.056	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.036	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.017	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.052	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.027	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.017	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.031	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.016	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.015	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.042	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.018	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.022	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.045	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.019	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.053	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.015	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.020	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.016	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.018	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.075	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.042	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.075	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.017	ppbv		ND	0.98	ug/m3

4.4.1
4

Summa Cleaning Certification

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W700-SCC	5W17567.D	1	04/07/16	TCH	n/a	n/a	V5W700

The QC reported here (Summa A1018) applies to the following samples: Method: TO-15

Batch CP8399 cleaned 04/04/16: JC19977-1(A356)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.031	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.020	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.020	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.023	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.16	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.048	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.055	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.020	ppbv		ND	0.72	ug/m3
80-62-6	Methylmethacrylate	ND	0.20	0.040	ppbv		ND	0.82	ug/m3
115-07-1	Propylene	ND	0.50	0.032	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.015	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.024	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.016	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.039	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.056	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.015	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.045	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.023	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.053	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.023	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.045	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.012	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.022	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.021	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.054	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.068	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.051	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.051	ppbv		ND	0.87	ug/m3

4.4.1
4

Summa Cleaning Certification

Job Number: JC19977
Account: PROVLABR Providence Engineering
Project: Valero-CAMS, Baton Rouge, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W700-SCC	5W17567.D	1	04/07/16	TCH	n/a	n/a	V5W700

The QC reported here (Summa A1018) applies to the following samples: Method: TO-15

Batch CP8399 cleaned 04/04/16: JC19977-1(A356)

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	93% 65-128%

4.4.1
4

Instrument Performance Check (BFB)

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample: V3W2026-BFB	Injection Date: 05/02/16
Lab File ID: 3W53730.D	Injection Time: 21:35
Instrument ID: GCMS3W	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	8.0 - 40.0% of mass 95	18725	18.5	Pass
75	30.0 - 66.0% of mass 95	46690	46.2	Pass
95	Base peak, 100% relative abundance	100970	100.0	Pass
96	5.0 - 9.0% of mass 95	6804	6.74	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	76482	75.7	Pass
175	4.0 - 9.01% of mass 174	5957	5.90 (7.79) ^a	Pass
176	93.0 - 101.0% of mass 174	74208	73.5 (97.0) ^a	Pass
177	5.0 - 9.0% of mass 176	4946	4.90 (6.67) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3W2026-ICC2026	3W53731.D	05/02/16	22:16	00:41	Initial cal 10
V3W2026-IC2026	3W53732.D	05/02/16	22:57	01:22	Initial cal 5
V3W2026-IC2026	3W53733.D	05/02/16	23:38	02:03	Initial cal 0.5
V3W2026-IC2026	3W53734.D	05/03/16	00:19	02:44	Initial cal 0.2
ZZZZZZ	3W53734.D	05/03/16	00:19	02:44	(unrelated sample)
V3W2026-IC2026	3W53735.D	05/03/16	01:00	03:25	Initial cal 20
V3W2026-IC2026	3W53736.D	05/03/16	01:41	04:06	Initial cal 15
V3W2026-IC2026	3W53738.D	05/03/16	03:03	05:28	Initial cal 0.1
ZZZZZZ	3W53738.D	05/03/16	03:03	05:28	(unrelated sample)
ZZZZZZ	3W53739.D	05/03/16	03:43	06:08	(unrelated sample)
V3W2026-IC2026	3W53739.D	05/03/16	03:43	06:08	Initial cal 0.04
V3W2026-IC2026	3W53740.D	05/03/16	04:23	06:48	Initial cal 30
V3W2026-IC2026	3W53742.D	05/03/16	05:46	08:11	Initial cal 40
V3W2026-ICV2026	3W53744.D	05/03/16	07:07	09:32	Initial cal verification 10

Instrument Performance Check (BFB)

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample:	V3W2033-BFB	Injection Date:	05/11/16
Lab File ID:	3W53876.D	Injection Time:	08:51
Instrument ID:	GCMS3W		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	8.0 - 40.0% of mass 95	9643	16.6	Pass
75	30.0 - 66.0% of mass 95	25600	44.1	Pass
95	Base peak, 100% relative abundance	58104	100.0	Pass
96	5.0 - 9.0% of mass 95	4081	7.02	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	45832	78.9	Pass
175	4.0 - 9.01% of mass 174	3406	5.86 (7.43) ^a	Pass
176	93.0 - 101.0% of mass 174	44365	76.4 (96.8) ^a	Pass
177	5.0 - 9.0% of mass 176	2941	5.06 (6.63) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3W53876.D	05/11/16	08:51	00:00	(unrelated sample)
V3W2033-CC2026	3W53877.D	05/11/16	09:34	00:43	Continuing cal 10
V3W2033-BS	3W53878.D	05/11/16	10:18	01:27	Blank Spike
V3W2033-BSD	3W53879.D	05/11/16	11:11	02:20	Blank Spike Duplicate
V3W2033-MB	3W53882.D	05/11/16	13:37	04:46	Method Blank
V3W2033-SCC	3W53882A.D	05/11/16	13:37	04:46	Summa Cleaning Certification
ZZZZZZ	3W53883.D	05/11/16	14:54	06:03	(unrelated sample)
ZZZZZZ	3W53884.D	05/11/16	15:36	06:45	(unrelated sample)
JC19993-1	3W53885.D	05/11/16	16:18	07:27	(used for QC only; not part of job JC19977)
JC19993-1DUP	3W53886.D	05/11/16	17:01	08:10	Duplicate
ZZZZZZ	3W53887.D	05/11/16	17:44	08:53	(unrelated sample)
ZZZZZZ	3W53888.D	05/11/16	18:28	09:37	(unrelated sample)
ZZZZZZ	3W53889.D	05/11/16	19:11	10:20	(unrelated sample)
V3W2033-SCC	3W53890.D	05/11/16	19:53	11:02	Summa Cleaning Certification
JC19977-1	3W53891.D	05/11/16	20:36	11:45	CAMS 286
ZZZZZZ	3W53892.D	05/11/16	21:17	12:26	(unrelated sample)
ZZZZZZ	3W53893.D	05/11/16	21:58	13:07	(unrelated sample)
V3W2033-SCC	3W53894.D	05/11/16	22:40	13:49	Summa Cleaning Certification
ZZZZZZ	3W53900.D	05/12/16	02:56	18:05	(unrelated sample)
ZZZZZZ	3W53901.D	05/12/16	03:38	18:47	(unrelated sample)
V3W2033-SCC	3W53902.D	05/12/16	04:21	19:30	Summa Cleaning Certification

Instrument Performance Check (BFB)

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample: V5W693-BFB	Injection Date: 03/29/16
Lab File ID: 5W17371.D	Injection Time: 19:32
Instrument ID: GCMS5W	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	8.0 - 40.0% of mass 95	25594	15.4	Pass
75	30.0 - 66.0% of mass 95	72960	43.8	Pass
95	Base peak, 100% relative abundance	166634	100.0	Pass
96	5.0 - 9.0% of mass 95	11042	6.63	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	159466	95.7	Pass
175	4.0 - 9.01% of mass 174	11879	7.13 (7.45) ^a	Pass
176	93.0 - 101.0% of mass 174	153920	92.4 (96.5) ^a	Pass
177	5.0 - 9.0% of mass 176	10360	6.22 (6.73) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V5W693-ICC693	5W17372.D	03/29/16	20:14	00:42	Initial cal 10
V5W693-IC693	5W17373.D	03/29/16	20:56	01:24	Initial cal 5
V5W693-IC693	5W17374.D	03/29/16	21:39	02:07	Initial cal 0.5
V5W693-IC693	5W17375.D	03/29/16	22:22	02:50	Initial cal 0.2
V5W693-IC693	5W17376.D	03/29/16	23:06	03:34	Initial cal 20
V5W693-IC693	5W17378.D	03/30/16	00:31	04:59	Initial cal 0.1
V5W693-IC693	5W17379.D	03/30/16	01:13	05:41	Initial cal 0.04
V5W693-IC693	5W17380.D	03/30/16	01:59	06:27	Initial cal 30
V5W693-IC693	5W17382.D	03/30/16	03:28	07:56	Initial cal 40
V5W693-ICV693	5W17384.D	03/30/16	04:52	09:20	Initial cal verification 10

Instrument Performance Check (BFB)

Job Number: JC19977
 Account: PROVLABR Providence Engineering
 Project: Valero-CAMS, Baton Rouge, LA

Sample: V5W700-BFB	Injection Date: 04/07/16
Lab File ID: 5W17551.D	Injection Time: 07:55
Instrument ID: GCMS5W	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	8.0 - 40.0% of mass 95	31245	15.8	Pass
75	30.0 - 66.0% of mass 95	86733	43.8	Pass
95	Base peak, 100% relative abundance	197866	100.0	Pass
96	5.0 - 9.0% of mass 95	13103	6.62	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	183978	93.0	Pass
175	4.0 - 9.01% of mass 174	13519	6.83 (7.35) ^a	Pass
176	93.0 - 101.0% of mass 174	178410	90.2 (97.0) ^a	Pass
177	5.0 - 9.0% of mass 176	11801	5.96 (6.61) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V5W700-CC693	5W17552.D	04/07/16	08:40	00:45	Continuing cal 10
V5W700-BS	5W17553.D	04/07/16	09:23	01:28	Blank Spike
V5W700-BSD	5W17554.D	04/07/16	10:06	02:11	Blank Spike Duplicate
V5W700-SCC	5W17556A.D	04/07/16	11:47	03:52	Summa Cleaning Certification
V5W700-MB	5W17556.D	04/07/16	11:47	03:52	Method Blank
ZZZZZZ	5W17557.D	04/07/16	13:02	05:07	(unrelated sample)
ZZZZZZ	5W17558.D	04/07/16	13:50	05:55	(unrelated sample)
ZZZZZZ	5W17559.D	04/07/16	14:30	06:35	(unrelated sample)
ZZZZZZ	5W17560.D	04/07/16	15:12	07:17	(unrelated sample)
ZZZZZZ	5W17561.D	04/07/16	15:55	08:00	(unrelated sample)
JC17438-12	5W17562.D	04/07/16	16:41	08:46	(used for QC only; not part of job JC19977)
JC17438-12DUP	5W17563.D	04/07/16	17:29	09:34	Duplicate
ZZZZZZ	5W17564.D	04/07/16	18:10	10:15	(unrelated sample)
ZZZZZZ	5W17565.D	04/07/16	18:54	10:59	(unrelated sample)
ZZZZZZ	5W17566.D	04/07/16	19:37	11:42	(unrelated sample)
V5W700-SCC	5W17567.D	04/07/16	20:24	12:29	Summa Cleaning Certification
ZZZZZZ	5W17568.D	04/07/16	21:11	13:16	(unrelated sample)
ZZZZZZ	5W17569.D	04/07/16	21:59	14:04	(unrelated sample)
ZZZZZZ	5W17570.D	04/07/16	22:46	14:51	(unrelated sample)
ZZZZZZ	5W17571.D	04/07/16	23:32	15:37	(unrelated sample)
ZZZZZZ	5W17572.D	04/08/16	00:21	16:26	(unrelated sample)
ZZZZZZ	5W17573.D	04/08/16	01:08	17:13	(unrelated sample)
ZZZZZZ	5W17574.D	04/08/16	01:56	18:01	(unrelated sample)
ZZZZZZ	5W17575.D	04/08/16	02:43	18:48	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC19977

Account: PROVLABR Providence Engineering

Project: Valero-CAMS, Baton Rouge, LA

Sample:	V5W700-BFB	Injection Date:	04/07/16
Lab File ID:	5W17551.D	Injection Time:	07:55
Instrument ID:	GCMS5W		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
<i>ZZZZZZ</i>	5W17576.D	04/08/16	03:31	19:36	(unrelated sample)
<i>ZZZZZZ</i>	5W17577.D	04/08/16	04:22	20:27	(unrelated sample)
<i>ZZZZZZ</i>	5W17578.D	04/08/16	05:07	21:12	(unrelated sample)
<i>ZZZZZZ</i>	5W17579.D	04/08/16	05:49	21:54	(unrelated sample)
<i>ZZZZZZ</i>	5W17580.D	04/08/16	06:31	22:36	(unrelated sample)

4.5.4
4

Volatile Surrogate Recovery Summary

Job Number: JC19977
Account: PROVLABR Providence Engineering
Project: Valero-CAMS, Baton Rouge, LA

Method: TO-15	Matrix: AIR
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC19977-1	3W53891.D	80
JC19993-1DUP	3W53886.D	84
V3W2033-BS	3W53878.D	91
V3W2033-BSD	3W53879.D	88
V3W2033-MB	3W53882.D	84
V5W700-SCC	5W17567.D	93
V5W700-BS	5W17553.D	95
V5W700-BSD	5W17554.D	96
V5W700-MB	5W17556.D	96

Surrogate Compounds	Recovery Limits
S1 = 4-Bromofluorobenzene	65-128%

4.6.1
4