Grace Consulting, Inc.
Emissions Testing Services

FORMALDEHYDE COMPLIANCE TEST REPORT

DTE MARIETTA, LLC

STAC
STACK TESTING ACCREDITATION COUNCIL

ACCREDITED
TO ASTM D7036 ONLY
CERT #4675.01

Marietta Cogen Facility
17554 State Route 7
Marietta, OH 45750

P001

Job # 22-1074

Test Date: 08-16-22
Report Date: 09-12-22

Grace Consulting, Inc.
Emissions Testing Services

September 12, 2022

I, Nathan Vineyard, hereby certify that the data obtained for DTE Marietta, LLC at the Marietta Cogen Facility on P001 is in accordance with procedures set forth by the USEPA. This report
accurately represents the data obtained from the testing

Nathan Vineyard, QSTI
Crew Chief
nathanvineyard@gcitest.com

I, Stacy Sword, hereby certify that the report was prepared under my direction in conformance with the requirements of ASTM D7036. To the best of my knowledge the data and results are complete and accurate.

Stacy Sword, QSTI
Office Manager
stacysword@gcitest.com

I, Carl Vineyard, hereby certify that I have reviewed this report and to the best of my knowledge, the data presented herein is complete and accurate. GCI operated in conformance with the requirements of the ASTM D7036 during the test project.

Carl Vineyard, P.E., QSTI
Test Engineer
carlvineyard@gcitest.com

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INTRODUCTION

INTRODUCTION

This report presents the results of the formaldehyde emissions test performed for DTE Marietta, LLC at the Marietta Cogen Facility on P001.

The purpose of the tests was to determine the formaldehyde emissions of the unit for compliance in accordance with the recently enacted CT MACT Rule per 40 CFR Part 63, Subpart YYYY. The results can be found in the Summary of Test Results section of this report.

The testing was performed by Grace Consulting, Inc., located at 684 Tower Rd., Plainfield, IN 46168. Present during the testing from Grace Consulting, Inc. were Nathan Vineyard Jesse Hall and Scott Klipa from DTE.

The tests were performed on August 16, 2022. The testing was completed in accordance with USEPA test methods as published in the Federal Register.

The sampling and analytical procedures can be found in the Methods and Discussion section of this report. The raw field data and the equations used to determine the final results are presented in the Appendix section.

SUMMARY OF TEST RESULTS

SUMMARY OF TEST RESULTS

The following presents the results of the emissions test for DTE Marietta, LLC at Marietta Cogen Facility on P001.

Method 320 - Formaldehyde

Run #	Test Date	CH_2O ppm wet	CH_2O ppm dry	CH_2O ppbvd	CH_2O ppbvd @ 15% O2	O2%
1	8/16/2022	0.083	0.09	90	85.6	14.7
2	8/16/2022	0.078	0.09	90	84.3	14.6
3	8/16/2022	0.090	0.10	100	93.7	14.6
Avg.		**0.084**	**0.09**	**93**	**87.9**	**14.6**

Limit: 91 ppbvd @ 15% O2

The complete results can be found on the computer printouts following.

Grace Consulting, Inc.

Sampling System Bias Check and Measured Value Correction

DTE Marietta, LLC
Marietta - Unit P001

Date: 8/16/2022
Pollutant: CO2
Monitor Span: 21.38

Run Number	Average Measured Percent	Initial Zero Gas Bias	Final Zero Gas Bias	Zero Gas Drift	Initial Upscale Gas Bias	Final Upscale Gas Bias	Upscale Gas Drift	Calibration Gas	Corrected Percent, Dry Basis
1	3.60	0.11	0.14	0.14	11.31	11.18	-0.61	11.39	3.60
2	4.10	0.14	0.04	-0.47	11.18	11.33	0.70	11.39	4.10
3	4.00	0.04	0.00	-0.19	11.33	11.21	-0.56	11.39	4.00

Cgas = (Cavg - Co) * Cma / (Cm - Co) Eq. 6C-1

where: Cgas = Effluent gas concentration, dry basis, percent
Cavg = Average gas concentration indicated by gas analyzer, dry basis, percent
Co = Average of initial and final system calibration bias check responses for the zero gas, percent
Cm = Average of initial and final system calibration bias check responses for the upscale calibration gas, percent
Cma = Actual concentration of the upscale calibration gas, percent

Grace Consulting, Inc.

Sampling System Bias Check and Measured Value Correction

DTE Marietta, LLC
Marietta - Unit P001

Date: 8/16/2022
Pollutant: O2
Monitor Span: 22.2

Run Number	Average Measured Percent	Initial Zero Gas Bias	Final Zero Gas Bias	Zero Gas Drift	Initial Upscale Gas Bias	Final Upscale Gas Bias	Upscale Gas Drift	Calibration Gas	Corrected Percent, Dry Basis
1	14.70	0.08	0.09	0.05	11.21	10.91	-1.35	11.01	14.70
2	14.70	0.09	0.11	0.09	10.91	11.25	1.53	11.01	14.60
3	14.70	0.11	0.09	-0.09	11.25	10.93	-1.44	11.01	14.60

Cgas = (Cavg - Co) * Cma / (Cm - Co) Eq. 6C-1

where: Cgas = Effluent gas concentration, dry basis, percent
Cavg = Average gas concentration indicated by gas analyzer, dry basis, percent
Co = Average of initial and final system calibration bias check responses for the zero gas, percent
Cm = Average of initial and final system calibration bias check responses for the upscale calibration gas, percent
Cma = Actual concentration of the upscale calibration gas, percent

Grace Consulting, Inc.
Moisture Calculations (Runs 1 - 3)

Client: DTE Marietta, LLC
Site: Marietta - Unit P001
Date: 08/16/22
Unit Number: P001

Run:	1	2	3
Total Impinger Content:	89.00	95.00	85.00
Volume Metered:	44.260	44.680	44.570
Meter Temperature:	83.00	87.00	91.00
Delta H:	1.900	1.900	1.900
Barometric Pressure:	29.98	29.98	29.98
Meter Correction Factor:	0.985	0.985	0.985
Volume Measured (DSCF):	42.66	42.75	42.33
Water Volume (SCF):	4.20	4.48	4.01
% Moisture in Flue Gas:	9.00	9.50	8.60

METHODS AND DISCUSSION

Test Methods used at DTE Marietta, LLC – Marietta Cogen Facility on P001

Method 3A

CO_2 and O_2 concentrations were determined with 3 Method 3A test runs. GCI used a monitor range of 0-21.38% for CO_2 and 0-22.20% for O_2.

Method 4

One moisture test was performed for each run of Method 320.

Method 320

GCI performed 3 Method 320 test runs to determine concentrations of gaseous Formaldehyde. Extractive Fourier transform infrared (FTIR) spectrometry was performed to quantify the concentration levels of Formaldehyde emissions. The USEPA test procedures were followed as written.

Discussion

Environmental conditions did not adversely affect the test results.

Testing was completed by following GCI's Internal Site-Specific Test Plan # 22-1074 with no deviations.

APPENDIX

SAMPLE CALCULATIONS

DTE Marietta, LLC
Marietta Cogen Facility
P001
8-16-22
Run 1

METHOD 320 (Formaldehyde) CALCULATION

$$\text{ppm dry} = \frac{ppm\ wet}{100 - \%\ moisture} \text{ x } 100$$

$$0.09 = \frac{0.083}{100 - 9.0} \text{ x } 100$$

$$\text{ppbvd} = \text{ppm dry x } 1000$$

$$90 = 0.9 \text{ x } 1000$$

$$\text{CH2O ppbvd at 15\% } O_2 = \text{ppbvd} \times \frac{(20.9 - 15)}{(20.9 - \%O2)}$$

$$85.6 = 90 \times \frac{(20.9 - 15)}{(20.9 - 14.7)}$$

*Sample calculations use rounded numbers and computer printouts carry all decimal places.

FORMALDEHYDE DATA - FTIR

Run 1

Spectrum	Date	Time	Formaldehyde (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
DTE_8_16_2022_1033.LAB	8/16/2022	7:50	0.071	192.4	0.993
DTE_8_16_2022_1034.LAB	8/16/2022	7:51	0.154	192.2	0.995
DTE_8_16_2022_1035.LAB	8/16/2022	7:52	0.060	192.4	0.995
DTE_8_16_2022_1036.LAB	8/16/2022	7:53	0.094	192.4	0.995
DTE_8_16_2022_1037.LAB	8/16/2022	7:54	0.053	192.3	0.995
DTE_8_16_2022_1038.LAB	8/16/2022	7:55	0.100	192.4	0.995
DTE_8_16_2022_1039.LAB	8/16/2022	7:56	0.107	192.4	0.995
DTE_8_16_2022_1040.LAB	8/16/2022	7:57	0.080	192.5	0.995
DTE_8_16_2022_1041.LAB	8/16/2022	7:58	0.083	192.5	0.996
DTE_8_16_2022_1042.LAB	8/16/2022	7:59	0.144	192.4	0.997
DTE_8_16_2022_1043.LAB	8/16/2022	8:00	0.029	192.5	0.996
DTE_8_16_2022_1044.LAB	8/16/2022	8:01	0.015	192.4	0.996
DTE_8_16_2022_1045.LAB	8/16/2022	8:02	0.069	192.5	0.997
DTE_8_16_2022_1046.LAB	8/16/2022	8:03	0.122	192.5	0.996
DTE_8_16_2022_1047.LAB	8/16/2022	8:04	0.104	192.4	0.997
DTE_8_16_2022_1048.LAB	8/16/2022	8:05	0.048	192.4	0.997
DTE_8_16_2022_1049.LAB	8/16/2022	8:06	0.057	192.5	0.998
DTE_8_16_2022_1050.LAB	8/16/2022	8:07	0.103	192.4	0.998
DTE_8_16_2022_1051.LAB	8/16/2022	8:08	0.133	192.5	0.998
DTE_8_16_2022_1052.LAB	8/16/2022	8:09	0.117	192.4	0.998
DTE_8_16_2022_1053.LAB	8/16/2022	8:11	0.144	192.3	0.998
DTE_8_16_2022_1054.LAB	8/16/2022	8:12	0.063	192.5	0.998
DTE_8_16_2022_1055.LAB	8/16/2022	8:13	0.005	192.4	0.998
DTE_8_16_2022_1056.LAB	8/16/2022	8:14	0.000	192.5	0.998
DTE_8_16_2022_1057.LAB	8/16/2022	8:15	0.048	192.5	0.999
DTE_8_16_2022_1058.LAB	8/16/2022	8:16	0.100	192.4	0.999
DTE_8_16_2022_1059.LAB	8/16/2022	8:17	0.077	192.5	0.999
DTE_8_16_2022_1060.LAB	8/16/2022	8:18	0.062	192.4	1.000
DTE_8_16_2022_1061.LAB	8/16/2022	8:19	0.158	192.3	0.999
DTE_8_16_2022_1062.LAB	8/16/2022	8:20	0.120	192.5	0.999
DTE_8_16_2022_1063.LAB	8/16/2022	8:21	0.055	192.4	0.999
DTE_8_16_2022_1064.LAB	8/16/2022	8:22	0.034	192.3	1.000
DTE_8_16_2022_1065.LAB	8/16/2022	8:23	0.015	192.5	1.001
DTE_8_16_2022_1066.LAB	8/16/2022	8:24	0.000	192.4	1.000
DTE_8_16_2022_1067.LAB	8/16/2022	8:25	0.070	192.3	1.001
DTE_8_16_2022_1068.LAB	8/16/2022	8:26	0.105	192.5	1.001
DTE_8_16_2022_1069.LAB	8/16/2022	8:27	0.070	192.3	1.001
DTE_8_16_2022_1070.LAB	8/16/2022	8:28	0.088	192.4	1.001
DTE_8_16_2022_1071.LAB	8/16/2022	8:29	0.073	192.5	1.002
DTE_8_16_2022_1072.LAB	8/16/2022	8:30	0.142	192.4	1.002
DTE_8_16_2022_1073.LAB	8/16/2022	8:31	0.140	192.5	1.002
DTE_8_16_2022_1074.LAB	8/16/2022	8:33	0.160	192.4	1.003
DTE_8_16_2022_1075.LAB	8/16/2022	8:34	0.107	192.3	1.003
DTE_8_16_2022_1076.LAB	8/16/2022	8:35	0.046	192.3	1.003
DTE_8_16_2022_1077.LAB	8/16/2022	8:36	0.109	192.4	1.003
DTE_8_16_2022_1078.LAB	8/16/2022	8:37	0.076	192.3	1.003
DTE_8_16_2022_1079.LAB	8/16/2022	8:38	0.066	192.5	1.003
DTE_8_16_2022_1080.LAB	8/16/2022	8:39	0.000	192.4	1.004
DTE_8_16_2022_1081.LAB	8/16/2022	8:40	0.075	192.4	1.003
DTE_8_16_2022_1082.LAB	8/16/2022	8:41	0.033	192.5	1.003

DTE_8_16_2022_1083.LAB	8/16/2022	8:42	0.099	192.2	1.003
DTE_8_16_2022_1084.LAB	8/16/2022	8:43	0.042	192.4	1.003
DTE_8_16_2022_1085.LAB	8/16/2022	8:44	0.107	192.4	1.003
DTE_8_16_2022_1086.LAB	8/16/2022	8:45	0.122	192.3	1.003
DTE_8_16_2022_1087.LAB	8/16/2022	8:46	0.168	192.4	1.004
DTE_8_16_2022_1088.LAB	8/16/2022	8:47	0.088	192.4	1.003
DTE_8_16_2022_1089.LAB	8/16/2022	8:48	0.054	192.4	1.003
DTE_8_16_2022_1090.LAB	8/16/2022	8:49	0.081	192.5	1.003
DTE_8_16_2022_1091.LAB	8/16/2022	8:50	0.179	192.4	1.003

Run 1	**Minimum**	**0.000**
8/16/22	**Maximum**	**0.179**
07:50 - 08:50	**Average**	**0.083**

Run 2

Spectrum	Date	Time	Formaldehyde (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
DTE_8_16_2022_1135.LAB	8/16/2022	9:15	0.071	192.5	0.996
DTE_8_16_2022_1136.LAB	8/16/2022	9:17	0.130	192.5	0.993
DTE_8_16_2022_1137.LAB	8/16/2022	9:18	0.073	192.4	0.992
DTE_8_16_2022_1138.LAB	8/16/2022	9:19	0.143	192.5	0.993
DTE_8_16_2022_1139.LAB	8/16/2022	9:20	0.099	192.5	0.992
DTE_8_16_2022_1140.LAB	8/16/2022	9:21	0.060	192.5	0.992
DTE_8_16_2022_1141.LAB	8/16/2022	9:22	0.081	192.5	0.993
DTE_8_16_2022_1142.LAB	8/16/2022	9:23	0.050	192.4	0.992
DTE_8_16_2022_1143.LAB	8/16/2022	9:24	0.095	192.4	0.993
DTE_8_16_2022_1144.LAB	8/16/2022	9:25	0.024	192.4	0.993
DTE_8_16_2022_1145.LAB	8/16/2022	9:26	0.070	192.2	0.992
DTE_8_16_2022_1146.LAB	8/16/2022	9:27	0.127	192.2	0.993
DTE_8_16_2022_1147.LAB	8/16/2022	9:28	0.000	192.2	0.992
DTE_8_16_2022_1148.LAB	8/16/2022	9:29	0.096	192.2	0.993
DTE_8_16_2022_1149.LAB	8/16/2022	9:30	0.165	192.4	0.993
DTE_8_16_2022_1150.LAB	8/16/2022	9:31	0.060	192.3	0.993
DTE_8_16_2022_1151.LAB	8/16/2022	9:32	0.113	192.3	0.992
DTE_8_16_2022_1152.LAB	8/16/2022	9:33	0.095	192.4	0.993
DTE_8_16_2022_1153.LAB	8/16/2022	9:34	0.064	192.2	0.993
DTE_8_16_2022_1154.LAB	8/16/2022	9:35	0.075	192.3	0.992
DTE_8_16_2022_1155.LAB	8/16/2022	9:36	0.107	192.2	0.993
DTE_8_16_2022_1156.LAB	8/16/2022	9:37	0.055	192.2	0.993
DTE_8_16_2022_1157.LAB	8/16/2022	9:38	0.000	192.4	0.993
DTE_8_16_2022_1158.LAB	8/16/2022	9:40	0.081	192.2	0.993
DTE_8_16_2022_1159.LAB	8/16/2022	9:41	0.048	192.3	0.993
DTE_8_16_2022_1160.LAB	8/16/2022	9:42	0.037	192.3	0.993
DTE_8_16_2022_1161.LAB	8/16/2022	9:43	0.095	192.3	0.993
DTE_8_16_2022_1162.LAB	8/16/2022	9:44	0.090	192.4	0.993
DTE_8_16_2022_1163.LAB	8/16/2022	9:45	0.054	192.3	0.993
DTE_8_16_2022_1164.LAB	8/16/2022	9:46	0.055	192.2	0.993
DTE_8_16_2022_1165.LAB	8/16/2022	9:47	0.097	192.3	0.993
DTE_8_16_2022_1166.LAB	8/16/2022	9:48	0.080	192.2	0.993
DTE_8_16_2022_1167.LAB	8/16/2022	9:49	0.105	192.4	0.993
DTE_8_16_2022_1168.LAB	8/16/2022	9:50	0.083	192.3	0.993
DTE_8_16_2022_1169.LAB	8/16/2022	9:51	0.112	192.4	0.993
DTE_8_16_2022_1170.LAB	8/16/2022	9:52	0.066	192.5	0.993
DTE_8_16_2022_1171.LAB	8/16/2022	9:53	0.055	192.3	0.993
DTE_8_16_2022_1172.LAB	8/16/2022	9:54	0.056	192.5	0.993
DTE_8_16_2022_1173.LAB	8/16/2022	9:55	0.135	192.4	0.993
DTE_8_16_2022_1174.LAB	8/16/2022	9:56	0.003	192.4	0.993
DTE_8_16_2022_1175.LAB	8/16/2022	9:57	0.062	192.5	0.993
DTE_8_16_2022_1176.LAB	8/16/2022	9:58	0.078	192.3	0.993
DTE_8_16_2022_1177.LAB	8/16/2022	9:59	0.111	192.5	0.993
DTE_8_16_2022_1178.LAB	8/16/2022	10:00	0.076	192.4	0.993
DTE_8_16_2022_1179.LAB	8/16/2022	10:02	0.094	192.3	0.993
DTE_8_16_2022_1180.LAB	8/16/2022	10:03	0.035	192.4	0.993
DTE_8_16_2022_1181.LAB	8/16/2022	10:04	0.045	192.4	0.993
DTE_8_16_2022_1182.LAB	8/16/2022	10:05	0.098	192.4	0.993
DTE_8_16_2022_1183.LAB	8/16/2022	10:06	0.157	192.4	0.993
DTE_8_16_2022_1184.LAB	8/16/2022	10:07	0.134	192.3	0.993

DTE_8_16_2022_1185.LAB	8/16/2022	10:08	0.097	192.4	0.993
DTE_8_16_2022_1186.LAB	8/16/2022	10:09	0.024	192.3	0.993
DTE_8_16_2022_1187.LAB	8/16/2022	10:10	0.028	192.3	0.993
DTE_8_16_2022_1188.LAB	8/16/2022	10:11	0.067	192.5	0.993
DTE_8_16_2022_1189.LAB	8/16/2022	10:12	0.066	192.3	0.993
DTE_8_16_2022_1190.LAB	8/16/2022	10:13	0.082	192.4	0.993
DTE_8_16_2022_1191.LAB	8/16/2022	10:14	0.061	192.4	0.993
DTE_8_16_2022_1192.LAB	8/16/2022	10:15	0.085	192.3	0.993

Run 2	**Minimum**	**0.000**
8/16/22	**Maximum**	**0.165**
09:15 - 10:15	**Average**	**0.078**

Run 3

Spectrum	Date	Time	Formaldehyde (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
DTE_8_16_2022_1240.LAB	8/16/2022	10:40	0.121	192.5	0.993
DTE_8_16_2022_1241.LAB	8/16/2022	10:41	0.052	192.4	0.993
DTE_8_16_2022_1242.LAB	8/16/2022	10:42	0.112	192.4	0.993
DTE_8_16_2022_1243.LAB	8/16/2022	10:43	0.145	192.5	0.993
DTE_8_16_2022_1244.LAB	8/16/2022	10:44	0.144	192.3	0.993
DTE_8_16_2022_1245.LAB	8/16/2022	10:45	0.086	192.4	0.993
DTE_8_16_2022_1246.LAB	8/16/2022	10:46	0.000	192.4	0.993
DTE_8_16_2022_1247.LAB	8/16/2022	10:47	0.074	192.4	0.993
DTE_8_16_2022_1248.LAB	8/16/2022	10:48	0.018	192.5	0.993
DTE_8_16_2022_1249.LAB	8/16/2022	10:49	0.125	192.4	0.993
DTE_8_16_2022_1250.LAB	8/16/2022	10:50	0.017	192.5	0.993
DTE_8_16_2022_1251.LAB	8/16/2022	10:52	0.082	192.5	0.993
DTE_8_16_2022_1252.LAB	8/16/2022	10:53	0.116	192.4	0.993
DTE_8_16_2022_1253.LAB	8/16/2022	10:54	0.119	192.5	0.993
DTE_8_16_2022_1254.LAB	8/16/2022	10:55	0.135	192.4	0.993
DTE_8_16_2022_1255.LAB	8/16/2022	10:56	0.131	192.4	0.993
DTE_8_16_2022_1256.LAB	8/16/2022	10:57	0.110	192.5	0.993
DTE_8_16_2022_1257.LAB	8/16/2022	10:58	0.056	192.4	0.993
DTE_8_16_2022_1258.LAB	8/16/2022	10:59	0.078	192.4	0.993
DTE_8_16_2022_1259.LAB	8/16/2022	11:00	0.006	192.4	0.993
DTE_8_16_2022_1260.LAB	8/16/2022	11:01	0.074	192.4	0.993
DTE_8_16_2022_1261.LAB	8/16/2022	11:02	0.053	192.4	0.993
DTE_8_16_2022_1262.LAB	8/16/2022	11:03	0.045	192.3	0.993
DTE_8_16_2022_1263.LAB	8/16/2022	11:04	0.073	192.3	0.993
DTE_8_16_2022_1264.LAB	8/16/2022	11:05	0.031	192.4	0.993
DTE_8_16_2022_1265.LAB	8/16/2022	11:06	0.142	192.3	0.993
DTE_8_16_2022_1266.LAB	8/16/2022	11:07	0.059	192.5	0.993
DTE_8_16_2022_1267.LAB	8/16/2022	11:08	0.116	192.4	0.993
DTE_8_16_2022_1268.LAB	8/16/2022	11:09	0.036	192.3	0.993
DTE_8_16_2022_1269.LAB	8/16/2022	11:10	0.106	192.4	0.993
DTE_8_16_2022_1270.LAB	8/16/2022	11:11	0.070	192.3	0.993
DTE_8_16_2022_1271.LAB	8/16/2022	11:12	0.115	192.3	0.993
DTE_8_16_2022_1272.LAB	8/16/2022	11:13	0.071	192.4	0.993
DTE_8_16_2022_1273.LAB	8/16/2022	11:15	0.073	192.3	0.993
DTE_8_16_2022_1274.LAB	8/16/2022	11:16	0.106	192.5	0.993
DTE_8_16_2022_1275.LAB	8/16/2022	11:17	0.015	192.4	0.993
DTE_8_16_2022_1276.LAB	8/16/2022	11:18	0.091	192.3	0.993
DTE_8_16_2022_1277.LAB	8/16/2022	11:19	0.102	192.4	0.993
DTE_8_16_2022_1278.LAB	8/16/2022	11:20	0.107	192.2	0.993
DTE_8_16_2022_1279.LAB	8/16/2022	11:21	0.069	192.5	0.993
DTE_8_16_2022_1280.LAB	8/16/2022	11:22	0.106	192.4	0.993
DTE_8_16_2022_1281.LAB	8/16/2022	11:23	0.067	192.3	0.993
DTE_8_16_2022_1282.LAB	8/16/2022	11:24	0.126	192.3	0.993
DTE_8_16_2022_1283.LAB	8/16/2022	11:25	0.075	192.2	0.993
DTE_8_16_2022_1284.LAB	8/16/2022	11:26	0.096	192.4	0.993
DTE_8_16_2022_1285.LAB	8/16/2022	11:27	0.087	192.5	0.993
DTE_8_16_2022_1286.LAB	8/16/2022	11:28	0.127	192.3	0.993
DTE_8_16_2022_1287.LAB	8/16/2022	11:29	0.094	192.4	0.993
DTE_8_16_2022_1288.LAB	8/16/2022	11:30	0.154	192.3	0.993
DTE_8_16_2022_1289.LAB	8/16/2022	11:31	0.020	192.3	0.993

DTE_8_16_2022_1290.LAB	8/16/2022	11:32	0.126	192.5	0.993
DTE_8_16_2022_1291.LAB	8/16/2022	11:33	0.095	192.4	0.993
DTE_8_16_2022_1292.LAB	8/16/2022	11:34	0.147	192.5	0.993
DTE_8_16_2022_1293.LAB	8/16/2022	11:35	0.146	192.4	0.993
DTE_8_16_2022_1294.LAB	8/16/2022	11:36	0.149	192.4	0.993
DTE_8_16_2022_1295.LAB	8/16/2022	11:38	0.114	192.4	0.993
DTE_8_16_2022_1296.LAB	8/16/2022	11:39	0.121	192.3	0.993
DTE_8_16_2022_1297.LAB	8/16/2022	11:40	0.072	192.3	0.993

Run 3	**Minimum**	**0.000**
8/16/22	**Maximum**	**0.154**
10:40-11:40	**Average**	**0.090**

Nitrogen Direct to FTIR

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)
DTE_8_16_2022_0007.LAB	8/16/2022	5:50:40	0.0	0.0	0.0	-0.40
DTE_8_16_2022_0008.LAB	8/16/2022	5:50:45	0.0	0.0	0.0	-0.10
DTE_8_16_2022_0009.LAB	8/16/2022	5:50:50	0.0	0.0	0.0	-0.10

CTS, 99.73ppm Ethylene Direct Purge

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
DTE_8_16_2022_0076.LAB	8/16/2022	5:57:45	0.095	0.0	0.0	99.20	99.6%
DTE_8_16_2022_0077.LAB	8/16/2022	5:57:50	0.096	0.0	0.0	99.20	99.6%
DTE_8_16_2022_0078.LAB	8/16/2022	5:57:55	0.000	0.0	0.0	99.70	100.1%
		Average:				**99.5**	

29.44 ppm CH2O / 5.15 ppm SF6 Direct Purge

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)
DTE_8_16_2022_0237.LAB	8/16/2022	6:10:55	23.7	0.0	4.9	-1.0
DTE_8_16_2022_0238.LAB	8/16/2022	6:11:00	23.8	0.0	4.9	-1.0
DTE_8_16_2022_0239.LAB	8/16/2022	6:11:05	23.7	0.0	4.9	-1.0
DTE_8_16_2022_0240.LAB	8/16/2022	6:11:10	23.9	0.0	4.9	-1.1
DTE_8_16_2022_0241.LAB	8/16/2022	6:11:15	23.7	0.0	4.9	-1.1
		Average:	**23.8**		**4.9**	

CTS, 99.73 ppm Ethylene Final Direct Purge

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
DTE_8_16_2022_1349.LAB	8/16/2022	11:56:15	0.077	0.0	0.0	97.8	98.2%
DTE_8_16_2022_1350.LAB	8/16/2022	11:56:20	0.000	0.0	0.0	98.2	98.6%
DTE_8_16_2022_1351.LAB	8/16/2022	11:56:25	0.000	0.0	0.0	98.9	99.3%

Final Nitrogen (Zero) Direct to FTIR

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
DTE_8_16_2022_1192.LAB	8/16/2022	10:15:36	0.000	7.9	0.0	0.2	0.2%
DTE_8_16_2022_1193.LAB	8/16/2022	10:16:38	0.000	7.9	0.0	0.1	0.1%
DTE_8_16_2022_1194.LAB	8/16/2022	10:17:41	0.000	7.9	0.0	0.2	0.2%

CTS, 99.73 ppm Ethylene System Purge and Response Time Test

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
DTE_8_16_2022_0958.LAB	8/16/2022	0:09:50	0.00	0.4	0.0	95.5	95.8%
DTE_8_16_2022_0959.LAB	8/16/2022	0:09:55	0.00	0.4	0.0	95.1	95.4%
DTE_8_16_2022_0960.LAB	8/16/2022	0:10:00	0.00	0.2	0.0	95.2	95.5%

Nitrogen (Zero) System Purge and Response Time Test

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
DTE_8_16_2022_0966.LAB	8/16/2022	0:10:30	0.0	0.3	0.0	1.6	1.6%
DTE_8_16_2022_0967.LAB	8/16/2022	0:10:35	0.0	0.3	0.0	0.6	0.6%
DTE_8_16_2022_0968.LAB	8/16/2022	0:10:40	0.0	0.4	0.0	0.0	0.0%
DTE_8_16_2022_0969.LAB	8/16/2022	0:10:45	0.0	0.4	0.0	0.0	0.0%

Unit CT Prior to Analyte Spike

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)
DTE_8_16_2022_1010.LAB	8/16/2022	7:25:35	0.117	8.5	-0.1	-1.1
DTE_8_16_2022_1011.LAB	8/16/2022	7:26:37	0.074	8.4	-0.1	-1.1
DTE_8_16_2022_1012.LAB	8/16/2022	7:27:40	0.000	8.4	-0.1	-1.1
		Native Avg.	**0.064**			

Unit CT Analyte Spike, Using 29.44 ppm CH2O / 5.15 ppm SF6

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor
DTE_8_16_2022_1022.LAB	8/16/2022	7:38:08	2.2	7.5	0.4	-0.900	0.085
DTE_8_16_2022_1023.LAB	8/16/2022	7:39:11	2.2	7.6	0.4	-1.000	0.083
DTE_8_16_2022_1024.LAB	8/16/2022	7:40:13	2.2	7.6	0.4	-0.900	0.085
DTE_8_16_2022_1025.LAB	8/16/2022	7:41:16	2.3	7.5	0.4	-0.800	0.083

CTS, 99.73 ppm Ethylene System Purge and Response Time Test Run 1

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
DTE_8_16_2022_1111.LAB	8/16/2022	9:06:09	0.20	0.2	0.0	97.9	98.3%
DTE_8_16_2022_1112.LAB	8/16/2022	9:06:14	0.08	0.2	0.0	98.3	98.7%
DTE_8_16_2022_1113.LAB	8/16/2022	9:06:19	0.11	0.2	0.0	97.8	98.2%
DTE_8_16_2022_1114.LAB	8/16/2022	9:06:24	0.00	0.2	0.0	98.0	98.4%
DTE_8_16_2022_1115.LAB	8/16/2022	9:06:29	0.00	0.2	0.0	98.5	98.9%
DTE_8_16_2022_1116.LAB	8/16/2022	9:06:34	0.00	0.2	0.0	98.2	98.6%

Unit 1 Prior to Analyte Spike Run 1

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)
DTE_8_16_2022_1088.LAB	8/16/2022	8:47:39	0.088	7.9	0.0	0.100
DTE_8_16_2022_1089.LAB	8/16/2022	8:48:41	0.054	7.9	0.0	0.10
DTE_8_16_2022_1090.LAB	8/16/2022	8:49:44	0.081	7.9	0.0	0.100
DTE_8_16_2022_1091.LAB	8/16/2022	8:50:47	0.179	7.9	0.0	0.100
		Native Avg.	**0.101**			

Unit CT Analyte Spike Run 1, Using 29.44 ppm CH2O / 5.15 ppm SF6

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)
DTE_8_16_2022_1101.LAB	8/16/2022	9:01:14	2.5	7.1	0.50	0.0
DTE_8_16_2022_1102.LAB	8/16/2022	9:02:17	2.1	7.3	0.42	0.0
DTE_8_16_2022_1103.LAB	8/16/2022	9:03:20	2.0	7.3	0.41	-0.1
DTE_8_16_2022_1104.LAB	8/16/2022	9:04:22	2.1	7.3	0.41	0.0

CTS, 99.73 ppm Ethylene System Purge and Response Time Test Run 2

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
DTE_8_16_2022_1215.LAB	8/16/2022	10:30:27	0.032	0.1	0.0	98.3	98.7%
DTE_8_16_2022_1216.LAB	8/16/2022	10:30:32	0.114	0.1	0.0	98.3	98.7%
DTE_8_16_2022_1217.LAB	8/16/2022	10:30:37	0.173	0.1	0.0	98.5	98.9%

DTE_8_16_2022_1218.LAB	8/16/2022	10:30:42	0.081	0.1	0.0	98.5	98.9%
DTE_8_16_2022_1219.LAB	8/16/2022	10:30:47	0.013	0.1	0.0	98.3	98.7%
DTE_8_16_2022_1220.LAB	8/16/2022	10:30:52	0.000	0.1	0.0	98.1	98.5%

Unit 1 Prior to Analyte Spike Run 2

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)
DTE_8_16_2022_1189.LAB	8/16/2022	10:12:27	0.066	7.9	0.0	0.100
DTE_8_16_2022_1190.LAB	8/16/2022	10:13:30	0.082	7.9	0.0	0.20
DTE_8_16_2022_1191.LAB	8/16/2022	10:14:33	0.061	7.9	0.0	0.200
DTE_8_16_2022_1192.LAB	8/16/2022	10:15:36	0.085	7.9	0.0	0.200
		Native Avg.	**0.074**			

Unit CT Analyte Spike Run 2, Using 0 ppm CH2O / 0 ppm SF6

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor
DTE_8_16_2022_1201.LAB	8/16/2022	10:25:00	2.1	7.2	0.40	0.3	0.078
DTE_8_16_2022_1202.LAB	8/16/2022	10:26:03	2.1	7.2	0.41	0.1	0.080
DTE_8_16_2022_1203.LAB	8/16/2022	10:27:06	2.2	7.2	0.40	0.1	0.078
DTE_8_16_2022_1204.LAB	8/16/2022	10:28:08	2.2	7.2	0.40	0.1	0.078

CTS, 99.73 ppm Ethylene System Purge and Response Time Test Run 3

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
DTE_8_16_2022_1317.LAB	8/16/2022	11:53:35	0.119	0.1	0.0	98.3	98.7%
DTE_8_16_2022_1318.LAB	8/16/2022	11:53:40	0.098	0.1	0.0	98.7	99.1%
DTE_8_16_2022_1319.LAB	8/16/2022	11:53:45	0.152	0.1	0.0	98.4	98.8%
DTE_8_16_2022_1320.LAB	8/16/2022	11:53:50	0.043	0.1	0.0	98.5	98.9%
DTE_8_16_2022_1321.LAB	8/16/2022	11:53:55	0.000	0.1	0.0	98.8	99.2%
DTE_8_16_2022_1322.LAB	8/16/2022	11:54:00	0.000	0.1	0.0	98.7	99.1%

Unit 1 Prior to Analyte Spike Run 3

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)
DTE_8_16_2022_1294.LAB	8/16/2022	11:36:58	0.149	7.8	0.0	0.200
DTE_8_16_2022_1295.LAB	8/16/2022	11:38:01	0.114	7.8	0.0	0.10
DTE_8_16_2022_1296.LAB	8/16/2022	11:39:04	0.121	7.8	0.0	0.200
DTE_8_16_2022_1297.LAB	8/16/2022	11:40:06	0.072	7.8	0.0	0.200
		Native Avg.	**0.114**			

Unit CT Analyte Spike Run 3, Using 0 ppm CH2O / 0 ppm SF6

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor
DTE_8_16_2022_1306.LAB	8/16/2022	11:49:31	2.1	7.1	0.40	0.3	0.078
DTE_8_16_2022_1307.LAB	8/16/2022	11:50:34	2.3	7.1	0.41	0.3	0.080
DTE_8_16_2022_1308.LAB	8/16/2022	11:51:36	2.2	7.1	0.40	0.2	0.078
DTE_8_16_2022_1204.LAB	8/16/2022	11:52:08	2.2	7.2	0.40	0.1	0.078

Nitrogen (Zero) System Purge and Response Time Test

Spectrum	Date	Time	CH2O (ppmv wet)	H2O (%v)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
DTE_8_16_2022_1335.LAB	8/16/2022	11:55:05	0.0	0.0	0.0	0.300	0.3%
DTE_8_16_2022_1336.LAB	8/16/2022	11:55:10	0.0	0.0	0.0	0.100	0.1%
DTE_8_16_2022_1337.LAB	8/16/2022	11:55:15	0.1	0.0	0.0	0.000	0.0%
DTE_8_16_2022_1338.LAB	8/16/2022	11:55:20	0.0	0.0	0.0	-0.100	-0.1%

Initial Spike Recovery

					Upper Tol Value	Lower Tol Value
Analyte Calibration Gas Value:	29.44		Analyte Calibration Gas Accuracy	5%	30.912	27.968
SF6 Tracer Value:	5.15	Diff	SF6 Tracer Accuracy	5%	5.4075	4.8925
Analyte Calibration Gas Value Measured Direct:	23.80	19.16%				
SF6 Tracer Value Measured Direct:	4.90	4.85%				

Native Analyte Concentration Measured:	0.06	The mean concentration of Analyte in the stack measured by the MKS.
Diluted SF6 Spike Conc Measured:	0.44	The diluted concentration of the SF6 spike gas measured by the MKS.
Dilution Factor:	0.09	Dilution factor derived from the SF6 Tracer measured value and the SF6 diluted value.
Cut Ratio/1:	11.26	

Diluted Native Analyte Conc Calculated:	0.06	The calculated native concentration of Analyte in the stack taking into account the dilution from the spike gas.
Diluted Calibration Analyte Conc Calculated:	2.11	The calculated diluted concentration of the Analyte calibration gas.
Expected Analyte Spike Conc:	**2.17**	Addition of the Analyte spike gas concentration and native Analyte concentration corrected for spike gas dilution.

30% of Expected Analyte Conc:	0.65

Upper Spiked Conc Calculated:	2.82
Lower Spiked Conc Calculated:	1.52
Difference:	0.07

		(+/-) Error ppm	(+/-) % Error
Actual Analyte Spike Conc Measured:	2.24	0.190	8.47%
% Recovery (Must be 70% - 130%):	**103.26%**		

Final Spike Recovery

					Upper Tol Value	Lower Tol Value
Analyte Calibration Gas Value:	29.44		Analyte Calibration Gas Accuracy	10%	32.384	26.496
SF6 Tracer Value:	5.15	Diff	SF6 Tracer Accuracy	5%	5.4075	4.8925
Analyte Calibration Gas Value Measured Direct:	23.80	19.16%				
SF6 Tracer Value Measured Direct:	4.90	4.85%				

Native Analyte Concentration Measured:	0.10	The mean concentration of Analyte in the stack measured by the MKS.
Diluted SF6 Spike Conc Measured:	0.44	The diluted concentration of the SF6 spike gas measured by the MKS.
Dilution Factor:	0.09	Dilution factor derived from the SF6 Tracer measured value and the SF6 diluted value.
Cut Ratio/1:	11.14	

Diluted Native Analyte Conc Calculated:	0.09	The calculated native concentration of Analyte in the stack taking into account the dilution from the spike gas.
Diluted Calibration Analyte Conc Calculated:	2.14	The calculated diluted concentration of the Analyte calibration gas.
Expected Analyte Spike Conc:	**2.23**	Addition of the Analyte spike gas concentration and native Analyte concentration corrected for spike gas dilution.

30% of Expected Analyte Conc:	0.67

Upper Spiked Conc Calculated:	2.90
Lower Spiked Conc Calculated:	1.56
Bias:	-0.07

		(+/-) Error ppm	(+/-) % Error
Actual Analyte Spike Conc Measured:	2.16	0.190	8.80%
% Recovery (Must be 70% - 130%):	**96.94%**		

Initial Spike Recovery

					Upper Tol Value	Lower Tol Value
Analyte Calibration Gas Value:	29.44		Analyte Calibration Gas Accuracy	5%	30.912	27.968
SF6 Tracer Value:	5.15	Diff	SF6 Tracer Accuracy	5%	5.4075	4.8925
Analyte Calibration Gas Value Measured Direct:	23.80	19.16%				
SF6 Tracer Value Measured Direct:	4.90	4.85%				

Native Analyte Concentration Measured:	0.10	The mean concentration of Analyte in the stack measured by the MKS.
Diluted SF6 Spike Conc Measured:	0.44	The diluted concentration of the SF6 spike gas measured by the MKS.
Dilution Factor:	0.09	Dilution factor derived from the SF6 Tracer measured value and the SF6 diluted value.
Cut Ratio/1:	11.14	

Diluted Native Analyte Conc Calculated:	0.09	The calculated native concentration of Analyte in the stack taking into account the dilution from the spike gas.
Diluted Calibration Analyte Conc Calculated:	2.14	The calculated diluted concentration of the Analyte calibration gas.
Expected Analyte Spike Conc:	**2.23**	Addition of the Analyte spike gas concentration and native Analyte concentration corrected for spike gas dilution.

30% of Expected Analyte Conc:	0.67

Upper Spiked Conc Calculated:	2.90
Lower Spiked Conc Calculated:	1.56
Difference:	-0.07

		(+/-) Error ppm	(+/-) % Error
Actual Analyte Spike Conc Measured:	2.16	0.190	8.80%
% Recovery (Must be 70% - 130%):	**96.94%**		

Final Spike Recovery

					Upper Tol Value	Lower Tol Value
Analyte Calibration Gas Value:	29.44		Analyte Calibration Gas Accuracy	5%	30.912	27.968
SF6 Tracer Value:	5.15	Diff	SF6 Tracer Accuracy	5%	5.4075	4.8925
Analyte Calibration Gas Value Measured Direct:	23.80	19.16%				
SF6 Tracer Value Measured Direct:	4.90	4.85%				

Native Analyte Concentration Measured:	0.07	The mean concentration of Analyte in the stack measured by the MKS.
Diluted SF6 Spike Conc Measured:	0.40	The diluted concentration of the SF6 spike gas measured by the MKS.
Dilution Factor:	0.08	Dilution factor derived from the SF6 Tracer measured value and the SF6 diluted value.
Cut Ratio/1:	12.25	

Diluted Native Analyte Conc Calculated:	0.07	The calculated native concentration of Analyte in the stack taking into account the dilution from the spike gas.
Diluted Calibration Analyte Conc Calculated:	1.94	The calculated diluted concentration of the Analyte calibration gas.
Expected Analyte Spike Conc:	**2.01**	Addition of the Analyte spike gas concentration and native Analyte concentration corrected for spike gas dilution.

30% of Expected Analyte Conc:	0.60

Upper Spiked Conc Calculated:	2.61
Lower Spiked Conc Calculated:	1.41
Bias:	0.17

		(+/-) Error ppm	(+/-) % Error
Actual Analyte Spike Conc Measured:	2.18	0.190	8.72%
% Recovery (Must be 70% - 130%):	**108.41%**		

Initial Spike Recovery

					Upper Tol Value	Lower Tol Value
Analyte Calibration Gas Value:	29.44		Analyte Calibration Gas Accuracy	5%	30.912	27.968
SF6 Tracer Value:	5.15	Diff	SF6 Tracer Accuracy	5%	5.4075	4.8925
Analyte Calibration Gas Value Measured Direct:	23.80	19.16%				
SF6 Tracer Value Measured Direct:	4.90	4.85%				

Native Analyte Concentration Measured:	0.07	The mean concentration of Analyte in the stack measured by the MKS.
Diluted SF6 Spike Conc Measured:	0.40	The diluted concentration of the SF6 spike gas measured by the MKS.
Dilution Factor:	0.08	Dilution factor derived from the SF6 Tracer measured value and the SF6 diluted value.
Cut Ratio/1:	12.25	

Diluted Native Analyte Conc Calculated:	0.07	The calculated native concentration of Analyte in the stack taking into account the dilution from the spike gas.
Diluted Calibration Analyte Conc Calculated:	1.94	The calculated diluted concentration of the Analyte calibration gas.
Expected Analyte Spike Conc:	**2.01**	Addition of the Analyte spike gas concentration and native Analyte concentration corrected for spike gas dilution.

30% of Expected Analyte Conc:	0.60

Upper Spiked Conc Calculated:	2.61
Lower Spiked Conc Calculated:	1.41
Difference:	0.17

		(+/-) Error ppm	(+/-) % Error
Actual Analyte Spike Conc Measured:	2.18	0.190	8.72%
% Recovery (Must be 70% - 130%):	**108.41%**		

Final Spike Recovery

					Upper Tol Value	Lower Tol Value
Analyte Calibration Gas Value:	29.44		Analyte Calibration Gas Accuracy	5%	30.912	27.968
SF6 Tracer Value:	5.15	Diff	SF6 Tracer Accuracy	5%	5.4075	4.8925
Analyte Calibration Gas Value Measured Direct:	23.80	19.16%				
SF6 Tracer Value Measured Direct:	4.90	4.85%				

Native Analyte Concentration Measured:	0.11	The mean concentration of Analyte in the stack measured by the MKS.
Diluted SF6 Spike Conc Measured:	0.40	The diluted concentration of the SF6 spike gas measured by the MKS.
Dilution Factor:	0.08	Dilution factor derived from the SF6 Tracer measured value and the SF6 diluted value.
Cut Ratio/1:	12.25	

Diluted Native Analyte Conc Calculated:	0.10	The calculated native concentration of Analyte in the stack taking into account the dilution from the spike gas.
Diluted Calibration Analyte Conc Calculated:	1.94	The calculated diluted concentration of the Analyte calibration gas.
Expected Analyte Spike Conc:	**2.04**	Addition of the Analyte spike gas concentration and native Analyte concentration corrected for spike gas dilution.

30% of Expected Analyte Conc:	0.61

Upper Spiked Conc Calculated:	2.66
Lower Spiked Conc Calculated:	1.43
Bias:	0.18

		(+/-) Error ppm	(+/-) % Error
Actual Analyte Spike Conc Measured:	2.22	0.190	8.56%
% Recovery (Must be 70% - 130%):	**108.62%**		

TEST DATA SHEETS

Client	**DTE Marietta, LLC**		**Marietta**	**Date**	**8/16/2022**
Unit	**P001**		**Project # 22-1074**	**Operator**	**N.Vineyard**

Run 1

Time	O2%	CO2%
7:50	14.7	3.6
7:51	14.7	3.6
7:52	14.7	3.6
7:53	14.7	3.6
7:54	14.7	3.5
7:55	14.7	3.5
7:56	14.7	3.5
7:57	14.7	3.5
7:58	14.7	3.4
7:59	14.7	3.4
8:00	14.7	3.4
8:01	14.7	3.4
8:02	14.7	3.4
8:03	14.7	3.4
8:04	14.7	3.4
8:05	14.7	3.4
8:06	14.7	3.4
8:07	14.7	3.4
8:08	14.7	3.4
8:09	14.7	3.4
8:10	14.7	3.4
8:11	14.7	3.5
8:12	14.7	3.5
8:13	14.7	3.5
8:14	14.7	3.5
8:15	14.7	3.5
8:16	14.7	3.5
8:17	14.7	3.5
8:18	14.7	3.5
8:19	14.7	3.5
8:20	14.7	3.5
8:21	14.7	3.6
8:22	14.7	3.5
8:23	14.7	3.6
8:24	14.7	3.6
8:25	14.7	3.6
8:26	14.7	3.6
8:27	14.7	3.6
8:28	14.7	3.6
8:29	14.7	3.7
8:30	14.7	3.7
8:31	14.7	3.7
8:32	14.7	3.7
8:33	14.7	3.7
8:34	14.7	3.7
8:35	14.7	3.7
8:36	14.7	3.8
8:37	14.7	3.8
8:38	14.7	3.8
8:39	14.7	3.8
8:40	14.7	3.8
8:41	14.7	3.8
8:42	14.7	3.8
8:43	14.7	3.7
8:44	14.7	3.6
8:45	14.7	3.7
8:46	14.7	3.9
8:47	14.7	3.9
8:48	14.7	3.8
8:49	14.7	3.8
8:50	14.9	3.9
Average	14.7	3.6

Client	**DTE Marietta, LLC**	**Marietta**		**Date**	**8/16/2022**
Unit	**P001**	**Project #**	**22-1074**	**Operator**	**N.Vineyard**

Run 2

Time	O2%	CO2%
9:15	14.7	4.1
9:16	14.7	4.1
9:17	14.7	4.2
9:18	14.7	4.2
9:19	14.7	4.3
9:20	14.7	4.4
9:21	14.7	4.5
9:22	14.7	4.2
9:23	14.7	4.1
9:24	14.7	4.1
9:25	14.7	4.1
9:26	14.7	4.1
9:27	14.7	4.1
9:28	14.7	3.2
9:29	14.7	2.1
9:30	14.7	3.4
9:31	14.7	4.1
9:32	14.7	4.1
9:33	14.7	4.2
9:34	14.7	4.1
9:35	14.7	4.2
9:36	14.7	4.2
9:37	14.7	4.1
9:38	14.7	4.0
9:39	14.7	4.0
9:40	14.7	4.0
9:41	14.7	4.0
9:42	14.7	4.0
9:43	14.7	4.0
9:44	14.7	4.0
9:45	14.7	4.0
9:46	14.7	4.0
9:47	14.7	4.0
9:48	14.7	4.0
9:49	14.7	4.1
9:50	14.7	4.1
9:51	14.7	4.1
9:52	14.7	4.1
9:53	14.7	4.1
9:54	14.7	4.2
9:55	14.7	4.3
9:56	14.7	4.3
9:57	14.7	4.4
9:58	14.7	4.4
9:59	14.7	4.4
10:00	14.7	4.4
10:01	14.7	4.3
10:02	14.7	4.3
10:03	14.7	4.2
10:04	14.7	3.9
10:05	14.7	3.8
10:06	14.7	3.9
10:07	14.7	4.0
10:08	14.7	4.2
10:09	14.7	4.1
10:10	14.7	4.2
10:11	14.7	3.9
10:12	14.7	3.9
10:13	14.7	3.9
10:14	14.7	3.9
10:15	14.9	3.8
Average	14.7	4.1

Client	**DTE Marietta, LLC**	**Marietta**		**Date**	**8/16/2022**
Unit	**P001**	**Project #**	**22-1074**	**Operator**	**N.Vineyard**

Run 3

Time	**O2%**	**CO2%**
10:40	14.7	4.1
10:41	14.7	4.1
10:42	14.7	4.1
10:43	14.7	4.0
10:44	14.7	3.8
10:45	14.7	3.6
10:46	14.7	3.6
10:47	14.7	3.7
10:48	14.7	3.7
10:49	14.7	3.7
10:50	14.7	3.6
10:51	14.7	3.6
10:52	14.7	3.7
10:53	14.7	3.7
10:54	14.7	3.8
10:55	14.7	3.9
10:56	14.7	3.9
10:57	14.7	4.0
10:58	14.7	4.0
10:59	14.7	4.0
11:00	14.7	4.0
11:01	14.7	4.0
11:02	14.7	4.0
11:03	14.7	4.1
11:04	14.7	4.1
11:05	14.7	4.1
11:06	14.7	4.1
11:07	14.7	4.1
11:08	14.7	4.2
11:09	14.7	4.2
11:10	14.7	4.2
11:11	14.7	4.2
11:12	14.7	4.2
11:13	14.7	4.2
11:14	14.7	4.2
11:15	14.7	4.1
11:16	14.7	4.1
11:17	14.7	4.0
11:18	14.7	4.1
11:19	14.7	4.1
11:20	14.7	4.1
11:21	14.7	4.1
11:22	14.7	4.0
11:23	14.7	4.1
11:24	14.7	4.1
11:25	14.7	4.1
11:26	14.7	4.1
11:27	14.7	4.2
11:28	14.7	4.2
11:29	14.7	4.2
11:30	14.7	4.2
11:31	14.7	4.2
11:32	14.7	4.2
11:33	14.7	4.2
11:34	14.7	4.3
11:35	14.7	4.3
11:36	14.7	4.3
11:37	14.7	4.2
11:38	14.7	4.1
11:39	14.7	4.1
11:40	14.9	4.1
Average	14.7	4.0

Grace Consulting, Inc.

RM 4 Moisture Field Data Sheet

CLIENT	DTE Marietta, LLC	**DATE**	08/16/22		
PLANT NAME	Marietta	**OPERATOR**	J.Hall		
PROJECT ID	22-1074	**LOAD**	Full		
LOCATION	P001	**METER NO**	IN14	**DAILY FIELD BALANCE CHECK**	500.1
BAROMETRIC PRESSURE	29.98	**METER CORR.**	0.985	**DELTA H@**	1.878

Run Number	**1**	***Sample Point***	***Delta H***	***Probe Set Pt.***	***Imp. Temp***	***Meter Out***	***Vac Press.***	***Initial Dry Gas Volume***	0.000
Start Time	7:50	5	1.9	250	56	80	3	3.72	
Stop Time	8:50	10	1.9	250	55	81	3	7.41	
Initial Weight	3343	15	1.9	250	54	81	3	11.12	
Final Weight	3432	20	1.9	250	57	82	3	14.80	
Initial Leak Check	0.001@15	25	1.9	250	54	83	3	18.52	
Final Leak Check	0.002@10	30	1.9	250	56	84	4	22.18	
		35	1.9	250	58	84	4	25.82	
		40	1.9	250	63	85	4	29.48	
		45	1.9	250	61	85	4	33.16	
		50	1.9	250	53	85	4	36.87	
		55	1.9	250	56	85	4	40.59	
		60	1.9	250	55	86	4	44.260	
			1.9	250	57	83	4	**44.260**	

Grace Consulting, Inc.

RM 4 Moisture Field Data Sheet

CLIENT	DTE Marietta, LLC			**DATE**	08/16/22				
PLANT NAME	Marietta			**OPERATOR**	J.Hall				
PROJECT ID	22-1074			**LOAD**	Full				
LOCATION	P001			**METER NO**	IN14			**DAILY FIELD BALANCE CHECK**	500.1
BAROMETRIC PRESSURE	29.98			**METER CORR.**	0.985			**DELTA H@**	1.878
Run Number	**2**	***Sample Point***	***Delta H***	***Probe Set Pt.***	***Imp. Temp***	***Meter Out***	***Vac Press.***	***Initial Dry Gas Volume***	0.000
Start Time	9:15	5	1.9	250	55	86	4	3.74	
Stop Time	10:15	10	1.9	250	54	86	4	7.42	
Initial Weight	3432	15	1.9	250	52	86	4	11.09	
Final Weight	3527	20	1.9	250	55	86	4	14.78	
Initial Leak Check	0.002@15	25	1.9	250	54	87	5	18.50	
Final Leak Check	0.002@10	30	1.9	250	55	87	5	22.23	
		35	1.9	250	56	88	5	25.99	
		40	1.9	250	55	88	5	29.72	
		45	1.9	250	54	88	5	33.47	
		50	1.9	250	53	89	5	37.22	
		55	1.9	250	57	89	5	40.93	
		60	1.9	250	60	89	5	44.680	
			1.9	250	55	87	5	**44.680**	

Grace Consulting, Inc.

RM 4 Moisture Field Data Sheet

CLIENT	DTE Marietta, LLC			**DATE**	08/16/22				
PLANT NAME	Marietta			**OPERATOR**	J.Hall				
PROJECT ID	22-1074			**LOAD**	Full				
LOCATION	P001			**METER NO**	IN14			**DAILY FIELD BALANCE CHECK**	500.1
BAROMETRIC PRESSURE	29.98			**METER CORR.**	0.985			**DELTA H@**	1.878
Run Number	**3**	***Sample Point***	***Delta H***	***Probe Set Pt.***	***Imp. Temp***	***Meter Out***	***Vac Press.***	***Initial Dry Gas Volume***	0.000
Start Time	10:40	5	1.9	250	52	88	3	3.77	
Stop Time	11:40	10	1.9	250	55	89	3	7.50	
Initial Weight	3341	15	1.9	250	61	89	3	11.27	
Final Weight	3426	20	1.9	250	64	90	4	15.00	
Initial Leak Check	0.001@15	25	1.9	250	61	90	4	18.77	
Final Leak Check	0.002@10	30	1.9	250	59	91	4	22.50	
		35	1.9	250	59	91	4	25.96	
		40	1.9	250	58	92	4	29.67	
		45	1.9	250	55	91	4	33.39	
		50	1.9	250	56	92	4	37.10	
		55	1.9	250	53	92	4	40.85	
		60	1.9	250	54	92	5	44.570	
			1.9	250	57	91	4	**44.570**	

GCI CALIBRATION DATA

Client	DTE Marietta, LLC	Test Date	8/16/2022
Plant Name	Marietta	Project #	22-1074
Source Identification	P001	Operator	Nathan Vineyard

Calibration Data For Sampling Runs: 1-3 Gas Type: CO2 Span: 21.38	Cylinder Number	Cylinder Value % or PPM	Analyzer Response	Absolute Difference % or PPM	Difference % of Span	
Zero Gas	EB0021895	**0.00**	0.09	0.09	0.421	
Mid-Range Gas	ALM-033630	**11.39**	11.31	0.08	0.374	
High-Range Gas	CC76166	**21.38**	21.47	0.09	0.421	

Run #: 1 Gas Type: CO2 Span: 21.38	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.09	0.11	0.09	0.14	0.23	0.14
Upscale Gas	11.31	11.31	0.00	11.18	-0.61	-0.61

Run #: 2 Gas Type: CO2 Span: 21.38	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.09	0.14	0.23	0.04	-0.23	-0.47
Upscale Gas	11.31	11.18	-0.61	11.33	0.09	0.70

Run #: 3 Gas Type: CO2 Span: 21.38	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.09	0.04	-0.23	0.00	-0.42	-0.19
Upscale Gas	11.31	11.33	0.09	11.21	-0.47	-0.56

Client	DTE Marietta, LLC	Test Date	8/16/2022
Plant Name	Marietta	Project #	22-1074
Source Identification	P001	Operator	Nathan Vineyard

Calibration Data For Sampling Runs: 1-3 Gas Type: O2 Span: 22.2	Cylinder Number	Cylinder Value % or PPM	Analyzer Response	Absolute Difference % or PPM	Difference % of Span	
Zero Gas	EB0021895	**0.00**	0.16	0.16	0.721	
Mid-Range Gas	ALM-033630	**11.01**	11.21	0.20	0.901	
High-Range Gas	CC76166	**22.20**	21.97	0.23	1.036	

Run #: 1 Gas Type: O2 Span: 22.2	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.16	0.08	-0.36	0.09	-0.32	0.05
Upscale Gas	11.21	11.21	0.00	10.91	-1.35	-1.35

Run #: 2 Gas Type: O2 Span: 22.2	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.16	0.09	-0.32	0.11	-0.23	0.09
Upscale Gas	11.21	10.91	-1.35	11.25	0.18	1.53

Run #: 3 Gas Type: O2 Span: 22.2	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.16	0.11	-0.23	0.09	-0.32	-0.09
Upscale Gas	11.21	11.25	0.18	10.93	-1.26	-1.44

CALIBRATION /GAS CERTIFICTAION SHEETS

Grace Consulting, Inc.

EPA Method 5

522 Series Meter Box Calibration

Calibration Orifice Method

English Meter Box Units, English K' Factor

Date:	8/8/2022
Model:	APEX XC - 522
Serial:	IN14
Technician:	Jesse Hall
Pump Used:	INP - 13

Barometric Pressure:	29.21	(in Hg)
Theoretical Critical Vacuum:	13.78	(in Hg)

Important: *For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.*

Important: *The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).*

DRY GAS METER READINGS

ΔH (in H_2O)	*Time (min)*	*Initial Volume (cu ft)*	*Final Volume (cu ft)*	*Total Volume (cu ft)*	*Temp Initial (deg F)*	*Temp Final (deg F)*
0.64	13	408.200	414.140	5.940	73	74
1.1	11	414.140	420.790	6.650	74	75
1.9	13	420.790	431.050	10.260	75	78
3.5	16	431.050	448.490	17.440	78	81

Critical Orifice Readings

Orifice Serial #	*K' Orifice Coefficient (see above)*	*Actual Vacuum (in Hg)*	**AMBIENT TEMPERATURE** *Initial (deg F)*	*Final (deg F)*	*Average (deg F)*
YX-48	0.3463	23	76	76	76
YX-55	0.4563	22	76	76	76
YX-63	0.5920	20	76	77	76.5
YX-73	0.8201	17	77	77	77

CORRECTED VOLUME

DRY GAS METER Vm(std) (cu ft)	ORIFICE Vcr(std) (cu ft)
5.746	5.680
6.428	6.333
9.901	9.705
16.803	16.540

DRY GAS METER

CALIBRATION FACTOR Y	
Value	Variation
0.988	0.004
0.985	0.00058
0.980	-0.0043
0.984	-0.00022

Average: 0.985

ORIFICE

CALIBRATION FACTOR ΔH	
Value (in H20)	Variation (in H20)
1.886	0.008
1.867	-0.011
1.918	0.039
1.842	-0.036

Average: 1.878

Orifice for Calc.
3.151321094

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

Signature: _____ **Date:** 8/8/2022

Airgas Mid America region
Airgas USA LLC
3500 Bernard Street
Saint Louis, MO 63103
Airgas.com

CERTIFICATE OF BATCH ANALYSIS

Grade of Product: CEM-CAL ZERO

Part Number:	NI CZ15A	Reference Number:	40-402248125-1
Cylinder Analyzed:	CC151725	Cylinder Volume:	142.0 CF
Laboratory:	111 - Saint Louis SGL (SAP) - MO	Cylinder Pressure:	2000 PSIG
Analysis Date:	Oct 06, 2021	Valve Outlet:	580
Lot Number:	40-402248125-1		

Expiration Date: Oct 06, 2029

ANALYTICAL RESULTS

Component	Requested Purity	Certified Concentration
NITROGEN	99.9995 %	99.9995 %
CARBON DIOXIDE	< 1.0 PPM	0.064 PPM
NOx	< 0.1 PPM	< 0.10 PPM
SO2	< 0.1 PPM	< 0.10 PPM
THC	< 0.1 PPM	0.044 PPM
CARBON MONOXIDE	< 0.5 PPM	0.064 PPM

Permanent Notes: Airgas certifies that the contents of this cylinder meet the requirements of 40 CFR 72.2

Cylinders in Batch:

CC151725, CC21281, CC234490@, CC273951, CC280400, CC425932, CC705866, CC705904, CC720327, CC727459, **EB0021895,** EB0034089

Impurities verified against analytical standards traceable to NIST by weight and/or analysis.

Signature on file

Approved for Release

Airgas Specialty Gases
Airgas USA LLC
12722 S. Wentworth Ave.
Chicago, IL 60628
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03NI77E15A2VT6	Reference Number:	54-402282497-1
Cylinder Number:	ALM-033630	Cylinder Volume:	152.0 CF
Laboratory:	124 - Chicago (SAP) - IL	Cylinder Pressure:	2015 PSIG
PGVP Number:	B12021	Valve Outlet:	590
Gas Code:	CO,O2,BALN	Certification Date:	Nov 16, 2021

Expiration Date: Nov 16, 2029

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
OXYGEN	11.00 %	11.01 %	G1	+/- 0.4% NIST Traceable	11/16/2021
CARBON DIOXIDE	11.45 %	11.39 %	G1	+/- 0.6% NIST Traceable	11/16/2021
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	11060614	CC340418	14.93 % OXYGEN/NITROGEN	+/- 0.2%	Dec 13, 2022
NTRM	08010601	K002531	13.94 % CARBON DIOXIDE/NITROGEN	+/- 0.6%	Jan 30, 2024

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
CO2-1 HORIBA VIA-510 V1E3H7P5	NDIR	Oct 21, 2021
O2-1 HORIBA MPA-510 3VUYL9NR	Paramagnetic	Oct 21, 2021

Triad Data Available Upon Request

Signature on file

Approved for Release

Airgas Specialty Gases
Airgas USA, LLC
12722 S. Wentworth Ave.
Chicago, IL 60628
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number:	E03NI56E15A1055	Reference Number:	54-401998434-1
Cylinder Number:	CC76166	Cylinder Volume:	161.7 CF
Laboratory:	124 - Chicago (SAP) - IL	Cylinder Pressure:	2015 PSIG
PGVP Number:	B12021	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Jan 11, 2021

Expiration Date: Jan 11, 2029

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	22.00 %	21.38 %	G1	+/- 0.6% NIST Traceable	01/11/2021
OXYGEN	22.00 %	22.20 %	G1	+/- 0.4% NIST Traceable	01/11/2021
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	060118	K008299	23.04 % CARBON DIOXIDE/NITROGEN	+/- 0.5%	Jun 27, 2022
NTRM	15010412	K023932	22.454 % OXYGEN/NITROGEN	+/- 0.05	Aug 05, 2021

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
CO2-1 HORIBA VIA-510 V1E3H7P5	NDIR	Dec 17, 2020
O2-1 HORIBA MPA-510 3VUYL9NR	Paramagnetic	Jan 05, 2021

Triad Data Available Upon Request

Signature on file

Approved for Release

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA LLC
6141 Easton Road
Plumsteadville, PA 18949
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: CERTIFIED STANDARD-SPEC

Part Number:	X03NI99C15A0220	Reference Number:	160-402278459-1
Cylinder Number:	EB0140110	Cylinder Volume:	100.5 CF
Laboratory:	124 - Plumsteadville - PA	Cylinder Pressure:	1383 PSIG
Analysis Date:	Dec 20, 2021	Valve Outlet:	350SS
Lot Number:	160-402278459-1		

Expiration Date: Dec 20, 2022

Product composition verified by direct comparison to calibration standards traceable to N.I.S.T. weights and/or N.I.S.T. Gas Mixture reference materials.

ANALYTICAL RESULTS

Component	Req Conc	Actual Concentration (Mole %)	Analytical Uncertainty
SULFUR HEXAFLUORIDE	5.000 PPM	5.150 PPM	+/- 5%
FORMALDEHYDE	30.00 PPM	29.44 PPM	+/- 5%
NITROGEN	Balance		

Approved for Release

PLANT DATA

DTE Marietta, LLC

Date 8-16-22

Source P001- CT Only

Run# 1

Time	Fuel Flow CT (kscfh)	Fuel Flow DB (kscfh)	Load (kw)	Ammonia Flow	SoloNOx Active (T/F)	
0850	82.2	0	7318	0	T	
0900	81.7	0	7311	0	T	
0910	81.2	0	7281	0	T	
0920	83	0	7288	0	T	
0930	81.5	0	7313	0	T	
0940	83.6	0	7297	0	T	
0950	80.7	0	7302	0	T	
1000	80.3	0	7284	0	T	
1010	81.2	0	7288	0	T	

DTE Marietta, LLC

Date 8-16-22

Source P001- CT Only

Run# 2

Time	Fuel Flow CT (kscfh)	Fuel Flow DB (kscfh)	Load (kw)	Ammonia Flow	SoloNOx Active (T/F)	
1015	79.1	0	7269	0	T	
1025	81.1	0	7270	0	T	
1035	81.2	0	7260	0	T	
1045	80.8	0	7273	0	T	
1055	82.2	0	7250	0	T	
1105	81.5	0	7260	0	T	
1115	78.9	0	7195	0	T	
1125	80.4	0	7227	0	T	
1135	78.7	0	7219	0	T	

DTE Marietta, LLC

Date 8-16-22

Source P001- CT Only

Run# 3

Time	Fuel Flow CT (kscfh)	Fuel Flow DB (kscfh)	Load (kw)	Ammonia Flow	SoloNOx Active (T/F)	
1140	81	0	7229	0	T	
1150	79.6	0	7234	0	T	
1200	80.4	0	7240	0	T	
1210	79.7	0	7235	0	T	
1220	78.6	0	7227	0	T	
1230	81.3	0	7233	0	T	
1240	80.5	0	7229	0	T	
1250	80.2	0	7248	0	T	
1300	81.6	0	7222	0	T	

ACCREDITATION

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

GRACE CONSULTING INC.

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 21st day of October 2021.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3727.01
Valid to September 30, 2023

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

Grace Consulting, Inc.
Emissions Testing Services

Qualified Individual

LET IT BE KNOWN THAT

Nathan Vineyard

AS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITHTHE GUIDELINES SET FORTH IN ASTM D 7036 FOR QUALIFIED INDIVIDUALS FOR

GROUP IV - TESTING FOR EMISSIONS OF HAZARDOUS METALS

DATE EXAM COMPLETED:

3/23/19

CERTIFICATION EXPIRES:

3/22/24

Darryl Christy

DARRYL CHRISTY, QUALITY MANAGER

SCOTT TEAGUE, QSTI I-IV, PRESIDENT

Test Administrator: Source Evaluation Society
Contact: qstiprogram@gmail.com

AETB Phone: 1-877-GCI-TEST
AETB Email: contact@gcitest.com
AETB Address: 510 Dickson St, Wellington, OH 44090

This is the Last Page
of this Report

Grace Consulting, Inc.
Emissions Testing Services