TEST REPORT FOR 2023 STATIONARY COMBUSTION TURBINES EMISSIONS IFORMATION COLLECTION REPORT ON CT-4 AND CT-5 AT SUNSHINE GAS PRODUCERS, LLC

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Test Dates: **February 7 – 17, 2023**
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REVIEW AND CERTIFICATION

I certify that, to the best of my knowledge, the information contained in this document is complete and accurate and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature: _____ Date: _____4/14/2023_____

Name: _____Pete San Juan_____ Title: _____Field Project Manager_____

I have reviewed, technically and editorially, details and other appropriate written materials contained herein. I hereby certify that to the best of my knowledge the presented material is authentic and accurate and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature: _____ Date: _____4/14/2023_____

Name: _____Surya Adhikari_____ Title: ___Senior Reporting QC Specialist___

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1.0   INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS) has been contracted by Sunshine Gas Producers, LLC (Sunshine) to conduct source testing at their facility in Sylmar, California. Testing was conducted according to the document submitted to Sunshine by the Environmental Protection Agency (EPA), titled "Stationary Combustion Turbines Emissions Information Collection." The testing was conducted from February 7 through February 17, 2023 at the exhaust stacks of Landfill gas -fired Stationary Combustion Turbine 4 (CT-4) and Combustion Turbine 5 (CT-5) to meet the following objectives:

- Provide emissions test data to the EPA under Clean Air Act Section 114 Information Collection Request (ICR) for Stationary Combustion Turbines. The following tests listed below were conducted during this test program:

Emissions Tests: Seven test runs were performed on each CT to measure the following emissions parameters:

- Carbon Monoxide (CO): ppmvd, ppmvd @ 15% O_2, and lb/hr
- Particulate: gr/dscf, gr/dscf @ 15% O_2, and lb/hr
- Acid Gases and Formaldehyde: ppmvd, ppmvd @ 15% O_2, and lb/hr
- Multiple Metals (listed below): mg/dscm, mg/dscm @ 15% O_2, and lb/hr

Additional compounds that were determined during this test program are:

- metals from the multi-metals train: antimony (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se);

Exhaust gas flow rate, moisture content, O_2 and CO_2 were determined in conjunction with the isokinetic tests. Sampling was coordinated with plant personnel throughout the program. The testing was performed by Pete San Juan, Dominic Heredero, James Navarrete, and Allen Dusky of MAQS. James Navarrete was the on-site Qualified Individual for MAQS. Nick Diedrich of Sunshine Gas Producers, LLC coordinated testing.

This test report contains unit description, operating conditions, and sample locations in Section 2. Section 3 contains a test program overview including the test procedures and the test schedule. The Appendices contain additional information including original data, calculations, and quality assurance information.

1.1   RESULTS SUMMARY

Tables 1-1 through 1-6 summarize the results of the tests.

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TABLE 1-1
CO EMISSIONS RESULTS SUMMARY
SUNHINE GAS PRODUCERS
COMBUSTION TURBINES 4 & 5

Parameter/Units	CT-4 Averages	CT-5 Averages
Diluent Emissions and Stack Flow Rate		
O_2, % Volume Dry	16.03	16.15
CO_2, % Volume Dry	4.44	4.22
Stack Flow Rate, dscfm	34,630	33,960
Pollutant Emissions		
Carbon Monoxide (CO)		
ppm Volume Dry	0.82	0.18
ppmc Volume Dry @ 15% O2	1.00	0.22
lb/hr	0.12	0.03

TABLE 1-2
PARTICULATE MATTER RESULTS SUMMARY
SUNHINE GAS PRODUCERS
COMBUSTION TURBINES 4 & 5

Parameter/Units	CT-4 Averages	CT-5 Averages
Diluent Emissions and Stack Flow Rate		
Moisture Fraction, %	5.1	5.3
O_2, % Volume Dry	16.03	16.15
CO_2, % Volume Dry	4.44	4.22
Stack Flow Rate, wacfm	85,252	84,194
Stack Flow Rate, dscfm	34,630	33,960
Total Particulate Matter (PM)		
Grain Loading, gr/dscf	0.00009	0.00007
Grain Loading @ 15% O_2	0.00011	0.00009
lb/hr	0.026	0.020

Note: Results of individual test runs are presented in the tables in Section 4.0.

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TABLE 1-3
TOTAL METALS RESULTS SUMMARY
SUNHINE GAS PRODUCERS
COMBUSTION TURBINES 4 & 5

Parameter/Units	CT-4 Averages		CT-5 Averages	
Diluent Emissions and Stack Flow Rate				
Flow Rate, dscfm		34,688		33,777
Sample Volume, dscf		177.29		175.38
O_2, % Volume Dry		16.03		16.15
CO_2, % Volume Dry		4.44		4.22
Moisture, % by Volume		5.03		4.90
Antimony				
mg/m^3	<	0.00007	ND<	0.00006
mg/m^3 @ 15% O_2	<	0.00008	ND<	0.00008
lb/hr	<	8.49×10^{-6}	ND<	7.73×10^{-6}
Arsenic				
mg/m^3	<	0.00015	ND<	0.00015
mg/m^3 @ 15% O_2	<	0.00018	ND<	0.00018
lb/hr	<	1.91×10^{-5}	ND<	1.84×10^{-5}
Beryllium				
mg/m^3	<	0.00002	<	0.00001
mg/m^3 @ 15% O_2	<	0.00002	<	0.00002
lb/hr	<	2.54×10^{-6}	<	1.85×10^{-6}
Cadmium				
mg/m^3	<	0.00005	<	0.00002
mg/m^3 @ 15% O_2	<	0.00006	<	0.00002
lb/hr	<	6.43×10^{-6}	<	2.08×10^{-6}
Chromium				
mg/m^3		0.00119		0.00105
mg/m^3 @ 15% O_2		0.00144		0.00130
lb/hr		1.55×10^{-4}		1.33×10^{-4}
Cobalt				
mg/m^3	<	0.00006	<	0.00002
mg/m^3 @ 15% O_2	<	0.00007	<	0.00002
lb/hr	<	7.54×10^{-6}	<	1.93×10^{-6}
Lead				
mg/m^3		0.00015		0.00008
mg/m^3 @ 15% O_2		0.00018		0.00011
lb/hr		1.92×10^{-5}		1.07×10^{-5}
Manganese				
mg/m^3		0.00038		0.00087
mg/m^3 @ 15% O_2		0.00047		0.00107
lb/hr		4.98×10^{-6}		1.10×10^{-4}
Mercury				
mg/m^3	<	0.00012	<	0.00009
mg/m^3 @ 15% O_2	<	0.00014	<	0.00011
lb/hr	<	1.55×10^{-5}	<	1.12×10^{-5}
Nickel				
mg/m^3		0.00046		0.00040
mg/m^3 @ 15% O_2		0.00056		0.00050
lb/hr		6.02×10^{-5}		5.08×10^{-5}
Selenium				
mg/m^3	<	0.00055	<	0.00101
mg/m^3 @ 15% O_2	<	0.00066	<	0.00124
lb/hr	<	7.08×10^{-5}	<	1.27×10^{-4}

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

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TABLE 1-4
FRONT HALF METALS RESULTS SUMMARY
SUNHINE GAS PRODUCERS
COMBUSTION TURBINES 4 & 5

Parameter/Units		CT-4 Averages		CT-5 Averages
Diluent Emissions and Stack Flow Rate				
Flow Rate, dscfm		34,688		33,777
Sample Volume, dscf		177.29		175.38
O_2, % Volume Dry		16.03		16.15
CO_2, % Volume Dry		4.44		4.22
Moisture, % by Volume		5.03		4.90
Antimony F½				
mg/m^3	<	0.00005	ND<	0.00005
mg/m^3 @ 15% O_2	<	0.00006	ND<	0.00006
lb/hr	<	6.81×10^{-6}	ND<	6.36×10^{-6}
Arsenic F½				
mg/m^3	ND<	0.00013	ND<	0.00014
mg/m^3 @ 15% O_2	ND<	0.00016	ND<	0.00017
lb/hr	ND<	1.74×10^{-5}	ND<	1.71×10^{-5}
Beryllium F½				
mg/m^3	<	0.00002	<	0.00001
mg/m^3 @ 15% O_2	<	0.00002	<	0.00001
lb/hr	<	2.01×10^{-6}	<	1.41×10^{-6}
Cadmium F½				
mg/m^3	<	0.00002	<	0.00001
mg/m^3 @ 15% O_2	<	0.00002	<	0.00001
lb/hr	<	2.45×10^{-6}	<	1.32×10^{-6}
Chromium F½				
mg/m^3		0.00108		0.00093
mg/m^3 @ 15% O_2		0.00131		0.00115
lb/hr		1.41×10^{-4}		1.18×10^{-4}
Cobalt F½				
mg/m^3	<	0.00005	ND<	0.00001
mg/m^3 @ 15% O_2	<	0.00006	ND<	0.00001
lb/hr	<	6.34×10^{-6}	ND<	1.43×10^{-6}
Lead F½				
mg/m^3		0.00008		0.00006
mg/m^3 @ 15% O_2		0.00010		0.00008
lb/hr		1.09×10^{-5}		8.12×10^{-6}
Manganese F½				
mg/m^3		0.00021		0.00026
mg/m^3 @ 15% O_2		0.00025		0.00032
lb/hr		2.71×10^{-5}		3.23×10^{-5}
Mercury F½				
mg/m^3	ND<	0.000005	ND<	0.00001
mg/m^3 @ 15% O_2	ND<	0.000006	ND<	0.00001
lb/hr	ND<	6.47×10^{-7}	ND<	6.36×10^{-7}
Nickel F½				
mg/m^3		0.00033		0.00030
mg/m^3 @ 15% O_2		0.00040		0.00037
lb/hr		4.26×10^{-5}		3.80×10^{-5}
Selenium F½				
mg/m^3	ND<	0.00006	ND<	0.00006
mg/m^3 @ 15% O_2	ND<	0.00007	ND<	0.00008
lb/hr	ND<	7.86×10^{-6}	ND<	7.74×10^{-6}

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

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TABLE 1-5
BACK HALF METALS RESULTS SUMMARY
SUNHINE GAS PRODUCERS
COMBUSTION TURBINES 4 & 5

Parameter/Units	CT-4 Averages		CT-5 Averages	
Diluent Emissions and Stack Flow Rate				
Flow Rate, dscfm		34,688		33,777
Sample Volume, dscf		177.29		175.38
O_2, % Volume Dry		16.03		16.15
CO_2, % Volume Dry		4.44		4.22
Moisture, % by Volume		5.03		4.90
Antimony B½				
mg/m^3	<	0.00001	ND<	0.00001
mg/m^3 @ 15% O_2	<	0.00002	ND<	0.00001
lb/hr	<	1.68×10^{-6}	ND<	1.36×10^{-6}
Arsenic B½				
mg/m^3	<	0.00001	ND<	0.00001
mg/m^3 @ 15% O_2	<	0.00002	ND<	0.00001
lb/hr	<	1.71×10^{-6}	ND<	1.36×10^{-6}
Beryllium B½				
mg/m^3	<	0.000004	ND<	0.000003
mg/m^3 @ 15% O_2	<	0.000005	ND<	0.000004
lb/hr	<	5.29×10^{-7}	ND<	4.41×10^{-7}
Cadmium B½				
mg/m^3	<	0.00003	<	0.00001
mg/m^3 @ 15% O_2	<	0.00004	<	0.00001
lb/hr	<	3.98×10^{-6}	<	7.60×10^{-7}
Chromium B½				
mg/m^3		0.00011		0.00012
mg/m^3 @ 15% O_2		0.00013		0.00015
lb/hr		1.42×10^{-5}		1.52×10^{-5}
Cobalt B½				
mg/m^3		0.00001	<	0.00000
mg/m^3 @ 15% O_2		0.00001	<	0.00000
lb/hr		1.19×10^{-6}	<	5.03×10^{-7}
Lead B½				
mg/m^3		0.00006		0.00002
mg/m^3 @ 15% O_2		0.00008		0.00003
lb/hr		8.38×10^{-6}		2.61×10^{-6}
Manganese B½				
mg/m^3		0.00018		0.00061
mg/m^3 @ 15% O_2		0.00021		0.00075
lb/hr		2.27×10^{-5}		7.75×10^{-5}
Mercury B½				
mg/m^3	<	0.00011	<	0.00008
mg/m^3 @ 15% O_2	<	0.00014	<	0.00010
lb/hr	<	1.49×10^{-5}	<	1.06×10^{-5}
Nickel B½				
mg/m^3		0.00014		0.00010
mg/m^3 @ 15% O_2		0.00016		0.00013
lb/hr		1.77×10^{-5}		1.29×10^{-5}
Selenium B½				
mg/m^3		0.00049		0.00094
mg/m^3 @ 15% O_2		0.00059		0.00116
lb/hr		6.29×10^{-5}		1.20×10^{-4}

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

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TABLE 1-6
EPA 320 EMISSIONS RESULTS SUMMARY
SUNHINE GAS PRODUCERS
COMBUSTION TURBINES 4 & 5

Parameter/Units	CT-4 Averages	CT-5 Averages
Diluent Emissions and Stack Flow Rate		
O_2, % Volume Dry	16.0	16.1
CO_2, % Volume Dry	4.5	4.3
Stack Flow Rate, dscfm	34,630	33,962
Pollutant Emissions		
Hydrochloric Acid (HCl)		
ppm Volume Dry	0.52	0.34
ppmc Volume Dry @ 15% O_2	0.63	0.41
lb/hr	0.10	0.06
Hydrogen Fluoride (HF)		
ppm Volume Dry	1.79	1.40
ppmc Volume Dry @ 15% O_2	2.16	1.72
lb/hr	0.19	0.15
Formaldehyde (CH_2O)[1]		
ppm Volume Dry	0.027	0.070
ppmc Volume Dry @ 15% O_2	0.033	0.086
lb/hr	0.004	0.011

(1) As measured values are reported from FTIR. These values are below the instrument detection limit (BDL).

1.2 PROGRAM CONTACTS

The following list contains information on personnel to be contacted regarding any aspect of the test program. Pete San Juan was the on-site Project Manager and James Navarrete was the on-site Qualified Individual for MAQS.

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2.0   UNIT DESCRIPTION

Sunshine Gas Producers owns and operates five (5) stationary combustion turbines located at 14747 San Fernando Rd, Sylmar, California facility. The five (5) turbines are identical Solar, Mercury 50, landfill gas fired, rated at 61 MMBtu/hr, driving a nominal 4.9 megawatt (MW) electrical generator. The units are equipped with flow rate recording devices and a continuous emission monitoring system (CEMS) for NO_x and O_2 concentrations.

2.2   OPERATION DURING TESTS

The turbines operated at the highest normal load conditions achievable during the source tests. The operating parameters for each turbine during the tests are shown below in Tables 2-1 and 2-2:

TABLE 2-1
OPERATING PARAMETERS CT-4
SUNHINE GAS PRODUCERS

Parameter/Units	2/7/2023	2/8/2023	2/9/2023	2/10/2023
Gas Flow, scfh	101929.4	101866.7	101031.4	100468.1
Heat Input, MMBtu/hr	46.99	46.94	46.80	46.93
Electrical Production, MW	4.2	4.1	4.1	4.1
Exhaust Temperature, °F	1200.0	1200.0	1200.0	1200.0

TABLE 2-2
OPERATING PARAMETERS CT-5
SUNHINE GAS PRODUCERS

Parameter/Units	2/14/2023	2/15/2023	2/16/2023	2/17/2023
Gas Flow, scfh	94486.8	98249.4	96888.0	96781.7
Heat Input, MMBtu/hr	44.15	44.90	45.15	45.25
Electrical Production, MW	3.7	3.8	3.8	3.8
Exhaust Temperature, °F	1200.0	1199.7	1200.0	1200.0

2.3   SAMPLE LOCATIONS

Reference method measurements were performed from sample ports located on the exhaust stacks. The sample locations meet the dimensional requirements of EPA Method 1. A diagram of the sample location is presented as Figure 2-1. Isokinetic testing was performed using a matrix of 24 points located according to EPA Method 1 procedures.

Table 2-3 presents stack measurements and traverse points for the sampling location listed.

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TABLE 2-3
SAMPLING LOCATION
SUNHINE GAS PRODUCERS
COMBUSTION TURBINES 4 & 5

Sampling Location	Duct Inside Diameter (in.)	Distance from Nearest Disturbance		Number of Traverse Points
		Downstream EPA "B" (ft./dia.)	Upstream EPA "A" (ft./dia.)	
CT-4	55	14.8/3.22	2.9/0.6	Isokinetic: 24 (2/port) Gaseous: 24 (2/port)
CT-5	55	14.8/3.22	2.9/0.6	Isokinetic: 24 (2/port) Gaseous: 24 (2/port)

FIGURE 2-1
SIMPLIFIED PROCESS BLOCK DIAGRAM
SUNHINE GAS PRODUCERS
COMBUSTION TURBINES 4 & 5
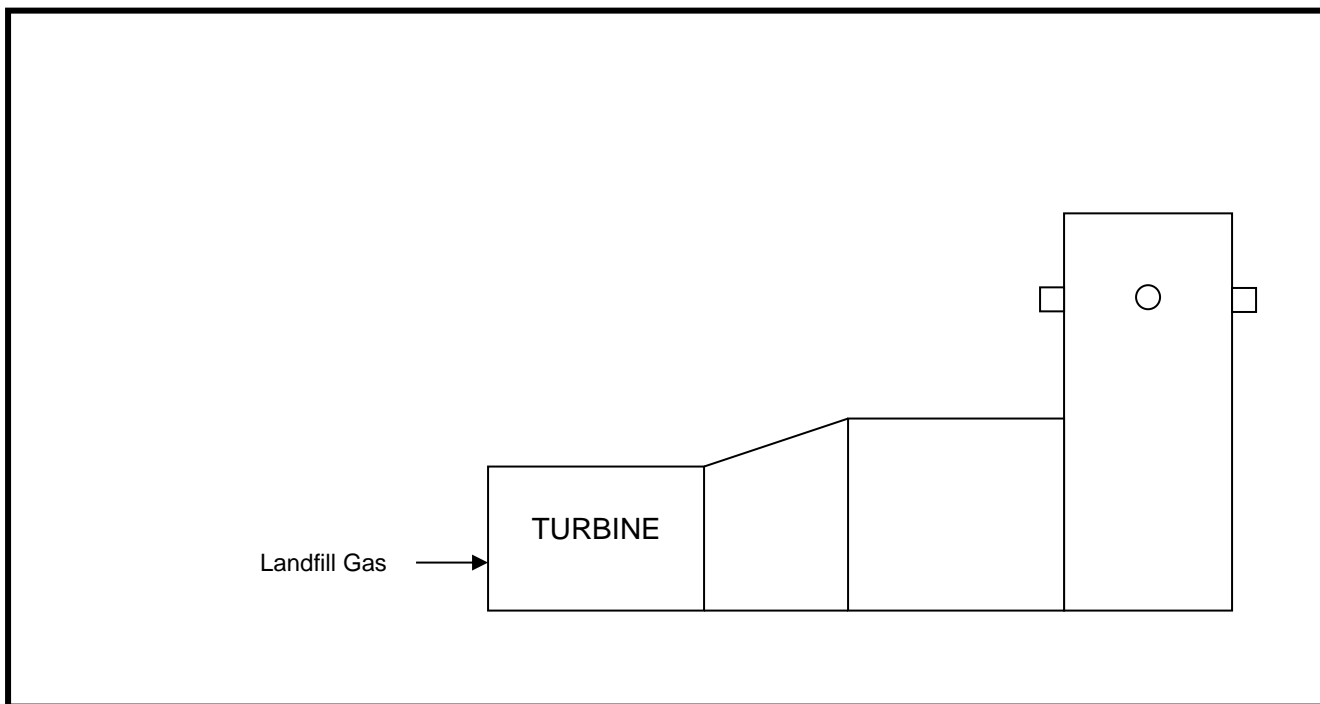
3.0   TEST METHODOLOGY

Table 3-1 summarizes the test methods and techniques used for the tests. The following sections describe each method in further detail.

TABLE 3-1
TEST SUMMARY

Parameter	Measurement Principle	Reference Method	Replicates-Duration	Comments
Flue Gas Velocity, Stack Flow Rate	S-type Pitot traverse	EPA 1 and 2	--	With all tests
H_2O	Condensation Gravimetric	EPA 4	--	With all tests
O_2	Continuous Analyzer (Electrochemical Cell)	EPA 3A	--	With all tests
CO_2	Continuous Analyzer (Non-dispersive infrared)	EPA 3A	--	With all tests
CO	Continuous Analyzer (Non-dispersive infrared)	EPA 10	7 – 240 minutes	N/A
Trace Metals	ICP-MS/OES and CVAAS	EPA 29	7 – 240 minutes	N/A
Particulate Matter (PM)	Gravimetric	EPA 5	7 – 240 minutes	N/A
Formaldehyde (CH_2O)	FTIR	EPA 320	7 – 60 minutes	N/A
Hydrochloric Acid (HCl)	FTIR	EPA 320	7 – 60 minutes	N/A
Hydrogen Fluoride (HF)	FTIR	EPA 320	7 – 60 minutes	N/A

3.1 O_2, CO_2, and CO BY CONTINUOUS ANALYZERS

O_2, CO_2, and CO concentrations were measured using EPA Methods 3A and 10. These measurements were made on-site with MAQS' mobile emission measurement laboratory. The system used for this project consisted of a probe, heated Teflon line, moisture removal system, unheated Teflon line, sample pump, sample filter, and individual component analyzers.

O_2 was measured using an approved electro-chemical cell analyzer. The cell contains an electrolytic fluid that reacts with oxygen to generate an electrical signal proportional to the concentration. The analyzer was operated on a 0-20% range.

CO_2 was measured using an approved non-dispersive infrared analyzer. The analyzer was operated on a 0-10% range.

CO was measured using an approved non-dispersive infrared analyzer. The analyzer employs gas filter correlation to minimize or eliminate the interferences of other species such as H_2O or CO_2. The analyzer was operated on a 0-10 ppm range.

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The analyzers and sampling system were subjected to calibration and quality assurance procedures including leak checks and calibration error determinations before sampling, and system bias and drift determinations as part of each test run as detailed below. Data were corrected for any observed bias or drift.

An Analyzer Calibration was performed as necessary by adjusting the zero and span settings of the analyzer. Calibration Error was then determined at three levels for each range of each analyzer. This check was performed at the beginning of each test day. The calibration error must not exceed ±2% of the calibration span of the analyzer as determined by the following equation:

$$\text{Calibration Error} = \frac{\text{Analyzer Response} - \text{Cal. Gas Value}}{\text{Calibration Span}} * 100\%$$

The Sample System Bias test was performed before and after each test run and must not exceed ±5% of the calibration span for both the zero and upscale span gas. The system bias is calculated using the following equation:

$$\text{Sample System Bias} = \frac{\text{Response to System Bias} - \text{Response to Analyzer Cal}}{\text{Calibration Span}} * 100\%$$

Where:

Response to Analyzer Cal = the analyzer response to the last time the same calibration gas was introduced directly to the analyzer (this may be the pre-test calibration error value or a more recent analyzer calibration adjustment)

Zero and Calibration Drift were calculated for each test run based on the analyzer response during the pre- and post-test sample system bias test. Zero and upscale drift must not exceed ±3% of the calibration span.

$$\text{Analyzer Drift} = \frac{\text{Post-Test System Bias Response} - \text{Pre-Test System Bias Response}}{\text{Calibration Span}} * 100\%$$

The pre- and post-test analyzer responses during the sample system bias test were used to correct the raw test average for any sample system bias and analyzer drift. The drift/bias corrected data are the actual reported concentrations and are used for subsequent calculations (mass emission rates, lb/MMBtu, corrections to 3% or 15% O_2, etc.). The drift/bias corrections are performed using the following equation:

$$C_c = \frac{\overline{C} - C_o}{C_m - C_o} * C_{ma}$$

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Where:

C_c = Drift/bias corrected concentration

$\overline{C}$ = Raw Test Average

C_m = Average of pre- and post-test response to sample system bias span

C_o = Average of pre- and post-test to sample system bias zero

C_{ma} = Span gas value

3.2 VELOCITY

The stack gas velocity was measured using EPA Method 2 which utilizes an S-type pitot tube and type-K thermocouple.

3.3 MOISTURE

Stack gas moisture content was measured in conjunction with all isokinetic tests.

3.4 PARTICULATE MATTER (FILTERABLE) BY EPA METHOD 5

Replicates of 7, 240-minute samples using EPA Method 5 were conducted to measure emissions of Particulate Matter (PM):

The sampling train included:

- Nozzle (part a);
- Heated glass-lined probe (part b);
- Filter heated to 248 ±25°F (part c);
- Flexible Teflon connecting tube or "sample line" (part d);
- An impinger train consisting of 2 impingers containing 100ml of deionized water, an empty impinger, and an impinger containing silica gel (part e).

Sampling was conducted as described in EPA Method 5. After sampling, the apparatus was leak-checked as described in that Method, then the sampling train was disassembled for sample recovery.

Recovery and Analysis of "Front Half" or filterable PM: Sample was recovered from the nozzle, probe liner and filter holder as described in EPA Method 5 with acetone washes and brushing into an amber glass bottle. The filter was returned to its pre-numbered Petri dish. The filterable PM emissions was determined from gravimetric analysis of the samples as described in EPA Method 5.

3.5   TRACE METALS BY EPA METHOD 29 (MULTI-METALS)

Replicates of 7, 240-minute samples were collected for metals using the procedure in EPA Method 29. These samples were analyzed for antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium.

This procedure isokinetically withdraws flue gas through the sample train described below:

1. The probe and nozzle are glass to prevent metal contamination of the sample.
2. The filter is Quartz fiber to minimize interferences.
3. The first impinger is empty, the second and third impingers contain 5% nitric acid and 10% hydrogen peroxide to collect any volatile metals which pass through the filter.
4. The fourth impinger is empty to prevent carry over of the HNO_3/H_2O_2 solution into the permanganate solution.
5. The fifth and sixth impingers contain acidified potassium permanganate solution to collect any mercury that is not collected in the HNO_3/H_2O_2 impingers.
6. The last impinger contains silica gel.

Sampling reagents and media are all trace metals quality with lot analyses of specific heavy metals available. The sampling train is pre-cleaned with DI water and nitric acid before testing and sealed with parafilm.

A field blank and reagent blank was collected and analyzed for this sampling program.

Sample recovery consists of recovering the following sample fractions:

- Probe, nozzle and front filter holder rinse – 100 ml of 0.1N HNO_3 and brushing.
- Filter - returned to pre-numbered petri dish and sealed.
- First three impingers, back half of filter holder and sample line - 100 ml of 0.1N HNO_3 acid rinse.
- Empty impinger 100 ml of 0.1N HNO_3 rinse.
- Permanganate impingers - 4% $KMnO_4$/10% H_2SO_4 rinse followed by DI water rinse.
- 8N hydrochloric acid rinse of permanganate impingers to remove residual manganese dioxide adhering to the impinger walls.

All sample fractions are stored in acid washed sample bottles.

Analysis for these metals except mercury was performed by ICP-MS and ICP-OES. Mercury was analyzed by cold vapor atomic absorption spectroscopy (CVAAS). Sample analyses were performed by Enthalpy Analytical, LLC in Durham, North Carolina. In the laboratory, decomposition of each sample fraction was performed per the method, and front half and back half fractions were analyzed and reported separately as requested by the EPA guidance document for this testing program. Five mercury analyses were performed per sample train: the combined filter/probe wash, nitric acid impinger catch, the empty impinger rinse, the potassium permanganate impinger catch, and the hydrochloric acid rinse of the permanganate impingers.

The reagent blank, the field blank and a laboratory preparation blank were analyzed for all trace metals. Spike recoveries and duplicate analyses are reported with the sample results in the laboratory report. No blank corrections were applied to the reported results since majority of the blank values were non-detect.

3.6   FORMALDEHYDE AND ACID GASES BY EPA METHOD 320

Replicates of 7 - 60 minute samples were collected for formaldehyde, hydrochloric acid (HCl), and hydrogen fluoride (HF) by EPA Method 320.

EPA Method 320 is an instrumental test method used to measure specific analyte concentrations for which EPA reference spectra have been developed or prepared. Extractive emission measurements are performed using FTIR spectroscopy. The FTIR analyzer is composed of a spectrometer and detector, a high optical throughput sampling cell, analysis software, and a quantitative spectral library. The analyzer collects high resolution spectra in the mid infrared spectral region (600 to 4,500 cm-1), which are analyzed using the quantitative spectral library. This provides an accurate, highly sensitive measurement of gases and vapors.

Pertinent information regarding the performance of the method is presented below:

- Method Options:
  - The specific analyte concentrations include H_2O, formaldehyde, HCl and HF
  - Continuous static sampling is performed at a flow rate of approximately 10 liters per minute
  - A dynamic matrix spike is performed using formaldehyde, HCl and HF. Each spiking cylinder contained SF_6 as a tracer gas
- Method Exceptions:
  - The minimum detectable concentration values are determined using the MDC2 calculation specified in ASTM Method D6348-12
- Target and/or Minimum Required Sample Duration: 60 minutes

4.0 TEST RESULTS AND OVERVIEW

4.1 CT-4 TEST RESULTS

The results of the CT-4 tests are presented in Tables 4-1 through 4-6.

TABLE 4-1
CO RESULTS CT-4
SUNHINE GAS PRODUCERS

Parameter/Units	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Run 7	Average
Date	2/7/2023	2/8/2023	2/8/2023	2/9/2023	2/9/2023	2/10/2023	2/10/2023	--
Start Time	10:53	08:11	13:06	08:06	12:41	07:51	12:16	--
Stop Time	15:03	12:18	17:12	12:21	16:55	12:00	16:25	--
Pre-Test Information								
Reference Temperature, °F	68	68	68	68	68	68	68	--
Diluent Emissions and Stack Flow Rate								
O_2, % Volume Dry	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
CO_2, % Volume Dry	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Stack Flow Rate, dscfm	34,673	34,670	34,381	34,767	34,864	34,564	34,491	34,630
Pollutant Emissions								
Carbon Monoxide (CO)								
ppm Volume Dry	1.22	1.27	0.96	0.63	1.04	0.43	0.22	0.82
ppmc Volume Dry @ 15% O_2	1.48	1.53	1.18	0.77	1.25	0.52	0.26	1.00
lb/hr	0.18	0.19	0.14	0.10	0.16	0.06	0.03	0.12

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TABLE 4-2
PARTICULATE MATTER RESULTS CT-4
SUNHINE GAS PRODUCERS

Parameter/Units	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Run 7	Average
Date	2/7/2023	2/8/2023	2/8/2023	2/9/2023	2/9/2023	2/10/2023	2/10/2023	--
Start Time	10:50	08:10	13:05	08:05	12:40	07:50	12:15	--
Stop Time	15:00	12:20	17:15	12:15	16:50	12:00	16:25	--
Test Information								
Reference Temperature, °F	68	68	68	68	68	68	68	--
Diluent Emissions and Stack Flow Rate								
Moisture Fraction, %	5.3	5.2	5.2	4.7	4.8	5.0	5.2	5.1
O_2, % Volume Dry	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
CO_2, % Volume Dry	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Stack Flow Rate, wacfm	85,268	85,063	84,263	85,048	85,359	85,851	85,914	85,252
Stack Flow Rate, dscfm	34,673	34,670	34,381	34,767	34,864	34,564	34,491	34,630
Particulate Emissions								
Grain Loading, gr/dscf	0.00006	0.00013	0.00010	0.00006	0.00011	0.00004	0.00012	0.00009
Grain Loading @ 15% O_2	0.00007	0.00015	0.00013	0.00007	0.00013	0.00005	0.00015	0.00011
lb/hr	0.018	0.037	0.031	0.017	0.033	0.013	0.036	0.026

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Sunshine Gas Producers, LLC
2023 ICR on CT-4 and CT-5

TABLE 4-3
TOTAL TRACE METALS RESULTS SUMMARY CT-4
SUNHINE GAS PRODUCERS

Parameter/Units	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	Averages
Diluent Emissions and Stack Flow Rate								
Date	2/7/2023	2/8/2023	2/8/2023	2/9/2023	2/9/2023	2/10/2023	2/10/2023	--
Start Time	10:50	08:10	13:05	08:05	12:40	07:50	12:15	--
Stop Time	15:00	12:20	17:15	12:15	16:50	12:00	16:25	--
Flow Rate, dscfm	34,801	34,847	34,702	34,614	34,850	34,552	34,453	34,688
Sample Volume, dscf	178.48	179.87	178.95	181.31	177.55	173.28	171.62	177.29
O_2, % Volume Dry	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
CO_2, % Volume Dry	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Moisture, % by Volume	5.03	5.07	5.13	5.04	4.90	4.94	5.09	5.03
Antimony								
mg/m^3	0.00009	0.00006	< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	< 0.00007
mg/m^3 @ 15% O_2	0.00011	0.00008	< 0.00008	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00008	< 0.00008
lb/hr	1.14×10^{-5}	8.22×10^{-6}	< 8.14×10^{-6}	ND< 7.73×10^{-6}	ND< 7.86×10^{-6}	ND< 7.98×10^{-6}	ND< 8.04×10^{-6}	< 8.49×10^{-6}
Arsenic								
mg/m^3	< 0.00014	< 0.00016	< 0.00015	ND< 0.00014	ND< 0.00014	ND< 0.00015	ND< 0.00015	< 0.00015
mg/m^3 @ 15% O_2	< 0.00017	< 0.00019	< 0.00018	ND< 0.00017	ND< 0.00017	ND< 0.00018	ND< 0.00018	< 0.00018
lb/hr	< 1.88×10^{-5}	< 2.03×10^{-6}	< 1.90×10^{-5}	ND< 1.84×10^{-6}	ND< 1.88×10^{-5}	ND< 1.91×10^{-5}	ND< 1.92×10^{-5}	< 1.91×10^{-6}
Beryllium								
mg/m^3	0.00003	0.00004	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002	< 0.00002
mg/m^3 @ 15% O_2	0.00004	0.00004	ND< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	< 0.00002	< 0.00002
lb/hr	3.81×10^{-6}	4.72×10^{-6}	ND< 1.80×10^{-6}	ND< 1.80×10^{-6}	ND< 1.83×10^{-6}	ND< 1.86×10^{-6}	< 1.97×10^{-6}	< 2.54×10^{-6}
Cadmium								
mg/m^3	0.00017	0.00006	< 0.00003	< 0.00004	< 0.00002	ND< 0.00001	< 0.00001	< 0.00005
mg/m^3 @ 15% O_2	0.00021	0.00008	< 0.00004	< 0.00004	< 0.00002	ND< 0.00002	< 0.00002	< 0.00006
lb/hr	2.24×10^{-5}	8.27×10^{-6}	< 3.78×10^{-6}	< 4.67×10^{-6}	< 2.08×10^{-6}	ND< 1.91×10^{-6}	< 1.93×10^{-6}	< 6.43×10^{-6}
Chromium								
mg/m^3	0.00103	0.00136	0.00099	0.00130	0.00136	0.00097	0.00135	0.00119
mg/m^3 @ 15% O_2	0.00124	0.00164	0.00121	0.00158	0.00163	0.00117	0.00164	0.00144
lb/hr	1.34×10^{-4}	1.77×10^{-4}	1.29×10^{-4}	1.69×10^{-4}	1.77×10^{-4}	1.25×10^{-4}	1.74×10^{-4}	1.55×10^{-4}
Cobalt								
mg/m^3	0.00004	0.00005	0.00023	0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00006
mg/m^3 @ 15% O_2	0.00005	0.00006	0.00028	0.00003	< 0.00002	< 0.00002	< 0.00002	< 0.00007
lb/hr	5.82×10^{-6}	7.01×10^{-6}	2.98×10^{-5}	3.06×10^{-6}	< 2.42×10^{-6}	< 2.19×10^{-6}	< 2.41×10^{-6}	< 7.54×10^{-6}
Lead								
mg/m^3	0.00027	0.00020	0.00011	0.00014	0.00012	0.00010	0.00010	0.00015
mg/m^3 @ 15% O_2	0.00033	0.00024	0.00013	0.00016	0.00015	0.00012	0.00012	0.00018
lb/hr	3.53×10^{-5}	2.62×10^{-5}	1.41×10^{-5}	1.75×10^{-5}	1.59×10^{-5}	1.33×10^{-5}	1.24×10^{-5}	1.92×10^{-5}
Manganese								
mg/m^3	0.00044	0.00036	0.00023	0.00026	0.00027	0.00050	0.00062	0.00038
mg/m^3 @ 15% O_2	0.00054	0.00044	0.00028	0.00032	0.00033	0.00061	0.00075	0.00047
lb/hr	5.77×10^{-5}	4.73×10^{-5}	2.97×10^{-5}	3.40×10^{-5}	3.58×10^{-5}	6.51×10^{-5}	7.93×10^{-5}	4.98×10^{-5}
Mercury								
mg/m^3	< 0.00015	< 0.00011	< 0.00020	< 0.00010	< 0.00009	< 0.00010	< 0.00009	< 0.00012
mg/m^3 @ 15% O_2	< 0.00018	< 0.00013	< 0.00024	< 0.00013	< 0.00010	< 0.00013	< 0.00010	< 0.00014
lb/hr	< 1.95×10^{-5}	< 1.44×10^{-5}	< 2.57×10^{-5}	< 1.33×10^{-5}	< 1.13×10^{-5}	< 1.35×10^{-5}	< 1.10×10^{-5}	< 1.55×10^{-5}
Nickel								
mg/m^3	0.00071	0.00048	0.00042	0.00053	0.00041	0.00033	0.00037	0.00046
mg/m^3 @ 15% O_2	0.00086	0.00058	0.00052	0.00064	0.00049	0.00040	0.00045	0.00056
lb/hr	9.28×10^{-5}	6.25×10^{-5}	5.48×10^{-5}	6.80×10^{-5}	5.29×10^{-5}	4.26×10^{-5}	4.80×10^{-5}	6.02×10^{-5}
Selenium								
mg/m^3	< 0.00028	< 0.00012	< 0.00029	< 0.00097	< 0.00029	< 0.00169	< 0.00018	< 0.00055
mg/m^3 @ 15% O_2	< 0.00034	< 0.00015	< 0.00035	< 0.00118	< 0.00035	< 0.00204	< 0.00022	< 0.00066
lb/hr	< 3.70×10^{-5}	< 1.60×10^{-5}	< 3.75×10^{-5}	< 1.26×10^{-4}	< 3.80×10^{-5}	< 2.18×10^{-4}	< 2.29×10^{-5}	< 7.08×10^{-5}

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

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Sunshine Gas Producers, LLC
2023 ICR on CT-4 and CT-5

TABLE 4-4
FRONT HALF TRACE METALS RESULTS SUMMARY CT-4
SUNHINE GAS PRODUCERS

Parameter/Units	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	Averages
Diluent Emissions and Stack Flow Rate								
Date	2/7/2023	2/8/2023	2/8/2023	2/9/2023	2/9/2023	2/10/2023	2/10/2023	--
Start Time	10:50	08:10	13:05	08:05	12:40	07:50	12:15	--
Stop Time	15:00	12:20	17:15	12:15	16:50	12:00	16:25	--
Flow Rate, dscfm	34,801	34,847	34,702	34,614	34,850	34,552	34,453	34,688
Sample Volume, dscf	178.48	179.87	178.95	181.31	177.55	173.28	171.62	177.29
O_2, % Volume Dry	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
CO_2, % Volume Dry	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Moisture, % by Volume	5.03	5.07	5.13	5.04	4.90	4.94	5.09	5.03
Antimony F½								
mg/dscm	0.00007	0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	< 0.00005
mg/dscm @ 15% O_2	0.00008	0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	< 0.00006
lb/hr	8.84×10^{-6}	6.43×10^{-6}	ND< 6.41×10^{-6}	ND< 6.31×10^{-6}	ND< 6.49×10^{-6}	ND< 6.59×10^{-6}	ND< 6.63×10^{-6}	< 6.81×10^{-6}
Arsenic F½								
mg/dscm	ND< 0.00013	ND< 0.00013	ND< 0.00013	ND< 0.00013	ND< 0.00013	ND< 0.00014	ND< 0.00014	ND< 0.00013
mg/dscm @ 15% O_2	ND< 0.00016	ND< 0.00016	ND< 0.00016	ND< 0.00016	ND< 0.00016	ND< 0.00017	ND< 0.00017	ND< 0.00016
lb/hr	ND< 1.73×10^{-5}	ND< 1.72×10^{-5}	ND< 1.72×10^{-5}	ND< 1.69×10^{-5}	ND< 1.74×10^{-5}	ND< 1.77×10^{-5}	ND< 1.78×10^{-5}	ND< 1.74×10^{-5}
Beryllium F½								
mg/dscm	0.00002	0.00003	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002
mg/dscm @ 15% O_2	0.00003	0.00004	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002
lb/hr	2.99×10^{-6}	4.20×10^{-6}	ND< 1.36×10^{-6}	ND< 1.34×10^{-6}	ND< 1.38×10^{-6}	ND< 1.40×10^{-6}	ND< 1.41×10^{-6}	< 2.01×10^{-6}
Cadmium F½								
mg/dscm	0.00005	0.00003	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	0.00001	< 0.00002
mg/dscm @ 15% O_2	0.00006	0.00004	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	0.00001	< 0.00002
lb/hr	5.98×10^{-6}	4.43×10^{-6}	ND< 1.33×10^{-6}	ND< 1.31×10^{-6}	ND< 1.35×10^{-6}	ND< 1.37×10^{-6}	1.39×10^{-6}	< 2.45×10^{-6}
Chromium F½								
mg/dscm	0.00090	0.00124	0.00089	0.00119	0.00125	0.00087	0.00126	0.00108
mg/dscm @ 15% O_2	0.00108	0.00149	0.00109	0.00144	0.00150	0.00105	0.00153	0.00131
lb/hr	1.17×10^{-4}	1.61×10^{-4}	1.16×10^{-4}	1.54×10^{-4}	1.63×10^{-4}	1.12×10^{-4}	1.62×10^{-4}	1.41×10^{-4}
Cobalt F½								
mg/dscm	0.00003	0.00004	0.00022	0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00005
mg/dscm @ 15% O_2	0.00003	0.00005	0.00027	0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00006
lb/hr	3.66×10^{-6}	5.15×10^{-6}	2.92×10^{-5}	1.96×10^{-6}	ND< 1.46×10^{-6}	ND< 1.48×10^{-5}	ND< 1.49×10^{-6}	< 6.34×10^{-6}
Lead F½								
mg/dscm	0.00013	0.00011	0.00007	0.00007	0.00008	0.00006	0.00007	0.00008
mg/dscm @ 15% O_2	0.00015	0.00013	0.00008	0.00008	0.00010	0.00008	0.00009	0.00010
lb/hr	1.63×10^{-5}	1.40×10^{-5}	8.84×10^{-6}	8.98×10^{-6}	1.05×10^{-5}	8.20×10^{-5}	9.13×10^{-6}	1.09×10^{-5}
Manganese F½								
mg/dscm	0.00020	0.00019	0.00015	0.00015	0.00014	0.00030	0.00033	0.00021
mg/dscm @ 15% O_2	0.00025	0.00023	0.00018	0.00018	0.00017	0.00036	0.00040	0.00025
lb/hr	2.65×10^{-5}	2.49×10^{-5}	1.90×10^{-5}	1.95×10^{-5}	1.88×10^{-5}	3.82×10^{-5}	4.27×10^{-5}	2.71×10^{-5}
Mercury F½								
mg/dscm	ND< 0.00000	ND< 0.00000	ND< 0.00000	ND< 0.00000	ND< 0.00000	ND< 0.00001	ND< 0.00001	ND< 0.00000
mg/dscm @ 15% O_2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
lb/hr	ND< 6.44×10^{-7}	ND< 6.40×10^{-7}	ND< 6.41×10^{-7}	ND< 6.31×10^{-7}	ND< 6.49×10^{-7}	ND< 6.59×10^{-7}	ND< 6.63×10^{-7}	ND< 6.47×10^{-7}
Nickel F½								
mg/dscm	0.00043	0.00036	0.00027	0.00038	0.00030	0.00025	0.00030	0.00033
mg/dscm @ 15% O_2	0.00052	0.00044	0.00033	0.00046	0.00036	0.00031	0.00037	0.00040
lb/hr	5.57×10^{-5}	4.74×10^{-5}	3.51×10^{-5}	4.92×10^{-5}	3.87×10^{-5}	3.29×10^{-5}	3.90×10^{-5}	4.26×10^{-5}
Selenium F½								
mg/dscm	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006
mg/dscm @ 15% O_2	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00008	ND< 0.00007
lb/hr	ND< 7.83×10^{-6}	ND< 7.78×10^{-6}	ND< 7.79×10^{-6}	ND< 7.67×10^{-6}	ND< 7.89×10^{-6}	ND< 8.01×10^{-6}	ND< 8.07×10^{-6}	ND< 7.86×10^{-6}

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

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Sunshine Gas Producers, LLC
2023 ICR on CT-4 and CT-5

TABLE 4-5
BACK HALF TRACE METALS RESULTS SUMMARY CT-4
SUNHINE GAS PRODUCERS

Parameter/Units	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	Averages
Diluent Emissions and Stack Flow Rate								
Date	2/7/2023	2/8/2023	2/8/2023	2/9/2023	2/9/2023	2/10/2023	2/10/2023	--
Start Time	10:50	08:10	13:05	08:05	12:40	07:50	12:15	--
Stop Time	15:00	12:20	17:15	12:15	16:50	12:00	16:25	--
Flow Rate, dscfm	34,801	34,847	34,702	34,614	34,850	34,552	34,453	34,688
Sample Volume, dscf	178.48	179.87	178.95	181.31	177.55	173.28	171.62	177.29
O_2, % Volume Dry	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
CO_2, % Volume Dry	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Moisture, % by Volume	5.03	5.07	5.13	5.04	4.90	4.94	5.09	5.03
Antimony B½								
mg/dscm	0.00002	0.00001	0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00001
mg/dscm @ 15% O_2	0.00002	0.00002	0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002
lb/hr	2.60×10^{-6}	1.80×10^{-6}	1.73×10^{-6}	ND< 1.42×10^{-6}	ND< 1.37×10^{-6}	ND< 1.40×10^{-6}	ND< 1.41×10^{-6}	< 1.68×10^{-6}
Arsenic B½								
mg/dscm	0.00001	0.00002	0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00001
mg/dscm @ 15% O_2	0.00001	0.00003	0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002
lb/hr	1.53×10^{-6}	3.07×10^{-6}	1.79×10^{-6}	ND< 1.42×10^{-6}	ND< 1.37×10^{-6}	ND< 1.40×10^{-6}	ND< 1.41×10^{-6}	< 1.71×10^{-6}
Beryllium B½								
mg/dscm	0.000006	0.000004	ND< 0.000003	ND< 0.000004	ND< 0.000003	ND< 0.000004	0.000004	< 0.000004
mg/dscm @ 15% O_2	0.000008	0.000005	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	0.000005	< 0.000005
lb/hr	8.22×10^{-7}	5.25×10^{-7}	ND< 4.41×10^{-7}	ND< 4.59×10^{-7}	ND< 4.46×10^{-7}	ND< 4.53×10^{-7}	5.60×10^{-7}	< 5.29×10^{-7}
Cadmium B½								
mg/dscm	0.00013	0.00003	0.00002	0.00003	0.00001	ND< 0.00000	ND< 0.00000	< 0.00003
mg/dscm @ 15% O_2	0.00015	0.00004	0.00002	0.00003	0.00001	ND< 0.00001	ND< 0.00001	< 0.00004
lb/hr	1.64×10^{-5}	3.84×10^{-6}	2.44×10^{-6}	3.36×10^{-6}	7.29×10^{-7}	ND< 5.40×10^{-7}	ND< 5.44×10^{-7}	< 3.98×10^{-6}
Chromium B½								
mg/dscm	0.00013	0.00012	0.00010	0.00011	0.00011	0.00010	0.00009	0.00011
mg/dscm @ 15% O_2	0.00016	0.00014	0.00012	0.00014	0.00013	0.00013	0.00011	0.00013
lb/hr	1.70×10^{-5}	1.55×10^{-5}	1.26×10^{-5}	1.47×10^{-6}	1.45×10^{-5}	1.35×10^{-5}	1.19×10^{-5}	1.42×10^{-5}
Cobalt B½								
mg/dscm	0.00002	0.00001	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001
mg/dscm @ 15% O_2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
lb/hr	2.16×10^{-6}	1.87×10^{-6}	6.18×10^{-7}	1.10×10^{-6}	9.60×10^{-7}	7.11×10^{-7}	9.23×10^{-7}	1.19×10^{-6}
Lead B½								
mg/dscm	0.00015	0.00009	0.00004	0.00007	0.00004	0.00004	0.00003	0.00006
mg/dscm @ 15% O_2	0.00018	0.00011	0.00005	0.00008	0.00005	0.00005	0.00003	0.00008
lb/hr	1.90×10^{-5}	1.22×10^{-5}	5.25×10^{-6}	8.53×10^{-6}	5.40×10^{-6}	5.06×10^{-6}	3.24×10^{-6}	8.38×10^{-6}
Manganese B½								
mg/dscm	0.00024	0.00017	0.00008	0.00011	0.00013	0.00021	0.00028	0.00018
mg/dscm @ 15% O_2	0.00029	0.00021	0.00010	0.00014	0.00016	0.00025	0.00035	0.00021
lb/hr	3.12×10^{-5}	2.23×10^{-5}	1.07×10^{-5}	1.45×10^{-5}	1.70×10^{-5}	2.69×10^{-5}	3.66×10^{-5}	2.27×10^{-5}
Mercury B½								
mg/dscm	< 0.00014	< 0.00011	< 0.00019	< 0.00010	< 0.00008	< 0.00010	< 0.00008	< 0.00011
mg/dscm @ 15% O_2	< 0.00017	< 0.00013	< 0.00024	< 0.00012	< 0.00010	< 0.00012	< 0.00010	< 0.00014
lb/hr	< 1.88×10^{-5}	< 1.37×10^{-5}	< 2.51×10^{-5}	< 1.27×10^{-5}	< 1.07×10^{-5}	< 1.28×10^{-5}	< 1.04×10^{-5}	< 1.49×10^{-5}
Nickel B½								
mg/dscm	0.00028	0.00012	0.00015	0.00015	0.00011	0.00007	0.00007	0.00014
mg/dscm @ 15% O_2	0.00034	0.00014	0.00019	0.00018	0.00013	0.00009	0.00009	0.00016
lb/hr	3.71×10^{-5}	1.51×10^{-5}	1.97×10^{-5}	1.88×10^{-5}	1.43×10^{-5}	9.62×10^{-6}	9.02×10^{-6}	1.77×10^{-5}
Selenium B½								
mg/dscm	0.00022	0.00006	0.00023	0.00091	0.00023	0.00163	0.00011	0.00049
mg/dscm @ 15% O_2	0.00027	0.00008	0.00028	0.00111	0.00028	0.00196	0.00014	0.00059
lb/hr	2.91×10^{-5}	8.24×10^{-6}	2.97×10^{-5}	1.18×10^{-4}	3.01×10^{-5}	2.10×10^{-4}	1.48×10^{-5}	6.29×10^{-5}

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

MONTROSE
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TABLE 4-6
ACID GASES AND FORMALDEHYDE RESULTS SUMMARY CT-4
SUNHINE GAS PRODUCERS

Parameter/Units	1-EPA 320	2-EPA 320	3-EPA 320	4-EPA 320	5-EPA 320	6-EPA 320	7-EPA 320	Averages
Date	2/7/2023	2/7/2023	2/7/2023	2/8/2023	2/8/2023	2/8/2023	2/8/2023	--
Start Time	10:50	12:00	13:15	09:06	10:19	11:23	13:05	--
Stop Time	11:50	13:08	14:15	10:06	11:19	12:32	14:05	--
Pre-Test Information								
Reference Temperature, °F	68	68	68	68	68	68	68	--
Diluent Emissions and Stack Flow Rate								
O_2, % Volume Dry	16.02	16.02	16.02	16.01	16.01	16.01	16.07	16.03
CO_2, % Volume Dry	4.40	4.40	4.40	4.52	4.52	4.52	4.47	4.46
Stack Flow Rate, dscfm	34,673	34,673	34,673	34,670	34,670	34,670	34,381	34,630
Pollutant Emissions								
Hydrochloric Acid (HCl)								
ppm Volume Dry	0.54	0.49	0.50	0.45	0.51	0.56	0.60	0.52
ppmc Volume Dry @ 15% O_2	0.65	0.59	0.61	0.54	0.61	0.68	0.73	0.63
lb/hr	0.11	0.10	0.10	0.09	0.10	0.11	0.12	0.10
Hydrogen Fluoride (HF)								
ppm Volume Dry	1.72	1.67	1.79	1.62	1.81	1.90	2.00	1.79
ppmc Volume Dry @ 15% O_2	2.08	2.02	2.16	1.95	2.19	2.30	2.44	2.16
lb/hr	0.19	0.18	0.19	0.17	0.20	0.21	0.21	0.19
Formaldehyde (CH_2O)[1]								
ppm Volume Dry	0.021	0.021	0.028	0.035	0.026	0.028	0.030	0.027
ppmc Volume Dry @ 15% O_2	0.026	0.025	0.034	0.042	0.032	0.034	0.037	0.033
lb/hr	0.003	0.003	0.005	0.006	0.004	0.005	0.005	0.004

(1) As measured values are reported from FTIR. These values are below the instrument detection limit (BDL).

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Sunshine Gas Producers, LLC
2023 ICR on CT-4 and CT-5

4.2 CT-5 TEST RESULTS

The results of the CT-5 tests are presented in Tables 4-7 through 4-12.

TABLE 4-7
CO RESULTS CT-5
SUNHINE GAS PRODUCERS

Parameter/Units	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Run 7	Average
Date	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/16/2023	2/16/2023	2/17/2023	--
Start Time	08:01	12:21	07:36	12:01	07:36	12:01	07:31	--
Stop Time	12:10	16:30	11:46	16:11	11:45	16:10	11:40	--
Pre-Test Information								
Reference Temperature, °F	68	68	68	68	68	68	68	--
Diluent Emissions and Stack Flow Rate								
O_2, % Volume Dry	16.08	16.08	16.11	16.15	16.20	16.22	16.17	16.15
CO_2, % Volume Dry	4.29	4.25	4.23	4.18	4.19	4.14	4.27	4.22
Stack Flow Rate, dscfm	33,956	33,815	34,017	33,819	34,037	34,235	33,840	33,960
Pollutant Emissions								
Carbon Monoxide (CO)								
ppm Volume Dry	0.39	0.08	0.14	0.12	0.15	0.08	0.26	0.18
ppmc Volume Dry @ 15% O_2	0.48	0.09	0.17	0.15	0.19	0.10	0.33	0.22
lb/hr	0.06	0.01	0.02	0.02	0.02	0.01	0.04	0.03

MONTROSE
AIR QUALITY SERVICES

TABLE 4-8
PARTICULATE MATTER RESULTS CT-5
SUNHINE GAS PRODUCERS

Parameter/Units	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Run 7	Average
Date	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/16/2023	2/16/2023	2/17/2023	--
Start Time	08:00	12:20	07:35	12:00	07:35	12:00	07:30	--
Stop Time	12:10	16:30	11:45	16:10	11:45	16:10	11:40	--
Test Information								
Reference Temperature, °F	68	68	68	68	68	68	68	--
Diluent Emissions and Stack Flow Rate								
Moisture Fraction, %	5.7	5.5	5.5	5.5	5.3	4.4	5.3	5.3
O_2, % Volume Dry	16.08	16.08	16.11	16.15	16.20	16.22	16.17	16.15
CO_2, % Volume Dry	4.29	4.25	4.23	4.18	4.19	4.14	4.27	4.22
Stack Flow Rate, wacfm	84,863	84,333	84,176	84,188	84,147	83,710	83,942	84,194
Stack Flow Rate, dscfm	33,956	33,815	34,017	33,819	34,037	34,235	33,840	33,960
Particulate Emissions								
Grain Loading, gr/dscf	0.00005	0.00010	0.00007	0.00006	0.00000	0.00015	0.00006	0.00007
Grain Loading @ 15% O_2	0.00006	0.00012	0.00008	0.00008	0.00000	0.00019	0.00008	0.00009
lb/hr	0.015	0.028	0.020	0.018	0.000	0.043	0.017	0.020

MONTROSE
AIR QUALITY SERVICES

TABLE 4-9
TOTAL TRACE METALS RESULTS SUMMARY CT-5
SUNHINE GAS PRODUCERS

Parameter/Units	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	Averages
Diluent Emissions and Stack Flow Rate								
Date	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/16/2023	2/16/2023	2/17/2023	--
Start Time	08:00	12:20	07:35	12:00	07:35	12:00	7:30	--
Stop Time	12:10	16:30	12:45	16:10	11:45	16:10	11:40	--
Flow Rate, dscfm	33,749	33,854	33,920	33,742	33,727	33,795	33,652	33,777
Sample Volume, dscf	175.69	171.57	178.69	174.82	179.16	173.04	174.67	175.38
O_2, % Volume Dry	16.08	16.08	16.11	16.15	16.20	16.22	16.17	16.15
CO_2, % Volume Dry	4.29	4.25	4.23	4.18	4.19	4.14	4.27	4.22
Moisture, % by Volume	5.09	4.79	4.95	4.97	4.76	4.81	4.91	4.90
Antimony								
mg/m^3	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006
mg/m^3 @ 15% O_2	ND< 0.00007	ND< 0.00008	ND< 0.00007	ND< 0.00008	ND< 0.00007	ND< 0.00008	ND< 0.00008	ND< 0.00008
lb/hr	ND< 7.69×10^{-5}	ND< 7.90×10^{-6}	ND< 7.68×10^{-6}	ND< 7.73×10^{-6}	ND< 7.54×10^{-6}	ND< 7.82×10^{-6}	ND< 7.71×10^{-6}	ND< 7.73×10^{-6}
Arsenic								
mg/m^3	ND< 0.00015	ND< 0.00015	ND< 0.00014	ND< 0.00015	ND< 0.00014	ND< 0.00015	ND< 0.00015	ND< 0.00015
mg/m^3 @ 15% O_2	ND< 0.00018	ND< 0.00018	ND< 0.00018	ND< 0.00018	ND< 0.00018	ND< 0.00019	ND< 0.00018	ND< 0.00018
lb/hr	ND< 1.84×10^{-5}	ND< 1.89×10^{-5}	ND< 1.82×10^{-5}	ND< 1.85×10^{-5}	ND< 1.80×10^{-5}	ND< 1.87×10^{-5}	ND< 1.84×10^{-5}	ND< 1.84×10^{-5}
Beryllium								
mg/m^3	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002	< 0.00001
mg/m^3 @ 15% O_2	ND< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	< 0.00002	< 0.00002
lb/hr	ND< 1.79×10^{-6}	ND< 1.84×10^{-6}	ND< 1.79×10^{-6}	ND< 1.80×10^{-6}	ND< 1.75×10^{-6}	ND< 1.82×10^{-6}	< 2.17×10^{-6}	< 1.85×10^{-5}
Cadmium								
mg/m^3	ND< 0.00001	< 0.00003	< 0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00001	< 0.00002
mg/m^3 @ 15% O_2	ND< 0.00002	< 0.00003	< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	< 0.00002	< 0.00002
lb/hr	ND< 1.84×10^{-6}	< 3.17×10^{-6}	< 2.20×10^{-6}	ND< 1.85×10^{-6}	ND< 1.80×10^{-6}	ND< 1.87×10^{-6}	< 1.85×10^{-6}	< 2.08×10^{-5}
Chromium								
mg/m^3	0.00102	0.00136	0.00104	0.00101	0.00100	0.00082	0.00111	0.00105
mg/m^3 @ 15% O_2	0.00125	0.00166	0.00128	0.00126	0.00125	0.00103	0.00139	0.00130
lb/hr	1.29×10^{-4}	1.72×10^{-4}	1.32×10^{-4}	1.28×10^{-4}	1.26×10^{-4}	1.03×10^{-4}	1.40×10^{-4}	1.33×10^{-4}
Cobalt								
mg/m^3	ND< 0.00001	ND< 0.00001	< 0.00002	< 0.00001	< 0.00002	ND< 0.00001	< 0.00002	< 0.00002
mg/m^3 @ 15% O_2	ND< 0.00002	ND< 0.00002	< 0.00002	< 0.00002	< 0.00002	ND< 0.00002	< 0.00002	< 0.00002
lb/hr	ND< 1.84×10^{-6}	ND< 1.89×10^{-5}	< 1.96×10^{-6}	< 1.87×10^{-6}	< 2.00×10^{-6}	ND< 1.87×10^{-6}	< 2.10×10^{-6}	< 1.93×10^{-6}
Lead								
mg/m^3	0.00008	0.00009	0.00009	0.00008	0.00009	0.00008	0.00009	0.00008
mg/m^3 @ 15% O_2	0.00010	0.00011	0.00011	0.00010	0.00011	0.00010	0.00011	0.00011
lb/hr	1.07×10^{-5}	1.11×10^{-5}	1.11×10^{-5}	9.85×10^{-6}	1.10×10^{-5}	1.02×10^{-5}	1.12×10^{-5}	1.07×10^{-5}
Manganese								
mg/m^3	0.00323	0.00057	0.00049	0.00023	0.00031	0.00066	0.00059	0.00087
mg/m^3 @ 15% O_2	0.00395	0.00070	0.00060	0.00028	0.00039	0.00084	0.00074	0.00107
lb/hr	4.07×10^{-4}	7.27×10^{-5}	6.19×10^{-5}	2.86×10^{-5}	3.94×10^{-5}	8.38×10^{-5}	7.43×10^{-5}	1.10×10^{-4}
Mercury								
mg/m^3	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
mg/m^3 @ 15% O_2	< 0.00010	< 0.00011	< 0.00011	< 0.00011	< 0.00011	< 0.00012	< 0.00011	< 0.00011
lb/hr	< 1.08×10^{-5}	< 1.16×10^{-5}	< 1.10×10^{-5}	< 1.11×10^{-5}	< 1.10×10^{-5}	< 1.18×10^{-5}	< 1.11×10^{-5}	< 1.12×10^{-5}
Nickel								
mg/m^3	0.00036	0.00043	0.00037	0.00039	0.00051	0.00036	0.00040	0.00040
mg/m^3 @ 15% O_2	0.00044	0.00052	0.00045	0.00049	0.00064	0.00045	0.00050	0.00050
lb/hr	4.56×10^{-5}	5.39×10^{-5}	4.68×10^{-5}	4.95×10^{-5}	6.42×10^{-5}	4.54×10^{-5}	5.04×10^{-5}	5.08×10^{-5}
Selenium								
mg/m^3	< 0.00175	< 0.00053	< 0.00405	< 0.00013	< 0.00022	< 0.00011	< 0.00025	< 0.00101
mg/m^3 @ 15% O_2	< 0.00214	< 0.00065	< 0.00499	< 0.00016	< 0.00028	< 0.00014	< 0.00031	< 0.00124
lb/hr	< 2.20×10^{-4}	< 6.76×10^{-5}	< 5.1×10^{-4}	< 1.61×10^{-5}	< 2.79×10^{-5}	< 1.40×10^{-5}	< 3.13×10^{-5}	< 1.27×10^{-4}

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

MONTROSE
AIR QUALITY SERVICES

Sunshine Gas Producers, LLC
2023 ICR on CT-4 and CT-5

TABLE 4-10
FRONT HALF TRACE METALS RESULTS SUMMARY CT-5
SUNHINE GAS PRODUCERS

Parameter/Units	1-EPA 29		2-EPA 29		3-EPA 29		4-EPA 29		5-EPA 29		6-EPA 29		7-EPA 29		Averages	
Diluent Emissions and Stack Flow Rate																
Date		2/14/2023		2/14/2023		2/15/2023		2/15/2023		2/16/2023		2/16/2023		2/17/2023		--
Start Time		08:00		12:20		07:35		12:00		07:35		12:00		07:30		--
Stop Time		12:10		16:30		12:45		16:10		11:45		16:10		11:40		--
Flow Rate, dscfm		33,749		33,854		33,920		33,742		33,727		33,795		33,652		33,777
Sample Volume, dscf		175.69		171.57		178.69		174.82		179.16		173.04		174.67		175.38
O_2, % Volume Dry		16.08		16.08		16.11		16.15		16.20		16.22		16.17		16.15
CO_2, % Volume Dry		4.29		4.25		4.23		4.18		4.19		4.14		4.27		4.22
Moisture, % by Volume		5.09		4.79		4.95		4.97		4.76		4.81		4.91		4.90
Antimony F½																
mg/dscm	ND<	0.00005	ND<	0.00005	ND<	0.00005	ND<	0.00005	ND<	0.00005	ND<	0.00005	ND<	0.00005	ND<	0.00005
mg/dscm @ 15% O_2	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006
lb/hr	ND<	6.35×10^{-6}	ND<	6.52×10^{-6}	ND<	6.27×10^{-6}	ND<	6.38×10^{-6}	ND<	6.22×10^{-6}	ND<	6.45×10^{-6}	ND<	6.37×10^{-6}	ND<	6.36×10^{-6}
Arsenic F½																
mg/dscm	ND<	0.00013	ND<	0.00014	ND<	0.00013	ND<	0.00014	ND<	0.00013	ND<	0.00014	ND<	0.00014	ND<	0.00014
mg/dscm @ 15% O_2	ND<	0.00017	ND<	0.00017	ND<	0.00016	ND<	0.00017	ND<	0.00017	ND<	0.00017	ND<	0.00017	ND<	0.00017
lb/hr	ND<	1.70×10^{-5}	ND<	1.75×10^{-5}	ND<	1.68×10^{-5}	ND<	1.71×10^{-5}	ND<	1.67×10^{-5}	ND<	1.73×10^{-5}	ND<	1.71×10^{-5}	ND<	1.71×10^{-5}
Beryllium F½																
mg/dscm	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001		0.00001	<	0.00001
mg/dscm @ 15% O_2	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001		0.00002	<	0.00001
lb/hr	ND<	1.35×10^{-6}	ND<	1.39×10^{-6}	ND<	1.33×10^{-6}	ND<	1.36×10^{-6}	ND<	1.32×10^{-6}	ND<	1.37×10^{-6}		1.73×10^{-6}	<	1.41×10^{-6}
Cadmium F½																
mg/dscm	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001		0.00001	<	0.00001
mg/dscm @ 15% O_2	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001		0.00001	<	0.00001
lb/hr	ND<	1.32×10^{-6}	ND<	1.35×10^{-6}	ND<	1.30×10^{-6}	ND<	1.32×10^{-6}	ND<	1.29×10^{-6}	ND<	1.34×10^{-6}		1.33×10^{-6}	<	1.32×10^{-6}
Chromium F½																
mg/dscm		0.00092		0.00126		0.00091		0.00089		0.00089		0.00072		0.00093		0.00093
mg/dscm @ 15% O_2		0.00112		0.00154		0.00112		0.00111		0.00112		0.00091		0.00116		0.00115
lb/hr		1.16×10^{-4}		1.60×10^{-4}		1.15×10^{-4}		1.13×10^{-4}		1.13×10^{-4}		9.14×10^{-5}		1.17×10^{-4}		1.18×10^{-4}
Cobalt F½																
mg/dscm	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001
mg/dscm @ 15% O_2	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001
lb/hr	ND<	1.43×10^{-6}	ND<	1.47×10^{-6}	ND<	1.41×10^{-6}	ND<	1.43×10^{-6}	ND<	1.40×10^{-6}	ND<	1.45×10^{-6}	ND<	1.43×10^{-6}	ND<	1.43×10^{-6}
Lead F½																
mg/dscm		0.00006		0.00006		0.00006		0.00006		0.00007		0.00007		0.00007		0.00006
mg/dscm @ 15% O_2		0.00008		0.00008		0.00007		0.00007		0.00009		0.00009		0.00009		0.00008
lb/hr		8.15×10^{-6}		8.19×10^{-6}		7.40×10^{-6}		7.12×10^{-6}		8.66×10^{-6}		8.60×10^{-6}		8.76×10^{-6}		8.12×10^{-6}
Manganese F½																
mg/dscm		0.00013		0.00047		0.00014		0.00014		0.00013		0.00053		0.00025		0.00026
mg/dscm @ 15% O_2		0.00016		0.00057		0.00017		0.00017		0.00017		0.00067		0.00031		0.00032
lb/hr		1.65×10^{-5}		5.95×10^{-5}		1.72×10^{-5}		1.78×10^{-5}		1.67×10^{-5}		6.69×10^{-5}		3.13×10^{-5}		3.23×10^{-5}
Mercury F½																
mg/dscm	ND<	0.00001	ND<	0.00001	ND<	0.00000	ND<	0.00001	ND<	0.00000	ND<	0.00001	ND<	0.00001	ND<	0.00001
mg/dscm @ 15% O_2	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001	ND<	0.00001
lb/hr	ND<	6.35×10^{-7}	ND<	6.52×10^{-7}	ND<	6.27×10^{-7}	ND<	6.38×10^{-7}	ND<	6.22×10^{-7}	ND<	6.45×10^{-7}	ND<	6.37×10^{-7}	ND<	6.36×10^{-7}
Nickel F½																
mg/dscm		0.00028		0.00034		0.00028		0.00028		0.00038		0.00028		0.00025		0.00030
mg/dscm @ 15% O_2		0.00035		0.00042		0.00035		0.00035		0.00048		0.00035		0.00031		0.00037
lb/hr		3.58×10^{-5}		4.33×10^{-5}		3.59×10^{-5}		3.57×10^{-5}		4.83×10^{-5}		3.54×10^{-5}		3.16×10^{-5}		3.80×10^{-5}
Selenium F½																
mg/dscm	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006	ND<	0.00006
mg/dscm @ 15% O_2	ND<	0.00007	ND<	0.00008	ND<	0.00007	ND<	0.00008	ND<	0.00008	ND<	0.00008	ND<	0.00008	ND<	0.00008
lb/hr	ND<	7.72×10^{-6}	ND<	7.93×10^{-6}	ND<	7.63×10^{-6}	ND<	7.75×10^{-6}	ND<	7.56×10^{-6}	ND<	7.85×10^{-6}	ND<	7.74×10^{-6}	ND<	7.74×10^{-5}

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

MONTROSE
AIR QUALITY SERVICES

Sunshine Gas Producers, LLC
2023 ICR on CT-4 and CT-5

TABLE 4-11
BACK HALF TRACE METALS RESULTS SUMMARY CT-5
SUNHINE GAS PRODUCERS

Parameter/Units	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	Averages
Diluent Emissions and Stack Flow Rate								
Date	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/16/2023	2/16/2023	2/17/2023	--
Start Time	08:00	12:20	07:35	12:00	07:35	12:00	07:30	--
Stop Time	12:10	16:30	12:45	16:10	11:45	16:10	11:40	--
Flow Rate, dscfm	33,749	33,854	33,920	33,742	33,727	33,795	33,652	33,777
Sample Volume, dscf	175.69	171.57	178.69	174.82	179.16	173.04	174.67	175.38
O_2, % Volume Dry	16.08	16.08	16.11	16.15	16.20	16.22	16.17	16.15
CO_2, % Volume Dry	4.29	4.25	4.23	4.18	4.19	4.14	4.27	4.22
Moisture, % by Volume	5.09	4.79	4.95	4.97	4.76	4.81	4.91	4.90
Antimony B½								
mg/dscm	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
mg/dscm @ 15% O_2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
lb/hr	ND< 1.35×10^{-6}	ND< 1.38×10^{-6}	ND< 1.41×10^{-6}	ND< 1.35×10^{-6}	ND< 1.32×10^{-6}	ND< 1.37×10^{-6}	ND< 1.35×10^{-6}	ND< 1.36×10^{-6}
Arsenic B½								
mg/dscm	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
mg/dscm @ 15% O_2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
lb/hr	ND< 1.35×10^{-6}	ND< 1.38×10^{-6}	ND< 1.41×10^{-6}	ND< 1.35×10^{-6}	ND< 1.32×10^{-6}	ND< 1.37×10^{-6}	ND< 1.35×10^{-6}	ND< 1.36×10^{-6}
Beryllium B½								
mg/dscm	ND< 0.000003	ND< 0.000004	ND< 0.000004	ND< 0.000003	ND< 0.000003	ND< 0.000004	ND< 0.000003	ND< 0.000003
mg/dscm @ 15% O_2	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004
lb/hr	ND< 4.37×10^{-7}	ND< 4.49×10^{-6}	ND< 4.57×10^{-7}	ND< 4.39×10^{-7}	ND< 4.28×10^{-6}	ND< 4.44×10^{-7}	ND< 4.38×10^{-7}	ND< 4.41×10^{-7}
Cadmium B½								
mg/dscm	ND< 0.00000	0.00001	0.00001	ND< 0.00000	ND< 0.00000	ND< 0.00000	ND< 0.00000	< 0.00001
mg/dscm @ 15% O_2	ND< 0.00001	0.00002	0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00001
lb/hr	ND< 5.20×10^{-7}	1.82×10^{-6}	8.96×10^{-7}	ND< 5.23×10^{-7}	ND< 5.10×10^{-7}	ND< 5.29×10^{-7}	ND< 5.22×10^{-7}	< 7.60×10^{-7}
Chromium B½								
mg/dscm	0.00011	0.00010	0.00013	0.00012	0.00010	0.00010	0.00019	0.00012
mg/dscm @ 15% O_2	0.00013	0.00012	0.00016	0.00015	0.00013	0.00012	0.00023	0.00015
lb/hr	1.35×10^{-5}	1.25×10^{-5}	1.67×10^{-5}	1.53×10^{-5}	1.30×10^{-5}	1.21×10^{-5}	2.36×10^{-5}	1.52×10^{-5}
Cobalt B½								
mg/dscm	ND< 0.00000	ND< 0.00000	0.00000	0.00000	0.00000	ND< 0.00000	0.00001	< 0.00000
mg/dscm @ 15% O_2	ND< 0.00000	ND< 0.00000	0.00001	0.00000	0.00001	ND< 0.00000	0.00001	< 0.00000
lb/hr	ND< 4.16×10^{-7}	ND< 4.28×10^{-7}	5.52×10^{-7}	4.34×10^{-7}	6.00×10^{-7}	ND< 4.23×10^{-7}	6.70×10^{-7}	< 5.03×10^{-7}
Lead B½								
mg/dscm	0.00002	0.00002	0.00003	0.00002	0.00002	0.00001	0.00002	0.00002
mg/dscm @ 15% O_2	0.00002	0.00003	0.00004	0.00003	0.00002	0.00002	0.00002	0.00003
lb/hr	2.51×10^{-6}	2.92×10^{-6}	3.69×10^{-6}	2.73×10^{-6}	2.36×10^{-6}	1.59×10^{-6}	2.49×10^{-6}	2.61×10^{-6}
Manganese B½								
mg/dscm	0.00310	0.00010	0.00035	0.00009	0.00018	0.00013	0.00034	0.00061
mg/dscm @ 15% O_2	0.00379	0.00013	0.00043	0.00011	0.00023	0.00017	0.00043	0.00075
lb/hr	3.91×10^{-4}	1.33×10^{-5}	4.47×10^{-5}	1.08×10^{-5}	2.26×10^{-5}	1.70×10^{-6}	4.30×10^{-5}	7.75×10^{-5}
Mercury B½								
mg/dscm	< 0.00008	< 0.00009	< 0.00008	< 0.00008	< 0.00008	< 0.00009	< 0.00008	< 0.00008
mg/dscm @ 15% O_2	< 0.00010	< 0.00011	< 0.00010	< 0.00010	< 0.00010	< 0.00011	< 0.00010	< 0.00010
lb/hr	< 1.02×10^{-5}	< 1.10×10^{-5}	< 1.04×10^{-5}	< 1.05×10^{-5}	< 1.04×10^{-5}	< 1.11×10^{-5}	< 1.04×10^{-5}	< 1.06×10^{-5}
Nickel B½								
mg/dscm	0.00008	0.00008	0.00009	0.00011	0.00013	0.00008	0.00015	0.00010
mg/dscm @ 15% O_2	0.00010	0.00010	0.00011	0.00014	0.00016	0.00010	0.00019	0.00013
lb/hr	9.85×10^{-6}	1.06×10^{-5}	1.09×10^{-5}	1.37×10^{-5}	1.59×10^{-5}	1.01×10^{-5}	1.88×10^{-5}	1.29×10^{-5}
Selenium B½								
mg/dscm	0.00168	0.00047	0.00399	0.00007	0.00016	0.00005	0.00019	0.00094
mg/dscm @ 15% O_2	0.00206	0.00058	0.00492	0.00008	0.00020	0.00006	0.00023	0.00116
lb/hr	2.13×10^{-4}	5.97×10^{-5}	5.07×10^{-4}	8.32×10^{-6}	2.03×10^{-5}	6.17×10^{-6}	2.36×10^{-5}	1.20×10^{-4}

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

MONTROSE
AIR QUALITY SERVICES

TABLE 4-12
ACID GASES AND FORMALDEHYDE RESULTS SUMMARY CT-5
SUNHINE GAS PRODUCERS

Parameter/Units	1-EPA 320	2-EPA 320	3-EPA 320	4-EPA 320	5-EPA 320	6-EPA 320	7-EPA 320	Averages
Date	2/14/2023	2/14/2023	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/15/2023	--
Start Time	09:15	10:20	11:25	12:40	09:05	10:10	11:15	--
Stop Time	10:15	11:20	12:34	13:40	10:05	11:10	12:30	--
Pre-Test Information								
Reference Temperature, °F	68	68	68	68	68	68	68	--
Diluent Emissions and Stack Flow Rate								
O_2, % Volume Dry	16.08	16.08	16.08	16.08	16.11	16.11	16.11	16.09
CO_2, % Volume Dry	4.29	4.29	4.29	4.25	4.23	4.23	4.23	4.26
Stack Flow Rate, dscfm	33,956	33,956	33,956	33,815	34,017	34,017	34,017	33,962
Pollutant Emissions								
Hydrochloric Acid (HCl)								
ppm Volume Dry	0.29	0.31	0.35	0.38	0.29	0.33	0.39	0.34
ppmc Volume Dry @ 15% O_2	0.35	0.38	0.43	0.47	0.35	0.41	0.49	0.41
lb/hr	0.06	0.06	0.07	0.07	0.06	0.06	0.08	0.06
Hydrogen Fluoride (HF)								
ppm Volume Dry	1.26	1.34	1.40	1.45	1.21	1.52	1.64	1.40
ppmc Volume Dry @ 15% O_2	1.54	1.64	1.72	1.77	1.49	1.87	2.02	1.72
lb/hr	0.13	0.14	0.15	0.15	0.13	0.16	0.17	0.15
Formaldehyde (CH_2O)[1]								
ppm Volume Dry	0.096	0.081	0.092	0.077	0.051	0.054	0.040	0.070
ppmc Volume Dry @ 15% O_2	0.118	0.100	0.112	0.094	0.063	0.066	0.049	0.086
lb/hr	0.015	0.013	0.015	0.012	0.008	0.009	0.006	0.011

(1) As measured values are reported from FTIR. These values are below the instrument detection limit (BDL).

MONTROSE
AIR QUALITY SERVICES

4.3   FIELD TEST DEVIATIONS AND EXCETPTIONS

No filed deviations or exceptions from the test plan or test methods occurred during this test program. Per the EPA guidance document, front and back half fractions were analyzed separately for EPA Method 29. The results of front half and back half analyses for individual metals were reported separately along with a total emission. The reported results are not blank corrected since majority of the blank values were non-detect. Sampling duration was designed such that a minimum volume of 141 dscf (4 dscm) was collected per run for each metal and particulate sampling train. Isokinetic sampling rate was maintained for each metal and particulate sampling train within the specification of 100 ±10%. The reported results are considered representative.

APPENDIX A
TEST DATA

MONTROSE
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Appendix A.1
Sample Location Data

MONTROSE
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TRAVERSE POINT LOCATION FOR CIRCULAR STACKS

Checked by: ___**PSJ**____

Plant:	Sunshine Gas	
Source:	Turbine 4 and 5	
Date:	2/7-2/17, 2023	
Inside of far wall to outside of nipple (a):	60"	
Inside of near wall to outside of nipple (b):	5"	
Stack I.D. (a-b):	55"	
Nearest upstream disturbance:		177.6"
Nearest downstream disturbance:		34.8"
Calculator:	SJ	

55" Dia   34.8"   177.6"

No Scale
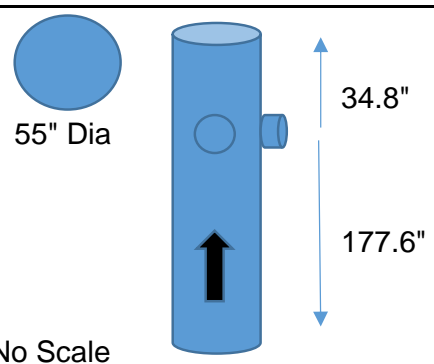
Schematic of duct

Traverse Point Number	Fraction of Stack I.D.	Stack I.D.	Products of Columns 2 & 3	Nipple Length	Traverse Point (sum of columns 4 & 5)
1	2.1	55	1.2	5	6.2
2	6.7	55	3.7	5	8.7
3	11.8	55	6.5	5	11.5
4	17.7	55	9.7	5	14.7
5	25.0	55	13.8	5	18.8
6	35.6	55	19.6	5	24.6
7	64.4	55	35.4	5	40.4
8	75.0	55	41.3	5	46.3
9	82.3	55	45.3	5	50.3
10	88.2	55	48.5	5	53.5
11	93.3	55	51.3	5	56.3
12	97.9	55	53.8	5	58.8

CYCLONIC FLOW VERIFICATION DATA SHEET

FACILITY	Sunshine
SOURCE	COG 4
DATE	2/7/23
PROJECT NUMBER	023392
STACK DIAMETER/DIMENSION	55"
BAROMETRIC PRESSURE	28.36
STATIC PRESSURE	-0.55
RUN NUMBER	1-7
TOTAL TRAVERSE POINTS	24
OPERATOR	DH, DD, DSJ

FIGURE
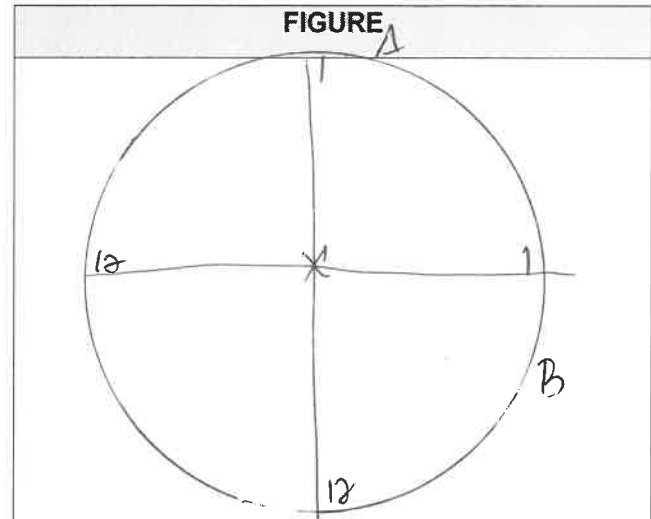
SAMPLE POINT	DISTANCE FROM SAMPLE PORT (INCHES)	NULL POINT ROTATION ANGLE	
		A NORTH/SOUTH	B EAST/WEST
1	1.2	0	1
2	3.7	1	0
3	6.5	2	0
4	9.7	1	1
5	13.8	3	2
6	19.6	1	1
7	35.4	0	0
8	41.3	2	0
9	45.3	0	3
10	48.5	0	1
11	51.3	1	0
12	53.8	0	1
	AVERAGE		1

CYCLONIC FLOW VERIFICATION DATA SHEET

FACILITY	Sunshine
SOURCE	Cog 5
DATE	2/14/23
PROJECT NUMBER	023392
STACK DIAMETER/DIMENSION	55"
BAROMETRIC PRESSURE	27.98
STATIC PRESSURE	-0.5
RUN NUMBER	1-7
TOTAL TRAVERSE POINTS	24
OPERATOR	OH, AD, PST

FIGURE

SAMPLE POINT	DISTANCE FROM SAMPLE PORT (INCHES)	NULL POINT ROTATION ANGLE	
		NORTH/SOUTH (A)	EAST/WEST (B)
1	1.2	0	1
2	3.7	0	0
3	6.5	1	0
4	9.7	0	1
5	13.8	1	2
6	19.6	0	1
7	35.4	2	0
8	41.3	1	1
9	45.3	0	0
10	48.5	1	0
11	51.3	2	0
12	53.8	0	1
	AVERAGE		1

Appendix A.2
Gaseous DAS Data

MONTROSE
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Appendix A.2.1
CT-4 Data

MONTROSE
AIR QUALITY SERVICES

Date	Time	O2%	CO2%	COppm		
2/7/2023	8:49:00	0.071	-0.255			
2/7/2023	8:50:00	0.072	-0.092	-0.088		
2/7/2023	8:51:00	-0.019	-0.029	-0.04	<	Zero Direct
2/7/2023	8:52:00	-0.027	-0.032	-0.024		
2/7/2023	8:53:00	-0.027	-0.038	-0.042		
2/7/2023	8:54:00	1.583	0.25	-0.014		
2/7/2023	8:55:00	9.504	4.541	5.999		
2/7/2023	8:56:00	10.193	4.71	9.661		
2/7/2023	8:57:00	18.098	8.918	9.673		
2/7/2023	8:58:00	19.116	9.364	9.649	<	DIrect High
2/7/2023	8:59:00	19.286	9.623	9.619	<	Direct High
2/7/2023	9:00:00	12.646	6.299	8.922		
2/7/2023	9:01:00	10.098	4.944	4.706	<	Direct Mid
2/7/2023	9:02:00	10.959	4.815	4.711		
2/7/2023	9:03:00	15.996	4.468	2.504		
2/7/2023	9:04:00	15.979	4.475	1.446		
2/7/2023	9:05:00	15.975	4.468	1.43		
2/7/2023	9:06:00	15.977	4.475	1.19		
2/7/2023	9:07:00	15.974	4.468	1.256		
2/7/2023	9:08:00	15.979	4.461	1.219		
2/7/2023	9:09:00	15.966	4.465	1.272		
2/7/2023	9:10:00	15.964	4.467	1.26		
2/7/2023	9:11:00	15.943	4.484	1.205		
2/7/2023	9:12:00	15.963	4.459	1.224		
2/7/2023	9:13:00	15.957	4.455	1.159		
2/7/2023	9:14:00	15.97	4.454	1.049		
2/7/2023	9:15:00	15.929	4.465	1.123		
2/7/2023	9:16:00	15.906	4.449	1.185		
2/7/2023	9:17:00	15.902	4.452	1.21		
2/7/2023	9:18:00	15.91	4.432	1.34		
2/7/2023	9:19:00	14.581	3.685	1.275		
2/7/2023	9:20:00	-0.009	0.101	0.728		
2/7/2023	9:21:00	-0.031	0.088	-0.048		
2/7/2023	9:22:00	-0.035	0.091	-0.044		
2/7/2023	9:23:00	-0.037	0.083	-0.028		
2/7/2023	9:24:00	-0.037	0.076	-0.042		
2/7/2023	9:25:00	-0.041	0.081	-0.031		
2/7/2023	9:26:00	-0.042	0.087	-0.036		
2/7/2023	9:27:00	-0.042	0.082	-0.045		
2/7/2023	9:28:00	-0.04	0.073	-0.042		
2/7/2023	9:29:00	-0.038	0.078	-0.052		
2/7/2023	9:30:00	-0.039	0.08	-0.045		
2/7/2023	9:31:00	-0.037	0.082	-0.042		
2/7/2023	9:32:00	-0.041	0.072	-0.05		
2/7/2023	9:33:00	-0.041	0.071	-0.049		
2/7/2023	9:34:00	-0.04	0.073	-0.055		
2/7/2023	9:35:00	-0.042	0.068	-0.046		
2/7/2023	9:36:00	-0.042	0.069	-0.045		

2/7/2023	9:37:00	-0.041	0.067	-0.058
2/7/2023	9:38:00	-0.039	0.065	-0.055
2/7/2023	9:39:00	-0.039	0.077	-0.061
2/7/2023	9:40:00	-0.04	0.085	-0.062
2/7/2023	9:41:00	-0.041	0.093	-0.071
2/7/2023	9:42:00	-0.04	0.102	-0.065
2/7/2023	9:43:00	-0.039	0.104	-0.067
2/7/2023	9:44:00	-0.041	0.093	-0.063
2/7/2023	9:45:00	-0.043	0.097	-0.065
2/7/2023	9:46:00	-0.042	0.095	-0.069
2/7/2023	9:47:00	-0.042	0.093	-0.074
2/7/2023	9:48:00	-0.042	0.101	-0.073
2/7/2023	9:49:00	12.777	3.663	0.536
2/7/2023	9:50:00	15.891	4.429	1.486
2/7/2023	9:51:00	15.913	4.41	1.21
2/7/2023	9:52:00	15.918	4.423	1.031
2/7/2023	9:53:00	15.898	4.472	1.481
2/7/2023	9:54:00	15.907	4.461	1.611
2/7/2023	9:55:00	15.891	4.468	1.015
2/7/2023	9:56:00	15.905	4.459	1.288
2/7/2023	9:57:00	15.923	4.45	1.623
2/7/2023	9:58:00	15.921	4.431	1.965
2/7/2023	9:59:00	15.904	4.449	1.347
2/7/2023	10:00:00	15.92	4.428	1.404
2/7/2023	10:01:00	15.901	4.439	1.103
2/7/2023	10:02:00	15.904	4.436	1.366
2/7/2023	10:03:00	15.899	4.441	1.122
2/7/2023	10:04:00	15.911	4.433	1.183
2/7/2023	10:05:00	15.899	4.459	1.159
2/7/2023	10:06:00	15.923	4.456	1.327
2/7/2023	10:07:00	15.927	4.456	1.069
2/7/2023	10:08:00	15.913	4.473	1.226
2/7/2023	10:09:00	15.92	4.456	1.238
2/7/2023	10:10:00	15.916	4.448	1.139
2/7/2023	10:11:00	15.922	4.451	1.169
2/7/2023	10:12:00	15.88	4.475	1.051
2/7/2023	10:13:00	15.896	4.481	1.205
2/7/2023	10:14:00	15.891	4.462	1.632
2/7/2023	10:15:00	15.923	4.428	1.288
2/7/2023	10:16:00	15.912	4.443	1.388
2/7/2023	10:17:00	15.917	4.45	1.514
2/7/2023	10:18:00	15.915	4.461	1.445
2/7/2023	10:19:00	15.908	4.47	1.914
2/7/2023	10:20:00	15.86	4.503	1.521
2/7/2023	10:21:00	15.899	4.455	1.272
2/7/2023	10:22:00	15.896	4.462	1.158
2/7/2023	10:23:00	15.899	4.458	1.131
2/7/2023	10:24:00	15.871	4.479	1.365
2/7/2023	10:25:00	15.915	4.442	1.765

2/7/2023	10:26:00	15.91	4.433	1.388			
2/7/2023	10:27:00	15.917	4.441	1.418			
2/7/2023	10:28:00	15.934	4.436	1.222			
2/7/2023	10:29:00	15.924	4.457	1.063			
2/7/2023	10:30:00	15.905	4.492	1.076			
2/7/2023	10:31:00	16.431	5.553	1.144			
2/7/2023	10:32:00	11.153	5.506	-0.059			
2/7/2023	10:33:00	-0.071	0.058	-0.163	<	DIrect Zero	
2/7/2023	10:34:00	-0.028	-0.023	-0.096	<	DIrect Zero	
2/7/2023	10:35:00	13.002	5.903	3.208			
2/7/2023	10:36:00	19.118	9.58	9.524	<	Direct High	
2/7/2023	10:37:00	19.287	9.635	9.636	<	DIrect High	
2/7/2023	10:38:00	19.292	9.619	9.631			
2/7/2023	10:39:00	11.608	5.675	7.961			
2/7/2023	10:40:00	10.129	4.897	4.687			
2/7/2023	10:41:00	10.128	4.903	4.653			
2/7/2023	10:42:00	10.124	4.899	4.664	<	Direct Mid	
2/7/2023	10:43:00	12.856	4.681	4.516			
2/7/2023	10:44:00	12.473	4.582	1.454			
2/7/2023	10:45:00	10.059	4.954	-0.093	<	System O2, CO2	
2/7/2023	10:46:00	3.221	1.401	0.813			
2/7/2023	10:47:00	-0.026	0.006	4.594	<	System CO	
2/7/2023	10:48:00	-0.031	0.153	4.644			
2/7/2023	10:49:00	5.322	1.56	4.592			
2/7/2023	10:50:00	15.899	4.451	2.037			
2/7/2023	10:51:00	15.903	4.457	1.327			
2/7/2023	10:52:00	15.884	4.464	1.446	<	Start run 1	
2/7/2023	10:53:00	15.897	4.447	1.237		12	
2/7/2023	10:54:00	15.904	4.429	1.022			
2/7/2023	10:55:00	15.924	4.412	1.095			
2/7/2023	10:56:00	15.924	4.42	1.471			
2/7/2023	10:57:00	15.925	4.412	1.107			
2/7/2023	10:58:00	15.921	4.416	0.98			
2/7/2023	10:59:00	15.926	4.419	1.439			
2/7/2023	11:00:00	15.922	4.432	1.177			
2/7/2023	11:01:00	15.902	4.46	1.376			
2/7/2023	11:02:00	15.94	4.438	0.993			
2/7/2023	11:03:00	15.927	4.46	1.063		11	
2/7/2023	11:04:00	15.933	4.449	1.189			
2/7/2023	11:05:00	15.94	4.447	0.935			
2/7/2023	11:06:00	15.931	4.451	1.015			
2/7/2023	11:07:00	15.935	4.458	1.005			
2/7/2023	11:08:00	15.928	4.479	1.092			
2/7/2023	11:09:00	15.931	4.475	0.948			
2/7/2023	11:10:00	15.925	4.489	1.192			
2/7/2023	11:11:00	15.937	4.489	1.004			
2/7/2023	11:12:00	15.932	4.479	0.949			
2/7/2023	11:13:00	15.928	4.48	1.341		10	
2/7/2023	11:14:00	15.934	4.489	1.427			

2/7/2023	11:15:00	15.931	4.492	1.413	
2/7/2023	11:16:00	15.95	4.48	1.172	
2/7/2023	11:17:00	15.934	4.483	1.173	
2/7/2023	11:18:00	15.923	4.475	1.262	
2/7/2023	11:19:00	15.933	4.472	1.443	
2/7/2023	11:20:00	15.939	4.458	1.241	
2/7/2023	11:21:00	15.942	4.468	1.322	
2/7/2023	11:22:00	15.936	4.463	1.536	
2/7/2023	11:23:00	15.905	4.501	1.137	9
2/7/2023	11:24:00	15.929	4.464	1.122	
2/7/2023	11:25:00	15.948	4.458	0.953	
2/7/2023	11:26:00	15.928	4.484	0.949	
2/7/2023	11:27:00	15.925	4.486	1.091	
2/7/2023	11:28:00	15.952	4.477	1.391	
2/7/2023	11:29:00	15.929	4.503	1.402	
2/7/2023	11:30:00	15.916	4.512	1.338	
2/7/2023	11:31:00	15.928	4.501	1.035	
2/7/2023	11:32:00	15.911	4.491	1.017	
2/7/2023	11:33:00	15.935	4.457	1.37	8
2/7/2023	11:34:00	15.96	4.44	1.068	
2/7/2023	11:35:00	15.926	4.493	1.339	
2/7/2023	11:36:00	15.924	4.49	1.146	
2/7/2023	11:37:00	15.944	4.463	1.053	
2/7/2023	11:38:00	15.947	4.441	1.119	
2/7/2023	11:39:00	15.944	4.461	1.071	
2/7/2023	11:40:00	15.947	4.466	1.301	
2/7/2023	11:41:00	15.949	4.465	0.977	
2/7/2023	11:42:00	15.941	4.473	1.054	
2/7/2023	11:43:00	15.952	4.45	1.072	7
2/7/2023	11:44:00	15.944	4.453	1.567	
2/7/2023	11:45:00	15.956	4.44	1.168	
2/7/2023	11:46:00	15.927	4.48	0.961	
2/7/2023	11:47:00	15.947	4.473	1.011	
2/7/2023	11:48:00	15.949	4.499	1.267	
2/7/2023	11:49:00	15.935	4.509	1.154	
2/7/2023	11:50:00	15.912	4.538	1.027	
2/7/2023	11:51:00	15.931	4.506	1.333	
2/7/2023	11:52:00	15.95	4.486	1.767	
2/7/2023	11:53:00	15.948	4.486	1.586	6
2/7/2023	11:54:00	15.964	4.466	1.878	
2/7/2023	11:55:00	15.952	4.471	1.162	
2/7/2023	11:56:00	15.946	4.477	1.441	
2/7/2023	11:57:00	15.922	4.489	1.719	
2/7/2023	11:58:00	15.953	4.457	1.095	
2/7/2023	11:59:00	15.921	4.49	1.201	
2/7/2023	12:00:00	15.949	4.467	1.036	
2/7/2023	12:01:00	15.96	4.451	0.984	
2/7/2023	12:02:00	15.95	4.463	1.535	
2/7/2023	12:03:00	15.957	4.474	1.047	5

2/7/2023	12:04:00	15.963	4.48	0.923	
2/7/2023	12:05:00	15.934	4.524	1.236	
2/7/2023	12:06:00	15.919	4.551	1.312	
2/7/2023	12:07:00	15.952	4.496	0.931	
2/7/2023	12:08:00	15.947	4.489	1.213	
2/7/2023	12:09:00	15.947	4.488	1.462	
2/7/2023	12:10:00	15.948	4.479	1.254	
2/7/2023	12:11:00	15.97	4.468	1.081	
2/7/2023	12:12:00	15.926	4.504	0.994	
2/7/2023	12:13:00	15.918	4.505	1.232	4
2/7/2023	12:14:00	15.957	4.467	1.596	
2/7/2023	12:15:00	15.958	4.467	1.781	
2/7/2023	12:16:00	15.929	4.48	1.151	
2/7/2023	12:17:00	15.946	4.452	2.113	
2/7/2023	12:18:00	15.939	4.483	1.701	
2/7/2023	12:19:00	15.95	4.486	1.342	
2/7/2023	12:20:00	15.97	4.482	0.977	
2/7/2023	12:21:00	15.951	4.502	1.123	
2/7/2023	12:22:00	15.963	4.481	1.278	
2/7/2023	12:23:00	15.958	4.474	0.984	3
2/7/2023	12:24:00	15.957	4.46	1.089	
2/7/2023	12:25:00	15.96	4.47	1.148	
2/7/2023	12:26:00	15.952	4.475	1.161	
2/7/2023	12:27:00	15.955	4.487	1.271	
2/7/2023	12:28:00	15.94	4.487	1.057	
2/7/2023	12:29:00	15.948	4.455	1.403	
2/7/2023	12:30:00	15.937	4.46	0.953	
2/7/2023	12:31:00	15.95	4.442	1.341	
2/7/2023	12:32:00	15.937	4.455	1.162	
2/7/2023	12:33:00	15.957	4.446	1.204	2
2/7/2023	12:34:00	15.969	4.422	1.045	
2/7/2023	12:35:00	15.963	4.419	1.143	
2/7/2023	12:36:00	15.972	4.408	1.237	
2/7/2023	12:37:00	15.962	4.421	1.223	
2/7/2023	12:38:00	15.973	4.418	1.468	
2/7/2023	12:39:00	15.962	4.434	1.065	
2/7/2023	12:40:00	15.966	4.451	1.24	
2/7/2023	12:41:00	15.965	4.448	1.282	
2/7/2023	12:42:00	15.973	4.432	1.23	
2/7/2023	12:43:00	15.958	4.44	1.192	1
2/7/2023	12:44:00	15.953	4.439	1.497	
2/7/2023	12:45:00	15.893	4.495	1.086	
2/7/2023	12:46:00	15.914	4.488	1.279	
2/7/2023	12:47:00	15.951	4.468	1.33	
2/7/2023	12:48:00	15.963	4.441	1.186	
2/7/2023	12:49:00	15.96	4.446	0.977	
2/7/2023	12:50:00	15.928	4.46	1.387	
2/7/2023	12:51:00	15.94	4.452	1.691	
2/7/2023	12:52:00	15.954	4.44	1.671	

2/7/2023	12:53:00	15.956	4.436	1.214			
2/7/2023	12:54:00	15.918	4.46	1.118			
2/7/2023	12:55:00	15.911	4.473	1.129			
2/7/2023	12:56:00	14.707	4.442	1.263			
2/7/2023	12:57:00	10.085	4.958	0.286			
2/7/2023	12:58:00	10.079	4.968	-0.012	<	System O2, CO2	
2/7/2023	12:59:00	5.342	2.426	0.114			
2/7/2023	13:00:00	-0.012	-0.005	4.151			
2/7/2023	13:01:00	-0.018	-0.02	4.626	<	System CO	
2/7/2023	13:02:00	-0.021	-0.033	4.619			
2/7/2023	13:03:00	9.14	2.574	4.173	<	Resume	
2/7/2023	13:04:00	15.905	4.446	1.237			12
2/7/2023	13:05:00	15.924	4.441	1.393			
2/7/2023	13:06:00	15.927	4.466	1.056			
2/7/2023	13:07:00	15.956	4.451	1.346			
2/7/2023	13:08:00	15.954	4.466	1.084			
2/7/2023	13:09:00	15.959	4.481	1.063			
2/7/2023	13:10:00	15.944	4.476	1.177			
2/7/2023	13:11:00	15.954	4.445	1.873			
2/7/2023	13:12:00	15.933	4.463	1.217			
2/7/2023	13:13:00	15.942	4.442	1.402			
2/7/2023	13:14:00	15.959	4.431	1.198			11
2/7/2023	13:15:00	15.957	4.442	1.307			
2/7/2023	13:16:00	15.95	4.45	2.071			
2/7/2023	13:17:00	15.946	4.439	1.392			
2/7/2023	13:18:00	15.942	4.442	1.404			
2/7/2023	13:19:00	15.966	4.404	2.075			
2/7/2023	13:20:00	15.951	4.424	1.351			
2/7/2023	13:21:00	15.957	4.437	1.116			
2/7/2023	13:22:00	15.959	4.437	1.251			
2/7/2023	13:23:00	15.956	4.427	1.19			
2/7/2023	13:24:00	15.951	4.422	1.356			10
2/7/2023	13:25:00	15.952	4.415	1.759			
2/7/2023	13:26:00	15.955	4.424	1.139			
2/7/2023	13:27:00	15.963	4.44	0.946			
2/7/2023	13:28:00	15.956	4.444	1.013			
2/7/2023	13:29:00	15.918	4.485	1.007			
2/7/2023	13:30:00	15.954	4.468	1.043			
2/7/2023	13:31:00	15.949	4.472	0.993			
2/7/2023	13:32:00	15.964	4.466	0.932			
2/7/2023	13:33:00	15.966	4.478	0.9			
2/7/2023	13:34:00	15.957	4.476	0.907			9
2/7/2023	13:35:00	15.962	4.461	0.93			
2/7/2023	13:36:00	15.956	4.459	0.903			
2/7/2023	13:37:00	15.96	4.458	0.924			
2/7/2023	13:38:00	15.938	4.493	1.726			
2/7/2023	13:39:00	15.951	4.483	1.55			
2/7/2023	13:40:00	15.959	4.485	1.602			
2/7/2023	13:41:00	15.964	4.498	1.277			

2/7/2023	13:42:00	15.962	4.487	0.931	
2/7/2023	13:43:00	15.968	4.478	0.912	
2/7/2023	13:44:00	15.967	4.475	0.903	8
2/7/2023	13:45:00	15.961	4.484	0.874	
2/7/2023	13:46:00	15.952	4.508	0.893	
2/7/2023	13:47:00	15.96	4.504	0.989	
2/7/2023	13:48:00	15.949	4.507	1.234	
2/7/2023	13:49:00	15.956	4.493	1.074	
2/7/2023	13:50:00	15.962	4.474	1.145	
2/7/2023	13:51:00	15.972	4.462	1.13	
2/7/2023	13:52:00	15.972	4.462	1.164	
2/7/2023	13:53:00	15.967	4.455	0.966	
2/7/2023	13:54:00	15.976	4.457	1.07	7
2/7/2023	13:55:00	15.951	4.484	1.049	
2/7/2023	13:56:00	15.97	4.472	1.196	
2/7/2023	13:57:00	15.965	4.474	1.071	
2/7/2023	13:58:00	15.962	4.492	0.926	
2/7/2023	13:59:00	15.968	4.496	0.907	
2/7/2023	14:00:00	15.97	4.5	0.954	
2/7/2023	14:01:00	15.97	4.504	0.931	
2/7/2023	14:02:00	15.965	4.518	1.049	
2/7/2023	14:03:00	15.97	4.515	0.98	
2/7/2023	14:04:00	15.962	4.519	1.005	6
2/7/2023	14:05:00	15.971	4.511	0.966	
2/7/2023	14:06:00	15.98	4.51	0.907	
2/7/2023	14:07:00	15.945	4.54	0.936	
2/7/2023	14:08:00	15.964	4.534	1	
2/7/2023	14:09:00	15.973	4.533	0.975	
2/7/2023	14:10:00	15.969	4.536	1.098	
2/7/2023	14:11:00	15.978	4.52	1.179	
2/7/2023	14:12:00	15.978	4.501	1.311	
2/7/2023	14:13:00	15.981	4.48	1.026	
2/7/2023	14:14:00	15.974	4.491	0.989	5
2/7/2023	14:15:00	15.974	4.481	0.985	
2/7/2023	14:16:00	15.986	4.466	0.953	
2/7/2023	14:17:00	15.975	4.482	0.937	
2/7/2023	14:18:00	15.972	4.483	0.918	
2/7/2023	14:19:00	15.964	4.499	0.923	
2/7/2023	14:20:00	15.972	4.492	1.035	
2/7/2023	14:21:00	15.975	4.5	0.908	
2/7/2023	14:22:00	15.981	4.513	0.956	
2/7/2023	14:23:00	15.986	4.536	0.99	
2/7/2023	14:24:00	15.937	4.566	1.006	4
2/7/2023	14:25:00	15.972	4.516	1.027	
2/7/2023	14:26:00	15.989	4.51	0.925	
2/7/2023	14:27:00	15.993	4.507	0.891	
2/7/2023	14:28:00	15.971	4.543	0.956	
2/7/2023	14:29:00	15.968	4.543	1.023	
2/7/2023	14:30:00	15.975	4.525	0.932	

2/7/2023	14:31:00	15.972	4.523	0.952		
2/7/2023	14:32:00	15.968	4.518	1.05		
2/7/2023	14:33:00	15.974	4.526	1.233		
2/7/2023	14:34:00	15.979	4.538	1.082	3	
2/7/2023	14:35:00	15.974	4.516	1.023		
2/7/2023	14:36:00	15.978	4.516	0.933		
2/7/2023	14:37:00	15.985	4.512	0.948		
2/7/2023	14:38:00	15.975	4.52	0.89		
2/7/2023	14:39:00	15.948	4.54	0.97		
2/7/2023	14:40:00	15.969	4.539	1.152		
2/7/2023	14:41:00	15.98	4.531	1.122		
2/7/2023	14:42:00	15.943	4.553	1.17		
2/7/2023	14:43:00	15.989	4.498	0.938		
2/7/2023	14:44:00	15.993	4.492	0.886	2	
2/7/2023	14:45:00	15.992	4.524	0.895		
2/7/2023	14:46:00	15.976	4.557	0.986		
2/7/2023	14:47:00	15.99	4.533	0.998		
2/7/2023	14:48:00	15.988	4.529	0.961		
2/7/2023	14:49:00	15.981	4.545	0.915		
2/7/2023	14:50:00	15.986	4.539	1.137		
2/7/2023	14:51:00	15.99	4.535	1.085		
2/7/2023	14:52:00	15.983	4.529	0.98		
2/7/2023	14:53:00	15.997	4.494	0.923		
2/7/2023	14:54:00	15.988	4.487	0.902	1	
2/7/2023	14:55:00	15.987	4.489	0.916		
2/7/2023	14:56:00	15.997	4.496	0.886		
2/7/2023	14:57:00	15.975	4.512	0.901		
2/7/2023	14:58:00	15.968	4.509	0.925		
2/7/2023	14:59:00	15.982	4.496	0.92		
2/7/2023	15:00:00	15.985	4.518	0.939		
2/7/2023	15:01:00	15.981	4.513	0.915		
2/7/2023	15:02:00	15.964	4.527	0.956		
2/7/2023	15:03:00	15.971	4.525	1.039		
2/7/2023	15:04:00	15.977	4.522	0.942		
2/7/2023	15:05:00	15.983	4.511	0.96		
2/7/2023	15:06:00	11.956	4.767	0.778		
2/7/2023	15:07:00	10.095	5.061	-0.048	<	System O2, CO2
2/7/2023	15:08:00	3.832	1.812	0.532		
2/7/2023	15:09:00	-0.014	-0.011	4.413		
2/7/2023	15:10:00	-0.019	-0.017	4.649	<	System CO
2/7/2023	15:11:00	1.813	0.314	4.648		
2/7/2023	15:12:00	19.308	9.794	6.302		
2/7/2023	15:13:00	19.329	9.707	9.565	<	DIrect High
2/7/2023	15:14:00	13.594	6.9	9.203		
2/7/2023	15:15:00	10.14	4.985	5.063		
2/7/2023	15:16:00	10.144	4.983	4.639	<	Direct Mid
2/7/2023	15:17:00	10.143	4.991	4.634		
2/7/2023	15:18:00	10.14	4.987	4.624		
2/7/2023	15:19:00	10.142	4.985	4.643		

2/7/2023	15:20:00	10.145	4.99	4.658
2/7/2023	15:21:00	10.142	5.003	4.661
2/7/2023	15:22:00	10.143	4.989	4.645
2/7/2023	15:23:00	10.145	4.964	4.657
2/7/2023	15:24:00	10.142	4.959	4.65
2/7/2023	15:25:00	10.143	4.953	4.656
2/7/2023	15:26:00	10.144	4.95	4.63
2/7/2023	15:27:00	10.144	4.956	4.641
2/7/2023	15:28:00	10.141	4.978	4.632
2/7/2023	15:29:00	10.142	4.974	4.63
2/7/2023	15:30:00	10.141	4.966	4.643
2/7/2023	15:31:00	10.141	4.954	4.641
2/7/2023	15:32:00	10.139	4.941	4.654
2/7/2023	15:33:00	10.139	4.937	4.649
2/7/2023	15:34:00	10.142	4.948	4.637
2/7/2023	15:35:00	10.142	4.961	4.64
2/7/2023	15:36:00	10.139	4.968	4.645
2/7/2023	15:37:00	10.14	4.95	4.651
2/7/2023	15:38:00	10.14	4.926	4.643
2/7/2023	15:39:00	10.143	4.922	4.637
2/7/2023	15:40:00	10.139	4.923	4.627
2/7/2023	15:41:00	10.139	4.929	4.639
2/7/2023	15:42:00	10.142	4.941	4.634
2/7/2023	15:43:00	10.141	4.96	4.634
2/7/2023	15:44:00	10.14	4.966	4.645
2/7/2023	15:45:00	10.139	4.962	4.643
2/7/2023	15:46:00	10.14	4.954	4.618
2/7/2023	15:47:00	10.141	4.935	4.633
2/7/2023	15:48:00	10.142	4.925	4.646
2/7/2023	15:49:00	10.142	4.915	4.643
2/7/2023	15:50:00	10.142	4.914	4.639
2/7/2023	15:51:00	10.142	4.929	4.662
2/7/2023	15:52:00	10.142	4.94	4.65
2/7/2023	15:53:00	10.143	4.947	4.639
2/7/2023	15:54:00	10.142	4.956	4.641
2/7/2023	15:55:00	10.142	4.959	4.642
2/7/2023	15:56:00	10.141	4.972	4.629
2/7/2023	15:57:00	10.141	4.972	4.635
2/7/2023	15:58:00	10.142	4.96	4.643
2/7/2023	15:59:00	10.142	4.948	4.654
2/7/2023	16:00:00	10.142	4.936	4.633
2/7/2023	16:01:00	10.144	4.943	4.633
2/7/2023	16:02:00	10.143	4.949	4.634
2/7/2023	16:03:00	1.737	0.898	4.08
2/7/2023	16:04:00	-0.052	-0.096	1.27
2/7/2023	16:05:00	-0.053	-0.109	0.224
2/7/2023	16:06:00	-0.012	-0.021	-0.04	< Direct Zero
2/7/2023	16:07:00	-0.051	-0.114	-0.098
2/7/2023	16:08:00	-0.05	-0.115	-0.122

2/7/2023	16:09:00	-0.051	-0.112	-0.135
2/7/2023	16:10:00	-0.053	-0.107	-0.133
2/7/2023	16:11:00	-0.052	-0.106	-0.135
2/7/2023	16:12:00	-0.054	-0.113	-0.123
2/7/2023	16:13:00	-0.053	-0.122	-0.128
2/7/2023	16:14:00	-0.053	-0.126	-0.126
2/7/2023	16:15:00	-0.053	-0.118	-0.132
2/7/2023	16:16:00	-0.054	-0.111	-0.125
2/7/2023	16:17:00	-0.054	-0.103	-0.127
2/7/2023	16:18:00	-0.055	-0.114	-0.139
2/7/2023	16:19:00	-0.055	-0.128	-0.135
2/7/2023	16:20:00	-0.055	-0.127	-0.124
2/7/2023	16:21:00	-0.056	-0.118	-0.129
2/7/2023	16:22:00	-0.055	-0.113	-0.125
2/7/2023	16:23:00	-0.057	-0.108	-0.134
2/7/2023	16:24:00	-0.055	-0.116	-0.117
2/7/2023	16:25:00	-0.053	-0.122	-0.129

Date	Time	O2%	CO2%	COppm		
2/8/2023	7:45:00	-0.012	-0.024	-0.018		
2/8/2023	7:46:00	-0.013	-0.015	-0.024	<	Direct Zero
2/8/2023	7:47:00	-0.014	-0.012	-0.015		
2/8/2023	7:48:00	1.233	0.243	-0.029		
2/8/2023	7:49:00	19.244	9.625	4.671		
2/8/2023	7:50:00	19.282	9.629	9.662	<	Direct High
2/8/2023	7:51:00	13.852	6.765	8.936		
2/8/2023	7:52:00	10.119	4.901	4.932		
2/8/2023	7:53:00	10.219	4.896	4.715	<	Direct Mid
2/8/2023	7:54:00	15.935	4.429	3.826		
2/8/2023	7:55:00	15.788	4.322	1.459		
2/8/2023	7:56:00	10.127	4.921	0.612		
2/8/2023	7:57:00	10.092	4.942	-0.079	<	System O2, CO2
2/8/2023	7:58:00	3.697	1.7	0.645		
2/8/2023	7:59:00	0.006	0.007	4.438		
2/8/2023	8:00:00	0.001	0.005	4.707	<	System CO
2/8/2023	8:01:00	12.61	3.57	3.668		
2/8/2023	8:02:00	15.94	4.433	1.467		
2/8/2023	8:03:00	15.937	4.45	1.431		
2/8/2023	8:04:00	15.944	4.437	1.376		
2/8/2023	8:05:00	15.941	4.427	1.319		
2/8/2023	8:06:00	15.943	4.432	1.285		
2/8/2023	8:07:00	15.949	4.428	1.265		
2/8/2023	8:08:00	15.944	4.431	1.314		
2/8/2023	8:09:00	15.946	4.427	1.327		
2/8/2023	8:10:00	15.943	4.435	1.345	<	Start Run 2A 0810
2/8/2023	8:11:00	15.949	4.427	1.375		12
2/8/2023	8:12:00	15.947	4.438	1.358		
2/8/2023	8:13:00	15.944	4.437	1.29		
2/8/2023	8:14:00	15.944	4.431	1.446		
2/8/2023	8:15:00	15.947	4.431	1.304		
2/8/2023	8:16:00	15.953	4.427	1.163		
2/8/2023	8:17:00	15.954	4.426	1.245		
2/8/2023	8:18:00	15.949	4.434	1.294		
2/8/2023	8:19:00	15.951	4.436	1.331		
2/8/2023	8:20:00	15.95	4.434	1.363		
2/8/2023	8:21:00	15.952	4.437	1.279		11
2/8/2023	8:22:00	15.955	4.425	1.268		
2/8/2023	8:23:00	15.953	4.428	1.144		
2/8/2023	8:24:00	15.942	4.435	1.257		
2/8/2023	8:25:00	15.954	4.429	1.397		
2/8/2023	8:26:00	15.93	4.444	1.302		
2/8/2023	8:27:00	15.927	4.441	1.27		
2/8/2023	8:28:00	15.946	4.432	1.282		
2/8/2023	8:29:00	15.962	4.43	1.203		
2/8/2023	8:30:00	15.947	4.447	1.351		
2/8/2023	8:31:00	15.957	4.433	1.271		10
2/8/2023	8:32:00	15.957	4.428	1.3		
2/8/2023	8:33:00	15.95	4.435	1.26		
2/8/2023	8:34:00	15.953	4.426	1.35		
2/8/2023	8:35:00	15.932	4.44	1.284		
2/8/2023	8:36:00	15.946	4.424	1.238		
2/8/2023	8:37:00	15.961	4.418	1.369		
2/8/2023	8:38:00	15.933	4.441	1.322		

2/8/2023	8:39:00	15.94	4.436	1.262	
2/8/2023	8:40:00	15.948	4.437	1.309	
2/8/2023	8:41:00	15.954	4.431	1.285	9
2/8/2023	8:42:00	15.951	4.424	1.307	
2/8/2023	8:43:00	15.93	4.445	1.208	
2/8/2023	8:44:00	15.947	4.428	1.226	
2/8/2023	8:45:00	15.96	4.424	1.226	
2/8/2023	8:46:00	15.95	4.427	1.173	
2/8/2023	8:47:00	15.959	4.422	1.262	
2/8/2023	8:48:00	15.957	4.408	1.257	
2/8/2023	8:49:00	15.952	4.424	1.42	
2/8/2023	8:50:00	15.948	4.437	1.429	
2/8/2023	8:51:00	15.947	4.428	1.279	8
2/8/2023	8:52:00	15.946	4.424	1.273	
2/8/2023	8:53:00	15.946	4.427	1.224	
2/8/2023	8:54:00	15.96	4.414	1.261	
2/8/2023	8:55:00	15.966	4.425	1.059	
2/8/2023	8:56:00	15.961	4.436	1.024	
2/8/2023	8:57:00	15.959	4.43	1.029	
2/8/2023	8:58:00	15.946	4.449	1.374	
2/8/2023	8:59:00	15.939	4.454	1.264	
2/8/2023	9:00:00	15.941	4.466	1.221	
2/8/2023	9:01:00	15.953	4.46	1.325	7
2/8/2023	9:02:00	15.946	4.465	1.365	
2/8/2023	9:03:00	15.952	4.475	1.271	
2/8/2023	9:04:00	15.957	4.469	1.315	
2/8/2023	9:05:00	15.938	4.484	1.424	
2/8/2023	9:06:00	15.931	4.496	1.209	
2/8/2023	9:07:00	15.939	4.493	1.18	
2/8/2023	9:08:00	15.963	4.48	1.182	
2/8/2023	9:09:00	15.958	4.49	1.072	
2/8/2023	9:10:00	15.936	4.522	1.185	
2/8/2023	9:11:00	15.912	4.556	1.154	6
2/8/2023	9:12:00	15.905	4.551	1.134	
2/8/2023	9:13:00	15.947	4.509	1.172	
2/8/2023	9:14:00	15.958	4.494	1.088	
2/8/2023	9:15:00	15.971	4.491	1.055	
2/8/2023	9:16:00	15.953	4.509	1.481	
2/8/2023	9:17:00	15.952	4.513	1.76	
2/8/2023	9:18:00	15.961	4.52	1.416	
2/8/2023	9:19:00	15.955	4.53	1.381	
2/8/2023	9:20:00	15.957	4.529	1.18	
2/8/2023	9:21:00	15.953	4.543	2.052	5
2/8/2023	9:22:00	15.957	4.526	1.92	
2/8/2023	9:23:00	15.959	4.525	1.548	
2/8/2023	9:24:00	15.962	4.534	1.551	
2/8/2023	9:25:00	15.96	4.551	1.557	
2/8/2023	9:26:00	15.961	4.55	1.592	
2/8/2023	9:27:00	15.955	4.556	1.325	
2/8/2023	9:28:00	15.96	4.546	1.63	
2/8/2023	9:29:00	15.957	4.551	1.47	
2/8/2023	9:30:00	15.967	4.542	1.453	
2/8/2023	9:31:00	15.966	4.534	1.496	4
2/8/2023	9:32:00	15.958	4.55	1.181	
2/8/2023	9:33:00	15.962	4.556	1.216	

2/8/2023	9:34:00	15.958	4.564	1.345		
2/8/2023	9:35:00	15.95	4.581	1.355		
2/8/2023	9:36:00	15.961	4.579	1.293		
2/8/2023	9:37:00	15.96	4.57	1.791		
2/8/2023	9:38:00	15.969	4.57	1.398		
2/8/2023	9:39:00	15.962	4.574	1.293		
2/8/2023	9:40:00	15.976	4.559	1.409		
2/8/2023	9:41:00	15.965	4.573	1.209	3	
2/8/2023	9:42:00	15.95	4.586	1.589		
2/8/2023	9:43:00	15.943	4.6	1.64		
2/8/2023	9:44:00	15.965	4.576	1.291		
2/8/2023	9:45:00	15.97	4.574	1.11		
2/8/2023	9:46:00	15.975	4.568	1.121		
2/8/2023	9:47:00	15.97	4.587	1.271		
2/8/2023	9:48:00	15.974	4.579	1.195		
2/8/2023	9:49:00	15.974	4.568	1.105		
2/8/2023	9:50:00	15.974	4.576	1.023		
2/8/2023	9:51:00	15.969	4.582	1.126	2	
2/8/2023	9:52:00	15.965	4.599	1.968		
2/8/2023	9:53:00	15.971	4.577	1.512		
2/8/2023	9:54:00	15.972	4.594	1.66		
2/8/2023	9:55:00	15.973	4.594	1.714		
2/8/2023	9:56:00	15.966	4.598	1.7		
2/8/2023	9:57:00	15.969	4.597	1.21		
2/8/2023	9:58:00	15.969	4.585	1.162		
2/8/2023	9:59:00	15.968	4.592	1.023		
2/8/2023	10:00:00	15.966	4.605	1.296		
2/8/2023	10:01:00	15.966	4.607	1.247	1	
2/8/2023	10:02:00	15.96	4.607	1.179		
2/8/2023	10:03:00	15.966	4.601	1.243		
2/8/2023	10:04:00	15.972	4.602	1.69		
2/8/2023	10:05:00	15.958	4.615	1.636		
2/8/2023	10:06:00	15.97	4.599	1.583		
2/8/2023	10:07:00	15.977	4.582	1.61		
2/8/2023	10:08:00	15.972	4.605	1.642		
2/8/2023	10:09:00	15.959	4.614	1.732		
2/8/2023	10:10:00	15.952	4.611	1.621		
2/8/2023	10:11:00	11.602	4.839	1.225		
2/8/2023	10:12:00	10.093	5.022	-0.058	<	System O2, CO2
2/8/2023	10:13:00	8.147	4.087	-0.191		
2/8/2023	10:14:00	-0.002	0.16	3.037		
2/8/2023	10:15:00	-0.013	0.047	4.675	<	System CO
2/8/2023	10:16:00	1.933	0.739	4.67		
2/8/2023	10:17:00	15.927	4.579	2.748		
2/8/2023	10:18:00	15.947	4.588	1.605	<	Resume Run 2B
2/8/2023	10:19:00	15.945	4.589	2.114	12	
2/8/2023	10:20:00	15.953	4.586	1.896		
2/8/2023	10:21:00	15.951	4.583	1.276		
2/8/2023	10:22:00	15.951	4.592	1.515		
2/8/2023	10:23:00	15.947	4.586	1.421		
2/8/2023	10:24:00	15.954	4.576	1.27		
2/8/2023	10:25:00	15.955	4.571	1.053		
2/8/2023	10:26:00	15.95	4.586	1.1		
2/8/2023	10:27:00	15.952	4.586	1.115		
2/8/2023	10:28:00	15.946	4.59	1.598		

2/8/2023	10:29:00	15.956	4.577	1.328	11
2/8/2023	10:30:00	15.956	4.577	1.052	
2/8/2023	10:31:00	15.953	4.583	1.439	
2/8/2023	10:32:00	15.957	4.584	1.15	
2/8/2023	10:33:00	15.952	4.588	1.152	
2/8/2023	10:34:00	15.951	4.592	1.299	
2/8/2023	10:35:00	15.961	4.583	1.092	
2/8/2023	10:36:00	15.962	4.576	0.957	
2/8/2023	10:37:00	15.957	4.593	0.969	
2/8/2023	10:38:00	15.95	4.604	1.123	
2/8/2023	10:39:00	15.951	4.624	1.417	10
2/8/2023	10:40:00	15.955	4.614	1.483	
2/8/2023	10:41:00	15.965	4.594	1.155	
2/8/2023	10:42:00	15.967	4.585	0.964	
2/8/2023	10:43:00	15.968	4.58	0.956	
2/8/2023	10:44:00	15.961	4.597	0.964	
2/8/2023	10:45:00	15.953	4.621	0.989	
2/8/2023	10:46:00	15.956	4.63	1.006	
2/8/2023	10:47:00	15.951	4.635	1.047	
2/8/2023	10:48:00	15.961	4.617	0.98	
2/8/2023	10:49:00	15.955	4.639	1.173	9
2/8/2023	10:50:00	15.958	4.643	1.396	
2/8/2023	10:51:00	15.956	4.63	1.372	
2/8/2023	10:52:00	15.955	4.625	1.28	
2/8/2023	10:53:00	15.966	4.622	1.388	
2/8/2023	10:54:00	15.965	4.639	1.029	
2/8/2023	10:55:00	15.964	4.655	1.263	
2/8/2023	10:56:00	15.946	4.675	1.439	
2/8/2023	10:57:00	15.961	4.65	1.318	
2/8/2023	10:58:00	15.947	4.653	1.342	
2/8/2023	10:59:00	15.961	4.629	1.157	8
2/8/2023	11:00:00	15.968	4.619	1.122	
2/8/2023	11:01:00	15.966	4.626	0.967	
2/8/2023	11:02:00	15.97	4.64	0.976	
2/8/2023	11:03:00	15.953	4.658	1.032	
2/8/2023	11:04:00	15.965	4.657	1.016	
2/8/2023	11:05:00	15.969	4.652	1.26	
2/8/2023	11:06:00	15.979	4.641	1.07	
2/8/2023	11:07:00	15.977	4.64	0.963	
2/8/2023	11:08:00	15.968	4.647	1.02	
2/8/2023	11:09:00	15.946	4.671	1.268	7
2/8/2023	11:10:00	15.957	4.652	1.313	
2/8/2023	11:11:00	15.961	4.649	1.187	
2/8/2023	11:12:00	15.971	4.634	1.264	
2/8/2023	11:13:00	15.974	4.623	1.705	
2/8/2023	11:14:00	15.965	4.648	1.319	
2/8/2023	11:15:00	15.97	4.651	1.409	
2/8/2023	11:16:00	15.972	4.645	1.068	
2/8/2023	11:17:00	15.973	4.632	1.113	
2/8/2023	11:18:00	15.978	4.624	1.003	
2/8/2023	11:19:00	15.966	4.643	0.997	6
2/8/2023	11:20:00	15.97	4.661	1.062	
2/8/2023	11:21:00	15.975	4.653	0.956	
2/8/2023	11:22:00	15.962	4.659	1.012	
2/8/2023	11:23:00	15.975	4.657	1.098	

2/8/2023	11:24:00	15.973	4.657	0.985	
2/8/2023	11:25:00	15.97	4.661	0.944	
2/8/2023	11:26:00	15.965	4.677	1.143	
2/8/2023	11:27:00	15.973	4.684	1.384	
2/8/2023	11:28:00	15.961	4.697	1.205	
2/8/2023	11:29:00	15.972	4.688	1.087	5
2/8/2023	11:30:00	15.981	4.688	0.947	
2/8/2023	11:31:00	15.98	4.689	0.928	
2/8/2023	11:32:00	15.977	4.702	1.077	
2/8/2023	11:33:00	15.974	4.706	1.677	
2/8/2023	11:34:00	15.979	4.699	1.088	
2/8/2023	11:35:00	15.978	4.691	1.178	
2/8/2023	11:36:00	15.985	4.684	1.719	
2/8/2023	11:37:00	15.986	4.687	0.971	
2/8/2023	11:38:00	15.978	4.695	1.03	
2/8/2023	11:39:00	15.978	4.687	0.992	4
2/8/2023	11:40:00	15.975	4.695	0.964	
2/8/2023	11:41:00	15.979	4.689	0.96	
2/8/2023	11:42:00	15.976	4.699	0.994	
2/8/2023	11:43:00	15.985	4.682	0.945	
2/8/2023	11:44:00	15.983	4.683	0.934	
2/8/2023	11:45:00	15.983	4.706	0.935	
2/8/2023	11:46:00	15.977	4.707	1.063	
2/8/2023	11:47:00	15.977	4.696	0.985	
2/8/2023	11:48:00	15.977	4.693	1.073	
2/8/2023	11:49:00	15.978	4.693	1.457	3
2/8/2023	11:50:00	15.994	4.68	0.969	
2/8/2023	11:51:00	15.986	4.687	0.952	
2/8/2023	11:52:00	15.986	4.707	0.993	
2/8/2023	11:53:00	15.992	4.708	1.059	
2/8/2023	11:54:00	15.988	4.701	0.94	
2/8/2023	11:55:00	15.99	4.709	0.947	
2/8/2023	11:56:00	15.983	4.71	0.986	
2/8/2023	11:57:00	15.986	4.696	1.113	
2/8/2023	11:58:00	15.985	4.682	0.988	
2/8/2023	11:59:00	15.988	4.692	0.957	2
2/8/2023	12:00:00	15.989	4.691	1.086	
2/8/2023	12:01:00	15.987	4.687	0.978	
2/8/2023	12:02:00	15.987	4.692	0.951	
2/8/2023	12:03:00	15.985	4.708	0.98	
2/8/2023	12:04:00	15.979	4.709	0.952	
2/8/2023	12:05:00	15.967	4.71	1.016	
2/8/2023	12:06:00	15.974	4.687	1.033	
2/8/2023	12:07:00	15.987	4.665	0.958	
2/8/2023	12:08:00	15.993	4.65	0.961	
2/8/2023	12:09:00	15.986	4.655	0.956	1
2/8/2023	12:10:00	15.995	4.637	0.925	
2/8/2023	12:11:00	15.989	4.643	0.915	
2/8/2023	12:12:00	15.986	4.642	0.942	
2/8/2023	12:13:00	15.976	4.65	0.998	
2/8/2023	12:14:00	15.981	4.632	0.971	
2/8/2023	12:15:00	15.989	4.626	0.94	
2/8/2023	12:16:00	15.993	4.619	0.926	
2/8/2023	12:17:00	16	4.626	0.92	
2/8/2023	12:18:00	15.992	4.646	0.932	< End Run 2

2/8/2023	12:19:00	15.993	4.643	0.967		
2/8/2023	12:20:00	12.286	4.819	0.92		
2/8/2023	12:21:00	10.103	5.027	-0.025	<	System O2, CO2
2/8/2023	12:22:00	4.435	2.298	0.365		
2/8/2023	12:23:00	0	0.179	4.319		
2/8/2023	12:24:00	-0.007	0.027	4.664	<	System CO
2/8/2023	12:25:00	6.239	1.924	4.515		
2/8/2023	12:26:00	15.992	4.615	1.499		
2/8/2023	12:27:00	16.005	4.614	0.942		
2/8/2023	12:28:00	16	4.626	0.914		
2/8/2023	12:29:00	15.999	4.642	0.95		
2/8/2023	12:30:00	16.001	4.633	0.99		
2/8/2023	12:31:00	15.991	4.648	0.951		
2/8/2023	12:32:00	15.996	4.656	0.936		
2/8/2023	12:33:00	15.996	4.65	0.941		
2/8/2023	12:34:00	15.998	4.653	0.927		
2/8/2023	12:35:00	16.003	4.642	0.919		
2/8/2023	12:36:00	16.002	4.636	0.919		
2/8/2023	12:37:00	15.988	4.658	0.969		
2/8/2023	12:38:00	15.995	4.658	0.966		
2/8/2023	12:39:00	15.994	4.656	1.226		
2/8/2023	12:40:00	16.003	4.638	1.111		
2/8/2023	12:41:00	16.01	4.636	1.017		
2/8/2023	12:42:00	15.997	4.628	1.076		
2/8/2023	12:43:00	16	4.609	1.067		
2/8/2023	12:44:00	16.016	4.583	0.988		
2/8/2023	12:45:00	16	4.578	0.975		
2/8/2023	12:46:00	15.986	4.591	0.976		
2/8/2023	12:47:00	15.999	4.57	0.946		
2/8/2023	12:48:00	15.998	4.578	1.016		
2/8/2023	12:49:00	16.003	4.567	0.963		
2/8/2023	12:50:00	16.006	4.558	0.934		
2/8/2023	12:51:00	15.999	4.56	0.911		
2/8/2023	12:52:00	16.001	4.551	0.931		
2/8/2023	12:53:00	16.018	4.544	0.909		
2/8/2023	12:54:00	15.961	4.589	0.959		
2/8/2023	12:55:00	15.993	4.552	0.936		
2/8/2023	12:56:00	16.009	4.537	0.932		
2/8/2023	12:57:00	16.012	4.544	0.934		
2/8/2023	12:58:00	15.999	4.571	0.986		
2/8/2023	12:59:00	13.218	4.649	0.926		
2/8/2023	13:00:00	10.095	5.011	-0.001	<	System O2, CO2
2/8/2023	13:01:00	4.571	2.268	0.349		
2/8/2023	13:02:00	-0.003	0.099	4.321		
2/8/2023	13:03:00	-0.007	0.027	4.647	<	System CO
2/8/2023	13:04:00	13.161	3.783	3.432		
2/8/2023	13:05:00	16.007	4.551	0.992	<	Start Run 3 13:05
2/8/2023	13:06:00	16.015	4.551	0.906		12
2/8/2023	13:07:00	16.016	4.555	0.91		
2/8/2023	13:08:00	16.019	4.546	0.924		
2/8/2023	13:09:00	16.02	4.546	0.904		
2/8/2023	13:10:00	16.023	4.543	0.9		
2/8/2023	13:11:00	16.012	4.559	0.92		
2/8/2023	13:12:00	16.011	4.552	0.916		
2/8/2023	13:13:00	16.012	4.551	0.899		

2/8/2023	13:14:00	16.019	4.537	0.914	
2/8/2023	13:15:00	16.026	4.533	0.897	
2/8/2023	13:16:00	16.023	4.553	0.963	11
2/8/2023	13:17:00	15.968	4.594	0.992	
2/8/2023	13:18:00	16.011	4.562	0.95	
2/8/2023	13:19:00	16.004	4.557	0.921	
2/8/2023	13:20:00	16.004	4.56	0.922	
2/8/2023	13:21:00	15.999	4.57	0.922	
2/8/2023	13:22:00	15.991	4.584	0.942	
2/8/2023	13:23:00	15.987	4.584	0.949	
2/8/2023	13:24:00	16.004	4.566	0.963	
2/8/2023	13:25:00	16.001	4.571	1.029	
2/8/2023	13:26:00	16.008	4.577	1.036	10
2/8/2023	13:27:00	16.006	4.573	0.954	
2/8/2023	13:28:00	15.993	4.584	1.005	
2/8/2023	13:29:00	15.989	4.587	0.971	
2/8/2023	13:30:00	16.014	4.574	0.94	
2/8/2023	13:31:00	16.019	4.568	0.923	
2/8/2023	13:32:00	16.013	4.583	0.958	
2/8/2023	13:33:00	15.995	4.602	1.011	
2/8/2023	13:34:00	16.002	4.596	0.986	
2/8/2023	13:35:00	16.011	4.581	0.985	
2/8/2023	13:36:00	16.02	4.585	0.935	9
2/8/2023	13:37:00	16.017	4.574	0.914	
2/8/2023	13:38:00	16.009	4.589	0.947	
2/8/2023	13:39:00	16.009	4.597	1.049	
2/8/2023	13:40:00	16.013	4.599	0.915	
2/8/2023	13:41:00	16.013	4.604	0.904	
2/8/2023	13:42:00	16.006	4.607	1.011	
2/8/2023	13:43:00	15.998	4.616	1.003	
2/8/2023	13:44:00	15.997	4.614	0.985	
2/8/2023	13:45:00	16.015	4.602	0.985	
2/8/2023	13:46:00	16.011	4.613	0.904	8
2/8/2023	13:47:00	16.014	4.612	0.918	
2/8/2023	13:48:00	16.017	4.608	0.9	
2/8/2023	13:49:00	16.015	4.605	0.939	
2/8/2023	13:50:00	16.015	4.606	0.975	
2/8/2023	13:51:00	16.003	4.617	0.959	
2/8/2023	13:52:00	16	4.621	0.941	
2/8/2023	13:53:00	16.005	4.615	0.923	
2/8/2023	13:54:00	15.999	4.626	1.235	
2/8/2023	13:55:00	16.012	4.622	0.963	
2/8/2023	13:56:00	16.011	4.622	0.969	7
2/8/2023	13:57:00	16	4.628	0.921	
2/8/2023	13:58:00	16.011	4.623	0.913	
2/8/2023	13:59:00	16.005	4.622	0.931	
2/8/2023	14:00:00	16	4.629	0.93	
2/8/2023	14:01:00	16.001	4.635	0.943	
2/8/2023	14:02:00	16.011	4.623	0.943	
2/8/2023	14:03:00	16.008	4.61	0.926	
2/8/2023	14:04:00	16	4.622	0.904	
2/8/2023	14:05:00	15.998	4.636	0.915	
2/8/2023	14:06:00	16.009	4.628	0.903	6
2/8/2023	14:07:00	16.006	4.626	0.888	
2/8/2023	14:08:00	16.006	4.625	0.925	

2/8/2023	14:09:00	16.01	4.618	0.911	
2/8/2023	14:10:00	16.016	4.622	0.938	
2/8/2023	14:11:00	16.015	4.63	0.916	
2/8/2023	14:12:00	16.011	4.633	0.912	
2/8/2023	14:13:00	16.01	4.64	0.916	
2/8/2023	14:14:00	16.005	4.65	0.943	
2/8/2023	14:15:00	16.005	4.64	0.917	
2/8/2023	14:16:00	16.012	4.623	0.941	5
2/8/2023	14:17:00	16.007	4.619	1.001	
2/8/2023	14:18:00	16.005	4.62	0.985	
2/8/2023	14:19:00	16.012	4.621	1.001	
2/8/2023	14:20:00	16.01	4.617	1.03	
2/8/2023	14:21:00	16.009	4.604	1.048	
2/8/2023	14:22:00	16.01	4.613	1.024	
2/8/2023	14:23:00	16.001	4.618	0.983	
2/8/2023	14:24:00	16.005	4.621	0.984	
2/8/2023	14:25:00	16.004	4.62	0.969	
2/8/2023	14:26:00	16.004	4.617	0.917	4
2/8/2023	14:27:00	15.986	4.635	0.909	
2/8/2023	14:28:00	15.999	4.613	0.938	
2/8/2023	14:29:00	16.002	4.616	0.918	
2/8/2023	14:30:00	16.004	4.619	0.887	
2/8/2023	14:31:00	15.992	4.627	0.91	
2/8/2023	14:32:00	16.001	4.615	0.954	
2/8/2023	14:33:00	16.001	4.622	0.956	
2/8/2023	14:34:00	16.007	4.622	0.912	
2/8/2023	14:35:00	16.003	4.648	0.928	
2/8/2023	14:36:00	16.002	4.649	0.981	3
2/8/2023	14:37:00	15.996	4.641	0.972	
2/8/2023	14:38:00	16.009	4.624	0.923	
2/8/2023	14:39:00	16.004	4.636	0.956	
2/8/2023	14:40:00	16.011	4.625	0.913	
2/8/2023	14:41:00	16.009	4.63	0.921	
2/8/2023	14:42:00	16.006	4.636	0.922	
2/8/2023	14:43:00	16.011	4.617	0.914	
2/8/2023	14:44:00	16.011	4.6	0.943	
2/8/2023	14:45:00	16.007	4.588	0.918	
2/8/2023	14:46:00	16.009	4.587	0.898	2
2/8/2023	14:47:00	16.009	4.575	0.916	
2/8/2023	14:48:00	15.993	4.592	0.922	
2/8/2023	14:49:00	15.993	4.576	0.932	
2/8/2023	14:50:00	16.001	4.577	0.926	
2/8/2023	14:51:00	16.004	4.557	0.932	
2/8/2023	14:52:00	16.002	4.556	0.925	
2/8/2023	14:53:00	16.005	4.557	0.922	
2/8/2023	14:54:00	16.006	4.567	0.959	
2/8/2023	14:55:00	16.015	4.562	0.979	
2/8/2023	14:56:00	16.001	4.565	0.984	1
2/8/2023	14:57:00	15.999	4.56	0.983	
2/8/2023	14:58:00	16.003	4.551	0.98	
2/8/2023	14:59:00	16	4.549	0.93	
2/8/2023	15:00:00	15.996	4.552	0.914	
2/8/2023	15:01:00	16.003	4.55	0.944	
2/8/2023	15:02:00	16.006	4.547	0.947	
2/8/2023	15:03:00	16.011	4.553	0.923	

Date	Time					Note
2/8/2023	15:04:00	16.01	4.556	0.913		
2/8/2023	15:05:00	16.012	4.549	0.919		
2/8/2023	15:06:00	11.139	4.828	0.681		
2/8/2023	15:07:00	10.099	5.012	-0.027		< System O2, CO2
2/8/2023	15:08:00	5.754	2.739	0.099		
2/8/2023	15:09:00	0	0.096	4.067		
2/8/2023	15:10:00	-0.006	0.035	4.641		< System CO
2/8/2023	15:11:00	-0.007	0.083	4.639		
2/8/2023	15:12:00	9.528	3.083	4.003		< Resume Run 3B
2/8/2023	15:13:00	16.05	4.533	0.938	12	
2/8/2023	15:14:00	16.057	4.539	0.929		
2/8/2023	15:15:00	16.058	4.539	0.916		
2/8/2023	15:16:00	16.056	4.549	0.933		
2/8/2023	15:17:00	16.052	4.541	0.952		
2/8/2023	15:18:00	16.054	4.539	0.944		
2/8/2023	15:19:00	16.052	4.539	0.922		
2/8/2023	15:20:00	16.044	4.543	0.942		
2/8/2023	15:21:00	16.058	4.541	0.917		
2/8/2023	15:22:00	16.054	4.542	0.925		
2/8/2023	15:23:00	16.057	4.541	0.929	11	
2/8/2023	15:24:00	16.052	4.549	0.931		
2/8/2023	15:25:00	16.08	4.531	0.906		
2/8/2023	15:26:00	16.036	4.574	0.907		
2/8/2023	15:27:00	16.044	4.552	0.956		
2/8/2023	15:28:00	16.06	4.537	0.915		
2/8/2023	15:29:00	16.059	4.543	0.912		
2/8/2023	15:30:00	16.068	4.544	0.904		
2/8/2023	15:31:00	16.065	4.556	0.918		
2/8/2023	15:32:00	16.061	4.557	0.91		
2/8/2023	15:33:00	16.06	4.55	0.927	10	
2/8/2023	15:34:00	16.061	4.538	0.935		
2/8/2023	15:35:00	16.058	4.527	0.927		
2/8/2023	15:36:00	16.052	4.537	0.929		
2/8/2023	15:37:00	16.06	4.528	0.931		
2/8/2023	15:38:00	16.053	4.538	0.921		
2/8/2023	15:39:00	16.059	4.527	0.957		
2/8/2023	15:40:00	16.052	4.545	0.932		
2/8/2023	15:41:00	16.052	4.544	0.938		
2/8/2023	15:42:00	16.049	4.551	0.921		
2/8/2023	15:43:00	16.046	4.542	0.978	9	
2/8/2023	15:44:00	16.037	4.537	0.989		
2/8/2023	15:45:00	16.05	4.53	0.967		
2/8/2023	15:46:00	16.053	4.527	0.917		
2/8/2023	15:47:00	16.052	4.528	0.921		
2/8/2023	15:48:00	16.052	4.526	0.924		
2/8/2023	15:49:00	16.051	4.534	0.913		
2/8/2023	15:50:00	16.042	4.54	0.938		
2/8/2023	15:51:00	16.043	4.525	0.932		
2/8/2023	15:52:00	16.047	4.525	0.933		
2/8/2023	15:53:00	16.063	4.533	0.913	8	
2/8/2023	15:54:00	16.018	4.566	0.942		
2/8/2023	15:55:00	16.042	4.535	0.963		
2/8/2023	15:56:00	16.055	4.516	0.95		
2/8/2023	15:57:00	16.056	4.526	1.004		
2/8/2023	15:58:00	16.049	4.527	0.994		

2/8/2023	15:59:00	16.044	4.533	0.951	
2/8/2023	16:00:00	16.038	4.533	0.964	
2/8/2023	16:01:00	16.049	4.519	0.944	
2/8/2023	16:02:00	16.037	4.537	0.959	
2/8/2023	16:03:00	16.051	4.522	0.958	7
2/8/2023	16:04:00	16.047	4.529	0.965	
2/8/2023	16:05:00	16.048	4.529	0.932	
2/8/2023	16:06:00	16.045	4.529	0.924	
2/8/2023	16:07:00	16.038	4.544	0.952	
2/8/2023	16:08:00	16.054	4.525	0.928	
2/8/2023	16:09:00	16.055	4.527	0.929	
2/8/2023	16:10:00	16.028	4.553	0.945	
2/8/2023	16:11:00	16.041	4.547	0.961	
2/8/2023	16:12:00	16.057	4.52	0.951	
2/8/2023	16:13:00	16.078	4.52	0.917	6
2/8/2023	16:14:00	16.007	4.567	0.971	
2/8/2023	16:15:00	16.044	4.534	0.967	
2/8/2023	16:16:00	16.054	4.51	0.957	
2/8/2023	16:17:00	16.055	4.513	0.961	
2/8/2023	16:18:00	16.055	4.528	0.942	
2/8/2023	16:19:00	16.044	4.535	0.938	
2/8/2023	16:20:00	16.047	4.531	0.95	
2/8/2023	16:21:00	16.052	4.512	0.945	
2/8/2023	16:22:00	16.06	4.509	0.937	
2/8/2023	16:23:00	16.055	4.511	0.936	5
2/8/2023	16:24:00	16.047	4.52	0.946	
2/8/2023	16:25:00	16.076	4.526	0.891	
2/8/2023	16:26:00	16.021	4.569	0.946	
2/8/2023	16:27:00	15.996	4.579	0.944	
2/8/2023	16:28:00	15.984	4.556	0.986	
2/8/2023	16:29:00	16.063	4.49	0.92	
2/8/2023	16:30:00	16.009	4.532	0.939	
2/8/2023	16:31:00	15.999	4.567	0.957	
2/8/2023	16:32:00	15.992	4.585	0.964	
2/8/2023	16:33:00	16.004	4.574	1.004	4
2/8/2023	16:34:00	16.014	4.546	0.951	
2/8/2023	16:35:00	16.025	4.54	0.923	
2/8/2023	16:36:00	16.009	4.545	0.958	
2/8/2023	16:37:00	16.008	4.552	0.956	
2/8/2023	16:38:00	16.004	4.559	1.005	
2/8/2023	16:39:00	16.012	4.554	1.007	
2/8/2023	16:40:00	16.021	4.545	0.96	
2/8/2023	16:41:00	16.024	4.531	0.926	
2/8/2023	16:42:00	16.018	4.54	0.968	
2/8/2023	16:43:00	16.01	4.528	1.068	3
2/8/2023	16:44:00	16.053	4.501	1.051	
2/8/2023	16:45:00	16.061	4.505	1.029	
2/8/2023	16:46:00	16.045	4.516	1.015	
2/8/2023	16:47:00	16.043	4.508	0.96	
2/8/2023	16:48:00	16.043	4.499	0.973	
2/8/2023	16:49:00	16.048	4.478	1.064	
2/8/2023	16:50:00	16.051	4.461	1.026	
2/8/2023	16:51:00	16.047	4.458	1.08	
2/8/2023	16:52:00	16.047	4.457	1.047	
2/8/2023	16:53:00	16.049	4.444	1.003	2

2/8/2023	16:54:00	16.049	4.446	0.967		
2/8/2023	16:55:00	16.049	4.441	0.992		
2/8/2023	16:56:00	16.054	4.438	0.958		
2/8/2023	16:57:00	16.051	4.452	0.944		
2/8/2023	16:58:00	16.045	4.467	0.939		
2/8/2023	16:59:00	16.098	4.402	0.923		
2/8/2023	17:00:00	16.073	4.449	0.877		
2/8/2023	17:01:00	16.028	4.534	0.952		
2/8/2023	17:02:00	16.042	4.542	0.963		
2/8/2023	17:03:00	16.04	4.494	0.952	1	
2/8/2023	17:04:00	16.042	4.49	0.953		
2/8/2023	17:05:00	16.048	4.473	0.966		
2/8/2023	17:06:00	16.052	4.481	0.955		
2/8/2023	17:07:00	16.048	4.493	0.95		
2/8/2023	17:08:00	16.03	4.51	0.957		
2/8/2023	17:09:00	15.975	4.496	0.954		
2/8/2023	17:10:00	15.993	4.483	0.949		
2/8/2023	17:11:00	15.937	4.756	0.972		
2/8/2023	17:12:00	15.979	4.428	0.952		
2/8/2023	17:13:00	11.264	4.931	1.667		
2/8/2023	17:14:00	10.097	5.015	-0.024	<	System O2, CO2
2/8/2023	17:15:00	4.772	2.136	0.315		
2/8/2023	17:16:00	-0.017	0.042	4.138		
2/8/2023	17:17:00	-0.022	0.041	4.668	<	System CO
2/8/2023	17:18:00	5.34	1.562	4.588		
2/8/2023	17:19:00	15.978	4.486	1.856		
2/8/2023	17:20:00	13.225	3.948	0.962		
2/8/2023	17:21:00	-0.006	-0.017	0.349		
2/8/2023	17:22:00	-0.006	-0.02	-0.08	<	DIrect Zero
2/8/2023	17:23:00	-0.004	-0.028	-0.075		
2/8/2023	17:24:00	-0.002	-0.028	-0.065		
2/8/2023	17:25:00	12.266	5.707	0.81		
2/8/2023	17:26:00	19.296	9.082	8.848		
2/8/2023	17:27:00	19.286	9.553	9.59		
2/8/2023	17:28:00	19.282	9.623	9.582	<	Direct High
2/8/2023	17:29:00	11.445	5.444	8.262		
2/8/2023	17:30:00	10.124	4.571	4.728		
2/8/2023	17:31:00	10.123	4.567	4.652		
2/8/2023	17:32:00	10.125	4.603	4.644		
2/8/2023	17:33:00	10.126	4.89	4.651	<	Direct Mid
2/8/2023	17:34:00	7.997	3.893	4.66		
2/8/2023	17:35:00	-0.023	-0.073	3.374		

Date	Time	O2%	CO2%	COppm		
2/9/2023	7:46:00	13.682	7.117	9.549		
2/9/2023	7:47:00	0.001	-0.07	2.764		
2/9/2023	7:48:00	-0.001	-0.07	-0.084	<	Direct Zero
2/9/2023	7:49:00	7.637	3.441	0.065		
2/9/2023	7:50:00	19.309	9.665	7.583		
2/9/2023	7:51:00	19.314	9.685	9.617	<,	DIrect High
2/9/2023	7:52:00	11.047	5.453	7.607		
2/9/2023	7:53:00	10.129	4.926	4.625	<	Direct Mid
2/9/2023	7:54:00	10.148	4.931	4.58		
2/9/2023	7:55:00	10.166	4.945	4.556		
2/9/2023	7:56:00	10.172	4.941	4.554		
2/9/2023	7:57:00	14.057	3.811	4.336		
2/9/2023	7:58:00	12.069	4.704	1.227		
2/9/2023	7:59:00	10.098	5.022	-0.032	<	System O2, CO2
2/9/2023	8:00:00	1.6	0.759	1.21		
2/9/2023	8:01:00	0.009	0.043	4.397		
2/9/2023	8:02:00	0.007	0.042	4.48		
2/9/2023	8:03:00	0.011	0.039	4.662	<	System CO
2/9/2023	8:04:00	11.583	3.291	3.605		
2/9/2023	8:05:00	15.973	4.457	0.958	<	Start Run 4 08:05
2/9/2023	8:06:00	15.979	4.465	0.709	12	
2/9/2023	8:07:00	15.976	4.476	0.698		
2/9/2023	8:08:00	15.977	4.474	0.753		
2/9/2023	8:09:00	15.982	4.465	0.665		
2/9/2023	8:10:00	15.977	4.469	0.71		
2/9/2023	8:11:00	15.975	4.466	0.633		
2/9/2023	8:12:00	15.979	4.465	0.649		
2/9/2023	8:13:00	15.974	4.474	0.746		
2/9/2023	8:14:00	15.974	4.484	0.891		
2/9/2023	8:15:00	15.975	4.478	0.81		
2/9/2023	8:16:00	15.984	4.462	0.842	11	
2/9/2023	8:17:00	15.984	4.457	0.718		
2/9/2023	8:18:00	15.981	4.461	0.716		
2/9/2023	8:19:00	15.978	4.473	0.781		
2/9/2023	8:20:00	15.985	4.46	0.828		
2/9/2023	8:21:00	15.984	4.442	0.735		
2/9/2023	8:22:00	15.976	4.454	0.754		
2/9/2023	8:23:00	15.986	4.432	0.79		
2/9/2023	8:24:00	15.987	4.431	0.735		
2/9/2023	8:25:00	15.983	4.442	0.732		
2/9/2023	8:26:00	15.988	4.433	0.781	10	
2/9/2023	8:27:00	15.986	4.422	0.715		
2/9/2023	8:28:00	15.985	4.412	0.796		
2/9/2023	8:29:00	15.979	4.408	0.686		
2/9/2023	8:30:00	15.983	4.407	0.663		
2/9/2023	8:31:00	15.987	4.404	0.641		
2/9/2023	8:32:00	15.977	4.401	0.696		
2/9/2023	8:33:00	15.963	4.423	0.707		
2/9/2023	8:34:00	15.971	4.415	0.68		
2/9/2023	8:35:00	15.972	4.414	0.652		
2/9/2023	8:36:00	15.98	4.403	0.614	9	
2/9/2023	8:37:00	15.981	4.407	0.839		
2/9/2023	8:38:00	15.981	4.414	0.81		
2/9/2023	8:39:00	15.986	4.404	0.795		

2/9/2023	8:40:00	15.988	4.388	0.708	
2/9/2023	8:41:00	15.984	4.391	0.725	
2/9/2023	8:42:00	15.98	4.392	0.71	
2/9/2023	8:43:00	15.984	4.391	0.572	
2/9/2023	8:44:00	15.978	4.394	0.664	
2/9/2023	8:45:00	15.987	4.386	0.729	
2/9/2023	8:46:00	15.985	4.384	0.578	8
2/9/2023	8:47:00	15.987	4.382	0.506	
2/9/2023	8:48:00	15.979	4.385	0.638	
2/9/2023	8:49:00	15.975	4.391	0.668	
2/9/2023	8:50:00	15.977	4.401	0.699	
2/9/2023	8:51:00	15.977	4.407	0.691	
2/9/2023	8:52:00	15.969	4.412	0.642	
2/9/2023	8:53:00	15.973	4.411	0.597	
2/9/2023	8:54:00	15.986	4.404	0.575	
2/9/2023	8:55:00	15.958	4.434	0.617	
2/9/2023	8:56:00	15.961	4.423	0.622	7
2/9/2023	8:57:00	15.971	4.415	0.549	
2/9/2023	8:58:00	15.979	4.417	0.703	
2/9/2023	8:59:00	15.984	4.423	0.639	
2/9/2023	9:00:00	15.975	4.415	0.565	
2/9/2023	9:01:00	15.98	4.406	0.569	
2/9/2023	9:02:00	15.972	4.419	0.588	
2/9/2023	9:03:00	15.977	4.423	0.541	
2/9/2023	9:04:00	15.987	4.417	0.481	
2/9/2023	9:05:00	15.979	4.428	0.519	
2/9/2023	9:06:00	15.977	4.422	0.569	6
2/9/2023	9:07:00	15.991	4.409	0.529	
2/9/2023	9:08:00	15.998	4.397	0.396	
2/9/2023	9:09:00	15.992	4.406	0.406	
2/9/2023	9:10:00	15.963	4.439	0.486	
2/9/2023	9:11:00	15.987	4.414	0.507	
2/9/2023	9:12:00	15.989	4.417	0.463	
2/9/2023	9:13:00	15.991	4.419	0.413	
2/9/2023	9:14:00	15.993	4.436	0.492	
2/9/2023	9:15:00	15.993	4.441	0.481	
2/9/2023	9:16:00	15.986	4.443	0.439	5
2/9/2023	9:17:00	15.986	4.44	0.548	
2/9/2023	9:18:00	15.995	4.419	0.424	
2/9/2023	9:19:00	15.988	4.435	0.47	
2/9/2023	9:20:00	15.982	4.437	0.417	
2/9/2023	9:21:00	15.979	4.441	0.569	
2/9/2023	9:22:00	15.973	4.441	0.627	
2/9/2023	9:23:00	15.961	4.449	0.613	
2/9/2023	9:24:00	15.985	4.44	1.353	
2/9/2023	9:25:00	15.932	4.501	1.043	
2/9/2023	9:26:00	15.959	4.488	0.919	4
2/9/2023	9:27:00	15.958	4.473	1.018	
2/9/2023	9:28:00	15.953	4.488	1.865	
2/9/2023	9:29:00	15.978	4.461	1.418	
2/9/2023	9:30:00	15.982	4.462	0.786	
2/9/2023	9:31:00	15.966	4.466	0.846	
2/9/2023	9:32:00	15.981	4.455	1.203	
2/9/2023	9:33:00	15.976	4.438	1.293	
2/9/2023	9:34:00	15.98	4.436	1.223	

2/9/2023	9:35:00	15.976	4.434	2.039		
2/9/2023	9:36:00	15.976	4.416	1.085		3
2/9/2023	9:37:00	15.969	4.406	1.206		
2/9/2023	9:38:00	15.973	4.401	1.369		
2/9/2023	9:39:00	15.983	4.39	0.621		
2/9/2023	9:40:00	15.98	4.397	0.38		
2/9/2023	9:41:00	15.965	4.413	0.41		
2/9/2023	9:42:00	15.979	4.422	0.448		
2/9/2023	9:43:00	15.981	4.427	0.377		
2/9/2023	9:44:00	15.981	4.414	0.34		
2/9/2023	9:45:00	15.982	4.409	0.332		
2/9/2023	9:46:00	15.982	4.406	0.431		2
2/9/2023	9:47:00	15.976	4.415	0.535		
2/9/2023	9:48:00	15.972	4.417	0.681		
2/9/2023	9:49:00	15.979	4.416	0.359		
2/9/2023	9:50:00	15.972	4.432	0.642		
2/9/2023	9:51:00	15.985	4.425	0.61		
2/9/2023	9:52:00	15.985	4.427	0.567		
2/9/2023	9:53:00	15.988	4.434	0.603		
2/9/2023	9:54:00	15.982	4.432	0.771		
2/9/2023	9:55:00	15.973	4.438	0.988		
2/9/2023	9:56:00	15.964	4.44	1.109		1
2/9/2023	9:57:00	15.965	4.432	0.809		
2/9/2023	9:58:00	15.975	4.422	0.635		
2/9/2023	9:59:00	15.978	4.419	0.698		
2/9/2023	10:00:00	15.983	4.422	0.792		
2/9/2023	10:01:00	15.985	4.429	0.647		
2/9/2023	10:02:00	15.984	4.427	0.619		
2/9/2023	10:03:00	15.982	4.424	1.245		
2/9/2023	10:04:00	15.984	4.419	0.708		
2/9/2023	10:05:00	15.98	4.426	0.517		
2/9/2023	10:06:00	15.983	4.423	0.462		
2/9/2023	10:07:00	11.226	4.659	0.2		
2/9/2023	10:08:00	10.107	4.948	-0.088	<	System O2, CO2
2/9/2023	10:09:00	5.006	2.329	-0.266		
2/9/2023	10:10:00	0.012	-0.041	3.426		
2/9/2023	10:11:00	1.456	0.376	3.948		
2/9/2023	10:12:00	0.613	0.359	3.983		
2/9/2023	10:13:00	0.001	-0.145	7.494		
2/9/2023	10:14:00	4.37	1.02	9.302		
2/9/2023	10:15:00	16.056	4.401	6.475		
2/9/2023	10:16:00	16.046	4.421	3.435		
2/9/2023	10:17:00	8.679	2.552	1.766		
2/9/2023	10:18:00	-0.011	-0.097	4.037		
2/9/2023	10:19:00	-0.01	-0.01	4.652	<	System CO
2/9/2023	10:20:00	12.438	3.409	3.791		
2/9/2023	10:21:00	16.003	4.434	0.665	<	Resume
2/9/2023	10:22:00	16	4.44	0.678		12
2/9/2023	10:23:00	16.007	4.431	0.375		
2/9/2023	10:24:00	16.002	4.446	0.442		
2/9/2023	10:25:00	15.98	4.449	0.387		
2/9/2023	10:26:00	15.912	4.504	0.511		
2/9/2023	10:27:00	15.992	4.42	0.366		
2/9/2023	10:28:00	16.001	4.405	0.416		
2/9/2023	10:29:00	16.002	4.381	0.447		

2/9/2023	10:30:00	16	4.386	0.706	
2/9/2023	10:31:00	16.004	4.381	0.387	
2/9/2023	10:32:00	16.003	4.382	0.331	11
2/9/2023	10:33:00	16.002	4.383	0.306	
2/9/2023	10:34:00	16.009	4.383	0.309	
2/9/2023	10:35:00	15.997	4.404	0.302	
2/9/2023	10:36:00	15.989	4.408	0.95	
2/9/2023	10:37:00	16.001	4.409	0.754	
2/9/2023	10:38:00	16.003	4.409	0.505	
2/9/2023	10:39:00	15.994	4.424	0.502	
2/9/2023	10:40:00	16.007	4.423	0.552	
2/9/2023	10:41:00	16.008	4.414	0.372	
2/9/2023	10:42:00	15.997	4.417	0.417	10
2/9/2023	10:43:00	16.006	4.397	0.678	
2/9/2023	10:44:00	16.006	4.415	0.698	
2/9/2023	10:45:00	16.004	4.432	0.503	
2/9/2023	10:46:00	15.991	4.459	0.539	
2/9/2023	10:47:00	16.009	4.443	0.872	
2/9/2023	10:48:00	16.01	4.441	0.497	
2/9/2023	10:49:00	16.009	4.438	0.372	
2/9/2023	10:50:00	16.008	4.44	0.417	
2/9/2023	10:51:00	16.014	4.461	0.377	
2/9/2023	10:52:00	16.009	4.486	0.441	9
2/9/2023	10:53:00	16.014	4.487	0.434	
2/9/2023	10:54:00	16.019	4.48	0.387	
2/9/2023	10:55:00	16.016	4.491	0.431	
2/9/2023	10:56:00	16.018	4.48	0.343	
2/9/2023	10:57:00	16.012	4.486	0.44	
2/9/2023	10:58:00	16.004	4.516	0.454	
2/9/2023	10:59:00	16.005	4.518	0.539	
2/9/2023	11:00:00	16.021	4.498	0.62	
2/9/2023	11:01:00	16.022	4.499	0.363	
2/9/2023	11:02:00	16.02	4.51	0.588	8
2/9/2023	11:03:00	16.025	4.507	0.338	
2/9/2023	11:04:00	16.022	4.509	0.998	
2/9/2023	11:05:00	16.017	4.512	0.443	
2/9/2023	11:06:00	16.011	4.515	0.464	
2/9/2023	11:07:00	16.019	4.514	0.507	
2/9/2023	11:08:00	16.026	4.529	0.329	
2/9/2023	11:09:00	16.016	4.53	0.862	
2/9/2023	11:10:00	16.028	4.52	0.44	
2/9/2023	11:11:00	16.021	4.518	0.395	
2/9/2023	11:12:00	16.023	4.504	0.579	7
2/9/2023	11:13:00	16.024	4.519	0.371	
2/9/2023	11:14:00	16.023	4.529	0.744	
2/9/2023	11:15:00	16.021	4.522	0.628	
2/9/2023	11:16:00	16.034	4.511	0.557	
2/9/2023	11:17:00	16.019	4.521	0.331	
2/9/2023	11:18:00	16.016	4.527	0.32	
2/9/2023	11:19:00	16.023	4.532	0.553	
2/9/2023	11:20:00	16.01	4.541	0.328	
2/9/2023	11:21:00	16.027	4.539	0.316	
2/9/2023	11:22:00	16.022	4.542	0.33	6
2/9/2023	11:23:00	16.021	4.552	0.341	
2/9/2023	11:24:00	16.03	4.533	0.424	

2/9/2023	11:25:00	15.998	4.552	0.399	
2/9/2023	11:26:00	16.004	4.537	0.67	
2/9/2023	11:27:00	16.021	4.519	0.636	
2/9/2023	11:28:00	16.033	4.51	0.365	
2/9/2023	11:29:00	16.023	4.509	0.441	
2/9/2023	11:30:00	16.002	4.52	0.518	
2/9/2023	11:31:00	16.025	4.521	0.928	
2/9/2023	11:32:00	16.011	4.524	0.533	5
2/9/2023	11:33:00	15.995	4.535	0.448	
2/9/2023	11:34:00	16.029	4.499	0.552	
2/9/2023	11:35:00	16.022	4.506	0.738	
2/9/2023	11:36:00	16.003	4.528	0.465	
2/9/2023	11:37:00	16.019	4.499	0.766	
2/9/2023	11:38:00	16.027	4.498	0.501	
2/9/2023	11:39:00	16.014	4.491	0.362	
2/9/2023	11:40:00	15.999	4.479	0.29	
2/9/2023	11:41:00	16.038	4.473	0.395	
2/9/2023	11:42:00	16.018	4.48	0.366	4
2/9/2023	11:43:00	16.034	4.48	0.438	
2/9/2023	11:44:00	16.035	4.493	0.405	
2/9/2023	11:45:00	16.033	4.493	0.528	
2/9/2023	11:46:00	16.028	4.493	0.764	
2/9/2023	11:47:00	16.042	4.494	0.422	
2/9/2023	11:48:00	16.022	4.499	0.413	
2/9/2023	11:49:00	16.031	4.485	0.347	
2/9/2023	11:50:00	16.022	4.491	0.285	
2/9/2023	11:51:00	16.019	4.489	0.298	
2/9/2023	11:52:00	16.017	4.5	0.451	3
2/9/2023	11:53:00	16.015	4.501	0.598	
2/9/2023	11:54:00	16.011	4.489	0.715	
2/9/2023	11:55:00	16.036	4.487	0.82	
2/9/2023	11:56:00	16.038	4.496	0.464	
2/9/2023	11:57:00	16.008	4.523	0.604	
2/9/2023	11:58:00	16.041	4.492	0.363	
2/9/2023	11:59:00	16.019	4.483	0.327	
2/9/2023	12:00:00	16.045	4.49	0.403	
2/9/2023	12:01:00	16.042	4.486	0.566	
2/9/2023	12:02:00	16.023	4.498	0.855	2
2/9/2023	12:03:00	16	4.495	0.618	
2/9/2023	12:04:00	16.037	4.497	0.323	
2/9/2023	12:05:00	16.029	4.494	0.749	
2/9/2023	12:06:00	16.019	4.484	0.639	
2/9/2023	12:07:00	16.012	4.484	0.62	
2/9/2023	12:08:00	16.018	4.483	0.41	
2/9/2023	12:09:00	16.034	4.456	0.416	
2/9/2023	12:10:00	16.039	4.46	0.496	
2/9/2023	12:11:00	16.037	4.473	0.361	
2/9/2023	12:12:00	16.031	4.477	0.563	1
2/9/2023	12:13:00	16.005	4.465	0.502	
2/9/2023	12:14:00	16.039	4.473	0.295	
2/9/2023	12:15:00	16.041	4.476	0.295	
2/9/2023	12:16:00	16.031	4.487	0.406	
2/9/2023	12:17:00	16.042	4.482	0.319	
2/9/2023	12:18:00	16.036	4.478	0.39	
2/9/2023	12:19:00	16.033	4.472	0.274	

2/9/2023	12:20:00	16.038	4.481	0.317		
2/9/2023	12:21:00	16.055	4.472	0.291		
2/9/2023	12:22:00	10.117	5.022	-0.439		
2/9/2023	12:23:00	10.108	5.017	-0.033	<	System O2, CO2
2/9/2023	12:24:00	5.616	3.224	1.212		
2/9/2023	12:25:00	-2.003	-0.082	5.754		
2/9/2023	12:26:00	-1.467	-0.092	4.979		
2/9/2023	12:27:00	-0.012	-0.029	4.653	<	System CO
2/9/2023	12:28:00	2.199	-0.106	4.672		
2/9/2023	12:29:00	2.743	4.156	4.354		
2/9/2023	12:30:00	15.052	4.417	3.439		
2/9/2023	12:31:00	16.034	4.426	2.761		
2/9/2023	12:32:00	16.034	4.432	2.037		
2/9/2023	12:33:00	15.94	4.445	1.154		
2/9/2023	12:34:00	15.97	4.439	1.147		
2/9/2023	12:35:00	15.926	4.441	1.113		
2/9/2023	12:36:00	15.929	4.44	1.105		
2/9/2023	12:37:00	15.928	4.445	1.152		
2/9/2023	12:38:00	15.951	4.441	1.129		
2/9/2023	12:39:00	15.936	4.438	1.145		
2/9/2023	12:40:00	15.916	4.431	0.871	<	Start run 5 1240
2/9/2023	12:41:00	15.887	4.418	0.1	12	
2/9/2023	12:42:00	15.917	4.429	0.459		
2/9/2023	12:43:00	15.94	4.424	1.064		
2/9/2023	12:44:00	15.939	4.439	0.936		
2/9/2023	12:45:00	15.969	4.429	0.93		
2/9/2023	12:46:00	15.963	4.434	0.962		
2/9/2023	12:47:00	15.945	4.443	1.007		
2/9/2023	12:48:00	15.955	4.429	1.036		
2/9/2023	12:49:00	15.965	4.422	1		
2/9/2023	12:50:00	15.966	4.416	0.964		
2/9/2023	12:51:00	15.955	4.421	0.953	11	
2/9/2023	12:52:00	15.965	4.409	1.285		
2/9/2023	12:53:00	15.965	4.417	1.054		
2/9/2023	12:54:00	15.953	4.42	0.995		
2/9/2023	12:55:00	15.966	4.405	0.957		
2/9/2023	12:56:00	15.958	4.409	1.048		
2/9/2023	12:57:00	15.96	4.417	1.056		
2/9/2023	12:58:00	15.952	4.419	0.951		
2/9/2023	12:59:00	15.962	4.405	0.946		
2/9/2023	13:00:00	15.958	4.402	0.962		
2/9/2023	13:01:00	15.96	4.4	0.956	10	
2/9/2023	13:02:00	15.956	4.39	0.966		
2/9/2023	13:03:00	15.954	4.399	0.964		
2/9/2023	13:04:00	15.955	4.393	1.1		
2/9/2023	13:05:00	15.955	4.384	1.004		
2/9/2023	13:06:00	15.954	4.383	1.035		
2/9/2023	13:07:00	15.961	4.375	0.984		
2/9/2023	13:08:00	15.949	4.377	0.971		
2/9/2023	13:09:00	15.954	4.375	1.064		
2/9/2023	13:10:00	15.955	4.374	0.96		
2/9/2023	13:11:00	15.946	4.38	0.923	9	
2/9/2023	13:12:00	15.946	4.372	0.93		
2/9/2023	13:13:00	15.948	4.378	0.974		
2/9/2023	13:14:00	15.948	4.369	0.996		

2/9/2023	13:15:00	15.949	4.376	0.976	
2/9/2023	13:16:00	15.949	4.384	0.958	
2/9/2023	13:17:00	15.942	4.379	0.94	
2/9/2023	13:18:00	15.933	4.386	0.97	
2/9/2023	13:19:00	15.936	4.376	0.962	
2/9/2023	13:20:00	15.942	4.355	0.95	
2/9/2023	13:21:00	15.946	4.367	0.948	8
2/9/2023	13:22:00	15.943	4.366	0.959	
2/9/2023	13:23:00	15.936	4.362	0.941	
2/9/2023	13:24:00	15.93	4.372	0.928	
2/9/2023	13:25:00	15.944	4.37	0.931	
2/9/2023	13:26:00	15.94	4.361	0.98	
2/9/2023	13:27:00	15.944	4.359	1.038	
2/9/2023	13:28:00	15.943	4.367	1.009	
2/9/2023	13:29:00	15.954	4.352	0.979	
2/9/2023	13:30:00	15.948	4.351	0.958	
2/9/2023	13:31:00	15.95	4.347	1.093	7
2/9/2023	13:32:00	15.95	4.349	0.979	
2/9/2023	13:33:00	15.942	4.351	1.061	
2/9/2023	13:34:00	15.944	4.348	1.021	
2/9/2023	13:35:00	15.941	4.346	0.931	
2/9/2023	13:36:00	15.938	4.35	1.025	
2/9/2023	13:37:00	15.939	4.349	1.061	
2/9/2023	13:38:00	15.94	4.343	0.951	
2/9/2023	13:39:00	15.92	4.369	0.917	
2/9/2023	13:40:00	15.938	4.353	1	
2/9/2023	13:41:00	15.941	4.348	0.955	6
2/9/2023	13:42:00	15.949	4.341	0.929	
2/9/2023	13:43:00	15.937	4.35	0.933	
2/9/2023	13:44:00	15.939	4.352	0.956	
2/9/2023	13:45:00	15.937	4.355	0.918	
2/9/2023	13:46:00	15.936	4.346	1	
2/9/2023	13:47:00	15.942	4.347	0.919	
2/9/2023	13:48:00	15.948	4.347	0.967	
2/9/2023	13:49:00	15.95	4.35	0.919	
2/9/2023	13:50:00	15.951	4.345	0.909	
2/9/2023	13:51:00	15.944	4.353	0.908	5
2/9/2023	13:52:00	15.929	4.362	0.926	
2/9/2023	13:53:00	15.933	4.356	0.949	
2/9/2023	13:54:00	15.939	4.345	0.93	
2/9/2023	13:55:00	15.945	4.337	0.915	
2/9/2023	13:56:00	15.953	4.332	1.006	
2/9/2023	13:57:00	15.952	4.33	1.043	
2/9/2023	13:58:00	15.961	4.323	0.929	
2/9/2023	13:59:00	15.957	4.333	0.9	
2/9/2023	14:00:00	15.953	4.343	0.913	
2/9/2023	14:01:00	15.946	4.345	0.98	4
2/9/2023	14:02:00	15.941	4.359	1.012	
2/9/2023	14:03:00	15.951	4.347	1.015	
2/9/2023	14:04:00	15.954	4.336	1.014	
2/9/2023	14:05:00	15.959	4.327	0.957	
2/9/2023	14:06:00	15.953	4.327	0.89	
2/9/2023	14:07:00	15.951	4.336	0.999	
2/9/2023	14:08:00	15.959	4.336	0.906	
2/9/2023	14:09:00	15.947	4.341	0.889	

2/9/2023	14:10:00	15.932	4.351	0.949	
2/9/2023	14:11:00	15.941	4.347	0.96	3
2/9/2023	14:12:00	15.944	4.34	0.972	
2/9/2023	14:13:00	15.939	4.344	0.957	
2/9/2023	14:14:00	15.936	4.35	0.929	
2/9/2023	14:15:00	15.939	4.336	1.041	
2/9/2023	14:16:00	15.939	4.338	0.951	
2/9/2023	14:17:00	15.936	4.337	0.915	
2/9/2023	14:18:00	15.938	4.339	0.925	
2/9/2023	14:19:00	15.944	4.337	0.888	
2/9/2023	14:20:00	15.936	4.342	0.971	
2/9/2023	14:21:00	15.949	4.324	0.9	2
2/9/2023	14:22:00	15.942	4.334	0.95	
2/9/2023	14:23:00	15.947	4.336	0.985	
2/9/2023	14:24:00	15.946	4.326	0.913	
2/9/2023	14:25:00	15.944	4.326	0.914	
2/9/2023	14:26:00	15.949	4.329	0.881	
2/9/2023	14:27:00	15.947	4.322	0.998	
2/9/2023	14:28:00	15.951	4.33	0.958	
2/9/2023	14:29:00	15.952	4.331	0.9	
2/9/2023	14:30:00	15.95	4.327	0.892	
2/9/2023	14:31:00	15.956	4.317	0.891	1
2/9/2023	14:32:00	15.943	4.325	0.912	
2/9/2023	14:33:00	15.948	4.329	0.989	
2/9/2023	14:34:00	15.946	4.335	1.365	
2/9/2023	14:35:00	15.932	4.346	1.295	
2/9/2023	14:36:00	15.933	4.332	1.368	
2/9/2023	14:37:00	15.953	4.312	1.013	
2/9/2023	14:38:00	15.95	4.319	0.878	
2/9/2023	14:39:00	15.958	4.314	0.876	
2/9/2023	14:40:00	15.959	4.316	0.86	
2/9/2023	14:41:00	15.957	4.317	0.854	
2/9/2023	14:42:00	15.941	4.326	0.926	
2/9/2023	14:43:00	15.953	4.319	0.882	
2/9/2023	14:44:00	15.949	4.319	0.866	
2/9/2023	14:45:00	15.956	4.324	0.882	
2/9/2023	14:46:00	15.954	4.319	0.898	
2/9/2023	14:47:00	14.953	4.354	0.87	
2/9/2023	14:48:00	10.056	4.871	0.149	
2/9/2023	14:49:00	10.098	4.973	-0.048	< System O2, CO2
2/9/2023	14:50:00	7.216	3.341	-0.167	
2/9/2023	14:51:00	-0.034	-0.106	3.284	
2/9/2023	14:52:00	-0.043	-0.116	4.494	
2/9/2023	14:53:00	-0.044	-0.012	4.639	< System CO
2/9/2023	14:54:00	11.616	3.17	3.899	
2/9/2023	14:55:00	15.937	4.31	1.24	< Resume
2/9/2023	14:56:00	15.935	4.323	1.07	12
2/9/2023	14:57:00	15.936	4.327	1.097	
2/9/2023	14:58:00	15.944	4.325	1.027	
2/9/2023	14:59:00	15.948	4.327	0.979	
2/9/2023	15:00:00	15.95	4.325	1.105	
2/9/2023	15:01:00	15.949	4.318	0.937	
2/9/2023	15:02:00	15.943	4.329	0.927	
2/9/2023	15:03:00	15.941	4.332	1.024	
2/9/2023	15:04:00	15.938	4.331	0.998	

Date	Time				
2/9/2023	15:05:00	15.927	4.342	1.031	
2/9/2023	15:06:00	15.93	4.327	1.234	11
2/9/2023	15:07:00	15.946	4.302	1.001	
2/9/2023	15:08:00	15.94	4.325	0.983	
2/9/2023	15:09:00	15.932	4.336	1.114	
2/9/2023	15:10:00	15.946	4.322	1.421	
2/9/2023	15:11:00	15.949	4.318	0.966	
2/9/2023	15:12:00	15.944	4.324	1.006	
2/9/2023	15:13:00	15.931	4.336	1.046	
2/9/2023	15:14:00	15.931	4.337	1.121	
2/9/2023	15:15:00	15.945	4.325	1.671	
2/9/2023	15:16:00	15.933	4.324	1.15	10
2/9/2023	15:17:00	15.954	4.3	1.181	
2/9/2023	15:18:00	15.941	4.332	0.94	
2/9/2023	15:19:00	15.944	4.319	0.985	
2/9/2023	15:20:00	15.952	4.307	1.056	
2/9/2023	15:21:00	15.942	4.311	1.013	
2/9/2023	15:22:00	15.955	4.289	1.042	
2/9/2023	15:23:00	15.957	4.291	0.991	
2/9/2023	15:24:00	15.945	4.301	0.887	
2/9/2023	15:25:00	15.945	4.3	0.924	
2/9/2023	15:26:00	15.948	4.303	0.965	9
2/9/2023	15:27:00	15.926	4.326	0.907	
2/9/2023	15:28:00	15.918	4.322	1.088	
2/9/2023	15:29:00	15.927	4.322	0.973	
2/9/2023	15:30:00	15.936	4.312	1.188	
2/9/2023	15:31:00	15.952	4.31	1.332	
2/9/2023	15:32:00	15.946	4.322	1.015	
2/9/2023	15:33:00	15.949	4.321	0.94	
2/9/2023	15:34:00	15.957	4.317	0.945	
2/9/2023	15:35:00	15.958	4.318	0.894	
2/9/2023	15:36:00	15.949	4.323	0.898	8
2/9/2023	15:37:00	15.928	4.342	0.923	
2/9/2023	15:38:00	15.944	4.323	0.918	
2/9/2023	15:39:00	15.947	4.322	0.995	
2/9/2023	15:40:00	15.936	4.335	1	
2/9/2023	15:41:00	15.942	4.327	1.44	
2/9/2023	15:42:00	15.948	4.321	0.921	
2/9/2023	15:43:00	15.944	4.34	0.955	
2/9/2023	15:44:00	15.944	4.337	0.979	
2/9/2023	15:45:00	15.943	4.339	1.02	
2/9/2023	15:46:00	15.937	4.342	1.039	7
2/9/2023	15:47:00	15.934	4.346	1.001	
2/9/2023	15:48:00	15.942	4.332	0.932	
2/9/2023	15:49:00	15.942	4.339	1.059	
2/9/2023	15:50:00	15.945	4.333	1.193	
2/9/2023	15:51:00	15.956	4.318	1.061	
2/9/2023	15:52:00	15.951	4.329	0.941	
2/9/2023	15:53:00	15.956	4.325	0.909	
2/9/2023	15:54:00	15.946	4.332	1.048	
2/9/2023	15:55:00	15.946	4.346	0.924	
2/9/2023	15:56:00	15.937	4.349	0.991	6
2/9/2023	15:57:00	15.947	4.341	1.007	
2/9/2023	15:58:00	15.939	4.342	1.102	
2/9/2023	15:59:00	15.948	4.353	1.198	

2/9/2023	16:00:00	15.944	4.359	1.168	
2/9/2023	16:01:00	15.941	4.345	1.438	
2/9/2023	16:02:00	15.941	4.343	1.185	
2/9/2023	16:03:00	15.927	4.362	1.219	
2/9/2023	16:04:00	15.951	4.348	1.005	
2/9/2023	16:05:00	15.949	4.348	0.943	
2/9/2023	16:06:00	15.947	4.347	1.025	5
2/9/2023	16:07:00	15.937	4.359	0.939	
2/9/2023	16:08:00	15.942	4.354	0.955	
2/9/2023	16:09:00	15.94	4.361	0.979	
2/9/2023	16:10:00	15.934	4.352	1.304	
2/9/2023	16:11:00	15.938	4.344	1.028	
2/9/2023	16:12:00	15.925	4.357	1.068	
2/9/2023	16:13:00	15.927	4.368	1.147	
2/9/2023	16:14:00	15.948	4.36	1.076	
2/9/2023	16:15:00	15.939	4.364	0.992	
2/9/2023	16:16:00	15.941	4.361	0.941	4
2/9/2023	16:17:00	15.941	4.364	1.028	
2/9/2023	16:18:00	15.944	4.348	1.009	
2/9/2023	16:19:00	15.933	4.356	1.08	
2/9/2023	16:20:00	15.935	4.362	1.085	
2/9/2023	16:21:00	15.93	4.368	1.029	
2/9/2023	16:22:00	15.938	4.357	1.159	
2/9/2023	16:23:00	15.942	4.345	1.035	
2/9/2023	16:24:00	15.951	4.343	1.036	
2/9/2023	16:25:00	15.935	4.36	0.934	
2/9/2023	16:26:00	15.943	4.36	0.92	3
2/9/2023	16:27:00	15.946	4.349	0.928	
2/9/2023	16:28:00	15.943	4.356	1.027	
2/9/2023	16:29:00	15.937	4.353	1.081	
2/9/2023	16:30:00	15.944	4.358	0.947	
2/9/2023	16:31:00	15.947	4.336	0.987	
2/9/2023	16:32:00	15.94	4.335	0.973	
2/9/2023	16:33:00	15.937	4.341	1.011	
2/9/2023	16:34:00	15.945	4.333	0.984	
2/9/2023	16:35:00	15.939	4.333	1.41	
2/9/2023	16:36:00	15.937	4.334	1.313	2
2/9/2023	16:37:00	15.923	4.341	1.22	
2/9/2023	16:38:00	15.935	4.319	1.182	
2/9/2023	16:39:00	15.926	4.324	1.095	
2/9/2023	16:40:00	15.948	4.325	1.029	
2/9/2023	16:41:00	15.94	4.336	1.044	
2/9/2023	16:42:00	15.941	4.34	1.02	
2/9/2023	16:43:00	15.932	4.34	0.94	
2/9/2023	16:44:00	15.933	4.335	0.952	
2/9/2023	16:45:00	15.938	4.316	0.994	
2/9/2023	16:46:00	15.923	4.327	1.157	1
2/9/2023	16:47:00	15.932	4.33	1.071	
2/9/2023	16:48:00	15.941	4.323	1.415	
2/9/2023	16:49:00	15.937	4.322	1.228	
2/9/2023	16:50:00	15.933	4.329	0.999	
2/9/2023	16:51:00	15.933	4.321	1.092	
2/9/2023	16:52:00	15.945	4.302	1.301	
2/9/2023	16:53:00	15.947	4.293	1.006	
2/9/2023	16:54:00	15.938	4.298	1.015	

2/9/2023	16:55:00	14.749	4.236	1.045		
2/9/2023	16:56:00	11.264	4.716	0.378		
2/9/2023	16:57:00	10.097	4.932	-0.027	<	System O2, CO2
2/9/2023	16:58:00	3.69	1.987	0.028		
2/9/2023	16:59:00	-0.009	-0.2	3.806		
2/9/2023	17:00:00	-0.01	-0.019	4.645	<	System CO
2/9/2023	17:01:00	-0.009	-0.015	4.632		
2/9/2023	17:02:00	12.186	5.164	4.1		
2/9/2023	17:03:00	19.294	9.646	7.687		
2/9/2023	17:04:00	19.3	9.629	9.637	<	Direct High
2/9/2023	17:05:00	18.776	9.38	9.683		
2/9/2023	17:06:00	10.106	4.917	6.969		
2/9/2023	17:07:00	10.098	4.92	4.703	<	Direct Mid
2/9/2023	17:08:00	6.578	3.453	4.681		
2/9/2023	17:09:00	-0.038	-0.001	1.438		
2/9/2023	17:10:00	-0.037	-0.009	-0.041	<	Direct Zero

Date	Time	O2%	CO2%	COppm		
2/10/2023	7:33:00	2.379	0.275	1.326		
2/10/2023	7:34:00	-0.048	-0.01	0.341		
2/10/2023	7:35:00	-0.045	-0.028	-0.063		
2/10/2023	7:36:00	-0.033	-0.039	-0.065	<	Direct Zero
2/10/2023	7:37:00	14.024	6.668	1.988		
2/10/2023	7:38:00	19.286	9.641	9.753		
2/10/2023	7:39:00	19.289	9.646	9.597		
2/10/2023	7:40:00	19.291	9.634	9.665	<	Direct High
2/10/2023	7:41:00	10.37	5.064	6.661		
2/10/2023	7:42:00	10.112	4.908	4.624	<	Direct Mid
2/10/2023	7:43:00	14.292	4.496	3.913		
2/10/2023	7:44:00	10.143	4.935	0.324		
2/10/2023	7:45:00	10.106	4.941	-0.01	<	System O2, CO2
2/10/2023	7:46:00	1.837	0.971	1.22		
2/10/2023	7:47:00	-0.01	-0.069	4.399		
2/10/2023	7:48:00	-0.011	-0.069	4.607	<	System CO
2/10/2023	7:49:00	14.905	4.075	3.353		
2/10/2023	7:50:00	15.965	4.42	1.056	<	Start Run 6
2/10/2023	7:51:00	15.96	4.429	1.011	12	
2/10/2023	7:52:00	15.962	4.428	0.831		
2/10/2023	7:53:00	15.95	4.435	1.04		
2/10/2023	7:54:00	15.96	4.433	1.029		
2/10/2023	7:55:00	15.956	4.439	0.91		
2/10/2023	7:56:00	15.962	4.435	0.897		
2/10/2023	7:57:00	15.969	4.448	0.848		
2/10/2023	7:58:00	15.957	4.474	0.779		
2/10/2023	7:59:00	15.956	4.466	0.963		
2/10/2023	8:00:00	15.947	4.473	0.938		
2/10/2023	8:01:00	15.969	4.464	0.825	11	
2/10/2023	8:02:00	15.96	4.467	0.806		
2/10/2023	8:03:00	15.954	4.472	0.701		
2/10/2023	8:04:00	15.952	4.477	0.77		
2/10/2023	8:05:00	15.958	4.478	0.785		
2/10/2023	8:06:00	15.959	4.493	0.772		
2/10/2023	8:07:00	15.962	4.479	0.717		
2/10/2023	8:08:00	15.958	4.481	1.015		
2/10/2023	8:09:00	15.954	4.489	0.737		
2/10/2023	8:10:00	15.965	4.478	0.631		
2/10/2023	8:11:00	15.97	4.474	0.719	10	
2/10/2023	8:12:00	15.966	4.483	0.673		
2/10/2023	8:13:00	15.949	4.519	0.69		
2/10/2023	8:14:00	15.952	4.512	0.743		
2/10/2023	8:15:00	15.961	4.497	0.628		
2/10/2023	8:16:00	15.968	4.498	0.689		
2/10/2023	8:17:00	15.977	4.499	0.703		
2/10/2023	8:18:00	15.973	4.489	0.684		
2/10/2023	8:19:00	15.962	4.494	0.636		
2/10/2023	8:20:00	15.97	4.489	0.699		
2/10/2023	8:21:00	15.97	4.503	0.648	9	
2/10/2023	8:22:00	15.969	4.517	0.55		
2/10/2023	8:23:00	15.96	4.509	0.579		
2/10/2023	8:24:00	15.974	4.49	0.628		
2/10/2023	8:25:00	15.97	4.498	0.609		
2/10/2023	8:26:00	15.965	4.508	0.556		

2/10/2023	8:27:00	15.965	4.509	0.482	
2/10/2023	8:28:00	15.978	4.5	0.546	
2/10/2023	8:29:00	15.971	4.512	0.619	
2/10/2023	8:30:00	15.98	4.515	0.619	
2/10/2023	8:31:00	15.973	4.519	0.631	8
2/10/2023	8:32:00	15.963	4.515	0.536	
2/10/2023	8:33:00	15.975	4.501	0.504	
2/10/2023	8:34:00	15.974	4.496	0.524	
2/10/2023	8:35:00	15.965	4.501	0.499	
2/10/2023	8:36:00	15.975	4.498	0.583	
2/10/2023	8:37:00	15.978	4.506	0.576	
2/10/2023	8:38:00	15.972	4.52	0.513	
2/10/2023	8:39:00	15.973	4.525	0.598	
2/10/2023	8:40:00	15.968	4.528	0.52	
2/10/2023	8:41:00	15.98	4.51	0.46	7
2/10/2023	8:42:00	15.978	4.5	0.495	
2/10/2023	8:43:00	15.973	4.492	0.572	
2/10/2023	8:44:00	15.983	4.491	0.439	
2/10/2023	8:45:00	15.97	4.521	0.43	
2/10/2023	8:46:00	15.973	4.532	0.522	
2/10/2023	8:47:00	15.967	4.53	0.531	
2/10/2023	8:48:00	15.98	4.514	0.522	
2/10/2023	8:49:00	15.978	4.522	0.596	
2/10/2023	8:50:00	15.973	4.525	0.6	
2/10/2023	8:51:00	15.962	4.52	0.42	6
2/10/2023	8:52:00	15.982	4.497	0.489	
2/10/2023	8:53:00	15.975	4.52	0.353	
2/10/2023	8:54:00	15.979	4.525	0.429	
2/10/2023	8:55:00	15.981	4.52	0.423	
2/10/2023	8:56:00	15.985	4.513	0.428	
2/10/2023	8:57:00	15.988	4.513	0.377	
2/10/2023	8:58:00	15.98	4.524	0.325	
2/10/2023	8:59:00	15.983	4.526	0.437	
2/10/2023	9:00:00	15.983	4.528	0.43	
2/10/2023	9:01:00	15.983	4.539	0.488	5
2/10/2023	9:02:00	15.985	4.528	0.459	
2/10/2023	9:03:00	15.994	4.517	0.464	
2/10/2023	9:04:00	15.988	4.523	0.396	
2/10/2023	9:05:00	15.975	4.518	0.255	
2/10/2023	9:06:00	15.967	4.534	0.464	
2/10/2023	9:07:00	15.976	4.54	0.395	
2/10/2023	9:08:00	15.983	4.54	0.423	
2/10/2023	9:09:00	15.981	4.542	0.462	
2/10/2023	9:10:00	15.986	4.533	0.551	
2/10/2023	9:11:00	15.988	4.513	0.499	4
2/10/2023	9:12:00	15.979	4.506	0.495	
2/10/2023	9:13:00	15.978	4.502	0.384	
2/10/2023	9:14:00	15.973	4.525	0.383	
2/10/2023	9:15:00	15.973	4.548	0.67	
2/10/2023	9:16:00	15.977	4.551	0.924	
2/10/2023	9:17:00	15.982	4.552	0.662	
2/10/2023	9:18:00	15.977	4.559	0.539	
2/10/2023	9:19:00	15.978	4.555	0.991	
2/10/2023	9:20:00	15.991	4.546	0.887	
2/10/2023	9:21:00	15.973	4.565	0.861	3

2/10/2023	9:22:00	15.988	4.549	0.855	
2/10/2023	9:23:00	15.975	4.557	0.867	
2/10/2023	9:24:00	15.977	4.567	0.848	
2/10/2023	9:25:00	15.985	4.556	0.671	
2/10/2023	9:26:00	15.97	4.577	0.816	
2/10/2023	9:27:00	15.992	4.564	0.628	
2/10/2023	9:28:00	15.999	4.572	1.089	
2/10/2023	9:29:00	16.002	4.58	-0.017	
2/10/2023	9:30:00	15.984	4.603	0.983	
2/10/2023	9:31:00	15.966	4.601	0.794	2
2/10/2023	9:32:00	15.971	4.61	0.492	
2/10/2023	9:33:00	15.94	4.646	0.622	
2/10/2023	9:34:00	15.994	4.596	0.6	
2/10/2023	9:35:00	15.984	4.601	1.015	
2/10/2023	9:36:00	16	4.587	0.999	
2/10/2023	9:37:00	15.998	4.572	1.333	
2/10/2023	9:38:00	15.995	4.575	0.675	
2/10/2023	9:39:00	15.996	4.586	0.439	
2/10/2023	9:40:00	15.976	4.617	0.387	
2/10/2023	9:41:00	15.961	4.64	0.605	1
2/10/2023	9:42:00	15.983	4.623	0.751	
2/10/2023	9:43:00	15.984	4.599	0.888	
2/10/2023	9:44:00	15.997	4.582	0.599	
2/10/2023	9:45:00	16.013	4.58	0.858	
2/10/2023	9:46:00	15.985	4.549	0.488	
2/10/2023	9:47:00	15.978	4.646	0.761	
2/10/2023	9:48:00	15.982	4.497	0.883	
2/10/2023	9:49:00	16.011	4.597	1.009	
2/10/2023	9:50:00	15.989	4.604	0.792	
2/10/2023	9:51:00	11.31	4.885	0.269	
2/10/2023	9:52:00	10.111	5.003	-0.037	< System O2, CO2
2/10/2023	9:53:00	7.252	3.908	0.088	
2/10/2023	9:54:00	-0.017	0.066	3.908	
2/10/2023	9:55:00	-0.017	0.003	4.675	< System CO
2/10/2023	9:56:00	14.122	3.891	3.893	
2/10/2023	9:57:00	15.981	4.618	1.757	
2/10/2023	9:58:00	15.959	4.632	1.358	
2/10/2023	9:59:00	16.01	4.573	0.42	
2/10/2023	10:00:00	15.998	4.573	0.186	< Resume
2/10/2023	10:01:00	16.006	4.576	0.331	12
2/10/2023	10:02:00	16.01	4.574	0.556	
2/10/2023	10:03:00	15.961	4.595	0.418	
2/10/2023	10:04:00	15.995	4.582	0.282	
2/10/2023	10:05:00	15.997	4.566	0.106	
2/10/2023	10:06:00	15.989	4.573	0.352	
2/10/2023	10:07:00	15.98	4.584	0.232	
2/10/2023	10:08:00	15.981	4.582	0.417	
2/10/2023	10:09:00	16.013	4.553	0.509	
2/10/2023	10:10:00	16	4.564	0.657	
2/10/2023	10:11:00	15.999	4.557	0.173	11
2/10/2023	10:12:00	15.983	4.561	0.146	
2/10/2023	10:13:00	15.993	4.556	0.14	
2/10/2023	10:14:00	16.003	4.561	0.213	
2/10/2023	10:15:00	15.986	4.579	0.166	
2/10/2023	10:16:00	16.005	4.554	-0.052	

2/10/2023	10:17:00	15.998	4.567	-0.055	
2/10/2023	10:18:00	15.997	4.564	0.148	
2/10/2023	10:19:00	15.984	4.576	0.27	
2/10/2023	10:20:00	15.984	4.578	0.154	
2/10/2023	10:21:00	15.992	4.564	0.116	10
2/10/2023	10:22:00	16.012	4.549	0.508	
2/10/2023	10:23:00	16.012	4.537	0.146	
2/10/2023	10:24:00	16.002	4.524	0.486	
2/10/2023	10:25:00	15.998	4.538	0.05	
2/10/2023	10:26:00	15.979	4.57	0.243	
2/10/2023	10:27:00	15.973	4.556	-0.054	
2/10/2023	10:28:00	15.991	4.558	0.057	
2/10/2023	10:29:00	16.006	4.53	0.066	
2/10/2023	10:30:00	15.988	4.536	0.125	
2/10/2023	10:31:00	15.983	4.547	0.422	9
2/10/2023	10:32:00	15.984	4.541	0.034	
2/10/2023	10:33:00	15.978	4.54	0.082	
2/10/2023	10:34:00	15.971	4.536	0.051	
2/10/2023	10:35:00	15.981	4.532	-0.031	
2/10/2023	10:36:00	16.013	4.472	0.433	
2/10/2023	10:37:00	16.005	4.468	0.056	
2/10/2023	10:38:00	15.996	4.474	0.338	
2/10/2023	10:39:00	16.012	4.477	-0.035	
2/10/2023	10:40:00	16.011	4.483	-0.025	
2/10/2023	10:41:00	16.01	4.489	0.073	8
2/10/2023	10:42:00	16	4.492	-0.108	
2/10/2023	10:43:00	15.983	4.495	0.175	
2/10/2023	10:44:00	15.981	4.5	0.12	
2/10/2023	10:45:00	15.98	4.502	0.028	
2/10/2023	10:46:00	16.015	4.503	0.026	
2/10/2023	10:47:00	15.978	4.547	0.278	
2/10/2023	10:48:00	15.967	4.556	-0.077	
2/10/2023	10:49:00	15.973	4.541	-0.143	
2/10/2023	10:50:00	15.993	4.518	0.025	
2/10/2023	10:51:00	16.011	4.502	0.346	7
2/10/2023	10:52:00	16.008	4.521	0.057	
2/10/2023	10:53:00	15.958	4.564	0.239	
2/10/2023	10:54:00	15.995	4.506	0.214	
2/10/2023	10:55:00	16.022	4.5	0.341	
2/10/2023	10:56:00	16.017	4.518	-0.12	
2/10/2023	10:57:00	16.006	4.533	0.127	
2/10/2023	10:58:00	15.964	4.567	0.06	
2/10/2023	10:59:00	15.994	4.545	0.006	
2/10/2023	11:00:00	15.988	4.54	0.029	
2/10/2023	11:01:00	15.914	4.59	0.078	6
2/10/2023	11:02:00	15.984	4.539	0.209	
2/10/2023	11:03:00	16.015	4.514	0.728	
2/10/2023	11:04:00	16.026	4.527	0.134	
2/10/2023	11:05:00	16.028	4.522	0.117	
2/10/2023	11:06:00	16.02	4.522	0.1	
2/10/2023	11:07:00	16.034	4.515	1.015	
2/10/2023	11:08:00	16.014	4.529	0.317	
2/10/2023	11:09:00	15.992	4.554	0.309	
2/10/2023	11:10:00	16.014	4.551	0.254	
2/10/2023	11:11:00	16.008	4.568	0.449	5

2/10/2023	11:12:00	16.014	4.559	0.727	
2/10/2023	11:13:00	16	4.564	0.386	
2/10/2023	11:14:00	16.007	4.559	0.072	
2/10/2023	11:15:00	16.029	4.543	0.265	
2/10/2023	11:16:00	16.007	4.565	0.123	
2/10/2023	11:17:00	16.018	4.567	0.493	
2/10/2023	11:18:00	16.017	4.561	0.028	
2/10/2023	11:19:00	16.033	4.552	0.155	
2/10/2023	11:20:00	16.026	4.56	0.17	
2/10/2023	11:21:00	16.019	4.555	0.145	4
2/10/2023	11:22:00	16.017	4.563	0.078	
2/10/2023	11:23:00	16.022	4.571	0.067	
2/10/2023	11:24:00	16.024	4.573	0.112	
2/10/2023	11:25:00	16.021	4.558	0.155	
2/10/2023	11:26:00	16.019	4.549	0.101	
2/10/2023	11:27:00	16.022	4.548	0.093	
2/10/2023	11:28:00	16.02	4.57	0.044	
2/10/2023	11:29:00	16.028	4.569	0.097	
2/10/2023	11:30:00	16.021	4.584	0.089	
2/10/2023	11:31:00	16.02	4.586	0.076	3
2/10/2023	11:32:00	16.023	4.579	0.137	
2/10/2023	11:33:00	16.028	4.579	0.152	
2/10/2023	11:34:00	16.028	4.554	0.164	
2/10/2023	11:35:00	16.029	4.559	0.121	
2/10/2023	11:36:00	16.023	4.579	0.055	
2/10/2023	11:37:00	16.016	4.593	0.168	
2/10/2023	11:38:00	16.016	4.589	0.453	
2/10/2023	11:39:00	16.026	4.569	0.073	
2/10/2023	11:40:00	16.026	4.568	0.03	
2/10/2023	11:41:00	16.026	4.564	0.271	2
2/10/2023	11:42:00	16.027	4.566	0.316	
2/10/2023	11:43:00	16.033	4.566	0.001	
2/10/2023	11:44:00	16.03	4.554	0.049	
2/10/2023	11:45:00	16.023	4.543	0.106	
2/10/2023	11:46:00	16.029	4.539	0.119	
2/10/2023	11:47:00	16.019	4.556	0.085	
2/10/2023	11:48:00	16.029	4.552	0.356	
2/10/2023	11:49:00	16.027	4.561	0.049	
2/10/2023	11:50:00	16.027	4.56	0.144	
2/10/2023	11:51:00	16.026	4.55	0.009	1
2/10/2023	11:52:00	16.022	4.547	0.164	
2/10/2023	11:53:00	16.016	4.565	0.068	
2/10/2023	11:54:00	16.018	4.569	0.167	
2/10/2023	11:55:00	16.022	4.575	0.127	
2/10/2023	11:56:00	16.013	4.598	0.059	
2/10/2023	11:57:00	16.022	4.581	0.185	
2/10/2023	11:58:00	16.027	4.555	0.191	
2/10/2023	11:59:00	16.015	4.594	0.249	
2/10/2023	12:00:00	16.13	4.097	0.585	
2/10/2023	12:01:00	14.122	5.111	0.115	
2/10/2023	12:02:00	10.122	5.001	-0.007	< System O2, CO2
2/10/2023	12:03:00	10.123	5.133	-0.014	
2/10/2023	12:04:00	15.773	4.622	0.619	
2/10/2023	12:05:00	16	4.579	1.197	
2/10/2023	12:06:00	15.99	4.579	1.054	

2/10/2023	12:07:00	15.985	4.558	0.201		
2/10/2023	12:08:00	15.982	4.553	0.154		
2/10/2023	12:09:00	15.981	4.559	0.144		
2/10/2023	12:10:00	13.245	3.95	0.093		
2/10/2023	12:11:00	-0.001	0.021	3.283		
2/10/2023	12:12:00	-0.002	0.019	4.786		
2/10/2023	12:13:00	0	0.008	4.632	<	System CO
2/10/2023	12:14:00	12.88	3.565	3.947		
2/10/2023	12:15:00	16.037	4.545	0.844	<	Start Run 7 1215
2/10/2023	12:16:00	16.031	4.552	0.052	12	
2/10/2023	12:17:00	16.036	4.555	0.045		
2/10/2023	12:18:00	16.029	4.564	0.017		
2/10/2023	12:19:00	16.035	4.561	0.017		
2/10/2023	12:20:00	16.022	4.578	0.119		
2/10/2023	12:21:00	16.036	4.565	0.029		
2/10/2023	12:22:00	16.039	4.547	0.024		
2/10/2023	12:23:00	16.04	4.55	0.082		
2/10/2023	12:24:00	16.029	4.587	0.048		
2/10/2023	12:25:00	16.032	4.584	0.059		
2/10/2023	12:26:00	16.032	4.589	0.034	11	
2/10/2023	12:27:00	16.022	4.591	0.08		
2/10/2023	12:28:00	16.02	4.581	0.045		
2/10/2023	12:29:00	16.016	4.57	0.128		
2/10/2023	12:30:00	16.037	4.552	0.302		
2/10/2023	12:31:00	16.035	4.549	0.401		
2/10/2023	12:32:00	16.036	4.564	0.361		
2/10/2023	12:33:00	16.021	4.576	0.175		
2/10/2023	12:34:00	16.04	4.563	0.547		
2/10/2023	12:35:00	16.044	4.579	0.043		
2/10/2023	12:36:00	16.023	4.59	0.06	10	
2/10/2023	12:37:00	16.026	4.577	0.133		
2/10/2023	12:38:00	16.037	4.57	0.006		
2/10/2023	12:39:00	16.021	4.581	0.181		
2/10/2023	12:40:00	16.032	4.566	0.019		
2/10/2023	12:41:00	16.031	4.585	0.044		
2/10/2023	12:42:00	16.049	4.568	0.025		
2/10/2023	12:43:00	16.049	4.578	0.064		
2/10/2023	12:44:00	16.033	4.601	0.125		
2/10/2023	12:45:00	16.038	4.608	0.015		
2/10/2023	12:46:00	16.022	4.622	0.252	9	
2/10/2023	12:47:00	16.041	4.622	0.014		
2/10/2023	12:48:00	16.039	4.643	0.346		
2/10/2023	12:49:00	16.031	4.654	0.383		
2/10/2023	12:50:00	16.026	4.644	0.234		
2/10/2023	12:51:00	16.031	4.625	0.257		
2/10/2023	12:52:00	16.042	4.608	0.806		
2/10/2023	12:53:00	16.043	4.619	0.254		
2/10/2023	12:54:00	16.022	4.645	0.146		
2/10/2023	12:55:00	16.039	4.646	0.407		
2/10/2023	12:56:00	16.037	4.648	0.501	8	
2/10/2023	12:57:00	16.044	4.641	0.622		
2/10/2023	12:58:00	16.044	4.629	0.378		
2/10/2023	12:59:00	16.038	4.618	0.089		
2/10/2023	13:00:00	16.039	4.609	0.098		
2/10/2023	13:01:00	16.043	4.604	0.033		

2/10/2023	13:02:00	16.039	4.613	0.487	
2/10/2023	13:03:00	16.047	4.619	0.433	
2/10/2023	13:04:00	16.034	4.646	0.641	
2/10/2023	13:05:00	16.032	4.646	0.698	
2/10/2023	13:06:00	16.048	4.639	0.288	7
2/10/2023	13:07:00	16.043	4.651	0.043	
2/10/2023	13:08:00	16.026	4.676	0.263	
2/10/2023	13:09:00	16.027	4.679	0.329	
2/10/2023	13:10:00	16.041	4.666	0.12	
2/10/2023	13:11:00	16.041	4.669	0.129	
2/10/2023	13:12:00	16.047	4.663	0.127	
2/10/2023	13:13:00	16.039	4.66	0.137	
2/10/2023	13:14:00	16.046	4.64	0.008	
2/10/2023	13:15:00	16.038	4.652	0.162	
2/10/2023	13:16:00	16.042	4.653	0.135	6
2/10/2023	13:17:00	16.043	4.655	0.298	
2/10/2023	13:18:00	16.037	4.658	0.234	
2/10/2023	13:19:00	16.041	4.663	0.035	
2/10/2023	13:20:00	16.044	4.674	0.018	
2/10/2023	13:21:00	16.031	4.684	0.046	
2/10/2023	13:22:00	16.034	4.677	0.045	
2/10/2023	13:23:00	16.036	4.68	0.271	
2/10/2023	13:24:00	16.046	4.676	0.162	
2/10/2023	13:25:00	16.047	4.68	0.278	
2/10/2023	13:26:00	16.045	4.686	0.018	5
2/10/2023	13:27:00	16.047	4.664	0.472	
2/10/2023	13:28:00	16.04	4.653	0.008	
2/10/2023	13:29:00	16.045	4.639	0.022	
2/10/2023	13:30:00	16.045	4.644	0.421	
2/10/2023	13:31:00	16.039	4.668	0.389	
2/10/2023	13:32:00	16.052	4.658	0.034	
2/10/2023	13:33:00	16.046	4.678	0.04	
2/10/2023	13:34:00	16.038	4.685	0.145	
2/10/2023	13:35:00	16.043	4.683	0.651	
2/10/2023	13:36:00	16.037	4.687	0.285	4
2/10/2023	13:37:00	16.054	4.673	0.061	
2/10/2023	13:38:00	16.042	4.696	0.379	
2/10/2023	13:39:00	16.051	4.67	0.483	
2/10/2023	13:40:00	16.04	4.661	0.383	
2/10/2023	13:41:00	16.045	4.646	0.14	
2/10/2023	13:42:00	16.042	4.652	0.25	
2/10/2023	13:43:00	16.055	4.64	0.02	
2/10/2023	13:44:00	16.05	4.644	0.039	
2/10/2023	13:45:00	16.035	4.661	0.098	
2/10/2023	13:46:00	16.042	4.649	0.004	3
2/10/2023	13:47:00	16.033	4.657	0.073	
2/10/2023	13:48:00	16.023	4.656	0.205	
2/10/2023	13:49:00	16.029	4.666	0.145	
2/10/2023	13:50:00	16.048	4.671	0.054	
2/10/2023	13:51:00	16.04	4.667	0.099	
2/10/2023	13:52:00	16.048	4.653	0.085	
2/10/2023	13:53:00	16.063	4.639	0.059	
2/10/2023	13:54:00	16.061	4.641	0.187	
2/10/2023	13:55:00	16.055	4.632	0.055	
2/10/2023	13:56:00	16.055	4.627	0.065	2

2/10/2023	13:57:00	16.054	4.621	0.378		
2/10/2023	13:58:00	16.051	4.627	0.061		
2/10/2023	13:59:00	16.06	4.622	0.282		
2/10/2023	14:00:00	16.063	4.621	0.096		
2/10/2023	14:01:00	16.056	4.638	0.062		
2/10/2023	14:02:00	16.046	4.664	0.038		
2/10/2023	14:03:00	16.043	4.653	0.01		
2/10/2023	14:04:00	16.056	4.639	0.149		
2/10/2023	14:05:00	16.049	4.65	0.053		
2/10/2023	14:06:00	16.053	4.655	0.01	1	
2/10/2023	14:07:00	16.047	4.669	0.133		
2/10/2023	14:08:00	16.043	4.659	0.173		
2/10/2023	14:09:00	16.043	4.645	0.024		
2/10/2023	14:10:00	16.06	4.622	0.075		
2/10/2023	14:11:00	16.052	4.621	0.063		
2/10/2023	14:12:00	16.049	4.631	0.044		
2/10/2023	14:13:00	16.042	4.647	0.097		
2/10/2023	14:14:00	16.042	4.639	0.221		
2/10/2023	14:15:00	16.04	4.639	0.525		
2/10/2023	14:16:00	13.883	4.786	0.023		
2/10/2023	14:17:00	10.148	5.005	-0.029	<	System O2, CO2
2/10/2023	14:18:00	11.016	5.111	-0.034		
2/10/2023	14:19:00	16.034	4.67	1.267		
2/10/2023	14:20:00	16.047	4.67	1.525		
2/10/2023	14:21:00	4.145	2.061	2.064		
2/10/2023	14:22:00	0	0.057	4.611		
2/10/2023	14:23:00	0.002	0.04	4.683	<	System CO
2/10/2023	14:24:00	9.108	2.466	4.508		
2/10/2023	14:25:00	16.071	4.605	1.626	<	Resume
2/10/2023	14:26:00	16.066	4.621	0.137	12	
2/10/2023	14:27:00	16.056	4.623	0.243		
2/10/2023	14:28:00	16.041	4.644	0.554		
2/10/2023	14:29:00	16.057	4.635	0.549		
2/10/2023	14:30:00	16.059	4.647	0.212		
2/10/2023	14:31:00	16.066	4.646	0.165		
2/10/2023	14:32:00	16.059	4.647	0.201		
2/10/2023	14:33:00	16.064	4.639	0.097		
2/10/2023	14:34:00	16.059	4.628	0.121		
2/10/2023	14:35:00	16.037	4.631	0.231		
2/10/2023	14:36:00	16.026	4.644	0.113	11	
2/10/2023	14:37:00	16.069	4.605	-0.008		
2/10/2023	14:38:00	16.053	4.614	0.005		
2/10/2023	14:39:00	16.045	4.619	0.303		
2/10/2023	14:40:00	16.057	4.608	0.422		
2/10/2023	14:41:00	16.059	4.597	0.067		
2/10/2023	14:42:00	16.058	4.591	0.07		
2/10/2023	14:43:00	16.062	4.585	0.032		
2/10/2023	14:44:00	16.063	4.585	0.017		
2/10/2023	14:45:00	16.041	4.608	0.156		
2/10/2023	14:46:00	16.06	4.591	0.15	10	
2/10/2023	14:47:00	16.053	4.59	0.111		
2/10/2023	14:48:00	16.046	4.609	0.221		
2/10/2023	14:49:00	16.053	4.618	0.183		
2/10/2023	14:50:00	16.049	4.622	0.229		
2/10/2023	14:51:00	16.054	4.619	0.29		

2/10/2023	14:52:00	16.055	4.618	0.611	
2/10/2023	14:53:00	16.058	4.631	0.296	
2/10/2023	14:54:00	16.036	4.661	0.334	
2/10/2023	14:55:00	16.057	4.628	0.505	
2/10/2023	14:56:00	16.059	4.603	0.494	9
2/10/2023	14:57:00	16.05	4.614	0.211	
2/10/2023	14:58:00	16.057	4.618	0.012	
2/10/2023	14:59:00	16.061	4.61	0.008	
2/10/2023	15:00:00	16.061	4.614	0.006	
2/10/2023	15:01:00	16.059	4.608	0.22	
2/10/2023	15:02:00	16.055	4.62	0.267	
2/10/2023	15:03:00	16.054	4.623	0.112	
2/10/2023	15:04:00	16.052	4.627	0.153	
2/10/2023	15:05:00	16.059	4.61	0.074	
2/10/2023	15:06:00	16.057	4.605	0.167	8
2/10/2023	15:07:00	16.054	4.606	0.094	
2/10/2023	15:08:00	16.051	4.605	0.251	
2/10/2023	15:09:00	16.057	4.597	0.457	
2/10/2023	15:10:00	16.055	4.596	0.309	
2/10/2023	15:11:00	16.054	4.611	0.267	
2/10/2023	15:12:00	16.063	4.624	0.124	
2/10/2023	15:13:00	16.054	4.616	0.133	
2/10/2023	15:14:00	16.057	4.619	0.699	
2/10/2023	15:15:00	16.067	4.624	0.196	
2/10/2023	15:16:00	16.065	4.618	0.083	7
2/10/2023	15:17:00	16.064	4.604	0.045	
2/10/2023	15:18:00	16.058	4.602	0.033	
2/10/2023	15:19:00	16.057	4.619	0.089	
2/10/2023	15:20:00	16.065	4.616	0.07	
2/10/2023	15:21:00	16.058	4.629	0.01	
2/10/2023	15:22:00	16.059	4.619	0.255	
2/10/2023	15:23:00	16.058	4.626	0.013	
2/10/2023	15:24:00	16.057	4.64	0.101	
2/10/2023	15:25:00	16.052	4.653	0.35	
2/10/2023	15:26:00	16.053	4.646	0.233	6
2/10/2023	15:27:00	16.055	4.652	0.093	
2/10/2023	15:28:00	16.062	4.651	0.058	
2/10/2023	15:29:00	16.046	4.677	0.05	
2/10/2023	15:30:00	16.055	4.649	0.134	
2/10/2023	15:31:00	16.058	4.642	0.156	
2/10/2023	15:32:00	16.051	4.632	0.039	
2/10/2023	15:33:00	16.061	4.627	0.232	
2/10/2023	15:34:00	16.058	4.627	0.315	
2/10/2023	15:35:00	16.04	4.644	0.296	
2/10/2023	15:36:00	16.052	4.642	0.37	5
2/10/2023	15:37:00	16.061	4.632	0.112	
2/10/2023	15:38:00	16.055	4.641	0.05	
2/10/2023	15:39:00	16.062	4.638	0.164	
2/10/2023	15:40:00	16.062	4.635	0.231	
2/10/2023	15:41:00	16.066	4.609	0.012	
2/10/2023	15:42:00	16.066	4.615	0.02	
2/10/2023	15:43:00	16.06	4.619	0.055	
2/10/2023	15:44:00	16.054	4.625	0.075	
2/10/2023	15:45:00	16.038	4.636	0.063	
2/10/2023	15:46:00	16.052	4.626	0.021	4

2/10/2023	15:47:00	16.056	4.625	0.13
2/10/2023	15:48:00	16.051	4.647	0.14
2/10/2023	15:49:00	16.055	4.63	0.221
2/10/2023	15:50:00	16.047	4.615	0.119
2/10/2023	15:51:00	16.048	4.59	0.027
2/10/2023	15:52:00	16.054	4.577	0.036
2/10/2023	15:53:00	16.05	4.573	0.127
2/10/2023	15:54:00	16.052	4.568	0.123
2/10/2023	15:55:00	16.058	4.566	0.222
2/10/2023	15:56:00	16.055	4.576	0.265	3
2/10/2023	15:57:00	16.059	4.576	0.415
2/10/2023	15:58:00	16.055	4.569	0.17
2/10/2023	15:59:00	16.056	4.55	0.149
2/10/2023	16:00:00	16.061	4.542	0.243
2/10/2023	16:01:00	16.059	4.548	0.195
2/10/2023	16:02:00	16.056	4.554	0.274
2/10/2023	16:03:00	16.055	4.562	0.3
2/10/2023	16:04:00	16.053	4.567	0.311
2/10/2023	16:05:00	16.048	4.564	0.326
2/10/2023	16:06:00	16.057	4.545	0.332	2
2/10/2023	16:07:00	16.058	4.545	0.197
2/10/2023	16:08:00	16.059	4.55	0.128
2/10/2023	16:09:00	16.053	4.552	0.267
2/10/2023	16:10:00	16.05	4.565	0.118
2/10/2023	16:11:00	16.053	4.581	0.233
2/10/2023	16:12:00	16.044	4.59	0.32
2/10/2023	16:13:00	16.053	4.584	0.167
2/10/2023	16:14:00	16.055	4.569	0.168
2/10/2023	16:15:00	16.044	4.564	0.282
2/10/2023	16:16:00	16.051	4.568	0.334	1
2/10/2023	16:17:00	16.048	4.562	0.19
2/10/2023	16:18:00	16.059	4.565	0.165
2/10/2023	16:19:00	16.051	4.573	0.061
2/10/2023	16:20:00	16.051	4.566	0.202
2/10/2023	16:21:00	16.053	4.554	0.23
2/10/2023	16:22:00	16.053	4.544	0.12
2/10/2023	16:23:00	16.052	4.545	0.224
2/10/2023	16:24:00	16.052	4.542	0.095
2/10/2023	16:25:00	16.045	4.549	0.194
2/10/2023	16:26:00	16.044	4.544	0.467
2/10/2023	16:27:00	16.049	4.535	0.131
2/10/2023	16:28:00	16.04	4.551	0.087
2/10/2023	16:29:00	16.047	4.551	0.154
2/10/2023	16:30:00	16.037	4.552	0.159
2/10/2023	16:31:00	10.842	4.998	-0.241
2/10/2023	16:32:00	10.14	5.003	-0.058	< System O2, CO2
2/10/2023	16:33:00	10.136	5.109	-0.538
2/10/2023	16:34:00	4.065	2.175	0.741
2/10/2023	16:35:00	-0.003	-0.006	4.377
2/10/2023	16:36:00	-0.002	-0.013	4.672	< System CO
2/10/2023	16:37:00	11.351	3.099	4.008
2/10/2023	16:38:00	16.033	4.531	1.495
2/10/2023	16:39:00	16.025	4.535	1.331
2/10/2023	16:40:00	16.035	4.542	1.289
2/10/2023	16:41:00	18.616	8.545	2.892

2/10/2023	16:42:00	19.321	9.631	9.273		
2/10/2023	16:43:00	19.321	9.656	9.64	<	Direct High
2/10/2023	16:44:00	10.604	4.582	6.915		
2/10/2023	16:45:00	10.15	4.998	4.679	<	Direct Mid
2/10/2023	16:46:00	8.932	4.284	4.628		
2/10/2023	16:47:00	-0.019	-0.723	2.357		
2/10/2023	16:48:00	-0.008	-0.056	0.147		
2/10/2023	16:49:00	-0.007	-0.073	0.114		
2/10/2023	16:50:00	-0.008	-0.065	-0.004	<	Direct Zero
2/10/2023	16:51:00	-0.008	-0.065	0.001		

Appendix A.2.2
CT-5 Data

MONTROSE
AIR QUALITY SERVICES

Date	Time	O2%	CO2%	COppm		
2/14/2023	7:44:00	-0.027	-0.026	0.044	<	Direct Zero
2/14/2023	7:45:00	11.991	7.517	0.587		
2/14/2023	7:46:00	19.237	11.33	8.005		
2/14/2023	7:47:00	19.28	9.631	9.652	<	Direct High
2/14/2023	7:48:00	13.538	6.46	8.703		
2/14/2023	7:49:00	10.079	4.902	4.629	<	Direct Mid
2/14/2023	7:50:00	13.61	4.559	4.348		
2/14/2023	7:51:00	16.081	4.311	2.345		
2/14/2023	7:52:00	16.078	4.305	2.153		
2/14/2023	7:53:00	13.397	4.515	1.923		
2/14/2023	7:54:00	10.071	4.928	-0.025	<	system O2, CO2
2/14/2023	7:55:00	3.932	2.043	0.013		
2/14/2023	7:56:00	-0.044	-0.075	3.896		
2/14/2023	7:57:00	-0.044	-0.081	4.421		
2/14/2023	7:58:00	-0.043	-0.079	4.607	<	system CO
2/14/2023	7:59:00	9.906	3.226	3.801		
2/14/2023	8:00:00	16.067	4.315	1.266	<	Start Eng 5 Run 1 08:00
2/14/2023	8:01:00	16.074	4.316	1.162		
2/14/2023	8:02:00	16.072	4.316	1.703		
2/14/2023	8:03:00	16.076	4.314	2.009		
2/14/2023	8:04:00	16.081	4.318	1.546		
2/14/2023	8:05:00	16.083	4.321	1.351		
2/14/2023	8:06:00	16.075	4.32	1.54		
2/14/2023	8:07:00	16.079	4.323	1.512		
2/14/2023	8:08:00	16.078	4.314	1.235		
2/14/2023	8:09:00	16.076	4.313	1.182		
2/14/2023	8:10:00	16.08	4.309	0.986		
2/14/2023	8:11:00	16.082	4.315	0.981		
2/14/2023	8:12:00	16.084	4.317	1.156		
2/14/2023	8:13:00	16.087	4.323	0.919		
2/14/2023	8:14:00	16.084	4.321	0.985		
2/14/2023	8:15:00	16.081	4.323	0.817		
2/14/2023	8:16:00	16.089	4.316	0.932		
2/14/2023	8:17:00	16.084	4.321	1.138		
2/14/2023	8:18:00	16.083	4.306	1.277		
2/14/2023	8:19:00	16.084	4.306	1.371		
2/14/2023	8:20:00	16.085	4.29	1.825		
2/14/2023	8:21:00	16.088	4.286	1.85		
2/14/2023	8:22:00	16.084	4.293	1.312		
2/14/2023	8:23:00	16.086	4.309	1.12		
2/14/2023	8:24:00	16.087	4.316	0.948		
2/14/2023	8:25:00	16.088	4.315	1.34		
2/14/2023	8:26:00	16.088	4.322	1.443		
2/14/2023	8:27:00	16.086	4.314	0.81		
2/14/2023	8:28:00	16.085	4.309	0.673		
2/14/2023	8:29:00	16.087	4.308	0.767		
2/14/2023	8:30:00	16.089	4.301	1.126		
2/14/2023	8:31:00	16.089	4.302	1.124		
2/14/2023	8:32:00	16.089	4.318	0.753		
2/14/2023	8:33:00	16.087	4.336	0.668		
2/14/2023	8:34:00	16.086	4.335	0.968		
2/14/2023	8:35:00	16.091	4.33	0.947		
2/14/2023	8:36:00	16.09	4.333	1.267		
2/14/2023	8:37:00	16.09	4.316	1.143		

2/14/2023	8:38:00	16.085	4.317	0.88
2/14/2023	8:39:00	16.091	4.312	0.828
2/14/2023	8:40:00	16.085	4.316	0.671
2/14/2023	8:41:00	16.085	4.325	0.594
2/14/2023	8:42:00	16.092	4.327	0.746
2/14/2023	8:43:00	16.093	4.338	0.773
2/14/2023	8:44:00	16.092	4.33	0.743
2/14/2023	8:45:00	16.089	4.331	0.966
2/14/2023	8:46:00	16.087	4.331	0.706
2/14/2023	8:47:00	16.09	4.325	0.557
2/14/2023	8:48:00	16.089	4.32	0.6
2/14/2023	8:49:00	16.093	4.315	0.649
2/14/2023	8:50:00	16.086	4.323	0.769
2/14/2023	8:51:00	16.086	4.327	0.627
2/14/2023	8:52:00	16.086	4.346	0.537
2/14/2023	8:53:00	16.09	4.344	0.444
2/14/2023	8:54:00	16.086	4.348	0.521
2/14/2023	8:55:00	16.092	4.348	0.424
2/14/2023	8:56:00	16.092	4.339	0.391
2/14/2023	8:57:00	16.089	4.312	0.38
2/14/2023	8:58:00	16.088	4.307	0.499
2/14/2023	8:59:00	16.089	4.295	0.642
2/14/2023	9:00:00	16.093	4.278	0.826
2/14/2023	9:01:00	16.092	4.277	0.568
2/14/2023	9:02:00	16.093	4.291	0.371
2/14/2023	9:03:00	16.09	4.285	0.477
2/14/2023	9:04:00	16.095	4.294	0.697
2/14/2023	9:05:00	16.093	4.305	0.76
2/14/2023	9:06:00	16.098	4.304	0.699
2/14/2023	9:07:00	16.089	4.296	0.586
2/14/2023	9:08:00	16.097	4.292	0.476
2/14/2023	9:09:00	16.093	4.292	0.44
2/14/2023	9:10:00	16.091	4.29	0.531
2/14/2023	9:11:00	16.088	4.298	0.708
2/14/2023	9:12:00	16.087	4.283	0.661
2/14/2023	9:13:00	16.086	4.273	0.598
2/14/2023	9:14:00	16.09	4.269	0.54
2/14/2023	9:15:00	16.097	4.272	0.456
2/14/2023	9:16:00	16.099	4.272	0.401
2/14/2023	9:17:00	16.098	4.281	0.346
2/14/2023	9:18:00	16.087	4.295	0.347
2/14/2023	9:19:00	16.082	4.299	0.452
2/14/2023	9:20:00	16.078	4.297	0.349
2/14/2023	9:21:00	16.092	4.286	0.296
2/14/2023	9:22:00	16.085	4.283	0.28
2/14/2023	9:23:00	16.083	4.288	0.3
2/14/2023	9:24:00	16.078	4.29	0.275
2/14/2023	9:25:00	16.078	4.277	0.342
2/14/2023	9:26:00	16.077	4.293	0.305
2/14/2023	9:27:00	16.08	4.299	0.275
2/14/2023	9:28:00	16.078	4.31	0.303
2/14/2023	9:29:00	16.079	4.317	0.307
2/14/2023	9:30:00	16.082	4.315	0.314
2/14/2023	9:31:00	16.08	4.306	0.588
2/14/2023	9:32:00	16.09	4.294	0.578

2/14/2023	9:33:00	16.09	4.285	0.453
2/14/2023	9:34:00	16.093	4.28	0.82
2/14/2023	9:35:00	16.087	4.283	0.4
2/14/2023	9:36:00	16.085	4.293	0.448
2/14/2023	9:37:00	16.089	4.305	0.483
2/14/2023	9:38:00	16.089	4.311	0.378
2/14/2023	9:39:00	16.092	4.309	0.79
2/14/2023	9:40:00	16.092	4.293	0.412
2/14/2023	9:41:00	16.099	4.287	0.442
2/14/2023	9:42:00	16.097	4.291	0.242
2/14/2023	9:43:00	16.092	4.295	0.316
2/14/2023	9:44:00	16.093	4.282	0.439
2/14/2023	9:45:00	16.096	4.298	0.225
2/14/2023	9:46:00	16.108	4.289	0.206
2/14/2023	9:47:00	16.106	4.302	0.236
2/14/2023	9:48:00	16.096	4.308	0.295
2/14/2023	9:49:00	16.094	4.294	0.304
2/14/2023	9:50:00	16.099	4.287	0.496
2/14/2023	9:51:00	16.106	4.279	0.238
2/14/2023	9:52:00	16.102	4.28	0.231
2/14/2023	9:53:00	16.102	4.29	0.211
2/14/2023	9:54:00	16.1	4.289	0.198
2/14/2023	9:55:00	16.103	4.28	0.193
2/14/2023	9:56:00	16.106	4.275	0.221
2/14/2023	9:57:00	16.104	4.267	0.198
2/14/2023	9:58:00	16.1	4.278	0.213
2/14/2023	9:59:00	16.09	4.272	0.203
2/14/2023	10:00:00	16.099	4.258	0.199
2/14/2023	10:01:00	16.093	4.262	0.206
2/14/2023	10:02:00	10.534	4.814	-0.203
2/14/2023	10:03:00	10.094	4.94	-0.026	< System O2, CO2
2/14/2023	10:04:00	3.864	1.405	3.459
2/14/2023	10:05:00	-0.025	-0.027	4.636	< System CO
2/14/2023	10:06:00	1.768	0.294	4.665
2/14/2023	10:07:00	16.086	4.256	2.673
2/14/2023	10:08:00	16.091	4.271	0.873
2/14/2023	10:09:00	16.089	4.276	0.007
2/14/2023	10:10:00	16.097	4.278	0.009	< Resume
2/14/2023	10:11:00	16.095	4.284	0.163
2/14/2023	10:12:00	16.085	4.293	0.176
2/14/2023	10:13:00	16.097	4.282	0.148
2/14/2023	10:14:00	16.098	4.271	0.003
2/14/2023	10:15:00	16.102	4.267	0.025
2/14/2023	10:16:00	16.102	4.273	0.013
2/14/2023	10:17:00	16.104	4.266	0.029
2/14/2023	10:18:00	16.099	4.277	0.004
2/14/2023	10:19:00	16.101	4.284	0.028
2/14/2023	10:20:00	16.095	4.278	0.011
2/14/2023	10:21:00	16.101	4.266	0.021
2/14/2023	10:22:00	16.098	4.264	0.03
2/14/2023	10:23:00	16.103	4.26	0.053
2/14/2023	10:24:00	16.1	4.267	0.047
2/14/2023	10:25:00	16.101	4.267	0.047
2/14/2023	10:26:00	16.099	4.281	0.04
2/14/2023	10:27:00	16.097	4.282	0.011

2/14/2023	10:28:00	16.093	4.274	0.024
2/14/2023	10:29:00	16.101	4.253	0.045
2/14/2023	10:30:00	16.101	4.25	0.038
2/14/2023	10:31:00	16.099	4.257	0.002
2/14/2023	10:32:00	16.094	4.265	0.063
2/14/2023	10:33:00	16.104	4.275	0.031
2/14/2023	10:34:00	16.104	4.285	0.04
2/14/2023	10:35:00	16.099	4.282	0.04
2/14/2023	10:36:00	16.101	4.267	0.057
2/14/2023	10:37:00	16.095	4.272	0.045
2/14/2023	10:38:00	16.095	4.275	0.019
2/14/2023	10:39:00	16.096	4.272	0.019
2/14/2023	10:40:00	16.104	4.262	0.052
2/14/2023	10:41:00	16.11	4.268	0.062
2/14/2023	10:42:00	16.093	4.274	0.042
2/14/2023	10:43:00	16.098	4.262	0.026
2/14/2023	10:44:00	16.105	4.258	0.03
2/14/2023	10:45:00	16.104	4.254	0.024
2/14/2023	10:46:00	16.092	4.257	0.051
2/14/2023	10:47:00	16.107	4.246	0.057
2/14/2023	10:48:00	16.101	4.249	0.071
2/14/2023	10:49:00	16.106	4.253	0.051
2/14/2023	10:50:00	16.096	4.244	0.051
2/14/2023	10:51:00	16.11	4.234	0.052
2/14/2023	10:52:00	16.107	4.236	0.079
2/14/2023	10:53:00	16.1	4.232	0.066
2/14/2023	10:54:00	16.101	4.242	0.049
2/14/2023	10:55:00	16.099	4.255	0.023
2/14/2023	10:56:00	16.103	4.256	0.043
2/14/2023	10:57:00	16.095	4.262	0.036
2/14/2023	10:58:00	16.088	4.269	0.049
2/14/2023	10:59:00	16.077	4.287	0.007
2/14/2023	11:00:00	16.104	4.26	0.017
2/14/2023	11:01:00	16.107	4.251	0.063
2/14/2023	11:02:00	16.107	4.252	0.066
2/14/2023	11:03:00	16.098	4.266	0.063
2/14/2023	11:04:00	16.099	4.254	0.054
2/14/2023	11:05:00	16.101	4.254	0.062
2/14/2023	11:06:00	16.098	4.255	0.064
2/14/2023	11:07:00	16.104	4.257	0.063
2/14/2023	11:08:00	16.099	4.264	0.053
2/14/2023	11:09:00	16.104	4.265	0.073
2/14/2023	11:10:00	16.102	4.267	0.071
2/14/2023	11:11:00	16.1	4.264	0.082
2/14/2023	11:12:00	16.108	4.258	0.068
2/14/2023	11:13:00	16.091	4.272	0.187
2/14/2023	11:14:00	16.081	4.283	0.025
2/14/2023	11:15:00	16.098	4.271	0.359
2/14/2023	11:16:00	16.096	4.274	0.082
2/14/2023	11:17:00	16.086	4.301	0.387
2/14/2023	11:18:00	16.104	4.292	0.307
2/14/2023	11:19:00	16.106	4.285	0.224
2/14/2023	11:20:00	16.108	4.27	0.032
2/14/2023	11:21:00	16.104	4.273	0.141
2/14/2023	11:22:00	16.118	4.256	0.004

2/14/2023	11:23:00	16.119	4.255	0.08
2/14/2023	11:24:00	16.116	4.26	0.091
2/14/2023	11:25:00	16.113	4.272	0.081
2/14/2023	11:26:00	16.115	4.272	0.095
2/14/2023	11:27:00	16.103	4.263	0.011
2/14/2023	11:28:00	16.112	4.251	0.042
2/14/2023	11:29:00	16.111	4.243	0.081
2/14/2023	11:30:00	16.113	4.243	0.097
2/14/2023	11:31:00	16.105	4.243	0.077
2/14/2023	11:32:00	16.108	4.255	0.087
2/14/2023	11:33:00	16.108	4.266	0.091
2/14/2023	11:34:00	16.112	4.258	0.063
2/14/2023	11:35:00	16.105	4.259	0.043
2/14/2023	11:36:00	16.09	4.275	0.157
2/14/2023	11:37:00	16.115	4.246	0.156
2/14/2023	11:38:00	16.117	4.251	0.029
2/14/2023	11:39:00	16.118	4.258	0.066
2/14/2023	11:40:00	16.114	4.27	0.09
2/14/2023	11:41:00	16.114	4.268	0.1
2/14/2023	11:42:00	16.102	4.271	0.072
2/14/2023	11:43:00	16.111	4.261	0.086
2/14/2023	11:44:00	16.111	4.265	0.094
2/14/2023	11:45:00	16.11	4.261	0.053
2/14/2023	11:46:00	16.113	4.267	0.095
2/14/2023	11:47:00	16.114	4.27	0.087
2/14/2023	11:48:00	16.115	4.275	0.096
2/14/2023	11:49:00	16.11	4.274	0.09
2/14/2023	11:50:00	16.117	4.269	0.104
2/14/2023	11:51:00	16.102	4.284	0.103
2/14/2023	11:52:00	16.114	4.267	0.103
2/14/2023	11:53:00	16.111	4.26	0.012
2/14/2023	11:54:00	16.117	4.255	0.226
2/14/2023	11:55:00	16.122	4.264	0.057
2/14/2023	11:56:00	16.121	4.271	0.071
2/14/2023	11:57:00	16.119	4.265	0.065
2/14/2023	11:58:00	16.117	4.267	0.079
2/14/2023	11:59:00	16.106	4.271	0.326
2/14/2023	12:00:00	16.115	4.264	0.226
2/14/2023	12:01:00	16.109	4.261	0.026
2/14/2023	12:02:00	16.12	4.252	0.039
2/14/2023	12:03:00	16.124	4.256	0.114
2/14/2023	12:04:00	16.123	4.261	0.061
2/14/2023	12:05:00	16.119	4.251	0.085
2/14/2023	12:06:00	16.122	4.246	0.091
2/14/2023	12:07:00	16.115	4.246	0.094
2/14/2023	12:08:00	16.116	4.25	0.077
2/14/2023	12:09:00	16.163	4.285	0.247
2/14/2023	12:10:00	16.082	4.226	0.276
2/14/2023	12:11:00	10.078	4.745	0.009
2/14/2023	12:12:00	10.182	4.926	0.015	< System O2, CO2
2/14/2023	12:13:00	7.247	2.005	1.353
2/14/2023	12:14:00	-0.045	-0.115	4.536
2/14/2023	12:15:00	-0.043	-0.128	4.693
2/14/2023	12:16:00	-0.039	-0.033	4.675	< System CO
2/14/2023	12:17:00	-0.04	-0.12	4.703

2/14/2023	12:18:00	6.176	1.405	4.558	
2/14/2023	12:19:00	16.129	4.268	1.552	
2/14/2023	12:20:00	16.13	4.27	0.017	< Start Eng 5 Run 2 12:20
2/14/2023	12:21:00	16.125	4.274	0.018	
2/14/2023	12:22:00	16.129	4.263	0.012	
2/14/2023	12:23:00	16.131	4.256	0.003	
2/14/2023	12:24:00	16.124	4.263	0.007	
2/14/2023	12:25:00	16.129	4.269	0.004	
2/14/2023	12:26:00	16.133	4.273	0.01	
2/14/2023	12:27:00	16.134	4.277	0.027	
2/14/2023	12:28:00	16.128	4.27	0.004	
2/14/2023	12:29:00	16.129	4.263	0.023	
2/14/2023	12:30:00	16.123	4.271	0.029	
2/14/2023	12:31:00	16.126	4.274	0.089	
2/14/2023	12:32:00	16.13	4.283	0.027	
2/14/2023	12:33:00	16.133	4.277	0.023	
2/14/2023	12:34:00	16.123	4.293	0.025	
2/14/2023	12:35:00	16.128	4.282	0.267	
2/14/2023	12:36:00	16.126	4.283	0.136	
2/14/2023	12:37:00	16.118	4.29	0.035	
2/14/2023	12:38:00	16.13	4.264	0.001	
2/14/2023	12:39:00	16.121	4.264	0.029	
2/14/2023	12:40:00	16.12	4.267	0.004	
2/14/2023	12:41:00	16.123	4.26	0.026	
2/14/2023	12:42:00	16.126	4.256	0.007	
2/14/2023	12:43:00	16.125	4.253	0.015	
2/14/2023	12:44:00	16.129	4.243	0.01	
2/14/2023	12:45:00	16.123	4.237	0.011	
2/14/2023	12:46:00	16.128	4.228	0.03	
2/14/2023	12:47:00	16.126	4.236	0.034	
2/14/2023	12:48:00	16.131	4.237	0.059	
2/14/2023	12:49:00	16.128	4.229	0.133	
2/14/2023	12:50:00	16.131	4.225	0.172	
2/14/2023	12:51:00	16.128	4.219	0.161	
2/14/2023	12:52:00	16.128	4.223	0.196	
2/14/2023	12:53:00	16.126	4.227	0.158	
2/14/2023	12:54:00	16.127	4.229	0.007	
2/14/2023	12:55:00	16.136	4.239	0.027	
2/14/2023	12:56:00	16.131	4.235	0.034	
2/14/2023	12:57:00	16.131	4.228	0.028	
2/14/2023	12:58:00	16.125	4.243	0.011	
2/14/2023	12:59:00	16.128	4.238	0.059	
2/14/2023	13:00:00	16.13	4.235	0.222	
2/14/2023	13:01:00	16.133	4.231	0.063	
2/14/2023	13:02:00	16.139	4.224	0.008	
2/14/2023	13:03:00	16.136	4.241	0.031	
2/14/2023	13:04:00	16.137	4.256	0.035	
2/14/2023	13:05:00	16.134	4.253	0.039	
2/14/2023	13:06:00	16.129	4.242	0.032	
2/14/2023	13:07:00	16.13	4.239	0.025	
2/14/2023	13:08:00	16.127	4.246	0.024	
2/14/2023	13:09:00	16.126	4.255	0.113	
2/14/2023	13:10:00	16.139	4.251	0.02	
2/14/2023	13:11:00	16.149	4.256	0.036	
2/14/2023	13:12:00	16.115	4.29	0.03	

2/14/2023	13:13:00	16.118	4.282	0.004
2/14/2023	13:14:00	16.128	4.255	0.229
2/14/2023	13:15:00	16.123	4.248	0.19
2/14/2023	13:16:00	16.122	4.244	0.276
2/14/2023	13:17:00	16.143	4.233	0.121
2/14/2023	13:18:00	16.118	4.255	0.092
2/14/2023	13:19:00	16.163	4.224	0.054
2/14/2023	13:20:00	16.116	4.256	0.12
2/14/2023	13:21:00	16.091	4.262	0.052
2/14/2023	13:22:00	16.091	4.221	0.02
2/14/2023	13:23:00	16.153	4.164	0.006
2/14/2023	13:24:00	16.145	4.182	0.005
2/14/2023	13:25:00	16.145	4.229	0.022
2/14/2023	13:26:00	16.093	4.259	0.034
2/14/2023	13:27:00	16.125	4.209	0.006
2/14/2023	13:28:00	16.136	4.186	0.03
2/14/2023	13:29:00	16.134	4.205	0.021
2/14/2023	13:30:00	16.113	4.224	0.031
2/14/2023	13:31:00	16.125	4.218	0.011
2/14/2023	13:32:00	16.13	4.225	0.02
2/14/2023	13:33:00	16.129	4.216	0.003
2/14/2023	13:34:00	16.125	4.228	0.012
2/14/2023	13:35:00	16.125	4.233	0.074
2/14/2023	13:36:00	16.123	4.223	0.018
2/14/2023	13:37:00	16.124	4.211	0.007
2/14/2023	13:38:00	16.122	4.216	0.036
2/14/2023	13:39:00	16.126	4.227	0.022
2/14/2023	13:40:00	16.13	4.236	0.012
2/14/2023	13:41:00	16.127	4.22	0.023
2/14/2023	13:42:00	16.124	4.208	0.025
2/14/2023	13:43:00	16.127	4.21	0.036
2/14/2023	13:44:00	16.123	4.213	0.419
2/14/2023	13:45:00	16.126	4.209	0.152
2/14/2023	13:46:00	16.134	4.199	0.052
2/14/2023	13:47:00	16.133	4.198	0.087
2/14/2023	13:48:00	16.119	4.212	0.063
2/14/2023	13:49:00	16.123	4.204	0.059
2/14/2023	13:50:00	16.129	4.206	0.091
2/14/2023	13:51:00	16.133	4.202	0.043
2/14/2023	13:52:00	16.13	4.203	0
2/14/2023	13:53:00	16.127	4.217	0.032
2/14/2023	13:54:00	16.124	4.222	0.013
2/14/2023	13:55:00	16.13	4.213	0.044
2/14/2023	13:56:00	16.113	4.221	0.018
2/14/2023	13:57:00	16.13	4.202	0.05
2/14/2023	13:58:00	16.127	4.192	0.049
2/14/2023	13:59:00	16.128	4.217	0.001
2/14/2023	14:00:00	16.123	4.229	0.04
2/14/2023	14:01:00	16.122	4.233	0.043
2/14/2023	14:02:00	16.122	4.215	0.039
2/14/2023	14:03:00	16.122	4.221	0.25
2/14/2023	14:04:00	16.13	4.213	0.455
2/14/2023	14:05:00	16.126	4.212	1.647
2/14/2023	14:06:00	16.126	4.221	0.368
2/14/2023	14:07:00	16.13	4.233	0.02

2/14/2023	14:08:00	16.126	4.234	0.06	
2/14/2023	14:09:00	16.126	4.234	0.021	
2/14/2023	14:10:00	16.125	4.234	0.008	
2/14/2023	14:11:00	16.126	4.234	0.002	
2/14/2023	14:12:00	16.129	4.239	0.019	
2/14/2023	14:13:00	16.123	4.249	0.035	
2/14/2023	14:14:00	16.13	4.249	0.015	
2/14/2023	14:15:00	16.127	4.251	0.003	
2/14/2023	14:16:00	16.127	4.257	0.021	
2/14/2023	14:17:00	16.121	4.255	0.046	
2/14/2023	14:18:00	16.117	4.263	0.092	
2/14/2023	14:19:00	16.109	4.265	0.016	
2/14/2023	14:20:00	16.121	4.252	0.001	
2/14/2023	14:21:00	16.13	4.254	0.046	
2/14/2023	14:22:00	12.47	4.566	0.195	
2/14/2023	14:23:00	10.094	4.919	0.246	
2/14/2023	14:24:00	10.091	4.914	0.007	System O2,CO2
2/14/2023	14:25:00	2.552	1.443	1.531	
2/14/2023	14:26:00	-0.029	-0.136	4.636	
2/14/2023	14:27:00	-0.027	-0.041	4.679	< System CO
2/14/2023	14:28:00	10.282	3.448	3.772	
2/14/2023	14:29:00	16.116	4.272	0.75	
2/14/2023	14:30:00	16.119	4.274	0.057	< Resume
2/14/2023	14:31:00	16.127	4.259	0.03	
2/14/2023	14:32:00	16.113	4.255	0.011	
2/14/2023	14:33:00	16.105	4.269	0.007	
2/14/2023	14:34:00	16.104	4.283	0.135	
2/14/2023	14:35:00	16.123	4.259	0.028	
2/14/2023	14:36:00	16.125	4.273	0.007	
2/14/2023	14:37:00	16.113	4.28	0.086	
2/14/2023	14:38:00	16.118	4.273	0.051	
2/14/2023	14:39:00	16.116	4.26	0.047	
2/14/2023	14:40:00	16.106	4.263	0.019	
2/14/2023	14:41:00	16.117	4.245	0.247	
2/14/2023	14:42:00	16.113	4.262	0.021	
2/14/2023	14:43:00	16.111	4.276	0.008	
2/14/2023	14:44:00	16.122	4.268	0.099	
2/14/2023	14:45:00	16.125	4.255	0.281	
2/14/2023	14:46:00	16.119	4.262	0.072	
2/14/2023	14:47:00	16.113	4.249	0.261	
2/14/2023	14:48:00	16.126	4.238	0.183	
2/14/2023	14:49:00	16.107	4.253	0.634	
2/14/2023	14:50:00	16.108	4.26	0.128	
2/14/2023	14:51:00	16.111	4.259	0.079	
2/14/2023	14:52:00	16.109	4.256	0.007	
2/14/2023	14:53:00	16.12	4.245	0.06	
2/14/2023	14:54:00	16.118	4.242	0.134	
2/14/2023	14:55:00	16.116	4.246	0.008	
2/14/2023	14:56:00	16.124	4.241	0.01	
2/14/2023	14:57:00	16.122	4.249	0.037	
2/14/2023	14:58:00	16.122	4.25	0.031	
2/14/2023	14:59:00	16.112	4.263	0.041	
2/14/2023	15:00:00	16.12	4.244	0.01	
2/14/2023	15:01:00	16.123	4.234	0.017	
2/14/2023	15:02:00	16.117	4.243	0.078	

2/14/2023	15:03:00	16.12	4.247	0.017
2/14/2023	15:04:00	16.121	4.252	0.039
2/14/2023	15:05:00	16.121	4.252	0.015
2/14/2023	15:06:00	16.127	4.25	0.054
2/14/2023	15:07:00	16.122	4.247	0.033
2/14/2023	15:08:00	16.125	4.238	0.05
2/14/2023	15:09:00	16.119	4.249	0.014
2/14/2023	15:10:00	16.114	4.253	0.033
2/14/2023	15:11:00	16.117	4.253	0.073
2/14/2023	15:12:00	16.121	4.249	0.056
2/14/2023	15:13:00	16.126	4.23	0.032
2/14/2023	15:14:00	16.1	4.253	0.076
2/14/2023	15:15:00	16.122	4.219	0.246
2/14/2023	15:16:00	16.122	4.234	0.036
2/14/2023	15:17:00	16.118	4.252	0.011
2/14/2023	15:18:00	16.11	4.264	0.218
2/14/2023	15:19:00	16.12	4.265	0.261
2/14/2023	15:20:00	16.128	4.243	0.435
2/14/2023	15:21:00	16.12	4.239	0.035
2/14/2023	15:22:00	16.125	4.221	0.01
2/14/2023	15:23:00	16.12	4.226	0.075
2/14/2023	15:24:00	16.118	4.228	0.105
2/14/2023	15:25:00	16.122	4.228	0.072
2/14/2023	15:26:00	16.116	4.239	0.025
2/14/2023	15:27:00	16.115	4.235	0.062
2/14/2023	15:28:00	16.118	4.245	0.015
2/14/2023	15:29:00	16.116	4.23	0.003
2/14/2023	15:30:00	16.112	4.232	0.096
2/14/2023	15:31:00	16.12	4.229	0.16
2/14/2023	15:32:00	16.099	4.255	0.064
2/14/2023	15:33:00	16.117	4.248	0.191
2/14/2023	15:34:00	16.123	4.242	0.121
2/14/2023	15:35:00	16.12	4.242	0.215
2/14/2023	15:36:00	16.125	4.224	0.059
2/14/2023	15:37:00	16.125	4.224	0.187
2/14/2023	15:38:00	16.128	4.226	0.056
2/14/2023	15:39:00	16.122	4.235	0.099
2/14/2023	15:40:00	16.124	4.235	0.049
2/14/2023	15:41:00	16.122	4.241	0.017
2/14/2023	15:42:00	16.129	4.226	0.054
2/14/2023	15:43:00	16.12	4.233	0.04
2/14/2023	15:44:00	16.101	4.245	0.038
2/14/2023	15:45:00	16.099	4.254	0.029
2/14/2023	15:46:00	16.111	4.255	0.037
2/14/2023	15:47:00	16.121	4.247	0.04
2/14/2023	15:48:00	16.11	4.263	0.06
2/14/2023	15:49:00	16.133	4.232	0.013
2/14/2023	15:50:00	16.106	4.244	0.058
2/14/2023	15:51:00	16.121	4.217	0.071
2/14/2023	15:52:00	16.107	4.24	0.038
2/14/2023	15:53:00	16.12	4.227	0.033
2/14/2023	15:54:00	16.119	4.237	0.008
2/14/2023	15:55:00	16.121	4.234	0.115
2/14/2023	15:56:00	16.119	4.227	0.095
2/14/2023	15:57:00	16.121	4.235	0.044

2/14/2023	15:58:00	16.1	4.26	0.058
2/14/2023	15:59:00	16.102	4.257	0.198
2/14/2023	16:00:00	16.125	4.237	0.035
2/14/2023	16:01:00	16.114	4.25	0.193
2/14/2023	16:02:00	16.123	4.239	0.07
2/14/2023	16:03:00	16.113	4.241	0.032
2/14/2023	16:04:00	16.118	4.23	0.01
2/14/2023	16:05:00	16.106	4.248	0.014
2/14/2023	16:06:00	16.11	4.241	0.049
2/14/2023	16:07:00	16.105	4.247	0.05
2/14/2023	16:08:00	16.085	4.269	0.008
2/14/2023	16:09:00	16.116	4.24	0.155
2/14/2023	16:10:00	16.121	4.231	0.061
2/14/2023	16:11:00	16.104	4.231	0.138
2/14/2023	16:12:00	16.126	4.216	0.071
2/14/2023	16:13:00	16.117	4.238	0.042
2/14/2023	16:14:00	16.125	4.239	0.041
2/14/2023	16:15:00	16.119	4.236	0.135
2/14/2023	16:16:00	16.123	4.218	0.213
2/14/2023	16:17:00	16.106	4.248	0.288
2/14/2023	16:18:00	16.081	4.256	0.086
2/14/2023	16:19:00	16.125	4.197	0.371
2/14/2023	16:20:00	16.124	4.206	0.023
2/14/2023	16:21:00	16.112	4.23	0.038
2/14/2023	16:22:00	16.11	4.236	0.174
2/14/2023	16:23:00	16.114	4.235	0.02
2/14/2023	16:24:00	16.113	4.231	0.064
2/14/2023	16:25:00	16.115	4.207	0.343
2/14/2023	16:26:00	16.127	4.191	0.344
2/14/2023	16:27:00	16.122	4.183	0.303
2/14/2023	16:28:00	16.104	4.184	0.067
2/14/2023	16:29:00	16.11	4.188	0.021
2/14/2023	16:30:00	16.1	4.205	0.081
2/14/2023	16:31:00	12.092	4.54	0.086
2/14/2023	16:32:00	10.092	4.895	-0.007	< System O2, CO2
2/14/2023	16:33:00	10.088	4.829	0.314
2/14/2023	16:34:00	8.659	4.329	4.019
2/14/2023	16:35:00	-0.057	-0.226	4.565
2/14/2023	16:36:00	-0.056	-0.032	4.657	< System CO
2/14/2023	16:37:00	-0.058	-0.051	4.655
2/14/2023	16:38:00	11.664	2.993	4.111
2/14/2023	16:39:00	16.315	4.307	0.562
2/14/2023	16:40:00	19.259	9.518	3.516
2/14/2023	16:41:00	19.274	9.646	9.05
2/14/2023	16:42:00	19.273	9.656	9.646	< Direct High
2/14/2023	16:43:00	16.012	7.909	9.525
2/14/2023	16:44:00	10.114	4.711	5.142
2/14/2023	16:45:00	10.113	4.902	4.613	< Direct Mid
2/14/2023	16:46:00	9.348	4.691	4.588
2/14/2023	16:47:00	-0.034	-0.323	2.067
2/14/2023	16:48:00	-0.037	-0.021	-0.023
2/14/2023	16:49:00	-0.037	-0.01	0.011	< Direct Zero
2/14/2023	16:50:00	-0.038	0.001	0.002

Date	Time	O2%	CO2%	COppm		
2/15/2023	7:14:00	-0.042	0.028	2.177		
2/15/2023	7:15:00	-0.032	-0.025	-0.031		
2/15/2023	7:16:00	-0.03	-0.031	-0.06		
2/15/2023	7:17:00	-0.03	-0.037	-0.064		
2/15/2023	7:18:00	-0.03	-0.054	2.858		
2/15/2023	7:19:00	-0.027	-0.056	1.1		
2/15/2023	7:20:00	-0.027	-0.038	-0.061	<	Zero Direct
2/15/2023	7:21:00	15.851	8.633	2.449		
2/15/2023	7:22:00	19.281	9.83	10.373		
2/15/2023	7:23:00	19.284	9.616	9.622	<	Direct High
2/15/2023	7:24:00	12.759	6.219	8.541		
2/15/2023	7:25:00	10.101	4.878	4.588		
2/15/2023	7:26:00	10.102	4.971	4.656	<	Direct Mid
2/15/2023	7:27:00	12.922	4.586	4.545		
2/15/2023	7:28:00	16.075	4.266	1.478		
2/15/2023	7:29:00	13.064	4.534	0.532		
2/15/2023	7:30:00	10.094	4.913	-0.023	<	System O2, CO2
2/15/2023	7:31:00	1.398	0.751	1.812		
2/15/2023	7:32:00	-0.041	-0.107	4.681		
2/15/2023	7:33:00	-0.041	-0.017	4.608	<	System CO
2/15/2023	7:34:00	14.059	3.932	2.853		
2/15/2023	7:35:00	16.069	4.279	0.681	<	Start Eng 5 Run 3 0735

Date	Time	O2%	CO2%	COppm	
2/15/2023	7:36:00	16.075	4.268	0.02	12
2/15/2023	7:37:00	16.068	4.27	0.021	
2/15/2023	7:38:00	16.058	4.283	0.027	
2/15/2023	7:39:00	16.067	4.27	0.044	
2/15/2023	7:40:00	16.071	4.266	0.056	
2/15/2023	7:41:00	16.068	4.273	0.074	
2/15/2023	7:42:00	16.061	4.277	0.046	
2/15/2023	7:43:00	16.061	4.281	0.006	
2/15/2023	7:44:00	16.071	4.272	0.008	
2/15/2023	7:45:00	16.071	4.259	0.008	
2/15/2023	7:46:00	16.074	4.252	0.011	11
2/15/2023	7:47:00	16.072	4.268	0.027	
2/15/2023	7:48:00	16.071	4.277	0.017	
2/15/2023	7:49:00	16.066	4.283	0.064	
2/15/2023	7:50:00	16.065	4.296	0.007	
2/15/2023	7:51:00	16.061	4.287	0.087	
2/15/2023	7:52:00	16.068	4.289	0.027	
2/15/2023	7:53:00	16.066	4.302	0.049	
2/15/2023	7:54:00	16.067	4.288	0.003	
2/15/2023	7:55:00	16.056	4.292	0.068	
2/15/2023	7:56:00	16.062	4.269	0.022	10
2/15/2023	7:57:00	16.065	4.256	0.139	
2/15/2023	7:58:00	16.061	4.243	0.196	
2/15/2023	7:59:00	16.065	4.248	0.16	
2/15/2023	8:00:00	16.061	4.259	0.113	
2/15/2023	8:01:00	16.058	4.269	0.122	
2/15/2023	8:02:00	16.067	4.259	0.149	
2/15/2023	8:03:00	16.052	4.273	0.162	
2/15/2023	8:04:00	16.064	4.253	0.146	
2/15/2023	8:05:00	16.062	4.251	0.17	
2/15/2023	8:06:00	16.057	4.267	0.186	9
2/15/2023	8:07:00	16.054	4.267	0.117	

2/15/2023	8:08:00	16.055	4.264	0.164	
2/15/2023	8:09:00	16.064	4.254	0.185	
2/15/2023	8:10:00	16.067	4.253	0.08	
2/15/2023	8:11:00	16.069	4.257	0.132	
2/15/2023	8:12:00	16.063	4.248	0.313	
2/15/2023	8:13:00	16.064	4.24	0.372	
2/15/2023	8:14:00	16.058	4.242	0.398	
2/15/2023	8:15:00	16.062	4.241	0.351	
2/15/2023	8:16:00	16.049	4.243	0.397	8
2/15/2023	8:17:00	16.073	4.218	0.428	
2/15/2023	8:18:00	16.059	4.236	0.41	
2/15/2023	8:19:00	16.06	4.237	0.421	
2/15/2023	8:20:00	16.059	4.235	0.426	
2/15/2023	8:21:00	16.061	4.215	0.427	
2/15/2023	8:22:00	16.058	4.212	0.427	
2/15/2023	8:23:00	16.052	4.242	0.448	
2/15/2023	8:24:00	16.054	4.236	0.454	
2/15/2023	8:25:00	16.067	4.217	0.454	
2/15/2023	8:26:00	16.067	4.223	0.442	7
2/15/2023	8:27:00	16.061	4.219	0.389	
2/15/2023	8:28:00	16.055	4.222	0.046	
2/15/2023	8:29:00	16.061	4.228	0.04	
2/15/2023	8:30:00	16.062	4.229	0.061	
2/15/2023	8:31:00	16.063	4.227	0.028	
2/15/2023	8:32:00	16.065	4.235	0.057	
2/15/2023	8:33:00	16.065	4.236	0.07	
2/15/2023	8:34:00	16.064	4.23	0.057	
2/15/2023	8:35:00	16.057	4.235	0.084	
2/15/2023	8:36:00	16.062	4.23	0.092	6
2/15/2023	8:37:00	16.043	4.256	0.097	
2/15/2023	8:38:00	16.045	4.262	0.094	
2/15/2023	8:39:00	16.027	4.281	0.083	
2/15/2023	8:40:00	16.074	4.141	0.081	
2/15/2023	8:41:00	16.287	4.018	0.266	
2/15/2023	8:42:00	16.247	4.024	0.278	
2/15/2023	8:43:00	16.238	4.049	0.274	
2/15/2023	8:44:00	16.214	4.093	0.261	
2/15/2023	8:45:00	16.218	4.1	0.273	
2/15/2023	8:46:00	16.208	4.09	0.256	5
2/15/2023	8:47:00	16.21	4.076	0.263	
2/15/2023	8:48:00	16.223	4.075	0.285	
2/15/2023	8:49:00	16.221	4.083	0.276	
2/15/2023	8:50:00	16.223	4.077	0.288	
2/15/2023	8:51:00	16.21	4.06	0.286	
2/15/2023	8:52:00	16.228	4.034	0.291	
2/15/2023	8:53:00	16.207	4.061	0.289	
2/15/2023	8:54:00	16.105	4.167	0.226	
2/15/2023	8:55:00	16.013	4.27	0.123	
2/15/2023	8:56:00	16.031	4.246	0.107	4
2/15/2023	8:57:00	16.039	4.23	0.146	
2/15/2023	8:58:00	16.053	4.199	0.151	
2/15/2023	8:59:00	16.054	4.203	0.167	
2/15/2023	9:00:00	16.055	4.217	0.183	
2/15/2023	9:01:00	16.053	4.227	0.17	
2/15/2023	9:02:00	16.059	4.216	0.178	

2/15/2023	9:03:00	16.054	4.216	0.181	
2/15/2023	9:04:00	16.059	4.198	0.178	
2/15/2023	9:05:00	16.065	4.19	0.195	
2/15/2023	9:06:00	16.059	4.203	0.183	3
2/15/2023	9:07:00	16.061	4.204	0.206	
2/15/2023	9:08:00	16.048	4.202	0.157	
2/15/2023	9:09:00	16.055	4.221	0.17	
2/15/2023	9:10:00	16.066	4.201	0.167	
2/15/2023	9:11:00	16.059	4.196	0.207	
2/15/2023	9:12:00	16.061	4.203	0.203	
2/15/2023	9:13:00	16.051	4.207	0.219	
2/15/2023	9:14:00	16.046	4.217	0.216	
2/15/2023	9:15:00	16.056	4.202	0.21	
2/15/2023	9:16:00	16.052	4.202	0.199	2
2/15/2023	9:17:00	16.059	4.198	0.203	
2/15/2023	9:18:00	16.062	4.199	0.217	
2/15/2023	9:19:00	16.058	4.201	0.222	
2/15/2023	9:20:00	16.063	4.204	0.191	
2/15/2023	9:21:00	16.062	4.193	0.008	
2/15/2023	9:22:00	16.064	4.189	0.029	
2/15/2023	9:23:00	16.065	4.188	0.002	
2/15/2023	9:24:00	16.063	4.189	0.017	
2/15/2023	9:25:00	16.054	4.191	0.011	
2/15/2023	9:26:00	16.053	4.196	0.019	1
2/15/2023	9:27:00	16.056	4.185	0.019	
2/15/2023	9:28:00	16.046	4.199	0.015	
2/15/2023	9:29:00	16.051	4.207	0.005	
2/15/2023	9:30:00	16.049	4.212	0.001	
2/15/2023	9:31:00	16.062	4.196	0.006	
2/15/2023	9:32:00	16.062	4.199	0.033	
2/15/2023	9:33:00	16.056	4.196	0.023	
2/15/2023	9:34:00	16.075	4.173	0.053	
2/15/2023	9:35:00	16.067	4.174	0.019	
2/15/2023	9:36:00	16.053	4.187	0.1	
2/15/2023	9:37:00	16.055	4.194	0.027	
2/15/2023	9:38:00	10.54	4.711	0.354	
2/15/2023	9:39:00	10.053	4.824	0.588	
2/15/2023	9:40:00	10.901	4.917	-0.006	
2/15/2023	9:41:00	10.05	4.814	-0.011	< System O2, CO2
2/15/2023	9:42:00	7.56	2.89	0.261	
2/15/2023	9:43:00	-0.04	-0.121	4.127	
2/15/2023	9:44:00	-0.041	-0.011	4.693	< System CO
2/15/2023	9:45:00	12.926	3.527	3.427	
2/15/2023	9:46:00	16.061	4.223	0.927	< Resume
2/15/2023	9:47:00	16.07	4.212	0.025	12
2/15/2023	9:48:00	16.065	4.215	0.032	
2/15/2023	9:49:00	16.068	4.206	0.033	
2/15/2023	9:50:00	16.074	4.195	0.032	
2/15/2023	9:51:00	16.061	4.189	0.034	
2/15/2023	9:52:00	16.069	4.179	0.043	
2/15/2023	9:53:00	16.068	4.184	0.044	
2/15/2023	9:54:00	16.072	4.178	0.051	
2/15/2023	9:55:00	16.072	4.181	0.045	
2/15/2023	9:56:00	16.073	4.175	0.032	
2/15/2023	9:57:00	16.073	4.172	0.044	11

2/15/2023	9:58:00	16.07	4.191	0.048	
2/15/2023	9:59:00	16.068	4.196	0.05	
2/15/2023	10:00:00	16.057	4.212	0.046	
2/15/2023	10:01:00	16.049	4.211	0.039	
2/15/2023	10:02:00	16.068	4.197	0.008	
2/15/2023	10:03:00	16.075	4.199	0.019	
2/15/2023	10:04:00	16.075	4.203	0.002	
2/15/2023	10:05:00	16.066	4.197	0.036	
2/15/2023	10:06:00	16.068	4.184	0.035	
2/15/2023	10:07:00	16.07	4.181	0.032	10
2/15/2023	10:08:00	16.074	4.172	0.048	
2/15/2023	10:09:00	16.084	4.184	0.053	
2/15/2023	10:10:00	16.074	4.204	0.039	
2/15/2023	10:11:00	16.075	4.203	0.036	
2/15/2023	10:12:00	16.066	4.206	0.029	
2/15/2023	10:13:00	16.069	4.203	0.047	
2/15/2023	10:14:00	16.067	4.198	0.052	
2/15/2023	10:15:00	16.067	4.194	0.055	
2/15/2023	10:16:00	16.073	4.19	0.056	
2/15/2023	10:17:00	16.074	4.202	0.04	9
2/15/2023	10:18:00	16.068	4.217	0.039	
2/15/2023	10:19:00	16.064	4.221	0.042	
2/15/2023	10:20:00	16.064	4.219	0.059	
2/15/2023	10:21:00	16.049	4.225	0.057	
2/15/2023	10:22:00	16.066	4.201	0.017	
2/15/2023	10:23:00	16.066	4.204	0.031	
2/15/2023	10:24:00	16.06	4.216	0.018	
2/15/2023	10:25:00	16.057	4.231	0.059	
2/15/2023	10:26:00	16.065	4.221	0.052	
2/15/2023	10:27:00	16.07	4.22	0.056	8
2/15/2023	10:28:00	16.078	4.203	0.089	
2/15/2023	10:29:00	16.067	4.226	0.056	
2/15/2023	10:30:00	16.069	4.22	0.077	
2/15/2023	10:31:00	16.064	4.211	0.082	
2/15/2023	10:32:00	16.069	4.217	0.074	
2/15/2023	10:33:00	16.056	4.236	0.076	
2/15/2023	10:34:00	16.066	4.234	0.057	
2/15/2023	10:35:00	16.076	4.229	0.082	
2/15/2023	10:36:00	16.064	4.231	0.048	
2/15/2023	10:37:00	16.075	4.212	0.048	7
2/15/2023	10:38:00	16.071	4.209	0.087	
2/15/2023	10:39:00	16.073	4.203	0.093	
2/15/2023	10:40:00	16.073	4.193	0.072	
2/15/2023	10:41:00	16.076	4.193	0.049	
2/15/2023	10:42:00	16.069	4.225	0.024	
2/15/2023	10:43:00	16.086	4.215	0.075	
2/15/2023	10:44:00	16.077	4.218	0.101	
2/15/2023	10:45:00	16.075	4.214	0.095	
2/15/2023	10:46:00	16.071	4.207	0.078	
2/15/2023	10:47:00	16.083	4.193	0.093	6
2/15/2023	10:48:00	16.073	4.208	0.077	
2/15/2023	10:49:00	16.075	4.215	0.054	
2/15/2023	10:50:00	16.077	4.22	0.06	
2/15/2023	10:51:00	16.083	4.228	0.097	
2/15/2023	10:52:00	16.071	4.224	0.092	

2/15/2023	10:53:00	16.075	4.221	0.09
2/15/2023	10:54:00	16.07	4.222	0.104
2/15/2023	10:55:00	16.081	4.218	0.097
2/15/2023	10:56:00	16.074	4.223	0.086
2/15/2023	10:57:00	16.068	4.236	0.091	5
2/15/2023	10:58:00	16.075	4.239	0.047
2/15/2023	10:59:00	16.082	4.246	0.068
2/15/2023	11:00:00	16.069	4.247	0.083
2/15/2023	11:01:00	16.077	4.231	0.093
2/15/2023	11:02:00	16.076	4.23	0.019
2/15/2023	11:03:00	16.079	4.248	0.006
2/15/2023	11:04:00	16.077	4.245	0.104
2/15/2023	11:05:00	16.092	4.234	0.105
2/15/2023	11:06:00	16.084	4.233	0.111
2/15/2023	11:07:00	16.073	4.233	0.096	4
2/15/2023	11:08:00	16.091	4.218	0.048
2/15/2023	11:09:00	16.085	4.229	0.089
2/15/2023	11:10:00	16.074	4.246	0.153
2/15/2023	11:11:00	16.06	4.26	0.003
2/15/2023	11:12:00	16.071	4.248	0.068
2/15/2023	11:13:00	16.081	4.233	0.035
2/15/2023	11:14:00	16.088	4.223	0.049
2/15/2023	11:15:00	16.088	4.218	0.097
2/15/2023	11:16:00	16.085	4.224	0.092
2/15/2023	11:17:00	16.084	4.233	0.066	3
2/15/2023	11:18:00	16.08	4.228	0.078
2/15/2023	11:19:00	16.092	4.214	0.105
2/15/2023	11:20:00	16.092	4.202	0.093
2/15/2023	11:21:00	16.09	4.208	0.091
2/15/2023	11:22:00	16.094	4.207	0.101
2/15/2023	11:23:00	16.092	4.219	0.092
2/15/2023	11:24:00	16.096	4.225	0.072
2/15/2023	11:25:00	16.098	4.217	0.093
2/15/2023	11:26:00	16.097	4.216	0.089
2/15/2023	11:27:00	16.086	4.215	0.079	2
2/15/2023	11:28:00	16.09	4.206	0.111
2/15/2023	11:29:00	16.098	4.213	0.094
2/15/2023	11:30:00	16.099	4.225	0.097
2/15/2023	11:31:00	16.098	4.22	0.099
2/15/2023	11:32:00	16.082	4.233	0.087
2/15/2023	11:33:00	16.096	4.215	0.098
2/15/2023	11:34:00	16.089	4.227	0.097
2/15/2023	11:35:00	16.104	4.223	0.112
2/15/2023	11:36:00	16.1	4.233	0.108
2/15/2023	11:37:00	16.102	4.222	0.097	1
2/15/2023	11:38:00	16.102	4.211	0.079
2/15/2023	11:39:00	16.098	4.211	0.071
2/15/2023	11:40:00	16.099	4.21	0.078
2/15/2023	11:41:00	16.104	4.214	0.066
2/15/2023	11:42:00	16.103	4.21	0.064
2/15/2023	11:43:00	16.101	4.22	0.051
2/15/2023	11:44:00	16.096	4.216	0.078
2/15/2023	11:45:00	16.089	4.213	0.079
2/15/2023	11:46:00	16.099	4.202	0.065
2/15/2023	11:47:00	12.766	4.492	0.127

Date	Time					
2/15/2023	11:48:00	10.094	4.898	-0.031	<	System O2, CO2
2/15/2023	11:49:00	12.335	4.606	-0.031		
2/15/2023	11:50:00	16.083	4.199	0.231		
2/15/2023	11:51:00	15.315	4.259	0.114		
2/15/2023	11:52:00	0.28	0.182	2.594		
2/15/2023	11:53:00	-0.039	-0.138	4.335		
2/15/2023	11:54:00	-0.037	-0.039	4.628	<	System CO
2/15/2023	11:55:00	4.597	0.989	4.606		
2/15/2023	11:56:00	16.1	4.171	1.61		
2/15/2023	11:57:00	16.089	4.173	0.213		
2/15/2023	11:58:00	16.101	4.174	0.069		
2/15/2023	11:59:00	16.11	4.179	0.17		
2/15/2023	12:00:00	16.108	4.179	0.191	<	Start Eng 5 Run 4
2/15/2023	12:01:00	16.109	4.175	0.212	12	
2/15/2023	12:02:00	16.108	4.166	0.046		
2/15/2023	12:03:00	16.111	4.163	0.005		
2/15/2023	12:04:00	16.104	4.174	0		
2/15/2023	12:05:00	16.109	4.173	0.001		
2/15/2023	12:06:00	16.108	4.178	0.002		
2/15/2023	12:07:00	16.111	4.183	0.005		
2/15/2023	12:08:00	16.105	4.179	0.006		
2/15/2023	12:09:00	16.111	4.179	0.033		
2/15/2023	12:10:00	16.111	4.172	0.022		
2/15/2023	12:11:00	16.106	4.18	0.019	11	
2/15/2023	12:12:00	16.111	4.186	0.016		
2/15/2023	12:13:00	16.112	4.176	0.024		
2/15/2023	12:14:00	16.116	4.175	0.062		
2/15/2023	12:15:00	16.107	4.176	0.029		
2/15/2023	12:16:00	16.106	4.188	0.003		
2/15/2023	12:17:00	16.112	4.196	0.016		
2/15/2023	12:18:00	16.112	4.199	0.029		
2/15/2023	12:19:00	16.103	4.211	0.045		
2/15/2023	12:20:00	16.109	4.2	0.021		
2/15/2023	12:21:00	16.109	4.193	0.016	10	
2/15/2023	12:22:00	16.105	4.199	0.01		
2/15/2023	12:23:00	16.107	4.202	0.023		
2/15/2023	12:24:00	16.091	4.227	0.048		
2/15/2023	12:25:00	16.095	4.221	0.041		
2/15/2023	12:26:00	16.103	4.226	0.037		
2/15/2023	12:27:00	16.105	4.233	0.025		
2/15/2023	12:28:00	16.101	4.224	0.042		
2/15/2023	12:29:00	16.111	4.221	0.013		
2/15/2023	12:30:00	16.108	4.232	0.021		
2/15/2023	12:31:00	16.111	4.24	0.039	9	
2/15/2023	12:32:00	16.104	4.26	0.033		
2/15/2023	12:33:00	16.116	4.25	0.052		
2/15/2023	12:34:00	16.114	4.25	0.046		
2/15/2023	12:35:00	16.115	4.238	0.044		
2/15/2023	12:36:00	16.116	4.244	0.004		
2/15/2023	12:37:00	16.116	4.24	0.001		
2/15/2023	12:38:00	16.112	4.247	0.02		
2/15/2023	12:39:00	16.111	4.257	0.038		
2/15/2023	12:40:00	16.098	4.246	0.03		
2/15/2023	12:41:00	16.112	4.226	0.031	8	
2/15/2023	12:42:00	16.111	4.245	0.037		

Date	Time				
2/15/2023	12:43:00	16.101	4.263	0.021	
2/15/2023	12:44:00	16.107	4.266	0.041	
2/15/2023	12:45:00	16.111	4.256	0.039	
2/15/2023	12:46:00	16.109	4.237	0.12	
2/15/2023	12:47:00	16.108	4.228	0.005	
2/15/2023	12:48:00	16.101	4.229	0.023	
2/15/2023	12:49:00	16.118	4.227	0.046	
2/15/2023	12:50:00	16.113	4.233	0.067	
2/15/2023	12:51:00	16.113	4.244	0.052	7
2/15/2023	12:52:00	16.116	4.232	0.043	
2/15/2023	12:53:00	16.108	4.215	0.014	
2/15/2023	12:54:00	16.11	4.175	0.04	
2/15/2023	12:55:00	16.112	4.157	0.035	
2/15/2023	12:56:00	16.103	4.166	0.002	
2/15/2023	12:57:00	16.103	4.163	0.056	
2/15/2023	12:58:00	16.1	4.177	0.026	
2/15/2023	12:59:00	16.104	4.164	0.173	
2/15/2023	13:00:00	16.105	4.15	0.085	
2/15/2023	13:01:00	16.11	4.144	0.1	6
2/15/2023	13:02:00	16.112	4.139	0.087	
2/15/2023	13:03:00	16.109	4.156	0.08	
2/15/2023	13:04:00	16.107	4.156	0.091	
2/15/2023	13:05:00	16.103	4.147	0.102	
2/15/2023	13:06:00	16.102	4.132	0.111	
2/15/2023	13:07:00	16.104	4.108	0.087	
2/15/2023	13:08:00	16.104	4.106	0.11	
2/15/2023	13:09:00	16.101	4.105	0.09	
2/15/2023	13:10:00	16.105	4.114	0.097	
2/15/2023	13:11:00	16.106	4.107	0.096	5
2/15/2023	13:12:00	16.088	4.118	0.039	
2/15/2023	13:13:00	16.108	4.101	0.072	
2/15/2023	13:14:00	16.106	4.088	0.08	
2/15/2023	13:15:00	16.112	4.092	0.06	
2/15/2023	13:16:00	16.107	4.102	0.072	
2/15/2023	13:17:00	16.103	4.096	0.062	
2/15/2023	13:18:00	16.09	4.103	0.07	
2/15/2023	13:19:00	16.105	4.092	0.077	
2/15/2023	13:20:00	16.108	4.099	0.076	
2/15/2023	13:21:00	16.093	4.11	0.092	4
2/15/2023	13:22:00	16.108	4.109	0.076	
2/15/2023	13:23:00	16.115	4.099	0.074	
2/15/2023	13:24:00	16.116	4.087	0.087	
2/15/2023	13:25:00	16.112	4.08	0.093	
2/15/2023	13:26:00	16.107	4.084	0.075	
2/15/2023	13:27:00	16.111	4.089	0.085	
2/15/2023	13:28:00	16.11	4.1	0.084	
2/15/2023	13:29:00	16.113	4.104	0.076	
2/15/2023	13:30:00	16.117	4.076	0.073	
2/15/2023	13:31:00	16.114	4.07	0.073	3
2/15/2023	13:32:00	16.112	4.071	0.078	
2/15/2023	13:33:00	16.113	4.066	0.044	
2/15/2023	13:34:00	16.114	4.07	0.062	
2/15/2023	13:35:00	16.108	4.083	0.038	
2/15/2023	13:36:00	16.113	4.071	0.045	
2/15/2023	13:37:00	16.107	4.076	0.082	

2/15/2023	13:38:00	16.101	4.08	0.115	
2/15/2023	13:39:00	16.112	4.061	0.08	
2/15/2023	13:40:00	16.103	4.048	0.084	
2/15/2023	13:41:00	16.102	4.062	0.085	2
2/15/2023	13:42:00	16.111	4.077	0.094	
2/15/2023	13:43:00	16.117	4.083	0.061	
2/15/2023	13:44:00	16.118	4.111	0.057	
2/15/2023	13:45:00	16.118	4.102	0.051	
2/15/2023	13:46:00	16.125	4.104	0.007	
2/15/2023	13:47:00	16.116	4.11	0.034	
2/15/2023	13:48:00	16.112	4.124	0.094	
2/15/2023	13:49:00	16.118	4.142	0.065	
2/15/2023	13:50:00	16.112	4.151	0.039	
2/15/2023	13:51:00	16.106	4.151	0.061	1
2/15/2023	13:52:00	16.11	4.141	0.066	
2/15/2023	13:53:00	16.116	4.135	0.08	
2/15/2023	13:54:00	16.116	4.144	0.051	
2/15/2023	13:55:00	16.113	4.154	0.097	
2/15/2023	13:56:00	16.116	4.166	0.096	
2/15/2023	13:57:00	16.127	4.152	0.096	
2/15/2023	13:58:00	16.111	4.156	0.062	
2/15/2023	13:59:00	16.107	4.141	0.011	
2/15/2023	14:00:00	16.116	4.141	0.057	
2/15/2023	14:01:00	14.572	4.253	0.124	
2/15/2023	14:02:00	10.088	4.826	0.553	
2/15/2023	14:03:00	10.083	4.816	0.588	
2/15/2023	14:04:00	10.082	4.816	0.588	
2/15/2023	14:05:00	10.081	4.811	0.588	
2/15/2023	14:06:00	10.091	4.905	-0.019	< System O2, CO2
2/15/2023	14:07:00	6.491	3.239	1.705	
2/15/2023	14:08:00	-0.044	-0.181	4.821	
2/15/2023	14:09:00	-0.041	-0.011	4.637	< System CO
2/15/2023	14:10:00	0.719	-0.148	4.749	
2/15/2023	14:11:00	16.071	4.137	2.371	< Resume
2/15/2023	14:12:00	16.103	4.157	0.914	12
2/15/2023	14:13:00	16.102	4.166	0.932	
2/15/2023	14:14:00	16.103	4.174	0.896	
2/15/2023	14:15:00	16.109	4.166	0.764	
2/15/2023	14:16:00	16.105	4.159	0.01	
2/15/2023	14:17:00	16.116	4.166	0.002	
2/15/2023	14:18:00	16.097	4.188	0.014	
2/15/2023	14:19:00	16.1	4.189	0.031	
2/15/2023	14:20:00	16.105	4.195	0.036	
2/15/2023	14:21:00	16.099	4.205	0.019	
2/15/2023	14:22:00	16.095	4.198	0.01	11
2/15/2023	14:23:00	16.105	4.175	0.028	
2/15/2023	14:24:00	16.103	4.181	0.001	
2/15/2023	14:25:00	16.09	4.194	0.019	
2/15/2023	14:26:00	16.104	4.203	0.022	
2/15/2023	14:27:00	16.115	4.179	0.034	
2/15/2023	14:28:00	16.113	4.177	0.03	
2/15/2023	14:29:00	16.107	4.178	0.046	
2/15/2023	14:30:00	16.111	4.177	0.017	
2/15/2023	14:31:00	16.103	4.198	0.005	
2/15/2023	14:32:00	16.104	4.2	0.029	10

2/15/2023	14:33:00	16.11	4.181	0.031	
2/15/2023	14:34:00	16.113	4.176	0.033	
2/15/2023	14:35:00	16.111	4.17	0.027	
2/15/2023	14:36:00	16.104	4.17	0.047	
2/15/2023	14:37:00	16.091	4.216	0.055	
2/15/2023	14:38:00	16.091	4.227	0.051	
2/15/2023	14:39:00	16.103	4.202	0.058	
2/15/2023	14:40:00	16.108	4.185	0.071	
2/15/2023	14:41:00	16.109	4.177	0.059	
2/15/2023	14:42:00	16.108	4.17	0.066	9
2/15/2023	14:43:00	16.092	4.188	0.063	
2/15/2023	14:44:00	16.104	4.181	0.052	
2/15/2023	14:45:00	16.115	4.189	0.053	
2/15/2023	14:46:00	16.116	4.185	0.071	
2/15/2023	14:47:00	16.104	4.185	0.047	
2/15/2023	14:48:00	16.11	4.18	0.04	
2/15/2023	14:49:00	16.108	4.181	0.057	
2/15/2023	14:50:00	16.109	4.186	0.058	
2/15/2023	14:51:00	16.108	4.188	0.063	
2/15/2023	14:52:00	16.109	4.161	0.065	8
2/15/2023	14:53:00	16.116	4.15	0.07	
2/15/2023	14:54:00	16.103	4.164	0.075	
2/15/2023	14:55:00	16.105	4.164	0.07	
2/15/2023	14:56:00	16.101	4.189	0.061	
2/15/2023	14:57:00	16.106	4.18	0.061	
2/15/2023	14:58:00	16.107	4.17	0.045	
2/15/2023	14:59:00	16.109	4.175	0.034	
2/15/2023	15:00:00	16.105	4.178	0.04	
2/15/2023	15:01:00	16.111	4.17	0.038	
2/15/2023	15:02:00	16.108	4.186	0.041	7
2/15/2023	15:03:00	16.106	4.186	0.029	
2/15/2023	15:04:00	16.113	4.175	0.001	
2/15/2023	15:05:00	16.116	4.169	0.011	
2/15/2023	15:06:00	16.112	4.166	0.022	
2/15/2023	15:07:00	16.111	4.169	0.013	
2/15/2023	15:08:00	16.113	4.189	0.045	
2/15/2023	15:09:00	16.112	4.176	0.048	
2/15/2023	15:10:00	16.105	4.168	0.046	
2/15/2023	15:11:00	16.104	4.155	0.053	
2/15/2023	15:12:00	16.109	4.161	0.026	6
2/15/2023	15:13:00	16.106	4.177	0.066	
2/15/2023	15:14:00	16.106	4.193	0.055	
2/15/2023	15:15:00	16.103	4.186	0.071	
2/15/2023	15:16:00	16.106	4.181	0.078	
2/15/2023	15:17:00	16.109	4.179	0.082	
2/15/2023	15:18:00	16.112	4.17	0.081	
2/15/2023	15:19:00	16.115	4.177	0.072	
2/15/2023	15:20:00	16.084	4.221	0.076	
2/15/2023	15:21:00	16.103	4.193	0.055	
2/15/2023	15:22:00	16.102	4.177	0.076	5
2/15/2023	15:23:00	16.107	4.162	0.066	
2/15/2023	15:24:00	16.118	4.152	0.071	
2/15/2023	15:25:00	16.12	4.18	0.065	
2/15/2023	15:26:00	16.094	4.213	0.028	
2/15/2023	15:27:00	16.087	4.208	0.065	

2/15/2023	15:28:00	16.11	4.17	0.06		
2/15/2023	15:29:00	16.111	4.161	0.083		
2/15/2023	15:30:00	16.118	4.157	0.079		
2/15/2023	15:31:00	16.098	4.188	0.08		
2/15/2023	15:32:00	16.097	4.208	0.073	4	
2/15/2023	15:33:00	16.108	4.188	0.057		
2/15/2023	15:34:00	16.112	4.171	0.073		
2/15/2023	15:35:00	16.111	4.169	0.051		
2/15/2023	15:36:00	16.112	4.175	0.056		
2/15/2023	15:37:00	16.111	4.187	0.07		
2/15/2023	15:38:00	16.113	4.204	0.07		
2/15/2023	15:39:00	16.105	4.206	0.061		
2/15/2023	15:40:00	16.108	4.177	0.043		
2/15/2023	15:41:00	16.128	4.155	0.025		
2/15/2023	15:42:00	16.127	4.149	0.036	3	
2/15/2023	15:43:00	16.115	4.161	0.051		
2/15/2023	15:44:00	16.106	4.187	0.046		
2/15/2023	15:45:00	16.105	4.202	0.05		
2/15/2023	15:46:00	16.098	4.194	0.063		
2/15/2023	15:47:00	16.119	4.166	0.074		
2/15/2023	15:48:00	16.119	4.16	0.081		
2/15/2023	15:49:00	16.11	4.15	0.08		
2/15/2023	15:50:00	16.108	4.164	0.066		
2/15/2023	15:51:00	16.103	4.181	0.053		
2/15/2023	15:52:00	16.104	4.194	0.032	2	
2/15/2023	15:53:00	16.112	4.173	0.011		
2/15/2023	15:54:00	16.11	4.155	0.044		
2/15/2023	15:55:00	16.116	4.149	0.079		
2/15/2023	15:56:00	16.106	4.161	0.077		
2/15/2023	15:57:00	16.107	4.171	0.082		
2/15/2023	15:58:00	16.108	4.177	0.06		
2/15/2023	15:59:00	16.109	4.177	0.053		
2/15/2023	16:00:00	16.104	4.16	0.024		
2/15/2023	16:01:00	16.096	4.168	0.001		
2/15/2023	16:02:00	16.117	4.156	0.051	1	
2/15/2023	16:03:00	16.114	4.167	0.071		
2/15/2023	16:04:00	16.111	4.168	0.054		
2/15/2023	16:05:00	16.11	4.162	0.065		
2/15/2023	16:06:00	16.103	4.172	0.062		
2/15/2023	16:07:00	16.114	4.15	0.059		
2/15/2023	16:08:00	16.099	4.157	0.018		
2/15/2023	16:09:00	16.108	4.156	0.031		
2/15/2023	16:10:00	16.094	4.178	0.039		
2/15/2023	16:11:00	16.103	4.161	0.025		
2/15/2023	16:12:00	16.107	4.151	0.017		
2/15/2023	16:13:00	16.102	4.151	0.018		
2/15/2023	16:14:00	10.976	4.652	-0.315		
2/15/2023	16:15:00	10.093	4.925	-0.08	<	System O2, CO2
2/15/2023	16:16:00	7.497	3.829	0.753		
2/15/2023	16:17:00	-0.026	-0.013	4.603	<	System CO
2/15/2023	16:18:00	1.738	0.141	4.584		
2/15/2023	16:19:00	17.516	6.327	2.305		
2/15/2023	16:20:00	19.276	9.619	7.52		
2/15/2023	16:21:00	19.278	9.647	9.652		
2/15/2023	16:22:00	19.282	9.647	9.655	<	Direct High

2/15/2023	16:23:00	14.848	7.47	9.387
2/15/2023	16:24:00	10.096	4.981	5.177
2/15/2023	16:25:00	10.096	4.978	4.582	< Direct Mid
2/15/2023	16:26:00	10.094	4.964	4.605
2/15/2023	16:27:00	2.206	1.271	3.745
2/15/2023	16:28:00	-0.023	0.049	0.222
2/15/2023	16:29:00	-0.025	0.061	0.108
2/15/2023	16:30:00	-0.026	0.067	-0.014	< Direct Zero
2/15/2023	16:31:00	-0.027	0.07	-0.024

Date	Time	O2%	CO2%	COppm		
2/16/2023	7:17:00	-0.031	-0.009	0.708		
2/16/2023	7:18:00	-0.033	-0.036	-0.032	<	DIrect Zero
2/16/2023	7:19:00	5.38	2.355	-0.022		
2/16/2023	7:20:00	19.328	9.642	6.294		
2/16/2023	7:21:00	19.287	9.635	9.553		
2/16/2023	7:22:00	19.291	9.63	9.6	<	Direct High
2/16/2023	7:23:00	11.442	5.327	7.028		
2/16/2023	7:24:00	10.099	4.911	4.52		
2/16/2023	7:25:00	10.103	4.906	4.611	<	Direct Mid
2/16/2023	7:26:00	15.714	3.566	3.882		
2/16/2023	7:27:00	16.094	4.294	0.55		
2/16/2023	7:28:00	10.694	4.827	-0.033		
2/16/2023	7:29:00	10.065	4.943	-0.052	<	System O2, CO2
2/16/2023	7:30:00	3.994	1.677	1.918		
2/16/2023	7:31:00	-0.043	-0.048	4.699		
2/16/2023	7:32:00	-0.041	-0.053	4.645	<	System CO
2/16/2023	7:33:00	10.46	2.763	3.904		
2/16/2023	7:34:00	16.113	4.28	0.974		
2/16/2023	7:35:00	16.11	4.275	0.813	<	Start Eng 5 Run 5 0735
2/16/2023	7:36:00	16.109	4.283	0.802	12	
2/16/2023	7:37:00	16.109	4.276	0.773		
2/16/2023	7:38:00	16.109	4.274	0.417		
2/16/2023	7:39:00	16.119	4.276	0.04		
2/16/2023	7:40:00	16.116	4.29	0.04		
2/16/2023	7:41:00	16.099	4.29	0.064		
2/16/2023	7:42:00	16.1	4.292	0.046		
2/16/2023	7:43:00	16.099	4.302	0.041		
2/16/2023	7:44:00	16.103	4.298	0.113		
2/16/2023	7:45:00	16.103	4.292	0.108		
2/16/2023	7:46:00	16.104	4.29	0.084	11	
2/16/2023	7:47:00	16.106	4.285	0.052		
2/16/2023	7:48:00	16.111	4.287	0.029		
2/16/2023	7:49:00	16.1	4.293	0.064		
2/16/2023	7:50:00	16.107	4.278	0.058		
2/16/2023	7:51:00	16.106	4.28	0.19		
2/16/2023	7:52:00	16.083	4.296	0.056		
2/16/2023	7:53:00	16.105	4.277	0.047		
2/16/2023	7:54:00	16.111	4.277	0.186		
2/16/2023	7:55:00	16.103	4.275	0.081		
2/16/2023	7:56:00	16.113	4.262	0.081	10	
2/16/2023	7:57:00	16.109	4.269	0.102		
2/16/2023	7:58:00	16.117	4.275	0.169		
2/16/2023	7:59:00	16.119	4.259	0.254		
2/16/2023	8:00:00	16.106	4.268	0.328		
2/16/2023	8:01:00	16.106	4.276	0.253		
2/16/2023	8:02:00	16.099	4.282	0.191		
2/16/2023	8:03:00	16.106	4.279	0.295		
2/16/2023	8:04:00	16.115	4.277	0.33		
2/16/2023	8:05:00	16.09	4.296	0.149		
2/16/2023	8:06:00	16.107	4.274	0.09	9	
2/16/2023	8:07:00	16.121	4.248	0.027		
2/16/2023	8:08:00	16.133	4.235	0.159		
2/16/2023	8:09:00	16.132	4.24	0.18		
2/16/2023	8:10:00	16.125	4.256	0.156		

2/16/2023	8:11:00	16.117	4.272	0.165	
2/16/2023	8:12:00	16.11	4.275	0.161	
2/16/2023	8:13:00	16.113	4.254	0.196	
2/16/2023	8:14:00	16.111	4.258	0.222	
2/16/2023	8:15:00	16.095	4.26	0.135	
2/16/2023	8:16:00	16.102	4.251	0.1	8
2/16/2023	8:17:00	16.104	4.255	0.204	
2/16/2023	8:18:00	16.109	4.25	0.231	
2/16/2023	8:19:00	16.111	4.241	0.241	
2/16/2023	8:20:00	16.116	4.23	0.244	
2/16/2023	8:21:00	16.109	4.244	0.212	
2/16/2023	8:22:00	16.112	4.249	0.188	
2/16/2023	8:23:00	16.114	4.25	0.194	
2/16/2023	8:24:00	16.111	4.24	0.282	
2/16/2023	8:25:00	16.11	4.242	0.249	
2/16/2023	8:26:00	16.112	4.247	0.063	7
2/16/2023	8:27:00	16.119	4.226	0.166	
2/16/2023	8:28:00	16.116	4.236	0.249	
2/16/2023	8:29:00	16.125	4.228	0.292	
2/16/2023	8:30:00	16.115	4.227	0.242	
2/16/2023	8:31:00	16.116	4.222	0.223	
2/16/2023	8:32:00	16.118	4.227	0.267	
2/16/2023	8:33:00	16.114	4.235	0.217	
2/16/2023	8:34:00	16.114	4.235	0.084	
2/16/2023	8:35:00	16.124	4.218	0.018	
2/16/2023	8:36:00	16.125	4.215	0.037	6
2/16/2023	8:37:00	16.124	4.218	0.002	
2/16/2023	8:38:00	16.113	4.226	0.058	
2/16/2023	8:39:00	16.115	4.224	0.076	
2/16/2023	8:40:00	16.112	4.227	0.078	
2/16/2023	8:41:00	16.113	4.217	0.112	
2/16/2023	8:42:00	16.112	4.228	0.021	
2/16/2023	8:43:00	16.111	4.225	0.029	
2/16/2023	8:44:00	16.104	4.232	0.004	
2/16/2023	8:45:00	16.087	4.243	0.062	
2/16/2023	8:46:00	16.103	4.224	0.04	5
2/16/2023	8:47:00	16.107	4.229	0.096	
2/16/2023	8:48:00	16.119	4.216	0.026	
2/16/2023	8:49:00	16.112	4.221	0.022	
2/16/2023	8:50:00	16.114	4.223	0.062	
2/16/2023	8:51:00	16.06	4.273	0.025	
2/16/2023	8:52:00	16.082	4.244	0.098	
2/16/2023	8:53:00	16.101	4.225	0.096	
2/16/2023	8:54:00	16.105	4.216	0.016	
2/16/2023	8:55:00	16.113	4.208	0.054	
2/16/2023	8:56:00	16.119	4.21	0.006	4
2/16/2023	8:57:00	16.125	4.211	0.07	
2/16/2023	8:58:00	16.116	4.213	0.098	
2/16/2023	8:59:00	16.117	4.212	0.072	
2/16/2023	9:00:00	16.116	4.203	0.068	
2/16/2023	9:01:00	16.111	4.222	0.056	
2/16/2023	9:02:00	16.118	4.215	0.026	
2/16/2023	9:03:00	16.099	4.225	0.008	
2/16/2023	9:04:00	16.114	4.225	0.005	
2/16/2023	9:05:00	16.085	4.242	0.036	

2/16/2023	9:06:00	16.11	4.229	0.049		3
2/16/2023	9:07:00	16.107	4.224	0.092		
2/16/2023	9:08:00	16.115	4.221	0.014		
2/16/2023	9:09:00	16.113	4.225	0.001		
2/16/2023	9:10:00	16.123	4.221	0.098		
2/16/2023	9:11:00	16.107	4.231	0.005		
2/16/2023	9:12:00	16.102	4.231	0.065		
2/16/2023	9:13:00	16.099	4.229	0.036		
2/16/2023	9:14:00	16.113	4.21	0.096		
2/16/2023	9:15:00	16.113	4.224	0.006		
2/16/2023	9:16:00	16.115	4.217	0.139		2
2/16/2023	9:17:00	16.11	4.221	0.099		
2/16/2023	9:18:00	16.115	4.208	0.049		
2/16/2023	9:19:00	16.119	4.213	0.072		
2/16/2023	9:20:00	16.113	4.216	0.073		
2/16/2023	9:21:00	16.105	4.214	0.305		
2/16/2023	9:22:00	16.108	4.203	0.148		
2/16/2023	9:23:00	16.109	4.205	0.125		
2/16/2023	9:24:00	16.107	4.195	0.049		
2/16/2023	9:25:00	16.125	4.173	0.009		
2/16/2023	9:26:00	16.105	4.184	0.147		1
2/16/2023	9:27:00	16.115	4.165	0.196		
2/16/2023	9:28:00	16.122	4.134	0.056		
2/16/2023	9:29:00	16.092	4.157	0.184		
2/16/2023	9:30:00	16.103	4.142	0.335		
2/16/2023	9:31:00	16.109	4.133	0.108		
2/16/2023	9:32:00	16.115	4.137	0.191		
2/16/2023	9:33:00	16.073	4.161	0.017		
2/16/2023	9:34:00	16.116	4.122	0.116		
2/16/2023	9:35:00	16.066	4.169	0.072		
2/16/2023	9:36:00	12.044	4.535	0.206		
2/16/2023	9:37:00	10.051	4.794	0.399		
2/16/2023	9:38:00	10.053	4.9	-0.021	<	System O2, CO2
2/16/2023	9:39:00	2.036	1.05	1.779		
2/16/2023	9:40:00	-0.034	-0.025	4.707	<	System CO
2/16/2023	9:41:00	1.021	0.119	4.609		
2/16/2023	9:42:00	15.403	4.222	2.841		
2/16/2023	9:43:00	16.089	4.154	1.075		
2/16/2023	9:44:00	16.113	4.159	1.11		
2/16/2023	9:45:00	16.112	4.158	1.07	<	Resume
2/16/2023	9:46:00	16.105	4.168	0.93		12
2/16/2023	9:47:00	16.088	4.176	1.151		
2/16/2023	9:48:00	16.105	4.156	0.19		
2/16/2023	9:49:00	16.107	4.16	0.056		
2/16/2023	9:50:00	16.105	4.178	0.053		
2/16/2023	9:51:00	16.108	4.187	0.024		
2/16/2023	9:52:00	16.049	4.255	0.05		
2/16/2023	9:53:00	16.069	4.231	0.073		
2/16/2023	9:54:00	16.082	4.203	0.022		
2/16/2023	9:55:00	16.057	4.231	0.11		
2/16/2023	9:56:00	16.076	4.216	0.315		11
2/16/2023	9:57:00	16.108	4.197	0.635		
2/16/2023	9:58:00	16.081	4.227	0.071		
2/16/2023	9:59:00	16.067	4.236	0.098		
2/16/2023	10:00:00	16.09	4.197	0.158		

2/16/2023	10:01:00	16.102	4.18	0.018	
2/16/2023	10:02:00	16.105	4.178	0.158	
2/16/2023	10:03:00	16.102	4.179	0.097	
2/16/2023	10:04:00	16.049	4.241	0.379	
2/16/2023	10:05:00	16.09	4.193	0.144	
2/16/2023	10:06:00	16.108	4.185	0.04	10
2/16/2023	10:07:00	16.115	4.191	0.06	
2/16/2023	10:08:00	16.103	4.2	0.079	
2/16/2023	10:09:00	16.084	4.216	0.096	
2/16/2023	10:10:00	16.095	4.216	0.076	
2/16/2023	10:11:00	16.079	4.229	0.304	
2/16/2023	10:12:00	16.097	4.212	0.416	
2/16/2023	10:13:00	16.093	4.22	0.142	
2/16/2023	10:14:00	16.092	4.228	0.085	
2/16/2023	10:15:00	16.099	4.222	0.049	
2/16/2023	10:16:00	16.083	4.228	0.039	9
2/16/2023	10:17:00	16.081	4.23	0.133	
2/16/2023	10:18:00	16.082	4.219	0.381	
2/16/2023	10:19:00	16.087	4.203	0.003	
2/16/2023	10:20:00	16.095	4.19	0.151	
2/16/2023	10:21:00	16.069	4.215	0.037	
2/16/2023	10:22:00	16.079	4.203	0.059	
2/16/2023	10:23:00	16.088	4.202	0.049	
2/16/2023	10:24:00	16.095	4.199	0.032	
2/16/2023	10:25:00	16.086	4.206	0.102	
2/16/2023	10:26:00	16.09	4.197	0.02	8
2/16/2023	10:27:00	16.093	4.2	0.06	
2/16/2023	10:28:00	16.09	4.192	0.004	
2/16/2023	10:29:00	16.094	4.182	0.033	
2/16/2023	10:30:00	16.088	4.19	0.029	
2/16/2023	10:31:00	16.1	4.173	0.095	
2/16/2023	10:32:00	16.083	4.18	0.153	
2/16/2023	10:33:00	16.075	4.192	0.029	
2/16/2023	10:34:00	16.07	4.197	0.42	
2/16/2023	10:35:00	16.091	4.176	0.109	
2/16/2023	10:36:00	16.082	4.177	0.005	7
2/16/2023	10:37:00	16.084	4.172	0.163	
2/16/2023	10:38:00	16.089	4.169	0.016	
2/16/2023	10:39:00	16.104	4.162	0.067	
2/16/2023	10:40:00	16.066	4.188	0.11	
2/16/2023	10:41:00	16.084	4.165	0.165	
2/16/2023	10:42:00	16.112	4.144	0.03	
2/16/2023	10:43:00	16.082	4.161	0.095	
2/16/2023	10:44:00	16.096	4.152	0.103	
2/16/2023	10:45:00	16.095	4.152	0.124	
2/16/2023	10:46:00	16.079	4.162	0.03	6
2/16/2023	10:47:00	16.108	4.145	0.134	
2/16/2023	10:48:00	16.101	4.154	0.163	
2/16/2023	10:49:00	16.095	4.152	0.1	
2/16/2023	10:50:00	16.101	4.156	0.086	
2/16/2023	10:51:00	16.112	4.142	0.19	
2/16/2023	10:52:00	16.098	4.145	0.204	
2/16/2023	10:53:00	16.098	4.148	0.195	
2/16/2023	10:54:00	16.093	4.151	0.197	
2/16/2023	10:55:00	16.101	4.148	0.189	

2/16/2023	10:56:00	16.107	4.155	0.162	5
2/16/2023	10:57:00	16.105	4.159	0.106	
2/16/2023	10:58:00	16.087	4.145	0.139	
2/16/2023	10:59:00	16.077	4.152	0.173	
2/16/2023	11:00:00	16.115	4.143	0.197	
2/16/2023	11:01:00	16.102	4.148	0.149	
2/16/2023	11:02:00	16.091	4.153	0.208	
2/16/2023	11:03:00	16.1	4.139	0.188	
2/16/2023	11:04:00	16.093	4.149	0.211	
2/16/2023	11:05:00	16.078	4.158	0.173	
2/16/2023	11:06:00	16.099	4.139	0.037	4
2/16/2023	11:07:00	16.092	4.142	0.153	
2/16/2023	11:08:00	16.088	4.139	0.058	
2/16/2023	11:09:00	16.092	4.132	0.073	
2/16/2023	11:10:00	16.085	4.152	0.053	
2/16/2023	11:11:00	16.108	4.16	0.017	
2/16/2023	11:12:00	16.091	4.173	0.071	
2/16/2023	11:13:00	16.096	4.178	0.267	
2/16/2023	11:14:00	16.092	4.173	0.028	
2/16/2023	11:15:00	16.092	4.164	0.023	
2/16/2023	11:16:00	16.095	4.152	0.003	3
2/16/2023	11:17:00	16.092	4.151	0.022	
2/16/2023	11:18:00	16.097	4.152	0.199	
2/16/2023	11:19:00	16.088	4.153	0.027	
2/16/2023	11:20:00	16.091	4.175	0.168	
2/16/2023	11:21:00	16.087	4.184	0.058	
2/16/2023	11:22:00	16.1	4.188	0.047	
2/16/2023	11:23:00	16.105	4.192	0.018	
2/16/2023	11:24:00	16.097	4.196	0.031	
2/16/2023	11:25:00	16.101	4.179	0.117	
2/16/2023	11:26:00	16.102	4.181	0.074	2
2/16/2023	11:27:00	16.094	4.176	0.022	
2/16/2023	11:28:00	16.101	4.167	0.053	
2/16/2023	11:29:00	16.099	4.176	0.02	
2/16/2023	11:30:00	16.079	4.178	0.386	
2/16/2023	11:31:00	16.105	4.171	0.059	
2/16/2023	11:32:00	16.105	4.152	0.063	
2/16/2023	11:33:00	16.105	4.142	0.007	
2/16/2023	11:34:00	16.103	4.134	0.132	
2/16/2023	11:35:00	16.103	4.124	0.018	
2/16/2023	11:36:00	16.098	4.107	0.061	1
2/16/2023	11:37:00	16.081	4.098	0.083	
2/16/2023	11:38:00	16.12	4.087	0.077	
2/16/2023	11:39:00	16.108	4.101	0.068	
2/16/2023	11:40:00	16.093	4.093	0.014	
2/16/2023	11:41:00	16.104	4.073	0.017	
2/16/2023	11:42:00	16.094	4.069	0.012	
2/16/2023	11:43:00	16.07	4.079	0.008	
2/16/2023	11:44:00	16.089	4.084	0.016	
2/16/2023	11:45:00	16.1	4.1	0.027	
2/16/2023	11:46:00	14.41	4.229	0.083	
2/16/2023	11:47:00	10.086	4.756	0.481	
2/16/2023	11:48:00	10.052	4.952	-0.007	< System O2, CO2
2/16/2023	11:49:00	6.402	3.119	0.162	
2/16/2023	11:50:00	-0.041	-0.142	3.882	

2/16/2023	11:51:00	-0.01	-0.047	4.648	< System CO
2/16/2023	11:52:00	-0.031	-0.049	4.652	
2/16/2023	11:53:00	-0.044	-0.048	4.648	
2/16/2023	11:54:00	14.54	3.635	3.012	
2/16/2023	11:55:00	16.095	4.105	1.085	
2/16/2023	11:56:00	16.091	4.114	0.433	
2/16/2023	11:57:00	16.094	4.111	0.02	
2/16/2023	11:58:00	16.103	4.096	0.168	
2/16/2023	11:59:00	16.088	4.107	0.021	
2/16/2023	12:00:00	16.098	4.096	0.025	< Start Eng 5 Run 6 1200
2/16/2023	12:01:00	16.085	4.112	0.003	12
2/16/2023	12:02:00	16.084	4.125	0.134	
2/16/2023	12:03:00	16.086	4.138	0.02	
2/16/2023	12:04:00	16.09	4.146	0.028	
2/16/2023	12:05:00	16.093	4.127	0.003	
2/16/2023	12:06:00	16.108	4.105	0.034	
2/16/2023	12:07:00	16.092	4.107	0.002	
2/16/2023	12:08:00	16.109	4.076	0.028	
2/16/2023	12:09:00	16.105	4.081	0.275	
2/16/2023	12:10:00	16.093	4.088	0.107	
2/16/2023	12:11:00	16.081	4.097	0.062	11
2/16/2023	12:12:00	16.092	4.095	0.005	
2/16/2023	12:13:00	16.092	4.111	0.02	
2/16/2023	12:14:00	16.099	4.104	0.07	
2/16/2023	12:15:00	16.097	4.106	0.066	
2/16/2023	12:16:00	16.093	4.101	0.037	
2/16/2023	12:17:00	16.091	4.097	0.245	
2/16/2023	12:18:00	16.115	4.101	0.013	
2/16/2023	12:19:00	16.088	4.086	0.027	
2/16/2023	12:20:00	16.092	4.089	0.048	
2/16/2023	12:21:00	16.084	4.105	0.163	10
2/16/2023	12:22:00	16.096	4.11	0.117	
2/16/2023	12:23:00	16.091	4.119	0.058	
2/16/2023	12:24:00	16.083	4.116	0.009	
2/16/2023	12:25:00	16.095	4.101	0.017	
2/16/2023	12:26:00	16.098	4.099	0.068	
2/16/2023	12:27:00	16.079	4.115	0.061	
2/16/2023	12:28:00	16.089	4.118	0.051	
2/16/2023	12:29:00	16.088	4.137	0.003	
2/16/2023	12:30:00	16.097	4.139	0.014	
2/16/2023	12:31:00	16.091	4.143	0.03	9
2/16/2023	12:32:00	16.095	4.135	0.056	
2/16/2023	12:33:00	16.095	4.126	0.036	
2/16/2023	12:34:00	16.09	4.128	0.013	
2/16/2023	12:35:00	16.091	4.119	0.09	
2/16/2023	12:36:00	16.085	4.138	0.024	
2/16/2023	12:37:00	16.093	4.143	0.052	
2/16/2023	12:38:00	16.104	4.142	0.03	
2/16/2023	12:39:00	16.094	4.153	0.054	
2/16/2023	12:40:00	16.083	4.152	0.045	
2/16/2023	12:41:00	16.09	4.138	0.014	8
2/16/2023	12:42:00	16.093	4.124	0.046	
2/16/2023	12:43:00	16.1	4.121	0.037	
2/16/2023	12:44:00	16.096	4.145	0.055	
2/16/2023	12:45:00	16.101	4.16	0.01	

Date	Time				
2/16/2023	12:46:00	16.111	4.146	0.048	
2/16/2023	12:47:00	16.104	4.157	0.039	
2/16/2023	12:48:00	16.104	4.152	0.006	
2/16/2023	12:49:00	16.112	4.141	0.013	
2/16/2023	12:50:00	16.106	4.137	0.048	
2/16/2023	12:51:00	16.104	4.137	0.034	7
2/16/2023	12:52:00	16.096	4.153	0.066	
2/16/2023	12:53:00	16.097	4.159	0.038	
2/16/2023	12:54:00	16.105	4.155	0.072	
2/16/2023	12:55:00	16.109	4.135	0.021	
2/16/2023	12:56:00	16.112	4.141	0.079	
2/16/2023	12:57:00	16.104	4.148	0.088	
2/16/2023	12:58:00	16.107	4.129	0.076	
2/16/2023	12:59:00	16.11	4.131	0.087	
2/16/2023	13:00:00	16.1	4.15	0.077	
2/16/2023	13:01:00	16.108	4.154	0.056	6
2/16/2023	13:02:00	16.106	4.16	0.033	
2/16/2023	13:03:00	16.109	4.168	0.093	
2/16/2023	13:04:00	16.111	4.166	0.107	
2/16/2023	13:05:00	16.103	4.169	0.089	
2/16/2023	13:06:00	16.104	4.171	0.056	
2/16/2023	13:07:00	16.085	4.202	0.055	
2/16/2023	13:08:00	16.1	4.192	0.077	
2/16/2023	13:09:00	16.109	4.195	0.082	
2/16/2023	13:10:00	16.109	4.188	0.061	
2/16/2023	13:11:00	16.113	4.17	0.043	5
2/16/2023	13:12:00	16.115	4.174	0.119	
2/16/2023	13:13:00	16.103	4.185	0.088	
2/16/2023	13:14:00	16.109	4.19	0.104	
2/16/2023	13:15:00	16.11	4.2	0.086	
2/16/2023	13:16:00	16.109	4.193	0.067	
2/16/2023	13:17:00	16.096	4.187	0.104	
2/16/2023	13:18:00	16.105	4.168	0.112	
2/16/2023	13:19:00	16.103	4.167	0.094	
2/16/2023	13:20:00	16.113	4.16	0.043	
2/16/2023	13:21:00	16.101	4.175	0.028	4
2/16/2023	13:22:00	16.107	4.183	0.193	
2/16/2023	13:23:00	16.113	4.171	0.058	
2/16/2023	13:24:00	16.1	4.17	0.111	
2/16/2023	13:25:00	16.111	4.155	0.126	
2/16/2023	13:26:00	16.099	4.158	0.112	
2/16/2023	13:27:00	16.102	4.151	0.081	
2/16/2023	13:28:00	16.102	4.156	0.035	
2/16/2023	13:29:00	16.098	4.166	0.044	
2/16/2023	13:30:00	16.105	4.158	0.041	
2/16/2023	13:31:00	16.11	4.154	0.071	3
2/16/2023	13:32:00	16.091	4.165	0.047	
2/16/2023	13:33:00	16.114	4.145	0.294	
2/16/2023	13:34:00	16.099	4.152	0.01	
2/16/2023	13:35:00	16.108	4.155	0.065	
2/16/2023	13:36:00	16.105	4.171	0.067	
2/16/2023	13:37:00	16.092	4.188	0.099	
2/16/2023	13:38:00	16.102	4.168	0.115	
2/16/2023	13:39:00	16.105	4.161	0.074	
2/16/2023	13:40:00	16.105	4.154	0.107	

2/16/2023	13:41:00	16.107	4.158	0.092		2
2/16/2023	13:42:00	16.104	4.178	0.07		
2/16/2023	13:43:00	16.102	4.187	0.076		
2/16/2023	13:44:00	16.104	4.187	0.097		
2/16/2023	13:45:00	16.108	4.182	0.085		
2/16/2023	13:46:00	16.112	4.162	0.109		
2/16/2023	13:47:00	16.11	4.156	0.099		
2/16/2023	13:48:00	16.123	4.148	0.1		
2/16/2023	13:49:00	16.05	4.231	0.008		
2/16/2023	13:50:00	16.083	4.194	0.045		
2/16/2023	13:51:00	16.096	4.166	0.067		1
2/16/2023	13:52:00	16.114	4.139	0.055		
2/16/2023	13:53:00	16.13	4.129	0.099		
2/16/2023	13:54:00	16.121	4.143	0.108		
2/16/2023	13:55:00	16.096	4.179	0.096		
2/16/2023	13:56:00	16.095	4.18	0.077		
2/16/2023	13:57:00	16.121	4.161	0.092		
2/16/2023	13:58:00	16.098	4.183	0.106		
2/16/2023	13:59:00	16.09	4.166	0.056		
2/16/2023	14:00:00	16.099	4.152	0.049		
2/16/2023	14:01:00	16.103	4.152	0.195		
2/16/2023	14:02:00	12.126	4.543	0.139		
2/16/2023	14:03:00	10.076	4.929	-0.027	<	System O2, CO2
2/16/2023	14:04:00	8.916	4.532	-0.052		
2/16/2023	14:05:00	-0.036	-0.064	3.095		
2/16/2023	14:06:00	-0.034	-0.072	4.643		
2/16/2023	14:07:00	-0.034	-0.067	4.671	<	System CO
2/16/2023	14:08:00	13.042	3.974	3.042		
2/16/2023	14:09:00	16.095	4.192	0.432		
2/16/2023	14:10:00	16.112	4.177	0.013	<	Resume
2/16/2023	14:11:00	16.115	4.17	0.113		12
2/16/2023	14:12:00	16.116	4.158	0.357		
2/16/2023	14:13:00	16.12	4.152	0.375		
2/16/2023	14:14:00	16.098	4.182	0.059		
2/16/2023	14:15:00	16.103	4.194	0.23		
2/16/2023	14:16:00	16.098	4.182	0.005		
2/16/2023	14:17:00	16.124	4.154	0.015		
2/16/2023	14:18:00	16.122	4.151	0.002		
2/16/2023	14:19:00	16.113	4.159	0.014		
2/16/2023	14:20:00	16.092	4.193	0.031		
2/16/2023	14:21:00	16.107	4.188	0.013		11
2/16/2023	14:22:00	16.118	4.166	0.044		
2/16/2023	14:23:00	16.115	4.16	0.006		
2/16/2023	14:24:00	16.114	4.166	0.154		
2/16/2023	14:25:00	16.085	4.175	0.03		
2/16/2023	14:26:00	16.109	4.154	0.001		
2/16/2023	14:27:00	16.11	4.166	0.141		
2/16/2023	14:28:00	16.101	4.18	0.04		
2/16/2023	14:29:00	16.107	4.174	0.015		
2/16/2023	14:30:00	16.113	4.172	0.002		
2/16/2023	14:31:00	16.115	4.155	0.062		10
2/16/2023	14:32:00	16.102	4.161	0.076		
2/16/2023	14:33:00	16.099	4.166	0.098		
2/16/2023	14:34:00	16.106	4.193	0.05		
2/16/2023	14:35:00	16.102	4.202	0.049		

2/16/2023	14:36:00	16.113	4.18	0.015	
2/16/2023	14:37:00	16.119	4.165	0.077	
2/16/2023	14:38:00	16.113	4.159	0.001	
2/16/2023	14:39:00	16.113	4.16	0.025	
2/16/2023	14:40:00	16.117	4.173	0.054	
2/16/2023	14:41:00	16.11	4.198	0.011	9
2/16/2023	14:42:00	16.111	4.184	0.009	
2/16/2023	14:43:00	16.119	4.162	0.121	
2/16/2023	14:44:00	16.114	4.16	0.017	
2/16/2023	14:45:00	16.108	4.163	0.001	
2/16/2023	14:46:00	16.099	4.186	0.145	
2/16/2023	14:47:00	16.114	4.18	0.215	
2/16/2023	14:48:00	16.124	4.181	0.149	
2/16/2023	14:49:00	16.125	4.171	0.039	
2/16/2023	14:50:00	16.12	4.158	0.028	
2/16/2023	14:51:00	16.111	4.153	0.052	8
2/16/2023	14:52:00	16.109	4.148	0.062	
2/16/2023	14:53:00	16.112	4.157	0.05	
2/16/2023	14:54:00	16.12	4.164	0.058	
2/16/2023	14:55:00	16.115	4.171	0.057	
2/16/2023	14:56:00	16.107	4.176	0.067	
2/16/2023	14:57:00	16.115	4.162	0.038	
2/16/2023	14:58:00	16.112	4.149	0.013	
2/16/2023	14:59:00	16.118	4.154	0.034	
2/16/2023	15:00:00	16.105	4.177	0.043	
2/16/2023	15:01:00	16.087	4.192	0.029	7
2/16/2023	15:02:00	16.118	4.165	0.039	
2/16/2023	15:03:00	16.11	4.167	0.057	
2/16/2023	15:04:00	16.121	4.146	0.072	
2/16/2023	15:05:00	16.124	4.154	0.063	
2/16/2023	15:06:00	16.117	4.169	0.064	
2/16/2023	15:07:00	16.117	4.173	0.011	
2/16/2023	15:08:00	16.111	4.185	0.003	
2/16/2023	15:09:00	16.115	4.175	0.026	
2/16/2023	15:10:00	16.105	4.172	0.024	
2/16/2023	15:11:00	16.117	4.162	0.059	6
2/16/2023	15:12:00	16.116	4.174	0.038	
2/16/2023	15:13:00	16.119	4.19	0.066	
2/16/2023	15:14:00	16.121	4.182	0.06	
2/16/2023	15:15:00	16.114	4.181	0.003	
2/16/2023	15:16:00	16.105	4.17	0.052	
2/16/2023	15:17:00	16.115	4.165	0.063	
2/16/2023	15:18:00	16.11	4.181	0.041	
2/16/2023	15:19:00	16.115	4.179	0.057	
2/16/2023	15:20:00	16.115	4.183	0.066	
2/16/2023	15:21:00	16.109	4.181	0.028	5
2/16/2023	15:22:00	16.112	4.17	0.06	
2/16/2023	15:23:00	16.115	4.168	0.039	
2/16/2023	15:24:00	16.103	4.202	0.021	
2/16/2023	15:25:00	16.109	4.207	0	
2/16/2023	15:26:00	16.11	4.204	0.077	
2/16/2023	15:27:00	16.122	4.183	0	
2/16/2023	15:28:00	16.122	4.166	0.006	
2/16/2023	15:29:00	16.121	4.158	0.007	
2/16/2023	15:30:00	16.118	4.16	0.046	

Date	Time				
2/16/2023	15:31:00	16.117	4.172	0.013	4
2/16/2023	15:32:00	16.112	4.185	0.228	
2/16/2023	15:33:00	16.113	4.171	0.018	
2/16/2023	15:34:00	16.119	4.155	0.022	
2/16/2023	15:35:00	16.11	4.161	0.041	
2/16/2023	15:36:00	16.111	4.159	0.371	
2/16/2023	15:37:00	16.126	4.156	0.011	
2/16/2023	15:38:00	16.117	4.18	0.043	
2/16/2023	15:39:00	16.124	4.171	0.034	
2/16/2023	15:40:00	16.125	4.157	0.071	
2/16/2023	15:41:00	16.117	4.157	0.032	3
2/16/2023	15:42:00	16.121	4.161	0.021	
2/16/2023	15:43:00	16.111	4.179	0.033	
2/16/2023	15:44:00	16.121	4.173	0.049	
2/16/2023	15:45:00	16.111	4.167	0.06	
2/16/2023	15:46:00	16.114	4.159	0.066	
2/16/2023	15:47:00	16.108	4.161	0.07	
2/16/2023	15:48:00	16.111	4.158	0.053	
2/16/2023	15:49:00	16.109	4.181	0.058	
2/16/2023	15:50:00	16.109	4.185	0.016	
2/16/2023	15:51:00	16.112	4.167	0.009	2
2/16/2023	15:52:00	16.114	4.158	0.027	
2/16/2023	15:53:00	16.114	4.148	0.064	
2/16/2023	15:54:00	16.111	4.146	0.065	
2/16/2023	15:55:00	16.106	4.157	0.022	
2/16/2023	15:56:00	16.112	4.146	0.031	
2/16/2023	15:57:00	16.108	4.152	0.052	
2/16/2023	15:58:00	16.115	4.138	0.035	
2/16/2023	15:59:00	16.113	4.139	0.151	
2/16/2023	16:00:00	16.108	4.135	0.023	
2/16/2023	16:01:00	16.102	4.131	0.056	1
2/16/2023	16:02:00	16.102	4.142	0.054	
2/16/2023	16:03:00	16.1	4.15	0.038	
2/16/2023	16:04:00	16.104	4.133	0.066	
2/16/2023	16:05:00	16.107	4.128	0.042	
2/16/2023	16:06:00	16.102	4.114	0.071	
2/16/2023	16:07:00	16.101	4.111	0.038	
2/16/2023	16:08:00	16.105	4.103	0.026	
2/16/2023	16:09:00	16.103	4.121	0.036	
2/16/2023	16:10:00	16.102	4.121	0.045	
2/16/2023	16:11:00	16.108	4.106	0.065	
2/16/2023	16:12:00	16.088	4.113	0.056	
2/16/2023	16:13:00	13.647	4.298	0.104	
2/16/2023	16:14:00	10.077	4.731	0.285	
2/16/2023	16:15:00	10.071	4.931	-0.143	
2/16/2023	16:16:00	10.069	4.937	-0.024	< System O2, CO2
2/16/2023	16:17:00	4.357	2.094	0.619	
2/16/2023	16:18:00	-0.033	-0.052	4.459	
2/16/2023	16:19:00	0.033	-0.071	4.627	< System CO
2/16/2023	16:20:00	15.402	5.866	3.221	
2/16/2023	16:21:00	19.248	9.357	7.31	
2/16/2023	16:22:00	19.277	9.627	9.626	
2/16/2023	16:23:00	19.282	9.639	9.62	< Direct High
2/16/2023	16:24:00	10.679	5.506	6.798	
2/16/2023	16:25:00	10.111	5.322	4.695	

2/16/2023	16:26:00	10.112	4.895	4.694	< Direct Mid
2/16/2023	16:27:00	10.111	4.892	4.698	
2/16/2023	16:28:00	1.137	1.513	3.428	
2/16/2023	16:29:00	-0.037	-0.04	0.07	< DIrect Zero
2/16/2023	16:30:00	-0.037	-0.02	-0.001	

Date	Time	O2%	CO2%	COppm		
2/17/2023	6:57:00	-0.033	-0.052	-0.094		
2/17/2023	6:58:00	-0.033	-0.049	-0.155		
2/17/2023	6:59:00	-0.033	-0.045	-0.213		
2/17/2023	7:00:00	-0.031	-0.044	-0.286		
2/17/2023	7:01:00	-0.032	-0.044	-0.337		
2/17/2023	7:02:00	-0.032	-0.051	-0.399		
2/17/2023	7:03:00	-0.03	-0.049	-0.446		
2/17/2023	7:04:00	-0.03	-0.038	-0.495		
2/17/2023	7:05:00	-0.031	-0.051	-0.553		
2/17/2023	7:06:00	-0.03	-0.056	-0.588		
2/17/2023	7:07:00	-0.032	-0.056	-0.589		
2/17/2023	7:08:00	-0.03	-0.054	-0.589		
2/17/2023	7:09:00	-0.03	-0.052	-0.589		
2/17/2023	7:10:00	-0.03	-0.043	-0.589		
2/17/2023	7:11:00	-0.03	-0.046	-0.46		
2/17/2023	7:12:00	-0.032	-0.023	-0.033	<	DIrect Zero
2/17/2023	7:13:00	6.312	2.148	0.011		
2/17/2023	7:14:00	19.282	8.471	6.733		
2/17/2023	7:15:00	19.275	9.632	9.601	<	Direct High
2/17/2023	7:16:00	12.819	6.341	8.472		
2/17/2023	7:17:00	10.101	4.909	4.559		
2/17/2023	7:18:00	10.102	4.912	4.591	<	Direct Mid
2/17/2023	7:19:00	14.697	4.458	3.773		
2/17/2023	7:20:00	16.085	4.303	0.711		
2/17/2023	7:21:00	16.095	4.256	0.59		
2/17/2023	7:22:00	10.407	4.86	-0.191		
2/17/2023	7:23:00	10.085	4.945	-0.029	<	System O2, CO2
2/17/2023	7:24:00	8.415	4.247	1.385		
2/17/2023	7:25:00	-0.039	-0.027	4.674	<	System CO
2/17/2023	7:26:00	11.392	2.931	4.126		
2/17/2023	7:27:00	16.102	4.298	0.865		
2/17/2023	7:28:00	16.118	4.287	-0.048		
2/17/2023	7:29:00	16.124	4.291	0		
2/17/2023	7:30:00	16.111	4.296	0.182	<	Start Run 7 Eng 5
2/17/2023	7:31:00	16.078	4.328	0.206	12	
2/17/2023	7:32:00	16.103	4.302	0.031		
2/17/2023	7:33:00	16.111	4.299	0.094		
2/17/2023	7:34:00	16.113	4.289	0.146		
2/17/2023	7:35:00	16.115	4.283	0.061		
2/17/2023	7:36:00	16.12	4.282	0.041		
2/17/2023	7:37:00	16.096	4.312	0.005		
2/17/2023	7:38:00	16.113	4.291	0.017		
2/17/2023	7:39:00	16.076	4.328	0.013		
2/17/2023	7:40:00	16.082	4.328	0.048		
2/17/2023	7:41:00	16.119	4.301	0.096	11	
2/17/2023	7:42:00	16.087	4.334	0.16		

2/17/2023	7:43:00	16.088	4.326	0.018	
2/17/2023	7:44:00	16.071	4.335	0.016	
2/17/2023	7:45:00	16.12	4.291	0.023	
2/17/2023	7:46:00	16.103	4.309	0.031	
2/17/2023	7:47:00	16.067	4.348	0.08	
2/17/2023	7:48:00	16.103	4.318	0.082	
2/17/2023	7:49:00	16.111	4.316	0.064	
2/17/2023	7:50:00	16.085	4.335	0.051	
2/17/2023	7:51:00	16.029	4.381	0.171	10
2/17/2023	7:52:00	16.056	4.35	0.14	
2/17/2023	7:53:00	16.068	4.334	0.161	
2/17/2023	7:54:00	16.119	4.289	0.015	
2/17/2023	7:55:00	16.1	4.312	0.077	
2/17/2023	7:56:00	16.088	4.319	0.144	
2/17/2023	7:57:00	16.089	4.309	0.163	
2/17/2023	7:58:00	16.103	4.305	0.222	
2/17/2023	7:59:00	16.094	4.314	0.153	
2/17/2023	8:00:00	16.093	4.319	0.145	
2/17/2023	8:01:00	16.107	4.307	0.2	9
2/17/2023	8:02:00	16.105	4.309	0.207	
2/17/2023	8:03:00	16.118	4.305	0.361	
2/17/2023	8:04:00	16.117	4.304	0.327	
2/17/2023	8:05:00	16.075	4.33	0.275	
2/17/2023	8:06:00	16.103	4.305	0.357	
2/17/2023	8:07:00	16.096	4.311	0.084	
2/17/2023	8:08:00	16.088	4.306	0.254	
2/17/2023	8:09:00	16.099	4.308	0.052	
2/17/2023	8:10:00	16.131	4.291	0.307	
2/17/2023	8:11:00	16.119	4.303	0.301	8
2/17/2023	8:12:00	16.121	4.295	0.241	
2/17/2023	8:13:00	16.095	4.318	0.319	
2/17/2023	8:14:00	16.127	4.305	0.333	
2/17/2023	8:15:00	16.076	4.346	0.354	
2/17/2023	8:16:00	16.063	4.343	0.353	
2/17/2023	8:17:00	16.122	4.292	0.364	
2/17/2023	8:18:00	16.109	4.306	0.097	
2/17/2023	8:19:00	16.028	4.376	0.375	
2/17/2023	8:20:00	16.097	4.322	0.402	
2/17/2023	8:21:00	16.103	4.313	0.357	7
2/17/2023	8:22:00	16.094	4.321	0.413	
2/17/2023	8:23:00	16.097	4.311	0.428	
2/17/2023	8:24:00	16.067	4.342	0.404	
2/17/2023	8:25:00	16.11	4.296	0.35	
2/17/2023	8:26:00	16.113	4.293	0.446	
2/17/2023	8:27:00	16.102	4.307	0.435	
2/17/2023	8:28:00	16.109	4.298	0.319	
2/17/2023	8:29:00	16.07	4.326	0.006	

2/17/2023	8:30:00	16.074	4.321	0.073	
2/17/2023	8:31:00	16.106	4.294	0.028	6
2/17/2023	8:32:00	16.135	4.28	0.073	
2/17/2023	8:33:00	16.125	4.281	0.124	
2/17/2023	8:34:00	16.124	4.28	0.198	
2/17/2023	8:35:00	16.121	4.289	0.165	
2/17/2023	8:36:00	16.059	4.342	0.098	
2/17/2023	8:37:00	16.108	4.304	0.023	
2/17/2023	8:38:00	16.109	4.298	0.02	
2/17/2023	8:39:00	16.069	4.341	0.082	
2/17/2023	8:40:00	16.125	4.28	0.135	
2/17/2023	8:41:00	16.115	4.281	0.123	5
2/17/2023	8:42:00	16.07	4.319	0.103	
2/17/2023	8:43:00	16.12	4.285	0.044	
2/17/2023	8:44:00	16.096	4.31	0.083	
2/17/2023	8:45:00	16.115	4.304	0.063	
2/17/2023	8:46:00	16.111	4.303	0.06	
2/17/2023	8:47:00	16.115	4.294	0.146	
2/17/2023	8:48:00	16.103	4.296	0.075	
2/17/2023	8:49:00	16.11	4.298	0.117	
2/17/2023	8:50:00	16.124	4.291	0.066	
2/17/2023	8:51:00	16.106	4.298	0.062	4
2/17/2023	8:52:00	16.104	4.289	0.109	
2/17/2023	8:53:00	16.077	4.317	0.069	
2/17/2023	8:54:00	16.106	4.293	0.152	
2/17/2023	8:55:00	16.125	4.28	0.042	
2/17/2023	8:56:00	16.102	4.302	0.177	
2/17/2023	8:57:00	16.112	4.293	0.067	
2/17/2023	8:58:00	16.117	4.28	0.14	
2/17/2023	8:59:00	16.073	4.316	0.167	
2/17/2023	9:00:00	16.085	4.295	0.12	
2/17/2023	9:01:00	16.105	4.286	0.015	3
2/17/2023	9:02:00	16.069	4.319	0.076	
2/17/2023	9:03:00	16.096	4.286	0.076	
2/17/2023	9:04:00	16.078	4.294	0.111	
2/17/2023	9:05:00	16.082	4.294	0.128	
2/17/2023	9:06:00	16.118	4.261	0.084	
2/17/2023	9:07:00	16.103	4.267	0.205	
2/17/2023	9:08:00	16.093	4.279	0.2	
2/17/2023	9:09:00	16.1	4.265	0.027	
2/17/2023	9:10:00	16.112	4.263	0.233	
2/17/2023	9:11:00	16.09	4.286	0.255	2
2/17/2023	9:12:00	16.052	4.309	0.211	
2/17/2023	9:13:00	16.082	4.278	0.062	
2/17/2023	9:14:00	16.108	4.25	0.104	
2/17/2023	9:15:00	16.069	4.271	0.195	
2/17/2023	9:16:00	16.113	4.24	0.249	

Date	Time				
2/17/2023	9:17:00	16.085	4.274	0.194	
2/17/2023	9:18:00	16.084	4.277	0.007	
2/17/2023	9:19:00	16.09	4.268	0.407	
2/17/2023	9:20:00	16.086	4.28	0.022	
2/17/2023	9:21:00	16.087	4.273	0.04	1
2/17/2023	9:22:00	16.081	4.285	0.074	
2/17/2023	9:23:00	16.084	4.273	0.06	
2/17/2023	9:24:00	16.064	4.3	0.16	
2/17/2023	9:25:00	16.036	4.313	0.182	
2/17/2023	9:26:00	16.052	4.303	0.209	
2/17/2023	9:27:00	16.091	4.272	0.123	
2/17/2023	9:28:00	16.072	4.286	0.273	
2/17/2023	9:29:00	16.097	4.271	0.21	
2/17/2023	9:30:00	16.105	4.256	0.18	
2/17/2023	9:31:00	16.089	4.266	0.114	
2/17/2023	9:32:00	14.483	4.359	0.093	
2/17/2023	9:33:00	10.075	4.908	-0.281	
2/17/2023	9:34:00	10.072	4.913	-0.03	< System O2, CO2
2/17/2023	9:35:00	8.224	3.451	0.21	
2/17/2023	9:36:00	-0.048	0.001	4.113	
2/17/2023	9:37:00	-0.047	0.002	4.617	< System Co
2/17/2023	9:38:00	9.973	2.522	4.3	
2/17/2023	9:39:00	16.075	4.282	1.055	
2/17/2023	9:40:00	16.066	4.296	0.004	< Resume
2/17/2023	9:41:00	16.068	4.295	0.335	12
2/17/2023	9:42:00	16.067	4.297	0.104	
2/17/2023	9:43:00	16.09	4.28	0.242	
2/17/2023	9:44:00	16.055	4.32	0.355	
2/17/2023	9:45:00	15.999	4.361	0.339	
2/17/2023	9:46:00	16.094	4.281	0.282	
2/17/2023	9:47:00	16.07	4.292	0.1	
2/17/2023	9:48:00	16.064	4.296	0.195	
2/17/2023	9:49:00	16.072	4.291	0.262	
2/17/2023	9:50:00	16.071	4.28	0.038	
2/17/2023	9:51:00	16.072	4.286	0.206	11
2/17/2023	9:52:00	16.072	4.276	0.017	
2/17/2023	9:53:00	16.087	4.256	0.286	
2/17/2023	9:54:00	16.061	4.282	0.413	
2/17/2023	9:55:00	16.057	4.287	0.095	
2/17/2023	9:56:00	16.041	4.303	0.034	
2/17/2023	9:57:00	16.087	4.27	0.288	
2/17/2023	9:58:00	16.082	4.282	0.448	
2/17/2023	9:59:00	16.067	4.302	0.176	
2/17/2023	10:00:00	16.08	4.283	0.298	
2/17/2023	10:01:00	16.084	4.276	0.388	10
2/17/2023	10:02:00	16.085	4.284	0.476	
2/17/2023	10:03:00	16.03	4.327	0.423	

2/17/2023	10:04:00	16.056	4.297	0.146	
2/17/2023	10:05:00	16.081	4.281	0.243	
2/17/2023	10:06:00	16.079	4.279	0.462	
2/17/2023	10:07:00	16.083	4.288	0.438	
2/17/2023	10:08:00	16.068	4.299	0.11	
2/17/2023	10:09:00	16.021	4.335	0.338	
2/17/2023	10:10:00	16.063	4.299	0.342	
2/17/2023	10:11:00	16.081	4.283	0.294	9
2/17/2023	10:12:00	16.084	4.29	0.502	
2/17/2023	10:13:00	16.036	4.339	0.489	
2/17/2023	10:14:00	16.063	4.292	0.284	
2/17/2023	10:15:00	16.078	4.279	0.279	
2/17/2023	10:16:00	16.101	4.266	0.258	
2/17/2023	10:17:00	16.076	4.294	0.385	
2/17/2023	10:18:00	16.054	4.311	0.278	
2/17/2023	10:19:00	16.065	4.301	0.134	
2/17/2023	10:20:00	16.087	4.266	0.249	
2/17/2023	10:21:00	16.092	4.264	0.488	8
2/17/2023	10:22:00	16.089	4.27	0.41	
2/17/2023	10:23:00	16.069	4.283	0.401	
2/17/2023	10:24:00	16.078	4.287	0.454	
2/17/2023	10:25:00	16.102	4.268	0.562	
2/17/2023	10:26:00	16.097	4.279	0.196	
2/17/2023	10:27:00	16.075	4.293	0.485	
2/17/2023	10:28:00	16.081	4.277	0.411	
2/17/2023	10:29:00	16.072	4.279	0.47	
2/17/2023	10:30:00	16.095	4.264	0.411	
2/17/2023	10:31:00	16.078	4.276	0.49	7
2/17/2023	10:32:00	16.085	4.273	0.506	
2/17/2023	10:33:00	16.077	4.267	0.484	
2/17/2023	10:34:00	16.075	4.256	0.435	
2/17/2023	10:35:00	16.068	4.259	0.49	
2/17/2023	10:36:00	16.099	4.233	0.492	
2/17/2023	10:37:00	16.098	4.237	0.586	
2/17/2023	10:38:00	16.098	4.236	0.552	
2/17/2023	10:39:00	16.08	4.249	0.56	
2/17/2023	10:40:00	16.079	4.248	0.543	
2/17/2023	10:41:00	16.086	4.238	0.57	6
2/17/2023	10:42:00	16.066	4.251	0.504	
2/17/2023	10:43:00	16.082	4.23	0.479	
2/17/2023	10:44:00	16.089	4.223	0.498	
2/17/2023	10:45:00	16.088	4.222	0.536	
2/17/2023	10:46:00	16.091	4.22	0.419	
2/17/2023	10:47:00	16.097	4.216	0.551	
2/17/2023	10:48:00	16.094	4.207	0.492	
2/17/2023	10:49:00	16.09	4.211	0.525	
2/17/2023	10:50:00	16.084	4.213	0.48	

2/17/2023	10:51:00	16.086	4.224	0.539	5
2/17/2023	10:52:00	16.074	4.234	0.518	
2/17/2023	10:53:00	16.089	4.226	0.497	
2/17/2023	10:54:00	16.093	4.216	0.581	
2/17/2023	10:55:00	16.097	4.196	0.587	
2/17/2023	10:56:00	16.095	4.192	0.585	
2/17/2023	10:57:00	16.091	4.184	0.583	
2/17/2023	10:58:00	16.09	4.174	0.577	
2/17/2023	10:59:00	16.079	4.178	0.527	
2/17/2023	11:00:00	16.092	4.169	0.548	
2/17/2023	11:01:00	16.094	4.165	0.584	4
2/17/2023	11:02:00	16.091	4.161	0.576	
2/17/2023	11:03:00	16.091	4.16	0.564	
2/17/2023	11:04:00	16.086	4.16	0.562	
2/17/2023	11:05:00	16.088	4.169	0.341	
2/17/2023	11:06:00	16.091	4.167	0.57	
2/17/2023	11:07:00	16.087	4.16	0.51	
2/17/2023	11:08:00	16.091	4.165	0.443	
2/17/2023	11:09:00	16.093	4.163	0.449	
2/17/2023	11:10:00	16.089	4.165	0.582	
2/17/2023	11:11:00	16.092	4.161	0.578	3
2/17/2023	11:12:00	16.082	4.171	0.491	
2/17/2023	11:13:00	16.093	4.152	0.556	
2/17/2023	11:14:00	16.079	4.168	0.153	
2/17/2023	11:15:00	16.087	4.159	0.388	
2/17/2023	11:16:00	16.083	4.152	0.571	
2/17/2023	11:17:00	16.085	4.149	0.498	
2/17/2023	11:18:00	16.093	4.136	0.588	
2/17/2023	11:19:00	16.091	4.146	0.588	
2/17/2023	11:20:00	16.089	4.152	0.585	
2/17/2023	11:21:00	16.092	4.162	0.588	2
2/17/2023	11:22:00	16.084	4.16	0.588	
2/17/2023	11:23:00	16.086	4.168	0.044	
2/17/2023	11:24:00	16.076	4.176	0.104	
2/17/2023	11:25:00	16.084	4.166	0.226	
2/17/2023	11:26:00	16.097	4.152	0.108	
2/17/2023	11:27:00	16.093	4.15	0.085	
2/17/2023	11:28:00	16.097	4.142	0.089	
2/17/2023	11:29:00	16.091	4.149	0.052	
2/17/2023	11:30:00	16.09	4.143	0.008	
2/17/2023	11:31:00	16.091	4.149	0.01	1
2/17/2023	11:32:00	16.09	4.148	0.016	
2/17/2023	11:33:00	16.078	4.159	0.054	
2/17/2023	11:34:00	16.086	4.141	0.016	
2/17/2023	11:35:00	16.083	4.149	0.02	
2/17/2023	11:36:00	16.08	4.16	0.012	
2/17/2023	11:37:00	16.076	4.156	0.017	

2/17/2023	11:38:00	16.086	4.144	0.043		
2/17/2023	11:39:00	16.087	4.136	0.024		
2/17/2023	11:40:00	16.084	4.128	0.027		
2/17/2023	11:41:00	16.081	4.138	0.017		
2/17/2023	11:42:00	14.47	4.252	0.214		
2/17/2023	11:43:00	10.064	4.772	0.472		
2/17/2023	11:44:00	10.039	4.904	0.027	<	System O2, CO2
2/17/2023	11:45:00	11.87	4.585	0.022		
2/17/2023	11:46:00	1.223	0.382	2.376		
2/17/2023	11:47:00	-0.044	-0.05	4.653	<	System CO
2/17/2023	11:48:00	11.519	3.264	4.272		
2/17/2023	11:49:00	19.249	9.514	5.941		
2/17/2023	11:50:00	19.275	9.636	9.615		
2/17/2023	11:51:00	19.279	9.633	9.648	<	Direct High
2/17/2023	11:52:00	11.507	6.393	7.485		
2/17/2023	11:53:00	10.101	5.357	4.705		
2/17/2023	11:54:00	10.103	4.898	4.612		
2/17/2023	11:55:00	10.097	4.897	4.633	<	Direct Mid
2/17/2023	11:56:00	1.773	1.385	2.887		
2/17/2023	11:57:00	-0.039	-0.025	-0.036		
2/17/2023	11:58:00	-0.033	-0.024	-0.032	<	Direct Zero
2/17/2023	11:59:00	-0.023	-0.03	-0.025		

Appendix A.3
Particulate Field and Laboratory Data

MONTROSE
AIR QUALITY SERVICES

Appendix A.3.1
CT-4 Field Data

MONTROSE
AIR QUALITY SERVICES

ML

ENd 4 R1

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Sunshine
LOCATION: Engine #1
DATE: 2/2/23
RUN NO: ENd 4 Run 2
OPERATOR: DY/AND
METER BOX NO: 12 wus
METER ΔH@: 1.786
METER Yd: 0.287
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= X ΔP: 1.788
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 55°
BAROMETRIC PRESSURE: 28.36
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: CCU/Glass
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: N92-2
NOZZLE DIAMETER: 0.267
FILTER NO/TYPE: 83-4417
PRE-TEST LEAK RATE: .002 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: .008 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST:
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. # Contents		Post-Test - Pre-Test = Difference
1	D.I	858.5 / 202.2
2	D.I	647.0 / 633.4
3	MT	614.6 / 608.1
4	SG	963.9 / 936.5
Total:		

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	1050	0.191	0.95	1.9	205		248	53	79	75	6		-0.65
2	1100	9.9	0.99	2.0	203		247	49		77	6		
3	1110	15.8	1.0	2.0	204		247	51		81	7		
4	1120	23.9	1.1	2.2	204		249	53		82	7		
5	1130	32.4	1.2	2.4	202		248	53		87	7		
6	1140	41.4	1.1	2.2	203		249	55		85	6		
7	1150	50.3	1.1	2.1	201		249	54		85	6		
8	1200	58.2	1.0	2.0	203		249	55		87	6		
9	1210	66.7	1.1	2.2	204		247	55		86	6		
10	1210	75.1	1.0	2.0	202		249	54		86	6		
11	1220	83.3	0.98	1.9	203		250	57		87	5		
12	1240	91.5	0.75	1.5	204		247	56		88	6		
1	1300	98.743	0.50	2.0	203		249	55		88	6		
2	1310	107.9	0.9	2.0	204		247	55		88	6		
3	1320	116.7	1.1	2.3	202		247	55		88	7		
4	1330	127.7	0.53	1.9	203		246	56		88	6		
5	1340	140.6	0.95	1.9	203		250	55		87	7		
6	1350	150.1	0.66	2.0	203		248	55		85	6		
7	1400	148.7	1.1	2.2	203		248	55		85	6		
8	1410	157.0	1.1	2.2	203		247	55		85	6		
9	1420	165.4	1.0	2.0	203		248	56		85	6		
10	1430	174.2	0.95	1.9	203		248	56		85	6		
11	1440	182.7	0.82	1.4	202		247	56		86	5		
12	1450	171.5			214		249	55		84			
Average:	1500	200.182					END TEST						

Comments:

Date of last revision 2/14/2017

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

MONTROSE AIR QUALITY SERVICES

CLIENT: Sunshine
LOCATION: ENG4/G #4
DATE: 2/8/23
RUN NO: ENG 4 Run 2
OPERATOR: DH / AD
METER BOX NO: 42 wcs
METER ΔH@: 1.356
METER Yd: 0.992
STACK AREA, FT²: 57"
ΔH= 1.965 X ΔP: 1.988
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 52°
BAROMETRIC PRESSURE: 28.34
ASSUMED MOISTURE: 38%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 006.1
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: N62.2 61/65
NOZZLE DIAMETER: 0.251
FILTER NO/TYPE: QF 4417
PRE-TEST LEAK RATE: 0.009 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.009 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: POST:
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

TRAVERSE POINTS, MIN/POINT: 10/24

Imp.	# Contents	Post-Test	- Pre-Test	= Difference
1	DI	868.5	704.8	
2	''	635.4	622.2	
3	MT	611.6	600.8	
4	Si	1015.2	971.9	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	0810	200.579	0.96	1.9	201		247	57	n.b	64	7		-0.54
2	0820	206.5	1.0	2.0	203		247	52		65	7		
3	0830	216.6	1.1	2.2	203		248	52		67	8		
4	0840	225.0	1.0	2.0	203		247	51		68	7		
5	0850	233.2	1.1	2.2	204		247	51		70	8		
6	0900	241.7	1.1	2.2	204		248	52		72	8		
7	0910	2504	1.0	2.0	204		247	53		73	8		
8	0920	258.5	0.92	1.5	204		248	53		74	7		
9	0930	266.7	1.0	2.0	204		248	52		74	7		
10	0940	275.0	1.1	2.2	204		250	53		75	8		
11	0950	282.6	0.96	1.9	205		249	54		76	7		
12	1000	291.5	0.77	1.7	203		272	54		75	6		
1	1010/1020	299.085	0.96	1.5	220		240	55		76	7		
2	1030	300.5	1.1	2.2	202		242	55		77	8		
3	1040	311.5	1.1	2.2	201		242	55		76	8		
4	1050	321.5	0.96	1.9	205		242	55		77	7		
5	1100	331.0	0.92	1.9	202		243	54		79	8		
6	1110	340.0	1.0	2.0	202		243	53		83	7		
7	1120	342.5	1.1	2.2	205		246	54		84	8		
8	1130	355.9	1.0	2.0	204		252	54		88	7		
9	1140	365.5	1.1	2.2	205		250	54		88	7		
10	1150	372.4	0.92	1.9			247	55		89	7		
11	1200	350.8	0.80							90			
12	1210												

Average: 1210 398.872 0.80 4.1

Comments:

M.5

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Sunshine
LOCATION: Engine #4
DATE: 2/8/21
RUN NO: 3
OPERATOR: DH/AD
METER BOX NO: 4cuws
METER $\Delta H@$: 1.776
METER Yd: 0.992
STACK AREA, FT²: 55"
$\Delta H= \quad X \Delta P$: 1.988
Probe Condition, pre/post test: sealed/sealed
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 66°
BAROMETRIC PRESSURE: 28.34
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 007/0.0455
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: 266/0.1045
NOZZLE DIAMETER: 0.257
FILTER NO/TYPE: GC-4419
PRE-TEST LEAK RATE: 0.005 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.006 CFM@ 10 in. Hg. POST:
PITOT LEAK CHECK - PRE:
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	DI	561.1	736.5	
2	"	647.4	620.6	
3	MeOH	635.6	634.7	
4	SG	948.8	903.0	
	Total:			

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp In	Meter Temp Out	Vacuum in. Hg.	O2 %	Pstatic in. H2O
1	1305	400.681	0.55	1.9	677		248	58		85	5		-0.54
2	1315	405.4	1.1	2.2	657		245	56		88	6		
3	1325	417.7	1.1	2.2	696		245	55		90	6		
4	1335	426.0	1.0	2.0	658		248	54		91	6		
5	1345	434.4	1.0	2.0	692		248	52		92	7		
6	1355	443.0	1.1	2.2	686		242	53		92	6		
7	1405	452.5	1.0	2.0	650		246	53		91	6		
8	1415	459.9	1.0	2.0	656		245	54		90	5		
9	1425	466.0	0.72	1.5	697		250	53		91	5		
10	1435	474.3	0.96	1.9	697		245	54		91	6		
11	1445	483.5	0.78	1.6	698		248	55		89	5		
12	1455	492.0	0.50	1.9	695		247	55		91	4		
1	1505/1515	495.55/496.25	1.1	2.1	703		248	54		90	4		
2	1525	502.1	0.9	2.0	705		248	56		90	4		
3	1535	515.0	0.657	1.1	705		248	55		91	4		
4	1545	523.7	0.50	1.1	705		247	55		89	4		
5	1555	520.8	0.85	1.7	705		242	55		96	3		
6	1605	532.5	1.1	2.2	705		245	55		93	3		
7	1615	546.3	1.1	2.1	704		247	54		94	3		
8	1625	555.1	0.1	2.0	704		246	56		93	3		
9	1635	562.4	0.1	2.0	708		246	57		95	3		
10	1645	574.6	0.1	1.9	705		245	56		95	2		
11	1655	580.1	0.50	1.7	703		248	57		54	5		
12	1705	583.557	0.50				END	TEST					

Average: 1715 | 576.957

Comments:

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

M5

CLIENT: Sunshine
LOCATION: Engineering
DATE: 2/9/23
RUN NO: ENG 4 RUN 4
OPERATOR: 04/AS
METER BOX NO: 42 wess
METER ΔH@: 1.786
METER Yd: 0.992
STACK AREA, FT²: 53"
TRAVERSE POINTS, MIN/POINT: 10|24
ΔH = 1.766 X ΔP: 1.983
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 53°
BAROMETRIC PRESSURE: 28.32
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 304/glass
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: N42-2 / wbwes
NOZZLE DIAMETER: 0.257
FILTER NO/TYPE: QF 4420
PRE-TEST LEAK RATE: .002 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: .002 CFM@ 12 in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN:
SAMPLER: 144/A4
SAMPLE CUSTODIAN:

Imp.	# Contents	Post-Test	- Pre-Test	= Difference
1	DI H₂O	8465	7045	
2	" (56)	1038.0	6255	
3	MT 613.3	613.9	608.9	
4		1012.9	1012.9	612.2
—	Total:			

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	0905	599.319	1.55	1.9	201		247	57		70	7		-0.57
2	0915	608.4	0.97	1.9	204		248	55		72	6		
3	0925	616.9	1.1	2.3	203		248	53		73	7		
4	0935	624.9	1.1	2.2	203		247	54		75	8		
5	0945	633.5	1.2	2.4	203		249	55		77.5	8		
6	0955	642.2	1.0	2.0	203		249	56		78	8		
7	0705	650.8	1.1	2.2	203		248	55		80	6		
8	0515	659.4	1.0	2.0	206		248	55		82	6		
9	0525	667.7	0.99	2.0	204		245	56		83	6		
10	0535	676.1	1.0	2.0	205		218	56		84	5		
11	0545	684.2	1.0	3.0	204		247	55		84.8	5		
12	0555	692.7	0.76	1.5	203		249	53		78	6		
1	1005/1015	700.083	0.98	1.9	206		248	56		87	6		
2	1025	208.4	1.1	2.6	206		248	56		88	6		
3	1035	216.0	1.1	2.2	205		249	55		89	7		
4	1045	224.4	0.92	1.9	205		247	55		89	7		
5	1055	732.8	0.95	1.9	203		247	55		89	7		
6	1105	740.1	0.96	1.9	204		248	57		90	7		
7	1115	744.7	0.99	2.0	203		250	58		92	8		
8	1125	757.7	1.0	2.0	202		247	57		93	8		
9	1135	765.4	1.1	2.2	199		248	58		93	8		
10	1145	774.7	1.0	2.0	198		247	57		95	7		
11	1155	782.7	0.76	1.7	201		248	57		95	7		
12	1205	790.8	0.83	1.7	202		248	56		55	6		
Average:	125	796.014						END TEST					

Comments: _____

Date of last revision 2/14/2017   Master Document Storage\Forms\Datasheets\Field Datasheets

DS834048

M5

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Sunshine
LOCATION: Engine #4
DATE: 2/5/23
RUN NO: Run 6
OPERATOR: 04/JW
METER BOX NO: 42 WS
METER ΔH@: 1.786
METER Yd: 0.950
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= 1.444 × ΔP: 1.788
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: ✓
Filter Condition after Test: ✓
Check Weight: 600/500

AMBIENT TEMPERATURE: 73°
BAROMETRIC PRESSURE: 28.72
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 006/glass
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: 266/glass
NOZZLE DIAMETER: 0.252
FILTER NO/TYPE: GF 4421
PRE-TEST LEAK RATE:: 0.007 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.006 CFM@ 6 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: ✓

SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	DIH₂O	872.6	752.2	
2	"	634.1	618.7	
3	MT	642.7	636.	
4	Sg	920.6	911.7	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	1240	795.327	0.97	1.9	305		249	55		89	6		-0.57
2	1250	803.1	1.0	2.0	304		250	58		92	6		
3	1300	815.2	1.0	2.0	304		245	56		93	5		
4	1310	823.2	1.1	2.1	305		250	56		92	6		
5	1320	831.6	1.1	2.1	305		248	55		93	8		
6	1330	840.2	1.2	2.2	304		249	54		95	6		
7	1340	849.5	1.0	2.0	305		248	54		96	6		
8	1350	858.1	1.0	2.0	304		248	55		93	7		
9	1400	866.3	1.1	2.2	303		250	55		92	6		
10	1410	875.7	0.94	1.7	305		250	55		91	6		
11	1410	884.8	0.88	1.5	303		249	54		95	5		
12	1420	891.6	0.86	1.5	305		245	55		95	6		
1	1430	899.846	0.96	1.7	304		248	55		96	6		
2	1440	907.9	0.89	1.7	305		247	55		96	6		
3	1450	915.7	1.0	2.0	305		247	56		96	4		
4	1510	926.7	1.1	2.2	305		247	55		98	6		
5	1530	935.7	0.98	1.9	303		247	55		95	6		
6	1540	944.0	0.98	1.9	303		250	56		73	6		
7	1550	953.2	1.0	2.0	304		248	56		71	8		
8	1600	965.5	0.1	2.1	303		249	56		90	6		
9	1610	973.1	0.1	2.0	303		248	55		90	8		
10	1620	912.4	1.1	2.1	303		247	55		92	6		
11	1630	990.0	0.93	1.7	304		248	55		91	6		
4	1640	998.624	0		304		EMPTY	EMPTY		T E ST			
Average:	1650												

Comments:

MONTROSE AIR QUALITY SERVICES

M5

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Sunshine
LOCATION: Engine #4
DATE: 2/10/23
RUN NO: One H Run 6
OPERATOR: DK/AD
METER BOX NO: Junes
METER ΔH@: 1.380
METER Yd: 0.992
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10 kn
ΔH= ____ X ΔP: 1.789
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight: 500/500

AMBIENT TEMPERATURE: 53°
BAROMETRIC PRESSURE: 29.26
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: .007/glass
PROBE LENGTH:
NOZZLE ID NO/MATERIAL: 266 Gtass
NOZZLE DIAMETER: 0.257
FILTER NO/TYPE: GF 4726
PRE-TEST LEAK RATE: 0.005 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 10 POST-8 in. Hg.
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	DI H2O	847.0	705.3	
2	"	626.3	692.3	
3	MT	810.2	606.7	
4	SG	10522	997.7	
—	Total:			

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	0750	958.799	0.97	1.9	316		247	58		92	5		-0.55
2	0800	1001.2	1.0	2.0	316		248	56		44	5		
3	0810	1043	1.1	2.7	315		248	55		45	6		
4	0820	1022.5	1.1	2.4	315		247	54		47	6		
5	0830	1030.2	1.2	2.4	316		248	55		69	7		
6	0840	1035.0	1.0	2.0	317		245	55		33	6		
7	0850	1040.1	1.0	2.0	317		247	54		32	5		
8	0900	1055.1	0.92	1.9	318		248	53		34	5		
9	0910	1063.7	1.1	2.2	318		247	54		35	6		
10	0920	1017	0.95	2.0	316		246	55		36	5		
11	0930	1079	0.56	5.1	315		247	55		48	5		
12	0940	1068.0	0.74	1.5	314		248	55		48	4		
1	0950/1000	1076.181	1.0	2.0	316		248	55		40	5		
2	1010	1042	1.0	2.0	314		248	55		56	5		
3	1020	1113	1.1	1.8	317		252	54		36	5		
4	1030	1120	0.85	1.5	314		252	55		36	5		
5	1040	1130.2	0.94	1.5	314		248	55		38	5		
6	1050	1139.2	0.56	1.1	314		248	50		38	5		
7	1100	1147.4	1.0	2.2	315		248	55		38	5		
8	1110	1152.2	1.1	2.2	314		249	53		38	4		
9	1120	1160.0	1.2	2.4	315		247	50		18	5		
10	1130	1169.1	0.55	1.9	315		245	50		18	4		
11	1140	1177.4	0.50	1.6	314		248	52		82	3		
12	1150	1185.5	0.80	1.0	313		247	52		81	5		

Average: 1100   END TEST

Comments:

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

MONTROSE AIR QUALITY SERVICES

CLIENT: Sunshine
LOCATION: Engine #4
DATE: 2/10/23
RUN NO: ENG 4 RUN 7
OPERATOR: BN/AD
METER BOX NO: 42wcs
METER ΔH@: 1.786
METER Yd: 0.952
STACK AREA, FT²: 5"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= XΔP: 1.989
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 67°
BAROMETRIC PRESSURE: 28.24
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 006/glass
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: 0.652
NOZZLE DIAMETER: 0.652
FILTER NO/TYPE: QF 4433
PRE-TEST LEAK RATE: 0.001 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.000 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	DIH₂O	866.5	740.6	
2	"	644.1	625.7	
3	MT	643.7	635.5	
4	SG	989.6	940.2	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	1215	1193.601	0.93	1.8	216		249	57	81	81	6		-0.55
2	1225	1201.5	0.58	1.9	217		248	57	80	80	6		
3	1235	1206.5	1.0	2.0	216		250	56	81	81	6		
4	1245	1212.7	1.0	2.0	216		250	55	82	82	7		
5	1255	1223.7	2.1	2.8	216		249	55	83	83	7		
6	1305	1240.4	2.1	2.7	216		249	55	83	83	7		
7	1315	1248.3	1.1	2.0	216		247	56	83	83	6		
8	1325	1250.4	0.1	2.0	216		248	56	82	82	7		
9	1335	1258.5	1.0	3.0	216		249	55	82	82	6		
10	1345	1269.4	1.1	2.2	213		248	55	84	84	7		
11	1355	1282.4	0.57	1.5	216		248	57	83	83	5		
12	1400	1287.4	0.70	1.6	215		248	57	82	82	6		
1	1415/25	1296.4	1.0	1.5	216		249	56	82	82	6		
2	1435	1298.3	0.82	1.9	216		248	56	82	82	6		
3	1445	1306.5	1.0	2.0	216		247	55	88	88	6		
4	1455	1314.3	0.50	1.9	215		248	55	80	80	6		
5	1505	1322.2	0.57	1.5	215		248	55	96	96	6		
6	1515	1330.1	1.0	2.0	216		248	57	76	76	6		
7	1525	1338.0	1.1	2.2	217		248	57	92	92	7		
8	1535	1346.0	2.1	2.4	216		248	56	72	72	7		
10	1555	1362.1	1.1	1.5	216		245	56	71	71	7		
11	1605	1370.6	0.35	1.5	217		248	55	90	90	6		
12	1615	1378.6	0.80	1.6	214		249	57	91	91	5		

Average: 1411 | 1386.269

Comments:

Appendix A.3.2
CT-5 Field Data

MONTROSE
AIR QUALITY SERVICES

Mb

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: EA Sunshine
LOCATION: Engineers
DATE: 2/14/23
RUN NO: ENG 5 RU?
OPERATOR: DH/AO
METER BOX NO: 42 wks
METER ΔH@: 1.796
METER Yd: 0.992
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH = X ΔP: 203
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 48'
BAROMETRIC PRESSURE: 22.9?
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: ODT/Glass
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: N6LL Glass
NOZZLE DIAMETER: 0.362
FILTER NO/TYPE: GF 4483
PRE-TEST LEAK RATE: 0.003 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 0 in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	DI H2O	871.1		7028
2	''	631.0		620
3	WT	609.1		6063
4	SG	1053.0		1000.3
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Out	Vacuum in. Hg.	O2 %	Pstatic in. H2O
1	0800	0.103	0.89	1.4	200		250	56	n/a	56	6 rough		-0.58
2	0810	7.0	0.44	1.6	201		243	53		57	6		
3	0820	14.8	0.85	1.7	200		248	52		60	6		
4	0830	22.5	0.92	1.9	200		248	55		62	7		
5	0840	30.5	1.7	2.2	201		245	51		63	7		
6	0850	38.4	1.1	2.7	201		248	50		64	8		
7	0900	46.3	1.3	2.6	201		249	51		65	8		
8	0910	54.6	1.4	2.8	201		249	52		67	8		
9	0920	63.0	1.1	2.2	202		248	53		69	8		
10	0930	70.5	0.97	2.0	201		248	54		70	8		
4	0940	76.2	0.85	1.7	201		242	55		70	9		
12	0950	86.6	0.76	1.5	201		242	52		70	9		
1	1000/10	93.8	0.92	1.5	201		348	55		71	9		
2	1010	101.5	0.83	1.7	202		249	55		71	9		
3	1020	107.5	0.86	1.7	202		282	57		71	9		
4	1040	117.1	0.55	1.9	202		242	55		72	9		
5	1050	125.0	1.0	2.0	202		242	55		71	9		
6	1100	135.0	1.1	2.2	202		242	55		72	8		
7	1110	144.1	1.2	2.4	202		244	56		72	8		
8	1120	149.1	1.3	2.6	202		246	57		73	8		
9	1120	157.5	1.0	2.0	202		242	56		74	9		
10	1140	164.1	0.55	2.0	203		250	57		75	9		
11	1150	174.1	0.83	1.7	203		250	57		74	9		
12	1210	181.9	0.74	1.5	203		248	58		74	5		
Average:		189.632											

END OF TEST

Comments:

EPA 5

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Sunshine
LOCATION: Engine #5
DATE: 2/14/23
RUN NO: Eng 5 Run 2
OPERATOR: DH/AD
METER BOX NO: 42001
METER ΔH@: 1.770
METER Yd: 0.972
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= __ X ΔP: 2.03
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: __
Filter Condition after Test: __
Check Weight: 500|500

AMBIENT TEMPERATURE: 55
BAROMETRIC PRESSURE: 27.98
ASSUMED MOISTURE: 6%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 6x8/glass
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: 0.661 Glass
NOZZLE DIAMETER: 0.257
FILTER NO/TYPE: GE - 44/84
PRE-TEST LEAK RATE: 0.002 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ✓   POST: ✓
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER: DH/AD
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	DI H₂O	903.8	744.0	
2	''	622.8	614.9	
3	MT	635.0	635.0	
4	SG	1007.4	958.3	
		Total:		

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	1:20	150.016	0.90	1.8	302		248	59	n/a	74	9		-0.54
2	1:30	172.7	0.80	1.7	302		249	58		75	9		
3	1:40	205.3	0.85	1.5	301		247	56		73	9		
4	1:50	213.0	0.93	2.0	301		247	57		72	4		
5	2:00	220.8	1.0	2.0	301		248	57		75	4		
6	2:10	228.7	1.1	2.1	302		248	55		74	9		
7	2:20	236.7	1.3	2.6	302		242	55		74	9		
8	2:30	244.9	1.4	2.8	302		248	55		75	8		
9	2:40	253.2	1.0	2.0	301		248	55		58	4		
10	2:50	261.6	0.58	1.1	301		249	54		58	8		
11	3:00	268.10	0.85	1.5	302		248	56		58	9		
12	3:10	278.746	0.75	1.5	302		three240	56		56	9		
1	4:20/30	287.371	0.52	1.3	302		250	57		56	9		
2	4:30	292.1	0.84	1.8	302		248	55		55	8		
3	4:40	306.9	0.80	2.0	302		247	54		58	8		
4	4:50	315.4	0.50	0.9	301		248	54		54	8		
5	5:00	321.5	1.0	2.0	301		247	55		55	8		
6	5:10	329.4	1.3	2.6	301		248	55		54	4		
7	5:20	340.0	1.0	2.0	300		248	55		53	4		
8	5:30	355.9	0.57	1.1	300		249	55		51	9		
9	5:40	363.6	0.62	1.1	300		249	60		58	8		
10	5:50	381.349	0.50	5.1	300		248	55		58	9		

Average: 1630

Comments:

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MONTROSE
AIR QUALITY SERVICES

EPA 5

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Sunshine
LOCATION: Engine 5 RUN 3
DATE: 2/15/23
RUN NO: ENG 5 RUN 3
OPERATOR: DH/AD
METER BOX NO: 412WGS
METER ΔH@: 1.756
METER Yd: 0.992
STACK AREA, FT2: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= X ΔP: 2.03
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 35°
BAROMETRIC PRESSURE: 23.15
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 207/9103
PROBE LENGTH: 5
NOZZLE ID NO/ MATERIAL: None/glass
NOZZLE DIAMETER: 0.157
FILTER NO/TYPE: AF 4403
PRE-TEST LEAK RATE: 0.003 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.004 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: N POST:
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN:
SAMPLER:
SAMPLE CUSTODIAN:

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	DI H2O	870.9	704.8	
2	"	627.7	623.9	
3	MT	610.0	607.5	
4	Sg	1032.8	979.9	
—	Total:			

Point	Time	Meter Volume, ft3	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O2 %	Pstatic in. H2O
													-0.58
1	0225	385.717	0.68	1.8	707		247	42		46	6		
2	0245	393.5	0.80	2.0	700		249	46		45	6		
3	0255	401.2	0.85	1.7	701		249	44		47	6		
4	0305	408.9	0.94	1.5	700		248	46		48	7		
5	0315	416.7	1.0	2.0	699		245	47		46	8		
6	0325	424.4	1.2	2.4	692		243	45		52	8		
7	0835	432.8	1.3	2.6	693		249	45		53	6		
8	0845	441.1	1.3	2.6	698		250	50		53	8		
9	0855	449.4	1.0	2.0	696		249	51		52	6		
10	0905	457.3	0.83	0.8	701		250	52		54	6		
11	0915	465.2	0.85	5.1	701		249	53		54	6		
12	0925	472.8	0.50	1.8	702		248	53		55	9		
1	0930	480.7	0.80	1.7	702		248	54		60	9		
2	1000	488.0	0.80	1.9	702		248	55		62	7		
3		496.0	0.56	1.1	703		248	55		63	8		
4		503.7	1.0	2.1	701		248	59		61	7		
5	1015	511.5	1.4	2.8	701		248	60		64	6		
6	1025	519.5	1.2	2.2	301		248	65		64	6		
7	1045	527.6	1.2	2.1	304		248	59		64	6		
8	1055	535.8	1.1	2.2	304		248	59		64	7		
10	1105	544.0	0.58	1.2	305		249	59		67	6		
11	1115	552.9	0.84	1.4	305		248	59		68	6		
12	1125	560.7	0.73	1.4	306		249	52		52	6		
	1135	568.7						TEST					
Average:	1145	576.542											
		190.825											

Comments:

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MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Sunshine
LOCATION: Edgyne #5
DATE: 2/15/23
RUN NO: ENG 5 RUN 4
OPERATOR: OH/AO
METER BOX NO: 42-US
METER ΔH@: 1.786
METER Yd: 0.992
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= XΔP: 2.03
Probe Condition, pre/post test: —
Silica Gel Expended, Y/N: —
Filter Condition after Test: —
Check Weight: 500/500

AMBIENT TEMPERATURE: 54°
BAROMETRIC PRESSURE: 04-28.86 28.15
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: OPG / glass
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL: 266/ 3/8 glass
NOZZLE DIAMETER: 0.251
FILTER NO/TYPE: 6/C 4486
PRE-TEST LEAK RATE: 0.005 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.007 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: POST:
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	emDI H₂O	916.1		7565
2	DIH₂O	6489		637.4
3	Wt	638D		634.5
4	SG	985.3		9344
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp In °F	Meter Temp Out °F	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	1200	577.206	0.90	1.8	307		245	56		70	9		−0.48
2	1210	585.1	0.80	1.6	307		248	54		69	9		
3	1220	592.7	0.85	1.7	305		248	52		69	9		
Y	1230	600.4	0.93	1.9	308		247	50		70	9		
5	1240	605.3	1.0	2.0	308		250	49		70	9		
6	1250	616.3	1.1	2.2	308		248	46		71	9		
7	1300	624.4	1.3	2.6	307		248	51		70	8		
Y	1310	636.7	1.4	2.8	308		247	52		70	8		
9	1320	641.1	1.0	2.0	305		248	53		70	8		
10	1330	649.0	0.95	1.9	308		247	55		69	8		
11	1340	656.0	0.74	1.5	307		247	53		69	8		
12	1350	664.2	0.92	1.9	307		248	55		71	8		
1	1400/10	672.3	0.84	1.7	307		248	55		72	8		
2	1420	680.1	0.88	1.8	307		248	54		73	8		
3	1430	687.5	0.86	1.7	308		248	53		74	8		
4	1440	695.5	0.55	1.1	307		245	54		74	8		
5	1450	703.2	1.0	2.0	308		247	55		75	8		
6	1500	711.6	1.0	2.0	305		250	55		74	8		
7	1510	719.4	1.2	2.4	306		250	55		76	7		
Y	1520	727.7	1.3	2.6	305		242	56		76	7		
9	1530	735.9	1.0	2.0	308		249	56		77	8		
10	1540	743.9	0.97	2.0	307		243	56		76	9		
11	1550	751.4	0.80	1.4	307		242	57		76	9		
12	1600	768.114	0.34	1.5	306		249	55		78	9		
Average: 1610		768.644											

Check Weight: 500/500

Comments: ___ 191.208

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EPA 5

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Sunland
LOCATION: Engine #5
DATE: 2/10/23
RUN NO: ENG of RUN 5
OPERATOR: DU/RD
METER BOX NO: 42003
METER ΔH@: 1.826
METER Yd: 0.992
STACK AREA, FT²: 55''
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= __ X ΔP: 2.03
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 40°
BAROMETRIC PRESSURE: 28.33
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 015/glass
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: NU2-2 / glass
NOZZLE DIAMETER: 0.259
FILTER NO/TYPE: GF 4187
PRE-TEST LEAK RATE: 0.004 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.003 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: __ POST: __
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN: QA
SAMPLER:
SAMPLE CUSTODIAN:

Imp. #	Contents	Post-Test - Pre-Test = Difference
1	DI H₂O	860.0 / 704.2
2	√	636.1 / 631.6
3	wet	610.4 / 607.8
4	SG	1030.6 / 990
—	Total:	

Pstatic in. H₂O: -0.45

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %
1	0735	769.011	0.90	1.8	710		250	50	N/A	52	6	
2	0745	776.7	0.82	1.7	710		246	49		54	6	
3	0755	787.4	0.85	1.7	705		249	48		55	7	
4	0805	792.0	0.52	1.9	705		247	49		56	7	
5	0815	799.8	1.1	2.2	705		248	50		57	6	
6	0825	807.8	1.0	2.0	710		248	47		55	8	
7	0835	815.2	1.3	2.6	710		248	51		55	8	
8	0845	824.1	1.4	2.8	711		247	51		55	8	
9	0855	832.6	1.2	2.4	708		247	52		55	8	
10	0905	840.8	0.55	1.7	705		246	52		60	6	
11	0915	848.8	0.84	1.7	705		248	51		61	5	
12	0925	856.5	0.75	1.5	705		248	52		62	6	
1	0935	861.071	0.52	1.7	705		249	51		63	6	
2	0945	872.9	0.80	1.4	710		250	53		64	6	
3	0955	879.5	0.86	1.7	710		250	53		65	6	
4	1005	887.2	0.96	1.5	710		242	54		65	6	
5	1015	895.1	1.0	2.0	705		249	55		64	6	
6	1025	903.0	1.0	2.0	706		247	54		65	6	
7	1035	911.0	1.2	2.4	705		247	55		66	8	
8	1045	919.1	1.2	2.4	708		244	56		67	8	
9	1055	927.5	1.0	2.0	703		249	56		67	6	
10	1105	935.6	0.98	2.0	702		249	55		66	6	
11	1115	943.5	0.84	1.7	702		247	56		67	6	
12	1125	951.2	0.75	1.5	702		249	56		67	5	

Average: 1145 958.564   END TEST

Comments: 189.553

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EPA 5

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Sunshine
LOCATION: Engine #5
DATE: 2/18/23
RUN NO: EN/A 5 Run 6
OPERATOR: DH/AD
METER BOX NO: 42wes
METER ΔH@: 1.880
METER Yd: 0.992
STACK AREA, FT²: 55.11
TRAVERSE POINTS, MIN/POINT: 10 | 24
ΔH= ___ X ΔP: 2.03
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight: 500/500

AMBIENT TEMPERATURE: 58°
BAROMETRIC PRESSURE: 28.33
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 075 / glass
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: 206 / glass
NOZZLE DIAMETER: 0.259
FILTER NO/TYPE: GF 4438
PRE-TEST LEAK RATE: 0.009 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	Pre-Test = Difference
1	DI H2O	813.5	759.7
2	"	633.0	630.9
3	MK	635.2	635.8
4	S6	933.6	915.5
	Total:		

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp In	Meter Temp Out	Vacuum in. Hg.	O2 %	Pstatic in. H2O
1	1200	958.811	0.90	1.8	307		249	56	114	71	6		-0.49
2	1210	966.6	0.82	1.7	307		248	54		70	6		
3	1220	977.5	0.54	1.7	308		249	53		70	9		
4	1230	982.0	0.92	1.9	305		248	51		71	9		
5	1240	991.3	1.01	2.0	307		250	51		73	7		
6	1250	997.7	1.1	2.4	307		250	52		72	8		
7	1300	1005.6	1.3	2.4	307		250	51		73	8		
8	1310	1014.1	1.4	2.8	306		249	51		73	8		
9	1320	1022.6	1.0	2.0	306		249	53		75	9		
10	1330	1030.6	0.59	0.9	306		242	55		76	6		
11	1340	1038.2	0.59	1.1	304		242	55		75	5		
12	1400	1053.869	0.90	1.6	306		242	55		77	9		
2	1420	1061.1	0.80	1.7	306		248	55		78	6		
3	1430	1069.3	0.86	1.7	305		252	55		79	6		
4	1440	1077.0	0.55	2.0	308		249	56		79	7		
5	1450	1084.9	0.59	2.0	304		249	55		79	7		
6	1500	1092.9	1.1	2.8	309		249	55		79	8		
7	1510	1100.9	1.1	2.6	307		249	55		78	9		
8	1520	1109.0	1.3	2.0	307		248	55		78	8		
9	1530	1117.03	1.0	3.0	307		248	56		80	9		
10	1540	1115.3	0.57	3.0	307		248	51		80	6		
11	1550	1135.6	0.50	1.0	307		249	53		80	6		
12	1600	1144.9	0.70	1.5	308		249	58		80	5		
Average:	1616	1149.348						END TEST					

Comments: 190.937

Date of last revision 2/14/2017

Master Document Storage\Forms\Datasheets\Field Datasheets

DS834048

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

MONTROSE AIR QUALITY SERVICES

CLIENT: Sunshine
LOCATION: Engines
DATE: 2/12/23
RUN NO: EU3 S Run 2
OPERATOR: DH/GN
METER BOX NO: 42 wesi
METER ΔH@: 1.9'46
METER Yd: 0.991
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10|24
ΔH= ___ X ΔP: 2.03
Probe Condition, pre/post test: ___
Silica Gel Expended, Y/N: ___
Filter Condition after Test: ___
Check Weight: 500/600

AMBIENT TEMPERATURE: 45°
BAROMETRIC PRESSURE: 28.14
ASSUMED MOISTURE: 10%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 075/glass
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: No 2-2 / GN55
NOZZLE DIAMETER: 0.252
FILTER NO/TYPE: GF 4489
PRE-TEST LEAK RATE: 0.007 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.007 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY: ___
SAMPLE CUSTODIAN
SAMPLER 04/GN
SAMPLE CUSTODIAN

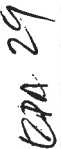| Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	021/66	667.0	609.0	
2	11	639.1	634.6	
3	MT	611.1	608.7	
4	SG	1031.3	950.3	
—				
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	0730	1150.147	0.90	1.8	703		249	51	mid	63	6		-0.49
2	0740	1157.9	0.83	1.7	703		249	50		61	6		
3	0750	1165.6	0.85	1.3	703		250	47		62	6		
4	0800	1173.7	0.90	1.3	703		248	46		62	7		
5	0810	1181.3	1.0	2.0	704		248	46		63	8		
6	0820	1189.2	1.1	2.3	705		247	47		62	8		
7	0830	1197.3	1.3	2.6	704		248	45		63	7		
8	0840	1205.7	1.4	2.8	705		250	43		64	8		
9	0850	1214.1	1.3	2.0	705		249	49		66	7		
10	0900	1222.1	0.99	2.0	705		248	46		65	6		
11	0910	1230.0	0.82	1.7	705		248	50		67	5		
12	0920	1237.8	0.74	1.5	705		247	50		67	6		
1	0930/10	1245.469	0.70	1.3	703		248	50		69	4		
2	0950	1253.2	0.81	1.6	704		247	51		69	6		
3	1000	1260.8	0.85	1.7	704		248	53		70	6		
4	1010	1268.5	0.96	1.9	705		250	54		71	7		
5	1020	1277.4	1.0	2.0	705		250	54		72	7		
6	1030	1284.4	1.1	2.1	705		249	54		74	8		
7	1040	1292.5	1.1	2.2	706		247	55		75	8		
8	1050	1300.6	1.3	2.6	706		248	54		74	8		
9	1100	1309.0	1.0	2.0	706		249	56		75	7		
10	1110	1317.0	1.0	2.0	706		249	55		76	7		
11	1120	1325.9	0.80	1.4	706		245	51		77	6		
12	1130	1333.9	0.72	1.6	706		248	56		78	5		
Average: 1140		1341.345						END TEST					

Comments: 191.238

W002AS-023392-RT-4542

DS834048
Master Document Storage\Forms\Datasheets\Field Datasheets
Date of last revision 2/14/2017

Appendix A.3.3
CT4 and CT-5 Laboratory Data

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy   **Sample Date:** Feb 7, 2023

Sample Location: Engine 4   **Analysis Date:** Feb 23, 2023

Test #   Eng 4 Run 1   Acetone Blank (mg/ml)   0.0000   **Analyst:**   AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4417	0.3496	0.3496	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	9293	31.1518	31.1511	0.7	0.00	100 / 100	0.70
Acetone Blank	9309	28.9133	28.9133	0.0		200 / 200	

Total Particulate =   0.7

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test #   Eng 4 Run 1   Acetone Blank (mg/ml) _0.0000_

Sample Date: Feb 7, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4417	0.3496	0.3496	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	9293	31.1518	31.1511	0.7	0.00	100 / 100	0.7
Acetone Blank	9309	28.9133	28.9133	0.6		200 / 200	

Total Particulate = _0.7_

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test #   Eng 4 Run 2   Acetone Blank (mg/ml)   0.0000

Sample Date: Feb 8, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4418	0.3470	0.3457	1.3	--------	--------	1.3
2. Probe and Nozzle Wash	9295	28.3014	28.3012	0.2	0.00	25 / 25	0.2

Total Particulate =   1.5

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project # PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test # Eng 4 Run 2   Acetone Blank (mg/ml) 0.0000

Sample Date: Feb 7, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	93-4418	0.3470	0.3457	1.3	--------	--------	1.3
2. Probe and Nozzle Wash	9295	AE 24.2515 28.3014	AE 44.2512 28.3012	0.2	0.00	25 25	0.2

A VM 3/1/23

Total Particulate = 1.5

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project # PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test # Eng 4 Run 3   Acetone Blank (mg/ml) 0.0000

Sample Date: Feb 8, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4419	0.3466	0.3457	0.9	--------	--------	0.9
2. Probe and Nozzle Wash	9296	29.2315	29.2312	0.3	0.00	60 / 60	0.3

Total Particulate = 1.2

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project # PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test # Eng 4 Run 3

Sample Date: Feb 8, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Acetone Blank (mg/ml) 0.0000

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4419	0.3466	0.3457	0.9	--------	--------	0.9
2. Probe and Nozzle Wash	9296	29.2315	29.2312	0.3	0.00	60 / 60	0.3

✕ VM 3/1/23

Total Particulate = 1.2

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project # PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test # Eng 4 Run 4   Acetone Blank (mg/ml) 0.0000

Sample Date: Feb 9, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4420	0.3431	0.3431	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	9297	28.2545	28.2538	0.7	0.00	40 / 40	0.7

Total Particulate = 0.7

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test #   Eng 4 Run 4   Acetone Blank (mg/ml) _0.0000_

Sample Date: Feb 9* , 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4470	0.3431	0.3431	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	9297	28.2545	28.2538	0.7	0.00	40 / 40	0.7

* vm 3/6/23

Total Particulate = _0.7_

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test #   Eng 4 Run 5   Acetone Blank (mg/ml)   0.0000

Sample Date: Feb 9, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4421	0.3493	0.3485	0.8	--------	--------	0.80
2. Probe and Nozzle Wash	9298	28.9515	28.9510	0.5	0.00	40 / 40	0.50

Total Particulate =   1.3

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

MONTROSE AIR QUALITY SERVICES

Project #	PROJ-023392	
Client/Location:	DTE Energy	
Sample Location:	Engine 4	
Test #	Eng 4 Run 5	**Acetone Blank (mg/ml)** 0.0000

Sample Date: Feb 9 8, 2023
Analysis Date: Feb 23, 2023
Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	93-4421	0.3493	0.3485	0.8	--------	--------	0.80
2. Probe and Nozzle Wash	9298	28.9515	28.9510	0.5	0.00	40 / 40	0.50

X Un 3/1/23

Total Particulate = 1.3

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project # PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test # Eng 4 Run 6   Acetone Blank (mg/ml) 0.0000

Sample Date: Feb 10, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4422	0.3503	0.3499	0.4	--------	--------	0.4
2. Probe and Nozzle Wash	9299	28.7119	28.7118	0.1	0.00	50 / 50	0.1

Total Particulate = 0.5

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test #   Eng 4 Run 6   Acetone Blank (mg/ml) _0.0000_

Sample Date: Feb 16th, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4402	0.3503	0.3499	0.4	--------	--------	0.4
2. Probe and Nozzle Wash	9299	28.7119	28.7118	0.1	0.00	50 / 50	0.1

* Vr 3/1/23

Total Particulate = _0.5_

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test #   Eng 4 Run 7   Acetone Blank (mg/ml)   0.0000

Sample Date: Feb 10, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4433	0.3509	0.3496	1.3	--------	--------	1.3
2. Probe and Nozzle Wash	9300	31.3633	31.3632	0.1	0.00	50 / 50	0.1

Total Particulate =   1.4

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test #   Eng 4 Run 7   Acetone Blank (mg/ml) _0.0000_

Sample Date: Feb 7, 2023 _10*_

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4433	0.3509	0.3496	1.3	--------	--------	1.3
2. Probe and Nozzle Wash	9300	31.3633	31.3632	0.1	0.00	50/50	0.1

* vm 3/1/23

Total Particulate = _1.4_

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test #   Eng 4 FB   Acetone Blank (mg/ml)   0.0000

Sample Date: Feb 10, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4499	0.3666	0.3666	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	9294	29.7746	29.7743	0.3	0.00	45 / 45	0.3

Total Particulate =   0.3

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 4

Test #   Eng 4 FB   Acetone Blank (mg/ml) _0.0000_

Sample Date: Feb 7, 2023 _10*_

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4499	0.3666	0.3666	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	G294	29.7746	29.7743	0.3	0.00	45 / 45	0.3

* VM 3/1/23

Total Particulate = _0.3_

Method of Sample Prep/Analysis Notes

CHAIN OF CUSTODY

CLIENT: DTE Energy   **PROJ #:** 023392   **TEST DATE(S):** 2/7/2023 - 2/10/-2023

LOCATION: Sunshine   **SAMPLER(S):** DH/AD/PSJ

SAMPLE LOCATION: SGT Eng 4 Exhaust   **PROJECT MANAGER:** PSJ

TEST METHOD(S): EPA 5   **DATE DUE:** ASAP

OUTSIDE LAB REQUIRED?: Yes   **COMPLIANCE TEST?:** Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
2/7/2023	10:50	1	Eng 4 Run1	3	DH,AD,PSJ	
2/8/2023	8:10	2	Eng 4 Run2	3	DH,AD,PSJ	
2/8/2023	13:05	3	Eng 4 Run3	3	DH,AD,PSJ	
2/9/2023	8:05	4	Eng 4 Run4	3	DH,AD,PSJ	
2/9/2023	12:40	5	Eng 4 Run5	3	DH,AD,PSJ	
2/10/2023	7:50	6	Eng 4 Run6	3	DH,AD,PSJ	
2/10/2023	12:15	7	Eng 4 Run7	3	DH,AD,PSJ	
2/10/2023		FB	Eng 4 Field Blank	3	DH,AD,PSJ	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
(signature)	2/20/23 13:00	Adrian Enwright _(signature)_	02/23/23 1030

ANALYSIS REQUIRED: **EPA 5**

MONTROSE
AIR QUALITY SERVICES

Date of Last Revision 9/1/2017

Chain of Custody - DS834001 - Excel
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PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy   **Sample Date:** Feb 14, 2023

Sample Location: Engine 5   **Analysis Date:** Feb 23, 2023

Test #   Eng 5 Run 1   Acetone Blank (mg/ml)   0.0000   **Analyst:**   AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4483	0.3642	0.3636	0.6	--------	--------	0.6
2. Probe and Nozzle Wash	9301	28.5975	28.5975	0.0	0.00	50 / 50	0.00
Acetone Blank	9309	28.9133	28.9133	0.0		200 / 200	

Total Particulate =   0.6

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 5

Test #   Eng 5 Run 1   Acetone Blank (mg/ml) _0.0000_

Sample Date: Feb 14, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	93-4483	0.3642	0.3636	0.6	--------	--------	0.6
2. Probe and Nozzle Wash	9301	29.5975	29.5975	0.0	0.00	50 / 50	0.00
Acetone Blank	9309	28.9133	28.9133	0.0		200 / 200	
						/	
						/	
						/	
						/	

Total Particulate = _0.6_

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy   **Sample Date:** Feb 15, 2023

Sample Location: Engine 5   **Analysis Date:** Feb 23, 2023

Test #   Eng 5 Run 2   Acetone Blank (mg/ml)   0.0000   **Analyst:**   AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4484	0.3646	0.3635	1.1	--------	--------	1.1
2. Probe and Nozzle Wash	9303	29.9323	29.9323	0.0	0.00	50 / 50	0.0

Total Particulate =   1.1

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project # _PROJ-023392_

Client/Location: _DTE Energy_

Sample Location: _Engine 5_

Test # _Eng 5 Run 2_   Acetone Blank (mg/ml) _0.0000_

Sample Date: _1S* Feb 14, 2023_

Analysis Date: _Feb 23, 2023_

Analyst: _AE_

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	43-4484	0.3646	0.3635	1.1	--------	--------	1.1
2. Probe and Nozzle Wash	9303	29.9323	29.9323	0.0	0.00	50/50	0.0

* Vm 3/1/23

Total Particulate = _1.1_

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 5

Test #   Eng 5 Run 3   Acetone Blank (mg/ml)   0.0000

Sample Date: Feb 15, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4485	0.3709	0.3701	0.8	--------	--------	0.8
2. Probe and Nozzle Wash	9304	30.6492	30.6492	0.0	0.00	45 / 45	0.0

Total Particulate =   0.8

Method of Sample Prep/Analysis Notes

Date: W002AS-023392-RPT-4542   Master Document Storage\Forms\Datasheets\Lab Forms

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 5

Test #   Eng 5 Run 3   Acetone Blank (mg/ml) 0.0000

Sample Date: Feb 14, 2023 *15*

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4485	0.3709	0.3701	0.8	--------	--------	0.8
2. Probe and Nozzle Wash	9304 ~~9305~~ AE	30.6492	30.6492	0.0	0.00	45 / 45	0.0

✳ VM 3/1/23

Total Particulate = 0.8

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392
Client/Location: DTE Energy
Sample Location: Engine 5
Test #   Eng 5 Run 4   Acetone Blank (mg/ml)   0.0000

Sample Date: Feb 16, 2023
Analysis Date: Feb 23, 2023
Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4486	0.3684	0.3678	0.6	--------	--------	0.6
2. Probe and Nozzle Wash	9305	28.7316	28.7315	0.1	0.00	60 / 60	0.1

Total Particulate =   0.7

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 5

Test #   Eng 5 Run 4   Acetone Blank (mg/ml) _0.0000_

16 #

Sample Date: Feb 14, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4486	0.3684	0.3678	0.6	--------	--------	0.6
2. Probe and Nozzle Wash	9305 9306 AE	28.7316	28.7315	0.1	0.00	60 / 60	0.1

✗ Vm 3/1/23

Total Particulate = ___0.7___

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project # ___PROJ-023392___

Client/Location: ___DTE Energy___

Sample Location: ___Engine 5___

Test # ___Eng 5 Run 5___   Acetone Blank (mg/ml) ___0.0000___

Sample Date: Feb 16, 2023

Analysis Date: Feb 23, 2023

Analyst: ___AE___

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4487	0.3677	0.3677	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	9306	28.0209	28.0209	0.0	0.00	60 / 60	0.00

Total Particulate = ___0.0___

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 5

Test #   Eng 5 Run 5   Acetone Blank (mg/ml) 0.0000

Sample Date: Feb 14, 2023 *16#*

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4487	0.3677	0.3677	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	9306 9307 4E	28.0209	28.0209	0.0	0.00	60 / 60	0.00

✗ Vm 3/1/23

Total Particulate = 0.0

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy   **Sample Date:** Feb 17, 2023

Sample Location: Engine 5   **Analysis Date:** Feb 23, 2023

Test #   Eng 5 Run 6   Acetone Blank (mg/ml)   0.0000   **Analyst:**   AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4488	0.3672	0.3667	0.5	--------	--------	0.5
2. Probe and Nozzle Wash	9307	30.0686	30.0674	1.2	0.00	70 / 70	1.2

Total Particulate =   1.7

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 5

Test #   Eng 5 Run 6   Acetone Blank (mg/ml) _0.0000_

Sample Date: Feb 14, 2023   17

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4488	0.3672	0.3667	0.5	--------	--------	0.5
2. Probe and Nozzle Wash	AE 9308 9307	30.0686	30.0674	1.2	0.00	70 / 70	1.2

x VM 3/1/23

Total Particulate = _1.7_

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy   **Sample Date:** Feb 17, 2023

Sample Location: Engine 5   **Analysis Date:** Feb 23, 2023

Test #   Eng 5 Run 7   Acetone Blank (mg/ml)   0.0000   **Analyst:** AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4489	0.3696	0.3689	0.7	--------	--------	0.7
2. Probe and Nozzle Wash	9308	29.3233	29.3233	0.0	0.00	70 / 70	0.0

Total Particulate =   0.7

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 5

Test #   Eng 5 Run 7   Acetone Blank (mg/ml) _0.0000_

17

Sample Date: Feb 14, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4484	0.3696	0.3689	0.7	--------	--------	0.7
2. Probe and Nozzle Wash	9308 4304 LF	29.3233	29.3233	0.0	0.00	70 / 70	0.0

✱ Vm 3/1/23

Total Particulate = ___0.7___

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project # PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 5

Test # Eng 5 FB   Acetone Blank (mg/ml) 0.0000

Sample Date: Feb 17, 2023

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	83-4490	0.3691	0.3691	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	9302	29.3013	29.3013	0.0	0.00	45 / 45	0.0

Total Particulate = 0.0

Method of Sample Prep/Analysis Notes

PARTICULATE
EPA METHOD 5

Project #   PROJ-023392

Client/Location: DTE Energy

Sample Location: Engine 5

Test #   Eng 5 FB   Acetone Blank (mg/ml) _0.0000_

Sample Date: Feb 14, 2023 _17_

Analysis Date: Feb 23, 2023

Analyst: AE

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Blank Correction (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)
1. Glass Fiber Filter	834490	0.3691	0.3691	0.0	--------	--------	0.0
2. Probe and Nozzle Wash	9302	29.3013	29.3013	0.0	0.00	45 / 45	0.0

✗ vm 3/1/23

Total Particulate = _0.0_

Method of Sample Prep/Analysis Notes

CHAIN OF CUSTODY

CLIENT: DTE Energy   **PROJ #:** 023392   **TEST DATE(S):** 2/14/2023 - 2/17/-2023

LOCATION: Sunshine   **SAMPLER(S):** DH/AD/PSJ

SAMPLE LOCATION: SGT Eng 5 Exhaust   **PROJECT MANAGER:** PSJ

TEST METHOD(S): EPA 5   **DATE DUE:** ASAP

OUTSIDE LAB REQUIRED?: Yes   **COMPLIANCE TEST?:** EPA

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
2/14/2023	8:00	1	Eng 5 Run1	3	DH,AD,PSJ	
2/15/2023	12:20	2	Eng 5 Run2	3	DH,AD,PSJ	
2/15/2023	7:35	3	Eng 5 Run3	3	DH,AD,PSJ	
2/16/2023	12:00	4	Eng 5 Run4	3	DH,AD,PSJ	
2/16/2023	7:35	5	Eng 5 Run5	3	DH,AD,PSJ	
2/17/2023	12:00	6	Eng 5 Run6	3	DH,AD,PSJ	
2/17/2023	7:30	7	Eng 5 Run7	3	DH,AD,PSJ	
2/17/2023		FB	Eng 5 Field Blank	3	DH,AD,PSJ	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
(signature)	2/20/23 130	_(signature)_ Adrian Enright	02/23/23 1030

ANALYSIS REQUIRED: EPA 5

Appendix A.4
Metals Field and Laboratory Data

MONTROSE
AIR QUALITY SERVICES

Appendix A.4.1
CT-4 Field Data

MONTROSE
AIR QUALITY SERVICES

ENG 4 R1

ERA 25

MONTROSE
AIR QUALITY SERVICES
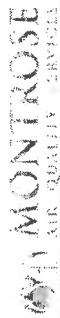
WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

CLIENT: Subhing
LOCATION:
DATE: 2/7/23
RUN NO: ENG 4 Run 1
OPERATOR: DH/AD
METER BOX NO: 45 WCS
METER ΔH@: 1.771
METER Yd: 1.014
STACK AREA, FT²: 55
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= X ΔP: 1.950
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight: 500/500

AMBIENT TEMPERATURE: 55°
BAROMETRIC PRESSURE: 28.36
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 120/glass
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: N02-15
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: 55
PRE-TEST LEAK RATE: 0.007 CFM@ 6 in. Hg.
POST-TEST LEAK RATE: 0.008 CFM@ 6 in. Hg.
PITOT LEAK CHECK - PRE: POST:
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test -	Pre-Test =	Difference
1	MT	763.1		638.1
2	5%H2O/10%H2O	776.1		740.6
3	" "	752.0		742.2
4	MC	646.9		616.5
5	450uml/05uCu	719.9		719.9
	" "	744.5		744.5
2	Sa	950.2		912.5

Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Out	Vacuum in. Hg.	O2 %	P. static in. H2O
1	1050	250.208	0.97	1.9	305		247	54		68	5		0.55
2	1100	237.9	1.1	2.1	305		248	52	na	74	5		
3	1110	245.5	1.1	2.1	304		248	55		78	5		
4	1120	255.4	0.99	1.9	304		242	85		81	5		
5	1130	261.1	0.92	1.9	302		249	54		83	5		
6	1140	265.2	0.85	2.0	303		247	55		84	5		
7	1150	377.8	1.0	2.0	301		248	55		85	5		
8	1200	384.6	1.2	2.2	305		250	56		85	6		
9	1210	722.8	1.1	2.1	304		248	56		83	5		
10	1220	809.9	0.75	1.8	302		248	57		85	5		
11	1230	808.5	0.94	1.8	303		248	56		84	5		
12	1240	815.9	0.80	1.6	304	EMO Port	248	56		84	4		
	1250	825.911											

Average:

Comments:

ENL 4 121

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: _____
LOCATION: _____
DATE: _____
RUN NO: ENL 4 Run 1
OPERATOR: _____
METER BOX NO: _____
METER ΔH@: _____
METER Yd: _____
STACK AREA, FT²: _____
TRAVERSE POINTS, MIN/POINT: _____
ΔH= ____ X ΔP: 1.950
Probe Condition, pre/post test: _____
Silica Gel Expended, Y/N: _____
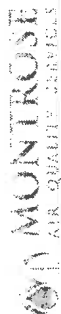Filter Condition after Test: _____
Check Weight: _____

AMBIENT TEMPERATURE: _____
BAROMETRIC PRESSURE: _____
ASSUMED MOISTURE: _____
PITOT TUBE COEFF, Cp: _____
PROBE ID NO/MATERIAL: _____
PROBE LENGTH: _____
NOZZLE ID NO/ MATERIAL: _____
NOZZLE DIAMETER: _____
FILTER NO/TYPE: _____
PRE-TEST LEAK RATE:: _____ CFM@ _____ in. Hg.
POST-TEST LEAK RATE:: _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY: _____
SAMPLE CUSTODIAN: _____
SAMPLER: _____
SAMPLE CUSTODIAN: _____

Imp. # Contents Post-Test - Pre-Test = Difference

Total: _____

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O2 %	P. static in. H2O
1	1300	723.61	0.75	1.5	305		249	55		82	5		
2	1310	851.2	0.98	1.9	304		247	51		77	5		
3	1320	839.7	1.1	2.1	201		248	52		78	6		
4	1330	846.8	1.1	2.1	203		248	54		87	7		
5	1340	851.4	1.2	2.3	305		249	55		77	7		
6	1350	842.7	1.0	2.0	305		248	56		82	7		
7	1400	842.3	1.0	2.0	305		242	55		63	4		
8	1410	878.7	0.97	1.5	303		248	55		88	4		
9	1420	869.3	1.1	2.1	305		248	55		88	4		
10	1430	854.5	0.99	1.9	303		248	55		88	6		
11	1440	9026	1.0	2.0	305		249	57		88	4		
12	1450	911.2	0.79	1.5	304		24	55		18	5		
/	1500	1131.316			END TEST	TEST							

Average: _____

Comments: _____

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MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

CLIENT: Joseph
LOCATION: Engine #4
DATE: 2/8/23
RUN NO: 2
OPERATOR: 04/109
METER BOX NO: 45 wos
METER ΔH@: 1.761
METER Yd: 1.014
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= 1.950 X ΔP: 1.950
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 52°
BAROMETRIC PRESSURE: 28.34
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 170/glass
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: MQ-15 0.254
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: Quartz EMU2 EU052
PRE-TEST LEAK RATE:: 0.007 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	- Pre-Test =	Difference
1	MT	779.9	641.1	
2	5bloom/10gpz	772.0	748.2	
3	"	752.6	748.2	
4	MT	650.0	650.0	
5	KMNO4	719.5	719.5	
6	"	742.3	742.2	
7	SG	939.9	903.2	

Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O2 %	P. static in. H2O
1	0810	919.902	0.97	1.9	204		248	53	60	64	5		-0.5
2	0820	927.6	1.0	2.0	203		249	51		65	5		
3	0830	935.1	1.2	2.3	205		248	50		66	6		
4	0840	943.4	0.98	1.9	204		242	52		66	5		
5	0850	950.9	0.95	1.9	202		247	53		67	5		
6	0900	965.9	0.96		202		249	54		62	5		
7	0910	965.9	1.0	2.0	204		248	54		68	5		
8	0920	973.8	1.2	2.3	204		244	54		70	6		
9	0930	981.5	1.0	2.0	206		250	55		70	5		
10	0940	982.5	1.0	2.0	205		245	55		71	4		
11	0950	993.5	0.93	1.8	203		245	54		72			
12	100	1005.1	0.82	1.7	203		248	55		72			
	1010/1010	1012.400						End Avg					

Average:

Comments:

Date of last revision 4/15/2022

Page 1 of 2

Master Document Storage\Forms\Datasheets\Field Datasheets
DS834071

W002AS-023392-RT-4542

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WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SUNSHINE
LOCATION: ENGINE 4
DATE: 2/8/23
RUN NO: 2
OPERATOR: _____
METER BOX NO: _____
METER ΔH@: _____
METER Yd: _____
STACK AREA, FT²: _____
TRAVERSE POINTS, MIN/POINT: _____
ΔH= X ΔP: 1.950
Probe Condition, pre/post test: _____
Silica Gel Expended, Y/N: _____
Filter Condition after Test: _____
Check Weight: _____

AMBIENT TEMPERATURE: _____
BAROMETRIC PRESSURE: _____
ASSUMED MOISTURE: _____
PITOT TUBE COEFF, Cp: _____
PROBE ID NO/MATERIAL: _____
PROBE LENGTH: _____
NOZZLE ID NO/ MATERIAL: _____
NOZZLE DIAMETER: _____
FILTER NO/TYPE: _____
PRE-TEST LEAK RATE:: _____ CFM@ _____ in. Hg.
POST-TEST LEAK RATE:: _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY: _____

SAMPLE CUSTODIAN _____
SAMPLER _____
SAMPLE CUSTODIAN _____

Imp. #Contents   Post-Test - Pre-Test = Difference

Total: _____

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	1020	1012.460	0.95	1.9	700		247	57	n/a	80	5		
2	1030	1020.4	0.98	1.9	700		248	56		81	5		
3	1040	1028.2	1.0	2.0	701		246	55		85	6		
4	1050	1036.1	1.2	2.3	699		245	55		84	6		
5	1100	1044.5	1.2	2.3	700		248	57		86	5		
6	1110	1052.6	1.1	2.1	700		250	57		88	6		
7	1120	1060.3	0.98	1.9	700		249	56		92	5		
8	1130	1069.2	0.96	6?	700		247	53		98	7		
9	1140	1077.4	1.0	2.0	659		247	55		85	4		
10	1150	1085.4	0.97	1.9	699		248	50		89	4.5		
11	1200	1093.1	1.1	2.1	705		245	55		88	5		
12	1210	1101.8	0.80	1.6	700		248	55		87	4		
1	1220	1109.365					End PSST						

Average: _____
Comments: _____

Date of last revision 2/14/2017

Master Document Storage\Forms\Datasheets\Field Datasheets

DS834048

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MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

CLIENT: Sunshine
LOCATION: Enterprise
DATE:
RUN NO: ENG 4 RUN 3
OPERATOR: 04/02
METER BOX NO: Wilcox
METER ΔH@: 1.791
METER Yd: 1.014
STACK AREA, FT²: 5"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= 1.950 x ΔP: 1.950
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight: 20.050

AMBIENT TEMPERATURE: 67°
BAROMETRIC PRESSURE: 28.34
ASSUMED MOISTURE: 30
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 126/5/655
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: 246
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: ENG 4 RUN 3
PRE-TEST LEAK RATE: 0.005 CFM@ 0 in. Hg.
POST-TEST LEAK RATE: 0.005 CFM@ 0 in. Hg.
PITOT LEAK CHECK - PRE: POST:
CHAIN OF CUSTODY:
SAMPLER:
SAMPLE CUSTODIAN:
SAMPLE CUSTODIAN:

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	EW MT	762.0	647.2	
2	5% H2O2	772.6	744.8	
3	"	770.9	768.4	
4	MT	619.2	616.3	
5	KMnO4	744.8	741.8	
6	"	755.4	752.8	
7	SG	1034.6	987.4	

Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp In	Out	Vacuum in. Hg.	O2 %	P. static in. H2O
1	1305	110.503	0.92	1.9	622		245	52		92	4		-0.54
2	1315	117.3	1.0	2.0	622		248	55		91	5		
3	1325	123.3	1.2	2.3	624		249	53		90	6		
4	1335	135.5	0.99	1.9	623		246	53		89	5		
5	1345	143.7	0.96	1.9	623		246	54		87	5		
6	1355	151.4	0.96	2.0	623		247	55		90	5		
7	1405	160.5	1.0	2.1	640		247	55		88	5		
8	1415	167.6	1.1	1.9	639		247	54		85	5		
9	1425	125.6	1.1	1.8	654		245	53		86	5		
10	1435	183.2	1.0	2.0	977		245	55		96	5		
11	1445	191.1	0.0	2.1	698		247	55		96	5		
12	1455	200.2	0.80	2.1									
1	1505/1615	207.464			END Don								

Average:

Comments:

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

MONTROSE AIR QUALITY SERVICES

CLIENT: Sunoco
LOCATION: Engine #4
DATE: 2/8/23
RUN NO:
OPERATOR: 4 Suc, D4
METER BOX NO: 45-W/66
METER ΔH@: 1.791
METER Yd: 1.016
STACK AREA, FT²: .55
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= 1.75 X ΔP:
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:
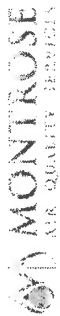
AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
POST-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. # Contents   Post-Test - Pre-Test = Difference
Total: _____

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O2 %	Pstatic in. H2O
1	1515	209.144	0.86	1.9	203		248	52		89	5		
2	1525	215.3	0.99	1.9	208		248	55		88	5		
3	1525	222.8	1.0	2.0	206		247	54		89	5		
4	1545	281.3	1.1	2.1	206		246	55		91	4		
5	1555	225.3	1.2	2.3	205		242	55		90	4		
6	1605	247.5	1.1	2.1	201		248	54		92	5		
7	1615	255.4	0.99	1.9	203		250	54		92	5		
8	1625	263.7	0.95	1.9	205		245	55		92	5		
9	1635	271.4	1.1	2.0	204		247	55		91	5		
10	1645	279.5	0.95	1.5	208		248	55		93	5		
11	1655	287.2	1.0	2.0	205		247	55		93	5		
12	1715	296.8	0.92	1.9	205		242	55		94	4		
1	1715	303.855	0.92					End meter test					

Average:
Comments:

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: Sunshine
LOCATION: Engine 4
DATE: 2/9/23
RUN NO: 4
OPERATOR: DH/AD
METER BOX NO: 150mt
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= X ΔP: 1.950
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE:: _____ CFM@ _____ in. Hg.
POST-TEST LEAK RATE:: _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY: SAMPLER _____ SAMPLE CUSTODIAN _____ SAMPLE CUSTODIAN _____

Imp. # Contents — Post-Test - Pre-Test = Difference

Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H2O
1	1015	402.689	0.96	1.9	303		247	56		83	6		
2	1025	411.2	0.99	2.0	304		249	54		84	6		
3	1035	418.7	1.1	2.2	305		248	56		85	3		
4	1045	426.6	1.1	2.1	303		247	52		87	7		
5	1055	434.8	1.2	2.1	303		247	57		85	6		
6	1105	441.5	1.0	2.0	302		248	56		90	6		
7	1115	450.9	0.98	1.9	303		248	56		91	7		
8	1125 H2O	459.9	0.93	1.8	302		245	58		90	7		
9	1135	468.1	1.0	2.0	677-678		250	57		92	3		
10	1145	476.2	0.97	1.9	201		245	58		92	3		
11	1155	484.5	1.0	2.0	201		248	58		93	6		
12	1205/1215	254.224.1	0.75	1.5	202		246	55		92	5		
/		485.545				END TEST							

Average:

Comments:

MONTROSE
AIR QUALITY SERVICES

QA 29

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS
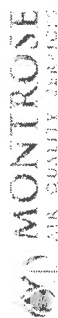
CLIENT: Sunshine
LOCATION: Engine #4
DATE: 2/9/23
RUN NO: 4
OPERATOR: QA/DD
METER BOX NO: 45003
METER ΔH@: 1.771
METER Yd: 1.044
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= 1.950 X ΔP: 1.950
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: ✓
Filter Condition after Test: ✓
Check Weight: 880/580

AMBIENT TEMPERATURE: 53°
BAROMETRIC PRESSURE: 28.32
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 130/9/95
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: N42-15
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: M2
PRE-TEST LEAK RATE: 0.008 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: ✓
SAMPLE CUSTODIAN:
SAMPLER:
SAMPLE CUSTODIAN:

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	MT	770.0	641.0	
2	600mL/200 10%	773.7	746.1	
3	"	750.8	749.1	
4	MT	653.4	649.2	
5	XXXXX	777.6	717.2	
6	"	747.4	745.3	
7	Si	970.4	975.6	
8			730.7	

Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp In	Meter Temp Out	Vacuum in. Hg.	O2 %	P. static in. H2O
1	0905	206.464	0.98	1.9	204		249	55		71	6		-0.57
2	0915	314.9	1.1	2.1	204		248	54		72	6		
3	0920	322.2	0.98	2.0	203		248	51		73	6		
4	0935	330.7	0.99	1.9	203		247	51		74	6		
5	0945	338.6	0.95	1.9	203		249	52		74	6		
6	0955	346.5	1.1	2.1	202		248	52		75	6		
7	0905	354.4	1.2	2.5	203		248	53		76	7		
8	0915	362.4	1.0	3.0	203		249.2	55		77	7		
9	0925	368.8	1.0	2.0	206		248	54		78	7		
10	0935	375.1	0.94	1.8	201		248	55		79	6		
11	0945	383.1	0.81	1.4	205		249	55		80	5		
12	0955	355			205		249.2	55		81	5		
	1001	629.204											

Average:

Comments:

Date of last revision 4/15/2022
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ERa 29

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

CLIENT: Enshaw
LOCATION: Enshaw#1
DATE: 2/27/22
RUN NO: ERa 4 RUN 5
OPERATOR: PB/AD
METER BOX NO: 45UG
METER ΔH@: 1.771
METER Yd: 1.014
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/14
ΔH= 1.850 X ΔP: 1.955
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight: 500 sub

AMBIENT TEMPERATURE: 73°
BAROMETRIC PRESSURE: 28.32
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: .844
PROBE ID NO/MATERIAL: 172 / (441)
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: 296
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: D12 Bath 4 Runs
PRE-TEST LEAK RATE:: .002 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: .002 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ok POST: ok
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER: M/AD
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	MT	759.2	6505	
2	5% / 10%	778.8	248.3	
3	VI	775.9	775.0	
4	MT	6282	618.8	
5	KMnO4	7389	7388	
6	"	757.6	752.6	
7	Silg	9554	912.0	

Total: _____

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	1240	500.061	0.54	1.8	205		247	60		54	5		-0.54
2	1250	507.7	1.0	2.0	204		248	85		55	5		
3	1300	515.2	1.1	2.1	204		248	55		54	7		
4	1310	522.0	1.6	2.0	201		249	55		93	5		
5	1320	530.8	0.95	1.5	205		248	55		93	5		
6	1330	538.8	0.95	1.6	204		249	54		81	5		
7	1340	547.0	1.0	2.0	204		248	55		90	5		
8	1350	554.5	1.2	2.3	204		248	55		47	5		
9	1400	562.8	1.2	2.3	204		249	55		91	5		
10	1410	572.3	1.0	2.0	204		246	55		92	5		
11	1420	580.5	0.54	1.9	202		250	55		60	6		
12	1430	588.8	0.55	1.9	204		246	55		60	6		
/	1440	595.94	1.8-0	2.7	204	Run)		55		05	6		

404.543

Average: _____

Comments: _____

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

CLIENT: _____
LOCATION: Engine #4
DATE: 2/9/23
RUN NO: 5
OPERATOR: _____
METER BOX NO: _____
METER ΔH@: _____
METER Yd: _____
STACK AREA, FT²: _____
TRAVERSE POINTS, MIN/POINT: _____
ΔH= _____ X ΔP.

AMBIENT TEMPERATURE: _____
BAROMETRIC PRESSURE: _____
ASSUMED MOISTURE: _____
PITOT TUBE COEFF, Cp: _____
PROBE ID NO/MATERIAL: _____
PROBE LENGTH: _____
NOZZLE ID NO/ MATERIAL: _____
NOZZLE DIAMETER: _____
FILTER NO/TYPE: _____
PRE-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
POST-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY:

Probe Condition, pre/post test: _____
Silica Gel Expended, Y/N: _____
Filter Condition after Test: _____
Check Weight: _____

SAMPLE CUSTODIAN _____
SAMPLER _____
SAMPLE CUSTODIAN _____

Imp. # Contents   Post-Test - Pre-Test = Difference

Total: _____

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	1430	596.682	0.96	51	307		249	55		90	5		
2	1500	600.5	0.54	51	306		250	57		88	5		
3	1510	621	0.1	02	304		242	53		83	5		
4	1520	642	1.1	21	305		248	55		83	4		
5	1530	1589	2.1	23	303		248	55		88	4		
6	1540	1559.6	0.1	20	303		242	55		88	4.5		
7	1550	645.0	0.055	51	305		242	55		85	5		
8	1600	652.5	0.2	21	305		248	55		88	5		
9	1610	664	0.1	11	305		250	55		88	5.5		
10	1620	666.9	0.56	51	304		242	55		88	4		
11	1640	678.9	0.45	41	304		242	55		88	4		
/	1650	697.587											

Average: _____

Comments: _____

CPA 29

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

MONTROSE
AIR QUALITY SERVICES

CLIENT: _Sunshine_
LOCATION: _Engine u_
DATE: _2/10/23_
RUN NO: _ENG 4 RUN 6_
OPERATOR: _DF/DD_
METER BOX NO: _45 WCS_
METER ΔH@: ~~1.750~~ 1.791 (DD)
METER Yd: _0.997 1.014_
STACK AREA, FT²: _5.5"_
TRAVERSE POINTS, MIN/POINT: _8/24_
ΔH= ~~1.750~~ X ΔP: _1.950_
Probe Condition, pre/post test: _✓_
Silica Gel Expended, Y/N: _✓_
Filter Condition after Test: _✓_
Check Weight: ___

AMBIENT TEMPERATURE: _55°_
BAROMETRIC PRESSURE: _28.26_
ASSUMED MOISTURE: _56_
PITOT TUBE COEFF, Cp: _0.84_
PROBE ID NO/MATERIAL: _172/q/ss1_
PROBE LENGTH: _5'_
NOZZLE ID NO/MATERIAL: _Nd2-15/6 ss_
NOZZLE DIAMETER: _0.254_
FILTER NO/TYPE: _QTz Gas 4 Part_
PRE-TEST LEAK RATE: _0.005 CFM@ 8 in. Hg._
POST-TEST LEAK RATE: _0.002 CFM@ 10 in. Hg._
PITOT LEAK CHECK - PRE: _✓_ POST: _✓_
CHAIN OF CUSTODY: ___
SAMPLE CUSTODIAN ___
SAMPLER _VK/DD_
SAMPLE CUSTODIAN ___

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	0750	692.182	0.96	1.5	216		249	52		62	5		-.055
2	0800	695.6	1.0	2.0	215		248	55		64	5		
3	0810	702.2	1.1	2.1	215		248	54		68	5		
4	0820	714.8	1.0	2.0	214		247	52		70	5		
5	0830	722.3	1.0	1.9	214		250	52		72	5		
6	0840	835.8	1.0	1.9	214		250	52		55	5		
7	0850	732.1	1.0	2.0	213		249	53		54	5		
8	0500	744.5	1.2	2.3	213		248	54		56	6		
9	0510	752.4	1.2	2.2	214		248	54		74	6		
10	0520	758.8	1.0	2.0	214		247	55		76	5		
11	0830	772.3	0.96	2.1	214		242	55		77	5		
12	0840	724.5	.82	2.1	214		242	55		46	5		

Average: ___

Total:

Imp.	# Contents	Post-Test - Pre-Test = Difference
1	MT	769.6 642.3
2	5% / 90%	706.4 748.5
3	"	7423 748.8
4	MT	6507 650.2
5	KMNO4	738.4 736.1
6	"	733.0 731.8
7	MT	969.0 927.6

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: Zeeland
LOCATION: Engine 8
DATE: 2/11/23
RUN NO: 6
OPERATOR: DH/CD
METER BOX NO: 45
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= ___ X ΔP: 1.050
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : ___ CFM@ ___ in. Hg.
POST-TEST LEAK RATE: : ___ CFM@ ___ in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY:
SAMPLER
SAMPLE CUSTODIAN
SAMPLE CUSTODIAN

Imp. # Contents   Post-Test - Pre-Test = Difference

Total:

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	1000	382.244	0.94	1.9	315		247	54		78	5		
2	1010	390.0	0.958	1.5	314		249	56		77	5		
3	1020	398.8	1.0	2.0	313		245	56		78	5		
4	1030	408.5	1.1	2.1	314		248	52		80	4		
5	1040	818.3	2.1	2.3	315		250	56		81	4		
6	1050	821.4	1.1	2.1	314		249	55		78	5		
7	1100	824.2	1.1	2.1	314		248	55		83	5		
8	1110	833.5	0.98	1.5	314		248	55		55	5		
9	1120	844.8	1.1	2.1	315		250	55		84	5		
10	1130	852.4	1.0	2.0	315		247	55		85	5		
11	1140	860.4	0.58	1.9	315		250	55		87	5		
12	1200	868.3	0.94	1.5	313		248	55		88	4		
		485.369											

Average:

Comments:

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MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

CLIENT: Sunshine
LOCATION: Engine 04
DATE: 2/03/23
RUN NO: ENG 4 RUN 7
OPERATOR: OH/GD
METER BOX NO: 45 WKS
METER ΔH@: 1.787
METER Yd: 1.014
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= 1.050 X ΔP: 1930
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: ✓
Filter Condition after Test: ✓
Check Weight:

AMBIENT TEMPERATURE: 67°D
BAROMETRIC PRESSURE: 28.26
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 170 / 6"/SS
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: 290 / 0.965
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: AC (filter box)
PRE-TEST LEAK RATE: 0.007 CFM@ 5 in. Hg.
POST-TEST LEAK RATE: 0.007 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN OH/GD
SAMPLER OH/GD
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test - Pre-Test = Difference
1	MT	707.7 649.2
2	5%/10%	777.3 749.7
3	"	775.6 772.2
4	MT	620.7 649.7
5	KMnO4	739.0 737.8
6	"	758.9 756.6
7	SG	949.5 947.9

Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Out	Vacuum in. Hg.	O₂ %	P. static in. H2O
1	1215	835.915	0.96	1.8	215		242	57		81	5		-0.55
2	1225	863.2	0.99	1.8	212		240	57		80	5		
3	1235	870.7	1.0	2.0	214		240	56		81	5		
4	1245	873.3	0.99	1.9	213		248	54		83	5		
5	1255	905.8	0.90	1.9	213		252	55		84	5		
6	1305	913.4	0.95	2.1	216		250	55		83	5		
7	1315	920.9	1.1	2.1	214		248	54		85	5		
8	1325	928.4	1.2	2.2	215		243	55		86	5		
9	1335	936.4	1.1	2.0	215		245	55		86	5		
10	1345	944.0	1.0	1.9	213		243	56		87	5		
11	1355	951.6	0.55	1.7	213		245	55		82	5		
12	1405	957.1	0.81	1.0	214		243	57		86	5		
	1415/65	962.146			END PORT								

Average:

Comments:

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

MONTROSE AIR QUALITY SERVICES

CLIENT: Sunshine
LOCATION: Baghouse
DATE: 2/10/23
RUN NO: 3 EPA4
OPERATOR: DH/MO
METER BOX NO: 4SW05
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= X ΔP: 1.950
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE:: _____ CFM@ _____ in. Hg.
POST-TEST LEAK RATE: _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY:

Imp. # Contents   Post-Test - Pre-Test = Difference

SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN
Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	1425	962.146	0.94	1.8	316		249	55		83	5		
2	1435	972.6	0.97	1.9	316		247	57		84	5		
3	1445	982.2	1.1	2.1	316		248	52		85	5		
4	1455	990.1	1.0	2.0	313		248	56		86	5		
5	1505	997.7	1.2	2.3	315		247	58		87	6		
6	1515	1005.6	1.1	2.1	315		248	58		84	5.5		
7	1525	1013.2	1.0	2.0	316		249	55		85	5		
8	1535	1020.8	0.85	1.5	316		248	53		90	5		
9	1545	1028.3	1.0	2.0	316		250	55		92	5		
10	1555	1035.9	1.0	2.0	316		248	58		53	5		
11	1605	1043.8	1.1	2.1	316		248	60		92	5		
12	1615	1051.7	0.85	1.5	316		248	55		54	4		
1	1625	1060.274											

Average:

Comments:

Appendix A.4.2
CT-5 Field Data

MONTROSE
AIR QUALITY SERVICES

EPA 29

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

MONTROSE
AIR QUALITY SERVICES

CLIENT:	Sunshine
LOCATION:	Engine #5
DATE:	2/14/23
RUN NO:	ENG 5 RUN 1
OPERATOR:	JH/AN
METER BOX NO:	45WC6
METER ΔH@:	1.361
METER Yd:	1.014
STACK AREA, FT²:	55"
TRAVERSE POINTS, MIN/POINT:	10/14
ΔH= X ΔP: 2.06	
Probe Condition, pre/post test:	✓
Silica Gel Expended, Y/N:	✓
Filter Condition after Test:	✓
Check Weight:	500/500

AMBIENT TEMPERATURE:	48°
BAROMETRIC PRESSURE:	29.98
ASSUMED MOISTURE:	
PITOT TUBE COEFF, Cp:	0.84
PROBE ID NO/MATERIAL:	110 w/us
PROBE LENGTH:	5'
NOZZLE ID NO/ MATERIAL:	N615 0.254 GLASS
NOZZLE DIAMETER:	0.254
FILTER NO/TYPE:	SPANCON 4-5 RUN 1
PRE-TEST LEAK RATE:	0.008 CFM@ 10 in. Hg.
POST-TEST LEAK RATE:	0.005 CFM@ 8 in. Hg.
PITOT LEAK CHECK - PRE: on POST:	
CHAIN OF CUSTODY:	
SAMPLE CUSTODIAN	
SAMPLER	JH/AN
SAMPLE CUSTODIAN	

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	WT	793.9	485	308.9
2	58/DI	153.6	7455	
3	'	769.5	768.9	
4	WK	619.6	618.4	
5	KANN	752.2	751.0	
6	''	765.4	763.0	
7	SG	1001.6	961.0	
—				

Total:

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	0800	061.525	0.23	1.5	700		244	54	n/a	52	5		-0.58
2	0810	068.3	0.85	1.8	701		242	51		54	5		
3	0820	076.0	1.0	2.0	700		245	50		55	6		
4	0830	083.1	1.0	2.0	700		250	51		56	5		
5	0840	090.6	1.0	2.5	701		248	53		56	6		
6	0850	099.0	1.1	2.5	701		248	53		57	8		
7	0900	107.3	0.50	2.0	701		245	54		57	7		
8	0910	115.50	0.56	2.0	700		248	56		58	9		
9	0920	123.4	0.84	1.7	701		248	56		60	5		
10	0930	131.2	0.90				246	57		61	5		
11	0940	139.8	0.90	1.9	701		246	57		62	5		
12	0950	147.2		1.9	701		248	56		65	5		
	1000/10	154.703				ENG PORT							

Average:

Comments:

Date of last revision 4/15/2022

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: Sunshine
LOCATION: Engine #3
DATE: 2/14/23
RUN NO.: 1
OPERATOR:
METER BOX NO: 45-sws
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= X ΔP: 2.00
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: _____ CFM@ _____ in. Hg.
POST-TEST LEAK RATE: _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. # Contents   Post-Test - Pre-Test = Difference

Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H2O
1	1010	154.303	0.94	1.5	204		248	56	u/k	65	5		
2	1020	162.0	0.55	1.8	201		249	56		65	5		
3	1030	169.4	0.50	2.0	202		245	55		67	3		
4	1040	177.5	1.0	2.0	202		250	55		67	4		
5	1050	184.2	1.3	2.6	202		248	57		67	8		
6	1100	191.9	1.2	2.5	202		248	55		68	8		
7	1110	198.5	1.1	2.3	202		248	58		69	3		
8	1120	207.0	1.0	2.0	203		245	54		69	3		
9	1130	214.2	0.54	1.9	202		248	55		70	5		
10	1140	221.4	0.83	1.7	203		245	58		71	5		
11	1150	228.5	0.82	2.1	203		246	57		72	5		
12	1200	236.4	0.85	1.8	203		245	55		72	5		
/	1210	244.168				END OF TEST							

Average:

Comments:

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WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

MONTROSE AIR QUALITY SERVICES

CLIENT: Sunshine
LOCATION: Engine #5
DATE: 2/14/23
RUN NO: ENG 5 RUN 2
OPERATOR: DH/AU
METER BOX NO: 4WCS
METER ΔH@: 1.791
METER Yd: 1.014
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= X ΔP: 2.00
Probe Condition, pre/post test: ___
Silica Gel Expended, Y/N: ___
Filter Condition after Test: ___
Check Weight: ___

AMBIENT TEMPERATURE: 55°
BAROMETRIC PRESSURE: 27.58
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 1.38/glass
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: 1540-3 296 / 0.254 glass
NOZZLE DIAMETER: .252/1.013 0.254
FILTER NO/TYPE: GF ENG5 RUN 2 652
PRE-TEST LEAK RATE: 0.003 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.003 CFM@ 13 in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY: ___
SAMPLE CUSTODIAN ___
SAMPLER DH/AU
SAMPLE CUSTODIAN ___

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out
1	1200	244.924	0.74	1.5	202		242	57	71	71
2	1230	252.3	0.75	1.88	202		247	53	72	71
3	1240	260.0	1.0	2.1	201		248	56	70	70
4	1250	268.5	1.1	2.3	201		248	54	70	70
5	1300	275.5	1.2	2.5	201		243	55	71	71
6	1310	282.4	1.3	2.7	202		243	52	71	72
7	1320	290.8	1.0	2.0	202		243	52	72	72
8	1330	298.2	0.99	2.0	202		243	53	71	71
9	1340	305.2	0.65	2.0	202		243	53	72	72
10	1350	313.2	0.84	1.7	201		243	55	72	72
11	1400	320.9	0.82	1.7	201		243	55	72	72
12	1410	328.73	0.93	1.9	201		243	55	73	73
1	1420½	335.761					Ref cas			

Average: ___

Total:

Imp. #	Contents	Post-Test - Pre-Test = Difference	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	MT	775.5 642.8	5		-1.58
2	5% /DI	702.2 747.7	5		
3	"	1651.9 650.8	6		
4	MT	743.0 742.2	8		
5	KMnO4	731.9 731.2	7		
6	"	742.7 742.0	7		
7	SG	9782 941.6	6		

Comments:

Date of last revision 4/15/2022   Master Document Storage\Forms\Datasheets\Field Datasheets

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WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

MONTROSE AIR QUALITY SERVICES

CLIENT: Sunshine
LOCATION: Engines 45
DATE: 2/14/23
RUN NO: EM 5 Run 2
OPERATOR:
METER BOX NO: 45___
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= X ΔP: .2oe
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : ___ CFM@ ___ in. Hg.
POST-TEST LEAK RATE: : ___ CFM@ ___ in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY: SAMPLE CUSTODIAN ___ / SAMPLER ___ / SAMPLE CUSTODIAN ___

Imp. #	Contents	Post-Test	-	Pre-Test	=	Difference
Total:						

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H2O
1	1430	335.961	0.72	1.5	702		250	57	NA	73	5		
2	1440	3-12.5	0.83	1.7	702		249	57		72	4		
3	1450	350.3	1.0	2.1	703		250	56		73	4		
5	1500	357.9	1.0	2.1	702		248	55		75	6		
5	1510	365.5	1.3	2.3	702		247	57		75	8		
6	1520	373.3	1.2	2.5	701		248	56		75	6		
7	1530	381.0	1.0	2.1	701		249	57		76	7		
8	1540	386.6	1.0	3.1	701		247	57		76	7		
9	1550	396.8	0.96	2.0	700		248	57		76	9		
10	1600	403.9	0.82	1.7	700		248	58		77	9		
11	1610	411.9	0.80	1.6	700		247	58		78	9		
12	1620	418.4	0.82	1.7	700			58		85			
	1630	424.456						END TEST					

Average:

Comments:

FRA 29

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

CLIENT: Sunshine
LOCATION: Engine #5
DATE: 2/15/23
RUN NO: FN 6 RUN 3
OPERATOR: DH/AP
METER BOX NO: 45 wcs
METER ΔH@: 1.791
METER Yd: 1.014
STACK AREA, FT²: 55'
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= XΔP: 2.06
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight: 500/500

AMBIENT TEMPERATURE: 35
BAROMETRIC PRESSURE: 28.15
ASSUMED MOISTURE: 50.5
PITOT TUBE COEFF, Cp: .84
PROBE ID NO/MATERIAL: 130/74?
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: Nick /glass
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: QTZ Gyass wms
PRE-TEST LEAK RATE: 0.005 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: POST:
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER DH/AP
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	MT	798.4	649.4	
2	5% /10%	757.6	748.4	
3	11	772.6	772.3	
4	MT	618.7	616.0	
5	KMNO4	744.1	743.2	
6	11	761.6	761.5	
7	Sg	992.2	9530	

Total:

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp In	Meter Temp Out	Vacuum in. Hg	O₂ %	P. static in. H₂O
1	0735	425.623	0.71	1.5	200	342 ow	246	45	n/a	43	5		-0.48
2	0745	436.0	0.87	1.8	200		248	45		48	5		
3	0755	443.5	0.59	2.0	101		248	59		50	5		
4	0805	451.1	1.0	2.1	200		248	46		52	7		
5	0815	458.9	1.2	2.5	497		248	48		53	8		
6	0825	466.0	1.3	2.1	492		250	49		55	8		
7	0835	473.5	1.0	2.1	450		249	47		54	6		
8	0845	482.1	0.57	1.7	488		249	47		55	6		
9	0855	489.8	0.54	1.4	496		249	50		55	6		
10	0905	497.4	0.85	1.8	350		247	59		55	6		
11	0915	504.5	0.80	1.9	101		247	58		40	6		
12	0925	512.4	0.92	2.1	101	One Port	247	59		42	6		
		520.151											

Average:

Comments:

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

MONTROSE
AIR QUALITY SERVICES

CLIENT: Sunshine
LOCATION: Engine #5
DATE: 2/15/23
RUN NO.: CNG Run 3
OPERATOR: DH/AB
METER BOX NO.: 45 wet
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= ___ X ΔP: 2.00
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : ___ CFM@ ___ in. Hg.
POST-TEST LEAK RATE: : ___ CFM@ ___ in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. # Contents   Post-Test - Pre-Test = Difference
Total:

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	1045	520.151	0.74	1.5	302		248	53	n/a	62	6		
2	1055	527.5	0.86	1.8	302		247	52		61	5.5		
3	1105	535.0	1.0	2.1	302		247	52		62	6		
4	1115	542.6	1.0	2.1	302		248	53		63	6		
5	1125	550.3	1.2	2.5	303		248	53		63	8		
6	1135	558.1	1.2	2.5	303		248	53		62	6		
7	1145	565.9	1.1	2.3	303		248	54		61	7		
8	1155	573.3	1.1	2.3	304		248	54		63	7		
9	1205	581.3	0.52	1.1	305		242	54		59	6		
10	1215	5835	0.82	1.7	305		242	55		59	6		
11	1225	594.4	0.81	1.7	305		243	55		59	6		
12	1245	604.1	0.89	1.8	305		249	55		55	6		
	1245	611.078	—	—			END TEST						

X = SGX 3

rd/6722

Average:

Comments:

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WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

MONTROSE AIR QUALITY SERVICES

CLIENT: Sunshine
LOCATION: Engine #5
DATE: 2/15/23
RUN NO: ENG 5 RUN 4
OPERATOR: DH/AD
METER BOX NO: 45WCS
METER ΔH@: 1.791
METER Yd: 1.014
STACK AREA, FT²: 55"
ΔH= X ΔP: 2.06

AMBIENT TEMPERATURE: 54°
BAROMETRIC PRESSURE: 28.15
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 132/glass
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: 146/glass
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: EN 45 NOV 4
PRE-TEST LEAK RATE: 0.002 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.007 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY:
Probe Condition, pre/post test: ___
Silica Gel Expended, Y/N: ___
Filter Condition after Test: ___
Check Weight: 500/500
SAMPLE CUSTODIAN
SAMPLER: DH/AD
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	MT	713.2	642.1	
2	5%/10%	765.3	747.6	
3	''	190.5	150.0	
4	MT	648.6	648.4	
5	KMNO4	749.7	748.6	
6	KMNO4	733.9	732.3	
7	SG	960.3	920.4	

Total: ___

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	1200	612.040	0.42	1.5	209		250	60		67	5		-0.48
2	1210	619.3	0.55	1.8	209		249	55		66	6		
3	1220	626.8	1.0	2.1	209		250	52		67	4		
4	1230	634.4	1.1	2.3	208		248	47		66	8		
5	1240	642.1	1.2	2.3	208		248	47		66	7		
6	1250	649.9	1.1	2.3	207		247	48		67	6		
7	1300	657.6	1.1	2.5	207		247	49		68	6		
8	1310	665.4	1.0	2.	208		247	54		68	5		
9	1320	673.1	0.94	1.9	208		247	51		70	6		
10	1330	680.8	1.20	1.1	207		245	41		69	5		
11	1340	688.2	0.82	1.1	207		246	65		70	4		
12	1350	695.4	0.82	1.1	207		247	51		72			
—	1400/10	703.923					Port	End					

Average: ___

Comments:

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: Sophine
LOCATION: Engines
DATE: 2/15/23
RUN NO: _____
OPERATOR: DH/AD
METER BOX NO: 45wer
METER ΔH@: _____
METER Yd: _____
STACK AREA, FT²: _____
TRAVERSE POINTS, MIN/POINT: _____
ΔH= X ΔP: 2.00
Probe Condition, pre/post test: _____
Silica Gel Expended, Y/N: _____
Filter Condition after Test: _____
Check Weight: _____

AMBIENT TEMPERATURE: _____
BAROMETRIC PRESSURE: _____
ASSUMED MOISTURE: _____
PITOT TUBE COEFF, Cp: _____
PROBE ID NO/MATERIAL: _____
PROBE LENGTH: _____
NOZZLE ID NO/ MATERIAL: _____
NOZZLE DIAMETER: _____
FILTER NO/TYPE: _____
PRE-TEST LEAK RATE: ____ CFM@ ____ in. Hg.
POST-TEST LEAK RATE: ____ CFM@ ____ in. Hg.
PITOT LEAK CHECK - PRE: ____ POST: ____
CHAIN OF CUSTODY: SAMPLE CUSTODIAN / SAMPLER / SAMPLE CUSTODIAN

Imp. # Contents   Post-Test - Pre-Test = Difference
Total: _____

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O2 %	P. static in. H2O
1	1410	203.925	0.75	1.5	207		247	51	Amb	70	5		
2	1420	211.2	0.85	1.7	207		247	51		71	4		
3	1430	218.7	1.0	2.1	207		247	50		71	4		
4	1440	226.4	1.0	2.1	207		250	51		72	4		
5	1450	234.1	1.3	2.7	207		249	52		74	4		
6	1500	242.1	1.1	2.3	206		245	53		73	4		
7	1510	249.9	1.1	2.3	206		247	53		74	4		
8	1520	258.4	0.95	2.0	208		246	67		30	4		
9	1530	545.3	0.92	1.9	208		242	67		74	5		
10	1540	272.8	0.86	1.8	208		244	54		73	5		
11	1550	280.7	0.83	1.3	206		248	54		73	5		
12	1600	287.7	0.55	8.1	206		245	54		74	5		
/	1610	295.96	0			END TEST							

Average:

Comments:

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

MONTROSE AIR QUALITY SERVICES

CLIENT: Sunshine
LOCATION: Engineers
DATE: 2/16/23
RUN NO: Run 5
OPERATOR: DH/AD
METER BOX NO: 45003
METER ΔH@: 1.791
METER Yd: 1.014
STACK AREA, FT²: 55
TRAVERSE POINTS, MIN/POINT: 10|24
ΔH= X ΔP: 2.06

AMBIENT TEMPERATURE: 40°
BAROMETRIC PRESSURE: 28.55
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: SS/glass
PROBE LENGTH: 5'
NOZZLE ID NO/MATERIAL: N°5 / glass
NOZZLE DIAMETER: 0.25~
FILTER NO/TYPE: 0-12 GMA 6 Run 8
PRE-TEST LEAK RATE: 0.07 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.02 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY: ___

Probe Condition, pre/post test: ___
Silica Gel Expended, Y/N: ___
Filter Condition after Test: ___
Check Weight: 592/500

SAMPLER: DH/AD
SAMPLE CUSTODIAN: DH/AD
SAMPLE CUSTODIAN: ___

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	MT	789.9	620.9	
2	5%/10%	760.6	749.7	
3	11	774.8	773.9	
4	Mt	620.6	619.9	
5	KMnO4	750.0	749.2	
6	''	762.7	761.5	
7	Sg	956.9	919.5	

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp In	Meter Temp Out	Vacuum in. Hg.	O2 %	P. static in. H2O
1	0735	801.219	0.7	1.5	710		249	50	NA	52	5		-0.49
2	0745	808.5	0.65	1.8	710		250	45		53	6		
3	0755	816.0	0.9	2.0	705		250	48		53	6		
4	0805	823.7	1.0	2.1	208		249	48		55	7		
5	0815	831.6	1.1	2.3	208		248	45		56	7		
6	0825	839.5	1.2	2.5	710		248	50		55	7		
7	0835	848.6	1.1	2.5	710		248	52		55	6		
8	0845	855.7	0.98	2.0	211		248	51		55	6		
9	0855	863.293	0.550	1.7	211		248	55		55	6		
10	0905	871.013	0.82	1.9	208		248	55		55	6		
11	0915	878.333	0.80	1.1	205		248	53		55	6		
12	0925	885.503	0.760	1.5	207		248	55	~	60	6		
	0935/05	892.123			END cart		END						

Average: ___

Total: ___

Comments: ___

Date of last revision 4/15/2022

Master Document Storage\Forms\Datasheets\Field Datasheets

DS834071

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: Sunshine
LOCATION: Engine 45
DATE: 2/10/23
RUN NO: Run 5
OPERATOR: DH/AO
METER BOX NO: 45 wes
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= X ΔP: 2.00
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE:: ___ CFM@ ___ in. Hg.
POST-TEST LEAK RATE: : ___ CFM@ ___ in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY: SAMPLE CUSTODIAN ___
SAMPLER ___
SAMPLE CUSTODIAN ___

Imp. # Contents   Post-Test - Pre-Test = Difference

Total: ___

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	0545	892.166	0.32	1.5	305		249	56	NA	55	5		
2	0555	871.5	0.86	1.8	308		250	55		61	7		
3	1005	907.1	0.0	2.1	310		249	53		63	7		
4	1015	914.8	1.0	2.1	310		246	55		64	8		
5	1025	922.6	1.3	2.2	308		247	55		66	8		
6	1035	930.6	1.1	2.3	305		248	54		67	7		
7	1045	938.5	1.0	2.1	308		248	56		66	7		
8	1055	944.3	1.0	2.1	308		248	56		67	9		
9	1105	954.2	0.52	1.9	308		248	57		68	9		
10	1115	961.9	0.84	1.1	308		248	56		69	9		
11	1125	970.4	0.80	1.6	308		248	56		71	9		
12	1135	976.9	0.95	1.8	308		248	65		72	9		
	1145	984.326						END OF TEST					

Average: 183.107

Comments: ___

DS834049

EPA 29

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

CLIENT: Sunshine
LOCATION: ESP Inlet
DATE: 2/10/23
RUN NO: ESP 5 Run 6
OPERATOR: DH/AD
METER BOX NO: 45W3
METER ΔH@: 1.391
METER Yd: 1.014
STACK AREA, FT²: 55"
TRAVERSE POINTS, MIN/POINT: 10/24
ΔH= X ΔP: 2.06
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: ✓
Filter Condition after Test: ✓
Check Weight: 500/500

AMBIENT TEMPERATURE: 58°
BAROMETRIC PRESSURE: 28.35
ASSUMED MOISTURE: 54
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 122/glass
PROBE LENGTH: 5
NOZZLE ID NO/MATERIAL: 296 10.854 glass
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: Rt-2 Emp 5 Pur 6
PRE-TEST LEAK RATE: 0.007 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: ✓
SAMPLE CUSTODIAN:
SAMPLER: DH/AD
SAMPLE CUSTODIAN:

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	MT	769.4	729	40.9
2	50/10%	761.5	747.5	
3	"	749.6	748.0	
4	MT	650.6	650.0	
5	KMnO4	745.4	744.9	
6	"	729	728.6	
7	Sg	952.3	911.2	

Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O2 %	P. static in. H2O
1	1200	652.513	0.71	1.5	307		249	51		70	5		-0.44
2	1210	677.5	0.86	1.8	307		249	56		72	6		
3	1220	707.074	1.0	2.1	308		250	54		73	7		
4	1230	715.1	1.0	2.1	308		250	51		73	7		
5	1240	722.8	1.1	2.3	308		250	52		72	8		
6	1250	730.6	1.2	2.5	307		249	53		74	8		
7	1300	738.5	1.2	2.5	307		249	53		73	7		
8	1310	746.4	0.96	2.0	306		248	55		74	6		
9	1320	754.0	0.94	2.0	307		247	54		75	6		
10	1330	646.6	0.83	1.7	306		248	54		75	5		
11	1340	667.1	0.80	1.4	306		248	53		76	5		
12	1350	777.2	0.91	1.5	306		248	54		76			
	1400 10,093.534									END TEST			

Average:

Comments:

Page 1 of 2

Date of last revision 4/15/2022

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: Sunshine
LOCATION: Engine #5
DATE: 2/10/23
RUN NO: BNb 5 w/ 6
OPERATOR: 04/AD
METER BOX NO: 4522c5
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= X ΔP: 2.00
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE:: _____ CFM@ _____ in. Hg.
POST-TEST LEAK RATE: _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST:
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN / SAMPLER
SAMPLE CUSTODIAN

Imp. # Contents   Post-Test - Pre-Test = Difference
___
___
___
___
Total:

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	1410	1083.554	0.72	1.5	306		250	54	RA	75	5		
2	1420	1090.9	0.86	1.8	307		248	53		77	6		
3	1430	1098.4	0.98	2.0	308		249	53		78	6		
4	1440	1106.0	1.0	2.1	305		248	56		80	7		
5	1450	1113.2	1.2	2.5	308		249	56		81	8		
6	1500	1021.6	1.2	2.5	308		249	56		80	8		
7	1510	1029.5	1.0	2.1	307		250	57		80	7		
8	1520	1037.2	1.0	2.1	303		246	58		81	7		
9	1530	1044.9	0.95	2.0	307		247	57		82	6		
10	1540	1052.5	0.82	1.7	307		242	58		82	6		
11	1550	1060.2	0.80	1.6	307		248	58		81	6		
12	1600	1070+	0.88	1.8	300		249	57		83	6		
-	1610	1074.844				END OF TEST							

Average: 182.231

Comments: _____

MONTROSE AIR QUALITY SERVICES

IPA 29

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – EXTRA IMPINGERS

CLIENT: Sunshine
LOCATION: Engine 45
DATE: 3/17/23
RUN NO: EN 5 Run 7
OPERATOR: D+/20
METER BOX NO: 4 Swiss
METER ΔH@: 1.794
METER Yd: 1.014
STACK AREA, FT²: 55"
ΔH= XΔP: 366
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight: 520/500

AMBIENT TEMPERATURE: 45°
BAROMETRIC PRESSURE: 38.14
ASSUMED MOISTURE: 5%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 133/9/455
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: M-15 / 41055
NOZZLE DIAMETER: 0.254
FILTER NO/TYPE: Gr. 204.5 fow7
PRE-TEST LEAK RATE: 200 W CFM @ 10 in. Hg.
POST-TEST LEAK RATE: 0 006 CFM @ 10 in. Hg.
PITOT LEAK CHECK - PRE: ___ POST: ___
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN: Dylan
SAMPLER
SAMPLE CUSTODIAN

Imp.	# Contents	Post-Test	- Pre-Test	= Difference
1	MT	7000	6504	
2	5%/10%	756.5	748.1	
3	''	7486	7470	
4	MT	6204	619.3	
5	KMNO4	738.4	737.6	
6	''	764.4	764.1	
7	S6	981.3	941.7	

Total: _____

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H₂O
1	0730	185.565	0.70	1.4	205		249	52	60	61	5		-.49
2	0740	185.8	0.84	1.7	203		250	50		63	5		
3	0750	193.3	1.0	8.0	205		250	47		64	6		
4	0800	300.9	1.0	3.6	204		249	48		66	6		
5	0810	305.6	1.3	3.5	205		247	47		62	7		
6	0820	316.5	1.1	2.3	205		245	44		67	7		
7	0830	321.1	1.1	2.3	204		248	45		63	7		
8	0840	332.1	0.90	2.0	205		249	45		69	6		
9	0850	335.1	0.95	2.0	205		249	49		71	6		
10	0900	344.8	0.64	1.7	205		250	51		71	5		
11	0910	845.5	0.82	1.3	205		249	51		72	5		
12	0920	372.5	0.50	1.5	205		249	52		73	5		
		no data 0920/0940					End Cal						
		396.048											

Average: _____

Comments: _____

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: Sunshine
LOCATION: Engine #5
DATE: 2/13/23
RUN NO: CN4 & CM5
OPERATOR: OH/AD
METER BOX NO: 45045

METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= X ΔP: 2.06
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
POST-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY:
SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Imp. # Contents   Post-Test - Pre-Test = Difference

Total:

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	P. static in. H2O
1	0940	220.366	0.74	1.5	205		247	52	NA	72	5		
2	0950	227.6	0.83	1.7	204		248	51		72	6		
3	1000	255.0	1.0	3.1	204		248	53		71	3		
4	1010	287.3.7	1.0	2.1	205		250	54		73	7		
5	1020	300.4	1.2	2.5	205		245	55		74	8		
6	1030	308.2	1.2	2.5	205		250	54		75	8		
7	1040	316.1	1.1	2.3	206		248	55		75	7		
8	1050	325.9	1.0	2.1	206		248	55		76	7		
9	1100	331.6	0.92	1.9	206		248	56		75	6		
10	1110	335.1	0.84	1.7	206		249	55		76	6		
11	1120	346.6	0.90	1.6	206		249	56		77	6		
12	1130	354.4	0.96	1.8	204		248	56		78	6		
1	1140	361.200			END TEST								

Average:

Comments:

DS834049

Appendix A.4.3
CT-4 and CT-5 Laboratory Data

MONTROSE
AIR QUALITY SERVICES

Montrose Air Quality Services, LLC – Santa Ana

1631 E St Andrew Pl
Santa Ana, CA 92705

DTE Energy

Sunshine – SGT Eng 4 and 5 Exhaust
Client Project # 023392

Analytical Report
(0223-176R)

EPA Method 29

Antimony, Arsenic, Beryllium, Cadmium, Chromium,
Cobalt, Lead, Manganese, Mercury, Nickel, and Selenium

Enthalpy Analytical, LLC

Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / www.enthalpy.com
800-1 Capitola Drive   Durham, NC 27713-4385

I certify that to the best of my knowledge all analytical data presented in this report:
- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s)

This analytical report was prepared in Portable Document Format (.PDF). This report shall not be reproduced except in full without approval of the laboratory. This will provide assurance that parts of a report are not taken out of context.

Report Issued: 4/3/23

Summary of Results

EPA Method 29 Summary

EA Project #: 0223-176R
Client: Montrose Air Quality Services, LLC - Santa Ana
Client Project ID: 023392 - DTE Energy - Sunshine

Sample ID	Element / Catch Weight (ug)				
	Antimony	Arsenic	Beryllium	Cadmium	Chromium
Eng 4 Run 1 - FH	0.343 J	0.671 ND	0.116 J	0.232 J	4.53
Eng 4 Run 1 - BH	0.101 J	0.0593 J	0.0319 J	0.638	0.660
Eng 4 Run 2 - FH	0.251 J	0.671 ND	0.164 J	0.173 J	6.30
Eng 4 Run 2 - BH	0.0702 J	0.120 J	0.0205 J	0.150	0.604
Eng 4 Run 3 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	4.53
Eng 4 Run 3 - BH	0.0675 J	0.0699 J	0.0172 ND	0.0954 J	0.493 J
Eng 4 Run 4 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	6.10
Eng 4 Run 4 - BH	0.0563 ND	0.0563 ND	0.0182 ND	0.133	0.583
Eng 4 Run 5 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	6.28
Eng 4 Run 5 - BH	0.0530 ND	0.0530 ND	0.0172 ND	0.0281 J	0.559
Eng 4 Run 6 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	4.25
Eng 4 Run 6 - BH	0.0530 ND	0.0530 ND	0.0172 ND	0.0205 ND	0.512 J
Eng 4 Run 7 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0523 J	6.10
Eng 4 Run 7 - BH	0.0530 ND	0.0530 ND	0.0211 J	0.0205 ND	0.450 J
Eng 4 Field Blank - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	1.27 J
Eng 4 Field Blank - BH	0.0547 ND	0.0547 ND	0.0177 ND	0.0211 ND	0.0547 ND
Eng 4 Reagent Blank - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	1.05 J
Eng 4 Reagent Blank - BH	0.0547 ND	0.0547 ND	0.0177 ND	0.0211 ND	0.228 J

0223-176R Metals Summary

EPA Method 29 Summary

EA Project #: 0223-176R
Client: Montrose Air Quality Services, LLC - Santa Ana
Client Project ID: 023392 - DTE Energy - Sunshine

	Element / Catch Weight (ug)				
Sample ID	**Antimony**	**Arsenic**	**Beryllium**	**Cadmium**	**Chromium**
Eng 5 Run 1 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	4.56
Eng 5 Run 1 - BH	0.0530 ND	0.0530 ND	0.0172 ND	0.0205 ND	0.532
Eng 5 Run 2 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	6.12
Eng 5 Run 2 - BH	0.0530 ND	0.0530 ND	0.0172 ND	0.0697 J	0.481 J
Eng 5 Run 3 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	4.58
Eng 5 Run 3 - BH	0.0563 ND	0.0563 ND	0.0182 ND	0.0357 J	0.666
Eng 5 Run 4 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	4.42
Eng 5 Run 4 - BH	0.0530 ND	0.0530 ND	0.0172 ND	0.0205 ND	0.600
Eng 5 Run 5 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	4.53
Eng 5 Run 5 - BH	0.0530 ND	0.0530 ND	0.0172 ND	0.0205 ND	0.523 J
Eng 5 Run 6 - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	3.54
Eng 5 Run 6 - BH	0.0530 ND	0.0530 ND	0.0172 ND	0.0205 ND	0.467 J
Eng 5 Run 7 - FH	0.250 ND	0.671 ND	0.0680 J	0.0523 J	4.59
Eng 5 Run 7 - BH	0.0530 ND	0.0530 ND	0.0172 ND	0.0205 ND	0.925
Eng 5 Field Blank - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	1.15 J
Eng 5 Reagent Blank - FH	0.250 ND	0.671 ND	0.0532 ND	0.0519 ND	1.04 J
Eng 5 Field Blank - 2A + Eng 5 Reagent Blank Composite - 2A	0.0546 ND	0.0546 ND	0.0177 ND	0.0211 ND	0.262 J

0223-176R Metals Summary

EPA Method 29 Summary

EA Project #: 0223-176R
Client: Montrose Air Quality Services, LLC - Santa Ana
Client Project ID: 023392 - DTE Energy - Sunshine

Sample ID	Element / Catch Weight (ug)				
	Cobalt	Lead	Manganese	Nickel	Selenium
Eng 4 Run 1 - FH	0.142 J	0.633	1.03 J	2.16 J	0.304 ND
Eng 4 Run 1 - BH	0.0837 J	0.736	1.21	1.44	1.13
Eng 4 Run 2 - FH	0.201 J	0.548	0.974 J	1.85 J	0.304 ND
Eng 4 Run 2 - BH	0.0729 J	0.477	0.872	0.591	0.322 J
Eng 4 Run 3 - FH	1.14	0.345 J	0.740 J	1.37 J	0.304 ND
Eng 4 Run 3 - BH	0.0241 J	0.205	0.417 J	0.770	1.16
Eng 4 Run 4 - FH	0.0777 J	0.356 J	0.774 J	1.95 J	0.304 ND
Eng 4 Run 4 - BH	0.0437 J	0.338	0.575	0.746	4.68
Eng 4 Run 5 - FH	0.0562 ND	0.405 J	0.723 J	1.49 J	0.304 ND
Eng 4 Run 5 - BH	0.0370 J	0.208	0.656	0.550	1.16
Eng 4 Run 6 - FH	0.0562 ND	0.311 J	1.45 J	1.25 J	0.304 ND
Eng 4 Run 6 - BH	0.0270 J	0.192	1.02	0.365 J	7.98
Eng 4 Run 7 - FH	0.0562 ND	0.344 J	1.61 J	1.47 J	0.304 ND
Eng 4 Run 7 - BH	0.0348 J	0.122	1.38	0.340 J	0.558
Eng 4 Field Blank - FH	0.0562 ND	0.371 J	0.538 J	1.26 J	0.304 ND
Eng 4 Field Blank - BH	0.0169 ND	0.0229 J	0.121 J	0.0547 ND	0.0875 ND
Eng 4 Reagent Blank - FH	0.0562 ND	0.240 J	0.459 J	1.13 J	0.304 ND
Eng 4 Reagent Blank - BH	0.0169 ND	0.0202 ND	0.216 J	0.173 J	0.0874 ND

0223-176R Metals Summary

EPA Method 29 Summary

EA Project #: 0223-176R
Client: Montrose Air Quality Services, LLC - Santa Ana
Client Project ID: 023392 - DTE Energy - Sunshine

	Element / Catch Weight (ug)				
Sample ID	Cobalt	Lead	Manganese	Nickel	Selenium
Eng 5 Run 1 - FH	0.0562 ND	0.321 J	0.649 J	1.41 J	0.304 ND
Eng 5 Run 1 - BH	0.0164 ND	0.0990 J	15.4	0.388 J	8.38
Eng 5 Run 2 - FH	0.0562 ND	0.314 J	2.28 J	1.66 J	0.304 ND
Eng 5 Run 2 - BH	0.0164 ND	0.112	0.509 J	0.408 J	2.29
Eng 5 Run 3 - FH	0.0562 ND	0.295 J	0.687 J	1.43 J	0.304 ND
Eng 5 Run 3 - BH	0.0220 J	0.147	1.78	0.435 J	20.2
Eng 5 Run 4 - FH	0.0562 ND	0.279 J	0.696 J	1.40 J	0.304 ND
Eng 5 Run 4 - BH	0.0170 J	0.107	0.424 J	0.539	0.326 J
Eng 5 Run 5 - FH	0.0562 ND	0.348 J	0.673 J	1.94 J	0.304 ND
Eng 5 Run 5 - BH	0.0241 J	0.0949 J	0.910	0.640	0.817
Eng 5 Run 6 - FH	0.0562 ND	0.333 J	2.59	1.37 J	0.304 ND
Eng 5 Run 6 - BH	0.0164 ND	0.0616 J	0.658	0.390 J	0.239 J
Eng 5 Run 7 - FH	0.0562 ND	0.344 J	1.23 J	1.24 J	0.304 ND
Eng 5 Run 7 - BH	0.0263 J	0.0976 J	1.69	0.739	0.925
Eng 5 Field Blank - FH	0.0562 ND	0.281 J	0.560 J	1.88 J	0.304 ND
Eng 5 Reagent Blank - FH	0.0562 ND	0.209 J	0.484 J	1.11 J	0.304 ND
Eng 5 Field Blank - 2A + Eng 5 Reagent Blank Composite - 2A	0.0169 ND	0.0734 J	0.382 J	0.156 J	0.0873 ND

0223-176R Metals Summary

EPA Method 29 Summary

EA Project #: 0223-176
Client: Montrose Air Quality Services, LLC - Santa Ana
Client Project ID: 023392 - DTE Energy - Sunshine - SGT Eng 4 and 5 Exhaust

Total Micrograms of Mercury in Sample (ug)

Sample ID	Frac 1B	Frac 2B	Frac 3A	Frac 3B	Frac 3C
Eng 4 Run 1	0.0250 ND	0.220 ND	0.0232 ND	0.0912 ND	0.396
Eng 4 Run 2	0.0250 ND	0.233 ND	0.0245 ND	0.0612 ND	0.218
Eng 4 Run 3	0.0250 ND	0.219 ND	0.0240 ND	0.0637 ND	0.671
Eng 4 Run 4	0.0250 ND	0.225 ND	0.0255 ND	0.0625 ND	0.191
Eng 4 Run 5	0.0250 ND	0.219 ND	0.0250 ND	0.0600 ND	0.108 J
Eng 4 Run 6	0.0250 ND	0.220 ND	0.0242 ND	0.0650 ND	0.178
Eng 4 Run 7	0.0250 ND	0.223 ND	0.0245 ND	0.0600 ND	0.0827 J
Eng 4 Field Blank	0.0250 ND	0.145 ND	0.0245 ND	0.0600 ND	0.429
Eng 4 Reagent Blank	0.0250 ND	0.147 ND	0.0237 ND	0.0205 ND	0.0650 ND
Eng 5 Run 1	0.0250 ND	0.219 ND	0.0250 ND	0.0600 ND	0.0972 J
Eng 5 Run 2	0.0250 ND	0.223 ND	0.0250 ND	0.0587 ND	0.114 J
Eng 5 Run 3	0.0250 ND	0.225 ND	0.0237 ND	0.0612 ND	0.104 J
Eng 5 Run 4	0.0250 ND	0.222 ND	0.0247 ND	0.0575 ND	0.107 J
Eng 5 Run 5	0.0250 ND	0.224 ND	0.0250 ND	0.0662 ND	0.103 J
Eng 5 Run 6	0.0250 ND	0.222 ND	0.0245 ND	0.0650 ND	0.119 J
Eng 5 Run 7	0.0250 ND	0.219 ND	0.0240 ND	0.0637 ND	0.103 J
Eng 5 Field Blank	0.0250 ND	0.145 ND	0.0242 ND	0.0808 J	1.04
Eng 5 Reagent Blank	0.0250 ND	0.150 ND	0.0245 ND	0.0205 ND	0.0675 ND

0223-176 Hg top

Results

		Element	Sb 121			Methodology		ICP-MS	

Element   Sb 121   Methodology   ICP-MS
Client MAQS   MDL   0.50   µg/L
EA Project No. 0223-176   LOQ   5.0   µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50   µg/L
                                           Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor		Total (µg)	
Front Halves								
Eng 4 Run 1	0223-176.1 -1A	0.69	3.43	100	5		0.34290	J
Eng 4 Run 2	0223-176.2 -1A	0.50	2.51	100	5		0.25140	J
Eng 4 Run 3	0223-176.3 -1A	0.41	2.03	100	5		0.25000	ND
Eng 4 Run 4	0223-176.4 -1A	0.16	0.82	100	5		0.25000	ND
Eng 4 Run 5	0223-176.5 -1A	0.19	0.97	100	5		0.25000	ND
Eng 4 Run 6	0223-176.6 -1A	0.12	0.61	100	5		0.25000	ND
Eng 4 Run 7	0223-176.7 -1A	0.30	1.50	100	5		0.25000	ND
Eng 4 Field Blank	0223-176.8 -1A	0.12	0.62	100	5		0.25000	ND
Eng 4 Reagent Blank	0223-176.9 -1A	0.08	0.38	100	5		0.25000	ND
Eng 5 Run 1	0223-176.10 -1A	0.13	0.66	100	5		0.25000	ND
Eng 5 Run 2	0223-176.11 -1A	0.16	0.81	100	5		0.25000	ND
Eng 5 Run 3	0223-176.12 -1A	0.12	0.62	100	5		0.25000	ND
Eng 5 Run 4	0223-176.13 -1A	0.16	0.80	100	5		0.25000	ND
Eng 5 Run 5	0223-176.14 -1A	0.12	0.61	100	5		0.25000	ND
Eng 5 Run 6	0223-176.15 -1A	0.14	0.70	100	5		0.25000	ND
Eng 5 Run 7	0223-176.16 -1A	0.42	2.12	100	5		0.25000	ND
Eng 5 Field Blank	0223-176.17 -1A	0.09	0.46	100	5		0.25000	ND
Eng 5 Reagent Blank	0223-176.18 -1A	0.07	0.35	100	5		0.25000	ND
Lab Blank Front	0223-176.LB -1A	0.34	0.34	100	1		0.05000	ND
LCS Front	0223-176.LCS -1A	51.11	102.22	100	2	% REC =	102.2%	
Spike Front	0223-176.1S -1A	52.98	264.90	100	5	% REC =	104.6%	
Duplicate Front	0223-176.2D -1A	0.25				RPD =	N/A	

Element	Sb 121				Methodology		ICP-MS		
Client	MAQS				MDL		0.50	µg/L	
EA Project No.	0223-176				LOQ		5.0	µg/L	
Analysis Date	3/29/2023				Postdig'n Spike Conc.		50	µg/L	
					Analyst(s)		MAL		

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	MAL Vol. Dig'd (mL)	Total (µg)	
Back Halves									
Eng 4 Run 1	0223-176.1 -2A	0.95	0.95	100	1	440	415	0.10061	J
Eng 4 Run 2	0223-176.2 -2A	0.63	0.63	100	1	465	415	0.07015	J
Eng 4 Run 3	0223-176.3 -2A	0.64	0.64	100	1	437	412	0.06749	J
Eng 4 Run 4	0223-176.4 -2A	0.37	0.37	100	1	450	400	0.05625	ND
Eng 4 Run 5	0223-176.5 -2A	0.46	0.46	100	1	438	413	0.05303	ND
Eng 4 Run 6	0223-176.6 -2A	0.24	0.24	100	1	440	415	0.05301	ND
Eng 4 Run 7	0223-176.7 -2A	0.30	0.30	100	1	445	420	0.05298	ND
Eng 4 Field Blank	0223-176.8 -2A	0.05	0.05	100	1	290	265	0.05472	ND
Eng 4 Reagent Blank	0223-176.9 -2A	0.05	0.05	100	1	294	269	0.05465	ND
Eng 5 Run 1	0223-176.10 -2A	0.25	0.25	100	1	437	412	0.05303	ND
Eng 5 Run 2	0223-176.11 -2A	0.22	0.22	100	1	446	421	0.05297	ND
Eng 5 Run 3	0223-176.12 -2A	0.28	0.28	100	1	450	400	0.05625	ND
Eng 5 Run 4	0223-176.13 -2A	0.13	0.13	100	1	443	418	0.05299	ND
Eng 5 Run 5	0223-176.14 -2A	0.20	0.20	100	1	447	422	0.05296	ND
Eng 5 Run 6	0223-176.15 -2A	0.11	0.11	100	1	443	418	0.05299	ND
Eng 5 Run 7	0223-176.16 -2A	0.25	0.25	100	1	437	412	0.05303	ND
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	0.16	0.16	100	1	590	540	0.05463	ND
Lab Blank Front	0223-176.LB -2A	0.00	0.00	100	1			0.05000	ND
LCS Front	0223-176.LCS -2A	48.26	96.52	100	2		% REC =	96.5%	
Spike Front	0223-176.1S -2A	52.41	52.41	100	1		% REC =	102.9%	
Duplicate Front	0223-176.2D -2A	0.43					RPD =	N/A	

	Element	As 75			Methodology		ICP-MS	
	Client	MAQS			MDL	1.34	µg/L	
	EA Project No.	0223-176			LOQ	5.0	µg/L	
	Analysis Date	3/29/2023			Postdig'n Spike Conc.	50	µg/L	
					Analyst(s)	MAL		

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor		Total (µg)	
Front Halves								
Eng 4 Run 1	0223-176.1 -1A	0.51	2.56	100	5		0.67069	ND
Eng 4 Run 2	0223-176.2 -1A	0.52	2.61	100	5		0.67069	ND
Eng 4 Run 3	0223-176.3 -1A	0.28	1.41	100	5		0.67069	ND
Eng 4 Run 4	0223-176.4 -1A	0.18	0.90	100	5		0.67069	ND
Eng 4 Run 5	0223-176.5 -1A	0.25	1.27	100	5		0.67069	ND
Eng 4 Run 6	0223-176.6 -1A	0.16	0.78	100	5		0.67069	ND
Eng 4 Run 7	0223-176.7 -1A	0.24	1.20	100	5		0.67069	ND
Eng 4 Field Blank	0223-176.8 -1A	0.06	0.29	100	5		0.67069	ND
Eng 4 Reagent Blank	0223-176.9 -1A	0.05	0.24	100	5		0.67069	ND
Eng 5 Run 1	0223-176.10 -1A	0.20	1.00	100	5		0.67069	ND
Eng 5 Run 2	0223-176.11 -1A	0.20	0.99	100	5		0.67069	ND
Eng 5 Run 3	0223-176.12 -1A	0.20	1.00	100	5		0.67069	ND
Eng 5 Run 4	0223-176.13 -1A	0.16	0.82	100	5		0.67069	ND
Eng 5 Run 5	0223-176.14 -1A	0.18	0.92	100	5		0.67069	ND
Eng 5 Run 6	0223-176.15 -1A	0.21	1.06	100	5		0.67069	ND
Eng 5 Run 7	0223-176.16 -1A	0.22	1.11	100	5		0.67069	ND
Eng 5 Field Blank	0223-176.17 -1A	0.06	0.32	100	5		0.67069	ND
Eng 5 Reagent Blank	0223-176.18 -1A	0.04	0.18	100	5		0.67069	ND
Lab Blank Front	0223-176.LB -1A	0.32	0.32	100	1		0.13414	ND
LCS Front	0223-176.LCS -1A	48.68	97.37	100	2	% REC =	97.4%	
Spike Front	0223-176.1S -1A	48.45	242.26	100	5	% REC =	96.9%	
Duplicate Front	0223-176.2D -1A	0.30				RPD =	N/A	

0223-176R Metals Worksheet

							Methodology	ICP-MS	

Element As 75 Methodology ICP-MS
Client MAQS MDL 0.50 µg/L
EA Project No. 0223-176 LOQ 5.0 µg/L
Analysis Date 3/29/2023 Postdig'n Spike Conc. 50 µg/L
Analyst(s) MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	MAL Vol. Dig'd (mL)	Total (µg)	
Back Halves									
Eng 4 Run 1	0223-176.1 -2A	0.56	0.56	100	1	440	415	0.05927	J
Eng 4 Run 2	0223-176.2 -2A	1.07	1.07	100	1	465	415	0.11990	J
Eng 4 Run 3	0223-176.3 -2A	0.66	0.66	100	1	437	412	0.06990	J
Eng 4 Run 4	0223-176.4 -2A	0.40	0.40	100	1	450	400	0.05625	ND
Eng 4 Run 5	0223-176.5 -2A	0.28	0.28	100	1	438	413	0.05303	ND
Eng 4 Run 6	0223-176.6 -2A	0.23	0.23	100	1	440	415	0.05301	ND
Eng 4 Run 7	0223-176.7 -2A	0.34	0.34	100	1	445	420	0.05298	ND
Eng 4 Field Blank	0223-176.8 -2A	0.06	0.06	100	1	290	265	0.05472	ND
Eng 4 Reagent Blank	0223-176.9 -2A	0.01	0.01	100	1	294	269	0.05465	ND
Eng 5 Run 1	0223-176.10 -2A	0.22	0.22	100	1	437	412	0.05303	ND
Eng 5 Run 2	0223-176.11 -2A	0.12	0.12	100	1	446	421	0.05297	ND
Eng 5 Run 3	0223-176.12 -2A	0.50	0.50	100	1	450	400	0.05625	ND
Eng 5 Run 4	0223-176.13 -2A	0.11	0.11	100	1	443	418	0.05299	ND
Eng 5 Run 5	0223-176.14 -2A	0.14	0.14	100	1	447	422	0.05296	ND
Eng 5 Run 6	0223-176.15 -2A	0.08	0.08	100	1	443	418	0.05299	ND
Eng 5 Run 7	0223-176.16 -2A	0.10	0.10	100	1	437	412	0.05303	ND
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	0.02	0.02	100	1	590	540	0.05463	ND
Lab Blank Front	0223-176.LB -2A	0.23	0.23	100	1			0.05000	ND
LCS Front	0223-176.LCS -2A	48.42	96.84	100	2		% REC =	96.8%	
Spike Front	0223-176.1S -2A	47.44	47.44	100	1		% REC =	93.8%	
Duplicate Front	0223-176.2D -2A	0.86					RPD =	N/A	

		Test Sol'n	Conc.	FV			Total	
	Element	Be 9			Methodology		ICP-MS	

Element   Be 9   Methodology   ICP-MS
Client MAQS   MDL   0.11 µg/L
EA Project No. 0223-176   LOQ   1.0 µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50 µg/L
                                    Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor		Total (µg)	
Front Halves								
Eng 4 Run 1	0223-176.1 -1A	0.23	1.16	100	5		0.11600	J
Eng 4 Run 2	0223-176.2 -1A	0.33	1.64	100	5		0.16360	J
Eng 4 Run 3	0223-176.3 -1A	0.03	0.17	100	5		0.05318	ND
Eng 4 Run 4	0223-176.4 -1A	0.02	0.09	100	5		0.05318	ND
Eng 4 Run 5	0223-176.5 -1A	0.01	0.03	100	5		0.05318	ND
Eng 4 Run 6	0223-176.6 -1A	0.01	0.04	100	5		0.05318	ND
Eng 4 Run 7	0223-176.7 -1A	0.08	0.41	100	5		0.05318	ND
Eng 4 Field Blank	0223-176.8 -1A	0.04	0.18	100	5		0.05318	ND
Eng 4 Reagent Blank	0223-176.9 -1A	0.02	0.11	100	5		0.05318	ND
Eng 5 Run 1	0223-176.10 -1A	0.02	0.11	100	5		0.05318	ND
Eng 5 Run 2	0223-176.11 -1A	0.02	0.08	100	5		0.05318	ND
Eng 5 Run 3	0223-176.12 -1A	0.01	0.06	100	5		0.05318	ND
Eng 5 Run 4	0223-176.13 -1A	0.01	0.06	100	5		0.05318	ND
Eng 5 Run 5	0223-176.14 -1A	0.01	0.05	100	5		0.05318	ND
Eng 5 Run 6	0223-176.15 -1A	0.01	0.04	100	5		0.05318	ND
Eng 5 Run 7	0223-176.16 -1A	0.14	0.68	100	5		0.06795	J
Eng 5 Field Blank	0223-176.17 -1A	0.06	0.30	100	5		0.05318	ND
Eng 5 Reagent Blank	0223-176.18 -1A	0.02	0.12	100	5		0.05318	ND
Lab Blank Front	0223-176.LB -1A	0.20	0.20	100	1		0.02018	J
LCS Front	0223-176.LCS -1A	49.09	98.17	100	2	% REC =	98.2%	
Spike Front	0223-176.1S -1A	47.97	239.87	100	5	% REC =	95.5%	
Duplicate Front	0223-176.2D -1A	0.09				RPD =	N/A	

		Element	Be 9			Methodology		ICP-MS	
		Client	MAQS			MDL		0.16	µg/L
		EA Project No.	0223-176			LOQ		1.0	µg/L
		Analysis Date	3/29/2023			Postdig'n Spike Conc.		50	µg/L
						Analyst(s)		MAL	

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	MAL Vol. Dig'd (mL)	Total (µg)	
Back Halves									
Eng 4 Run 1	0223-176.1 -2A	0.30	0.30	100	1	440	415	0.03193	J
Eng 4 Run 2	0223-176.2 -2A	0.18	0.18	100	1	465	415	0.02050	J
Eng 4 Run 3	0223-176.3 -2A	0.00	0.00	100	1	437	412	0.01719	ND
Eng 4 Run 4	0223-176.4 -2A	0.00	0.00	100	1	450	400	0.01823	ND
Eng 4 Run 5	0223-176.5 -2A	0.00	0.00	100	1	438	413	0.01719	ND
Eng 4 Run 6	0223-176.6 -2A	0.00	0.00	100	1	440	415	0.01718	ND
Eng 4 Run 7	0223-176.7 -2A	0.20	0.20	100	1	445	420	0.02112	J
Eng 4 Field Blank	0223-176.8 -2A	0.04	0.04	100	1	290	265	0.01774	ND
Eng 4 Reagent Blank	0223-176.9 -2A	0.00	0.00	100	1	294	269	0.01771	ND
Eng 5 Run 1	0223-176.10 -2A	0.00	0.00	100	1	437	412	0.01719	ND
Eng 5 Run 2	0223-176.11 -2A	0.00	0.00	100	1	446	421	0.01717	ND
Eng 5 Run 3	0223-176.12 -2A	0.00	0.00	100	1	450	400	0.01823	ND
Eng 5 Run 4	0223-176.13 -2A	0.00	0.00	100	1	443	418	0.01718	ND
Eng 5 Run 5	0223-176.14 -2A	0.00	0.00	100	1	447	422	0.01717	ND
Eng 5 Run 6	0223-176.15 -2A	0.00	0.00	100	1	443	418	0.01718	ND
Eng 5 Run 7	0223-176.16 -2A	0.00	0.00	100	1	437	412	0.01719	ND
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	0.00	0.00	100	1	590	540	0.01771	ND
Lab Blank Front	0223-176.LB -2A	0.20	0.20	100	1			0.02022	J
LCS Front	0223-176.LCS -2A	49.13	98.25	100	2		% REC =	98.3%	
Spike Front	0223-176.1S -2A	48.92	48.92	100	1		% REC =	97.2%	
Duplicate Front	0223-176.2D -2A	0.04					RPD =	N/A	

		Test Sol'n	Conc.	FV			Total	
Element	Cd 111				Methodology		ICP-MS	
Client	MAQS				MDL	0.10	µg/L	
EA Project No.	0223-176				LOQ	1.0	µg/L	
Analysis Date	3/29/2023				Postdig'n Spike Conc.	50	µg/L	
					Analyst(s)	MAL		

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor		Total (µg)	
Front Halves								
Eng 4 Run 1	0223-176.1 -1A	0.46	2.32	100	5		0.23170	J
Eng 4 Run 2	0223-176.2 -1A	0.35	1.73	100	5		0.17320	J
Eng 4 Run 3	0223-176.3 -1A	0.04	0.18	100	5		0.05194	ND
Eng 4 Run 4	0223-176.4 -1A	0.02	0.10	100	5		0.05194	ND
Eng 4 Run 5	0223-176.5 -1A	0.00	0.00	100	5		0.05194	ND
Eng 4 Run 6	0223-176.6 -1A	0.00	0.00	100	5		0.05194	ND
Eng 4 Run 7	0223-176.7 -1A	0.10	0.52	100	5		0.05230	J
Eng 4 Field Blank	0223-176.8 -1A	0.03	0.16	100	5		0.05194	ND
Eng 4 Reagent Blank	0223-176.9 -1A	0.00	0.00	100	5		0.05194	ND
Eng 5 Run 1	0223-176.10 -1A	0.01	0.03	100	5		0.05194	ND
Eng 5 Run 2	0223-176.11 -1A	0.00	0.00	100	5		0.05194	ND
Eng 5 Run 3	0223-176.12 -1A	0.01	0.03	100	5		0.05194	ND
Eng 5 Run 4	0223-176.13 -1A	0.00	0.01	100	5		0.05194	ND
Eng 5 Run 5	0223-176.14 -1A	0.00	0.00	100	5		0.05194	ND
Eng 5 Run 6	0223-176.15 -1A	0.00	0.01	100	5		0.05194	ND
Eng 5 Run 7	0223-176.16 -1A	0.10	0.52	100	5		0.05230	J
Eng 5 Field Blank	0223-176.17 -1A	0.03	0.17	100	5		0.05194	ND
Eng 5 Reagent Blank	0223-176.18 -1A	0.00	0.00	100	5		0.05194	ND
Lab Blank Front	0223-176.LB -1A	0.18	0.18	100	1		0.01849	J
LCS Front	0223-176.LCS -1A	51.25	102.51	100	2	% REC =	102.5%	
Spike Front	0223-176.1S -1A	50.70	253.50	100	5	% REC =	100.5%	
Duplicate Front	0223-176.2D -1A	0.10				RPD =	N/A	

		Element	Cd 111		Methodology			ICP-MS	
		Client	MAQS		MDL		0.19	µg/L	
		EA Project No.	0223-176		LOQ		1.0	µg/L	
		Analysis Date	3/29/2023		Postdig'n Spike Conc.		50	µg/L	
					Analyst(s)		MAL		

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	MAL Vol. Dig'd (mL)	Total (µg)	
Back Halves									
Eng 4 Run 1	0223-176.1 -2A	6.02	6.02	100	1	440	415	0.63808	
Eng 4 Run 2	0223-176.2 -2A	1.34	1.34	100	1	465	415	0.15045	
Eng 4 Run 3	0223-176.3 -2A	0.90	0.90	100	1	437	412	0.09539	J
Eng 4 Run 4	0223-176.4 -2A	1.19	1.19	100	1	450	400	0.13331	
Eng 4 Run 5	0223-176.5 -2A	0.27	0.27	100	1	438	413	0.02813	J
Eng 4 Run 6	0223-176.6 -2A	0.11	0.11	100	1	440	415	0.02048	ND
Eng 4 Run 7	0223-176.7 -2A	0.15	0.15	100	1	445	420	0.02047	ND
Eng 4 Field Blank	0223-176.8 -2A	0.02	0.02	100	1	290	265	0.02114	ND
Eng 4 Reagent Blank	0223-176.9 -2A	0.00	0.00	100	1	294	269	0.02111	ND
Eng 5 Run 1	0223-176.10 -2A	0.11	0.11	100	1	437	412	0.02049	ND
Eng 5 Run 2	0223-176.11 -2A	0.66	0.66	100	1	446	421	0.06966	J
Eng 5 Run 3	0223-176.12 -2A	0.32	0.32	100	1	450	400	0.03571	J
Eng 5 Run 4	0223-176.13 -2A	0.07	0.07	100	1	443	418	0.02047	ND
Eng 5 Run 5	0223-176.14 -2A	0.16	0.16	100	1	447	422	0.02046	ND
Eng 5 Run 6	0223-176.15 -2A	0.15	0.15	100	1	443	418	0.02047	ND
Eng 5 Run 7	0223-176.16 -2A	0.17	0.17	100	1	437	412	0.02049	ND
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	0.03	0.03	100	1	590	540	0.02111	ND
Lab Blank Front	0223-176.LB -2A	0.00	0.00	100	1			0.01932	ND
LCS Front	0223-176.LCS -2A	47.86	95.73	100	2		% REC =	95.7%	
Spike Front	0223-176.1S -2A	58.91	58.91	100	1		% REC =	105.8%	
Duplicate Front	0223-176.2D -2A	1.11					RPD =	N/A	

0223-176R Metals Worksheet

W002AS-023392-RT-4542

	Element	Cr 52			Methodology		ICP-MS	

Element   Cr 52   Methodology   ICP-MS
Client MAQS   MDL   0.50   µg/L
EA Project No. 0223-176   LOQ   5.0   µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50   µg/L
                                     Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor		Total (µg)
Front Halves							
Eng 4 Run 1	0223-176.1 -1A	9.05	45.26	100	5		4.52585
Eng 4 Run 2	0223-176.2 -1A	12.60	63.02	100	5		6.30225
Eng 4 Run 3	0223-176.3 -1A	9.06	45.28	100	5		4.52845
Eng 4 Run 4	0223-176.4 -1A	12.19	60.96	100	5		6.09630
Eng 4 Run 5	0223-176.5 -1A	12.56	62.82	100	5		6.28175
Eng 4 Run 6	0223-176.6 -1A	8.49	42.46	100	5		4.24645
Eng 4 Run 7	0223-176.7 -1A	12.20	61.01	100	5		6.10095
Eng 4 Field Blank	0223-176.8 -1A	2.54	12.72	100	5		1.27175 J
Eng 4 Reagent Blank	0223-176.9 -1A	2.09	10.47	100	5		1.04700 J
Eng 5 Run 1	0223-176.10 -1A	9.12	45.60	100	5		4.56000
Eng 5 Run 2	0223-176.11 -1A	12.24	61.19	100	5		6.11865
Eng 5 Run 3	0223-176.12 -1A	9.15	45.77	100	5		4.57655
Eng 5 Run 4	0223-176.13 -1A	8.83	44.17	100	5		4.41705
Eng 5 Run 5	0223-176.14 -1A	9.06	45.32	100	5		4.53215
Eng 5 Run 6	0223-176.15 -1A	7.07	35.37	100	5		3.53695
Eng 5 Run 7	0223-176.16 -1A	9.18	45.88	100	5		4.58820
Eng 5 Field Blank	0223-176.17 -1A	2.31	11.54	100	5		1.15435 J
Eng 5 Reagent Blank	0223-176.18 -1A	2.09	10.45	100	5		1.04475 J
Lab Blank Front	0223-176.LB -1A	0.36	0.36	100	1		0.05000 ND
LCS Front	0223-176.LCS -1A	48.36	96.72	100	2	% REC =	96.7%
Spike Front	0223-176.1S -1A	54.45	272.26	100	5	% REC =	90.8%
Duplicate Front	0223-176.2D -1A	12.48				RPD =	N/A

Element   Cr 52   Methodology   ICP-MS
Client   MAQS   MDL   0.50   µg/L
EA Project No. 0223-176   LOQ   5.0   µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50   µg/L
Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	Vol. Dig'd (mL)	Total (µg)
Back Halves								
Eng 4 Run 1	0223-176.1 -2A	6.22	6.22	100	1	440	415	0.65983
Eng 4 Run 2	0223-176.2 -2A	5.39	5.39	100	1	465	415	0.60402
Eng 4 Run 3	0223-176.3 -2A	4.65	4.65	100	1	437	412	0.49348 J
Eng 4 Run 4	0223-176.4 -2A	5.18	5.18	100	1	450	400	0.58262
Eng 4 Run 5	0223-176.5 -2A	5.27	5.27	100	1	438	413	0.55913
Eng 4 Run 6	0223-176.6 -2A	4.83	4.83	100	1	440	415	0.51222 J
Eng 4 Run 7	0223-176.7 -2A	4.25	4.25	100	1	445	420	0.45029 J
Eng 4 Field Blank	0223-176.8 -2A	0.42	0.42	100	1	290	265	0.05472 ND
Eng 4 Reagent Blank	0223-176.9 -2A	2.09	2.09	100	1	294	269	0.22839 J
Eng 5 Run 1	0223-176.10 -2A	5.01	5.01	100	1	437	412	0.53169
Eng 5 Run 2	0223-176.11 -2A	4.54	4.54	100	1	446	421	0.48134 J
Eng 5 Run 3	0223-176.12 -2A	5.92	5.92	100	1	450	400	0.66641
Eng 5 Run 4	0223-176.13 -2A	5.66	5.66	100	1	443	418	0.60029
Eng 5 Run 5	0223-176.14 -2A	4.94	4.94	100	1	447	422	0.52283 J
Eng 5 Run 6	0223-176.15 -2A	4.41	4.41	100	1	443	418	0.46688 J
Eng 5 Run 7	0223-176.16 -2A	8.72	8.72	100	1	437	412	0.92521
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	2.40	2.40	100	1	590	540	0.26180 J
Lab Blank Front	0223-176.LB -2A	0.37	0.37	100	1			0.05000 ND
LCS Front	0223-176.LCS -2A	49.63	99.26	100	2		% REC =	99.3%
Spike Front	0223-176.1S -2A	53.26	53.26	100	1		% REC =	94.1%
Duplicate Front	0223-176.2D -2A	5.31					RPD =	N/A

		Test Sol'n	Conc.	FV			Total
Element	Co 59				Methodology		ICP-MS

Element   Co 59   Methodology   ICP-MS
Client MAQS   MDL   0.11 µg/L
EA Project No. 0223-176   LOQ   1.0 µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50 µg/L
Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor		Total (µg)
Front Halves							
Eng 4 Run 1	0223-176.1 -1A	0.28	1.42	100	5		0.14165 J
Eng 4 Run 2	0223-176.2 -1A	0.40	2.01	100	5		0.20130 J
Eng 4 Run 3	0223-176.3 -1A	2.28	11.39	100	5		1.13925
Eng 4 Run 4	0223-176.4 -1A	0.16	0.78	100	5		0.07765 J
Eng 4 Run 5	0223-176.5 -1A	0.07	0.36	100	5		0.05623 ND
Eng 4 Run 6	0223-176.6 -1A	0.01	0.07	100	5		0.05623 ND
Eng 4 Run 7	0223-176.7 -1A	0.08	0.38	100	5		0.05623 ND
Eng 4 Field Blank	0223-176.8 -1A	0.02	0.11	100	5		0.05623 ND
Eng 4 Reagent Blank	0223-176.9 -1A	0.00	0.01	100	5		0.05623 ND
Eng 5 Run 1	0223-176.10 -1A	0.01	0.07	100	5		0.05623 ND
Eng 5 Run 2	0223-176.11 -1A	0.01	0.06	100	5		0.05623 ND
Eng 5 Run 3	0223-176.12 -1A	0.01	0.07	100	5		0.05623 ND
Eng 5 Run 4	0223-176.13 -1A	0.01	0.05	100	5		0.05623 ND
Eng 5 Run 5	0223-176.14 -1A	0.01	0.06	100	5		0.05623 ND
Eng 5 Run 6	0223-176.15 -1A	0.03	0.17	100	5		0.05623 ND
Eng 5 Run 7	0223-176.16 -1A	0.07	0.33	100	5		0.05623 ND
Eng 5 Field Blank	0223-176.17 -1A	0.02	0.08	100	5		0.05623 ND
Eng 5 Reagent Blank	0223-176.18 -1A	0.00	0.02	100	5		0.05623 ND
Lab Blank Front	0223-176.LB -1A	0.19	0.19	100	1		0.01877 J
LCS Front	0223-176.LCS -1A	48.03	96.06	100	2	% REC =	96.1%
Spike Front	0223-176.1S -1A	45.35	226.77	100	5	% REC =	90.1%
Duplicate Front	0223-176.2D -1A	0.21				RPD =	N/A

		Element	Co 59			Methodology		ICP-MS	

Element   Co 59   Methodology   ICP-MS

Client   MAQS   MDL   0.15   µg/L

EA Project No. 0223-176   LOQ   1.0   µg/L

Analysis Date 3/29/2023   Postdig'n Spike Conc.   50   µg/L

Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	MAL Vol. Dig'd (mL)	Total (µg)	
Back Halves									
Eng 4 Run 1	0223-176.1 -2A	0.79	0.79	100	1	440	415	0.08366	J
Eng 4 Run 2	0223-176.2 -2A	0.65	0.65	100	1	465	415	0.07289	J
Eng 4 Run 3	0223-176.3 -2A	0.23	0.23	100	1	437	412	0.02414	J
Eng 4 Run 4	0223-176.4 -2A	0.39	0.39	100	1	450	400	0.04374	J
Eng 4 Run 5	0223-176.5 -2A	0.35	0.35	100	1	438	413	0.03700	J
Eng 4 Run 6	0223-176.6 -2A	0.25	0.25	100	1	440	415	0.02699	J
Eng 4 Run 7	0223-176.7 -2A	0.33	0.33	100	1	445	420	0.03482	J
Eng 4 Field Blank	0223-176.8 -2A	0.06	0.06	100	1	290	265	0.01691	ND
Eng 4 Reagent Blank	0223-176.9 -2A	0.02	0.02	100	1	294	269	0.01689	ND
Eng 5 Run 1	0223-176.10 -2A	0.15	0.15	100	1	437	412	0.01639	ND
Eng 5 Run 2	0223-176.11 -2A	0.14	0.14	100	1	446	421	0.01637	ND
Eng 5 Run 3	0223-176.12 -2A	0.20	0.20	100	1	450	400	0.02204	J
Eng 5 Run 4	0223-176.13 -2A	0.16	0.16	100	1	443	418	0.01701	J
Eng 5 Run 5	0223-176.14 -2A	0.23	0.23	100	1	447	422	0.02410	J
Eng 5 Run 6	0223-176.15 -2A	0.09	0.09	100	1	443	418	0.01638	ND
Eng 5 Run 7	0223-176.16 -2A	0.25	0.25	100	1	437	412	0.02632	J
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	0.02	0.02	100	1	590	540	0.01688	ND
Lab Blank Front	0223-176.LB -2A	0.20	0.20	100	1			0.01983	J
LCS Front	0223-176.LCS -2A	48.06	96.12	100	2		% REC =	96.1%	
Spike Front	0223-176.1S -2A	49.22	49.22	100	1		% REC =	96.9%	
Duplicate Front	0223-176.2D -2A	0.50					RPD =	N/A	

		Test Sol'n	Conc.	FV			Total
Element	Pb 208			Methodology		ICP-MS	

Element   Pb 208   Methodology   ICP-MS
Client MAQS   MDL   0.10   µg/L
EA Project No. 0223-176   LOQ   1.0   µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50   µg/L
                                                              Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor		Total (µg)
Front Halves							
Eng 4 Run 1	0223-176.1 -1A	1.27	6.33	100	5		0.63310
Eng 4 Run 2	0223-176.2 -1A	1.10	5.48	100	5		0.54805
Eng 4 Run 3	0223-176.3 -1A	0.69	3.45	100	5		0.34505 J
Eng 4 Run 4	0223-176.4 -1A	0.71	3.56	100	5		0.35560 J
Eng 4 Run 5	0223-176.5 -1A	0.81	4.05	100	5		0.40460 J
Eng 4 Run 6	0223-176.6 -1A	0.62	3.11	100	5		0.31075 J
Eng 4 Run 7	0223-176.7 -1A	0.69	3.44	100	5		0.34425 J
Eng 4 Field Blank	0223-176.8 -1A	0.74	3.71	100	5		0.37095 J
Eng 4 Reagent Blank	0223-176.9 -1A	0.48	2.40	100	5		0.24000 J
Eng 5 Run 1	0223-176.10 -1A	0.64	3.21	100	5		0.32050 J
Eng 5 Run 2	0223-176.11 -1A	0.63	3.14	100	5		0.31365 J
Eng 5 Run 3	0223-176.12 -1A	0.59	2.95	100	5		0.29490 J
Eng 5 Run 4	0223-176.13 -1A	0.56	2.79	100	5		0.27875 J
Eng 5 Run 5	0223-176.14 -1A	0.70	3.48	100	5		0.34835 J
Eng 5 Run 6	0223-176.15 -1A	0.67	3.33	100	5		0.33330 J
Eng 5 Run 7	0223-176.16 -1A	0.69	3.44	100	5		0.34360 J
Eng 5 Field Blank	0223-176.17 -1A	0.56	2.81	100	5		0.28110 J
Eng 5 Reagent Blank	0223-176.18 -1A	0.42	2.09	100	5		0.20935 J
Lab Blank Front	0223-176.LB -1A	0.18	0.18	100	1		0.01833 J
LCS Front	0223-176.LCS -1A	49.71	99.43	100	2	% REC =	99.4%
Spike Front	0223-176.1S -1A	51.07	255.35	100	5	% REC =	99.6%
Duplicate Front	0223-176.2D -1A	0.90				RPD =	N/A

0223-176R Metals Worksheet

		Element	Pb 208		Methodology		ICP-MS	

Element   Pb 208   Methodology   ICP-MS
Client MAQS   MDL   0.19 µg/L
EA Project No. 0223-176   LOQ   1.0   µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50   µg/L
                                            Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	MAL Vol. Dig'd (mL)	Total (µg)	
Back Halves									
Eng 4 Run 1	0223-176.1 -2A	6.94	6.94	100	1	440	415	0.73627	
Eng 4 Run 2	0223-176.2 -2A	4.26	4.3	100	1	465	415	0.47682	
Eng 4 Run 3	0223-176.3 -2A	1.93	1.93	100	1	437	412	0.20494	
Eng 4 Run 4	0223-176.4 -2A	3.01	3.01	100	1	450	400	0.33834	
Eng 4 Run 5	0223-176.5 -2A	1.96	1.96	100	1	438	413	0.20751	
Eng 4 Run 6	0223-176.6 -2A	1.81	1.81	100	1	440	415	0.19154	
Eng 4 Run 7	0223-176.7 -2A	1.15	1.15	100	1	445	420	0.12189	
Eng 4 Field Blank	0223-176.8 -2A	0.21	0.21	100	1	290	265	0.02289	J
Eng 4 Reagent Blank	0223-176.9 -2A	0.17	0.17	100	1	294	269	0.02024	ND
Eng 5 Run 1	0223-176.10 -2A	0.93	0.93	100	1	437	412	0.09901	J
Eng 5 Run 2	0223-176.11 -2A	1.06	1.1	100	1	446	421	0.11239	
Eng 5 Run 3	0223-176.12 -2A	1.31	1.31	100	1	450	400	0.14698	
Eng 5 Run 4	0223-176.13 -2A	1.01	1.01	100	1	443	418	0.10682	
Eng 5 Run 5	0223-176.14 -2A	0.90	0.90	100	1	447	422	0.09488	J
Eng 5 Run 6	0223-176.15 -2A	0.58	0.58	100	1	443	418	0.06163	J
Eng 5 Run 7	0223-176.16 -2A	0.92	0.92	100	1	437	412	0.09756	J
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	0.67	0.67	100	1	590	540	0.07339	J
Lab Blank Front	0223-176.LB -2A	0.01	0.01	100	1			0.01852	ND
LCS Front	0223-176.LCS -2A	49.93	99.86	100	2		% REC =	99.9%	
Spike Front	0223-176.1S -2A	58.44	58.4	100	1		% REC =	103.0%	
Duplicate Front	0223-176.2D -2A	4.09					RPD =	N/A	

		Element	Mn 55		Methodology		ICP-MS	

Element   Mn 55   Methodology   ICP-MS
Client MAQS   MDL   0.80   µg/L
EA Project No. 0223-176   LOQ   5.0   µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50   µg/L
                                                                Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor		Total (µg)	
Front Halves								
Eng 4 Run 1	0223-176.1 -1A	2.06	10.31	100	5		1.03050	J
Eng 4 Run 2	0223-176.2 -1A	1.95	9.74	100	5		0.97365	J
Eng 4 Run 3	0223-176.3 -1A	1.48	7.40	100	5		0.74025	J
Eng 4 Run 4	0223-176.4 -1A	1.55	7.74	100	5		0.77435	J
Eng 4 Run 5	0223-176.5 -1A	1.45	7.23	100	5		0.72335	J
Eng 4 Run 6	0223-176.6 -1A	2.89	14.47	100	5		1.44665	J
Eng 4 Run 7	0223-176.7 -1A	3.21	16.06	100	5		1.60645	J
Eng 4 Field Blank	0223-176.8 -1A	1.08	5.38	100	5		0.53775	J
Eng 4 Reagent Blank	0223-176.9 -1A	0.92	4.59	100	5		0.45865	J
Eng 5 Run 1	0223-176.10 -1A	1.30	6.49	100	5		0.64880	J
Eng 5 Run 2	0223-176.11 -1A	4.56	22.81	100	5		2.28055	J
Eng 5 Run 3	0223-176.12 -1A	1.37	6.87	100	5		0.68705	J
Eng 5 Run 4	0223-176.13 -1A	1.39	6.96	100	5		0.69580	J
Eng 5 Run 5	0223-176.14 -1A	1.35	6.73	100	5		0.67285	J
Eng 5 Run 6	0223-176.15 -1A	5.17	25.85	100	5		2.58530	
Eng 5 Run 7	0223-176.16 -1A	2.46	12.28	100	5		1.22840	J
Eng 5 Field Blank	0223-176.17 -1A	1.12	5.60	100	5		0.55960	J
Eng 5 Reagent Blank	0223-176.18 -1A	0.97	4.84	100	5		0.48370	J
Lab Blank Front	0223-176.LB -1A	0.32	0.32	100	1		0.07986	ND
LCS Front	0223-176.LCS -1A	50.08	100.16	100	2	% REC =	100.2%	
Spike Front	0223-176.1S -1A	49.34	246.72	100	5	% REC =	94.6%	
Duplicate Front	0223-176.2D -1A	1.73				RPD =	N/A	

0223-176R Metals Worksheet

W002AS-023392-RT-4542

		Element	Mn 55		Methodology		ICP-MS	

Element   Mn 55   Methodology   ICP-MS
Client MAQS   MDL   0.59 µg/L
EA Project No. 0223-176   LOQ   5.0   µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50   µg/L
                                        Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	MAL Vol. Dig'd (mL)	Total (µg)	
Back Halves									
Eng 4 Run 1	0223-176.1 -2A	11.45	11.45	100	1	440	415	1.21388	
Eng 4 Run 2	0223-176.2 -2A	7.78	7.78	100	1	465	415	0.87176	
Eng 4 Run 3	0223-176.3 -2A	3.93	3.93	100	1	437	412	0.41730	J
Eng 4 Run 4	0223-176.4 -2A	5.11	5.11	100	1	450	400	0.57492	
Eng 4 Run 5	0223-176.5 -2A	6.18	6.18	100	1	438	413	0.65574	
Eng 4 Run 6	0223-176.6 -2A	9.62	9.62	100	1	440	415	1.01943	
Eng 4 Run 7	0223-176.7 -2A	13.07	13.07	100	1	445	420	1.38476	
Eng 4 Field Blank	0223-176.8 -2A	1.11	1.11	100	1	290	265	0.12130	J
Eng 4 Reagent Blank	0223-176.9 -2A	1.97	1.97	100	1	294	269	0.21584	J
Eng 5 Run 1	0223-176.10 -2A	14.49	144.87	100	10	437	412	15.3656	
Eng 5 Run 2	0223-176.11 -2A	4.80	4.80	100	1	446	421	0.50858	J
Eng 5 Run 3	0223-176.12 -2A	15.83	15.83	100	1	450	400	1.78053	
Eng 5 Run 4	0223-176.13 -2A	4.00	4.00	100	1	443	418	0.42409	J
Eng 5 Run 5	0223-176.14 -2A	8.60	8.60	100	1	447	422	0.91049	
Eng 5 Run 6	0223-176.15 -2A	6.21	6.21	100	1	443	418	0.65844	
Eng 5 Run 7	0223-176.16 -2A	15.91	15.91	100	1	437	412	1.68787	
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	3.50	3.50	100	1	590	540	0.38229	J
Lab Blank Front	0223-176.LB -2A	0.57	0.57	100	1			0.05887	ND
LCS Front	0223-176.LCS -2A	48.53	97.06	100	2		% REC =	97.1%	
Spike Front	0223-176.1S -2A	59.64	59.64	100	1		% REC =	96.4%	
Duplicate Front	0223-176.2D -2A	7.73					RPD =	N/A	

	Element	Ni 60			Methodology		ICP-MS	
	Client	MAQS			MDL		0.65	µg/L
	EA Project No.	0223-176			LOQ		5.0	µg/L
	Analysis Date	3/29/2023			Postdig'n Spike Conc.		50	µg/L
					Analyst(s)		MAL	

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor		Total (µg)	
Front Halves								
Eng 4 Run 1	0223-176.1 -1A	4.31	21.55	100	5		2.15500	J
Eng 4 Run 2	0223-176.2 -1A	3.69	18.46	100	5		1.84635	J
Eng 4 Run 3	0223-176.3 -1A	2.74	13.69	100	5		1.36875	J
Eng 4 Run 4	0223-176.4 -1A	3.91	19.53	100	5		1.95295	J
Eng 4 Run 5	0223-176.5 -1A	2.98	14.90	100	5		1.48970	J
Eng 4 Run 6	0223-176.6 -1A	2.49	12.45	100	5		1.24530	J
Eng 4 Run 7	0223-176.7 -1A	2.95	14.73	100	5		1.47340	J
Eng 4 Field Blank	0223-176.8 -1A	2.51	12.57	100	5		1.25675	J
Eng 4 Reagent Blank	0223-176.9 -1A	2.25	11.25	100	5		1.12515	J
Eng 5 Run 1	0223-176.10 -1A	2.81	14.06	100	5		1.40645	J
Eng 5 Run 2	0223-176.11 -1A	3.32	16.58	100	5		1.65750	J
Eng 5 Run 3	0223-176.12 -1A	2.86	14.31	100	5		1.43110	J
Eng 5 Run 4	0223-176.13 -1A	2.80	14.00	100	5		1.40045	J
Eng 5 Run 5	0223-176.14 -1A	3.88	19.42	100	5		1.94240	J
Eng 5 Run 6	0223-176.15 -1A	2.75	13.75	100	5		1.37460	J
Eng 5 Run 7	0223-176.16 -1A	2.49	12.45	100	5		1.24460	J
Eng 5 Field Blank	0223-176.17 -1A	3.76	18.81	100	5		1.88080	J
Eng 5 Reagent Blank	0223-176.18 -1A	2.23	11.13	100	5		1.11340	J
Lab Blank Front	0223-176.LB -1A	0.42	0.42	100	1		0.06505	ND
LCS Front	0223-176.LCS -1A	47.23	94.46	100	2	% REC =	94.5%	
Spike Front	0223-176.1S -1A	47.68	238.41	100	5	% REC =	86.7%	
Duplicate Front	0223-176.2D -1A	3.61				RPD =	N/A	

0223-176R Metals Worksheet

W002AS-023392-RT-4542

		Element	Ni 60			Methodology		ICP-MS	

Element   Ni 60   Methodology   ICP-MS
Client MAQS   MDL   0.50 µg/L
EA Project No. 0223-176   LOQ   5.0 µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50 µg/L
                                          Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	MAL Vol. Dig'd (mL)	Total (µg)	
Back Halves									
Eng 4 Run 1	0223-176.1 -2A	13.60	13.60	100	1	440	415	1.44242	
Eng 4 Run 2	0223-176.2 -2A	5.28	5.28	100	1	465	415	0.59122	
Eng 4 Run 3	0223-176.3 -2A	7.26	7.26	100	1	437	412	0.76971	
Eng 4 Run 4	0223-176.4 -2A	6.63	6.63	100	1	450	400	0.74576	
Eng 4 Run 5	0223-176.5 -2A	5.19	5.19	100	1	438	413	0.55042	
Eng 4 Run 6	0223-176.6 -2A	3.44	3.44	100	1	440	415	0.36468	J
Eng 4 Run 7	0223-176.7 -2A	3.21	3.21	100	1	445	420	0.34047	J
Eng 4 Field Blank	0223-176.8 -2A	0.43	0.43	100	1	290	265	0.05472	ND
Eng 4 Reagent Blank	0223-176.9 -2A	1.58	1.58	100	1	294	269	0.17257	J
Eng 5 Run 1	0223-176.10 -2A	3.65	3.65	100	1	437	412	0.38764	J
Eng 5 Run 2	0223-176.11 -2A	3.86	3.86	100	1	446	421	0.40849	J
Eng 5 Run 3	0223-176.12 -2A	3.87	3.87	100	1	450	400	0.43502	J
Eng 5 Run 4	0223-176.13 -2A	5.09	5.09	100	1	443	418	0.53945	
Eng 5 Run 5	0223-176.14 -2A	6.05	6.05	100	1	447	422	0.64046	
Eng 5 Run 6	0223-176.15 -2A	3.68	3.68	100	1	443	418	0.38997	J
Eng 5 Run 7	0223-176.16 -2A	6.97	6.97	100	1	437	412	0.73924	
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	1.43	1.43	100	1	590	540	0.15602	J
Lab Blank Front	0223-176.LB -2A	0.55	0.55	100	1			0.05545	J
LCS Front	0223-176.LCS -2A	48.92	97.84	100	2		% REC =	97.8%	
Spike Front	0223-176.1S -2A	61.38	61.38	100	1		% REC =	95.6%	
Duplicate Front	0223-176.2D -2A	5.15					RPD =	N/A	

		Element	Se 77			Methodology		ICP-MS	

Element   Se 77
Client MAQS
EA Project No. 0223-176
Analysis Date 3/29/2023

Methodology   ICP-MS
MDL   0.61 μg/L
LOQ   5.0 μg/L
Postdig'n Spike Conc.   50 μg/L
Analyst(s)   MAL

Sample ID		Test Sol'n (μg/L)	Conc. (μg/L)	FV (mL)	Diln Factor		Total (μg)	
Front Halves								
Eng 4 Run 1	0223-176.1 -1A	0.37	1.87	100	5		0.30361	ND
Eng 4 Run 2	0223-176.2 -1A	0.37	1.84	100	5		0.30361	ND
Eng 4 Run 3	0223-176.3 -1A	0.14	0.72	100	5		0.30361	ND
Eng 4 Run 4	0223-176.4 -1A	0.05	0.27	100	5		0.30361	ND
Eng 4 Run 5	0223-176.5 -1A	0.00	0.00	100	5		0.30361	ND
Eng 4 Run 6	0223-176.6 -1A	0.00	0.00	100	5		0.30361	ND
Eng 4 Run 7	0223-176.7 -1A	0.00	0.00	100	5		0.30361	ND
Eng 4 Field Blank	0223-176.8 -1A	0.00	0.00	100	5		0.30361	ND
Eng 4 Reagent Blank	0223-176.9 -1A	0.00	0.00	100	5		0.30361	ND
Eng 5 Run 1	0223-176.10 -1A	0.00	0.00	100	5		0.30361	ND
Eng 5 Run 2	0223-176.11 -1A	0.00	0.00	100	5		0.30361	ND
Eng 5 Run 3	0223-176.12 -1A	0.00	0.00	100	5		0.30361	ND
Eng 5 Run 4	0223-176.13 -1A	0.00	0.00	100	5		0.30361	ND
Eng 5 Run 5	0223-176.14 -1A	0.00	0.00	100	5		0.30361	ND
Eng 5 Run 6	0223-176.15 -1A	0.00	0.00	100	5		0.30361	ND
Eng 5 Run 7	0223-176.16 -1A	0.00	0.00	100	5		0.30361	ND
Eng 5 Field Blank	0223-176.17 -1A	0.00	0.00	100	5		0.30361	ND
Eng 5 Reagent Blank	0223-176.18 -1A	0.00	0.00	100	5		0.30361	ND
Lab Blank Front	0223-176.LB -1A	0.24	0.24	100	1		0.06072	ND
LCS Front	0223-176.LCS -1A	48.99	97.97	100	2	% REC =	98.0%	
Spike Front	0223-176.1S -1A	47.40	237.00	100	5	% REC =	94.8%	
Duplicate Front	0223-176.2D -1A	0.19				RPD =	N/A	

| | | Methodology | | | ICP-MS | | | |
| | | | | | | | | |

Element   Se 77   Methodology   ICP-MS
Client MAQS   MDL   0.80 µg/L
EA Project No. 0223-176   LOQ   5.0 µg/L
Analysis Date 3/29/2023   Postdig'n Spike Conc.   50 µg/L
                                      Analyst(s)   MAL

Sample ID		Test Sol'n (µg/L)	Conc. (µg/L)	FV (mL)	Diln Factor	Total Vol. (mL)	MAL Vol. Dig'd (mL)	Total (µg)	
Back Halves									
Eng 4 Run 1	0223-176.1 -2A	10.69	10.69	100	1	440	415	1.13376	
Eng 4 Run 2	0223-176.2 -2A	2.87	2.87	100	1	465	415	0.32194	J
Eng 4 Run 3	0223-176.3 -2A	10.96	10.96	100	1	437	412	1.16248	
Eng 4 Run 4	0223-176.4 -2A	41.62	41.62	100	1	450	400	4.68201	
Eng 4 Run 5	0223-176.5 -2A	10.91	10.91	100	1	438	413	1.15747	
Eng 4 Run 6	0223-176.6 -2A	75.25	75.25	100	1	440	415	7.97861	
Eng 4 Run 7	0223-176.7 -2A	5.27	5.27	100	1	445	420	0.55817	
Eng 4 Field Blank	0223-176.8 -2A	0.24	0.24	100	1	290	265	0.08746	ND
Eng 4 Reagent Blank	0223-176.9 -2A	0.23	0.23	100	1	294	269	0.08735	ND
Eng 5 Run 1	0223-176.10 -2A	79.00	79.00	100	1	437	412	8.37910	
Eng 5 Run 2	0223-176.11 -2A	21.57	21.57	100	1	446	421	2.28525	
Eng 5 Run 3	0223-176.12 -2A	17.98	179.84	100	10	450	400	20.2314	
Eng 5 Run 4	0223-176.13 -2A	3.08	3.08	100	1	443	418	0.32611	J
Eng 5 Run 5	0223-176.14 -2A	7.71	7.71	100	1	447	422	0.81670	
Eng 5 Run 6	0223-176.15 -2A	2.25	2.25	100	1	443	418	0.23853	J
Eng 5 Run 7	0223-176.16 -2A	8.72	8.72	100	1	437	412	0.92463	
Eng 5 Field Blk + Eng 5 Reag. Blk Composite	0223-176.17 -2A	0.30	0.30	100	1	590	540	0.08732	ND
Lab Blank Front	0223-176.LB -2A	0.33	0.33	100	1			0.07992	ND
LCS Front	0223-176.LCS -2A	48.11	96.22	100	2		% REC =	96.2%	
Spike Front	0223-176.1S -2A	63.57	63.57	100	1		% REC =	105.8%	
Duplicate Front	0223-176.2D -2A	2.56					RPD =	N/A	

0223-176R Metals Worksheet

W002AS-023392-RT-4542

METHOD 29 MERCURY - CVAA Worksheet

Client: MAQS - Santa Ana
EA Project #: 0223-176
Analysis Date: 2/27/23, 2/28/23, 3/1/23, 3/6/23, 3/7/23

MDL = 0.050 µg/L
RL = 0.10 µg/L
Matrix spike conc. = 5.0 µg/L

Sample ID		Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Total Volume ml	Volume Dig'd ml	Total µg	
FRACTION 1B									
ENG 4 Run 1	0223-176.1 -1B	-0.018	-0.02	50	1	100	10.0	0.0250	ND
ENG 4 Run 2	0223-176.2 -1B	-0.048	-0.05	50	1	100	10.0	0.0250	ND
ENG 4 Run 3	0223-176.3 -1B	-0.031	-0.03	50	1	100	10.0	0.0250	ND
ENG 4 Run 4	0223-176.4 -1B	-0.020	-0.02	50	1	100	10.0	0.0250	ND
ENG 4 Run 5	0223-176.5 -1B	-0.019	-0.02	50	1	100	10.0	0.0250	ND
ENG 4 Run 6	0223-176.6 -1B	-0.016	-0.02	50	1	100	10.0	0.0250	ND
ENG 4 Run 7	0223-176.7 -1B	-0.021	-0.02	50	1	100	10.0	0.0250	ND
ENG 4 Field Blank	0223-176.8 -1B	-0.017	-0.02	50	1	100	10.0	0.0250	ND
ENG 4 Reagent Blank	0223-176.9 -1B	-0.027	-0.03	50	1	100	10.0	0.0250	ND
ENG 5 Run 1	0223-176.10 -1B	-0.028	-0.03	50	1	100	10.0	0.0250	ND
ENG 5 Run 2	0223-176.11 -1B	-0.023	-0.02	50	1	100	10.0	0.0250	ND
ENG 5 Run 3	0223-176.12 -1B	-0.031	-0.03	50	1	100	10.0	0.0250	ND
ENG 5 Run 4	0223-176.13 -1B	-0.030	-0.03	50	1	100	10.0	0.0250	ND
ENG 5 Run 5	0223-176.14 -1B	-0.031	-0.03	50	1	100	10.0	0.0250	ND
ENG 5 Run 6	0223-176.15 -1B	-0.030	-0.03	50	1	100	10.0	0.0250	ND
ENG 5 Run 7	0223-176.16 -1B	-0.027	-0.03	50	1	100	10.0	0.0250	ND
ENG 5 Field Blank	0223-176.17 -1B	-0.025	-0.03	50	1	100	10.0	0.0250	ND
ENG 5 Reagent Blank	0223-176.18 -1B	-0.029	-0.03	50	1	100	10.0	0.0250	ND
Matrix Spike	0223-176.1S -1B	4.650				% REC =	93.0%		
Duplicate	0223-176.2D -1B	-0.014				% RPD =	N/A		
FRACTION 2B									
ENG 4 Run 1	0223-176.1 -2B	0.009	0.01	50	1	440	5.0	0.2200	ND
ENG 4 Run 2	0223-176.2 -2B	0.029	0.03	50	1	465	5.0	0.2325	ND
ENG 4 Run 3	0223-176.3 -2B	0.011	0.01	50	1	437	5.0	0.2185	ND
ENG 4 Run 4	0223-176.4 -2B	0.038	0.04	50	1	450	5.0	0.2250	ND
ENG 4 Run 5	0223-176.5 -2B	0.013	0.01	50	1	438	5.0	0.2190	ND
ENG 4 Run 6	0223-176.6 -2B	0.020	0.02	50	1	440	5.0	0.2200	ND
ENG 4 Run 7	0223-176.7 -2B	0.002	0.00	50	1	445	5.0	0.2225	ND
ENG 4 Field Blank	0223-176.8 -2B	-0.001	0.00	50	1	290	5.0	0.1450	ND
ENG 4 Reagent Blank	0223-176.9 -2B	0.035	0.04	50	1	294	5.0	0.1470	ND
ENG 5 Run 1	0223-176.10 -2B	0.007	0.01	50	1	437	5.0	0.2185	ND
ENG 5 Run 2	0223-176.11 -2B	0.028	0.03	50	1	446	5.0	0.2230	ND
ENG 5 Run 3	0223-176.12 -2B	0.021	0.02	50	1	450	5.0	0.2250	ND
ENG 5 Run 4	0223-176.13 -2B	0.017	0.02	50	1	443	5.0	0.2215	ND
ENG 5 Run 5	0223-176.14 -2B	0.013	0.01	50	1	447	5.0	0.2235	ND
ENG 5 Run 6	0223-176.15 -2B	0.014	0.01	50	1	443	5.0	0.2215	ND
ENG 5 Run 7	0223-176.16 -2B	0.010	0.01	50	1	437	5.0	0.2185	ND
ENG 5 Field Blank	0223-176.17 -2B	0.003	0.00	50	1	290	5.0	0.1450	ND
ENG 5 Reagent Blank	0223-176.18 -2B	0.032	0.03	50	1	300	5.0	0.1500	ND
Matrix Spike	0223-176.1S -2B	5.100				% REC =	102.0%		
Duplicate	0223-176.2D -2B	0.032				% RPD =	N/A		

METHOD 29 MERCURY - CVAA Worksheet

Client: MAQS - Santa Ana   MDL =   0.050 µg/L
EA Project #: 0223-176   RL =   0.10 µg/L
Analysis Date: 2/27/23, 2/28/23, 3/1/23, 3/6/23, 3/7/23   Matrix spike conc. =   5.0 µg/L

Sample ID		Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Total Volume ml	Volume Dig'd ml	Total µg	
FRACTION 3A									
ENG 4 Run 1	0223-176.1 -3A	0.033	0.03	50	1	93	10.0	0.0232	ND
ENG 4 Run 2	0223-176.2 -3A	0.026	0.03	50	1	98	10.0	0.0245	ND
ENG 4 Run 3	0223-176.3 -3A	-0.002	0.00	50	1	96	10.0	0.0240	ND
ENG 4 Run 4	0223-176.4 -3A	0.010	0.01	50	1	102	10.0	0.0255	ND
ENG 4 Run 5	0223-176.5 -3A	0.000	0.00	50	1	100	10.0	0.0250	ND
ENG 4 Run 6	0223-176.6 -3A	0.002	0.00	50	1	97	10.0	0.0242	ND
ENG 4 Run 7	0223-176.7 -3A	0.003	0.00	50	1	98	10.0	0.0245	ND
ENG 4 Field Blank	0223-176.8 -3A	-0.002	0.00	50	1	98	10.0	0.0245	ND
ENG 4 Reagent Blank	0223-176.9 -3A	-0.003	0.00	50	1	95	10.0	0.0237	ND
ENG 5 Run 1	0223-176.10 -3A	-0.002	0.00	50	1	100	10.0	0.0250	ND
ENG 5 Run 2	0223-176.11 -3A	0.011	0.01	50	1	100	10.0	0.0250	ND
ENG 5 Run 3	0223-176.12 -3A	-0.001	0.00	50	1	95	10.0	0.0237	ND
ENG 5 Run 4	0223-176.13 -3A	0.004	0.00	50	1	99	10.0	0.0247	ND
ENG 5 Run 5	0223-176.14 -3A	0.002	0.00	50	1	100	10.0	0.0250	ND
ENG 5 Run 6	0223-176.15 -3A	0.002	0.00	50	1	98	10.0	0.0245	ND
ENG 5 Run 7	0223-176.16 -3A	0.001	0.00	50	1	96	10.0	0.0240	ND
ENG 5 Field Blank	0223-176.17 -3A	0.000	0.00	50	1	97	10.0	0.0242	ND
ENG 5 Reagent Blank	0223-176.18 -3A	-0.001	0.00	50	1	98	10.0	0.0245	ND
Matrix Spike	0223-176.1S -3A	5.030				% REC =	100.6%		
Duplicate	0223-176.2D -3A	0.028				% RPD =	N/A		
FRACTION 3B									
ENG 4 Run 1	0223-176.1 -3B	-0.001	0.00	50	1	365	10.0	0.0912	ND
ENG 4 Run 2	0223-176.2 -3B	0.014	0.01	50	1	245	10.0	0.0612	ND
ENG 4 Run 3	0223-176.3 -3B	0.017	0.02	50	1	255	10.0	0.0637	ND
ENG 4 Run 4	0223-176.4 -3B	0.021	0.02	50	1	250	10.0	0.0625	ND
ENG 4 Run 5	0223-176.5 -3B	0.017	0.02	50	1	240	10.0	0.0600	ND
ENG 4 Run 6	0223-176.6 -3B	0.026	0.03	50	1	260	10.0	0.0650	ND
ENG 4 Run 7	0223-176.7 -3B	0.022	0.02	50	1	240	10.0	0.0600	ND
ENG 4 Field Blank	0223-176.8 -3B	0.021	0.02	50	1	240	10.0	0.0600	ND
ENG 4 Reagent Blank	0223-176.9 -3B	0.020	0.02	50	1	82	10.0	0.0205	ND
ENG 5 Run 1	0223-176.10 -3B	0.022	0.02	50	1	240	10.0	0.0600	ND
ENG 5 Run 2	0223-176.11 -3B	0.019	0.02	50	1	235	10.0	0.0587	ND
ENG 5 Run 3	0223-176.12 -3B	0.018	0.02	50	1	245	10.0	0.0612	ND
ENG 5 Run 4	0223-176.13 -3B	0.021	0.02	50	1	230	10.0	0.0575	ND
ENG 5 Run 5	0223-176.14 -3B	0.021	0.02	50	1	265	10.0	0.0662	ND
ENG 5 Run 6	0223-176.15 -3B	0.022	0.02	50	1	260	10.0	0.0650	ND
ENG 5 Run 7	0223-176.16 -3B	0.020	0.02	50	1	255	10.0	0.0637	ND
ENG 5 Field Blank	0223-176.17 -3B	0.061	0.06	50	1	265	10.0	0.0808	J
ENG 5 Reagent Blank	0223-176.18 -3B	0.022	0.02	50	1	82	10.0	0.0205	ND
Matrix Spike	0223-176.1S -3B	5.290				% REC =	105.8%		
Duplicate	0223-176.2D -3B	0.017				% RPD =	N/A		

METHOD 29 MERCURY - CVAA Worksheet

Client: MAQS - Santa Ana
EA Project #: 0223-176
Analysis Date: 2/27/23, 2/28/23, 3/1/23, 3/6/23, 3/7/23

MDL = 0.050 µg/L
RL = 0.10 µg/L
Matrix spike conc. = 5.0 µg/L

Sample ID		Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Total Volume ml	Volume Dig'd ml	Total µg
FRACTION 3C								
ENG 4 Run 1	0223-176.1 -3C	0.288	0.29	50	1	275	10.0	0.3960
ENG 4 Run 2	0223-176.2 -3C	0.153	0.15	50	1	285	10.0	0.2180
ENG 4 Run 3	0223-176.3 -3C	0.471	0.47	50	1	285	10.0	0.6712
ENG 4 Run 4	0223-176.4 -3C	0.134	0.13	50	1	285	10.0	0.1910
ENG 4 Run 5	0223-176.5 -3C	0.072	0.07	50	1	300	10.0	0.1080 J
ENG 4 Run 6	0223-176.6 -3C	0.115	0.12	50	1	310	10.0	0.1783
ENG 4 Run 7	0223-176.7 -3C	0.058	0.06	50	1	285	10.0	0.0827 J
ENG 4 Field Blank	0223-176.8 -3C	0.301	0.30	50	1	285	10.0	0.4289
ENG 4 Reagent Blank	0223-176.9 -3C	0.020	0.02	50	1	260	10.0	0.0650 ND
ENG 5 Run 1	0223-176.10 -3C	0.067	0.07	50	1	290	10.0	0.0972 J
ENG 5 Run 2	0223-176.11 -3C	0.083	0.08	50	1	275	10.0	0.1141 J
ENG 5 Run 3	0223-176.12 -3C	0.072	0.07	50	1	290	10.0	0.1044 J
ENG 5 Run 4	0223-176.13 -3C	0.075	0.08	50	1	285	10.0	0.1069 J
ENG 5 Run 5	0223-176.14 -3C	0.070	0.07	50	1	295	10.0	0.1033 J
ENG 5 Run 6	0223-176.15 -3C	0.085	0.09	50	1	280	10.0	0.1190 J
ENG 5 Run 7	0223-176.16 -3C	0.072	0.07	50	1	285	10.0	0.1026 J
ENG 5 Field Blank	0223-176.17 -3C	0.733	0.73	50	1	285	10.0	1.0445
ENG 5 Reagent Blank	0223-176.18 -3C	0.018	0.02	50	1	270	10.0	0.0675 ND
Matrix Spike	0223-176.1S -3C	5.130				% REC =	96.8%	
Duplicate	0223-176.2D -3C	0.156				% RPD =	N/A	
Batch Quality Control								
Lab Blank	0223-176.LB1	-0.002	0.00	50	1	50	20	0.00625 ND
Lab Control Sample	0223-176.LCS1	5.000				% REC =	100.0%	
Lab Blank	0223-176.LB2	0.000	0.00	50	1	50	20	0.00625 ND
Lab Control Sample	0223-176.LCS2	5.140				% REC =	102.8%	
Lab Blank	0223-176.LB3	0.000	0.00	50	1	50	20	0.00625 ND
Lab Control Sample	0223-176.LCS3	5.070				% REC =	101.4%	
Lab Blank	0223-176.LB4	0.009	0.009	50	1	50	20	0.00625 ND
Lab Control Sample	0223-176.LCS4	5.080				% REC =	101.6%	
Lab Blank	0223-176.LB5	0.001	0.00	50	1	50	20	0.00625 ND
Lab Control Sample	0223-176.LCS5	4.970				% REC =	99.4%	

Narrative Summary

Enthalpy Analytical Narrative Summary

Company	Montrose Air Quality Services, LLC – Santa Ana
Job No.	0223-176R EPA Method 29
Client ID.	023392 Site: DTE Energy – Sunshine – SGT Eng 4 and 5 Exhaust

| Custody | Conor Benson received the samples on 2/20/23 after being relinquished by Montrose Air Quality Services, LLC – Santa Ana. He then delivered the samples to Enthalpy's Durham Laboratory on 2/24/23. Alyssa Miller logged the samples in on 2/24/23 at 20.5 °C in good condition. |
| | Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, LLC. |

| Analysis | The samples were prepared and analyzed for antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel, selenium, and mercury using the procedures in EPA Method 29, Determination of Metals Emissions from Stationary Sources. |
| | The Inductively Coupled Plasma Mass Spectrometer "X" and the Cold Vapor Atomic Absorption Spectrometer "Walt Jr." were used for these analyses. |

| Calibration | The calibration curves met all method-specified precision criteria. |

QC Notes	The elements were not identified at concentrations greater than the reporting limit in the analyses of the laboratory blanks.
	The Laboratory Control Spikes were within the acceptance limits of 80% to 120%.
	The Matrix Spike recovery values were within the acceptance range of 75% to 125%.
	The required duplicate samples had a relative percent difference of 20% or less or were less than five times the limit of quantitation.
	All of the samples were analyzed at least in duplicate.

Reporting Notes	The revision is due to client request that front half and back half fractions are analyzed and reported separately.
	Inadvertently, samples **Eng 5 Field Blank – 2A** and **Eng 5 Reagent Blank – Composite** were combined during digestion.
	These analyses met the requirements of the TNI Standard. Any deviations from the requirements of the reference method or TNI Standard have been stated above.
	The results presented in this report are representative of the sample as provided to the laboratory.

General Reporting Notes

The following are general reporting notes that are applicable to all Enthalpy Analytical, LLC data reports, unless specifically noted otherwise.

- Any analysis which refers to the method as *"Type"* represents a planned deviation from the reference method. For instance a Hydrogen Sulfide assay from a Tedlar bag would be labeled as "EPA Method 16-Type" because Tedlar bags are not mentioned as one of the collection options in EPA Method 16.

- The acronym *MDL* represents the Minimum Detection Limit. Below this value the laboratory cannot determine the presence of the analyte of interest reliably.

- The acronym *LOQ* represents the Limit of Quantification. Below this value the laboratory cannot quantitate the analyte of interest within the criteria of the method.

- The acronym *ND* following a value indicates a non-detect or analytical result below the MDL.

- The letter *J* in the Qualifier or Flag column in the results indicates that the value is between the MDL and the LOQ. The laboratory can positively identify the analyte of interest as present, but the value should be considered an estimate.

- The letter *E* in the Qualifier or Flag column indicates an analytical result exceeding 100% of the highest calibration point. The associated value should be considered as an estimate.

- Sample results are presented 'as measured' for single injection methodologies, or an average value if multiple injections are made. If all injections are below the MDL, the sample is considered non-detect and the ND value is presented. If one, but not all, are below the MDL, the MDL value is used for any injections that are below the MDL. For example, if the MDL is 0.500 and LOQ is 1.00, and the instrument measures 0.355, 0.620, and 0.442 - the result reported is the average of 0.500, 0.620, and 0.500 - - - i.e. 0.540 with a J flag.

- When a spike recovery (Bag Spike, Collocated Spike Train, or liquid matrix spike) is being calculated, the native (unspiked) sample result is used in the calculations, as long as the value is above the MDL. If a sample is ND, then 0 is used as the native amount (not the MDL value).

- The acronym *DF* represents Dilution Factor. This number represents dilution of the sample during the preparation and/or analysis process. The analytical result taken from a laboratory instrument is multiplied by the DF to determine the final undiluted sample results.

- The addition of *MS* to the Sample ID represents a Matrix Spike. An aliquot of an actual sample is spiked with a known amount of analyte so that a percent recovery value can be determined. The MS analysis indicates what effect the sample matrix may have on the target analyte, i.e. whether or not anything in the sample matrix interferes with the analysis of the analyte(s).

General Reporting Notes
(continued)

- The addition of **MSD** to the Sample ID represents a Matrix Spike Duplicate. Prepared in the same manner as a MS, the use of duplicate matrix spikes allows further confirmation of laboratory quality by showing the consistency of results gained by performing the same steps multiple times.

- The addition of **LD** to the Sample ID represents a Laboratory Duplicate. The analyst prepares an additional aliquot of sample for testing and the results of the duplicate analysis are compared to the initial result. The result should have a difference value of within 10% of the initial result (if the results of the original analysis are greater than the LOQ).

- The addition of **AD** to the Sample ID represents an Alternate Dilution. The analyst prepares an additional aliquot at a different dilution factor (usually double the initial factor). This analysis helps confirm that no additional compound is present and coeluting or sharing absorbance with the analyte of interest, as they would have a different response/absorbance than the analyte of interest.

- The Sample ID **LCS** represents a Laboratory Control Sample. Clean matrix, similar to the client sample matrix, prepared and analyzed by the laboratory using the same reagents, spiking standards and procedures used for the client samples. The LCS is used to assess the control of the laboratory's analytical system. Whenever spikes are prepared for our client projects, two spikes are retained as LCSs. The LCSs are labeled with the associated project number and kept in-house at the appropriate temperature conditions. When the project samples are received for analysis, the LCSs are analyzed to confirm that the analyte could be recovered from the media, separate from the samples which were used on the project and which may have been affected by source matrix, sample collection, and/or sample transport.

- **Significant Figures**: Where the reported value is much greater than unity (1.00) in the units expressed, the number is rounded to a whole number of units, rather than to 3 significant figures. For example, a value of 10,456.45 ug catch is rounded to 10,456 ug. There are five significant digits displayed, but no confidence should be placed on more than two significant digits. In the case of small numbers, generally 3 significant figures are presented, but still only 2 should be used with confidence. Many neat materials are only certified to 3 digits, and as the mathematically correct final result is always 1 digit less than all its pre-cursors - 2 significant figures are what are most defensible.

- **Manual Integration**: The data systems used for processing will flag manually integrated peaks with an "M". There are several reasons a peak may be manually integrated. These reasons will be identified by the following two letter designations on sample chromatograms, if provided in the report. The peak was *not integrated* by the software **"NI"**, the peak was *integrated incorrectly* by the software **"II"** or the *wrong peak* was integrated by the software **"WP"**. These codes will accompany the analyst's manual integration stamp placed next to the compound name on the chromatogram.

Sample Custody

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CHAIN OF CUSTODY

CLIENT: DTE Energy

PROJ #: 023392

TEST DATE(S): 2/7/2023 – 2/10/-2023

LOCATION: Sunshine

SAMPLER(S): DH/AD/PSJ

SAMPLE LOCATION: SGT Eng 4 Exhaust

PROJECT MANAGER: PSJ

TEST METHOD(S): EPA 29

DATE DUE: ASAP

OUTSIDE LAB REQUIRED?: Yes

COMPLIANCE TEST?: Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
2/7/2023	10:50	1	Eng 4 Run1	6	DH,AD,PSJ	
2/8/2023	8:10	2	Eng 4 Run2	6	DH,AD,PSJ	
2/8/2023	13:05	3	Eng 4 Run3	6	DH,AD,PSJ	
2/9/2023	8:05	4	Eng 4 Run4	6	DH,AD,PSJ	
2/9/2023	12:40	5	Eng 4 Run5	6	DH,AD,PSJ	
2/10/2023	7:50	6	Eng 4 Run6	6	DH,AD,PSJ	
2/10/2023	12:15	7	Eng 4 Run7	6	DH,AD,PSJ	
2/10/2023		FB / RB	Eng 4 Field Blank	12	DH,AD,PSJ	
		Pmm3 02.24.23				

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
	2/20/23		2/20/23 17:00
	2/24/23 13:45	Alyssa McPhee	02.24.23 1345

ANALYSIS REQUIRED: EPA 29 Metals include: Antimony (Sb), Arsenic (As), Beryllium (Be), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), and Selenium (Se).

MONTROSE

Date of Last Revision 9/1/2017

Chain of Custody - DS834001 - Excel
Master Document Storage\Forms\Datasheets\Lab Forms

80.5°C Recyclable good condition Pmm3 02-24-23

Reta RB not listed or CoC Pmm3 02-24-23 Pmm3 02-24-23

CHAIN OF CUSTODY

CLIENT: DTE Energy

LOCATION: Sunshine

SAMPLE LOCATION: SGT Eng 5 Exhaust

TEST METHOD(S): EPA 29

OUTSIDE LAB REQUIRED?: Yes

TEST DATE(S): 2/14/2023 - 2/17/2023

SAMPLER(S): DH/AD/PSJ

PROJECT MANAGER: PSJ

DATE DUE: ASAP

COMPLIANCE TEST?: Yes

PROJ # 023392

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
2/14/2023	8:00	1	Eng 5 Run1	6	DH,AD,PSJ	
2/15/2023	12:20	2	Eng 5 Run2	6	DH,AD,PSJ	
2/15/2023	7:35	3	Eng 5 Run3	6	DH,AD,PSJ	
2/16/2023	12:00	4	Eng 5 Run4	6	DH,AD,PSJ	
2/16/2023	7:35	5	Eng 5 Run5	6	DH,AD,PSJ	
2/17/2023	12:00	6	Eng 5 Run6	6	DH,AD,PSJ	
2/17/2023	7:30	7	Eng 5 Run7	6	DH,AD,PSJ	
		FB / RB	Eng 5 Field Blank	12	DH,AD,PSJ	
		Brom3 02·24·23				

RELEASED BY | DATE/TIME | RECEIVED BY | DATE/TIME
2/20/23 | | 2/20/23 | Ambient
2/24/23 12:46 | Qlynn Mmillen | 02.24.23 1345

Ambient
2/20/23 1400

ANALYSIS REQUIRED: **EPA 29 Metals** include: Antimony (Sb), Arsenic (As), Beryllium (Be), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), and Selenium (Se).

MONTROSE

Date of Last Revision 9/1/2017

20·5°C Chapter 2, spout cevolution Pmm3 02·24·23

Chain of Custody - DS834001 - Excel
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Raw Data

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Job #s	Describe Work Documented on This Page
0223-176	m29 ~~Hg~~ ① prep

Supplies, Ancillary Equipment Serial #s, Lot #s, Etc

NA

1381 A = M29 Volumes Worksheet

1381 B = M29 Volumes Worksheet

1381 C = M29 FH Prep Sheet

1381 D = M29 BH Prep Sheet

① EE LMP
2/27/23

② Combined 0223-176.17-2
with 0223-176.18-2 on ~~accident~~ ③ EE EWC
accident while cooling down   2.28.23
EWC 2.28.23 added after 2-out

Reviewer's Initials & Date:

Metals Prep
EA Job# 0223-176 Page 141 of 186

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1361A

ENTHALPY ANALYTICAL

Method 29 Volumes Worksheet

Client: MACS-Santa Ana	8N HCl ID: ES-0845	8N HCl Exp: 8/24/23	2B Digitube ID: JSS3474-7890
EA Project #: 0223-176	8N HCl Pipette ID: JSS3474-7890	Pipette Exp: N/A	0.50L/1.0L Bottle ID: L-1-008-0513B
Analyst: EWC/LMP	Custody Seals Intact? Yes/No	Comments:	
Date: 1/27/23, 2/28/23, 3/1/23 3/6/23	Leak Check Levels Ok? Yes/No	Comments:	

Method 29 Fraction Volumes (mL):

Sample ID	Container 3	Container 4	Container 2B	Container 3A	Container 3B	Container 3C	Cont. 3 pH Initial / Final	Amount HNO₃ Added (mL)	Cont. 4 Initial / Final	Amount HNO₃ Added (mL)
0223-176.1	91	440	25	93	345/305	275	<2		<2	
.2	86	405	50	98	245	285	<2		<2	
.3	96	437	25	96	255	285	<2		<2	
.4	90	450	50	102	250	285	<2		<2	
.5	94	438	25	106	240	300	<2		<2	
.6	95	440	25	97	260	310	<2		<2	
.7	96	445	25	98	240	285	<2		<2	
.8	96	290 saw yellow	25	98	240	285	<2		<2	
.9	① 9+267	437	25	95	82	260	<2		<2	
.10	97	437	25	100	240	290	<2		<2	
.11	94	446	25	100	235	275	<2		<2	
.12	93	450	50	95	245	290	<2		<2	

Reagent & Field Blank Composites	Container 3 Total	Container 3 Digested	Container 4 Total	When possible: the FH Blank should consist of 100 mL of Container 3. The BH Blank should consist of 100 mL of Container 3 + 200 mL of Container 4. If not enough solution provided, treat as field sample by digesting entire containers w/o combining.		
0223-176.9	267	100	194	Container 4 Composite	Hg Aliquot Removed from BH Composite:	Container 4 Digested
				294 - 25 =	25	= 269

If pH is >2

HNO₃ ID:		HNO₃ Exp:
HNO₃ Pip:		HNO₃ Pip Exp:

Comments:
OEEWC 1/27/23 @EELMP 3/6/23

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1381B

ENTHALPY ANALYTICAL

Method 29 Volumes Worksheet

Client: MAQS - Santa Ana	8N HCl ID:	8N HCl Exp: ES-0845	2B Digitube ID: 8/24/23	JSS 5474-7898
EA Project #: 0223-176	8N HCl Pipette ID:	Pipette Exp:	0.50L/1.0L Bottle ID: NA	L-1-008-05 BB
Analyst: BWC/LMP	Custody Seals Intact? Yes/No	Comments:		
Date: 1/27/23, 2/28/23, 3/1/23, 3/6/23	Leak Check Levels Ok? Yes/No	Comments:		

Method 29 Fraction Volumes (mL):

Sample ID	Container 3	Container 4	Container 2B	Container 3A	Container 3B	Container 3C	Cont. 3 pH Initial / Final	Amount HNO_3 Added (mL)	Cont. 4 Initial / Final	Amount HNO_3 Added (mL)
0223-176.13	95	443	25	99	230	285	@7 <2		<2	
.14	97	447	25	100	265	295	<2		<2	
.15	99	443	25	98	260	280	<2		<2	
.16	94	437	25	96	255	285	<2		<2	
.17	94	290	25	97	265	285	<2		<2	
.18	191	see below	25	98	82	270	<2		<2	

When possible: the FH Blank should consist of 100 mL of Container 3. The BH Blank should consist of 100 mL of Container 3 + 200 mL of Container 4. If not enough solution provided, treat as field sample by digesting entire containers w/o combining.

Reagent & Field Blank Composites	Container 3 Total	Container 3 Digested	Container 4 Total	Container 4 Composite	Hg Aliquot Removed from BH Composite	Container 4 Digested
0223-176.14	191	100	100	300 - 25 = 275		

If pH is >2

HNO₃ ID:
HNO₃ Pip:
HNO₃ Exp:
HNO₃ Pip Exp:

Comments:
OK BWC 2/27/23

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ENTHALPY
ANALYTICAL

1381C

METHOD 29 METALS PREP SHEET

FRONT HALF SAMPLES

DAY 1	Date: 2/27/23	Analyst(s): LMP		DAY 3	Date: 3/2/23	Analyst(s): EWC
DAY 2	Date: 3/1/23	Analyst(s): EWC		DAY 4	Date:	Analyst(s):

Ves. #	Reagents	ID#:	Expiration Date:	Sample ID		Final Volume (mL)
1	HNO₃: 6 mL	LL400034	10/24	0223-176.1	-1	100
2	HF: 4 mL	SCA2348098	11/25	.2	-1	
3				.3	-1	
4	**Support Equipment**	**ID#:**	**Expiration Date:**	.4	-1	
5	Ag vessels used? YES / (NOT NEEDED)			.5	-1	
6	Cleaning Cycle Completed? (YES) / NO			.6	-1	
7	Micro. #	6,7	N/A	.7	-1	
8				.8	-1	
9	Hotplate #	8	N/A	.9	-1	
10				.10	-1	
1	HF Pipette	130	3/3/23	.11	-1	
2				.12	-1	
3	HNO₃ Pipette	⊥	⊥	.13	-1	
4				.14	-1	
5	Digitube	J553474-7898	N/A	.15	-1	
6				.16	-1	
7	Comments:			.17	-1	
8				.18	-1	
					-1	
					-1	

Front Half Quality Control

Ves. #	QC	ID:	Expiraton:	Stock Conc. (ppm)	Prepped Conc. (ppb)	Amount Added (mL)	Pip ID:	Pip Exp:
9	Lab Blank-1	--	--	--	--	--	--	--
10	LCS-1	F0814	4/23	10	100	1.0	124	3/4/23

List additional LCS's below as needed. For example: Ag, LCS-High

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METHOD 29 METALS PREP SHEET

BACK HALF SAMPLES

| DAY 1 | Date: 2/27/23 | Analyst(s): LMP | DAY 3 | Date: | Analyst(s): |
| DAY 2 | Date: 3/2/23 | Analyst(s): ENC | DAY 4 | Date: | Analyst(s): |

Reagents		ID#:	Expiration Date:	Sample ID		Final Volume (mL)
1:1 HNO3:	30mL	ES-0832	5/10/23	0223-176 . 1	-2A	100
H2O2:	1mL	61326206	11/30/23	. 2	-2A	
				. 3	-2A	
Support Equipment		**ID#:**	**Expiration Date:**	. 4	-2A	
				. 5	-2A	
Hotplate #		10	N/A	. 6	-2A	
				.7	-2A	
1:1 HNO3 Pipette		J553474 -7898	NA	. 8	-2A	
				. 9	-2A	
H2O2 Pipette		130	3/3/23	.10	-2A	
				. 11	-2A	
Hg Aliquot Removed (mL) (-2B)		25, 50		.12	-2A	
				.13	-2A	
				.14	-2A	
Digitube		J553474-7898	N/A	.15	-2A	
Comments:				.16	-2A	
				.17	-2A	
				.18	-2A	
					-2A	
					-2A	

Back Half Quality Control

QC	ID:	Expiraton:	Stock Conc. (ppm)	Prepped Conc. (ppb)	Amount Added (mL)	Pip ID:	Pip Exp:
Lab Blank-2A	--	--	--	--	--	--	--
LCS-2A	F0814	11/23	10	100	1.0	124	3/4/23

List additional LCS's below as needed. For example: Ag, LCS-High

Analyst(s): MAL	Analysis Date(s): 3/29/23

EA Project #s: 0223-176

Analytes: Be, Cr, Mn, Co, Ni, As, Se, Cd, Sb, Pb

Method: 6020	Smart Tune ID: ES-0804	Conc: 1ppb	Exp: 7/3/23
	Internal Standard ID[1]: F0842	Conc: 10ppm	Exp: 3/3/24

Diluent: 50 mL HNO3 (ID # 62327   Exp: 11/24   ) diluted to 1000 mL with DI

Calib. Blk/ICB/CCB: Diluent

[1] All samples and standards are spiked with 50µL of internal std. (pipette 127 exp 6/6/23)

Calibration Standards - Made from EA ID#[2]: 1:10 F0824   (Stock Concentration: 10ppm

Exp Date: 3/30/23   ) and brought up with Diluent

	Final Conc. (ppb)	Amount (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst	Date	Exp. Date
Standard 1	1	100 of Std 6	127 6/6/23					
Standard 2	5	500 of Std 6	124		143			
Standard 3	10	1000 of Std 6	⊥	10	5/9/23	MAL	3/29/23	3/30/23
Standard 4	50	50	127					
Standard 5	100	100	⎮					
No IS Std 6	100	100	⊥					

[2] 10ppm WS = 1mL of Standard F0824 exp 7/25 (pipettes: 124, 143 exp 5/9/23 6/6/23) + 9mL Diluent

Secondary Standards - Made from EA ID#: F0814   (Stock Concentration: 10ppm

ExpDate: 11/23   ) and brought up with Diluent

	Final Conc. (ppb)	Amount (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst	Date	Exp. Date
ICV/CCV	50	50	127 6/6/23	10	143 5/9/23	MAL	3/29/23	3/30/23

ICS's- Made from Stock Std ICS-A ID#(F0786   Exp: 7/23)

& 50 ppb Metals Std ID#(F0814   Conc: 10ppm   Exp: 11/23) brought up with Diluent

	Conc.	Amount WS (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst	Date	Exp. Date
ICS-A	Multi	100	127 6/6/23		143			
	Multi	100		10	5/9/23	MAL	3/29/23	3/30/23
ICS-AB	50 ppb	50	⊥					

Post Dig Matrix Spike Samples - Diluted with Diluent (Metals Mix ID# F0814   Conc: 10ppm   Exp: 11/23)

Sample ID	Dilution Factor of Field Sample	Aliquot of Sample (mL)	Final Conc. (ppb)	Amount of Spike Added (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst
0223-176.1-1A	5x	2	50	50	127 6/6/23	10	143 5/9/23	MAL
0223-176.1-2A	—	9.90	50	50	⊥	10	⊥	MAL
						10		
						10		
						10		
						10		
						10		

ICP-MS Raw Data Coversheet
Instrument (X)__

Sample ID(s)	Dilution Factor of Sample	Aliquot of Sample (mL)	Pipette # & Exp:		Final Vol (mL)	Pipette # & Exp:	Analyst
0223-176.LCS-1A+2A	2x	5	143	5/5/23	10	143 5/5/23	MAL
0223-176.1-18-1A	5x	2	124	6/6/23	⊥	⊥	⊥
0223-176.10+12-2A	10x	1	⊥		⊥	⊥	⊥

Table title: **Sample Dilution Tracker - Diluted with Diluent**

Comments:

All analytical sequences use the same calibration standards + ICSA/B. The check Standards (ICV/ICB) were prepared for each set of analyses.

MZ 3/29/23

Batch Folder: D:\Agilent\ICPMH\1\DATA\2023\0223-176 032923 low mass FH.b\
Analysis File: 0223-176 032923 low mass FH.batch.bin
DA Date-Time: 3/29/2023 10:04:08 AM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	001CALB.d	Cal Blank	3/29/2023 9:46:26 AM
2	002CALS.d	1 ppb	3/29/2023 9:50:05 AM
3	003CALS.d	5 ppb	3/29/2023 9:53:32 AM
4	004CALS.d	10 ppb	3/29/2023 9:57:02 AM
5	005CALS.d	50 ppb	3/29/2023 10:00:30 AM
6	006CALS.d	100 ppb	3/29/2023 10:04:00 AM

W002AS-023392-RT-4542   3/29/2023 12:11:39 PM

9 Be [tune 1] ISTD : 7 Li [tune 1]
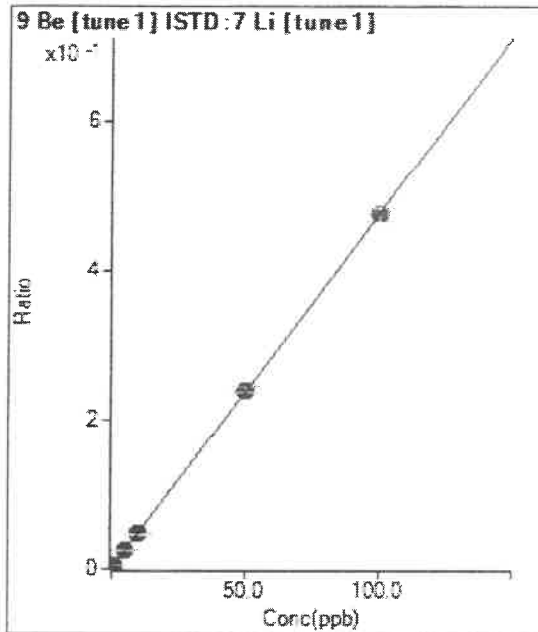
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20.02	0.0000	P	87.8
2	☐	1.000	1.059	10577.89	0.0050	P	5.6
3	☐	5.000	5.301	53769.85	0.0252	P	0.6
4	☐	10.000	9.951	107581.36	0.0473	P	3.5
5	☐	50.000	50.360	530841.33	0.2396	P	3.1
6	☐	100.000	99.809	1057329.23	0.4748	A	3.5

$y = 0.0048 * x + 8.7471E\text{-}006$

$R = 1.0000$

$DL = 0.004843$

$BEC = 0.001839$

Weight: <None>

Min Conc: 0

52 Cr [tune 1] ISTD : 72 Ge [tune 1]
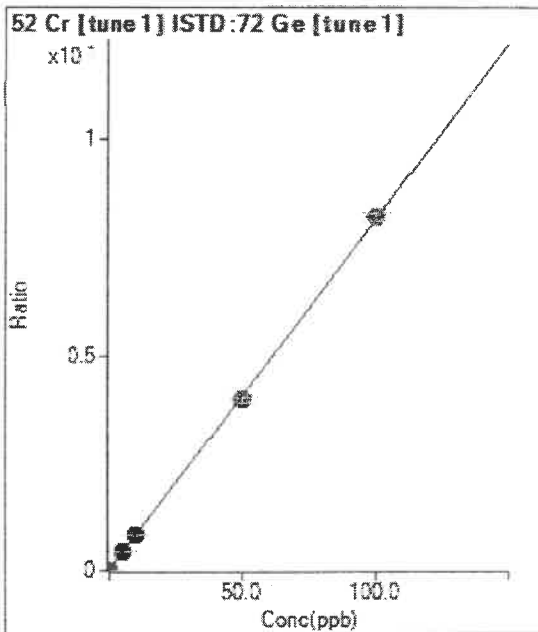
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12828.74	0.0149	P	3.6
2	☐			78308.31	0.0967	P	4.5
3	☐	5.000	5.028	346960.26	0.4235	P	4.2
4	☐	10.000	9.864	674088.03	0.8165	P	1.2
5	☐	50.000	48.903	3263859.76	3.9890	A	3.4
6	☐	100.000	100.561	6839379.50	8.1869	A	2.2

$y = 0.0813 * x + 0.0149$

$R = 0.9999$

$DL = 0.01974$

$BEC = 0.1832$

Weight: <None>

Min Conc: 0

55 Mn [tune 1] ISTD :72 Ge [tune 1]
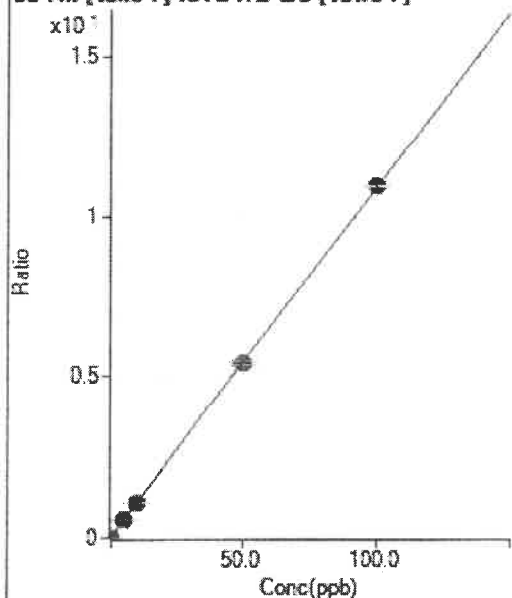
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14131.37	0.0164	P	5.3
2	☐			105196.65	0.1298	P	3.8
3	☐	5.000	5.154	474232.48	0.5787	P	2.0
4	☐	10.000	10.041	917971.57	1.1119	A	2.0
5	☐	50.000	49.303	4416107.88	5.3954	A	2.5
6	☐	100.000	100.337	9159364.14	10.9634	A	0.8

$y = 0.1091 * x + 0.0164$

R = 1.0000

DL = 0.02398

BEC = 0.1503

Weight: <None>

Min Conc: 0

59 Co [tune 1] ISTD :72 Ge [tune 1]
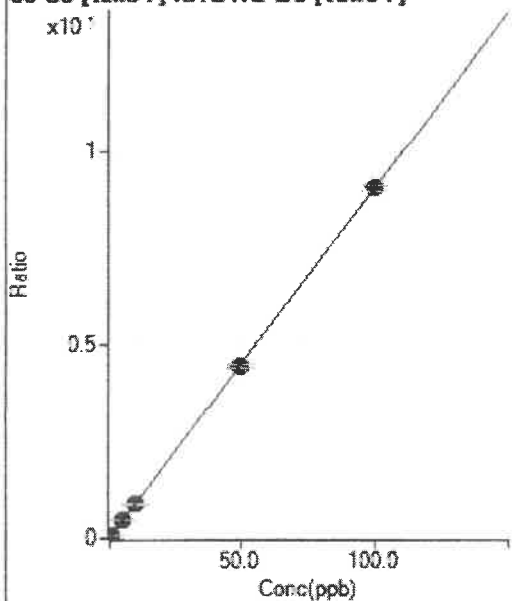
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3030.08	0.0035	P	12.2
2	☐	1.000	1.023	77903.66	0.0961	P	3.0
3	☐	5.000	5.105	381434.04	0.4655	P	2.8
4	☐	10.000	9.895	742176.45	0.8990	P	2.4
5	☐	50.000	49.493	3668493.00	4.4823	A	2.3
6	☐	100.000	100.259	7583424.46	9.0764	A	1.9

$y = 0.0905 * x + 0.0035$

R = 1.0000

DL = 0.01423

BEC = 0.03884

Weight: <None>

Min Conc: 0

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60 Ni [tune 1] ISTD :72 Ge [tune 1]
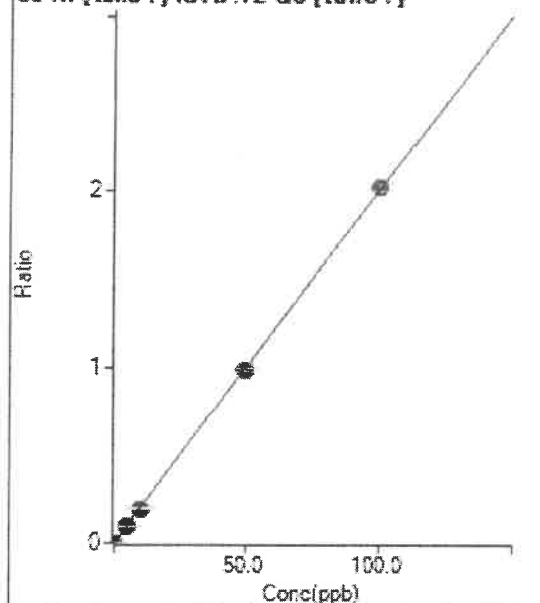
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	887.60	0.0010	P	3.5
2	☐			16663.35	0.0205	P	1.7
3	☐	5.000	4.882	81232.17	0.0991	P	1.4
4	☐	10.000	9.762	162789.84	0.1972	P	2.0
5	☐	50.000	48.877	804650.78	0.9832	M	1.9
6	☐	100.000	100.591	1689656.88	2.0224	A	2.2

$y = 0.0201 * x + 0.0010$

R = 0.9999

DL = 0.005317

BEC = 0.05125

Weight: <None>

Min Conc: 0

62 Ni [tune 1] ISTD :72 Ge [tune 1]
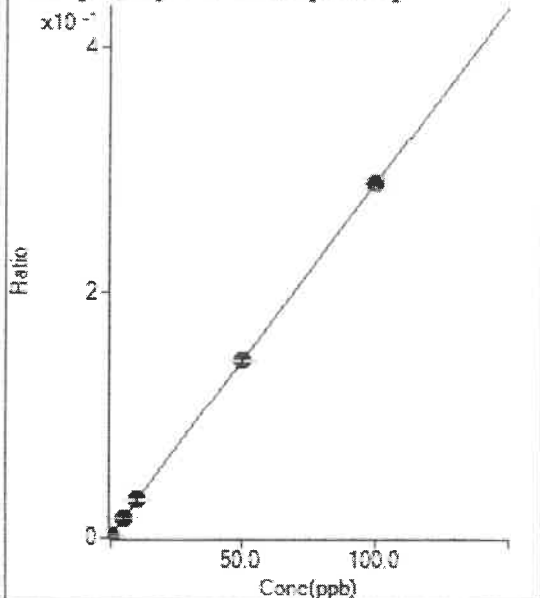
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	914.29	0.0011	P	8.6
2	☐			2993.34	0.0037	P	9.7
3	☐	5.000	4.968	12581.67	0.0153	P	1.6
4	☐	10.000	10.051	24740.03	0.0300	P	1.9
5	☐	50.000	49.975	118497.64	0.1448	P	1.0
6	☐	100.000	100.009	241164.40	0.2887	P	2.5

$y = 0.0029 * x + 0.0011$

R = 1.0000

DL = 0.09524

BEC = 0.3691

Weight: <None>

Min Conc: 0

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75 As [tune 1] ISTD :72 Ge [tune 1]
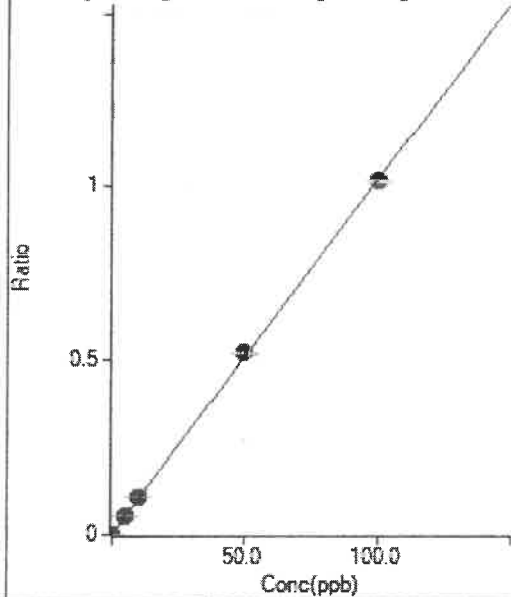
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	110.11	0.0001	P	8.3
2	☐			8654.78	0.0107	P	2.3
3	☐	5.000	5.181	43498.41	0.0531	P	2.4
4	☐	10.000	10.452	88287.43	0.1070	P	2.7
5	☐	50.000	50.910	425932.78	0.5204	P	0.6
6	☐	100.000	99.491	849624.99	1.0169	A	0.4

$y = 0.0102 * x + 1.2773E\text{-}004$

$R = 0.9999$

$DL = 0.003107$

$BEC = 0.0125$

Weight: <None>

Min Conc: 0

77 Se [tune 1] ISTD :72 Ge [tune 1]
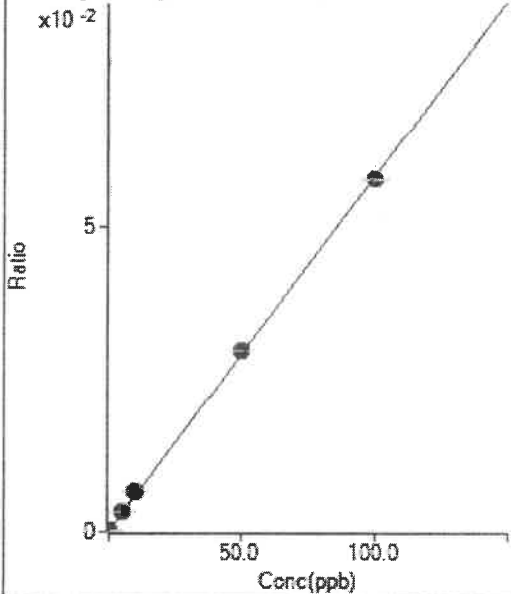
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	133.47	0.0002	P	35.8
2	☐			613.97	0.0008	P	21.5
3	☐	5.000	5.561	2779.75	0.0034	P	2.5
4	☐	10.000	11.418	5613.46	0.0068	P	2.3
5	☐	50.000	51.047	24439.52	0.0299	P	0.3
6	☐	100.000	99.307	48409.57	0.0579	P	0.4

$y = 5.8191E\text{-}004 * x + 1.5515E\text{-}004$

$R = 0.9999$

$DL = 0.2867$

$BEC = 0.2666$

Weight: <None>

Min Conc: 0

78 Se [tune 1] ISTD :72 Ge [tune 1]
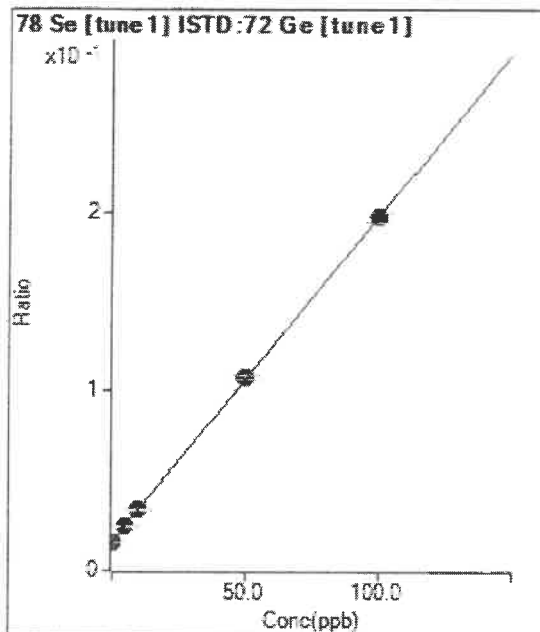
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13530.27	0.0157	P	3.3
2	☐			14198.20	0.0175	P	1.5
3	☐	5.000	4.889	20168.27	0.0246	P	2.5
4	☐	10.000	10.213	28330.71	0.0343	P	2.6
5	☐	50.000	50.481	88147.65	0.1077	P	2.5
6	☐	100.000	99.744	165026.81	0.1975	P	2.4

$y = 0.0018 * x + 0.0157$

$R = 1.0000$

$DL = 0.8442$

$BEC = 8.614$

Weight: <None>

Min Conc: 0

82 Se [tune 1] ISTD :72 Ge [tune 1]
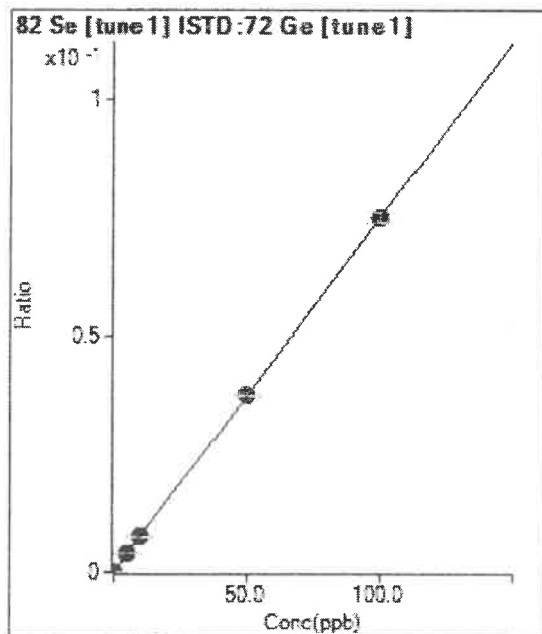
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2.00	0.0000	P	2765.2
2	☐			672.42	0.0008	P	3.9
3	☐	5.000	5.302	3251.75	0.0040	P	6.5
4	☐	10.000	9.893	5109.25	0.0074	P	3.6
5	☐	50.000	50.113	30680.21	0.0375	P	0.8
6	☐	100.000	99.939	62438.89	0.0747	P	3.1

$y = 7.4793E\text{-}004 * x + 1.9025E\text{-}006$

$R = 1.0000$

$DL = 0.211$

$BEC = 0.002544$

Weight: <None>

Min Conc: 0

83 Kr [tune 1] No available calibration points
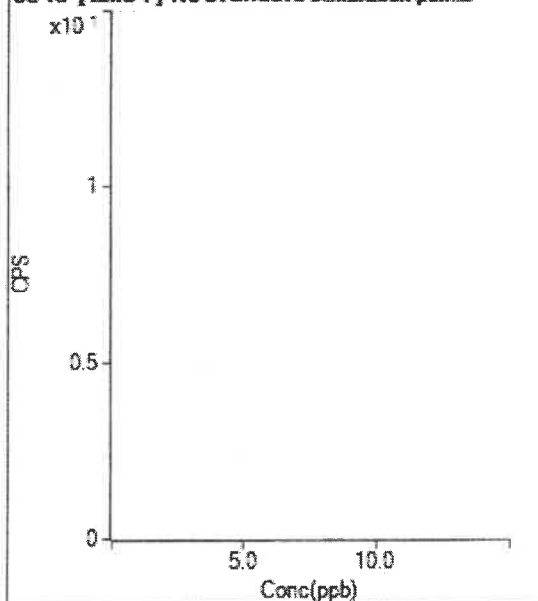
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			170.17		P	15.6
2	☐			206.87		P	15.6
3	☐			253.59		P	14.9
4	☐			216.89		P	44.8
5	☐			246.92		P	11.7
6	☐			230.23		P	13.0

6 Li (ISTD) [tune 1]
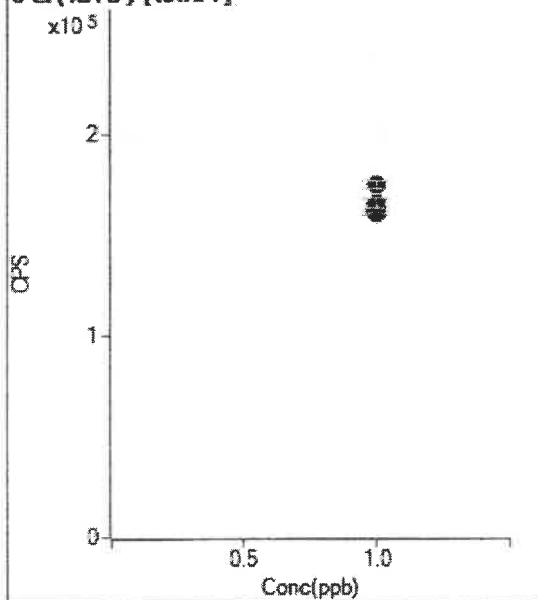
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		174977.22		P	2.1
2	☐	1.000		164410.22		P	4.1
3	☐	1.000		161264.40		P	0.6
4	☐	1.000		162946.03		P	1.2
5	☐	1.000		162720.39		P	2.0
6	☐	1.000		166373.91		P	2.7

7 Li (ISTD) [tune 1]
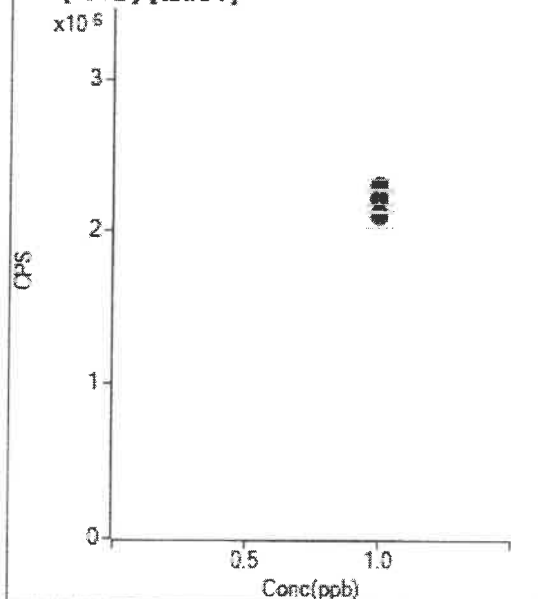
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2306091.71		A	3.4
2	☐	1.000		2100528.76		A	6.8
3	☐	1.000		2131555.81		A	0.1
4	☐	1.000		2272818.73		A	0.9
5	☐	1.000		2217929.44		A	4.3
6	☐	1.000		2228834.15		A	3.8

72 Ge (ISTD) [tune 1]
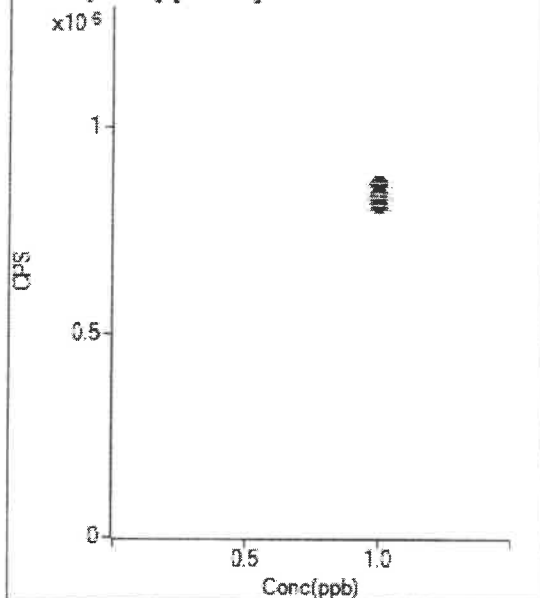
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		861689.42		A	1.3
2	☐	1.000		810853.99		M	2.9
3	☐	1.000		819577.71		M	1.5
4	☐	1.000		825554.74		A	0.5
5	☐	1.000		818472.24		A	1.4
6	☐	1.000		835495.52		A	1.1

85 Rb (ISTD) [tune 1]

x10⁵
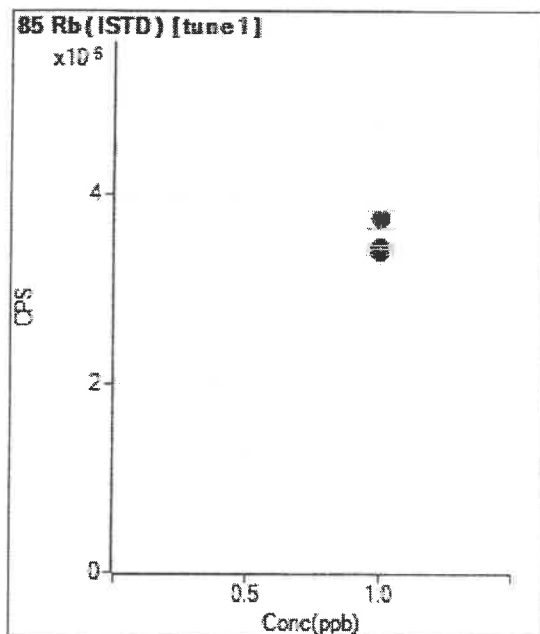
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3741039.45		A	4.5
2	☐	1.000		3410778.81		A	0.8
3	☐	1.000		3444462.44		A	2.3
4	☐	1.000		3418290.10		A	2.3
5	☐	1.000		3389024.82		A	0.7
6	☐	1.000		3452337.53		A	1.5

89 Y (ISTD) [tune 1]

x10⁵
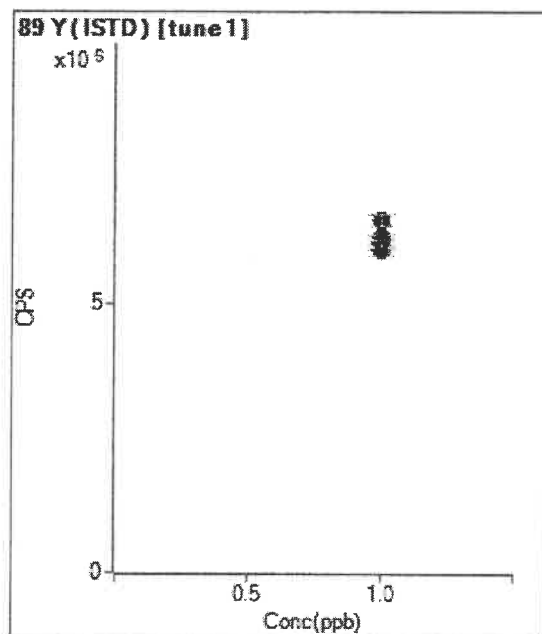
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		6534218.68		A	3.0
2	☐	1.000		5989892.34		A	0.5
3	☐	1.000		5987125.51		A	3.1
4	☐	1.000		6233525.91		A	1.6
5	☐	1.000		6039855.53		A	0.4
6	☐	1.000		6120029.71		A	1.4

Acq. Date-Time	Sample Name	9 Be [tune 1] Conc. [ppb]	9 Be [tune 1] Conc. RSD	52 Cr [tune 1] Conc. [ppb]	52 Cr [tune 1] Conc. RSD	55 Mn [tune 1] Conc. [ppb]	55 Mn [tune 1] Conc. RSD	59 Co [tune 1] Conc. [ppb]	59 Co [tune 1] Conc. RSD	60 Ni [t Conc. [ppb]
3/29/2023 9:46	Cal Blank	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000
3/29/2023 9:50	1 ppb	1.0594	5.5743	1.0062	5.3479	1.0395	4.3618	1.0233	3.1014	0.9714
3/29/2023 9:53	5 ppb	5.3014	0.6130	5.0284	4.3868	5.1543	2.0726	5.1055	2.8241	4.8816
3/29/2023 9:57	10 ppb	9.9513	3.4673	9.8644	1.2525	10.0412	1.9809	9.8952	2.3959	9.7618
3/29/2023 10:00	50 ppb	50.3605	3.0830	48.9031	3.3954	49.3027	2.5064	49.4928	2.3291	48.8773
3/29/2023 10:04	100 ppb	99.8090	3.5209	100.5606	2.2170	100.3368	0.7839	100.2586	1.8779	100.5911
3/29/2023 10:07	ICV	53.6463	3.1809	52.7313	2.5076	53.3127	1.9661	52.3051	1.3539	50.5722
3/29/2023 10:10	ICB	0.4197	10.6015	0.3853	15.4098	0.3961	14.9517	0.3781	14.1539	0.3506
3/29/2023 10:14	ICSA	0.1110	9.0758	0.2499	2.5248	0.1309	2.1620	0.1053	1.8818	0.2379
3/29/2023 10:17	ICSAB	50.6537	2.4646	46.7078	1.3950	46.9004	2.5684	47.2657	2.7797	45.5868
3/29/2023 10:21	0223-176.LB-1A	0.2018	18.2435	0.3599	6.6441	0.3185	10.4720	0.1877	12.6470	0.4191
3/29/2023 10:24	0223-176.LCS-1A 2X	49.0859	0.9463	48.3614	2.6115	50.0811	1.7310	48.0322	2.1662	47.2289
3/29/2023 10:28	0223-176.1-1A 5X	0.2320	2.1730	9.0517	1.1560	2.0610	1.0244	0.2833	7.2542	4.3100
3/29/2023 10:31	0223-176.1-1A MS 5X	47.9742	4.2174	54.4513	3.9408	49.3441	3.3053	45.3531	4.2916	47.6816
3/29/2023 10:34	0223-176.2-1A 5X	0.3272	19.1462	12.6045	3.0805	1.9473	1.1262	0.4026	7.3209	3.6927
3/29/2023 10:38	0223-176.2-1A DUP 5X	0.0907	11.9596	12.4789	1.1475	1.7263	2.5844	0.2058	2.0063	3.6083
3/29/2023 10:41	0223-176.3-1A 5X	0.0331	23.0387	9.0569	1.9797	1.4805	0.6471	2.2785	2.0407	2.7375
3/29/2023 10:45	0223-176.4-1A 5X	0.0178	12.3094	12.1926	1.1426	1.5487	1.3985	0.1553	4.2993	3.9059
3/29/2023 10:48	0223-176.5-1A 5X	0.0060	15.1201	12.5635	3.8221	1.4467	2.0894	0.0729	5.0237	2.9794
3/29/2023 10:52	0223-176.6-1A 5X	0.0082	2.0146	8.4929	1.5803	2.8933	2.7468	0.0134	29.5328	2.4906
3/29/2023 10:55	ICV	47.6095	2.0487	46.3115	3.8995	48.4339	2.0544	47.8400	1.0945	46.1669
3/29/2023 10:58	ICB	0.2587	9.2197	0.2480	5.5937	0.2651	6.2669	0.2254	4.5559	0.2428
3/29/2023 11:02	0223-176.7-1A 5X	0.0816	6.1733	12.2019	2.0492	3.2129	1.4061	0.0763	4.6882	2.9468
3/29/2023 11:05	0223-176.8-1A 5X	0.0357	13.7807	2.5435	2.1695	1.0755	3.1543	0.0221	20.5863	2.5135
3/29/2023 11:09	0223-176.9-1A 5X	0.0224	2.4426	2.0940	2.7287	0.9173	3.0779	0.0029	93.6994	2.2503
3/29/2023 11:12	0223-176.10-1A 5X	0.0217	7.2777	9.1200	2.0803	1.2976	4.3154	0.0137	6.3784	2.8129
3/29/2023 11:16	0223-176.11-1A 5X	0.0150	26.4268	12.2373	3.6562	4.5611	2.8344	0.0118	40.4257	3.3150
3/29/2023 11:19	0223-176.12-1A 5X	0.0120	10.8180	9.1531	0.3226	1.3741	1.3817	0.0139	8.2541	2.8622
3/29/2023 11:22	0223-176.13-1A 5X	0.0115	46.9162	8.8341	3.4078	1.3916	4.8420	0.0094	52.0683	2.8009
3/29/2023 11:26	0223-176.14-1A 5X	0.0097	84.0568	9.0643	1.0391	1.3457	2.2476	0.0112	34.6670	3.8848
3/29/2023 11:29	0223-176.15-1A 5X	0.0074	38.1792	7.0739	0.7630	5.1706	2.5313	0.0342	3.2017	2.7492
3/29/2023 11:33	ICV	46.2799	2.2124	46.0595	1.0567	48.1214	0.7268	47.0891	1.7279	45.0927
3/29/2023 11:36	ICB	0.2799	10.3690	0.2501	15.5591	0.2589	10.8997	0.2129	11.0974	0.2219
3/29/2023 11:40	0223-176.16-1A 5X	0.1359	9.2919	9.1764	1.1660	2.4568	1.9490	0.0666	4.8021	2.4892
3/29/2023 11:43	0223-176.17-2A 5X	0.0591	13.6236	2.3087	1.4287	1.1192	1.1369	0.0164	30.7618	3.7616
3/29/2023 11:46	0223-176.18-1A 5X	0.0231	31.5780	2.0895	2.0099	0.9674	4.0311	0.0040	92.8650	2.2268
3/29/2023 11:50	ICV	46.3570	1.7188	46.6169	2.3579	48.8213	1.5651	48.4642	2.2743	45.1561
3/29/2023 11:53	ICB	0.2797	7.8056	0.2489	11.9078	0.2770	12.0394	0.2461	8.8606	0.2359

Sample 0223-176.17 was the 1A analysis not the 2A analysis. - MAL 4/3/23

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Sample Name	[tune 1] Conc. RSD	62 Ni [tune 1] Conc. [ppb]	62 Ni [tune 1] Conc. RSD	75 As [tune 1] Conc. [ppb]	75 As [tune 1] Conc. RSD	77 Se [tune 1] Conc. [ppb]	77 Se [tune 1] Conc. RSD	78 Se [tune 1] Conc. [ppb]	78 Se [tune 1] Conc. RSD	82 Se [tune 1] Conc. [ppb]	82 Se [tune 1] Conc. RSD
Cal Blank	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A
1 ppb	1.7747	0.9161	13.5416	1.0322	2.3643	1.0400	27.0467	0.9910	14.0923	1.1054	3.8849
5 ppb	1.4281	4.9678	1.6721	5.1806	2.4521	5.5607	2.5814	4.8891	6.8140	5.3021	6.5280
10 ppb	1.9737	10.0512	1.9974	10.4525	2.6667	11.4177	2.3055	10.2129	4.7538	9.8926	3.6086
50 ppb	1.8869	49.9753	0.9708	50.9101	0.6255	51.0468	0.3329	50.4810	2.9190	50.1132	0.8048
100 ppb	2.2498	100.0088	2.5396	99.4907	0.4323	99.3068	0.3543	99.7438	2.5943	99.9390	3.0736
ICV	0.1628	52.2878	1.0044	51.5855	2.0539	51.8124	3.0823	52.5782	2.4327	52.5163	1.7815
ICB	15.6495	0.3889	29.8791	0.3956	9.1493	0.4227	29.1557	0.4710	28.5789	0.3892	8.8797
ICSA	0.8806	0.2723	15.0538	0.2395	5.2804	0.6315	36.1726	0.2540	96.2621	0.0446	398.4359
ICSAB	1.4350	47.3997	0.5940	49.3297	0.7772	0.2443	2.8521	49.4995	1.1974	49.6404	1.9127
0223-176.LB-1A	12.7457	0.4216	19.1836	0.3236	20.7204	48.9860	35.7265	0.2549	152.6802	0.2613	45.4343
0223-176.LCS-1A 2X	2.5452	48.9058	0.5256	48.6827	1.9707	0.3734	2.2239	50.0280	4.1487	49.6893	2.3007
0223-176.1-1A 5X	1.9074	4.3392	4.1200	0.5128	0.5647	47.4002	23.1378	<0.000	N/A	1.2216	33.6548
0223-176.1-1A MS 5X	2.3916	49.3751	1.7587	48.4526	1.6607	0.3680	6.4884	45.5828	5.1328	48.0388	4.2000
0223-176.2-1A 5X	1.0456	3.8302	5.1848	0.5229	3.9480	0.1852	27.1184	<0.000	N/A	0.8464	25.2521
0223-176.2-1A DUP 5X	2.6949	3.5394	3.0138	0.3015	4.5538	0.1445	6.3384	<0.000	N/A	0.6003	25.0920
0223-176.3-1A 5X	3.7174	2.6831	2.9352	0.2811	1.0297	0.0538	23.1904	<0.000	N/A	0.8927	26.8943
0223-176.4-1A 5X	0.2162	3.7909	3.8048	0.1799	10.0024	<0.000	144.9694	<0.000	N/A	0.6973	48.3442
0223-176.5-1A 5X	2.2901	2.9881	3.2605	0.2549	5.0525	<0.000	N/A	<0.000	N/A	0.8738	33.1821
0223-176.6-1A 5X	2.2820	2.5308	6.7246	0.1556	9.1273	<0.000	N/A	<0.000	N/A	0.7178	40.7850
ICV	1.6213	47.2971	0.7468	49.2441	0.6006	50.3894	2.2874	50.2897	0.5156	49.4968	0.6417
ICB	16.3630	0.1678	9.6207	0.2725	9.5487	0.1116	53.9400	0.1534	12.6288	0.2581	84.0755
0223-176.7-1A 5X	1.3719	2.9658	0.9944	0.2394	7.1556	<0.000	N/A	<0.000	N/A	0.7330	52.1384
0223-176.8-1A 5X	0.5972	2.5468	2.7849	0.0585	9.1792	<0.000	N/A	<0.000	N/A	0.5269	102.3845
0223-176.9-1A 5X	1.9728	2.1878	6.8906	0.0480	18.1394	<0.000	N/A	<0.000	N/A	0.8893	9.0114
0223-176.10-1A 5X	3.3272	2.8195	1.5761	0.1990	4.1047	<0.000	N/A	<0.000	N/A	1.0041	15.7371
0223-176.11-1A 5X	2.1627	3.2932	3.2199	0.1985	7.9695	<0.000	N/A	<0.000	N/A	1.1068	13.5005
0223-176.12-1A 5X	2.1202	2.9216	8.4778	0.1998	3.8032	<0.000	N/A	<0.000	N/A	0.9177	41.0670
0223-176.13-1A 5X	3.3460	2.7598	5.4606	0.1649	7.2182	<0.000	N/A	0.0825	172.4725	1.0711	44.3162
0223-176.14-1A 5X	2.1815	3.9322	4.2457	0.1844	7.7505	<0.000	N/A	<0.000	N/A	0.7916	32.4196
0223-176.15-1A 5X	2.3828	2.6371	5.5509	0.2120	3.9769	<0.000	N/A	<0.000	N/A	0.9642	48.3283
ICV	0.7768	46.5811	1.2782	48.9261	0.5747	50.3910	3.0676	52.2338	1.9565	51.2646	0.9498
ICB	12.6110	0.1464	39.0559	0.2653	9.9010	0.0852	128.2850	1.1890	42.9123	0.1620	99.6774
0223-176.16-1A 5X	2.6844	2.6115	2.0045	0.2217	11.3707	<0.000	N/A	0.2313	144.2707	0.8811	30.9472
0223-176.17-2A 5X	1.1852	3.8814	3.5114	0.0633	5.8671	<0.000	N/A	<0.000	N/A	0.7119	17.8416
0223-176.18-1A 5X	2.2622	2.2172	0.8427	0.0364	15.9340	<0.000	N/A	0.0463	885.9047	1.2552	7.7381
ICV	2.0661	47.3004	3.6657	48.5398	2.1551	50.3101	1.3872	52.1697	2.4129	50.4379	1.0416
ICB	3.1261	0.1024	16.9342	0.3135	7.8281	0.1802	12.2743	1.6565	17.0138	0.1873	95.4748

Sample 0223-176.17 was the 1A analysis not the 2A analysis. - MAL 4/3/23

Sample Name	6 Li (ISTD) [tune 1] CPS	ISTD Recovery %	7 Li (ISTD) [tune 1] CPS	ISTD Recovery %	72 Ge (ISTD) [tune 1] CPS	ISTD Recovery %	85 Rb (ISTD) [tune 1] CPS	ISTD Recovery %	89 Y (IS CPS
Cal Blank	174977.22	100.00	2306091.71	100.00	861689.42	100.00	3741039.45	100.00	6534218.68
1 ppb	164410.22	93.96	2100528.76	91.09	810853.99	94.10	3410778.81	91.17	5989892.34
5 ppb	161264.40	92.16	2131555.81	92.43	819577.71	95.11	3444462.44	92.07	5987125.51
10 ppb	162946.03	93.12	2272818.73	98.56	825554.74	95.81	3418290.10	91.37	6233525.91
50 ppb	162720.39	93.00	2217929.44	96.18	818472.24	94.98	3389024.82	90.59	6039855.53
100 ppb	166373.91	95.08	2228834.15	96.65	835495.52	96.96	3452337.53	92.28	6120029.71
ICV	162359.39	92.79	2156190.44	93.50	806704.56	93.62	3504487.39	93.68	6139358.36
ICB	159318.07	91.05	2128171.61	92.28	823271.67	95.54	3467762.93	92.70	6074249.97
ICSA	145597.01	83.21	1996593.76	86.58	785247.51	91.13	3199047.61	85.51	5781143.13
ICSAB	153249.34	87.58	2077631.97	90.09	793090.54	92.04	3283490.59	87.77	5911677.66
0223-176.LB-1A	169313.25	96.76	2223010.87	96.40	830628.79	96.40	3584784.89	95.82	6314573.88
0223-176.LCS-1A 2X	169441.43	96.84	2246730.84	97.43	823586.35	95.58	3491349.19	93.33	6105453.89
0223-176.1-1A 5X	160688.17	91.83	2156911.97	93.53	815504.28	94.64	3322931.12	88.82	6118507.30
0223-176.1-1A MS 5X	165987.97	94.86	2205215.79	95.63	821034.43	95.28	3329636.63	89.00	6134076.05
0223-176.2-1A 5X	160903.17	91.96	2099919.00	91.06	813514.22	94.41	3408530.67	91.11	6238583.10
0223-176.2-1A DUP 5X	160800.67	91.90	2107053.25	91.37	812129.48	94.25	3464540.07	92.61	6107015.97
0223-176.3-1A 5X	163504.19	93.44	2205693.43	95.65	823026.81	95.51	3460264.70	92.49	6253582.74
0223-176.4-1A 5X	163150.43	93.24	2220124.60	96.27	838636.41	97.32	3423800.03	91.52	6318108.67
0223-176.5-1A 5X	168752.60	96.44	2241700.22	97.21	817838.84	94.91	3401955.09	90.94	6315209.31
0223-176.6-1A 5X	172891.69	98.81	2311681.26	100.24	830188.41	96.34	3457561.66	92.42	6243799.25
ICV	174536.15	99.75	2288164.54	99.22	799457.07	92.78	3400772.53	90.90	6060322.82
ICB	175266.79	100.17	2329090.13	101.00	786859.04	91.32	3465878.59	92.64	6160964.18
0223-176.7-1A 5X	179378.87	102.52	2335482.54	101.27	826503.69	95.92	3530776.75	94.38	6491761.90
0223-176.8-1A 5X	182449.81	104.27	2355676.04	102.15	859437.18	99.74	3476560.69	92.93	6383614.17
0223-176.9-1A 5X	184238.39	105.29	2432242.52	105.47	857588.48	99.52	3507658.21	93.76	6443387.27
0223-176.10-1A 5X	185923.78	106.26	2408796.97	104.45	847026.18	98.30	3540393.21	94.64	6507966.18
0223-176.11-1A 5X	187055.72	106.90	2418126.46	104.86	845728.82	98.15	3449153.77	92.20	6339052.37
0223-176.12-1A 5X	184802.09	105.61	2433817.79	105.54	848985.47	98.53	3545448.32	94.77	6483368.45
0223-176.13-1A 5X	188393.83	107.67	2432090.10	105.46	848952.57	98.52	3561822.35	95.21	6550330.41
0223-176.14-1A 5X	186354.52	106.50	2423024.92	105.07	866400.37	100.55	3613881.20	96.60	6637481.26
0223-176.15-1A 5X	188901.36	107.96	2428634.74	105.31	869704.57	100.93	3693567.92	98.73	6560577.06
ICV	177137.95	101.23	2332098.32	101.13	801969.98	93.07	3585486.61	95.84	6284733.58
ICB	174157.68	99.53	2274607.37	98.63	799830.34	92.82	3510621.15	93.84	6294186.15
0223-176.16-1A 5X	182187.57	104.12	2364954.66	102.55	871641.28	101.15	3506410.69	93.73	6376697.57
0223-176.17-2A 5X	183450.00	104.84	2371093.01	102.82	865860.90	100.48	3632412.39	97.10	6588775.68
0223-176.18-1A 5X	183740.42	105.01	2370838.91	102.81	873524.47	101.37	3707147.96	99.09	6515115.09
ICV	170183.27	97.26	2252178.06	97.66	786635.27	91.29	3530334.90	94.37	6227740.54
ICB	168182.26	96.12	2192369.95	95.07	782601.14	90.82	3408920.52	91.12	6078460.02

Sample 0223-176.17 was the 1A analysis not the 2A analysis. - MAL 4/3/23

| | ID) [tune 1] |
Sample Name	ISTD Recovery %
Cal Blank	100.00
1 ppb	91.67
5 ppb	91.63
10 ppb	95.40
50 ppb	92.43
100 ppb	93.66
ICV	93.96
ICB	92.96
ICSA	88.47
ICSAB	90.47
0223-176.LB-1A	96.64
0223-176.LCS-1A 2X	93.44
0223-176.1-1A 5X	93.64
0223-176.1-1A MS 5X	93.88
0223-176.2-1A 5X	95.48
0223-176.2-1A DUP 5X	93.46
0223-176.3-1A 5X	95.71
0223-176.4-1A 5X	96.69
0223-176.5-1A 5X	96.65
0223-176.6-1A 5X	95.56
ICV	92.75
ICB	94.29
0223-176.7-1A 5X	99.35
0223-176.8-1A 5X	97.70
0223-176.9-1A 5X	98.61
0223-176.10-1A 5X	99.60
0223-176.11-1A 5X	97.01
0223-176.12-1A 5X	99.22
0223-176.13-1A 5X	100.25
0223-176.14-1A 5X	101.58
0223-176.15-1A 5X	100.40
ICV	96.18
ICB	96.33
0223-176.16-1A 5X	97.59
0223-176.17-2A 5X	100.83
0223-176.18-1A 5X	99.71
ICV	95.31
ICB	93.03

Sample 0223-176.17 was the 1A analysis not the 2A analysis. - MAL 4/3/23

Batch Folder: D:\Agilent\ICPMH\1\DATA\2023\0223-176 032923 high mass FH.b\

Analysis File: 0223-176 032923 high mass FH.batch.bin

DA Date-Time: 3/29/2023 2:41:58 PM

Calibration Title:

Calibration Method: External Calibration

VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	001CALB.d	Cal Blank	3/29/2023 12:07:43 PM
2	002CALS.d	1 ppb	3/29/2023 12:11:28 PM
3	003CALS.d	5 ppb	3/29/2023 12:14:56 PM
4	004CALS.d	10 ppb	3/29/2023 12:18:22 PM
5	005CALS.d	50 ppb	3/29/2023 12:21:51 PM
6	006CALS.d	100 ppb	3/29/2023 12:25:16 PM

111 Cd [tune 1] ISTD : 115 In [tune 1]
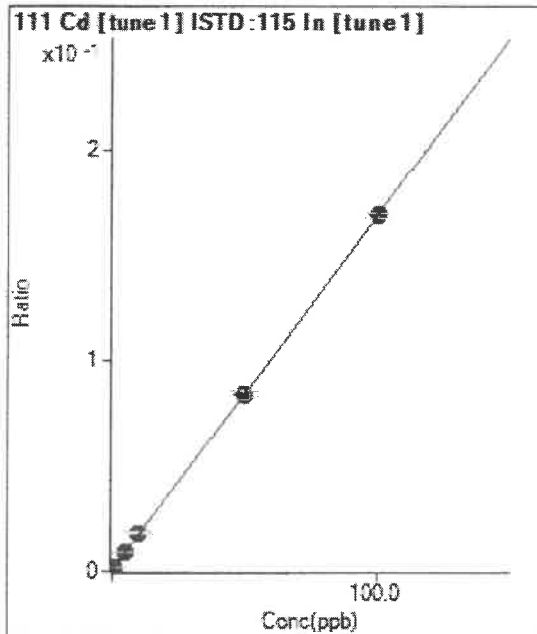
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	230.23	0.0000	P	15.6
2	☐	1.000	1.023	9486.24	0.0018	P	1.6
3	☐	5.000	5.226	47728.53	0.0089	P	2.3
4	☐	10.000	10.779	93813.78	0.0183	P	1.8
5	☐	50.000	49.982	448727.38	0.0845	P	3.3
6	☐	100.000	99.920	888224.53	0.1689	A	1.6

$y = 0.0017 * x + 3.9343E-005$

$R = 1.0000$

$DL = 0.01088$

$BEC = 0.02328$

Weight: <None>

Min Conc: 0

114 Cd [tune 1] ISTD : 115 In [tune 1]
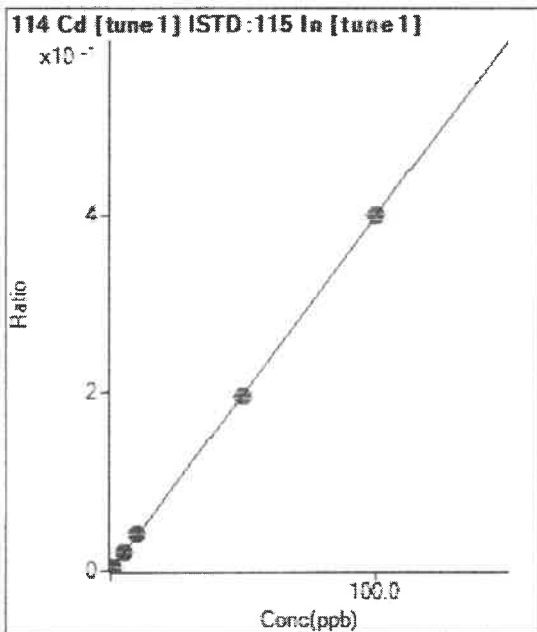
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	650.51	0.0001	P	41.2
2	☐	1.000	0.986	21657.29	0.0040	P	2.5
3	☐	5.000	5.098	109924.41	0.0204	P	1.6
4	☐	10.000	10.598	217570.59	0.0423	P	2.6
5	☐	50.000	49.571	1049555.46	0.1976	A	2.6
6	☐	100.000	100.150	2100260.77	0.3991	A	1.8

$y = 0.0040 * x + 1.1113E-004$

$R = 1.0000$

$DL = 0.03444$

$BEC = 0.02789$

Weight: <None>

Min Conc: 0

118 Sn [tune 1] No available calibration points
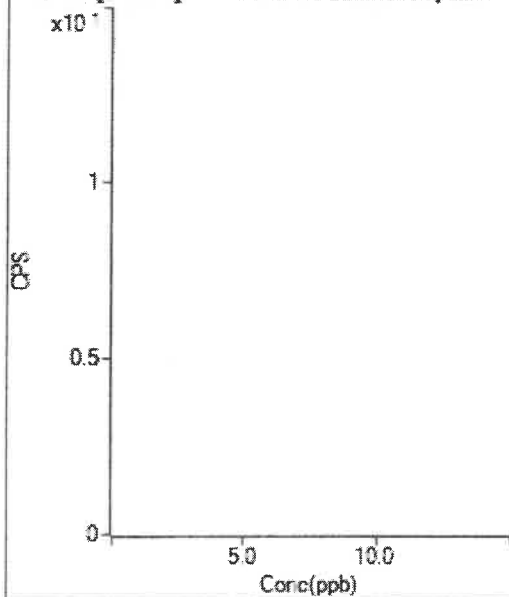
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			740.77		P	1.4
2	☐			804.17		P	6.3
3	☐			1227.96		P	9.7
4	☐			2035.55		P	7.1
5	☐			880.92		P	7.5
6	☐			927.63		P	2.7

121 Sb [tune 1] ISTD :115 In [tune 1]
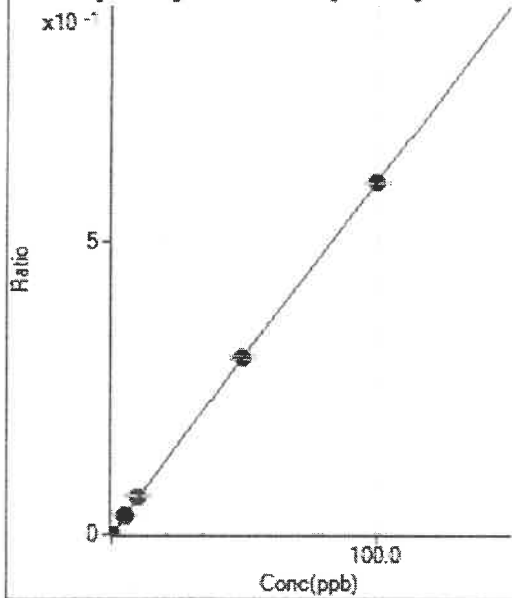
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1054.45	0.0002	P	31.6
2	☐			34274.55	0.0064	P	1.7
3	☐	5.000	5.137	167532.09	0.0311	P	3.2
4	☐	10.000	10.768	334475.63	0.0651	P	1.7
5	☐	50.000	49.913	1598552.72	0.3010	A	2.4
6	☐	100.000	99.960	3170172.01	0.6026	A	0.8

$y = 0.0060 * x + 1.8025E\text{-}004$

$R = 1.0000$

$DL = 0.02838$

$BEC = 0.02991$

Weight: <None>

Min Conc: 0

123 Sb [tune 1] ISTD :115 In [tune 1]
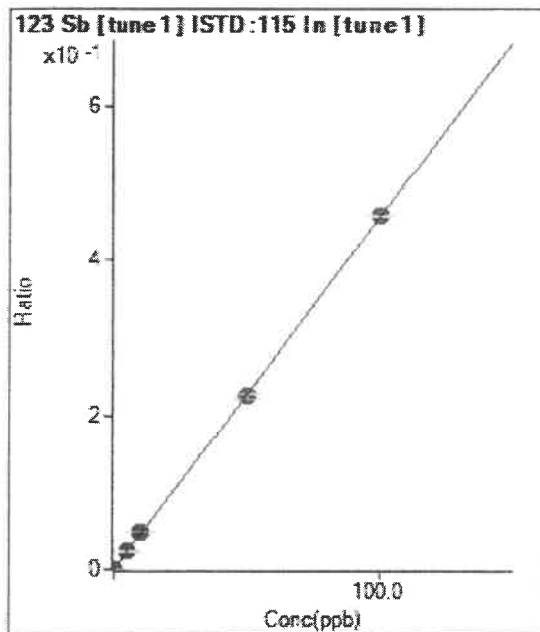
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	852.97	0.0001	P	33.8
2	☐			25371.65	0.0047	P	3.6
3	☐	5.000	5.100	125905.65	0.0234	P	3.6
4	☐	10.000	10.560	248199.69	0.0483	P	2.7
5	☐	50.000	49.190	1192011.38	0.2245	A	3.7
6	☐	100.000	100.344	2408192.32	0.4578	A	0.4

$y = 0.0046 * x + 1.4582E\text{-}004$

$R = 0.9999$

$DL = 0.03238$

$BEC = 0.03198$

Weight: <None>

Min Conc: 0

125 Te [tune 1] No available calibration points
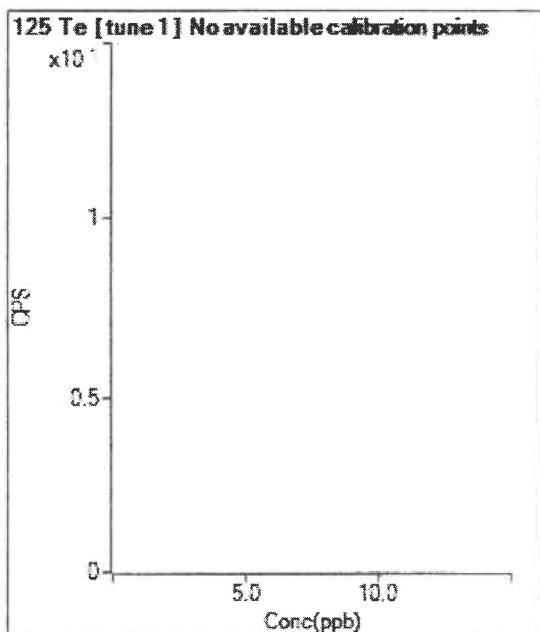
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			10.01		P	100.0
2	☐			10.01		P	100.0
3	☐			13.35		P	86.6
4	☐			16.68		P	69.3
5	☐			6.67		P	86.6
6	☐			6.67		P	86.6

206 Pb [tune 1] ISTD :209 Bi [tune 1]
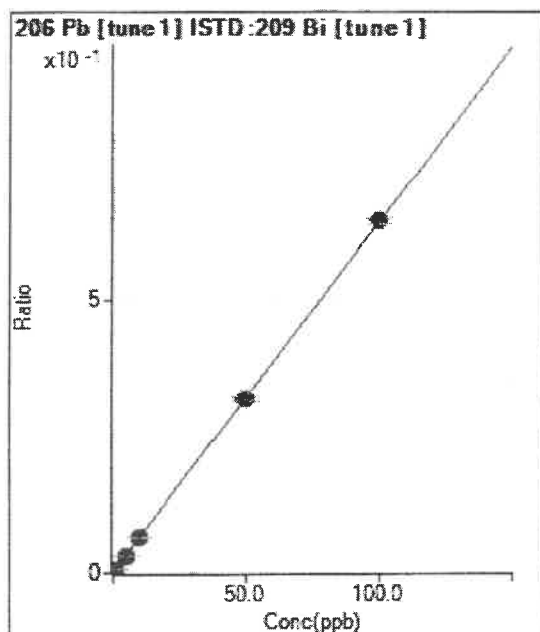
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1004.39	0.0003	P	26.0
2	☐	1.000	0.964	24066.91	0.0065	P	0.5
3	☐	5.000	4.857	117766.96	0.0315	P	1.2
4	☐	10.000	10.047	237219.39	0.0649	P	2.2
5	☐	50.000	49.388	1147069.16	0.3180	A	1.6
6	☐	100.000	100.309	2307756.58	0.6456	A	1.7

$y = 0.0064 * x + 2.5091E\text{-}004$

$R = 1.0000$

$DL = 0.0304$

$BEC = 0.039$

Weight: <None>

Min Conc: 0

207 Pb [tune 1] ISTD :209 Bi [tune 1]
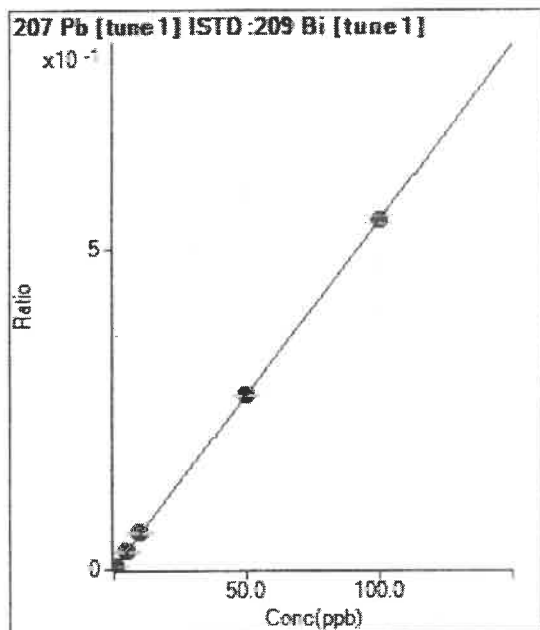
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	797.50	0.0002	P	28.5
2	☐	1.000	0.990	20804.59	0.0056	P	2.7
3	☐	5.000	5.029	102828.26	0.0275	P	3.6
4	☐	10.000	10.322	205773.46	0.0563	P	1.2
5	☐	50.000	49.642	973279.48	0.2698	A	1.1
6	☐	100.000	100.146	1944874.47	0.5441	A	2.0

$y = 0.0054 * x + 1.9966E\text{-}004$

$R = 1.0000$

$DL = 0.03142$

$BEC = 0.03676$

Weight: <None>

Min Conc: 0

208 Pb [tune 1] ISTD :209 Bi [tune 1]
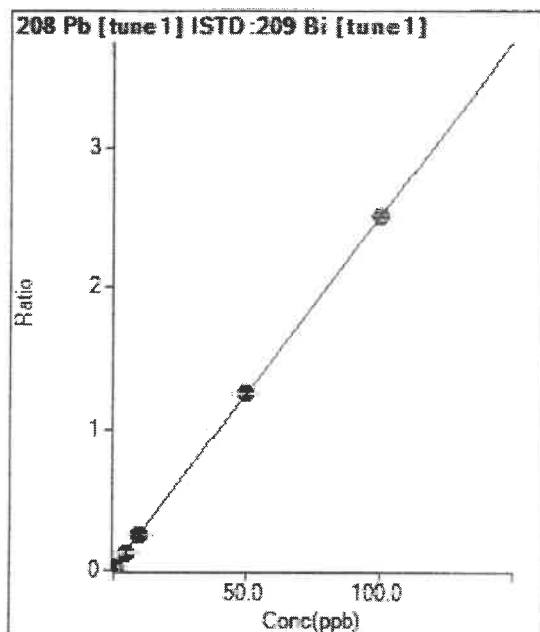
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3353.56	0.0008	P	22.5
2	☐	1.000	0.985	95267.99	0.0255	P	1.0
3	☐	5.000	4.972	469378.90	0.1256	P	2.7
4	☐	10.000	10.255	943839.42	0.2581	P	0.7
5	☐	50.000	50.150	4541539.09	1.2589	A	0.9
6	☐	100.000	99.901	8961528.22	2.5069	A	1.3

$y = 0.0251 * x + 8.3835E\text{-}004$

$R = 1.0000$

$DL = 0.02253$

$BEC = 0.03342$

Weight: <None>

Min Conc: 0

115 In (ISTD) [tune 1]
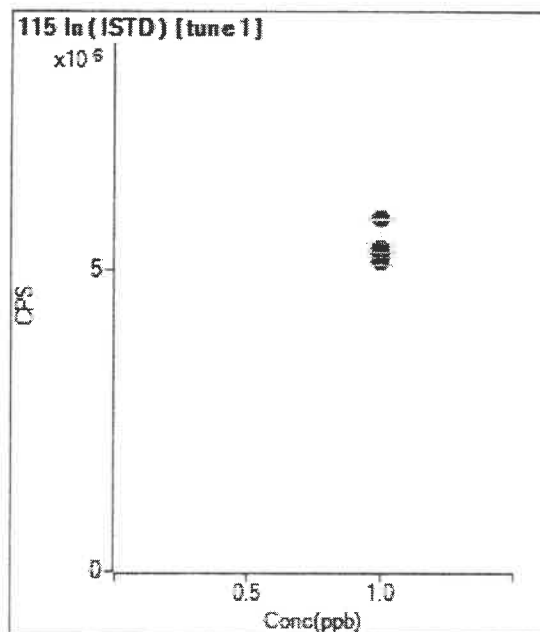
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		5854953.67		A	0.7
2	☐	1.000		5362765.93		A	1.7
3	☐	1.000		5383489.50		A	3.0
4	☐	1.000		5140791.03		A	2.4
5	☐	1.000		5311320.35		A	0.8
6	☐	1.000		5260683.69		A	2.2

159 Tb (ISTD) [tune 1]
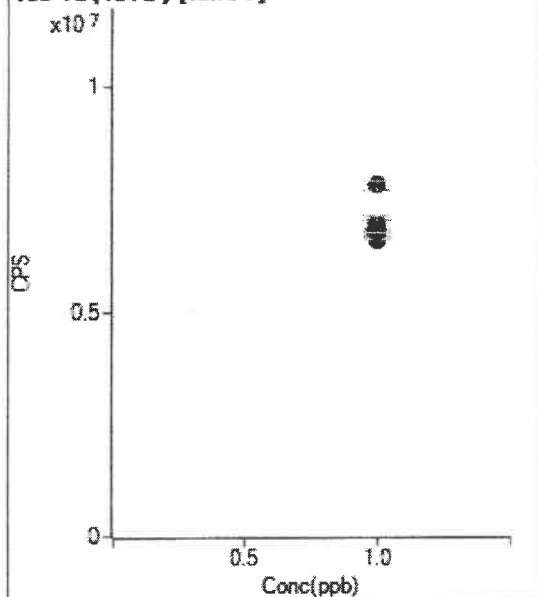
	Rjct	Conc.	Calc Conc	CPS	Ratio	Det.	RSD
1	☐	1.000		7831415.20		A	2.8
2	☐	1.000		6892924.14		A	5.3
3	☐	1.000		6977916.84		A	4.5
4	☐	1.000		6706427.03		A	1.2
5	☐	1.000		6603883.08		A	0.7
6	☐	1.000		6824196.72		A	1.2

165 Ho (ISTD) [tune 1]
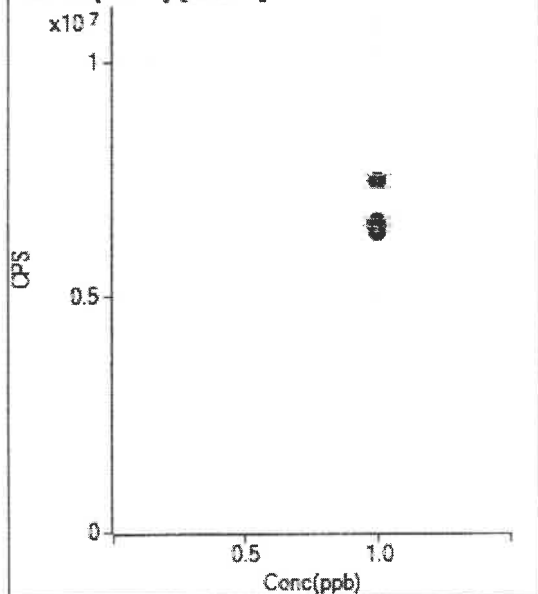
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		7455265.01		A	3.8
2	☐	1.000		6499956.19		A	3.9
3	☐	1.000		6611197.74		A	2.5
4	☐	1.000		6572185.60		A	2.1
5	☐	1.000		6364986.22		A	0.3
6	☐	1.000		6428770.52		A	1.9

209 Bi (ISTD) [tune 1]
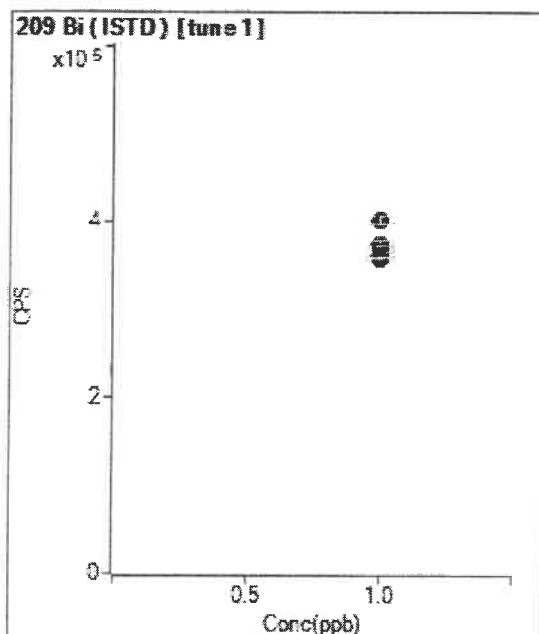
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		4010424.06		A	2.2
2	☐	1.000		3730654.95		A	1.5
3	☐	1.000		3739428.93		A	2.5
4	☐	1.000		3657278.97		A	3.2
5	☐	1.000		3608256.85		A	3.0
6	☐	1.000		3574924.02		A	0.6

Acq. Date-Time	Sample Name	111 Cd [tune 1] Conc. [ppb]	111 Cd [tune 1] Conc. RSD	114 Cd [tune 1] Conc. [ppb]	114 Cd [tune 1] Conc. RSD	121 Sb [tune 1] Conc. [ppb]	121 Sb [tune 1] Conc. RSD	123 Sb [tune 1] Conc. [ppb]	123 Sb [tune 1] Conc. RSD	206 Pb [Conc. [ppb]
3/29/2023 12:07	Cal Blank	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000
3/29/2023 12:11	1 ppb	1.0235	1.6285	0.9857	2.5806	1.0306	1.7714	1.0059	3.7152	0.9637
3/29/2023 12:14	5 ppb	5.2258	2.3441	5.0982	1.5696	5.1366	3.2390	5.1001	3.6242	4.8565
3/29/2023 12:18	10 ppb	10.7786	1.8067	10.5982	2.5570	10.7681	1.7437	10.5596	2.7505	10.0471
3/29/2023 12:21	50 ppb	49.9817	3.2592	49.5707	2.5720	49.9129	2.3611	49.1903	3.6566	49.3880
3/29/2023 12:25	100 ppb	99.9198	1.6174	100.1501	1.8112	99.9599	0.8030	100.3439	0.3636	100.3088
3/29/2023 12:28	ICV	52.3403	1.6716	51.2165	1.5754	51.8535	0.9552	51.4468	0.3165	50.8494
3/29/2023 12:32	ICB	0.5398	4.9561	0.5379	6.3267	0.6115	6.1744	0.6197	5.7952	0.5663
3/29/2023 12:35	ICSA	0.2292	6.1897	0.2227	14.6972	0.2945	14.4192	0.2861	22.2055	0.1962
3/29/2023 12:38	ICSAB	52.4919	0.6902	50.0057	2.1638	51.4573	2.3208	51.2551	2.8151	48.8433
3/29/2023 12:42	0223-176.LB-1A	0.1849	19.3455	0.1676	17.4282	0.3429	11.4877	0.3407	11.0842	0.1787
3/29/2023 12:45	0223-176.LCS-1A 2X	51.2528	4.7455	49.6663	0.9969	51.1110	1.4282	51.2125	2.1087	49.4470
3/29/2023 12:49	0223-176.1-1A 5X	0.4634	2.1915	0.4352	2.8564	0.6858	6.9137	0.6593	9.7805	1.2996
3/29/2023 12:52	0223-176.1-1A MS 5X	50.6990	2.5730	48.9400	2.9822	52.9802	0.4145	52.9322	1.7290	50.5488
3/29/2023 12:55	0223-176.2-1A 5X	0.3464	12.1102	0.3460	12.7560	0.5028	7.7171	0.5076	7.0967	1.1097
3/29/2023 12:59	0223-176.2-1A DUP 5X	0.1040	32.4939	0.0891	2.4354	0.2506	8.8439	0.2451	3.6466	0.9294
3/29/2023 13:02	0223-176.3-1A 5X	0.0367	4.2583	0.0164	56.3846	0.4067	2.4603	0.3933	3.3786	0.6993
3/29/2023 13:06	0223-176.4-1A 5X	0.0193	42.0035	0.0078	162.6860	0.1647	1.9294	0.1677	3.1562	0.7481
3/29/2023 13:09	0223-176.5-1A 5X	<0.000	N/A	<0.000	N/A	0.1934	7.5408	0.1957	1.1831	0.8436
3/29/2023 13:12	0223-176.6-1A 5X	<0.000	N/A	<0.000	N/A	0.1214	4.6677	0.1227	9.0941	0.6434
3/29/2023 13:16	ICV	49.7680	2.8268	49.1341	1.0598	49.2591	0.7896	50.2040	1.1396	49.1850
3/29/2023 13:19	ICB	0.3038	13.6273	0.2953	13.1232	0.2837	12.3841	0.2982	13.2382	0.2920
3/29/2023 13:23	0223-176.7-1A 5X	0.1046	15.6272	0.1112	7.9078	0.3007	3.2053	0.2973	4.9881	0.7086
3/29/2023 13:26	0223-176.8-1A 5X	0.0321	5.2487	0.0154	16.0026	0.1243	5.8573	0.1234	6.2465	0.7509
3/29/2023 13:29	0223-176.9-1A 5X	<0.000	N/A	<0.000	N/A	0.0760	6.1140	0.0800	5.7980	0.5098
3/29/2023 13:33	0223-176.10-1A 5X	0.0062	29.7161	<0.000	N/A	0.1322	1.0635	0.1161	7.8048	0.6488
3/29/2023 13:36	0223-176.11-1A 5X	<0.000	N/A	<0.000	N/A	0.1626	4.9432	0.1607	9.2121	0.6491
3/29/2023 13:40	0223-176.12-1A 5X	0.0059	96.9882	<0.000	N/A	0.1235	0.4066	0.1248	14.9312	0.6217
3/29/2023 13:43	0223-176.13-1A 5X	0.0028	288.2580	<0.000	N/A	0.1600	7.2674	0.1618	6.8491	0.5989
3/29/2023 13:46	0223-176.14-1A 5X	<0.000	N/A	<0.000	N/A	0.1223	8.9062	0.1328	10.1717	0.7335
3/29/2023 13:50	0223-176.15-1A 5X	0.0013	278.0579	<0.000	N/A	0.1406	1.9167	0.1362	11.3547	0.7000
3/29/2023 13:53	ICV	49.8554	2.1179	48.5818	3.3476	50.8967	1.1031	50.2435	3.2433	49.8459
3/29/2023 13:57	ICB	0.3568	1.2990	0.3568	6.1814	0.3848	5.3393	0.3567	5.9186	0.3506
3/29/2023 14:00	0223-176.16-1A 5X	0.1046	12.7308	0.0893	33.6066	0.4245	5.0647	0.4169	6.8845	0.7322
3/29/2023 14:03	0223-176.17-2A 5X	0.0331	12.9424	0.0129	24.6802	0.0921	5.4991	0.0778	7.9976	0.5826
3/29/2023 14:07	0223-176.18-1A 5X	<0.000	N/A	<0.000	N/A	0.0692	12.5074	0.0643	5.1307	0.4454
3/29/2023 14:10	ICV	48.6904	0.9927	48.4844	0.9176	50.3991	1.0477	49.4397	0.7924	49.0666
3/29/2023 14:14	ICB	0.3431	3.5191	0.3528	1.8137	0.3570	3.3374	0.3644	3.1412	0.3599

Sample 0223-176.17 was the 1A analysis not the 2A analysis - MAL 4/3/23
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Sample Name	tune 1 Conc. RSD	207 Pb [tune 1] Conc. [ppb]	207 Pb [tune 1] Conc. RSD	208 Pb [tune 1] Conc. [ppb]	208 Pb [tune 1] Conc. RSD	115 In (ISTD) [tune 1] CPS	115 In (ISTD) [tune 1] ISTD Recovery %	159 Tb (ISTD) [tune 1] CPS	159 Tb (ISTD) [tune 1] ISTD Recovery %	165 Ho CPS
Cal Blank	N/A	0.0000	N/A	0.0000	N/A	5854953.67	100.00	7831415.20	100.00	7455265.01
1 ppb	0.5211	0.9903	2.7495	0.9846	1.0377	5362765.93	91.59	6892924.14	88.02	6499956.19
5 ppb	1.1893	5.0288	3.6417	4.9716	2.7089	5383489.50	91.95	6977916.84	89.10	6611197.74
10 ppb	2.1803	10.3217	1.1744	10.2545	0.7520	5140791.03	87.80	6706427.03	85.63	6572185.60
50 ppb	1.6451	49.6419	1.1238	50.1497	0.8841	5311320.35	90.71	6603883.08	84.33	6364986.22
100 ppb	1.7303	100.1455	2.0128	99.9013	1.3260	5260683.69	89.85	6824196.72	87.14	6428770.52
ICV	1.8520	49.4919	4.4910	50.7785	1.7388	5382695.89	91.93	6941624.35	88.64	6592233.98
ICB	5.4250	0.5469	2.0071	0.5531	4.3707	5382346.49	91.93	6850366.17	87.47	6582772.70
ICSA	17.0226	0.1720	16.7265	0.1901	18.2778	4801846.58	82.01	6419615.64	81.97	6032030.78
ICSAB	1.9170	47.6938	1.5561	48.8451	1.1021	4660441.30	78.57	6200122.82	79.17	5979506.54
0223-176.LB-1A	2.3580	0.1749	13.6040	0.1833	7.1625	5492176.79	93.80	6851816.26	87.49	6606007.02
0223-176.LCS-1A 2X	1.5889	49.1117	1.1353	49.7139	1.9103	5200539.99	88.82	6964702.11	88.93	6720599.11
0223-176.1-1A 5X	4.2762	1.2369	3.5277	1.2662	3.1535	4919891.60	84.03	6607467.18	84.37	6334020.83
0223-176.1-1A MS 5X	1.3660	50.6759	2.4421	51.0700	2.4994	5040839.80	86.10	6724812.75	85.87	6498816.45
0223-176.2-1A 5X	5.0667	1.0647	0.7548	1.0961	3.6781	5076526.39	86.70	6619943.09	84.53	6313519.34
0223-176.2-1A DUP 5X	1.6348	0.9105	2.0117	0.9001	2.1726	5212220.22	89.02	6862500.17	87.63	6694110.39
0223-176.3-1A 5X	1.7546	0.6855	4.6060	0.6901	3.2797	5236400.94	89.44	6924497.17	88.42	6689153.19
0223-176.4-1A 5X	8.9401	0.7040	4.7014	0.7112	5.1644	5109084.47	87.26	7119954.55	90.92	6608931.93
0223-176.5-1A 5X	3.7027	0.7949	4.5453	0.8092	3.9078	5203966.19	88.88	6625811.67	84.61	6439247.77
0223-176.6-1A 5X	2.9267	0.6032	2.1562	0.6215	0.8381	5187634.36	88.60	6608178.52	84.38	6308548.33
ICV	1.3258	47.9271	2.7958	49.0693	2.2643	5211587.18	89.01	6652624.21	84.95	6326015.22
ICB	9.4059	0.2732	13.1739	0.2898	9.3262	5291793.78	90.38	6540477.02	83.52	6348645.35
0223-176.7-1A 5X	1.7104	0.6848	3.1776	0.6885	1.2002	5234127.06	89.40	6849299.11	87.46	6682781.50
0223-176.8-1A 5X	1.6866	0.7280	3.6231	0.7419	2.3069	5137465.49	87.75	6711379.11	85.70	6462125.07
0223-176.9-1A 5X	4.3544	0.4655	6.7394	0.4800	5.6296	5336005.66	91.14	6724593.89	85.87	6456714.77
0223-176.10-1A 5X	2.7083	0.6393	3.9264	0.6410	1.5431	5364487.18	91.62	6751009.63	86.20	6484411.79
0223-176.11-1A 5X	0.4461	0.6107	5.3664	0.6273	1.2216	5209379.26	88.97	6699477.68	85.55	6467356.82
0223-176.12-1A 5X	5.5125	0.5707	4.9020	0.5898	2.8284	5162269.64	88.17	6747781.09	86.16	6527639.60
0223-176.13-1A 5X	5.9276	0.5337	2.4673	0.5575	3.8074	5166314.32	88.24	6705496.72	85.62	6501068.39
0223-176.14-1A 5X	1.4145	0.6793	4.4234	0.6967	2.4232	5144690.07	87.87	6695251.06	84.22	6244873.93
0223-176.15-1A 5X	1.6709	0.6601	3.5687	0.6666	1.3287	5046812.66	86.20	6643718.64	84.83	6292564.53
ICV	3.1865	47.9477	0.4005	49.5090	1.1548	5108658.75	87.25	6513678.19	83.17	6097394.21
ICB	9.0246	0.3428	5.5818	0.3499	6.2482	5128113.72	87.59	6552474.17	83.67	6192706.76
0223-176.16-1A 5X	3.0944	0.6764	5.9799	0.6872	3.6478	5215843.54	89.08	6596017.09	84.23	6417633.92
0223-176.17-2A 5X	2.0032	0.5324	1.2001	0.5622	2.3833	5185400.47	88.56	6600025.37	84.28	6317693.83
0223-176.18-1A 5X	5.1715	0.4106	6.0944	0.4187	4.5874	5311940.47	90.73	6629478.05	84.65	6312709.15
ICV	2.9130	48.0916	2.5556	49.0304	0.3616	5106985.82	87.23	6063775.96	77.43	5870489.61
ICB	5.5373	0.3374	4.3485	0.3567	4.5731	5114566.03	87.35	6498055.85	82.97	6133275.40

Sample 0223-176.17 was the 1A analysis not the 2A analysis. - MAL 4/3/23

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Sample Name	ISTD) [tune 1] ISTD Recovery %	209 Bi (ISTD) [tune 1] CPS	ISTD Recovery %
Cal Blank	100.00	4010424.06	100.00
1 ppb	87.19	3730654.95	93.02
5 ppb	88.68	3739428.93	93.24
10 ppb	88.15	3657278.97	91.19
50 ppb	85.38	3608256.85	89.97
100 ppb	86.23	3574924.02	89.14
ICV	88.42	3713749.37	92.60
ICB	88.30	3675865.55	91.66
ICSA	80.91	3117912.81	77.75
ICSAB	80.21	3231044.91	80.57
0223-176.LB-1A	88.61	3656923.64	91.19
0223-176.LCS-1A 2X	90.15	3735041.97	93.13
0223-176.1-1A 5X	84.96	3557581.13	88.71
0223-176.1-1A MS 5X	87.17	3647766.99	90.96
0223-176.2-1A 5X	84.69	3553604.13	88.61
0223-176.2-1A DUP 5X	89.79	3591501.61	89.55
0223-176.3-1A 5X	89.72	3612001.48	90.07
0223-176.4-1A 5X	88.65	3579707.34	89.26
0223-176.5-1A 5X	86.37	3585105.65	89.39
0223-176.6-1A 5X	84.62	3484587.77	86.89
ICV	84.85	3574090.34	89.12
ICB	85.16	3513355.96	87.61
0223-176.7-1A 5X	89.64	3703909.43	92.36
0223-176.8-1A 5X	86.68	3580021.64	89.27
0223-176.9-1A 5X	86.61	3504718.68	87.39
0223-176.10-1A 5X	86.98	3507301.68	87.45
0223-176.11-1A 5X	86.75	3443669.95	85.87
0223-176.12-1A 5X	87.56	3518111.95	87.72
0223-176.13-1A 5X	87.20	3566232.07	88.92
0223-176.14-1A 5X	83.76	3434841.33	85.65
0223-176.15-1A 5X	84.40	3428226.73	85.48
ICV	81.79	3319194.52	82.76
ICB	83.06	3356613.66	83.70
0223-176.16-1A 5X	86.08	3444585.61	85.89
0223-176.17-2A 5X	84.74	3484656.10	86.89
0223-176.18-1A 5X	84.67	3427967.04	85.48
ICV	78.74	3289155.34	82.02
ICB	82.27	3195211.06	79.67

Sample 0223-176.17 was the 1A analysis not the 2A analysis. - MAL 4/3/23

Acq. Date-Time	Sample Name	111 Cd [tune 1]		114 Cd [tune 1]		121 Sb [tune 1]		123 Sb [tune 1]		206 Pb [tune 1]		207 Pb [tune 1]	
		Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD
3/29/2023 14:10	ICV	48.6904	0.9927	48.4844	0.9176	50.3991	1.0477	49.4397	0.7924	49.0666	2.9130	48.0916	2.5556
3/29/2023 14:14	ICB	0.3431	3.5191	0.3528	1.8137	0.3570	3.3374	0.3644	3.1412	0.3599	5.5373	0.3374	4.3485
3/29/2023 14:41	0223-176.-LB-2A	<0.000	N/A	<0.000	N/A	<0.000	N/A	<0.000	N/A	0.0019	403.4233	0.0124	44.5910
3/29/2023 14:45	0223-176.LCS-2A 2X	47.8646	2.2390	49.2375	2.3537	48.2579	1.5782	48.5307	1.5251	49.9301	1.6816	48.0136	2.3323
3/29/2023 14:48	0223-176.1-2A	6.0183	1.0611	5.6273	7.0797	0.9489	6.7429	0.9334	7.7811	6.7762	2.5542	7.0120	2.6384
3/29/2023 14:52	0223-176.1-2A MS	58.9069	2.0272	59.5222	1.8817	52.4140	2.2472	52.2946	2.6936	58.7842	3.5791	57.9615	0.5534
3/29/2023 14:55	0223-176.2-2A	1.3427	1.3662	0.9466	40.3526	0.6261	3.7359	0.6096	6.7884	4.1886	1.6136	4.3074	1.9815
3/29/2023 14:58	0223-176.2-2A DUP	1.1110	1.8328	1.0475	11.8966	0.4258	7.2980	0.4103	2.9224	4.1229	1.4383	4.0622	4.3740
3/29/2023 15:02	0223-176.3-2A	0.8993	6.3393	0.6693	19.8747	0.6363	3.7338	0.6261	3.5365	1.9346	2.3317	1.9577	1.4314
3/29/2023 15:05	0223-176.4-2A	1.1850	7.1887	0.9541	27.1166	0.3730	4.3491	0.3679	6.3975	2.9546	2.8577	3.0373	4.2939
3/29/2023 15:09	0223-176.5-2A	0.2652	3.0823	0.1058	290.1274	0.4619	3.4426	0.4648	4.3036	1.9545	1.9336	1.9469	1.2352
3/29/2023 15:12	0223-176.6-2A	0.1127	5.4595	<0.000	N/A	0.2400	3.3096	0.2236	2.5406	1.7823	4.9655	1.8115	5.4326
3/29/2023 15:15	ICV	49.8203	0.8925	48.0748	1.0373	50.8554	2.3414	51.1018	1.1814	50.5577	3.1923	49.7076	2.4933
3/29/2023 15:19	ICB	0.2679	16.5504	0.2585	16.8066	0.2718	19.6473	0.2697	19.3318	0.2723	12.9721	0.2583	12.2105
3/29/2023 15:22	0223-176.7-2A	0.1505	16.1008	<0.000	N/A	0.3046	7.8318	0.3267	7.5362	1.1498	6.8716	1.1518	5.1356
3/29/2023 15:26	0223-176.8-2A	0.0168	24.7344	<0.000	N/A	0.0503	10.0659	0.0509	4.9178	0.1948	1.7622	0.2134	3.4418
3/29/2023 15:29	0223-176.9-2A	<0.000	N/A	<0.000	N/A	0.0534	5.3483	0.0562	9.7194	0.1671	6.5053	0.1669	5.1789
3/29/2023 15:32	0223-176.10-2A	0.1063	16.5592	<0.000	N/A	0.2459	2.2337	0.2484	7.5407	0.9295	2.9301	0.9335	3.0521
3/29/2023 15:36	0223-176.11-2A	0.6576	0.5720	0.3333	15.8956	0.2243	5.2219	0.2251	4.6838	1.0384	3.6651	1.0194	1.9683
3/29/2023 15:39	0223-176.12-2A	0.3174	2.3462	0.1422	184.7978	0.2750	3.4169	0.2717	8.7177	1.2909	1.6280	1.3023	4.4567
3/29/2023 15:43	0223-176.13-2A	0.0651	10.4056	<0.000	N/A	0.1301	5.3087	0.1250	5.0708	1.0073	4.2234	1.0051	2.2858
3/29/2023 15:46	0223-176.14-2A	0.1611	9.8095	<0.000	N/A	0.2013	7.1748	0.1924	10.9678	0.8669	1.6753	0.8920	1.6221
3/29/2023 15:50	0223-176.15-2A	0.1496	7.9404	<0.000	N/A	0.1057	7.4074	0.1030	17.3724	0.5636	1.5017	0.5755	7.8049
3/29/2023 15:53	ICV	50.7701	3.9325	48.7152	2.4500	51.3062	6.2507	50.0222	6.3359	50.6016	2.9865	49.8509	0.4573
3/29/2023 15:56	ICB	0.2667	3.1240	0.2594	11.0691	0.2555	12.0605	0.2636	2.9010	0.2552	10.6788	0.2640	2.1177
3/29/2023 16:00	0223-176.16-2A	0.1748	25.7443	0.0225	405.4462	0.2548	10.0337	0.2479	9.4395	0.9248	3.9559	0.9184	2.8266
3/29/2023 16:03	0223-176.17-2A	0.0297	18.7822	<0.000	N/A	0.1573	2.1270	0.1616	5.9992	0.6509	7.9790	0.6696	3.6841
3/29/2023 16:07	0223-176.18-2A ①	1.4004	32.7163	2.1184	12.3589	3.9314	7.1004	3.7502	17.5916	2.3661	13.8480	2.0303	18.6345
3/29/2023 16:10	ICV	51.1588	2.4196	49.5570	0.5624	51.5101	4.4620	50.8620	2.8684	49.7990	1.5557	49.3503	0.3962
3/29/2023 16:13	ICB	0.2912	14.7689	0.2651	13.3965	0.2666	14.5397	0.2784	17.4895	0.2831	12.1506	0.2829	16.9483

① There was no tube in the A/S. There is no sample 19-2A

JTZ 3/31/23

Sample Name	208 Pb [tune 1]		115 In (ISTD) [tune 1]		159 Tb (ISTD) [tune 1]		165 Ho (ISTD) [tune 1]		209 Bi (ISTD) [tune 1]	
	Conc. [ppb]	Conc. RSD	CPS	ISTD Recovery %	CPS	ISTD Recovery %	CPS	ISTD Recovery %	CPS	ISTD Recovery %
ICV	49.0304	0.3616	5106985.82	87.23	6063775.96	77.43	5870489.61	78.74	3289155.34	82.02
ICB	0.3567	4.5731	5114566.03	87.35	6498055.85	82.97	6133275.40	82.27	3195211.06	79.67
0223-176.-LB-2A	0.0131	29.6451	5459132.91	93.24	6776057.33	86.52	6570771.17	88.14	3333640.11	83.12
0223-176.LCS-2A 2X	49.9312	0.3991	5604570.29	95.72	6967492.87	88.97	6546575.77	87.81	3537067.46	88.20
0223-176.1-2A	6.9444	1.3526	5343566.97	91.27	7857105.84	100.33	7541006.68	101.15	3983282.12	99.32
0223-176.1-2A MS	58.4410	2.2076	5269566.50	90.00	7707216.11	98.41	7455306.24	100.00	3845700.44	95.89
0223-176.2-2A	4.2555	1.3486	5309987.51	90.69	7658378.94	97.79	7512773.86	100.77	3943266.33	98.33
0223-176.2-2A DUP	4.0949	2.0908	5246470.00	89.61	7718884.86	98.56	7371967.80	98.88	3808950.98	94.98
0223-176.3-2A	1.9322	1.4595	5226063.91	89.27	7746285.65	98.91	7513285.74	100.78	3913391.09	97.58
0223-176.4-2A	3.0075	1.6900	5239649.39	89.49	7777968.06	99.32	7494881.44	100.53	3894189.57	97.10
0223-176.5-2A	1.9567	0.3887	5289742.94	90.35	7802605.45	99.63	7475148.69	100.27	3894585.93	97.11
0223-176.6-2A	1.8066	2.5652	5212064.01	89.02	7970935.66	101.78	7589040.44	101.79	3913514.16	97.58
ICV	50.6302	3.0871	5075026.28	86.68	6430162.80	82.11	6156633.35	82.58	3331890.78	83.08
ICB	0.2750	11.8511	5025368.90	85.83	6462419.85	82.52	6248581.54	83.81	3299651.28	82.28
0223-176.7-2A	1.1504	5.1664	5225921.56	89.26	7814917.20	99.79	7540800.59	101.15	3946710.32	98.41
0223-176.8-2A	0.2092	2.8995	5572080.22	95.17	7139448.36	91.16	6796467.38	91.16	3735342.66	93.14
0223-176.9-2A	0.1698	3.8914	5312631.10	90.74	7962009.49	101.73	7538191.52	101.11	3926319.75	97.90
0223-176.10-2A	0.9335	1.6878	4997074.01	85.35	7816654.66	99.81	7441780.42	99.82	3800750.98	94.77
0223-176.11-2A	1.0609	1.9974	5166892.79	88.25	7598994.87	97.03	7298406.48	97.90	3949826.28	98.49
0223-176.12-2A	1.3065	1.9439	5361619.81	91.57	7740581.09	98.84	7336223.93	98.40	3824107.20	95.35
0223-176.13-2A	1.0079	2.5271	5450795.85	93.10	8263889.33	105.52	7762734.13	104.12	4048758.75	100.96
0223-176.14-2A	0.8957	1.3511	5479403.72	93.59	7972755.23	101.80	7624592.08	102.27	3938100.38	98.20
0223-176.15-2A	0.5815	2.2601	5385373.56	91.98	7736994.19	98.82	7419479.95	99.52	4004561.03	99.85
ICV	50.5821	1.4296	5084220.06	86.84	6294759.91	80.38	5970429.80	80.08	3319932.53	82.78
ICB	0.2594	6.5461	5032018.03	85.94	6305142.84	80.51	5946110.69	79.76	3345256.73	83.41
0223-176.16-2A	0.9198	2.3902	5211070.60	89.00	8023452.44	102.45	7581611.50	101.69	3949293.29	98.48
0223-176.17-2A	0.6717	2.8296	5405093.98	92.32	8212282.53	104.87	7720687.45	103.56	3909687.55	97.49
0223-176.18-2A ①	1.8537	12.9195	12438.03	0.21	17718.43	0.22	16176.28	0.22	10114.21	0.25
ICV	50.0082	1.1240	4922166.96	84.07	6231572.76	79.57	5836915.30	78.29	3276144.75	81.69
ICB	0.2794	14.2644	4807040.51	82.10	6290355.08	80.32	6011748.88	80.64	3155085.91	78.67

① See note on 1st page   MZ 3/31/23

Batch Folder: D:\Agilent\ICPMH\1\DATA\2023\0223-176 032923 low mass BH.b\
Analysis File: 0223-176 032923 low mass BH.batch.bin
DA Date-Time: 3/29/2023 6:36:46 PM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	001CALB.d	Cal Blank	3/29/2023 4:18:51 PM
2	002CALS.d	1 ppb	3/29/2023 4:22:20 PM
3	003CALS.d	5 ppb	3/29/2023 4:25:50 PM
4	004CALS.d	10 ppb	3/29/2023 4:29:18 PM
5	005CALS.d	50 ppb	3/29/2023 4:32:48 PM
6	006CALS.d	100 ppb	3/29/2023 4:36:15 PM

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9 Be [tune 1] ISTD :7 Li [tune 1]
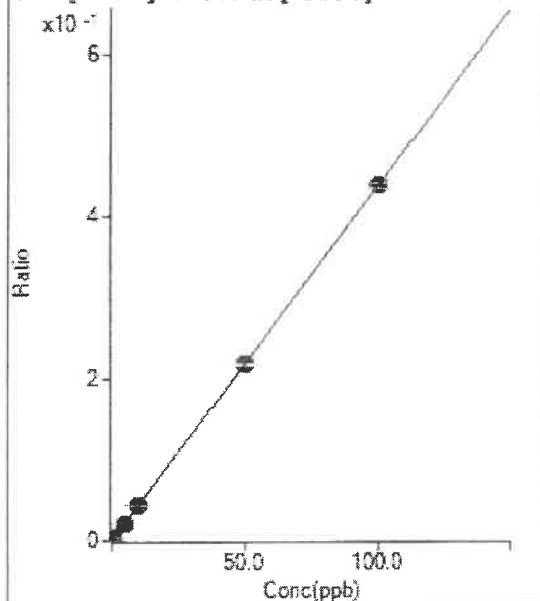
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	440.45	0.0002	P	7.9
2	☐	1.000	1.033	9162.12	0.0047	P	1.1
3	☐	5.000	4.951	42253.83	0.0219	P	1.2
4	☐	10.000	9.992	85929.25	0.0440	P	1.8
5	☐	50.000	49.813	426423.17	0.2185	P	1.1
6	☐	100.000	100.096	859281.16	0.4389	A	1.8

$y = 0.0044 * x + 2.1515E-004$

$R = 1.0000$

$DL = 0.01159$

$BEC = 0.04909$

Weight: <None>

Min Conc: 0

52 Cr [tune 1] ISTD :72 Ge [tune 1]
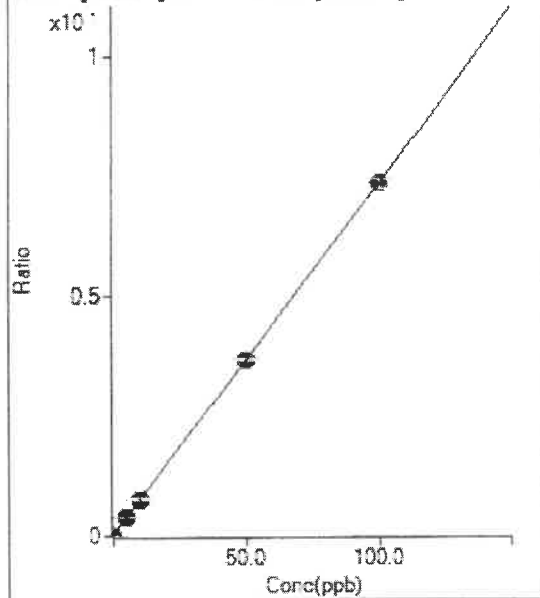
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13252.98	0.0180	P	5.0
2	☐			64833.30	0.0929	P	3.0
3	☐	5.000	4.923	273666.56	0.3794	P	0.6
4	☐	10.000	10.029	536226.08	0.7543	P	2.2
5	☐	50.000	49.883	2613592.38	3.6803	A	1.2
6	☐	100.000	100.059	5341374.57	7.3641	A	2.6

$y = 0.0734 * x + 0.0180$

$R = 1.0000$

$DL = 0.03658$

$BEC = 0.2451$

Weight: <None>

Min Conc: 0

55 Mn [tune 1] ISTD :72 Ge [tune 1]
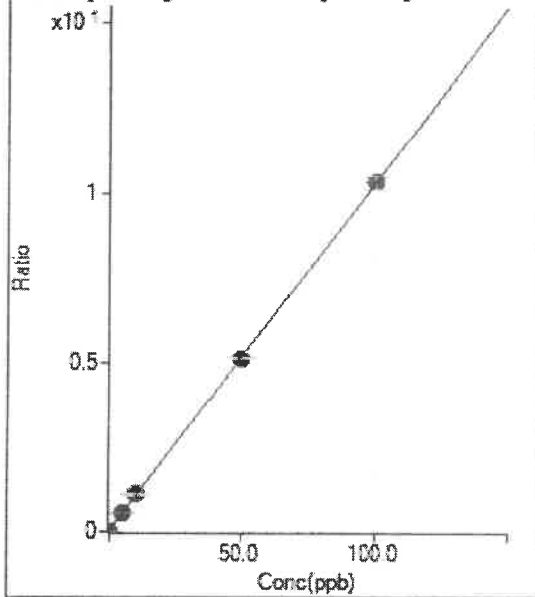
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14318.38	0.0195	P	6.2
2	☐			89499.24	0.1282	P	3.4
3	☐	5.000	5.040	388035.96	0.5379	P	1.4
4	☐	10.000	10.269	764913.17	1.0759	P	2.3
5	☐	50.000	49.519	3631636.72	5.1140	A	1.7
6	☐	100.000	100.212	7490750.12	10.3293	A	3.9

$y = 0.1029 * x + 0.0195$

$R = 1.0000$

$DL = 0.03535$

$BEC = 0.1891$

Weight: <None>

Min Conc: 0

59 Co [tune 1] ISTD :72 Ge [tune 1]
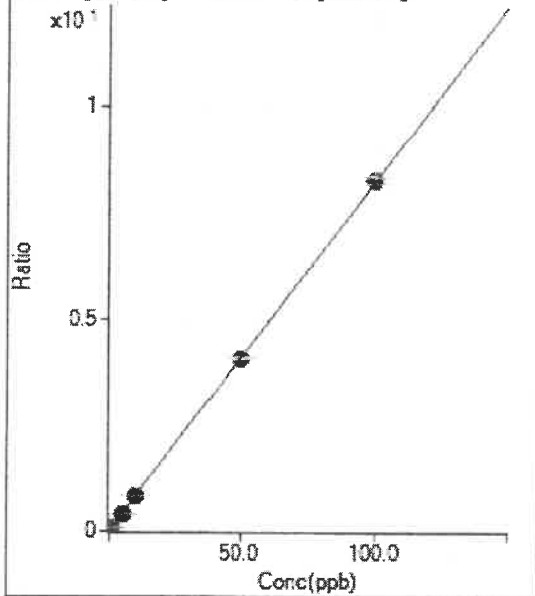
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3320.44	0.0045	P	9.7
2	☐	1.000	1.002	60902.71	0.0872	P	4.0
3	☐	5.000	4.877	293683.67	0.4071	P	2.0
4	☐	10.000	9.830	580180.42	0.8160	P	0.4
5	☐	50.000	49.614	2911815.07	4.1003	A	1.7
6	☐	100.000	100.216	6003956.87	8.2775	A	2.1

$y = 0.0826 * x + 0.0045$

$R = 1.0000$

$DL = 0.01594$

$BEC = 0.05466$

Weight: <None>

Min Conc: 0

60 Ni [tune 1] ISTD :72 Ge [tune 1]
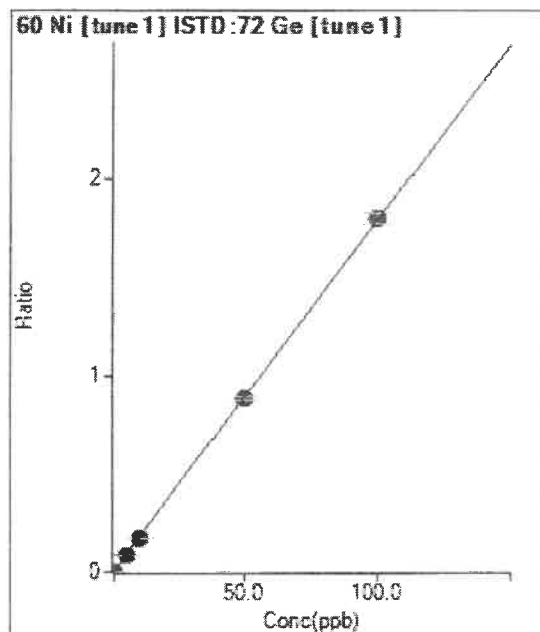
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1074.46	0.0015	P	17.2
2	☐			13480.07	0.0193	P	2.1
3	☐	5.000	4.853	63815.19	0.0885	P	3.7
4	☐	10.000	9.678	124419.98	0.1750	P	0.7
5	☐	50.000	49.366	629634.47	0.8866	P	1.9
6	☐	100.000	100.357	1306117.14	1.8009	A	3.2

$y = 0.0179 * x + 0.0015$

$R = 1.0000$

$DL = 0.04207$

$BEC = 0.08138$

Weight: <None>

Min Conc: 0

62 Ni [tune 1] ISTD :72 Ge [tune 1]
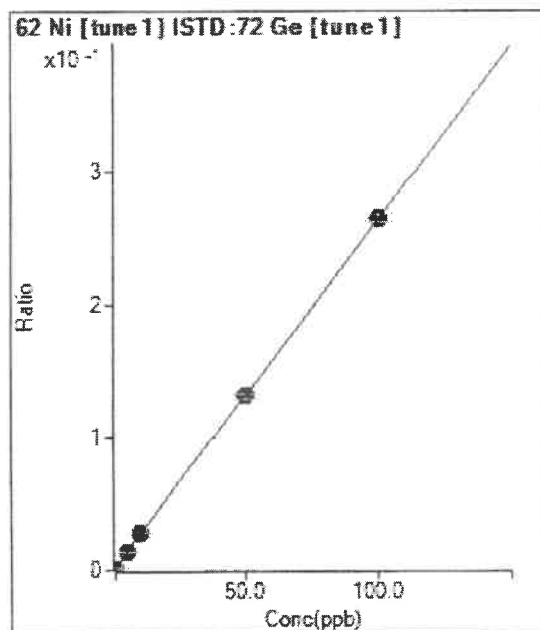
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	920.96	0.0013	P	1.3
2	☐			2592.86	0.0037	P	7.4
3	☐	5.000	4.876	10130.55	0.0140	P	2.4
4	☐	10.000	10.120	19763.80	0.0278	P	1.9
5	☐	50.000	49.549	93209.07	0.1312	P	3.7
6	☐	100.000	100.220	191623.94	0.2642	P	2.0

$y = 0.0026 * x + 0.0013$

$R = 1.0000$

$DL = 0.01804$

$BEC = 0.4765$

Weight: <None>

Min Conc: 0

75 As [tune 1] ISTD:72 Ge [tune 1]
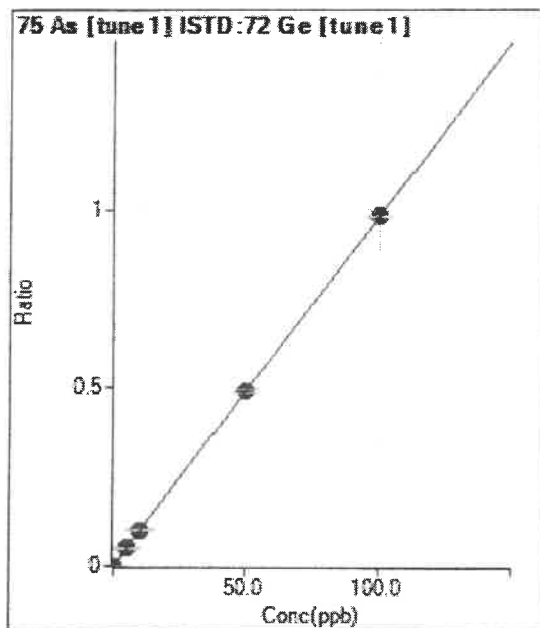
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	470.49	0.0006	P	29.7
2	☐			7569.71	0.0108	P	4.0
3	☐	5.000	5.010	35989.47	0.0499	P	2.7
4	☐	10.000	10.286	72363.78	0.1018	P	0.3
5	☐	50.000	49.770	348024.32	0.4900	P	1.9
6	☐	100.000	100.086	714379.00	0.9847	P	0.8

$y = 0.0098 * x + 6.4240E\text{-}004$

$R = 1.0000$

$DL = 0.0582$

$BEC = 0.06533$

Weight: <None>

Min Conc: 0

77 Se [tune 1] ISTD:72 Ge [tune 1]
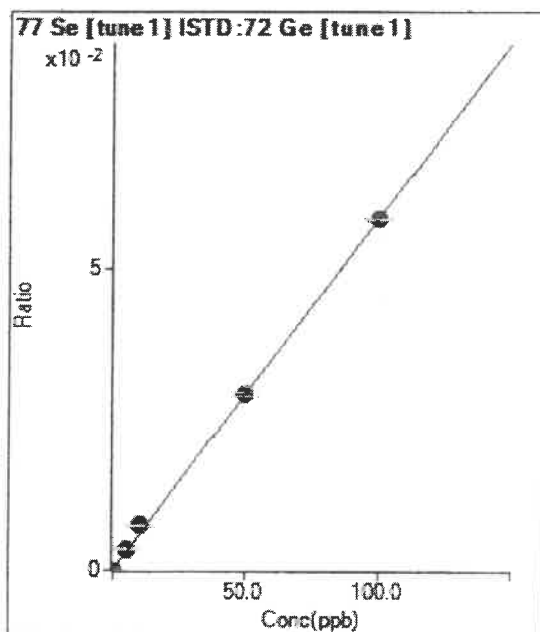
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	46.71	0.0001	P	27.0
2	☐			530.54	0.0008	P	19.0
3	☐	5.000	5.943	2536.13	0.0035	P	8.7
4	☐	10.000	12.523	5222.92	0.0073	P	4.0
5	☐	50.000	49.559	20505.75	0.0289	P	2.2
6	☐	100.000	99.921	42189.62	0.0582	P	0.6

$y = 5.8135E\text{-}004 * x + 6.3643E\text{-}005$

$R = 0.9997$

$DL = 0.08866$

$BEC = 0.1095$

Weight: <None>

Min Conc: 0

W002AS-023392-RT-4542

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78 Se [tune 1] ISTD :72 Ge [tune 1]
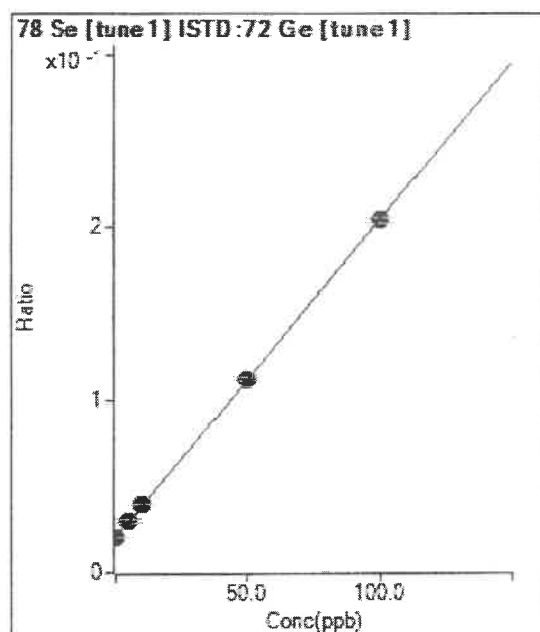
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15049.99	0.0204	P	3.3
2	☐			16613.35	0.0238	P	2.6
3	☐	5.000	5.323	21779.02	0.0302	P	3.8
4	☐	10.000	10.470	28193.64	0.0397	P	0.4
5	☐	50.000	50.192	79946.19	0.1126	P	1.8
6	☐	100.000	99.841	147796.73	0.2037	P	1.3

$y = 0.0018 * x + 0.0204$

$R = 1.0000$

$DL = 1.116$

$BEC = 11.13$

Weight: <None>

Min Conc: 0

82 Se [tune 1] ISTD :72 Ge [tune 1]
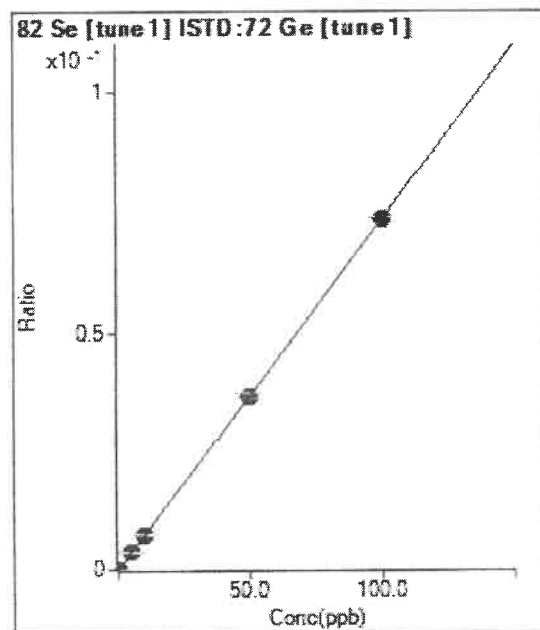
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38.50	0.0001	P	67.9
2	☐			438.73	0.0006	P	8.7
3	☐	5.000	5.071	2724.91	0.0038	P	8.4
4	☐	10.000	10.153	5341.61	0.0075	P	4.8
5	☐	50.000	49.917	26079.79	0.0367	P	3.0
6	☐	100.000	100.023	53341.98	0.0735	P	1.8

$y = 7.3470E\text{-}004 * x + 5.1918E\text{-}005$

$R = 1.0000$

$DL = 0.144$

$BEC = 0.07067$

Weight: <None>

Min Conc: 0

83 Kr [tune 1] No available calibration points
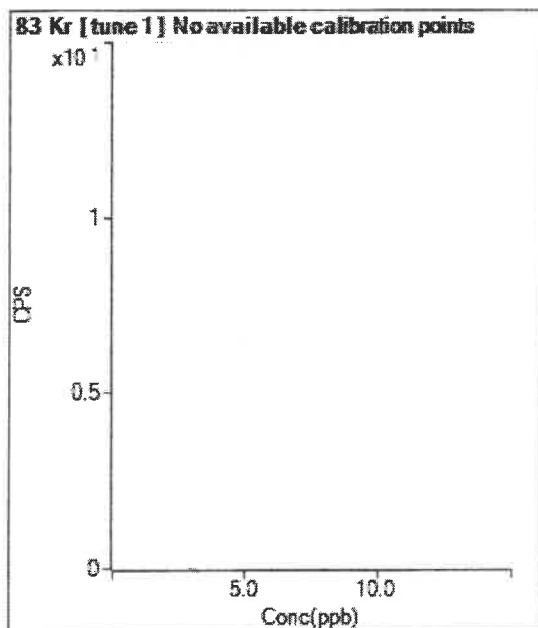
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			196.87		P	21.2
2	☐			220.22		P	7.9
3	☐			190.19		P	32.9
4	☐			200.20		P	5.0
5	☐			176.84		P	37.7
6	☐			213.55		P	10.8

6 Li (ISTD) [tune 1]
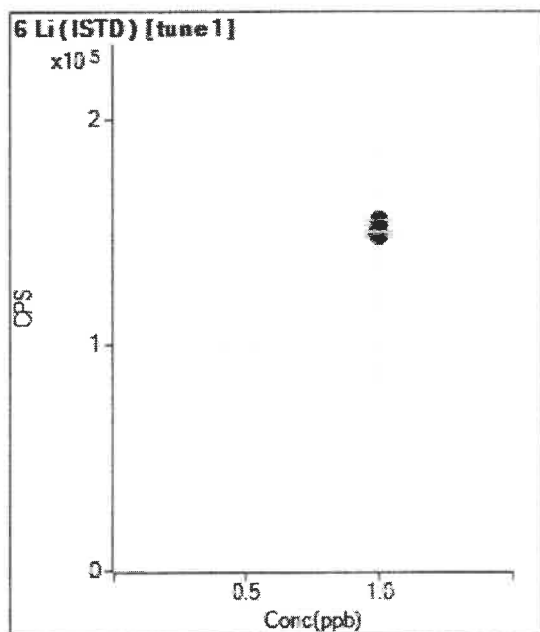
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		155148.75		P	0.3
2	☐	1.000		151698.83		P	2.0
3	☐	1.000		147910.00		P	1.3
4	☐	1.000		148722.47		P	1.1
5	☐	1.000		150147.59		P	0.8
6	☐	1.000		150186.34		P	0.8

7 Li (ISTD) [tune 1]

x10⁵

CPS

Conc(ppb)
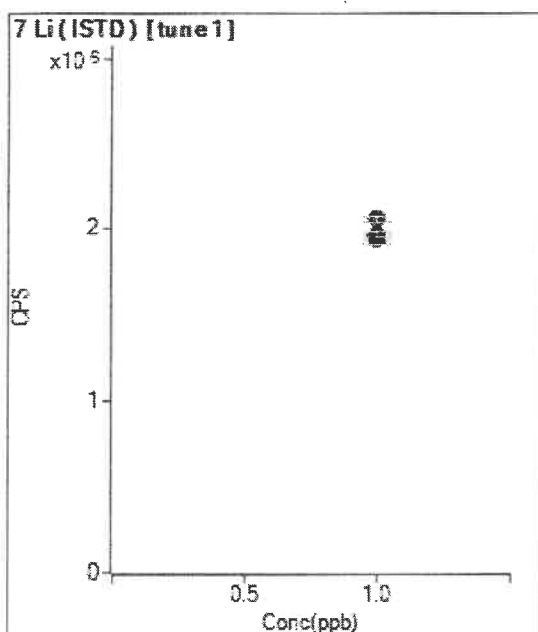
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2047408.12		A	1.7
2	☐	1.000		1932005.10		A	0.7
3	☐	1.000		1928355.66		A	2.7
4	☐	1.000		1952992.05		A	1.8
5	☐	1.000		1951462.25		A	1.2
6	☐	1.000		1958321.25		A	2.1

72 Ge (ISTD) [tune 1]

x10⁵

CPS

Conc(ppb)
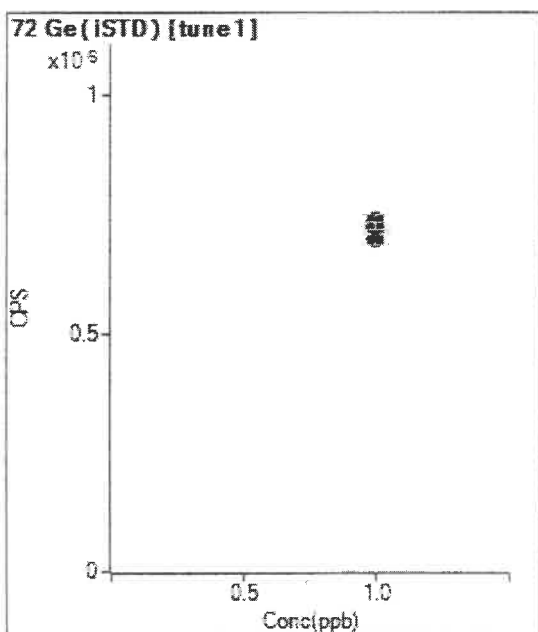
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		736850.09		P	3.1
2	☐	1.000		698583.94		P	3.0
3	☐	1.000		721318.17		P	1.4
4	☐	1.000		710991.40		P	1.0
5	☐	1.000		710194.03		P	0.7
6	☐	1.000		725532.51		P	2.0

85 Rb (ISTD) [tune 1]
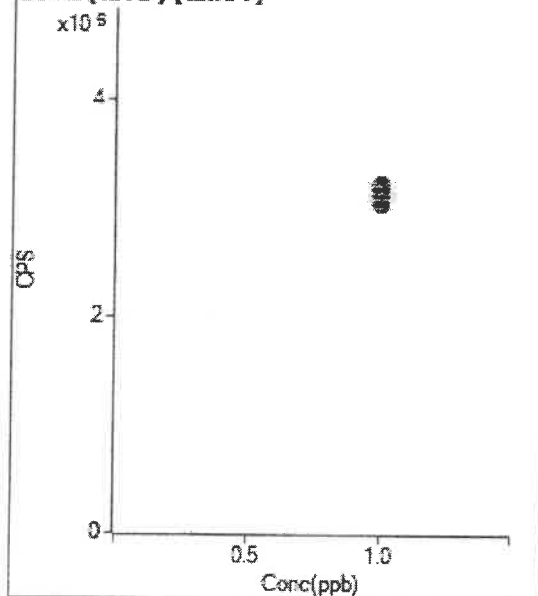
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3227910.61		A	1.4
2	☐	1.000		3102731.30		A	2.0
3	☐	1.000		3043956.92		A	1.9
4	☐	1.000		3095933.09		A	1.2
5	☐	1.000		3133278.80		A	2.1
6	☐	1.000		3181105.50		A	1.9

89 Y (ISTD) [tune 1]
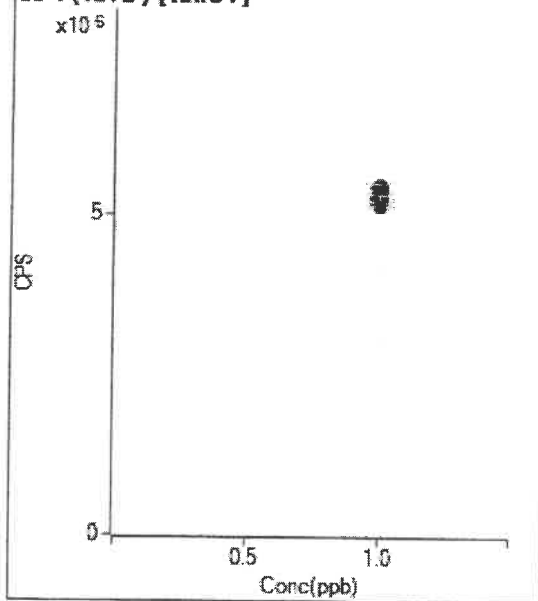
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		5415127.64		A	2.9
2	☐	1.000		5327342.52		A	0.9
3	☐	1.000		5160809.53		A	1.6
4	☐	1.000		5193383.72		A	2.0
5	☐	1.000		5280368.88		A	1.6
6	☐	1.000		5252469.63		A	1.7

W002AS-023392-RT-4542

3/30/2023 7:41:56 AM

Acq. Date-Time	Sample Name	9 Be [tune 1] Conc. [ppb]	9 Be [tune 1] Conc. RSD	52 Cr [tune 1] Conc. [ppb]	52 Cr [tune 1] Conc. RSD	55 Mn [tune 1] Conc. [ppb]	55 Mn [tune 1] Conc. RSD	59 Co [tune 1] Conc. [ppb]	59 Co [tune 1] Conc. RSD	60 Ni [tune 1] Conc. [ppb]	60 Ni [tune 1] Conc. RSD
3/29/2023 16:18	Cal Blank	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A
3/29/2023 16:22	1 ppb	1.0329	1.1440	1.0197	3.7445	1.0570	4.0010	1.0022	4.2123	0.9951	2.2564
3/29/2023 16:25	5 ppb	4.9513	1.1749	4.9227	0.6324	5.0396	1.4936	4.8765	2.0025	4.8530	3.7658
3/29/2023 16:29	10 ppb	9.9916	1.7989	10.0287	2.2739	10.2686	2.3330	9.8305	0.4372	9.6785	0.7285
3/29/2023 16:32	50 ppb	49.8131	1.1453	49.8832	1.2007	49.5187	1.7312	49.6144	1.6691	49.3656	1.8623
3/29/2023 16:36	100 ppb *MA 3/28/23 CCV*	100.0964	1.8487	100.0594	2.5730	100.2118	3.8738	100.2159	2.0824	100.3567	3.2193
3/29/2023 16:39	ICV① ICB CCV	0.6844	18.2855	0.7012	12.2175	0.8534	11.6659	0.6863	13.4349	0.6845	11.9567
3/29/2023 16:43	ICB ICV	48.1378	2.2191	49.7880	1.5511	49.7117	1.8108	49.6333	2.5773	48.5386	0.7124
3/29/2023 16:46	ICSA	0.3971	16.1001	0.5280	6.8252	0.3939	6.2596	0.3639	4.6806	0.4358	7.4765
3/29/2023 16:50	ICSAB	51.6033	0.9318	48.0742	1.6978	48.0284	1.7895	47.8334	1.0138	47.4330	1.8540
3/29/2023 16:53	0223-176.-LB-2A	0.2022	16.8337	0.3710	9.7489	0.5705	8.6448	0.1983	17.6466	0.5545	10.4122
3/29/2023 16:56	0223-176.LCS-2A 2X	49.1269	1.0645	49.6313	1.0436	48.5296	2.2878	48.0609	2.0475	48.9188	1.4919
3/29/2023 17:00	0223-176.1-2A	0.3012	23.2822	6.2234	0.7952	11.4491	2.0302	0.7891	8.5117	13.6046	1.0445
3/29/2023 17:03	0223-176.1-2A MS	48.9197	0.6957	53.2566	3.3048	59.6381	2.3619	49.2244	2.0764	61.3814	1.6561
3/29/2023 17:07	0223-176.2-2A	0.1830	22.6070	5.3907	0.7333	7.7802	0.9442	0.6505	6.2312	5.2765	1.0498
3/29/2023 17:10	0223-176.2-2A DUP	0.0400	9.2202	5.3071	2.8979	7.7312	4.0468	0.5012	6.5401	5.1459	2.9719
3/29/2023 17:14	0223-176.3-2A	<0.000	N/A	4.6525	1.7130	3.9343	1.9058	0.2276	1.1884	7.2568	1.4379
3/29/2023 17:17	0223-176.4-2A	<0.000	N/A	5.1788	1.0189	5.1104	2.2238	0.3888	1.5585	6.6290	1.3450
3/29/2023 17:20	0223-176.5-2A	<0.000	N/A	5.2722	0.5398	6.1831	2.1981	0.3489	3.3685	5.1900	3.0865
3/29/2023 17:24	0223-176.6-2A	<0.000	N/A	4.8312	1.4806	9.6151	1.0350	0.2546	2.6767	3.4396	2.0556
3/29/2023 17:27	ICV① ICB	<0.000	N/A	0.0528	16.0713	0.1833	5.9153	<0.000	N/A	<0.000	N/A
3/29/2023 17:31	ICB ICV	50.2282	1.4187	49.5773	2.0469	50.0626	3.6756	49.3878	2.7704	48.8978	3.8106
3/29/2023 17:34	0223-176.7-2A	0.1993	37.2536	4.2499	2.5986	13.0696	2.3607	0.3286	13.9813	3.2134	2.4923
3/29/2023 17:38	0223-176.8-2A	0.0361	59.7156	0.4179	8.6905	1.1084	0.7678	0.0583	27.4567	0.4309	5.9967
3/29/2023 17:41	0223-176.9-2A	<0.000	N/A	2.0897	2.0149	1.9749	1.9382	0.0185	8.3548	1.5790	1.7973
3/29/2023 17:45	0223-176.10-2A	<0.000	N/A	5.0127	0.1790	135.4831	1.4569	0.1493	3.1129	3.6546	0.6854
3/29/2023 17:48	0223-176.11-2A	<0.000	N/A	4.5436	0.7128	4.8007	2.3060	0.1418	5.3336	3.8559	0.4383
3/29/2023 17:51	0223-176.12-2A	<0.000	N/A	5.9236	1.0582	15.8269	1.0126	0.1959	1.1329	3.8668	0.3701
3/29/2023 17:55	0223-176.13-2A	<0.000	N/A	5.6641	2.2036	4.0016	1.2268	0.1605	4.7364	5.0901	3.2680
3/29/2023 17:58	0223-176.14-2A	<0.000	N/A	4.9359	3.7640	8.5957	1.0965	0.2275	2.5749	6.0464	0.8809
3/29/2023 18:02	0223-176.15-2A	<0.000	N/A	4.4053	2.7668	6.2128	0.3865	0.0872	3.6285	3.6796	0.7755
3/29/2023 18:05	ICV① ICB	<0.000	N/A	0.0326	46.8127	0.1788	5.3790	<0.000	N/A	<0.000	N/A
3/29/2023 18:09	ICB ICV	51.4096	0.7280	49.9787	1.4288	49.3679	2.2861	49.2318	1.6296	48.5370	1.1036
3/29/2023 18:19	0223-176.10-2A 10X	0.0275	46.5391	0.5863	2.6831	14.4866	2.9472	0.0465	19.0769	0.3827	7.1263
3/29/2023 18:22	0223-176.12-2A 10X	<0.000	N/A	0.6000	4.1558	2.0015	3.1892	<0.000	N/A	0.3565	2.9353
3/29/2023 18:26	0223-176.16-2A	<0.000	N/A	8.7228	1.1401	15.9131	3.6970	0.2481	1.1154	6.9695	0.5980
3/29/2023 18:29	0223-176.17-2A	<0.000	N/A	2.3961	1.9836	3.4989	0.8386	0.0192	19.4830	1.4280	3.5609
3/29/2023 18:33	ICV① ICB	<0.000	N/A	0.0331	19.9800	0.1954	7.7247	<0.000	N/A	<0.000	N/A
3/29/2023 18:36	ICB ICV	50.8522	1.4531	48.8168	0.5217	49.0612	1.3269	48.3093	0.4826	47.9423	1.3101

① Solutions were accidently swapped MA 3/28/23

Sample Name	62 Ni [tune 1] Conc. [ppb]	62 Ni [tune 1] Conc. RSD	75 As [tune 1] Conc. [ppb]	75 As [tune 1] Conc. RSD	77 Se [tune 1] Conc. [ppb]	77 Se [tune 1] Conc. RSD	78 Se [tune 1] Conc. [ppb]	78 Se [tune 1] Conc. RSD	82 Se [tune 1] Conc. [ppb]	82 Se [tune 1] Conc. RSD	6 Li (ISTD) [tune 1] CPS	6 Li (ISTD) [tune 1] ISTD Recovery %
Cal Blank	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	155148.75	100.00
1 ppb	0.9404	11.1731	1.0375	4.2997	1.2018	20.7711	1.8308	18.1684	0.7852	9.4665	151698.83	97.78
5 ppb	4.8761	2.6661	5.0103	2.6857	5.9434	8.8675	5.3226	11.7453	5.0713	8.5298	147910.00	95.33
10 ppb	10.1196	1.9610	10.2859	0.2828	12.5231	4.0211	10.4702	0.8078	10.1531	4.7939	148722.47	95.86
50 ppb	49.5491	3.7169	49.7699	1.9262	49.5587	2.1808	50.1916	2.2100	49.9172	3.0114	150147.59	96.78
100 ppb	100.2197	1.9994	100.0860	0.8258	99.9212	0.6435	99.8411	1.4053	100.0225	1.7608	150186.34	96.80
ICV	0.6673	24.6403	0.7351	12.1396	0.7353	22.6432	1.5509	14.3552	0.6263	32.3334	149261.91	96.21
ICB	49.6711	0.8915	49.1267	2.5661	48.8411	4.4215	49.7107	3.9710	48.2003	2.1326	147225.73	94.89
ICSA	0.5209	11.6728	0.5148	10.5347	1.1874	6.5348	1.2237	36.2745	0.3440	36.0317	132814.54	85.60
ICSAB	47.6791	1.3353	50.6629	2.3818	51.1888	1.4133	51.3271	0.5465	50.9782	0.8117	128326.60	82.71
0223-176.-LB-2A	0.4975	3.5821	0.2319	6.2113	0.3252	14.7634	0.7489	24.8577	0.2395	36.6669	131419.93	84.71
0223-176.LCS-2A 2X	49.7277	2.0544	48.4175	0.9047	48.1122	1.3376	48.6756	0.8735	47.5901	4.3872	133023.15	85.74
0223-176.1-2A	13.7807	1.4022	0.5594	12.0279	10.6934	2.0191	11.2085	4.3995	10.6579	2.1201	115934.73	74.72
0223-176.1-2A MS	62.6804	0.7706	47.4433	0.2354	63.5714	1.6689	63.7371	0.3708	64.0128	2.9366	117693.52	75.86
0223-176.2-2A	5.4076	4.6936	1.0701	5.0732	2.8732	8.5559	2.4304	7.9858	2.9079	7.4786	121478.51	78.30
0223-176.2-2A DUP	4.9930	1.5074	0.8609	6.3830	2.5558	13.5744	2.6748	3.7844	2.3579	18.0025	122587.99	79.01
0223-176.3-2A	7.2335	4.0805	0.6590	4.7283	10.9598	3.2352	11.2235	1.0156	11.5094	1.0223	121307.12	78.19
0223-176.4-2A	6.6590	1.6348	0.4019	11.8173	41.6179	1.5120	41.6979	0.9957	42.2758	5.4105	117804.82	75.93
0223-176.5-2A	5.1289	4.9842	0.2809	1.9160	10.9140	2.4725	11.0236	3.7826	11.1928	3.0075	118315.54	76.26
0223-176.6-2A	3.3433	1.0984	0.2306	8.4363	75.2528	1.5011	74.0698	0.6958	76.0625	0.9704	120970.10	77.97
ICV	<0.000	N/A	<0.000	N/A	0.7059	23.4377	0.9237	7.2063	0.4333	12.6197	127536.08	82.20
ICB	49.3648	2.8794	49.3050	0.9306	48.7104	1.9446	50.5954	1.4347	50.3407	1.2816	126293.71	81.40
0223-176.7-2A	3.1209	6.9062	0.3380	12.4499	5.2681	13.1090	5.0442	9.5729	5.0755	3.8956	114333.86	73.69
0223-176.8-2A	0.3565	45.2705	0.0609	33.2882	0.2435	15.4046	0.2396	214.8225	0.1044	53.1169	125832.18	81.10
0223-176.9-2A	1.7238	4.7796	0.0119	115.1115	0.2308	29.3850	0.2641	53.7555	<0.000	N/A	122914.85	79.22
0223-176.10-2A	3.6468	4.2205	0.2227	0.8088	78.9975	1.4344	78.6188	0.8205	80.1884	2.4696	120798.64	77.86
0223-176.11-2A	3.8216	5.2549	0.1203	12.2907	21.5715	1.8252	21.7015	3.9017	23.0442	1.2609	119432.89	76.98
0223-176.12-2A	3.8771	2.4377	0.4994	3.0733	198.3134	0.7439	202.0008	0.6937	206.0767	0.3337	119688.24	77.14
0223-176.13-2A	5.0279	2.2566	0.1089	16.1580	3.0771	5.9863	3.3814	15.1288	2.9237	10.1481	119143.65	76.79
0223-176.14-2A	6.0213	4.1766	0.1384	17.3598	7.7102	6.3123	7.3676	4.0608	6.8678	8.0455	122655.77	79.06
0223-176.15-2A	3.5332	2.9219	0.0789	35.2921	2.2507	10.7310	2.1634	15.0875	1.9065	11.1268	126303.25	81.41
ICV	<0.000	N/A	<0.000	N/A	0.2322	14.1000	0.2473	72.6185	<0.000	N/A	131514.04	84.77
ICB	49.0091	1.5623	48.7994	1.0708	50.2091	2.9093	50.9195	0.6711	48.2084	1.3254	125347.87	80.79
0223-176.10-2A 10X	0.4555	9.8194	0.0663	4.0799	7.2572	6.8203	7.8027	6.8728	7.0066	6.5802	128622.97	82.90
0223-176.12-2A 10X	0.3357	2.2249	0.0191	90.6310	17.9835	5.1351	18.2671	4.1680	17.7032	3.1883	128750.77	82.99
0223-176.16-2A	6.9860	2.6217	0.0974	7.8799	8.7173	13.5819	9.1357	4.2491	8.7532	11.1761	123035.88	79.30
0223-176.17-2A	1.4608	4.0217	0.0205	76.0670	0.3019	51.6485	0.3145	96.5565	0.0491	176.1553	122928.40	79.23
ICV	<0.000	N/A	<0.000	N/A	0.1844	23.2065	0.5594	59.9159	<0.000	N/A	126586.94	81.59
ICB	49.1669	1.4122	48.8598	0.9898	49.3632	4.3443	50.2916	3.3695	47.7123	1.7354	121643.64	78.40

① See p. 1 note MB 2/24/23

Sample Name	7 Li (ISTD) [tune 1] CPS	ISTD Recovery %	72 Ge (ISTD) [tune 1] CPS	ISTD Recovery %	85 Rb (ISTD) [tune 1] CPS	ISTD Recovery %	89 Y (ISTD) [tune 1] CPS	ISTD Recovery %
Cal Blank	2047408.12	100.00	736850.09	100.00	3227910.61	100.00	5415127.64	100.00
1 ppb	1932005.10	94.36	698583.94	94.81	3102731.30	96.12	5327342.52	98.38
5 ppb	1928355.66	94.19	721318.17	97.89	3043956.92	94.30	5160809.53	95.30
10 ppb	1952992.05	95.39	710991.40	96.49	3095933.09	95.91	5193383.72	95.91
50 ppb	1951462.25	95.31	710194.03	96.38	3133278.80	97.07	5280368.88	97.51
100 ppb	1958321.25	95.65	725532.51	98.46	3181105.50	98.55	5252469.63	97.00
ICV ⊖	1946203.02	95.06	719839.12	97.69	3245303.29	100.54	5366654.07	99.10
ICB	1972319.18	96.33	704259.59	95.58	3049001.89	94.46	5187733.85	95.80
ICSA	1774318.35	86.66	686295.40	93.14	2909002.91	90.12	4973227.17	91.84
ICSAB	1677942.58	81.95	690009.17	93.64	2986494.31	92.52	5085324.10	93.91
0223-176.LB-2A	1729604.97	84.48	726084.50	98.54	3318418.04	102.80	5553611.39	102.56
0223-176.LCS-2A 2X	1789986.07	87.43	728147.18	98.82	3241317.69	100.42	5389540.91	99.53
0223-176.1-2A	1518336.13	74.16	707805.28	96.06	3281791.26	101.67	5593260.35	103.29
0223-176.1-2A MS	1563879.41	76.38	719369.21	97.63	3441655.00	106.62	5756255.90	106.30
0223-176.2-2A	1587855.87	77.55	746721.15	101.34	3416556.05	105.84	5785330.02	106.84
0223-176.2-2A DUP	1605523.28	78.42	737466.77	100.08	3403804.86	105.45	5849553.31	108.02
0223-176.3-2A	1611612.36	78.71	738134.89	100.17	3462755.76	107.28	5897314.56	108.90
0223-176.4-2A	1546092.03	75.51	720655.92	97.80	3372929.35	104.49	5666708.33	104.65
0223-176.5-2A	1533803.85	74.91	715515.44	97.10	3275056.19	101.46	5563636.20	102.74
0223-176.6-2A	1583626.49	77.35	723390.33	98.17	3401976.00	105.39	5792417.42	106.97
ICV ⊖	1713557.33	83.69	690558.96	93.72	3007670.69	93.18	5030238.08	92.89
ICB	1686321.35	82.36	684067.11	92.84	3003294.15	93.04	5025200.80	92.80
0223-176.7-2A	1524825.17	74.48	703161.86	95.43	3282257.95	101.68	5522674.72	101.99
0223-176.8-2A	1668573.97	81.50	715580.52	97.11	3302021.73	102.30	5635646.65	104.07
0223-176.9-2A	1626360.18	79.44	725126.79	98.41	3385516.67	104.88	5827566.47	107.62
0223-176.10-2A	1609182.71	78.60	715110.91	97.05	3410350.73	105.65	5692157.53	105.12
0223-176.11-2A	1578047.32	77.08	729604.07	99.02	3384848.20	104.86	5770867.96	106.57
0223-176.12-2A	1625490.34	79.39	720603.23	97.80	3325632.39	103.03	5738206.28	105.97
0223-176.13-2A	1582176.72	77.28	713264.15	96.80	3444694.63	106.72	5750793.51	106.20
0223-176.14-2A	1630999.52	79.66	741692.48	100.66	3423215.52	106.05	5807604.48	107.25
0223-176.15-2A	1682251.94	82.16	758513.76	102.94	3517834.69	108.98	5919076.42	109.31
ICV ⊖	1737183.87	84.85	723033.39	98.12	3102870.00	96.13	5161997.02	95.33
ICB	1646687.19	80.43	688846.51	93.49	2976353.77	92.21	5019688.47	92.70
0223-176.10-2A 10X	1729744.94	84.48	690794.04	93.75	3134691.43	97.11	5240857.39	96.78
0223-176.12-2A 10X	1680452.24	82.08	710898.20	96.48	3173512.78	98.31	5343779.53	98.68
0223-176 16-2A	1637258.60	79.97	734137.71	99.63	3443319.84	106.67	5869390.28	108.39
0223-176.17-2A	1641008.05	80.15	742070.55	100.71	3545203.78	109.83	5981912.17	110.47
ICV ⊖	1708218.12	83.43	684648.95	92.92	2997441.95	92.86	4988164.24	92.12
ICB	1624410.46	79.34	669306.21	90.83	2845423.19	88.15	4889566.95	90.29

① See p. 1 note MA 3/29/23

Location:_____   Drawer:_____   Analyst: MAL

Cabinet:_____   Folder:_____   Date: 3/29/23

Job #s	Describe Work Documented on This Page
0223-176	ICP-MS Analysis

173A= Analytical Sequence p.1
173B =   p.2
173C =   p.3

Supplies, Ancillary Equipment
Serial #s, Lot #s, Etc

N/A

Reviewer's Initials & Date:

ICPMS-X
page 173

EA Job# 0223-176R Page 86 of 186

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ENTHALPY

Acq. Date-Time	Sample Name
3/29/2023 9:46	Cal Blank
3/29/2023 9:50	1 ppb
3/29/2023 9:53	5 ppb
3/29/2023 9:57	10 ppb
3/29/2023 10:00	50 ppb
3/29/2023 10:04	100 ppb
3/29/2023 10:07	ICV
3/29/2023 10:10	ICB
3/29/2023 10:14	ICSA
3/29/2023 10:17	ICSAB
3/29/2023 10:21	0223-176.LB-1A
3/29/2023 10:24	0223-176.LCS-1A 2X
3/29/2023 10:28	0223-176.1-1A 5X
3/29/2023 10:31	0223-176.1-1A MS 5X
3/29/2023 10:34	0223-176.2-1A 5X
3/29/2023 10:38	0223-176.2-1A DUP 5X
3/29/2023 10:41	0223-176.3-1A 5X
3/29/2023 10:45	0223-176.4-1A 5X
3/29/2023 10:48	0223-176.5-1A 5X
3/29/2023 10:52	0223-176.6-1A 5X
3/29/2023 10:55	ICV
3/29/2023 10:58	ICB
3/29/2023 11:02	0223-176.7-1A 5X
3/29/2023 11:05	0223-176.8-1A 5X
3/29/2023 11:09	0223-176.9-1A 5X
3/29/2023 11:12	0223-176.10-1A 5X
3/29/2023 11:16	0223-176.11-1A 5X
3/29/2023 11:19	0223-176.12-1A 5X
3/29/2023 11:22	0223-176.13-1A 5X
3/29/2023 11:26	0223-176.14-1A 5X
3/29/2023 11:29	0223-176.15-1A 5X
3/29/2023 11:33	ICV
3/29/2023 11:36	ICB
3/29/2023 11:40	0223-176.16-1A 5X
3/29/2023 11:43	0223-176.17-2A 5X
3/29/2023 11:46	0223-176.18-1A 5X
3/29/2023 11:50	ICV
3/29/2023 11:53	ICB

Instr. X

173A

MAL
3/29/23

Acq. Date-Time	Sample Name
3/29/2023 12:07	Cal Blank
3/29/2023 12:11	1 ppb
3/29/2023 12:14	5 ppb
3/29/2023 12:18	10 ppb
3/29/2023 12:21	50 ppb
3/29/2023 12:25	100 ppb
3/29/2023 12:28	ICV
3/29/2023 12:32	ICB
3/29/2023 12:35	ICSA
3/29/2023 12:38	ICSAB
3/29/2023 12:42	0223-176.LB-1A
3/29/2023 12:45	0223-176.LCS-1A 2X
3/29/2023 12:49	0223-176.1-1A 5X
3/29/2023 12:52	0223-176.1-1A MS 5X
3/29/2023 12:55	0223-176.2-1A 5X
3/29/2023 12:59	0223-176.2-1A DUP 5X
3/29/2023 13:02	0223-176.3-1A 5X
3/29/2023 13:06	0223-176.4-1A 5X
3/29/2023 13:09	0223-176.5-1A 5X
3/29/2023 13:12	0223-176.6-1A 5X
3/29/2023 13:16	ICV
3/29/2023 13:19	ICB
3/29/2023 13:23	0223-176.7-1A 5X
3/29/2023 13:26	0223-176.8-1A 5X
3/29/2023 13:29	0223-176.9-1A 5X
3/29/2023 13:33	0223-176.10-1A 5X
3/29/2023 13:36	0223-176.11-1A 5X
3/29/2023 13:40	0223-176.12-1A 5X
3/29/2023 13:43	0223-176.13-1A 5X
3/29/2023 13:46	0223-176.14-1A 5X
3/29/2023 13:50	0223-176.15-1A 5X
3/29/2023 13:53	ICV
3/29/2023 13:57	ICB
3/29/2023 14:00	0223-176.16-1A 5X
3/29/2023 14:03	0223-176.17-2A 5X
3/29/2023 14:07	0223-176.18-1A 5X
3/29/2023 14:10	ICV
3/29/2023 14:14	ICB
3/29/2023 14:41	0223-176.-LB-2A
3/29/2023 14:45	0223-176.LCS-2A 2X
3/29/2023 14:48	0223-176.1-2A
3/29/2023 14:52	0223-176.1-2A MS
3/29/2023 14:55	0223-176.2-2A
3/29/2023 14:58	0223-176.2-2A DUP
3/29/2023 15:02	0223-176.3-2A

Instr. X

MAL

3/29/23

173B

3/29/2023 15:05	0223-176.4-2A
3/29/2023 15:09	0223-176.5-2A
3/29/2023 15:12	0223-176.6-2A
3/29/2023 15:15	ICV
3/29/2023 15:19	ICB
3/29/2023 15:22	0223-176.7-2A
3/29/2023 15:26	0223-176.8-2A
3/29/2023 15:29	0223-176.9-2A
3/29/2023 15:32	0223-176.10-2A
3/29/2023 15:36	0223-176.11-2A
3/29/2023 15:39	0223-176.12-2A
3/29/2023 15:43	0223-176.13-2A
3/29/2023 15:46	0223-176.14-2A
3/29/2023 15:50	0223-176.15-2A
3/29/2023 15:53	ICV
3/29/2023 15:56	ICB
3/29/2023 16:00	0223-176.16-2A
3/29/2023 16:03	0223-176.17-2A
3/29/2023 16:07	0223-176.18-2A
3/29/2023 16:10	ICV
3/29/2023 16:13	ICB

Acq. Date-Time	Sample Name
3/29/2023 16:18	Cal Blank
3/29/2023 16:22	1 ppb
3/29/2023 16:25	5 ppb
3/29/2023 16:29	10 ppb
3/29/2023 16:32	50 ppb
3/29/2023 16:36	100 ppb
3/29/2023 16:39	ICV
3/29/2023 16:43	ICB
3/29/2023 16:46	ICSA
3/29/2023 16:50	ICSAB
3/29/2023 16:53	0223-176.-LB-2A
3/29/2023 16:56	0223-176.LCS-2A 2X
3/29/2023 17:00	0223-176.1-2A
3/29/2023 17:03	0223-176.1-2A MS
3/29/2023 17:07	0223-176.2-2A
3/29/2023 17:10	0223-176.2-2A DUP
3/29/2023 17:14	0223-176.3-2A
3/29/2023 17:17	0223-176.4-2A
3/29/2023 17:20	0223-176.5-2A
3/29/2023 17:24	0223-176.6-2A
3/29/2023 17:27	ICV
3/29/2023 17:31	ICB
3/29/2023 17:34	0223-176.7-2A
3/29/2023 17:38	0223-176.8-2A
3/29/2023 17:41	0223-176.9-2A
3/29/2023 17:45	0223-176.10-2A
3/29/2023 17:48	0223-176.11-2A
3/29/2023 17:51	0223-176.12-2A
3/29/2023 17:55	0223-176.13-2A
3/29/2023 17:58	0223-176.14-2A
3/29/2023 18:02	0223-176.15-2A
3/29/2023 18:05	ICV
3/29/2023 18:09	ICB
3/29/2023 18:19	0223-176.10-2A 10X
3/29/2023 18:22	0223-176.12-2A 10X
3/29/2023 18:26	0223-176.16-2A
3/29/2023 18:29	0223-176.17-2A
3/29/2023 18:33	ICV
3/29/2023 18:36	ICB

1.00 validated 12/10/08 VR

Calculation of MDL per SOP ENT-027   Enter values into the highlighted cells.

Date Analyzed 2/3/23
Analyst KAH
Date Reviewed 2/15/23
Reviewed By AMC

Instrument X - FRONT HALF (-1A)
Logbook Page
Injector (F,R,NA)
Column
Injector (F,R,NA)
Column

Job #(s)
Applicable Method(s) 29, 6020
Matrix
Solvent

Seven (or more) replicates of a low concentration preparation are made. The worst injection(s) (farthest from the mean area) may be removed assuming an appropriate Outlier Test calculation shows the value(s) to be an outlier. At least seven injections must remain.

MDL = Stdev * Student's t-value

t-value = 3.143	N=7	Degrees of Freedom = 6
t-value = 2.998	N=8	Degrees of Freedom = 7
t-value = 2.896	N=9	Degrees of Freedom = 8
t-value = 2.821	N=10	Degrees of Freedom = 9

Compound #	1	2	3	4	5	6	7
Compound Name	Be 9	V 51	Cr 52	Mn 55	Co 59	Ni 60	Ni 62
Notes (if needed)							
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Test Std Concentrations #1	1.02000	5.06110	5.28980	5.03060	1.09550	4.98750	4.88670
#2	0.97600	5.25530	5.62950	5.13720	1.10220	5.10580	4.86630
#3	1.00780	5.23730	5.39820	8.67000	1.11020	5.60630	5.39220
#4	0.99290	5.19850	5.25870	4.95930	1.05580	5.21400	5.23630
#5	0.98220	4.93330	5.19150	4.92090	1.01610	4.95910	4.82170
#6	1.07090	4.97690	5.20480	4.94730	1.02980	4.99240	4.89490
#7	0.95370	5.07940	5.25950	5.07750	1.07650	5.18480	4.97500
#8	0.98400	5.14340	5.36300	4.94470	1.02430	5.32370	5.24080
#9							
!! Remove extra zeros !! #10							
Standard Deviation	0.0355	0.1186	0.1423	1.2988	0.0375	0.2170	0.2170
Student's T factor	2.998	2.998	2.998	2.998	2.998	2.998	2.998
Calculated MDL = StDev * t	0.106	0.356	0.427	3.894	0.112	0.651	0.650
Concentration of Std	1.000	5.000	5.000	5.000	1.000	5.000	5.000
Lowest Part 136 App B value*	0.100	0.500	0.500	0.500	0.100	0.500	0.500
MDL value <1/10 Std Value?	Pass	<1/10 Conc of Std	<1/10 Conc of Std	Pass	Pass	Pass	Pass
MDL to Use	0.10636	0.50000	0.50000	3.89389	0.11246	0.65051	0.65045
	100.1%	103.7%	108.8%	125.6% Reprep LOQ	110.3%	104.7%	101.0%
	2.3%	2.1%	3.2%	33.0%	0.7%	6.3%	5.9%

*40 CFR Part 136 Appendix B, a common detection limit guidance, indicates that the MDL can not be <1/10th the standard used to set the MDL. MDL to use is the maximum of the Calculated MDL, lowest integratable concentration and the Lowest Part 136 B value.

1.00 validated 12/10/08 VR

	8 Cu 63	9 Cu 65	10 Zn 66	11 Zn 68	12 As 75	13 Se 77	14 Se 78	15 Se 82
	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
#1	4.96040	5.06950			6.13670	4.96360	4.33920	5.36710
#2	5.26170	5.28120			6.23660	5.21630	4.65430	5.45310
#3	5.18940	5.24810			5.72080	5.53940	4.48170	5.50840
#4	5.21950	5.13870			5.19440	5.40480	4.55390	5.10280
#5	4.93760	5.02380			5.29240	5.03490	4.09110	5.46890
#6	4.79220	4.89580			4.98980	5.22280	4.35280	5.20410
#7	5.01150	4.92170			4.85660	5.21800	4.31850	4.94080
#8	4.87970	4.98790			4.78090	4.98600	4.26740	5.22130
#9								
#10								
	0.1723	0.1426	#DIV/0!	#DIV/0!	0.5665	0.2025	0.1765	0.2003
	2.998	2.998	0.000	0.000	2.998	2.998	2.998	2.998
	0.517	0.427	#DIV/0!	#DIV/0!	1.698	0.607	0.529	0.601
	5.000	5.000	20.000	20.000	5.000	5.000	5.000	5.000
	0.500	0.500	2.000	2.000	0.500	0.500	0.500	0.500
	Pass	<1/10 Conc of Std	#DIV/0!	#DIV/0!	Pass	Pass	Pass	Pass
	0.51660	0.50000	#DIV/0!	#DIV/0!	1.69827	0.60722	0.52920	0.60064
	3.1% 102.7%	2.2% 104.0%			4.5% 120.6%	5.5% 104.8%	3.5% 89.8%	1.3% 108.4%

108.9% (Se 78)

LB is > 5, set LOQ @ 10
until lab repreps.
AMC 2/15/23

EA Job# 0223-176R Page 92 of 186

	16 Ag 107	17 Ag 109	18 Cd 111	19 Cd 114
	ppb	ppb	ppb	ppb
#1	1.13220	1.12130	1.12520	1.06210
#2	1.06810	1.09970	1.04910	1.05560
#3	1.05170	1.03280	1.03310	1.00280
#4	1.07130	1.05060	1.05780	0.99920
#5	1.00550	1.04290	1.03840	0.99810
#6	1.05460	1.04310	1.06410	1.01360
#7	1.00480	1.00790	1.01430	1.00050
#8	1.00020	1.00160	1.02180	1.02520
#9				
#10				
	0.0448	0.0415	0.0346	0.0259
	2.998	2.998	2.998	2.998
	0.134	0.124	0.104	0.078
	1.000	1.000	1.000	1.000
	0.100	0.100	0.100	0.100
	Pass	Pass	Pass	<1/10 Conc of Std
	0.13431	0.12445	0.10388	0.10000
	3.9%	4.3%	4.6%	3.1%
	108.5%	106.9%	104.0%	

1.00 validated 12/10/08 VR

1.00 validated 12/10/08 VR

Calculation of MDL per SOP ENT-027

Enter values into the highlighted cells.

Date Analyzed 2/3/23
Analyst KAH
Date Reviewed 2/15/2023 / 3/16/23 changed ppm to ppb
Reviewed By AMC

Instrument X - FRONT HALF (-1A)
Logbook Page
Injector (F,R,NA)
Column
Injector (F,R,NA)
Column

Job #(s)
Applicable Method(s) 29, 6020
Matrix
Solvent

Seven (or more) replicates of a low concentration preparation are made. The worst injection(s) (farthest from the mean area) may be removed assuming an appropriate Outlier Test calculation shows the value(s) to be an outlier. At least seven injections must remain.

MDL = Stdev * Student's t-value

t-value = 3.143	N=7	Degrees of Freedom = 6
t-value = 2.998	N=8	Degrees of Freedom = 7
t-value = 2.896	N=9	Degrees of Freedom = 8
t-value = 2.821	N=10	Degrees of Freedom = 9

Compound #	1	2	3	4	5	6	7	8
Compound Name	Sb 121	Sb 123	Ba 137	Ba 138	Tl 205	Pb 206	Pb 207	Pb 208
Notes (if needed)								
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Test Std Concentrations #1	5.05780	5.07690	5.58040	5.49650	1.04010	1.02500	1.04420	1.03110
#2	5.05900	5.11320			1.01920	1.05990	1.05200	1.03600
#3	5.06410	5.02960	7.44750	7.45390	1.02780	1.01090	1.03100	1.01520
#4	5.11230	5.07050	6.57850	6.47340	1.02590	1.02810	1.00320	1.01840
#5	4.92970	4.87120	5.83830	5.72030	1.03550	1.04620	1.03860	1.02670
#6	5.10130	5.20220	5.19820	5.11530	0.99720	1.01340	1.03200	1.01280
#7	4.82560	4.82020	5.18390	5.14260	1.00030	1.00960	1.01110	0.99800
#8	4.82790	4.82970	5.11040	5.09790	1.01260	1.01790	1.03890	1.01630
#9								
!! Remove extra zeros !! #10								
Standard Deviation	0.1188	0.1431	0.8728	0.8832	0.0156	0.0181	0.0165	0.0119
Student's T factor	2.998	2.998	3.143	3.143	2.998	2.998	2.998	2.998
Calculated MDL = StDev * t	0.356	0.429	2.743	2.776	0.047	0.054	0.049	0.036
Concentration of Std	5.000	5.000	5.000	5.000	1.000	1.000	1.000	1.000
Lowest Part 136 App. B value*	0.500	0.500	0.500	0.500	0.100	0.100	0.100	0.100
MDL value <1/10 Std Value?	<1/10 Conc of Std	<1/10 Conc of Std	Pass	Pass	<1/10 Conc of Std	<1/10 Conc of Std	<1/10 Conc of Std	<1/10 Conc of Std
MDL to Use	0.50000	0.50000	2.74332	2.77577	0.10000	0.10000	0.10000	0.10000

LOQ / / / Average & RSD
| 101.2% | 0.066% | 101.5% | 0.826% | 130.3% | 20.268% | 129.5% | 20.259% | 21.375% | 102.9% | 1.021% | 103.2% | 2.444% | 104.2% | 1.018% | 102.7% | 1.058% |

*40 CFR Part 136 Appendix B, a common detection limit guidance, indicates that the MDL can not be <1/10th the standard used to set the MDL.
MDL to use is the maximum of the Calculated MDL, lowest integratable concentration and the Lowest Part 136 B value.

Calculation of MDL per SOP ENT-027

Enter values into the highlighted cells

Date Analyzed 2/16/23
Analyst KAH
Date Reviewed 2/17/23
Reviewed By AMC

Instrument X - FRONT HALF (-1A) Mn, Zn, As and Ba
Logbook Page
Injector (F,R,NA)
Column
Injector (F,R,NA)
Column

Job #(s)
Applicable Method(s) 29, 6020
Matrix
Solvent

Seven (or more) replicates of a low concentration preparation are made. The worst injection(s) (farthest from the mean area) may be removed assuming an appropriate Outlier Test calculation shows the value(s) to be an outlier. At least seven injections must remain.

MDL =	Stdev * Student's t-value	
t-value = 3.143	N=7	Degrees of Freedom = 6
t-value = 2.998	N=8	Degrees of Freedom = 7
t-value = 2.896	N=9	Degrees of Freedom = 8
t-value = 2.821	N=10	Degrees of Freedom = 9

Compound #	1	2	3	4	5	6	7
Compound Name	Mn 55	Zn 66	Zn 68	As 75	Ba 137	Ba 138	
Notes (if needed)							
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Test Std Concentrations #1	5.94800	22.97600	22.54320	6.60140	5.40050	5.44880	
#2	5.16610	21.34400	21.36380	5.92600	5.17660	5.15070	
#3	5.38520	22.03740	21.67540	5.53960	4.97090	4.96540	
#4	5.24670	21.77570	21.40630	5.58670	5.24530	5.20270	
#5	5.28200	20.71230	20.98820	5.56040	4.99040	4.99270	
#6	5.26610	23.77680	23.89830	5.63090	5.29010	5.49510	
#7	5.10420	21.44840	21.14110	5.08630	4.98650	4.88180	
#8	5.18530	23.87300	23.68320	5.36910	outlier	outlier	
#9							
#10							
Standard Deviation	0.2664	1.1705	1.1523	0.4474	0.1715	0.2383	#DIV/0!
Student's T factor	2.998	2.998	2.998	2.998	3.143	3.143	0.000
Calculated MDL = StDev * t	0.799	3.509	3.455	1.341	0.539	0.749	#DIV/0!
Concentration of Std	5.000	20.000	20.000	5.000	5.000	5.000	
Lowest Part 136 App B value*	0.500	2.000	2.000	0.500	0.500	0.500	0.000
MDL value <1/10 Std Value?	Pass	Pass	Pass	Pass	Pass	Pass	#DIV/0!
MDL to Use	**0.79859**	**3.50907**	**3.45461**	**1.34138**	**0.53896**	**0.74908**	**#DIV/0!**
LOQ / Avg Conc & RSD	110.0% 7.3%	110.6% 3.7%	109.3% 2.8%	120.4% 8.9%	103.7% 4.1%	103.8% 4.7%	#DIV/0! #DIV/0!

!! Remove extra zeros !!

*40 CFR Part 136 Appendix B, a common detection limit guidance, indicates that the MDL can not be <1/10th the standard used to set the MDL.

1.00 validated 12/10/08 VR

Calculation of MDL per SOP ENT-027

Enter values into the highlighted cells.

Date Analyzed 2/3/23
Analyst KAH
Date Reviewed 2/15/23
Reviewed By AMC

Instrument X - BACK HALF (-2A)
Logbook Page
Injector (F,R,NA)
Column
Injector (F,R,NA)
Column

Job #(s)
Applicable Method(s) 29 6020
Matrix
Solvent

Seven (or more) replicates of a low concentration preparation are made. The worst injection(s) (farthest from the mean area) may be removed assuming an appropriate Outlier Test calculation shows the value(s) to be an outlier. At least seven injections must remain.

MDL =	Stdev * Student's t-value	
t-value = 3.143	N=7	Degrees of Freedom = 6
t-value = 2.998	N=8	Degrees of Freedom = 7
t-value = 2.896	N=9	Degrees of Freedom = 8
t-value = 2.821	N=10	Degrees of Freedom = 9

Compound #	1	2	3	4	5	6	7
Compound Name	Be 9	V 51	Cr 52	Mn 55	Co 59	Ni 60	Ni 62
Notes (if needed)							
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Test Std Concentrations #1	1.07330	5.05310	5.50890	5.08570	1.12600	5.07000	4.90930
#2	0.99300	4.90240	5.17020	4.98140	1.01980	4.81520	4.79630
#3	0.97240	4.92540	5.23980	5.08350	1.03340	4.90040	5.05720
#4	0.93980	5.03690	5.35280	5.06750	0.98300	4.98790	5.05540
#5	0.90980	5.11360	5.32910	5.54170	0.98200	4.94460	4.92750
#6	0.90850	5.10670	5.22510	5.01410	0.96630	4.98470	4.97990
#7	0.94100	5.11540	5.22530	4.87210	0.99610	5.00530	4.82680
#8	0.93910	4.97600	5.32650	5.07250	0.98020	5.03320	4.93770
#9							
!! Remove extra zeros !! #10							
Standard Deviation	0.0541	0.0852	0.1066	0.1964	0.0515	0.0803	0.0949
Student's T factor	2.998	2.998	2.998	2.998	2.998	2.998	2.998
Calculated MDL = StDev * t	0.162	0.256	0.320	0.589	0.155	0.241	0.285
Concentration of Std	1.000	5.000	5.000	5.000	1.000	5.000	5.000
Lowest Part 136 App B value*	0.100	0.500	0.500	0.500	0.100	0.500	0.500
MDL value <1/10 Std Value?	Pass	Pass <1/10 Conc of Std	Pass <1/10 Conc of Std	Pass	Pass	Pass <1/10 Conc of Std	<1/10 Conc of Std
MDL to Use	0.16207	0.50000	0.50000	0.58873	0.15453	0.50000	0.50000

| LOQ // AVERAGE & RSD | 101.3% | 5.26% | 99.2% | 1.64% | 106.1% | 3.37% | 101.0% | 106.0% | 1.18% | 5.45% | 98.6% | 2.63% | 98.4% | 2.66% |

*40 CFR Part 136 Appendix B, a common detection limit guidance, indicates that the MDL can not be <1/10th the standard used to set the MDL.
MDL to use is the maximum of the Calculated MDL, lowest integratable concentration and the Lowest Part 136 B value.

Entry	8 Cu 63 (ppb)	9 Cu 65 (ppb)	10 Zn 66 (ppb)	11 Zn 68 (ppb)	12 As 75 (ppb)	13 Se 77 (ppb)	14 Se 78 (ppb)	15 Se 82 (ppb)
#1	4.95160	5.06260	20.67570	20.40220	4.77280	4.84810	4.20750	4.80130
#2	4.88770	4.78540	20.21670	20.18220	4.67230	4.28760	4.04800	4.91300
#3	4.83.66	4.86160	19.68340	19.89950	4.62070	4.69190	4.19570	4.75460
#4	4.87860	4.98630	20.45300	19.96850	4.74540	4.87330	4.15760	4.95220
#5	5.02820	5.07780	33.94130	33.08090	4.74380	4.71780	4.27370	4.62390
#6	4.96500	4.89190	20.92690	20.74360	4.77180	4.20030	3.97480	5.20820
#7	4.81170	4.83920	20.21990	20.07780	4.68530	4.43680	4.22100	4.79230
#8	4.97150	4.97030	22.63020	22.43950	4.81000	4.83650	4.33670	4.97760
#9								
#10								
	0.0724	0.1065	4.7669	4.5130	0.0628	0.2666	0.1171	0.1768
	3.143	2.998	2.998	2.998	2.998	2.998	2.998	2.998
	0.228	0.319	14.291	13.530	0.188	0.799	0.351	0.530
	5.000	5.000	20.000	20.000	5.000	5.000	5.000	5.000
	0.500	0.500	2.000	2.000	0.500	0.500	0.500	0.500
	<1/10 Conc of Std	<1/10 Conc of Std	Pass	Pass	<1/10 Conc of Std	Pass	<1/10 Conc of Std	Pass
	0.50000	0.50000	14.29113	13.52999	0.50000	0.79918	0.50000	0.52992
	0.92%	2.92%	2.46%	1.25%	1.65%	6.28%	2.14%	1.69%
	98.4%	98.1%	101.0%	100.8%	93.8%	92.2%	83.0%	107.8%

(additional value near Se 78 column: 96.5%)

1.00 validated 12/10/08 VR

	16 Ag 107	17 Ag 109	18 Cd 111	19 Cd 114
	ppb	ppb	ppb	ppb
#1	1.15640	1.13140	1.18030	1.15320
#2	1.07970	1.08800	1.08460	1.07310
#3	0.99800	0.99550	1.03040	1.04340
#4	1.00950	1.01730	0.98690	0.98180
#5	0.98640	1.00090	0.99970	0.98840
#6	1.02770	1.00450	1.06550	0.99820
#7	1.00180	1.01050	0.99200	1.00150
#8	1.01340	1.01380	1.02700	0.97670
#9				
#10				
	0.0570	0.0494	0.0644	0.0608
	2.998	2.998	2.998	2.998
	0.171	0.148	0.193	0.182
	1.000	1.000	1.000	1.000
	0.100	0.100	0.100	0.100
	Pass	Pass	Pass	Pass
	0.17085	0.14808	0.19318	0.18223
	7.35% 107.2%	6.48% 109.8%	6.91% 109.0%	5.21%

1.00 validated 12/10/08 VR

Calculation of MDL per SOP ENT-027

Enter values into the highlighted cells.

Date Analyzed 2/3/23
Analyst KAH
Date Reviewed 2/15/23
Reviewed By AMC

Instrument X - BACK HALF (-2A)
Logbook Page
Injector (F,R,NA)
Column
Injector (F,R,NA)
Column

Job #(s)
Applicable Method(s) 29, 6020
Matrix
Solvent

Seven (or more) replicates of a low concentration preparation are made. The worst injection(s) (farthest from the mean area) may be removed assuming an appropriate Outlier Test calculation shows the value(s) to be an outlier. At least seven injections must remain.

MDL = Stdev * Student's t-value

t-value =	3.143	N=7	Degrees of Freedom = 6
t-value =	2.998	N=8	Degrees of Freedom = 7
t-value =	2.896	N=9	Degrees of Freedom = 8
t-value =	2.821	N=10	Degrees of Freedom = 9

Compound #	1	2	3	4	5	6	7	8
Compound Name	Sb 121	Sb 123	Ba 137	Ba 138	Tl 205	Pb 206	Pb 207	Pb 208
Notes (if needed)								
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Test Std Concentrations #1	4.95090	4.87810	5.31240	5.22330	1.14670	1.14530	1.16820	1.14010
#2	4.83370	4.90380	5.30310	5.29670	1.08190	1.08180	1.08060	1.07990
#3	4.80560	4.76980	4.90620	4.87040	1.00770	0.98270	0.98070	0.99430
#4	4.81720	4.87910	4.79670	4.78960	1.00690	0.98860	0.99050	0.97490
#5	4.73740	4.79890	4.78880	4.79020	0.95720	1.04030	0.99660	1.01630
#6	5.14090	5.10260	4.85670	4.87580	1.00300	0.97500	0.95910	0.96330
#7	4.81550	4.71390	4.78570	4.81400	0.98160	1.00580	0.97750	0.97300
#8	4.80400	4.79460	4.89050	4.93130	1.00150	0.99550	1.01610	0.99460
#9								
#10								
!! Remove extra zeros !!								
Standard Deviation	0.1269	0.1188	0.2225	0.1989	0.0611	0.0595	0.0698	0.0618
Student's T factor	2.998	2.998	2.998	2.998	2.998	2.998	2.998	2.998
Calculated MDL = StDev * t	0.380	0.356	0.667	0.596	0.183	0.178	0.209	0.185
Concentration of Std	5.000	5.000	5.000	5.000	1.000	1.000	1.000	1.000
Lowest Part 136 App B value*	0.500	0.500	0.500	0.500	0.100	0.100	0.100	0.100
MDL value <1/10 Std Value?	<1/10 Conc of Std	<1/10 Conc of Std	Pass	Pass	Pass	Pass	Pass	Pass
MDL to Use	0.50000	0.50000	0.66697	0.59620	0.18331	0.17829	0.20930	0.18522
LOQ // AVERAGE & RSD	97.3% 1.58%	97.0% 1.58%	103.5% 4.48%	102.6% 4.44%	107.9% 6.45%	107.0% 7.66%	107.7% 8.72%	107.1% 6.84%

*40 CFR Part 136 Appendix B, a common detection limit guidance, indicates that the MDL can not be <1/10th the standard used to set the MDL. MDL to use is the maximum of the Calculated MDL, lowest integratable concentration and the Lowest Part 136 B value.

Job #s	Describe Work Documented on This Page
MS LOQ.1-8	
MAL CDOC.1-4	m29 prep

1340A = m29 FH prep sheet
1340B = m29 BH prep sheet

Preparation of LOQ working standard   **M2 2/2/23 added**

Element	Stock ID	exp date	Vol. spiked (mL)	final conc. (ppm)
Be	F0734	6/30/27	0.1	1
Cr	F0583	4/30/26	0.5	5
Mn	F0731	10/31/27	0.5	5
Co	F0728	6/30/27	0.1	1
Cu	F0789	5/31/29	0.5	5
Ni	F0729	5/31/25	0.5	5
Zn	F0703	4/30/26	2.0	20
As	F0695	4/30/27	0.5	5
Se	F0645	12/31/25	0.5	5
Ag	F0798	~~12/23/~~ ① 4/1/23	0.1	1
Cd	F0730	3/31/28	0.1	1
Sb	F0820	8/2/23	0.5	5
Ba	F0769	4/30/25	0.5	5
Tl	F0816	5/9/23	0.1	1
① ~~Zn~~ Pb	F0802	6/30/29	① ~~2.0~~ 0.1	1
V	F0457	9/30/23	0.5	5

① M2 2/2/23 EE

0.1mL spike used pipet 127 next cal due 3/4/23
0.5 + 2mL spikes used pipet 124 next cal due 3/4/23
Final volume 100mL with 5% HNO₃

Supplies, Ancillary Equipment Serial #s, Lot #s, Etc

NA
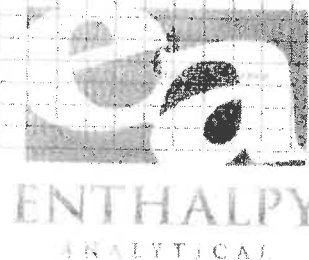
METHOD 29 METALS PREP SHEET

FRONT HALF SAMPLES

| DAY 1 | Date: 2/2/23 | Analyst(s): LMP / MAL | DAY 3 | Date: | Analyst(s): |
| DAY 2 | Date: 2/3/23 | Analyst(s): LMP | DAY 4 | Date: | Analyst(s): |

Ves. #	Reagents	ID#:	Expiration Date:	Sample ID		Final Volume (mL)
1	HNO₃: 6 mL	22330073	8/24	LOQ .1	-1	100
2	HF: 4 mL	SCA 2118048	4/25	.2	-1	
3	**Support**			.3	-1	
4	**Equipment**	ID#:	Expiration Date:	.4	-1	
5	Ag vessels used? YES NOT NEEDED			.5	-1	
6	Cleaning Cycle Completed? YES / NO			.6	-1	
7	Micro. #	6,7	N/A	.7	-1	
8				.8	-1	
9	Hotplate #	8	N/A	MAL CDOC .1	-1	
10				.2	-1	
11	HF Pipette	130	3/3/23	.3	-1	
12				.4	-1	
	HNO₃ Pipette	⊥	⊥		-1	
					-1	
	Digitube	J553470-2258	N/A		-1	
					-1	
	Comments:				-1	
					-1	
					-1	
					-1	
					-1	

Front Half Quality Control

Ves. #	QC	ID:	Expiraton:	Stock Conc. (ppm)	Prepped Conc. (ppb)	Amount Added (mL)	Pip ID:	Pip Exp:
13	Lab Blank-1	--	--	--	--	--	--	--
14	LCS-1	F0814	10/28/23	10	100	1.0	124	3/4/23

List additional LCS's below as needed. For example: Ag, LCS-High

Controlled Document
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EA Job# 0223-176R Page 101 of 186

306 of 688

Page 1 of 1

W002AS-023392-RT-4542

METHOD 29 METALS PREP SHEET

BACK HALF SAMPLES

| DAY 1 | Date: 2/2/23 | Analyst(s): LMP/MAL | DAY 3 | Date: | Analyst(s): |
| DAY 2 | Date: 2/3/23 | Analyst(s): LMP | DAY 4 | Date: | Analyst(s): |

Reagents	ID#:	Expiration Date:	Sample ID		Final Volume (mL)
1:1 HNO3: 30mL	ES-0795	6/19/23	LOQ.1	-2A	100
H2O2: 1mL	6132620b	11/30/23	.2	-2A	
			.3	-2A	
Support Equipment	ID#: 1	Expiration Date:	.4	-2A	
			.5	-2A	
Hotplate #	10	N/A	.6	-2A	
			.7	-2A	
1:1 HNO3 Pipette	J553470-2258	NA	.8	-2A	
				-2A	
H2O2 Pipette	125	3/1/23		-2A	
				-2A	
Hg Aliquot Removed (mL) (-2B)	NA			-2A	
				-2A	
Digitube	J553470-2258	N/A		-2A	
				-2A	
Comments:				-2A	
				-2A	
				-2A	
				-2A	
				-2A	
				-2A	

Back Half Quality Control

QC	ID:	Expiraton:	Stock Conc. (ppm)	Prepped Conc. (ppb)	Amount Added (mL)	Pip ID:	Pip Exp:
Lab Blank-2A	--	--	--	--	--	--	--
LCS-2A	F0763	2/24	100	100	0.10	127	3/4/23

List additional LCS's below as needed. For example: Ag, LCS-High

W002AS-023392-RT-4542

ICP-MS Raw Data Coversheet
Instrument (X)__

Analyst(s): KAH	Analysis Date(s): 2/3/23
EA Project #s: LaQ Study	
Analytes: All M29 + V	

Method: G020	Smart Tune ID: ES-0804	Conc: 1 ppb	Exp: 7/3/23
	Internal Standard ID¹: F0773	Conc: 10 ppm	Exp: 2/23
Diluent: 50 mL HNO3 (ID # 2230073	Exp: 8/24) diluted to 1000 mL with DI		
Calib. Blk/ICB/CCB: Diluent			

¹ All samples and standards are spiked with 50µL of internal std. (pipette 127 exp 3/4/23)

Calibration Standards - Made from EA ID#²: H0 F0763 (Stock Concentration: 10ppm)
Exp Date: 2/4/23) and brought up with Diluent

	Final Conc. (ppb)	Amount (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst	Date	Exp. Date
Standard 1	1	100 of Std 6	127 3/4/23					
Standard 2	5	500 of Std 6	124					
Standard 3	20	2mL Std6		10	143 2/9/23	KAH	2/3/23	2/4/23
Standard 4	50	50	127					
Standard 5	100	100						
No IS Std 6	100	100						

² 10ppm WS = 1mL of Standard F0763 exp 2/24 (pipettes: 124, 143 exp 3/4/23 2/9/23) + 9mL Diluent [100ppm]

Secondary Standards - Made from EA ID#: F0814 + (3) (Stock Concentration: 10ppm)
ExpDate: 11/23 / 2/4/23) and brought up with Diluent

	Final Conc. (ppb)	Amount (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst	Date	Exp. Date
ICV/CCV	50	50+50	127 3/4/23	10	143 2/9/23	KAH	2/3/23	2/4/23

③ 10ppm V: 100µL F0457 (1000ppm 9/23) w/ 127 3/4/23 → 10mL w/diluent 143 2/9/23 KAH 2/3/23

ICS's- Made from Stock Std ICS-A ID#(F0786 Exp: 8/23)
& 50 ppb Metals Std ID#(2) F0763 Conc: 10ppm Exp: 2/4/23) brought up with Diluent

	Conc.	Amount WS (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst	Date	Exp. Date
ICS-A	Multi	100	127 3/4/23					
	Multi	100		10	143 2/9/23	KAH	2/3/23	2/4/23
ICS-AB	50 ppb	50						

Post Dig Matrix Spike Samples - Diluted with Diluent (Metals Mix ID#_____ Conc:_____ Exp:_____)

Sample ID	Dilution Factor of Field Sample	Aliquot of Sample (mL)	Final Conc. (ppb)	Amount of Spike Added (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst
						10		
						10		
						10		
						10		
						10		
						10		
						10		

ICP-MS Raw Data Coversheet
Instrument (X)__

Sample ID(s)	Dilution Factor of Sample	Aliquot of Sample (mL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst
LCS - 1A	2	5	143 2/9/23	10	143 2/9/23	KAH
1 - 2A	1	1	1	1	1	1

Sample Dilution Tracker - Diluted with Diluent

Comments:

Batch Folder: D:\Agilent\ICPMH\1\DATA\2023\LOQ MAL FH IDOC 020323.b\
Analysis File: LOQ MAL FH IDOC 020323.batch.bin
DA Date-Time: 2/3/2023 3:55:01 PM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	001CALB.d	CAL BLK	2/3/2023 1:17:15 PM
2	002CALS.d	1 PPB	2/3/2023 1:20:57 PM
3	003CALS.d	5 PPB	2/3/2023 1:24:19 PM
4	004CALS.d	20 PPB	2/3/2023 1:27:40 PM
5	005CALS.d	50 PPB	2/3/2023 1:31:03 PM
6	006CALS.d	100 PPB	2/3/2023 1:34:18 PM

9 Be [tune 1] ISTD :7 Li [tune 1]
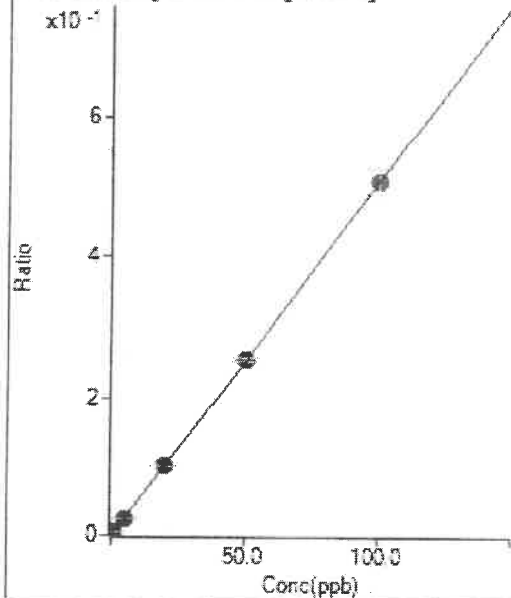
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	160.16	0.0001	P	10.7
2	☐	1.000	1.007	15316.91	0.0052	P	3.9
3	☐	5.000	4.863	78963.69	0.0248	P	1.5
4	☐	20.000	20.197	310003.37	0.1027	P	1.1
5	☐	50.000	50.238	809189.97	0.2553	A	1.6
6	☐	100.000	99.849	1614321.80	0.5073	A	7.3

$y = 0.0051 * x + 5.0182E\text{-}005$

$R = 1.0000$

$DL = 0.003161$

$BEC = 0.009878$

Weight: <None>

Min Conc: 0

51 V [tune 1] ISTD :72 Ge [tune 1]
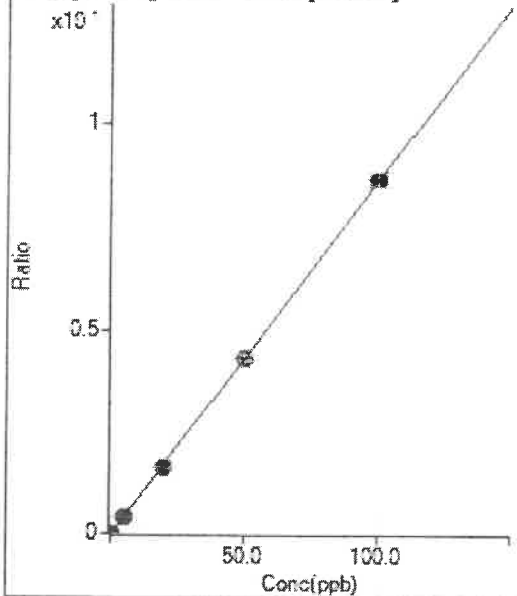
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	523.87	0.0005	P	14.0
2	☐			80701.88	0.0865	P	3.5
3	☐	5.000	4.729	387904.65	0.4082	P	4.3
4	☐	20.000	19.299	1621181.09	1.6642	A	0.4
5	☐	50.000	50.044	4066701.56	4.3148	A	2.6
6	☐	100.000	100.132	8018636.16	8.6328	A	4.3

$y = 0.0862 * x + 5.3372E\text{-}004$

$R = 1.0000$

$DL = 0.002603$

$BEC = 0.006191$

Weight: <None>

Min Conc: 0

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52 Cr [tune 1] ISTD :72 Ge [tune 1]
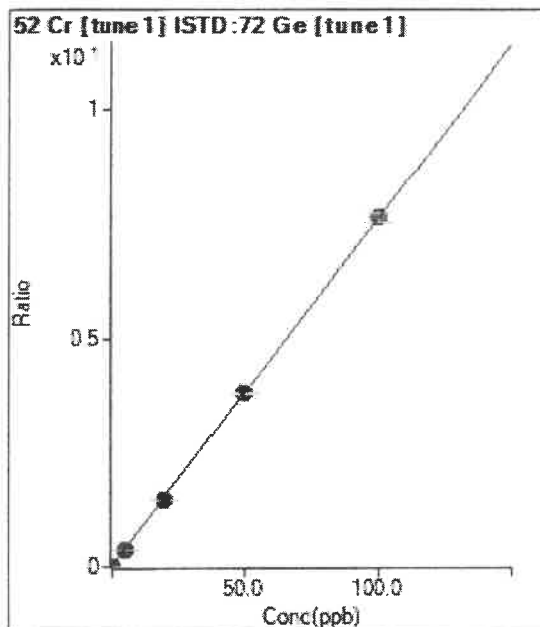
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10414.38	0.0106	P	5.9
2	☐			79829.30	0.0856	P	3.1
3	☐	5.000	4.691	349621.02	0.3679	P	3.7
4	☐	20.000	19.082	1425963.45	1.4639	A	1.7
5	☐	50.000	49.797	3584520.23	3.8032	A	1.1
6	☐	100.000	100.300	7107043.25	7.6495	A	2.7

$y = 0.0762 * x + 0.0106$

$R = 1.0000$

$DL = 0.02439$

$BEC = 0.1387$

Weight: <None>

Min Conc: 0

55 Mn [tune 1] ISTD :72 Ge [tune 1]
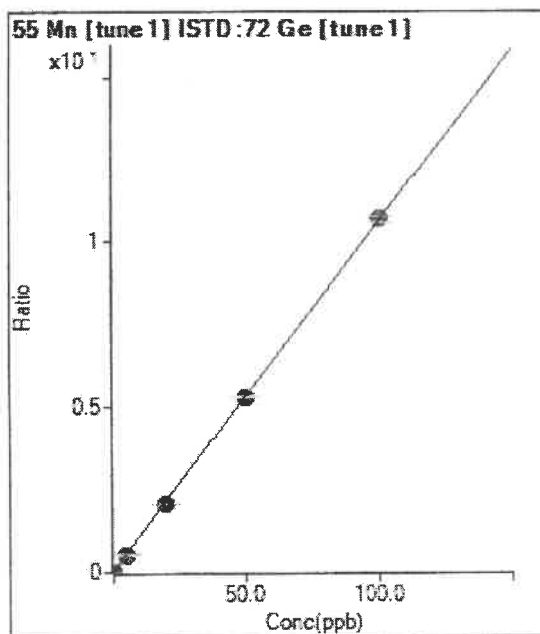
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	24773.44	0.0251	P	5.6
2	☐			120656.47	0.1293	P	0.3
3	☐	5.000	4.804	507734.27	0.5342	P	3.7
4	☐	20.000	19.077	1993468.88	2.0464	A	1.1
5	☐	50.000	49.626	4980861.68	5.2831	A	1.9
6	☐	100.000	100.381	9906928.25	10.6608	A	1.7

$y = 0.1060 * x + 0.0251$

$R = 0.9999$

$DL = 0.03988$

$BEC = 0.2372$

Weight: <None>

Min Conc: 0

59 Co [tune 1] ISTD :72 Ge [tune 1]
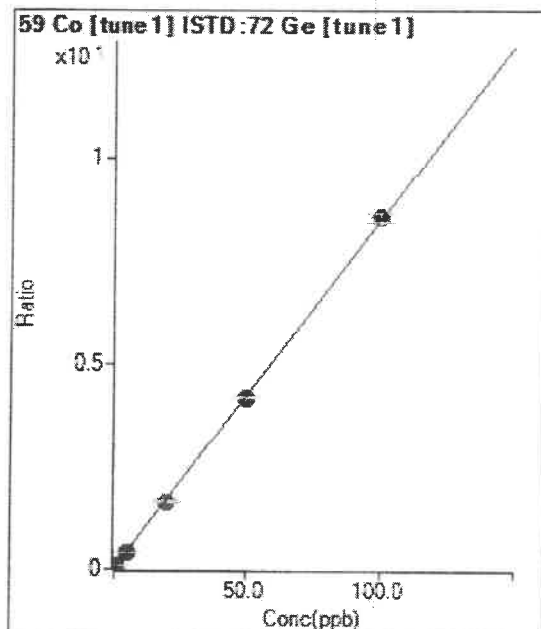
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2753.06	0.0028	P	5.5
2	☐	1.000	0.996	81776.60	0.0877	P	2.6
3	☐	5.000	4.795	390926.73	0.4113	P	3.4
4	☐	20.000	19.221	1597941.96	1.6404	A	3.1
5	☐	50.000	49.253	3958491.45	4.1989	A	0.5
6	☐	100.000	100.540	7961397.32	8.5683	A	2.5

$y = 0.0852 * x + 0.0028$

$R = 0.9999$

$DL = 0.005423$

$BEC = 0.03277$

Weight: <None>

Min Conc: 0

60 Ni [tune 1] ISTD :72 Ge [tune 1]
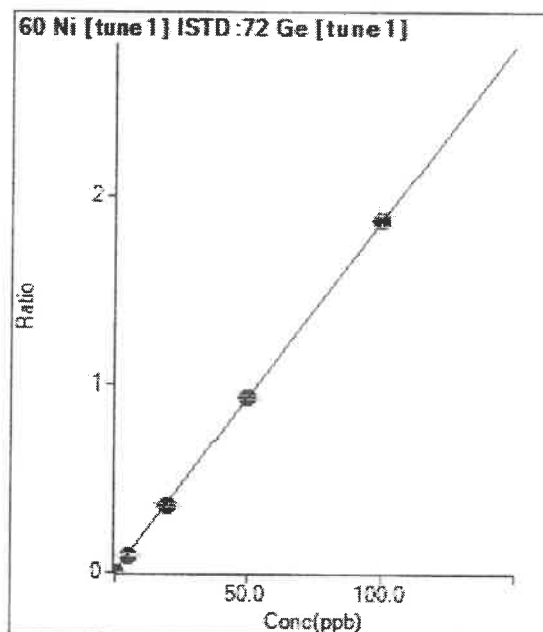
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4118.09	0.0042	P	3.4
2	☐			21043.65	0.0226	P	5.0
3	☐	5.000	4.818	89255.84	0.0939	P	1.9
4	☐	20.000	18.844	345743.60	0.3550	P	4.9
5	☐	50.000	49.877	878939.39	0.9326	P	1.7
6	☐	100.000	100.302	1738894.81	1.8713	A	3.3

$y = 0.0186 * x + 0.0042$

$R = 0.9999$

$DL = 0.02316$

$BEC = 0.2246$

Weight: <None>

Min Conc: 0

62 Ni [tune 1] ISTD :72 Ge [tune 1]
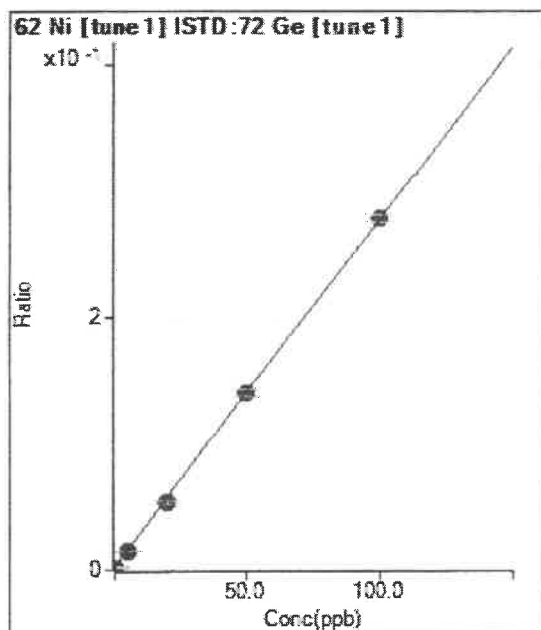
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2135.66	0.0022	P	10.5
2	☐			4498.60	0.0048	P	11.5
3	☐	5.000	4.607	14107.97	0.0149	P	6.5
4	☐	20.000	18.552	51881.53	0.0533	P	5.8
5	☐	50.000	49.738	131082.99	0.1392	P	4.6
6	☐	100.000	100.440	259084.64	0.2788	P	2.3

$y = 0.0028 * x + 0.0022$

R = 0.9999

DL = 0.2483

BEC = 0.785

Weight: <None>

Min Conc: 0

63 Cu [tune 1] ISTD :72 Ge [tune 1]
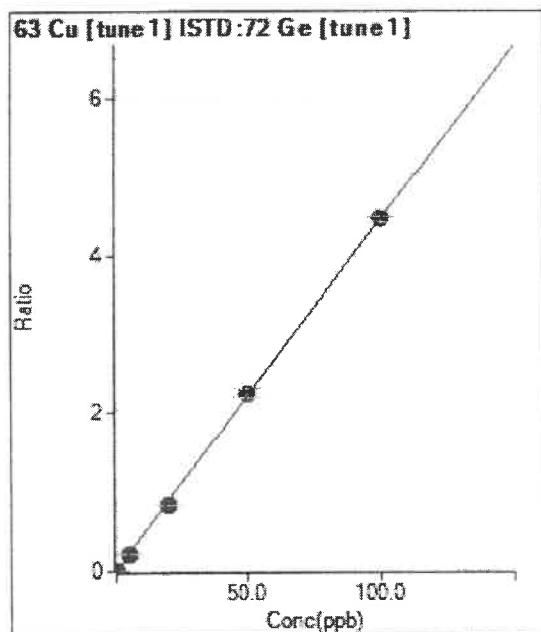
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3160.23	0.0032	P	4.7
2	☐			43929.58	0.0471	P	3.1
3	☐	5.000	4.823	207244.43	0.2181	P	4.5
4	☐	20.000	18.364	800199.92	0.8215	P	1.4
5	☐	50.000	50.565	2125379.31	2.2563	A	4.4
6	☐	100.000	100.053	4145714.48	4.4613	A	1.4

$y = 0.0446 * x + 0.0032$

R = 0.9998

DL = 0.01008

BEC = 0.07192

Weight: <None>

Min Conc: 0

65 Cu [tune 1] ISTD : 72 Ge [tune 1]
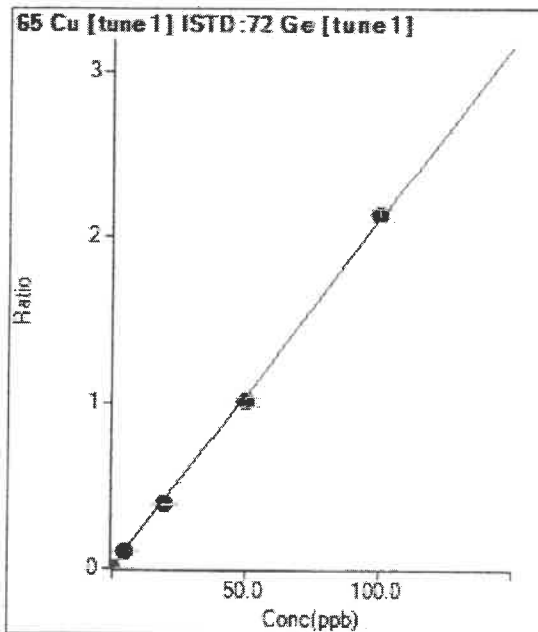
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1438.19	0.0015	P	7.3
2	☐			20652.80	0.0221	P	4.1
3	☐	5.000	4.682	94973.12	0.0999	P	2.6
4	☐	20.000	18.622	382700.16	0.3929	P	3.0
5	☐	50.000	48.134	954273.05	1.0133	A	5.7
6	☐	100.000	101.225	1978304.16	2.1293	A	3.5

$y = 0.0210 * x + 0.0015$

$R = 0.9996$

$DL = 0.01523$

$BEC = 0.06951$

Weight: <None>

Min Conc: 0

66 Zn [tune 1] ISTD : 72 Ge [tune 1]
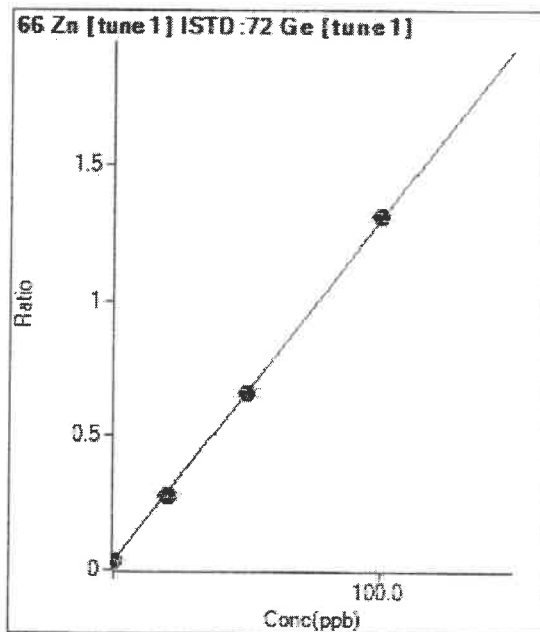
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34788.21	0.0353	P	0.8
2	☐			41416.13	0.0444	P	3.5
3	☐			83699.99	0.0881	P	3.5
4	☐	20.000	19.147	271158.70	0.2784	P	3.3
5	☐	50.000	49.294	622698.31	0.6611	P	4.9
6	☐	100.000	100.524	1218684.22	1.3116	A	2.0

$y = 0.0127 * x + 0.0353$

$R = 0.9999$

$DL = 0.07068$

$BEC = 2.782$

Weight: <None>

Min Conc: 0

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68 Zn [tune 1] ISTD :72 Ge [tune 1]
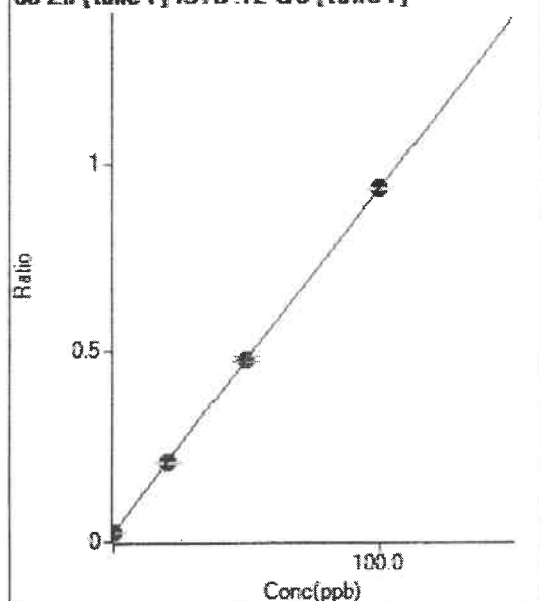
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	25201.49	0.0256	P	0.3
2	☐			30423.69	0.0326	P	0.7
3	☐			62147.34	0.0654	P	2.0
4	☐	20.000	19.930	201411.55	0.2068	P	1.5
5	☐	50.000	49.704	449856.62	0.4774	P	2.9
6	☐	100.000	100.162	870022.94	0.9361	A	0.7

$y = 0.0091 * x + 0.0256$

$R = 1.0000$

$DL = 0.02815$

$BEC = 2.814$

Weight: <None>

Min Conc: 0

75 As [tune 1] ISTD :72 Ge [tune 1]
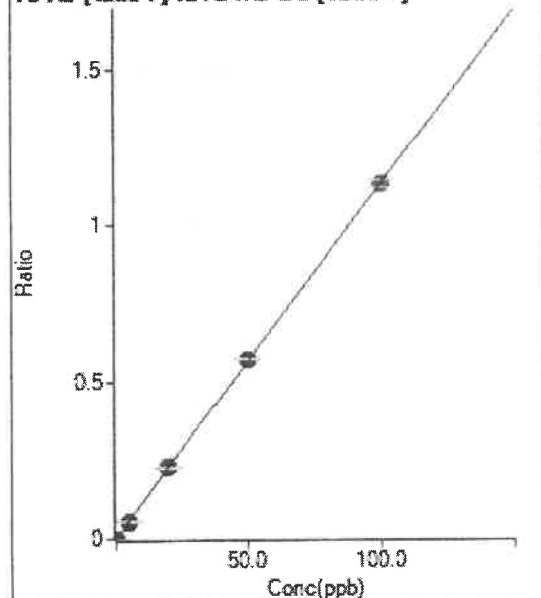
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	724.08	0.0007	P	7.3
2	☐			10962.08	0.0117	P	6.5
3	☐	5.000	4.921	53663.96	0.0564	P	2.2
4	☐	20.000	19.809	219178.69	0.2250	P	1.5
5	☐	50.000	50.424	538669.91	0.5716	P	1.7
6	☐	100.000	99.830	1050797.71	1.1309	A	2.1

$y = 0.0113 * x + 7.3371E\text{-}004$

$R = 1.0000$

$DL = 0.01421$

$BEC = 0.06481$

Weight: <None>

Min Conc: 0

77 Se [tune 1] ISTD :72 Ge [tune 1]
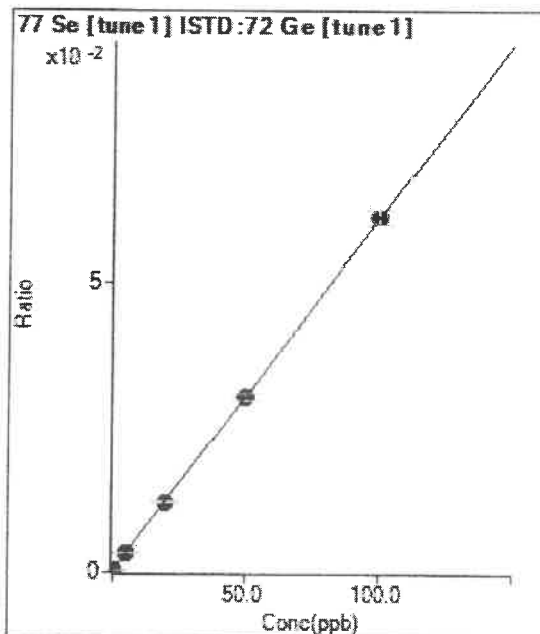
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	243.58	0.0002	P	30.6
2	☐			830.87	0.0009	P	9.0
3	☐	5.000	4.865	3046.74	0.0032	P	4.6
4	☐	20.000	19.561	11826.95	0.0121	P	2.5
5	☐	50.000	49.561	28635.24	0.0304	P	4.5
6	☐	100.000	100.314	56870.72	0.0612	P	4.3

$y = 6.0787E\text{-}004 * x + 2.4923E\text{-}004$

$R = 1.0000$

$DL = 0.3763$

$BEC = 0.41$

Weight: <None>

Min Conc: 0

78 Se [tune 1] ISTD :72 Ge [tune 1]
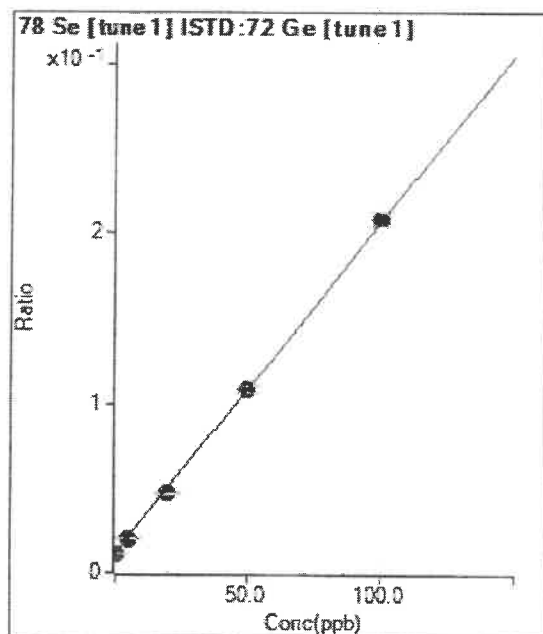
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11018.83	0.0112	P	3.0
2	☐			12114.16	0.0130	P	1.7
3	☐	5.000	4.575	19135.79	0.0202	P	8.0
4	☐	20.000	18.269	45778.02	0.0470	P	2.5
5	☐	50.000	49.996	102843.24	0.1092	P	3.6
6	☐	100.000	100.370	193095.76	0.2079	P	4.2

$y = 0.0020 * x + 0.0112$

$R = 0.9998$

$DL = 0.5138$

$BEC = 5.71$

Weight: <None>

Min Conc: 0

82 Se [tune 1] ISTD :72 Ge [tune 1]
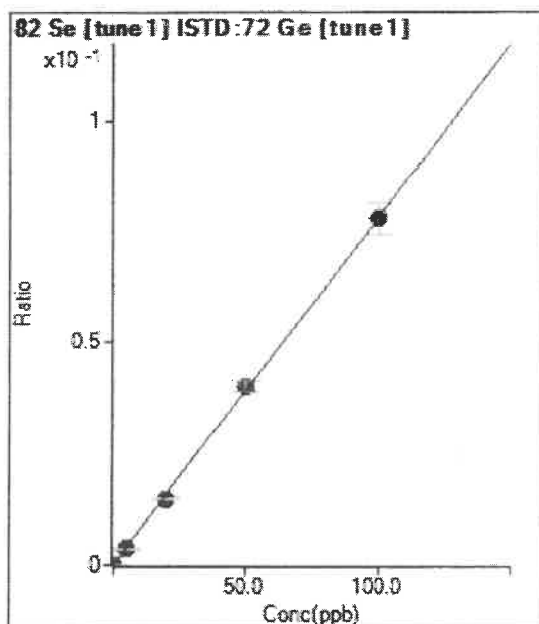
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	-108.36	-0.0001	P	-24.9
2	☐			789.96	0.0008	P	7.2
3	☐	5.000	4.602	3329.51	0.0035	P	5.5
4	☐	20.000	18.781	14247.69	0.0146	P	3.2
5	☐	50.000	50.745	37388.24	0.0397	P	6.5
6	☐	100.000	99.891	72672.38	0.0783	P	9.0

$y = 7.8468E\text{-}004 * x - 1.1047E\text{-}004$

$R = 0.9999$

$DL = 0.1051$

$BEC = -0.1408$

Weight: <None>

Min Conc: 0

83 Kr [tune 1] No available calibration points
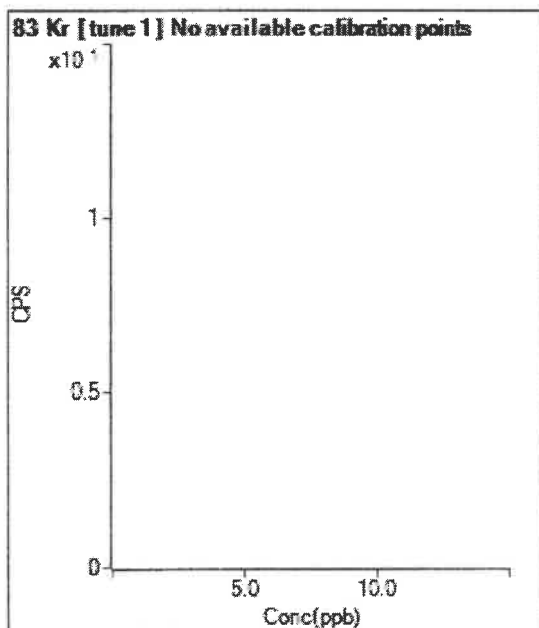
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			627.31		P	7.2
2	☐			540.56		P	4.9
3	☐			563.91		P	14.8
4	☐			593.95		P	12.0
5	☐			707.40		P	24.4
6	☐			880.92		P	7.5

107 Ag [tune 1] ISTD :115 In [tune 1]
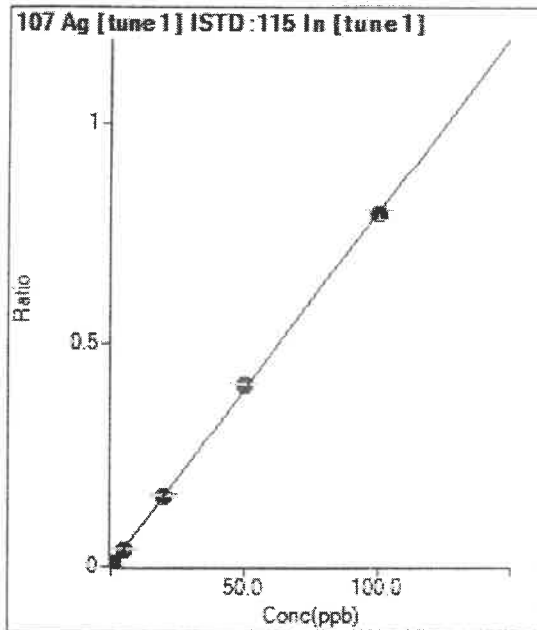
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	283.63	0.0000	P	5.5
2	☐	1.000	0.994	48099.99	0.0080	P	0.3
3	☐	5.000	4.994	237121.11	0.0400	P	3.9
4	☐	20.000	20.218	949506.68	0.1617	M	1.9
5	☐	50.000	51.274	2476520.68	0.4100	A	1.7
6	☐	100.000	99.320	4890881.02	0.7941	A	2.3

$y = 0.0080 * x + 4.7176E\text{-}005$

$R = 0.9999$

$DL = 0.0009749$

$BEC = 0.005901$

Weight: <None>

Min Conc: 0

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109 Ag [tune 1] ISTD :115 In [tune 1]
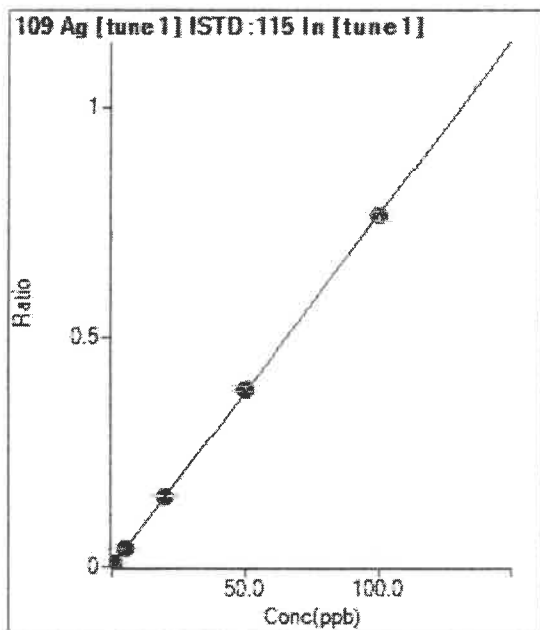
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	286.96	0.0000	P	10.8
2	☐	1.000	0.980	45381.55	0.0075	P	4.0
3	☐	5.000	5.048	229178.69	0.0386	P	1.3
4	☐	20.000	20.179	905508.33	0.1542	P	3.6
5	☐	50.000	50.756	2342841.40	0.3878	A	3.2
6	☐	100.000	99.584	4684584.99	0.7609	A	2.4

$y = 0.0076 * x + 4.7848E\text{-}005$

$R = 1.0000$

$DL = 0.002023$

$BEC = 0.006262$

Weight: <None>

Min Conc: 0

111 Cd [tune 1] ISTD :115 In [tune 1]
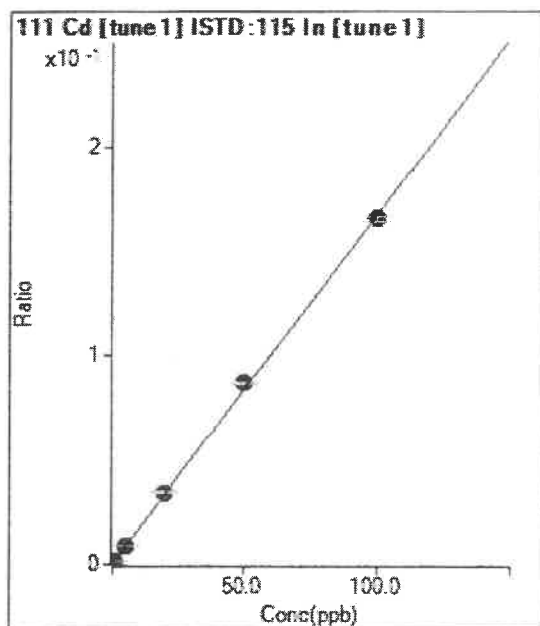
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	140.14	0.0000	P	5.5
2	☐	1.000	1.028	10508.02	0.0017	P	4.2
3	☐	5.000	5.206	51861.05	0.0087	P	5.9
4	☐	20.000	20.585	202695.14	0.0345	P	2.9
5	☐	50.000	51.775	524184.22	0.0868	P	1.6
6	☐	100.000	98.985	1021375.73	0.1659	A	1.7

$y = 0.0017 * x + 2.3199E-005$

R = 0.9997

DL = 0.0023

BEC = 0.01384

Weight: <None>

Min Conc: 0

114 Cd [tune1] ISTD :115 In [tune 1]
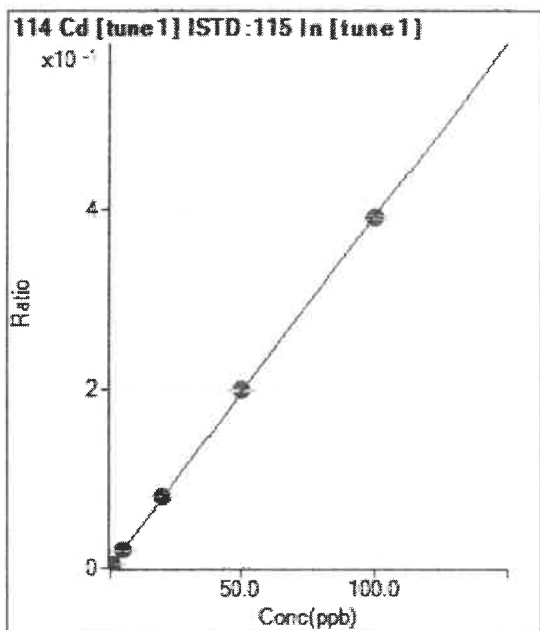
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	268.64	0.0000	P	17.7
2	☐	1.000	1.012	24212.97	0.0040	P	2.2
3	☐	5.000	5.037	117827.27	0.0198	P	2.3
4	☐	20.000	20.387	470892.19	0.0802	P	0.4
5	☐	50.000	50.617	1201609.87	0.1990	A	1.1
6	☐	100.000	99.612	2411201.93	0.3916	A	1.2

$y = 0.0039 * x + 4.4743E-005$

R = 1.0000

DL = 0.006048

BEC = 0.01138

Weight: <None>

Min Conc: 0

118 Sn [tune 1] No available calibration points
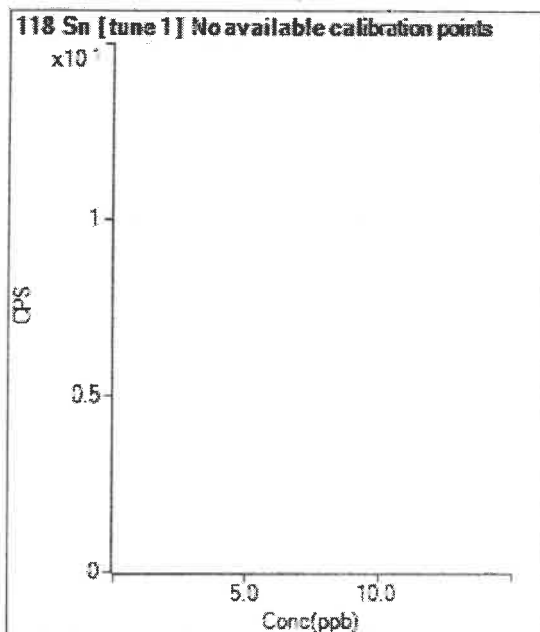
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			3243.67		P	7.1
2	☐			2813.14		P	7.8
3	☐			3143.55		P	3.1
4	☐			2746.39		P	3.0
5	☐			4632.14		P	4.2
6	☐			2846.50		P	1.7

121 Sb [tune 1] ISTD : 115 In [tune 1]
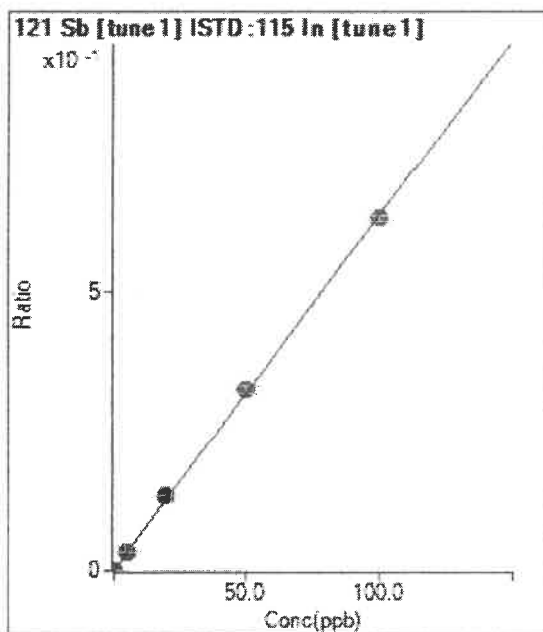
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	977.69	0.0002	P	6.4
2	☐			39905.81	0.0066	P	0.7
3	☐	5.000	5.071	193360.30	0.0326	P	1.1
4	☐	20.000	20.930	786627.82	0.1339	P	0.9
5	☐	50.000	51.137	1974307.11	0.3270	A	4.4
6	☐	100.000	99.242	3906476.84	0.6345	A	1.6

y = 0.0064 * x + 1.6251E-004

R = 0.9998

DL = 0.006422

BEC = 0.02542

Weight: <None>

Min Conc: 0

123 Sb [tune 1] ISTD : 115 In [tune 1]
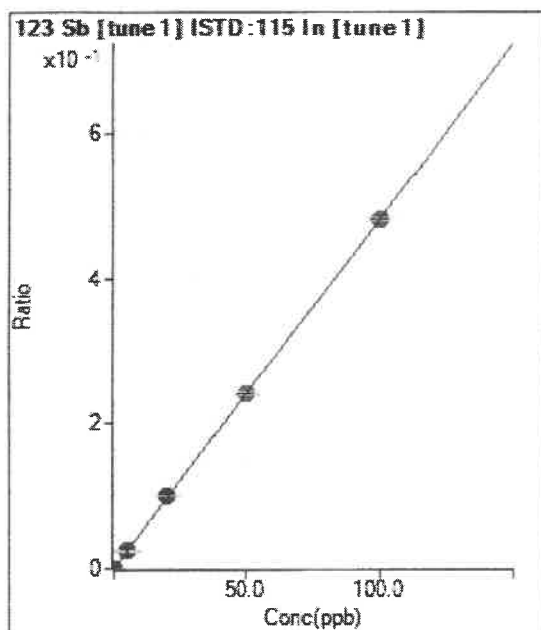
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	694.05	0.0001	P	3.8
2	☐			30157.07	0.0050	P	1.7
3	☐	5.000	5.028	144482.46	0.0243	P	3.2
4	☐	20.000	20.763	588378.21	0.1002	P	0.8
5	☐	50.000	49.834	1450766.62	0.2403	A	2.3
6	☐	100.000	99.929	2966317.68	0.4817	A	1.0

$y = 0.0048 * x + 1.1495E\text{-}004$

$R = 1.0000$

$DL = 0.002703$

$BEC = 0.02385$

Weight: <None>

Min Conc: 0

125 Te [tune 1] No available calibration points
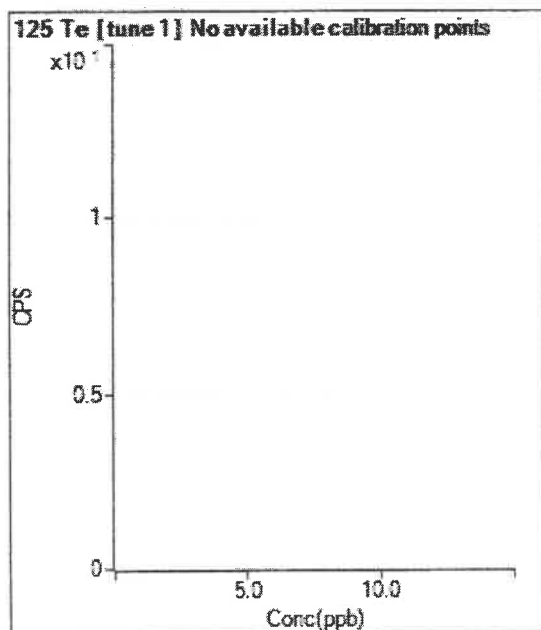
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			0.00		P	
2	☐			3.34		P	173.2
3	☐			13.35		P	114.6
4	☐			13.35		P	43.3
5	☐			3.34		P	173.2
6	☐			20.02		P	50.0

137 Ba [tune 1] ISTD :165 Ho [tune 1]
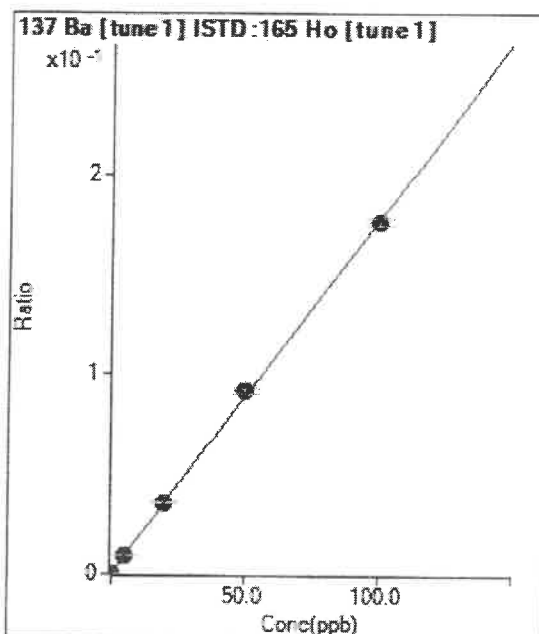
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	597.29	0.0001	P	11.7
2	☐			13998.14	0.0019	P	5.5
3	☐	5.000	5.084	65821.48	0.0091	P	2.8
4	☐	20.000	20.159	266585.80	0.0359	P	4.0
5	☐	50.000	51.403	683869.63	0.0915	P	3.2
6	☐	100.000	99.262	1345986 07	0.1766	A	2.2

$y = 0.0018 * x + 7.7440E-005$

$R = 0.9998$

$DL = 0.01527$

$BEC = 0.04355$

Weight: <None>

Min Conc: 0

138 Ba [tune 1] ISTD :165 Ho [tune 1]
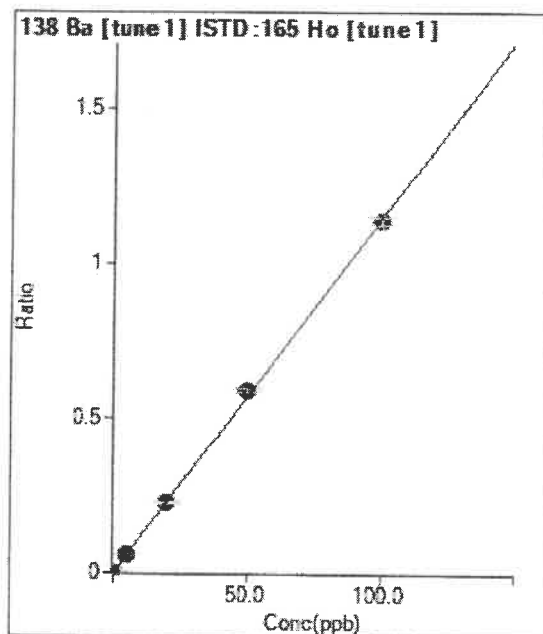
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3506.28	0.0005	P	4.0
2	☐			89401.57	0.0119	P	6.8
3	☐	5.000	5.184	431371.94	0.0598	P	1.6
4	☐	20.000	19.733	1678582.56	0.2262	A	3.2
5	☐	50.000	51.560	4412724.43	0.5902	A	2.2
6	☐	100.000	99.264	8656778.88	1.1359	A	2.1

$y = 0.0114 * x + 4.5739E-004$

$R = 0.9998$

$DL = 0.004788$

$BEC = 0.03999$

Weight: <None>

Min Conc: 0

139 La [tune 1] No available calibration points
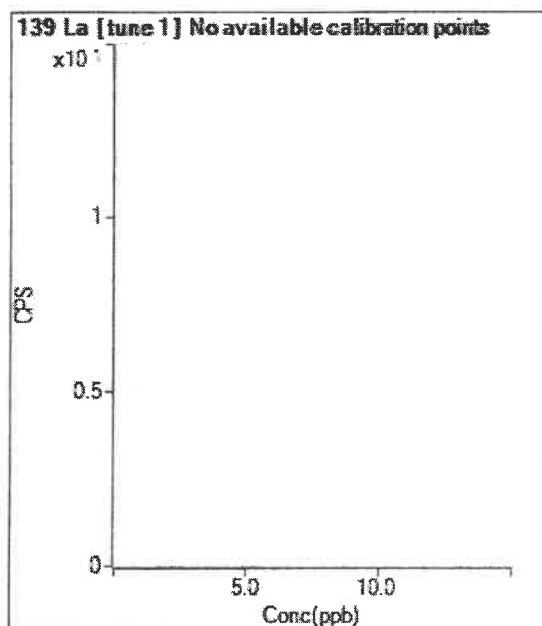
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			93.43		P	6.2
2	☐			76.74		P	15.1
3	☐			150.15		P	24.0
4	☐			246.92		P	11.7
5	☐			633.99		P	10.3
6	☐			1084.48		P	5.9

140 Ce [tune 1] No available calibration points
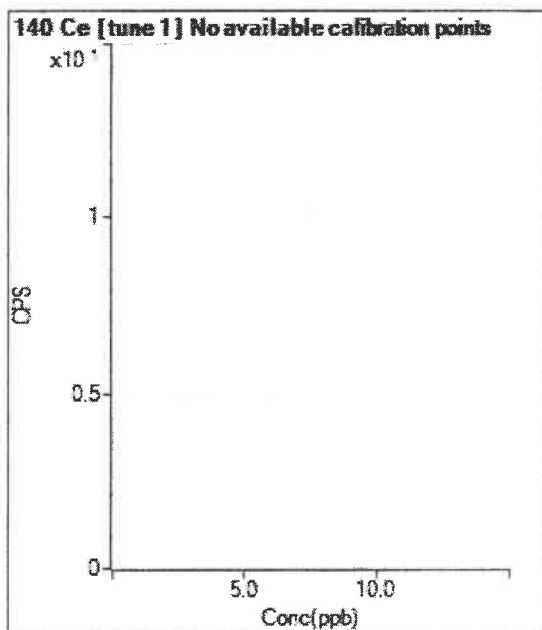
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			340.35		P	25.1
2	☐			276.95		P	29.0
3	☐			233.57		P	10.8
4	☐			200.20		P	8.7
5	☐			300.31		P	20.3
6	☐			276.95		P	19.9

205 Tl [tune 1] ISTD : 165 Ho [tune 1]
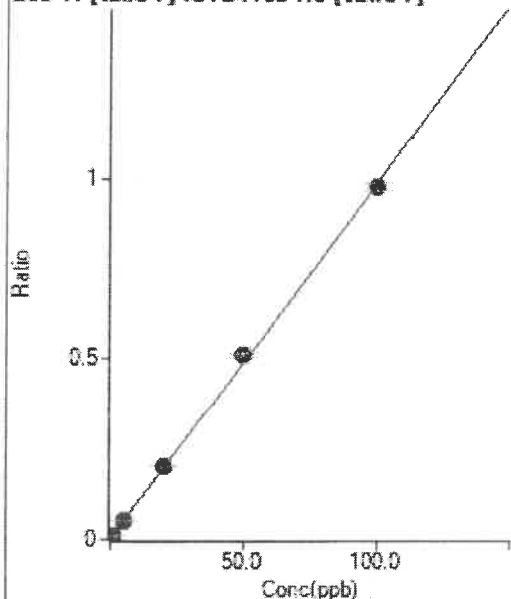
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1177.91	0.0002	P	10.9
2	☐	1.000	1.001	75377.29	0.0100	P	2.8
3	☐	5.000	5.065	361306.12	0.0500	P	1.7
4	☐	20.000	20.419	1495460.54	0.2013	A	0.5
5	☐	50.000	51.857	3820335.38	0.5109	A	1.7
6	☐	100.000	98.984	7430534.96	0.9751	A	2.1

$y = 0.0098 * x + 1.5415E\text{-}004$

$R = 0.9997$

$DL = 0.005118$

$BEC = 0.01565$

Weight: <None>

Min Conc: 0

206 Pb [tune 1] ISTD : 165 Ho [tune 1]
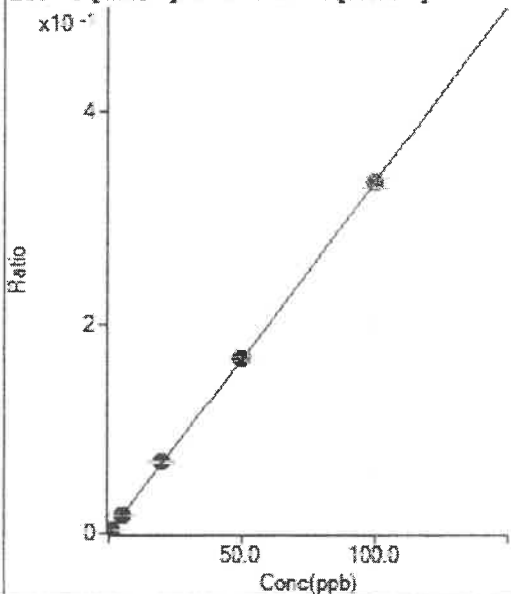
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1081.14	0.0001	P	8.3
2	☐	1.000	0.993	25915.60	0.0034	P	5.9
3	☐	5.000	5.032	122007.30	0.0169	P	1.1
4	☐	20.000	20.465	507216.98	0.0683	P	1.5
5	☐	50.000	50.168	1250852.62	0.1672	A	1.9
6	☐	100.000	99.822	2554280.18	0.3326	A	2.5

$y = 0.0033 * x + 1.4111E\text{-}004$

$R = 1.0000$

$DL = 0.01052$

$BEC = 0.04237$

Weight: <None>

Min Conc: 0

207 Pb [tune 1] ISTD :165 Ho [tune 1]
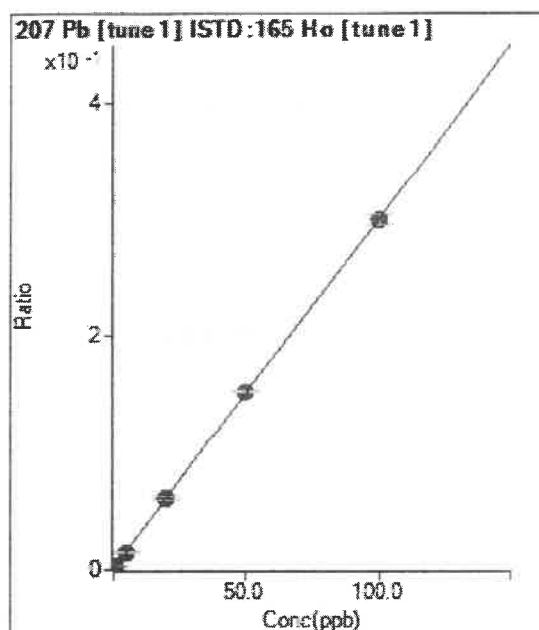
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	900.94	0.0001	P	8.9
2	☐	1.000	0.961	22559.41	0.0030	P	2.5
3	☐	5.000	4.957	108120.19	0.0150	P	1.7
4	☐	20.000	20.093	447822.67	0.0603	P	4.0
5	☐	50.000	50.408	1130686.34	0.1512	A	1.7
6	☐	100.000	99.780	2279376.01	0.2992	A	3.2

$y = 0.0030 * x + 1.1712E\text{-}004$

$R = 1.0000$

$DL = 0.01043$

$BEC = 0.03907$

Weight: <None>

Min Conc: 0

208 Pb [tune 1] ISTD :165 Ho [tune 1]
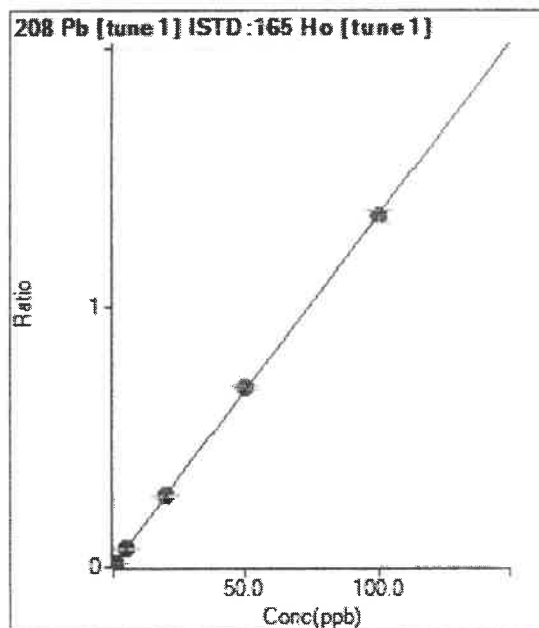
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4224.54	0.0006	P	8.3
2	☐	1.000	0.960	101765.84	0.0135	P	4.4
3	☐	5.000	5.014	493519.96	0.0684	P	2.1
4	☐	20.000	19.833	1994956.12	0.2688	A	3.3
5	☐	50.000	50.750	5136034.53	0.6869	A	1.5
6	☐	100.000	99.658	10270967.01	1.3483	A	3.6

$y = 0.0135 * x + 5.5171E\text{-}004$

$R = 1.0000$

$DL = 0.01017$

$BEC = 0.0408$

Weight: <None>

Min Conc: 0

7 Li (ISTD) [tune 1]
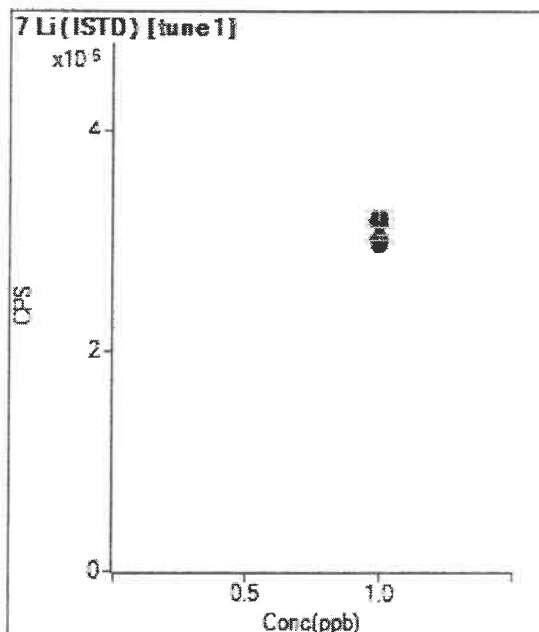
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3192463.75		A	3.8
2	☐	1.000		2966195.73		A	0.4
3	☐	1.000		3190010.52		A	0.4
4	☐	1.000		3020031.59		A	1.2
5	☐	1.000		3170237.44		A	1.9
6	☐	1.000		3189276.56		A	4.7

72 Ge (ISTD) [tune 1]
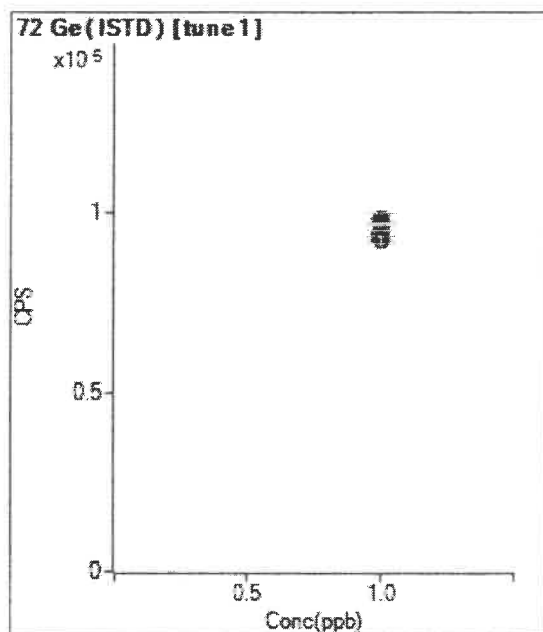
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		985053.55		A	3.8
2	☐	1.000		932925.50		A	1.8
3	☐	1.000		951311.62		A	4.2
4	☐	1.000		974141.14		A	0.9
5	☐	1.000		942677.37		A	2.7
6	☐	1.000		929433.47		A	2.2

89 Y (ISTD) [tune 1]
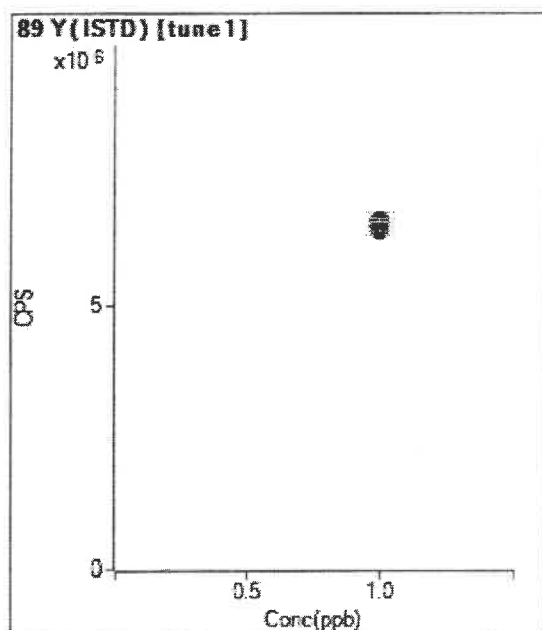
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		6589730.69		A	5.7
2	☐	1.000		6431916.95		A	2.8
3	☐	1.000		6416481.10		A	2.1
4	☐	1.000		6479084.74		A	1.5
5	☐	1.000		6533526.27		A	4.1
6	☐	1.000		6616146.49		A	1.0

115 In (ISTD) [tune 1]
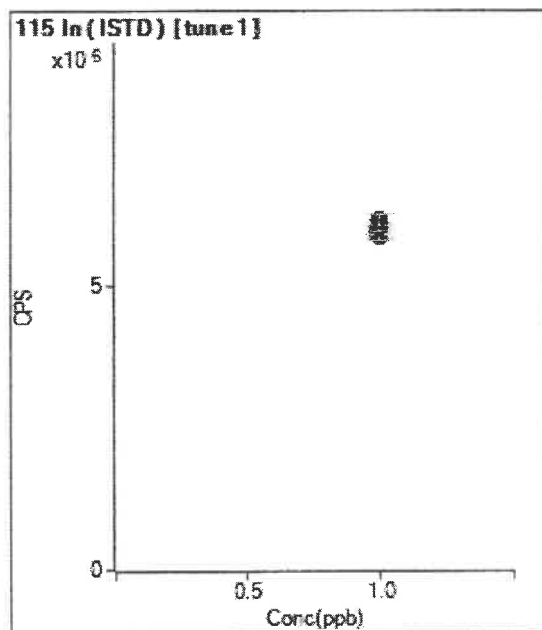
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		6028461.51		A	7.5
2	☐	1.000		6018228.41		A	1.3
3	☐	1.000		5936977.21		A	3.6
4	☐	1.000		5873458.59		A	1.6
5	☐	1.000		6039303.56		A	1.7
6	☐	1.000		6158894.07		A	3.1

159 Tb (ISTD) [tune 1]
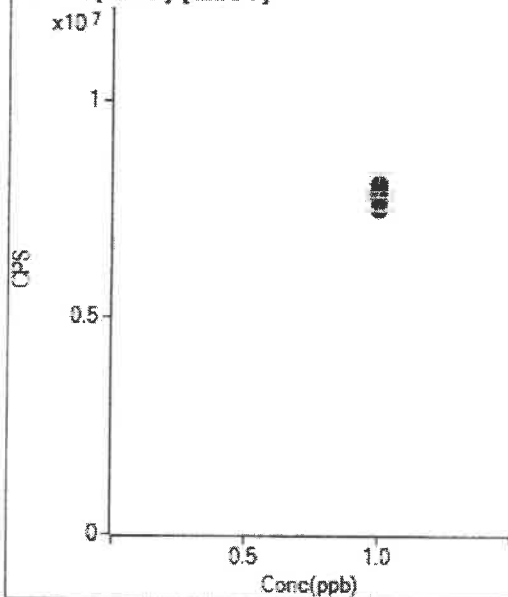
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		8095462.21		A	6.5
2	☐	1.000		7875911.52		A	2.9
3	☐	1.000		7521362.55		A	.2
4	☐	1.000		7710399.40		A	5.2
5	☐	1.000		7800498.25		A	2.1
6	☐	1.000		7875746.20		A	.3

165 Ho (ISTD) [tune 1]
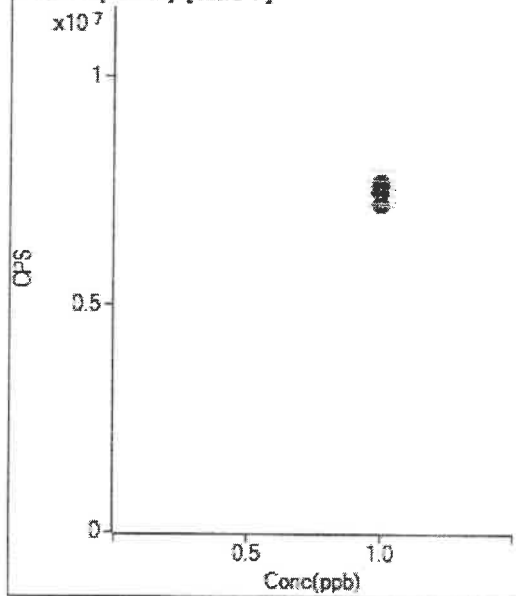
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		7679610.23		A	6.9
2	☐	1.000		7529872.47		A	4.4
3	☐	1.000		7220213.76		A	1.2
4	☐	1.000		7429667.22		A	4.9
5	☐	1.000		7479671.13		A	3.1
6	☐	1.000		7623055.86		A	2.9

209 Bi (ISTD) [tune 1]
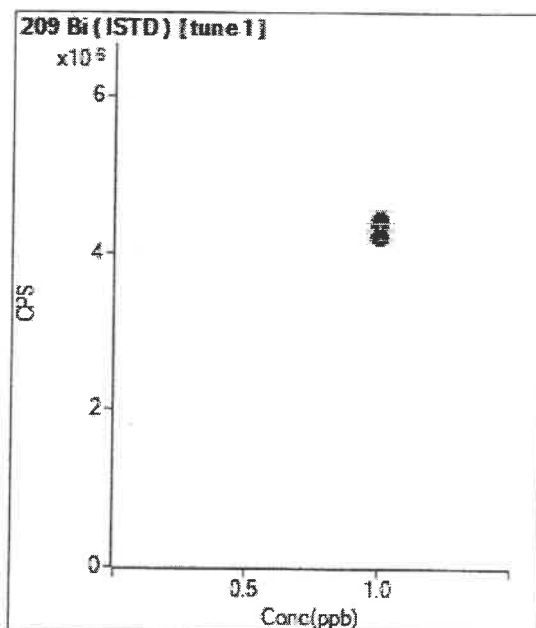
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		4442782.94		A	5.4
2	☐	1.000		4225000.53		A	3.6
3	☐	1.000		4264724.16		A	2.9
4	☐	1.000		4235674.38		A	1.9
5	☐	1.000		4355269.70		A	2.6
6	☐	1.000		4370279.71		A	1.6

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Acq Date-Time	Sample Name	9 Be [tune 1] Conc [ppb]	Conc. RSD	51 V [tune 1] Conc [ppb]	Conc RSD	52 Cr [tune 1] Conc [ppb]	Conc. RSD	55 Mn [tune 1] Conc [ppb]	Conc. RSD	59 Co [tune 1] Conc. [ppb]	Conc. RSD	60 Ni [tune 1] Conc [ppb]	Conc. RSD	62 Ni [tune 1] Conc. [ppb]	Conc. RSD	63 Cu [tune 1] Conc. [ppb]	Conc. RSD	65 Cu [tune 1] Conc [ppb]	Conc. RSD
2/3/2023 13:17	CAL BLK	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A
2/3/2023 13:20	1 FPB	1.0065	3.9105	0.9976	3.5237	0.9852	3.5913	0.9934	0.3948	0.9662	2.6966	0.9872	6.1664	0.9678	20.8440	0.9852	3.3317	0.9840	4.3966
2/3/2023 13:24	5 PPB	4.8627	1.4871	4.7288	4.3387	4.6914	3.8607	4.8045	3.8784	4.7953	3.4667	4.8181	2.0230	4.6069	7.5817	4.8233	4.5576	4.6822	2.6053
2/3/2023 13:27	20 PPB	20.1966	1.1401	19.2986	0.4182	19.0824	1.7567	19.0774	1.1589	19.2212	3.0690	18.8442	4.9328	18.5518	6.0185	18.3642	1.3617	18.6221	3.0074
2/3/2023 13:31	50 PPB	50.2377	1.6058	50.0440	2.6353	49.7975	1.0778	49.6258	1.9992	49.2527	0.5379	49.8774	1.7111	49.7383	4.6561	50.5654	4.4253	48.1336	5.7056
2/3/2023 13:34	100 PPB	99.8487	7.2887	100.1318	4.2573	100.3002	2.7318	100.3814	1.7089	100.5397	2.4881	100.3016	3.2574	100.4401	2.3049	100.0533	1.4283	101.2247	3.4984
2/3/2023 13:37	ICV	48.4981	3.9625	51.4628	4.0636	49.2175	1.5613	47.4295	1.3179	47.5931	2.1694	49.0066	2.6998	49.3817	1.6095	48.3672	1.3507	47.3525	2.5433
2/3/2023 13:40	ICB	0.3697	29.7011	0.3495	24.0461	0.3351	24.8353	5.7320	0.9602	0.3172	22.9656	0.2991	17.7492	0.2615	21.8734	0.3252	21.7378	0.3168	23.5879
2/3/2023 13:43	ICSA	0.0605	7.1455	0.2004	4.3179	0.2853	5.9868	0.1337	6.7891	0.1071	6.7821	0.1718	11.0539	0.3653	21.2458	0.2429	4.1745	0.3424	3.9213
2/3/2023 13:47	ICSAB	49.5776	1.3355	47.1887	4.4695	46.7597	3.8345	45.3573	5.4703	44.2931	2.9049	44.2042	3.6085	45.1168	2.8198	43.6136	1.8622	42.5862	0.5112
2/3/2023 14:11	LB-1A	0.0205	12.4520	0.0898	7.7211	0.1763	12.9715	0.0147	48.9997	0.0500	15.2860	0.0878	20.9982	0.0303	232.6778	0.1904	9.7667	0.3278	2.6223
2/3/2023 14:14	LCS-1A 2X	48.6171	1.9287	49.8267	3.0608	49.3313	3.9251	48.3762	3.6970	46.8917	3.1610	47.6534	1.9560	48.5138	1.9252	48.3221	2.7680	47.2756	5.2419
2/3/2023 14:17	LOQ1-1A	1.0120	1.7288	5.0611	4.3088	5.2898	3.7824	5.0306	5.5806	1.0955	6.1966	4.9875	6.8871	4.8867	8.9272	4.9604	8.7746	5.0695	8.8964
2/3/2023 14:20	LOQ2-1A	0.9760	4.4013	5.2553	4.3475	5.6295	1.2556	5.1372	1.0185	1.1022	4.8991	5.1058	1.0260	4.8663	2.3401	5.2617	0.9921	5.2812	1.4550
2/3/2023 14:24	LOQ3-1A	1.0078	6.8606	5.2373	4.3638	5.3982	3.0137	8.6700	0.6810	1.1102	1.2364	5.6063	2.0722	5.3922	4.5412	5.1894	4.2106	5.2481	4.1230
2/3/2023 14:27	LOQ4-1A	0.9929	2.6831	5.1985	3.4497	5.2587	2.3272	4.9593	1.1431	1.0558	2.3139	5.2140	2.6580	5.2363	2.1329	5.2195	2.5110	5.1387	0.2211
2/3/2023 14:30	LOQ5-1A	0.9822	4.8502	4.9333	6.9669	5.1915	4.2946	4.9209	3.0377	1.0161	5.6130	4.9591	5.6130	4.8217	4.0719	4.8376	5.3033	5.0238	2.2370
2/3/2023 14:33	LOQ6-1A	1.0709	5.1801	4.9769	4.8983	5.2048	3.4490	4.9473	3.1944	1.0298	2.2271	4.9924	2.2271	4.8949	6.6525	4.7922	3.0574	4.8958	6.0873
2/3/2023 14:36	LOQ7-1A	0.9637	5.6912	5.0794	3.1876	5.2695	5.6813	5.0775	3.4224	1.0765	8.9335	5.1848	5.7490	4.9750	2.3843	5.0115	4.3613	4.9217	2.0906
2/3/2023 14:40	LOQ8 1A	0.9840	5.6107	5.1434	1.4662	5.3630	2.7229	4.9447	4.4768	1.0243	2.6865	5.3237	4.6953	5.2408	5.8659	4.8797	5.1867	4.9879	5.6207
2/3/2023 14:43	CCV	48.8269	2.5154	50.0731	4.6381	48.8807	3.0013	47.4517	4.3707	46.5492	6.2637	46.8332	4.6722	47.2634	3.2179	477972	3.4136	47.2217	3.3830
2/3/2023 14:46	CCB	0.2903	0.2541	0.3063	3.7359	0.3058	4.0374	5.8186	0.4635	0.2620	7.0526	0.3100	7.3992	0.1894	36.1816	0.2700	9.6921	0.2665	1.3304
2/3/2023 15:19	LB-2A	0.0067	12.7315	0.0049	22.5128	0.0898	6.9000	0.1405	8.3805	<0.000	N/A	0.3786	5.8761	0.4480	6.3740	0.1069	10.3143	0.1090	10.6569
2/3/2023 15:22	LCS-2A 2X	49.4702	2.3150	49.0474	3.5123	49.5784	4.2799	49.3639	3.4356	49.3275	3.0677	48.6587	0.8806	48.2789	2.5937	48.4377	2.9393	49.0141	5.1452
2/3/2023 15:25	LOQ1-2A	1.0733	5.0508	5.0631	1.8841	5.5089	0.5841	5.0357	1.3243	1.1260	2.2754	5.0700	2.4841	4.9093	6.7332	4.9516	3.2693	5.0626	4.6145
2/3/2023 15:28	LOQ2-2A	0.9930	2.2424	4.9024	4.9180	5.1702	3.0718	4.9814	3.1155	1.0198	3.9760	4.8152	2.2469	4.7963	4.9212	4.8877	2.5614	4.7854	3.3172
2/3/2023 15:32	LOQ3-2A	0.9724	1.9636	4.9254	4.5062	5.2398	6.9255	5.0835	4.1861	1.0334	2.9632	4.9004	5.7451	5.0572	8.4855	4.8366	4.0193	4.8616	5.2787
2/3/2023 15:35	LOQ4-2A	0.9398	1.7078	5.0369	2.9131	5.3528	2.5221	5.0675	0.4053	0.9830	1.8625	4.9879	0.8218	5.0554	2.9168	4.8786	2.0272	4.9663	3.1514
2/3/2023 15:38	LOQ5-2A	0.9098	1.3072	5.1136	3.2987	5.3291	2.3285	5.5417	2.7829	0.9820	4.2003	4.9445	1.3143	4.9275	1.7778	5.0287	0.6574	5.0778	0.8197
2/3/2023 15:41	LOQ6-2A	0.9085	4.1351	5.1067	5.2268	5.2251	5.6370	5.0141	4.7006	0.9663	4.6343	4.9847	3.1857	4.9799	4.6450	4.9650	2.1255	4.8919	6.2583
2/3/2023 15:45	LOQ7-2A	0.9410	1.6358	5.1154	8.4326	5.2253	5.0925	4.8721	6.0308	0.9961	3.4977	5.0053	4.4008	4.8268	2.2111	4.8117	3.5363	4.9392	3.4440
2/3/2023 15:48	LOQ8-2A	0.9391	0.8911	4.9760	1.9715	5.3265	2.9748	5.0725	2.3561	0.9802	0.7840	5.0332	1.7506	4.9377	0.6681	4.9715	3.1879	4.9703	4.5611
2/3/2023 15:51	CCV	48.7933	0.6413	50.1711	4.8547	48.3233	7.7611	46.5657	5.6409	45.5795	3.3218	47.9488	2.2307	47.7328	0.9843	47.9557	2.2734	47.1930	3.2068
2/3/2023 15:54	CCB	0.2789	23.0292	0.2945	21.3591	0.2763	17.3883	5.7987	1.1260	0.2469	13.7149	0.3295	5.3475	0.3203	29.0574	0.2585	14.6569	0.2652	17.6400

DNV Zn Fh data KAH 2/6/23

Acq. Date-Time	Sample Name	66 Zn [tune 1]		68 Zn [tune 1]		75 As [tune 1]		77 Se [tune 1]		78 Se [tune 1]		82 Se [tune 1]		107 Ag [tune 1]		109 Ag [tune 1]		111 Cd [tune 1]	
		Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD
2/3/2023 13:20	CAL BLK	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A
2/3/2023 13:24	1 PPB	0.7166	17.2590	0.7732	3.1411	0.9727	6.8965	1.0562	12.4486	0.9173	12.4452	1.2201	8.3267	0.9937	0.2810	0.9904	4.0494	1.0278	4.2260
2/3/2023 13:27	5 PPB	4.1537	5.8690	4.3750	3.3316	4.9207	2.1841	4.8648	4.9400	4.5758	17.9092	4.6925	5.3507	4.9941	3.8930	5.0476	1.2673	5.2061	5.9425
2/3/2023 13:31	20 PPB	19.1474	3.8016	19.8297	1.7628	19.8092	1.5332	19.5612	2.5680	18.2684	3.3422	18.7814	3.1484	20.2178	1.9475	20.1794	3.5032	20.5845	2.9162
2/3/2023 13:34	50 PPB	49.2936	5.2273	49.7045	3.0812	50.4244	1.6761	49.5612	4.5259	49.9057	3.9808	50.7448	6.5143	51.2737	1.7331	50.7960	3.1655	51.7747	1.5870
2/3/2023 13:37	100 PPB	100.5237	2.0492	100.1518	0.7465	99.8299	2.0685	100.3139	4.3498	100.3696	4.4335	99.8812	9.0004	99.3199	2.3162	99.3939	2.4454	98.9852	1.6518
2/3/2023 13:40	ICV	48.4100	3.3161	49.0565	1.3966	49.9623	0.4693	48.6450	6.5002	48.0777	1.7748	48.2024	2.6042	51.9293	3.1706	52.3954	4.8921	51.5765	3.0177
2/3/2023 13:43	ICB	<0.000	N/A	<0.000	N/A	0.3684	13.0354	0.4562	33.6056	0.1079	253.7028	0.4249	55.6858	0.3635	18.7855	0.3508	21.8391	0.3415	15.6482
2/3/2023 13:47	ICSA	1.4984	8.6099	1.3122	8.9801	0.2418	5.0457	0.9857	22.5234	0.0914	8928.1364	0.1169	125.7748	0.0551	11.0232	3.6517	14.5833	0.3706	2.9491
2/3/2023 14:11	ICSAB	47.4690	6.3135	47.6560	1.0201	48.1990	0.8708	48.8029	3.5188	47.4431	3.7584	47.4553	5.9727	46.1033	1.0346	44.9843	5.7536	51.2939	1.9414
2/3/2023 14:14	LB-1A	3.8629	7.4098	3.7716	3.1609	6.5595	5.1884	0.1668	81.3274	<0.000	N/A	0.3522	48.2134	0.0361	177.8650	0.0371	30.5262	0.0146	60.9151
2/3/2023 14:17	LCS-1A 2X	65.7063	1.2461	65.6021	1.0092	48.3722	1.0216	49.7136	0.8972	46.4627	3.9181	46.2795	3.4620	50.1110	2.8711	50.9723	2.2839	50.0531	0.7924
2/3/2023 14:20	LOQ1-1A	25.2791	6.6356	24.6536	6.9982	6.1367	2.6470	4.9636	3.3552	4.3192	4.5571	5.3671	3.5458	1.1322	6.6088	1.1213	3.9864	1.1252	2.4645
2/3/2023 14:24	LOQ2-1A	23.8915	2.3890	23.8372	1.1419	6.2566	0.4509	5.2163	6.7217	4.6543	8.6693	5.4531	4.0794	1.0681	1.6439	1.0897	6.7355	1.0491	8.2149
2/3/2023 14:27	LOQ3-1A	34.5499	2.2016	34.1864	3.4566	5.7208	2.1161	5.5394	9.5719	4.4817	7.0715	5.5084	6.8930	1.0517	2.0262	1.0228	6.7355	1.0331	4.3848
2/3/2023 14:30	LOQ4-1A	26.1518	1.9568	25.7614	2.6865	5.1944	2.5766	5.4048	0.4478	4.5539	10.3164	5.1028	3.7330	1.0713	3.6466	1.0506	2.5719	1.0578	6.7678
2/3/2023 14:33	LOQ5-1A	28.0934	1.9813	27.5115	3.2319	5.2924	3.3124	5.0349	7.2633	4.0911	8.3113	5.4689	4.0704	1.0055	2.8126	1.0429	2.5722	1.0384	5.9999
2/3/2023 14:36	LOQ6-1A	30.5506	4.3280	29.8721	2.6263	4.3988	2.9689	5.2228	5.9573	4.3578	11.0854	5.2041	7.2330	1.0546	5.2287	1.0431	7.7217	1.0641	0.7677
2/3/2023 14:40	LOQ7-1A	24.3819	3.8704	23.9492	3.3735	4.8564	1.6955	4.9860	3.4706	4.2674	16.7777	4.9908	2.1754	1.0048	2.2977	1.0079	2.5903	1.0143	3.5387
2/3/2023 14:43	CCV	41.2627	3.8927	41.6422	4.0606	48.4182	0.6606	47.6653	0.5688	46.6161	15.6798	46.7715	3.4681	51.2173	2.8618	50.8726	1.2922	51.5609	1.0548
2/3/2023 14:46	CCB	<0.000	N/A	<0.000	N/A	<0.000	N/A	<0.000	N/A	<0.000	N/A	0.0753	135.4187	0.0050	38.0633	0.0817	26.7671	0.0064	98.8298
2/3/2023 15:19	LB-2A	2.3844	6.1155	2.3594	1.3191	0.2817	N/A	0.1295	34.8779	0.1212	103.4899	0.3924	77.1478	0.2829	2.5695	0.2735	5.3744	0.2921	11.3733
2/3/2023 15:22	LCS 2A 2X	49.1629	2.5538	50.4635	1.7649	49.0419	1.5931	48.6070	3.0209	47.6409	3.0120	48.5911	2.9691	52.0339	3.1664	51.8993	5.0631	50.5239	1.4362
2/3/2023 15:25	LOQ1 2A	20.5757	3.4520	20.4022	2.8647	4.7728	1.1745	4.8481	2.4246	4.2075	4.5739	4.8013	0.5332	1.1564	8.1365	1.1114	9.4045	1.1803	8.3990
2/3/2023 15:28	LOQ2 2A	20.2167	3.5872	20.1822	2.0972	4.6728	4.8340	4.2876	2.3918	4.0480	10.3749	4.9130	10.3645	1.0797	3.5311	1.0800	2.2400	1.0846	4.3126
2/3/2023 15:32	LOQ3 2A	19.5834	4.3839	19.8995	3.0258	4.6207	4.6725	4.6919	4.1026	4.1957	15.3685	4.7546	12.1397	0.9980	2.0666	0.9955	3.1624	1.0304	3.3667
2/3/2023 15:35	LOQ4 2A	20.4530	2.4238	19.9685	1.7785	4.7454	1.4072	4.8733	3.9656	4.1576	10.2798	4.9522	6.1271	1.0095	4.0687	1.0173	2.0680	0.9866	5.7425
2/3/2023 15:38	LOQ5 2A	33.9413	5.1438	33.3809	2.8065	4.7438	3.2181	4.7178	5.1765	4.2737	5.5499	4.6239	4.1708	0.9864	3.9994	1.0099	2.4502	0.9997	5.5121
2/3/2023 15:41	LOQ6 2A	20.9209	2.6113	20.7436	4.0320	4.7718	5.5588	4.2003	4.5948	3.9746	9.8374	5.2082	9.9825	1.0277	2.2206	1.0099	4.0703	1.0655	6.5163
2/3/2023 15:45	LOQ7 2A	20.2199	1.7213	20.0778	3.2460	4.6853	2.9750	4.4368	7.2780	4.2210	10.5710	4.7923	5.6050	1.0018	2.4740	1.0195	3.2527	1.0185	1.0548
2/3/2023 15:48	LOQ8 2A	20.6302	3.7078	22.4395	0.7680	4.8100	2.4131	4.8365	2.8096	4.3367	3.3063	4.9776	3.1128	1.0134	4.1681	1.0136	2.3731	1.0270	8.2147
2/3/2023 15:51	CCV	47.6521	3.1078	48.3315	1.7601	48.2279	2.8220	47.5660	4.1661	46.3668	3.5596	46.5836	0.8400	51.3078	3.5487	51.1502	3.3655	51.4480	2.5810
2/3/2023 15:54	CCB	<0.000	N/A	<0.000	N/A	0.2499	12.7627	0.0880	97.7389	0.3033	84.8562	0.5123	18.1597	0.2608	11.4296	0.2581	14.2257	0.2620	17.5324

Acq. Date-Time	Sample Name	114 Cd [tune 1] Conc. [ppb]	114 Cd Conc. RSD	121 Sb [tune 1] Conc. [ppb]	121 Sb Conc. RSD	123 Sb [tune 1] Conc. [ppb]	123 Sb Conc. RSD	137 Ba [tune 1] Conc. [ppb]	137 Ba Conc. RSD	138 Ba [tune 1] Conc. [ppb]	138 Ba Conc. RSD	205 Tl [tune 1] Conc. [ppb]	205 Tl Conc. RSD	206 Pb [tune 1] Conc. [ppb]	206 Pb Conc. RSD	207 Pb [tune 1] Conc. [ppb]	207 Pb Conc. RSD	208 Pb [tune 1] Conc. [ppb]	208 Pb Conc. RSD
2/3/2023 13:17	CAL BLK	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A
2/3/2023 13:20	1 PPB	1.0121	2.2102	1.0120	0.7436	1.0159	1.7485	1.0033	5.7755	0.9999	7.1201	1.0014	2.8632	0.9927	6.1182	0.9612	2.6443	0.9599	4.6036
2/3/2023 13:24	5 PPB	5.0369	2.3177	5.0714	1.1201	5.0276	3.1757	5.0840	2.8434	5.1840	1.6119	5.0654	1.6774	5.0317	1.1521	4.9574	1.7593	5.0142	2.1498
2/3/2023 13:27	20 PPB	20.3865	0.3586	20.9298	0.8683	20.7632	0.8263	20.1692	4.0490	19.7326	3.1962	20.4187	0.5237	20.4646	1.4803	20.0928	4.0502	19.8326	3.2741
2/3/2023 13:31	50 PPB	50.6172	1.0800	51.1372	4.3534	49.8336	2.2993	51.4030	3.2493	51.5603	2.2107	51.6672	1.7010	50.1677	1.9229	50.4079	1.7489	50.7604	1.4826
2/3/2023 13:34	100 PPB	99.6121	1.2003	99.2419	1.6377	99.9292	1.0291	99.2625	2.2399	99.2641	2.0657	98.9844	2.0617	99.8217	2.5462	99.7800	3.1736	99.6580	3.5631
2/3/2023 13:37	ICV	49.6553	2.7169	48.7249	3.3946	49.1612	3.2683	50.0374	2.1338	49.8393	3.4047	50.6193	1.5516	52.9749	3.4981	46.8478	2.5554	49.7337	0.6312
2/3/2023 13:40	ICB	0.3459	21.1079	0.2906	24.3462	0.3021	15.9964	0.3281	22.0784	0.3153	24.0953	0.3337	26.1871	0.3400	31.9003	0.3155	28.2393	0.3200	31.1159
2/3/2023 13:43	ICSA	0.2386	1.5095	0.0727	3.3894	0.0655	8.0169	0.1189	16.8564	0.1236	3.7738	0.0664	5.0922	0.0876	1.6936	0.0911	16.4086	0.0885	7.8476
2/3/2023 13:47	ICSAB	49.2193	1.5222	51.8103	4.6458	51.6227	3.8181	49.2758	2.0714	48.3363	3.3596	48.9209	0.8457	46.7521	2.9647	45.5559	2.6572	46.2803	2.9014
2/3/2023 14:11	LB-1A	0.0147	45.9840	0.2898	11.4924	0.2804	13.1874	0.1205	7.5003	0.1159	7.9678	0.3103	70.4839	0.0055	36.1854	0.0010	514.1002	0.0017	163.1657
2/3/2023 14:14	LCS-1A 2X	49.3692	1.3681	48.6198	2.5680	48.9609	1.4460	47.8059	4.7146	47.8192	1.6859	50.1927	1.1442	53.2784	0.1608	49.1981	1.9812	51.1747	1.9038
2/3/2023 14:17	LOQ1-1A	1.0621	4.0783	5.0578	1.4669	5.0768	2.0713	5.5804	2.8938	5.4965	1.1140	1.0401	2.7858	1.0250	2.0650	1.0442	3.7084	1.0311	3.6478
2/3/2023 14:20	LOQ2-1A	1.0356	2.1765	5.0590	3.2639	5.1132	2.3031	12.0209	3.8438	12.1963	5.6408	1.0192	0.8839	1.0599	4.3459	1.0520	1.5119	1.0366	1.9101
2/3/2023 14:24	LOQ3-1A	1.0028	2.3599	5.0641	4.6659	5.0296	3.8130	7.4475	1.4776	7.4539	2.0056	1.0278	0.2349	1.0109	0.6364	1.0310	4.5085	1.0152	2.5453
2/3/2023 14:27	LOQ4-1A	0.9992	5.0289	4.9297	5.2277	5.0705	3.8678	6.5785	4.9396	6.4734	3.9076	1.0259	3.9728	1.0281	1.2699	1.0032	1.2277	1.0184	1.3432
2/3/2023 14:30	LOQ5-1A	0.9981	5.2693	5.1013	1.7069	4.8712	5.2211	5.8383	7.0061	5.7203	6.0557	1.0355	2.5897	1.0462	1.6290	1.0386	3.7050	1.0267	0.7978
2/3/2023 14:33	LOQ6-1A	1.0136	3.3482	5.1013	1.1909	5.2022	3.3277	5.1082	5.4366	5.1153	5.9023	0.9972	2.2235	1.0134	6.4053	1.0020	9.2947	1.0128	7.3548
2/3/2023 14:36	LOQ7-1A	1.0005	1.8745	4.8256	3.1459	4.8202	4.0748	5.1839	4.0934	5.1426	4.4561	1.0003	3.7299	1.0096	3.7840	1.0111	5.3636	0.9980	4.8676
2/3/2023 14:40	LOQ8-1A	1.0252	3.2304	4.8279	1.1736	4.8297	3.3419	5.1104	0.7647	5.0979	4.6675	1.0126	5.1335	1.0179	5.0191	1.0389	5.2789	1.0163	4.3833
2/3/2023 14:43	CCV	50.1139	2.5185	49.7615	5.8034	49.7261	3.0579	48.2758	1.0904	47.2274	1.2002	50.1589	0.6237	51.2185	1.3450	47.2190	0.4214	49.8378	0.6474
2/3/2023 14:46	CCB	0.2768	5.7960	0.2909	9.1034	0.2942	11.4735	0.2612	5.8595	0.2629	10.0004	0.2796	7.2178	0.2883	1.5602	0.2474	9.4645	0.2641	4.5922
2/3/2023 15:19	LB-2A	<0.000	N/A	<0.000	N/A	0.0002	143.6364	0.0183	18.7683	0.0308	8.9983	<0.000	N/A	<0.000	N/A	<0.000	N/A	<0.000	N/A
2/3/2023 15:22	LCS 2A 2X	50.0316	2.3321	51.0634	3.5878	51.4455	0.2118	51.6714	6.8031	52.1740	7.2955	52.9776	1.0197	50.3741	3.3975	51.4327	2.4221	52.0128	1.9328
2/3/2023 15:25	LOQ1-2A	1.1532	2.9968	4.9509	2.3740	4.8781	5.2656	5.3124	2.6597	5.2233	4.0368	1.1467	2.3370	1.1453	4.0514	1.1682	6.2479	1.1401	4.5240
2/3/2023 15:28	LOQ2-2A	1.0731	1.9102	4.8337	2.4674	4.9038	3.0122	5.3031	2.5044	5.2967	0.9439	1.0819	2.6629	1.0818	2.3104	1.0606	2.8397	1.0799	1.4206
2/3/2023 15:32	LOQ3-2A	1.0434	9.7902	4.8656	3.3506	4.7698	2.8304	4.9062	0.7196	4.8704	2.2310	1.0077	2.8193	0.9827	1.1141	0.9807	2.4109	0.9943	1.6157
2/3/2023 15:35	LOQ4-2A	0.9818	2.5915	4.8172	2.2985	4.8791	2.0819	4.7957	5.8748	4.7896	7.0087	1.0069	1.9940	0.9886	5.5318	0.9905	3.5188	0.9749	2.8518
2/3/2023 15:38	LOQ5-2A	0.9884	4.4253	4.7334	2.1614	4.7989	2.1308	4.7888	2.2818	4.7907	3.0900	0.9932	1.7656	1.0403	1.3391	0.9966	5.0472	1.0163	2.2805
2/3/2023 15:41	LOQ6-2A	0.9982	2.7658	5.1409	1.7333	5.1026	2.5376	4.8567	2.9982	4.8758	1.8075	1.0030	2.0287	0.9750	3.4335	0.8591	2.9940	0.9633	3.0266
2/3/2023 15:45	LOQ7-2A	1.0015	2.4013	4.8155	2.5856	4.7139	1.4357	4.7857	5.3797	4.8140	2.9034	0.9816	1.5459	1.0058	1.3458	0.9775	3.5618	0.9730	2.2526
2/3/2023 15:48	LOQ8-2A	0.9767	2.7901	4.8040	4.1714	4.7946	1.2923	4.8905	2.0813	4.9313	3.5978	1.0015	2.3856	0.9955	1.6158	1.0161	3.0888	0.9946	3.4210
2/3/2023 15:51	CCV	49.7461	4.0742	49.8475	3.7102	49.0949	2.0489	47.1250	1.9529	45.7037	2.1187	48.7715	2.1938	49.9434	2.0710	45.0568	2.3078	47.7722	0.3874
2/3/2023 15:54	CCB	0.2662	15.0488	0.2240	17.5982	0.2196	13.8194	0.2635	15.2929	0.2579	15.0845	0.2626	15.2973	0.2711	17.8405	0.2401	9.0491	0.2586	14.9412

Acq Date-Time	Sample Name	7 Li (ISTD) (tune 1)		72 Ge (ISTD) (tune 1)		89 Y (ISTD) (tune 1)		115 In (ISTD) (tune 1)		159 Tb (ISTD) (tune 1)		165 Ho (ISTD) (tune 1)		209 Bi (ISTD) (tune 1)	
		CPS	ISTD Recovery %	CPS	ISTD Recovery %	CPS	ISTD Recovery %	CPS	ISTD Recovery %	CPS	ISTD Recovery %	CPS	ISTD Recovery %	CPS	ISTD Recovery %
2/3/2023 13:17	CAL BLK	3192463.75	100.00	9850543.55	100.00	6589730.69	100.00	60284611.51	100.00	8045462.21	100.00	7879610.23	100.00	4442782.94	100.00
2/3/2023 13:20	1 PPB	2966196.73	92.91	9329526.50	94.71	6431916.95	97.61	60182284.1	99.83	7875811.52	97.29	7529872.47	98.65	4225000.53	95.18
2/3/2023 13:24	5 PPB	3190010.52	99.92	9513311.62	96.57	6416481.10	97.37	59365977.21	98.48	7521382.55	92.91	7220213.76	94.02	4264724.18	95.99
2/3/2023 13:27	20 PPB	3020031.59	94.60	9741411.14	98.89	6479084.74	98.32	58734583.59	97.43	7710399.40	95.24	7429667.27	96.75	4235674.38	95.34
2/3/2023 13:31	50 PPB	3170237.44	99.30	9426777.37	95.70	6533526.27	99.15	60393033.56	100.18	7800498.25	96.36	7478767.13	97.40	4355269.70	98.03
2/3/2023 13:34	100 PPB	3182276.56	99.90	9294334.7	94.35	6616146.49	100.40	61538804.07	102.16	7875746.20	97.29	7623095.86	99.28	4370279.71	98.37
2/3/2023 13:37	ICV	2945374.26	92.26	8860042.59	89.95	6044829.51	91.73	55565684.97	92.17	7164919.57	88.51	6966980.17	89.42	3955334.75	89.03
2/3/2023 13:40	ICB	3087413.01	96.71	9765142.70	99.03	6805499.64	100.24	60886302.02	101.00	7937585.90	98.05	7521011.53	97.93	4355967.06	98.05
2/3/2023 13:43	ICSA	2895690.09	90.70	8441942.0	95.85	6291176.84	95.47	57031290.28	94.61	7539750.08	93.13	7160969.10	93.25	3863515.64	86.96
2/3/2023 13:47	ICSAB	2892062.59	90.59	9107962.98	92.46	6032322.68	91.54	55130111.10	91.45	7271042.30	89.82	6996357.96	91.10	3811374.63	85.79
2/3/2023 14:11	LB-1A	3000950.53	94.00	9291603	99.40	7029105.03	106.68	66267312.52	109.92	8830008.76	109.07	8383447.80	109.17	4754704.27	107.02
2/3/2023 14:14	LCS-1A 2X	2920055.16	91.47	9569207	97.07	6680249.13	101.37	62851911.95	104.26	8322047.59	102.80	7888015.13	102.71	4512784.50	101.58
2/3/2023 14:17	LOQ1-1A	3086762.96	96.69	9792301.69	99.42	7153718.47	108.56	62887116.50	104.32	8772793.38	108.37	8234470.01	107.20	4643751.09	104.52
2/3/2023 14:20	LOQ2-1A	3004682.83	94.12	9406317.3	95.49	6902249.04	104.74	62175811.61	103.14	8613764.92	106.40	8244714.11	107.36	4610856.21	103.99
2/3/2023 14:24	LOQ3-1A	2928787.49	91.74	9265346.84	94.04	7101095.38	107.76	63942021.98	106.08	8371306.11	103.41	8051457.77	104.84	4398950.51	99.01
2/3/2023 14:27	LOQ4-1A	3026826.13	94.81	9585113.61	97.29	6947445.79	105.43	63095505.26	104.66	8557982.89	105.77	8072858.75	106.47	4597459.07	103.37
2/3/2023 14:30	LOQ5-1A	3086207.32	96.67	9905620.05	100.56	7229051.03	109.70	64732471.10	107.48	8304821.51	102.59	7986776.60	104.00	4524599.32	101.84
2/3/2023 14:33	LOQ6-1A	2833917.70	88.77	9724920.3	96.72	6926554.85	105.11	63113375.70	104.69	8639010.78	106.70	8232099.00	107.18	4596734.70	103.47
2/3/2023 14:36	LOQ7-1A	3090401.00	96.80	9562995.38	97.76	6927082.31	105.12	67533899.72	112.01	8680489.77	107.23	8330763.00	108.48	4802948.72	108.11
2/3/2023 14:40	LOQ8-1A	3042331.31	95.30	9619908.18	97.65	6776067.94	102.83	65890827.46	109.31	8326623.60	102.89	7970599.05	103.72	4476686.40	100.77
2/3/2023 14:43	CCV	2708989.02	84.86	9393122.10	90.67	6148937.53	93.31	56012596.03	92.91	7432901.86	91.82	7146150.22	93.05	4089011.31	91.90
2/3/2023 14:46	CCB	2827574.85	88.57	8963190.00	90.89	6180012.64	93.90	57948611.44	96.13	7432225.56	91.81	7368699.94	95.95	4081449.64	91.87
2/3/2023 15:19	LB-2A	3126678.44	98.00	9240003.70	94.11	6589244.90	99.99	58019885.57	96.24	7967047.81	98.41	7676023.36	99.05	4260857.84	95.91
2/3/2023 15:22	LCS-2A 2X	3040811.15	95.28	9119803.35	92.58	6378766.30	96.80	59308115.91	98.38	7651821.29	94.52	7252434.94	94.44	4188021.21	94.27
2/3/2023 15:25	LOQ1-2A	3328799.15	104.27	9825862.21	99.75	6866838.47	104.21	63683933.52	105.64	8299891.06	102.53	7922105.80	103.15	4379786.08	98.56
2/3/2023 15:28	LOQ2-2A	3230804.10	101.20	9569139.77	98.38	6701945.20	101.70	61532036.26	102.07	7912994.33	97.75	7518458.20	97.90	4355633.60	98.04
2/3/2023 15:32	LOQ3-2A	3284860.27	102.89	9332176.66	96.77	6719435.40	101.97	62563504.22	103.78	8267272.76	102.12	7719142.26	100.51	4380392.68	98.66
2/3/2023 15:35	LOQ4-2A	3242892.36	101.58	9328117.2	94.70	6534248.18	99.16	60766272.81	100.80	7929018.01	97.94	7733140.11	100.70	4347564.24	97.74
2/3/2023 15:38	LOQ5-2A	3163286.48	99.09	912894.63	92.68	6474850.98	98.26	60034073.83	99.58	8124398.02	100.36	7734827.27	100.72	4223311.40	95.06
2/3/2023 15:41	LOQ6-2A	3153086.45	98.77	9194346.90	93.34	6580860.73	99.87	58859042.17	97.64	7968385.60	98.43	7541134.67	98.20	4136336.21	93.15
2/3/2023 15:45	LOQ7-2A	3259845.15	102.11	9571255.58	97.16	6778721.40	102.87	62058705.88	102.94	8136934.20	100.51	7868803.95	102.46	4384475.13	98.24
2/3/2023 15:48	LOQ8-2A	3350543.19	104.95	9343673.2	94.85	6807191.54	103.30	60873591.75	100.98	7940877.83	98.09	7610425.68	99.10	4257810.37	95.84
2/3/2023 15:51	CCV	2903165.28	90.94	8740075.90	88.73	8031128.78	91.52	55460523.96	92.00	7496274.02	92.60	7179676.65	93.49	3987932.43	89.76
2/3/2023 15:54	CCB	2948852.50	92.31	8694366.99	88.26	6030670.77	91.52	57169903.57	94.83	7072640.98	87.37	6772808.92	88.19	3968222.20	89.32

ICP-MS Raw Data Coversheet
Instrument (X)

Analyst(s):	KAH	Analysis Date(s):	2/16/23

EA Project #s:	M29 G020 X LOQs

Analytes:	As, Mn, Zn, Ba	EE KAH 2/16/23

Method:	G020	Smart Tune ID: ES-0804	Conc: ~~10ppm~~1ppb	Exp: 7/3/23
		Internal Standard ID¹: F0773	Conc: 10 ppm	Exp: 2/23

Diluent:	50 mL HNO3 (ID # 22380017 Exp: 9/24) diluted to 1000 mL with DI

Calib. Blk/ICB/CCB:	Diluent

¹ All samples and standards are spiked with 50µL of internal std. (pipette 127 exp 3/4/23)

Calibration Standards - Made from EA ID#²: 1:10 F0824 (Stock Concentration: 10ppm
Exp Date: 2/17/23) and brought up with Diluent

	Final Conc. (ppb)	Amount (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst	Date	Exp. Date
Standard 1	~~X 5~~ (3)	~~100~~ of Std 6	124 3/4/23		141 3/4/23	KAH	2/16/23	2/17/23
Standard 2	810	~~500~~ of Std 6						
Standard 3	20	2mL Std 6		10				
Standard 4	50	50	127					
Standard 5	100	100						
No IS Std 6	100	100						

² 10ppm WS = 1mL of Standard F0824 exp 7/25 (pipettes: 124, 141 exp 3/4/23) + 9mL Diluent   100ppm

Secondary Standards - Made from EA ID#: F0814 (Stock Concentration: 10ppm
ExpDate: 11/23) and brought up with Diluent

	Final Conc. (ppb)	Amount (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst	Date	Exp. Date
ICV/CCV	50	50	127 3/4/23	10	141 3/4/23	KAH	2/16/23	2/17/23

ICS's- Made from Stock Std ICS-A ID#(F0786 Exp: 9/25)
& 50 ppb Metals Std ID#(F0814 Conc: 10ppm Exp: 11/23) brought up with Diluent

	Conc.	Amount WS (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst	Date	Exp. Date
ICS-A	Multi	100	127 3/4/23		141 3/4/23	KAH	2/16/23	2/17/23
	Multi	100		10				
ICS-AB	50 ppb	50						

Post Dig Matrix Spike Samples - Diluted with Diluent (Metals Mix ID# _____ Conc: _____ Exp: _____)

Sample ID	Dilution Factor of Field Sample	Aliquot of Sample (mL)	Final Conc. (ppb)	Amount of Spike Added (µL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst
						10		
						10		
						10		
						10		
						10		
						10		
						10		

(3) 5ppb 500 µL Std 6   2/16/23
10ppb 1mL Std 6 KAH 2/16/23
EE KAH

ICP-MS Raw Data Coversheet
Instrument (X)

Sample ID(s)	Dilution Factor of Sample	Aliquot of Sample (mL)	Pipette # & Exp:	Final Vol (mL)	Pipette # & Exp:	Analyst
LCS-1	2	5	141 3/4/23	10	141 3/4/23	KAH

Sample Dilution Tracker - Diluted with Diluent

Comments:

Acq. Date-Time	Sample Name	55 Mn [tune 1]		66 Zn [tune 1]		68 Zn [tune 1]		75 As [tune 1]		137 Ba [tune 1]		138 Ba [tune 1]	
		Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD	Conc. [ppb]	Conc. RSD
2/16/2023 14:14	CAL BLK	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A	0.0000	N/A
2/16/2023 14:17	5 PPB	4.9627	2.6817	4.6663	1.3884	4.5814	4.5973	4.6939	1.5824	4.8264	3.6332	4.7508	3.5943
2/16/2023 14:20	10 PPB	10.0068	1.9238	9.9468	4.7553	9.6326	5.3567	9.7236	1.8757	9.5850	3.1201	9.6143	1.1507
2/16/2023 14:23	20 PPB	19.4146	1.5472	20.2086	1.6566	20.1351	2.1697	20.0668	0.9059	19.1407	3.6546	19.3028	1.9194
2/16/2023 14:26	50 PPB	50.4978	2.1817	50.0270	1.8103	49.4470	0.8017	49.7705	0.9302	49.4909	1.0722	48.8829	2.0232
2/16/2023 14:29	100 PPB	99.8694	1.4027	99.9448	1.5750	100.2495	2.9652	100.1443	1.9096	100.4766	1.5843	100.7490	3.9512
2/16/2023 15:12	ICV	50.3902	0.9720	49.7309	3.9383	50.2926	0.2352	50.4107	3.0667	48.5621	3.6998	48.6098	1.5864
2/16/2023 15:15	ICB	0.2365	10.2227	<0.000	N/A	<0.000	N/A	0.2526	8.0246	0.1970	9.6994	0.2197	8.0640
2/16/2023 15:18	ICSA	0.2401	13.3435	2.3564	4.1687	2.0928	6.9325	0.4312	4.3133	0.1932	20.5841	0.2078	11.2861
2/16/2023 15:21	ICSAB	49.1888	2.8105	52.1901	1.8027	51.3700	1.9522	51.8181	1.5367	49.3129	2.7093	50.0345	3.9418
2/16/2023 15:27	LB-1	0.3502	8.6982	3.2950	7.7310	3.1409	5.0149	7.4196	3.9204	1.0985	2.0213	1.0906	3.3538
2/16/2023 15:30	LCS-1	52.9262	1.3568	53.0764	3.3200	53.1767	1.2085	53.4225	3.0370	53.0435	1.6448	53.0752	1.8554
2/16/2023 15:33	LOQ1-1	5.9480	2.1350	22.9760	2.4107	22.5432	1.0552	6.6014	4.5264	5.4005	0.0617	5.4488	3.7420
2/16/2023 15:36	LOQ2-1	5.1661	3.6439	21.3440	1.4135	21.3638	5.5831	5.9260	5.8898	5.1766	1.0484	5.1507	0.8421
2/16/2023 15:39	LOQ3-1	5.3852	1.5991	22.0374	2.6334	21.6754	1.9302	5.5396	5.6065	4.9709	1.9314	4.9654	2.0292
2/16/2023 15:42	LOQ4-1	5.2467	2.8438	21.7757	1.7535	21.4063	2.6742	5.5867	2.5579	5.2453	3.9683	5.2027	2.8508
2/16/2023 15:46	LOQ5-1	5.2820	3.7171	20.7123	2.8328	20.9882	3.4788	5.5604	3.8335	4.9904	0.4753	4.9927	2.2198
2/16/2023 15:49	LOQ6-1	5.2661	1.2616	23.7768	1.5895	23.8983	0.7627	5.6309	2.1591	5.2901	3.6649	5.4951	1.0479
2/16/2023 15:52	LOQ7-1	5.1042	1.8694	21.4484	1.5465	21.1411	2.3542	5.0863	1.3547	4.9865	1.0618	4.8818	2.9204
2/16/2023 15:55	LOQ8-1	5.1853	1.9751	217.3869	3.2392	213.1079	2.4172	5.3691	4.4130	8.9091	3.1486	8.9534	3.8298
2/16/2023 15:58	CCV	50.1454	18.5524	51.5490	1.8598	51.6782	0.7520	50.9102	2.0518	49.7551	3.6363	50.5881	2.0927
2/16/2023 16:05	CCB	0.2424	8.8379	0.0371	349.2564	0.0574	133.8759	0.4653	12.8697	0.2211	8.6426	0.2060	14.4440
2/16/2023 16:10	LB-1 RP	0.1964	0.4838	2.7433	2.2169	2.5615	5.6244	1.1538	8.4668	0.9733	4.2392	0.9616	4.4076
2/16/2023 16:13	LOQ8-1 RP	5.2032	4.4051	23.8730	2.7269	23.6832	1.7922	5.2859	3.2240	8.5695	4.2223	8.6736	3.0566
2/16/2023 16:16	CCV	49.4981	17.6938	49.8243	1.0245	50.5082	1.2605	51.2277	1.9818	49.0456	1.6145	49.5437	3.2345
2/16/2023 16:20	CCB	0.3117		<0.000	N/A	<0.000	N/A	0.5256	6.1337	0.3125	31.0339	0.2805	20.3016

Acq. Date-Time	Sample Name	72 Ge (ISTD) [tune 1]		89 Y (ISTD) [tune 1]		115 In (ISTD) [tune 1]		159 Tb (ISTD) [tune 1]	
		CPS	ISTD Recovery %	CPS	ISTD Recovery %	CPS	ISTD Recovery %	CPS	ISTD Recovery %
2/16/2023 14:14	CAL BLK	185583.60	100.00	1207247.56	100.00	1095157.77	100.00	1407278.44	100.00
2/16/2023 14:17	5 PPB	187245.48	100.90	1213521.98	100.52	1087668.50	99.32	1437748.65	102.17
2/16/2023 14:20	10 PPB	181347.08	97.72	1161336.40	96.20	1056166.72	96.44	1412340.89	100.36
2/16/2023 14:23	20 PPB	184352.94	99.34	1156870.76	95.83	1066004.00	97.34	1387827.15	98.62
2/16/2023 14:26	50 PPB	183462.51	98.86	1161144.70	96.18	1049804.22	95.86	1406473.39	99.94
2/16/2023 14:29	100 PPB	185681.29	100.05	1155138.30	95.68	1034012.21	94.42	1406563.49	99.95
2/16/2023 15:12	ICV	186928.92	100.72	1163128.48	96.35	1039347.71	94.90	1361429.89	96.74
2/16/2023 15:15	ICB	179193.25	96.56	1162764.41	96.32	1045780.77	95.49	1337127.40	95.02
2/16/2023 15:18	ICSA	177364.67	95.57	1096982.79	90.87	982567.38	89.72	1278643.17	90.86
2/16/2023 15:21	ICSAB	177597.28	95.70	1098148.59	90.96	980248.58	89.51	1326343.80	94.25
2/16/2023 15:27	LB-1	192460.67	103.71	1242944.25	102.96	1166708.03	106.55	1554062.11	110.43
2/16/2023 15:30	LCS-1	181553.04	97.83	1192266.89	98.76	1067663.23	97.49	1470402.12	104.49
2/16/2023 15:33	LOQ1-1	188333.08	101.48	1215515.84	100.68	1120559.16	102.32	1558988.11	110.78
2/16/2023 15:36	LOQ2-1	191755.76	103.33	1201443.76	99.52	1123505.86	102.59	1519539.25	107.98
2/16/2023 15:39	LOQ3-1	191230.26	103.04	1237448.34	102.50	1143154.12	104.38	1580165.81	112.29
2/16/2023 15:42	LOQ4-1	186916.31	100.72	1193391.59	98.85	1117882.00	102.07	1522254.68	108.17
2/16/2023 15:46	LOQ5-1	187094.73	100.81	1222667.27	101.56	1128926.60	103.07	1549962.72	110.49
2/16/2023 15:49	LOQ6-1	185462.01	99.93	1222554.40	101.27	1116484.33	101.95	1520890.12	108.07
2/16/2023 15:52	LOQ7-1	187212.61	100.88	1234181.78	102.23	1144935.91	104.55	1541835.84	109.56
2/16/2023 15:55	LOQ8-1	192408.76	103.68	1212377.87	100.42	1110550.32	101.41	1576249.55	112.01
2/16/2023 15:58	CCV	180599.38	97.31	1138266.36	94.29	1038980.13	94.87	1402147.78	99.64
2/16/2023 16:05	CCB	176106.79	94.89	1114443.43	92.31	1029862.61	94.04	1347961.85	95.79
2/16/2023 16:10	LB-1 RP	187973.90	101.29	1210377.78	100.26	1112087.72	101.55	1524588.04	108.34
2/16/2023 16:13	LOQ8-1 RP	192833.02	103.91	1237486.69	102.50	1141648.98	104.25	1524779.10	108.35
2/16/2023 16:16	CCV	181092.58	97.58	1144266.57	94.78	1038742.96	94.85	1384272.30	98.37
2/16/2023 16:20	CCB	176396.99	95.05	1122747.69	93.00	1016062.50	92.78	1379605.58	98.03

Batch Folder: D:\Agilent\ICPMH\1\DATA\2023\As, Zn, Mn, Ba LOQ RR 021623.b\
Analysis File: As, Zn, Mn, Ba LOQ RR 021623.batch.bin
DA Date-Time: 2/16/2023 4:20:52 PM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	001CALB.d	CAL BLK	2/16/2023 2:14:08 PM
2	002CALS.d	5 PPB	2/16/2023 2:17:16 PM
3	003CALS.d	10 PPB	2/16/2023 2:20:26 PM
4	004CALS.d	20 PPB	2/16/2023 2:23:35 PM
5	005CALS.d	50 PPB	2/16/2023 2:26:46 PM
6	006CALS.d	100 PPB	2/16/2023 2:29:55 PM

55 Mn [tune 1] ISTD :72 Ge [tune 1]
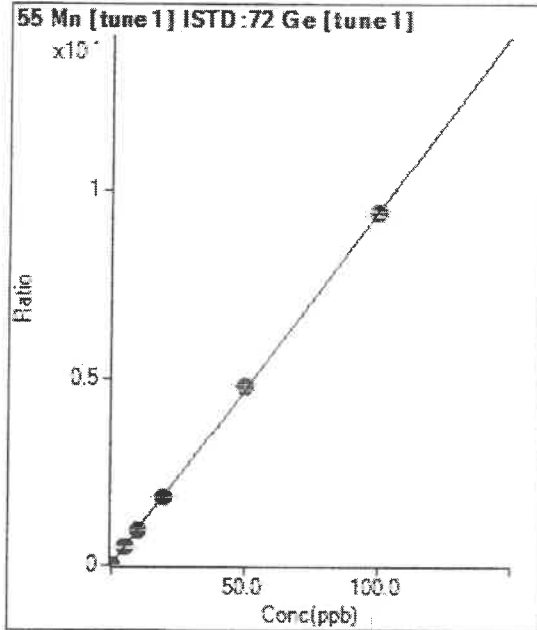
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2405.97	0.0130	P	8.5
2	☐	5.000	4.963	89744.45	0.4794	P	2.6
3	☐	10.000	10.007	172863.93	0.9534	P	1.9
4	☐	20.000	19.415	338683.37	1.8375	P	1.5
5	☐	50.000	50.498	873138.86	4.7586	A	2.2
6	☐	100.000	99.869	1745213.35	9.3983	A	1.4

$y = 0.0940 * x + 0.0130$

$R = 1.0000$

$DL = 0.03502$

$BEC = 0.1381$

Weight: <None>

Min Conc: 0

66 Zn [tune 1] ISTD :72 Ge [tune 1]
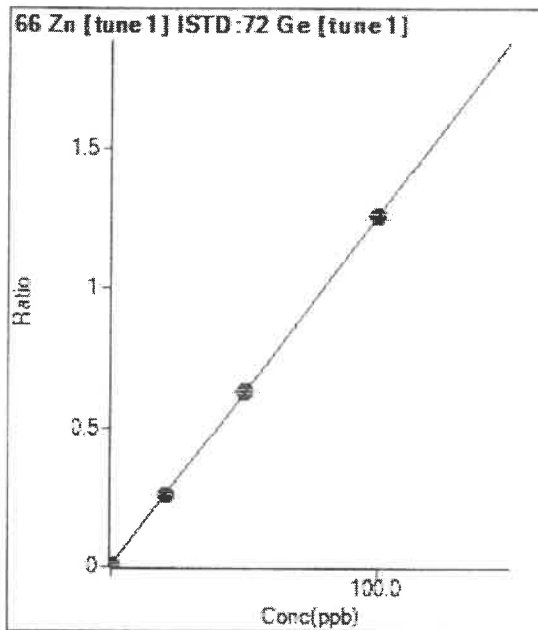
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1458.21	0.0079	P	6.7
2	☐			12414.69	0.0663	P	1.2
3	☐			24011.46	0.1324	P	4.5
4	☐	20.000	20.209	48094.18	0.2609	P	1.6
5	☐	50.000	50.027	116368.10	0.6344	P	1.8
6	☐	100.000	99.945	233850.12	1.2595	P	1.5

$y = 0.0125 * x + 0.0079$

$R = 1.0000$

$DL = 0.1257$

$BEC = 0.6279$

Weight: <None>

Min Conc: 0

68 Zn [tune 1] ISTD :72 Ge [tune 1]
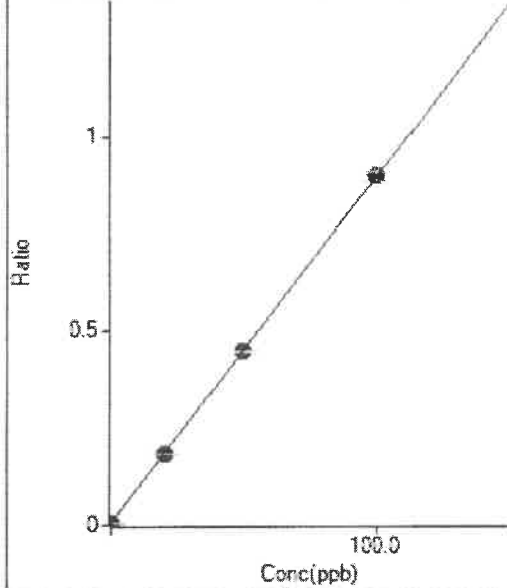
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1294.70	0.0070	P	2.0
2	☐			8925.19	0.0477	P	3.9
3	☐			16776.99	0.0925	P	5.0
4	☐	20.000	20.135	34266.41	0.1858	P	2.1
5	☐	50.000	49.447	81874.63	0.4462	P	0.8
6	☐	100.000	100.249	166633.48	0.8975	P	2.9

$y = 0.0089 * x + 0.0070$

$R = 1.0000$

$DL = 0.04681$

$BEC = 0.7856$

Weight: <None>

Min Conc: 0

75 As [tune 1] ISTD :72 Ge [tune 1]
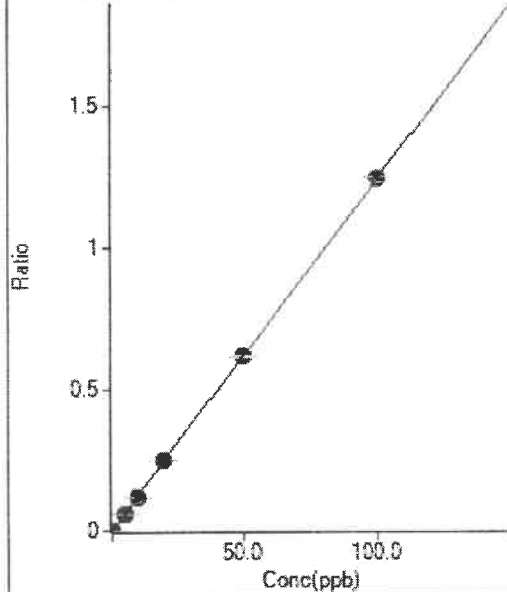
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.01	0.0001	P	100.8
2	☐	5.000	4.694	10905.28	0.0582	P	1.6
3	☐	10.000	9.724	21862.61	0.1206	P	1.9
4	☐	20.000	20.067	45858.42	0.2488	P	0.9
5	☐	50.000	49.770	113174.58	0.6170	P	0.9
6	☐	100.000	100.144	230473.32	1.2413	P	1.9

$y = 0.0124 * x + 5.3526E\text{-}005$

$R = 1.0000$

$DL = 0.01306$

$BEC = 0.004318$

Weight: <None>

Min Conc: 0

77 Se [tune 1] No available calibration points
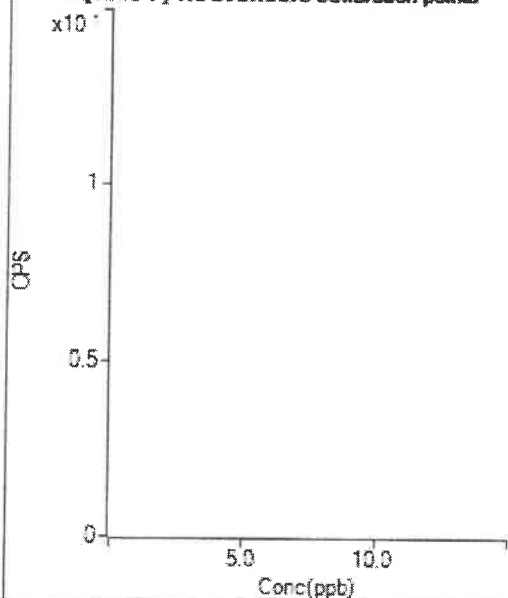
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			20.02		P	50.0
2	☐			597.29		P	14.3
3	☐			977.69		P	12.0
4	☐			2055.56		P	2.0
5	☐			5503.30		P	2.0
6	☐			10698.28		P	2.3

82 Se [tune 1] No available calibration points
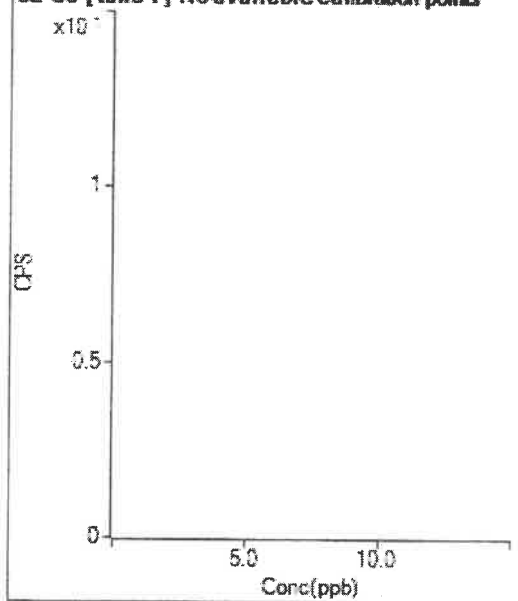
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			186.85		P	11.2
2	☐			870.91		P	18.1
3	☐			1401.49		P	7.1
4	☐			2909.92		P	5.5
5	☐			6938.76		P	4.0
6	☐			13814.14		P	2.6

118 Sn [tune 1] No available calibration points
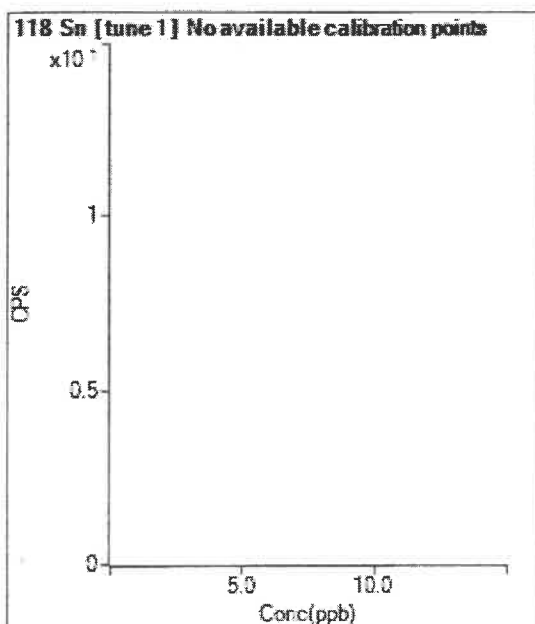
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			123.46		P	30.7
2	☐			90.09		P	19.2
3	☐			353.70		P	8.6
4	☐			180.18		P	20.0
5	☐			80.08		P	21.7
6	☐			86.75		P	24.0

137 Ba [tune 1] ISTD :115 In [tune 1]
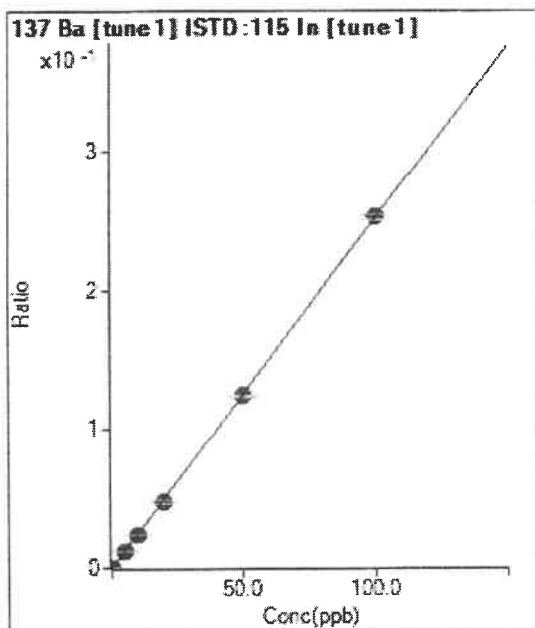
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.01	0.0000	P	100.1
2	☐	5.000	4.826	13193.15	0.0121	P	3.6
3	☐	10.000	9.585	25446.69	0.0241	P	3.1
4	☐	20.000	19.141	51259.72	0.0481	P	3.7
5	☐	50.000	49.491	130561.54	0.1244	P	1.1
6	☐	100.000	100.477	261034.64	0.2525	P	1.6

$y = 0.0025 * x + 9.0807E\text{-}006$

$R = 0.9999$

$DL = 0.01085$

$BEC = 0.003614$

Weight: <None>

Min Conc: 0

138 Ba [tune 1] ISTD :115 In [tune 1]
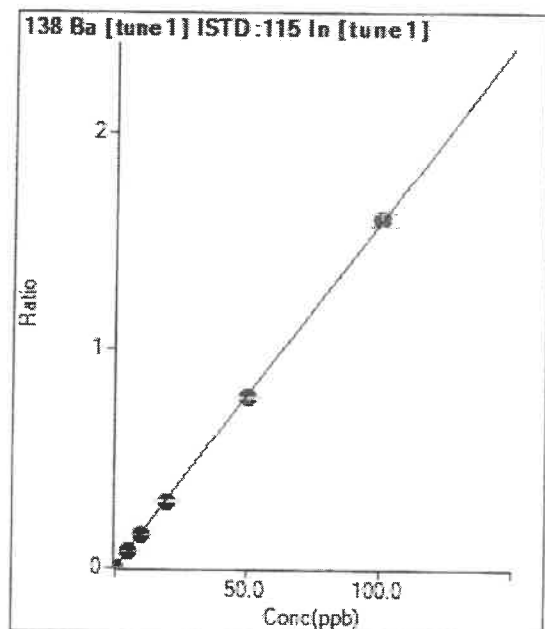
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	96.67	0.0001	P	41.0
2	☐	5.000	4.751	82244.91	0.0757	P	3.6
3	☐	10.000	9.614	161615.51	0.1530	P	1.2
4	☐	20.000	19.303	327351.15	0.3072	P	1.9
5	☐	50.000	48.883	816426.60	0.7777	P	2.0
6	☐	100.000	100.749	1657025.18	1.6028	A	4.0

$y = 0.0159 * x + 8.7970E-005$

$R = 0.9999$

$DL = 0.006809$

$BEC = 0.00553$

Weight: <None>

Min Conc: 0

139 La [tune 1] No available calibration points
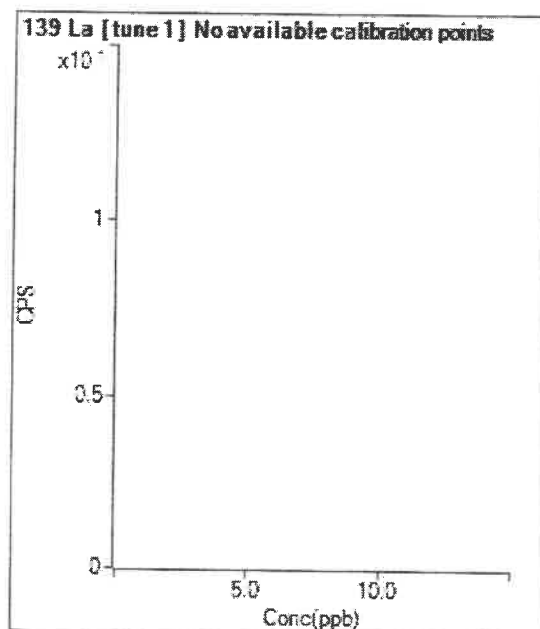
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			23.36		P	49.5
2	☐			23.36		P	24.7
3	☐			30.03		P	66.7
4	☐			40.04		P	25.0
5	☐			106.77		P	23.6
6	☐			180.18		P	41.9

140 Ce [tune 1] No available calibration points
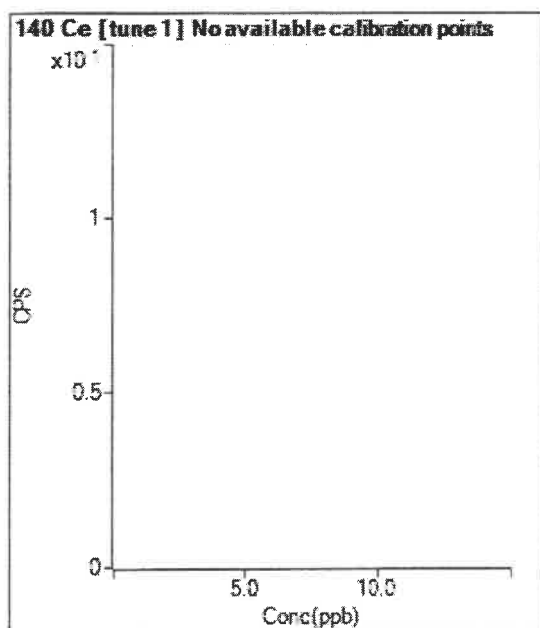
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			23.36		P	24.7
2	☐			43.38		P	70.5
3	☐			46.71		P	49.5
4	☐			50.05		P	69.3
5	☐			66.73		P	52.7
6	☐			60.06		P	44.1

72 Ge (ISTD) [tune 1]
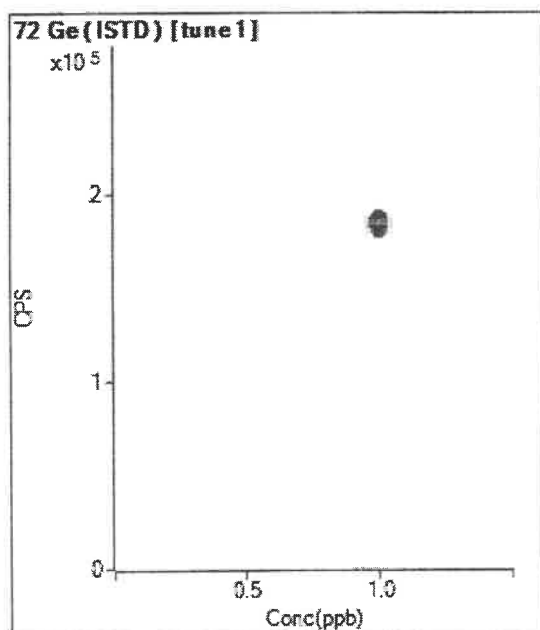
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		185583.60		P	2.4
2	☐	1.000		187245.48		P	1.0
3	☐	1.000		181347.08		P	1.4
4	☐	1.000		184352.94		P	2.1
5	☐	1.000		183462.51		P	2.1
6	☐	1.000		185681.29		P	0.7

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2/16/2023 4:24:25 PM

89 Y (ISTD) [tune 1]
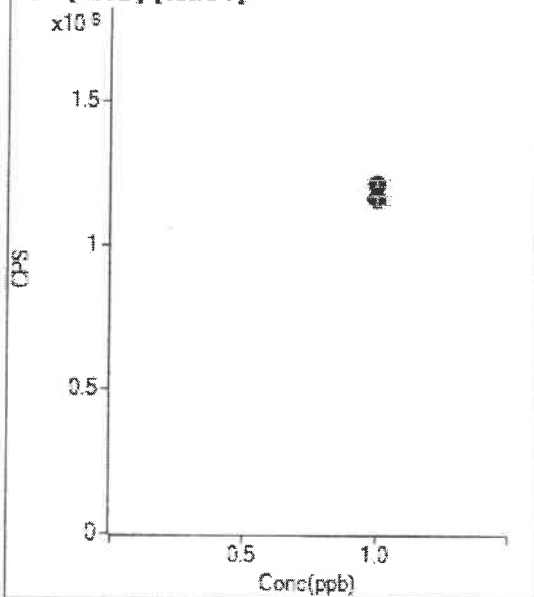
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1207247.56		A	0.4
2	☐	1.000		1213521.98		A	2.0
3	☐	1.000		1161336.40		A	0.9
4	☐	1.000		1156870.76		A	0.9
5	☐	1.000		1161144.70		A	1.5
6	☐	1.000		1155138.30		A	2.8

115 In (ISTD) [tune 1]
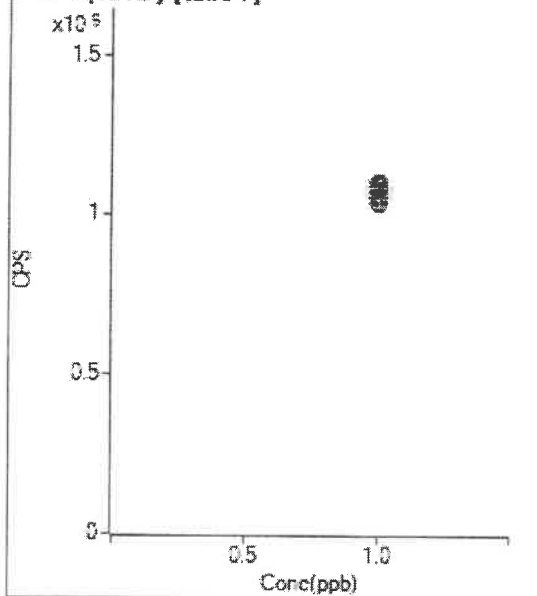
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1095157.77		A	1.3
2	☐	1.000		1087668.50		A	2.8
3	☐	1.000		1056166.72		A	1.4
4	☐	1.000		1066004.00		A	2.0
5	☐	1.000		1049804.22		A	1.1
6	☐	1.000		1034012.21		A	1.8

159 Tb (ISTD) [tune 1]
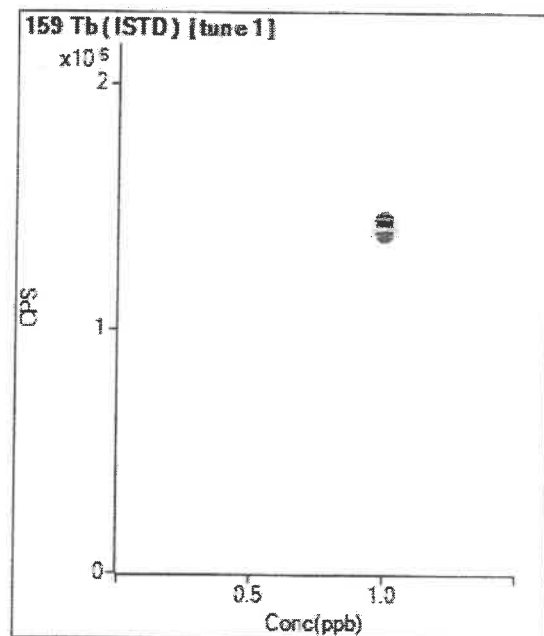
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1407278.44		A	3.4
2	☐	1.000		1437748.65		A	1.8
3	☐	1.000		1412340.89		A	2.2
4	☐	1.000		1387827.15		A	1.2
5	☐	1.000		1406473.39		A	0.3
6	☐	1.000		1406563.49		A	0.3

Raw Data

Job #s	Describe Work Documented on This Page
0223-176	M29 Hg Analysis

1382A = CVAA Std Prep log

1382B = M29 Hg prepsheet

Supplies, Ancillary Equipment Serial #s, Lot #s, Etc

NA

LMP 2/27/23

Reviewer's Initials & Date:

Metals Prep

EA Job# 0223-176R Page 144 of 186

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ENTHALPY
ANALYTICAL

1382 A

CVAA Standard Preparation Log *Stds must be prepared fresh daily

EA Std ID#Hg (Job #-1, 2, 3, etc.)	Std/Reagent Name	Conc.	Stock Standard/Reagent	Conc.	EA ID# & Exp Date	Amount Added	Final Volume (mL) & Diluent	Pipette & Exp Date	Analyst	Date	Exp. Date
	Primary Intermediate Standard										
1	Primary Int. Std.	1000 ppb	Hg Standard	1000 ppm	F0704 4/28/23 ①	0.10 mL	100 DI	133 5/9/23	LMP	2/27/23	2/28/23
"	"	"	HNO3	67-70%	9/24	0.5 mL	"	134 5/9/23			
	Secondary Intermediate Standard										
2	Secondary Int. Std.	1000 ppb	Hg Standard (2nd Source)	1000 ppm	F0752 4/28/23 ①	0.10 mL	100 DI	133 5/9/23			
"	"	"	HNO3	67-70%	9/24	0.5 mL	"	134 5/9/23			
	Primary Working Standard										
3	Primary Working Std.	50 ppb	Primary Int. Std.	1000 ppb	1 2/28/23 ①	5.0 mL	100 DI	141 3/4/23			
"	"	"	HNO3	67-70%	9/24	0.5 mL	"	134 5/9/23			
	Secondary Working Standard										
4	Secondary Working Std.	50 ppb	Secondary Int. Std.	1000 ppb	2 2/28/23 ①	5.0 mL	100 DI	141 3/4/23			
"	"	"	HNO3	67-70%	9/24	0.5 mL	"	134 5/9/23			

① 22380017
LMP 2/27/23

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Doc. No.: HG02
Rev.: J
Effective Date: 01/31/23

Method 29 Hg Prepsheet

Job Nos: 0223-176

Prep Date(s): 2/27/23

Analyst(s) LMP

Instrument: Walt jr

Calibration Standards and QC

Spike Used	Calibration Standard	Spike Amount (mL)	Pip & Exp	Final Vol. (mL)
--	Calibration Blank	--	N/A	50
1st WS	Standard 1 - 0.1 ppb	0.1	133 5/9/23	50
1st WS	Standard 2 - 1.0 ppb	1.0	134	50
1st WS	Standard 3 - 2.0 ppb	2.0	⊥	50
1st WS	Standard 4 - 5.0 ppb	5.0	141 3/4/23	50
1st WS	Standard 5 - 10 ppb	10.0		50
2nd WS	ICV/CCV - 5.0 ppb	5.0	⊥	50
--	ICB/CCB	--	N/A	50

Temp (°C): 95.4   Hotplate # 3

1st WS ID: 3	Exp Date: 2/28/23
2nd WS ID: 4	Exp Date: ⊥
H2SO4 ID: 62252	Exp Date: 10/24
HNO3 ID: 22380017	Exp Date: 9/24
KMnO4 ID: ES-0842	Exp Date: 8/23/23
K2S2O8 ID: ES-0828	Exp Date: 8/8/23
HAS ID: ES-0836	Exp Date: 8/17/23
SnCl2 ID: ES-0847	Exp Date: 3/6/23
H2SO4 Pip & Exp: 139 3/8/23	HNO3 Pip & Exp: 139 3/8/23
KMnO4 Pip & Exp:	K2S2O8 Pip & Exp: ⊥
HAS Pip & Exp: ⊥	Digitube ID: J506384-4932
LCS Pip & Exp: 141 3/4/23	MS Pip & Exp: 141 3/4/23

Samples

Sample ID	Aliquot Volume (mL)	Final Vol. (mL)
0223-176.1-3A	10	50
.2	1	50
.3		50
.4		50
.5		50
.6		50
.7		50
.8		50
.9		50
.10		50
.11		50
.12		50
.13		50
.14		50
.15		50
.16		50
.17		50
.18		50
		50
		50

Digestion Time

Start: 10:00am   Finish: 12:00pm

Quality Control

QC Sample	Sample ID	Aliq. Vol. (mL)	Final Vol. (mL)	Spike ID	ID Exp Date	Stock Conc	Volume Added (mL)
MB	N/A	20	50	N/A	N/A	N/A	N/A
LCS	N/A	20	50	3	2/28/23	50 ppb	5.0
MS	0223-176.1-3A	10	50	⊥	⊥	⊥	⊥
Duplicate	⊥ .2 ⊥	⊥	50	N/A	N/A	N/A	N/A

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File   Edit   View   Log   Analyze   Options   Window   Help

Time	Sample Label	Conc (ppb)	µAbs	%RSD	Flag	%Residual
1:15	0223-176.8-3A	-0.002	71.7	34.83		
1:16	0223-176.9-3A	-0.003	58.5	18.66		
1:16	0223-176.10-3A	-0.002	75.1	15.86		
1:15	0223-176.11-3A	0.011	371.1	6.14		
1:16	0223-176.12-3A	-0.001	85.9	13.81		
1:17	0223-176.13-3A	0.004	220.4	12.35		
1:18	0223-176.14-3A	0.002	170.4	24.64		
1:19	0223-176.15-3A	0.002	177.8	28.30		
1:20	0223-176.16-3A	0.001	145.4	26.73		
S:	CCV	4.830	115513.3	1.50		
S:	CCB	-0.006	-32.7	4.83		
1:2	0223-176.17-3A	0.000	118.5	694.49		
1:2	0223-176.18-3A	-0.001	95.5	52.66		
S:7	CCV	4.860	116087.6	1.49		
S:8	CCB	-0.006	-19.2	9.69		
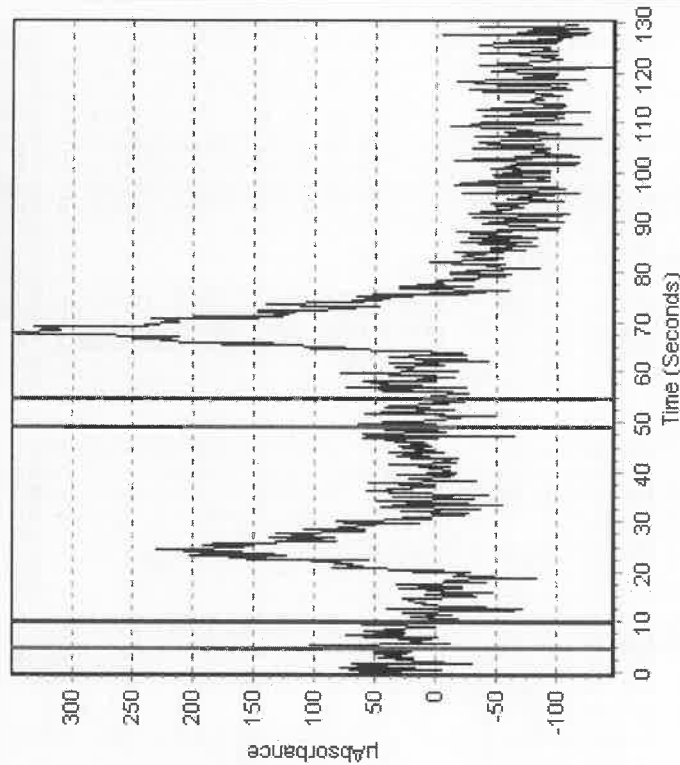
2/27/2023	1:41 PM	Worksheet Saved
2/27/2023	1:41 PM	Analysis completed normally
2/27/2023	1:41 PM	Sample 'CCB' measured. Conc.: -5.8500E-003 ppb (not diln. corrected)
2/27/2023	1:39 PM	QC Sample 'CCV'. Recovery was measured at 97.18 percent
2/27/2023	1:39 PM	Sample 'CCV' measured. Conc.: 4.860 ppb (not diln. corrected)
2/27/2023	1:37 PM	Sample '0223-176.18-3A' measured. Conc.: -1.0400E-003 ppb (not diln. corrected)
2/27/2023	1:34 PM	Sample '0223-176.17-3A' measured. Conc.: -7.4100E-005 ppb (not diln. corrected)
2/27/2023	1:32 PM	Sample 'CCB' measured. Conc.: -6.4100E-003 ppb (not diln. corrected)
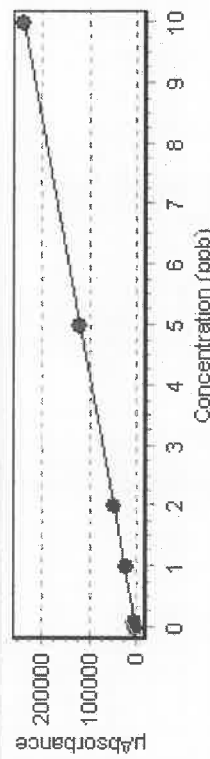
Calibration Coeffs: 23866.95222x +   120.310, R2: 0.99996, RSE: 2.80%

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0223-176 022723

Analysis Complete

Idle

Sample ID	Time Stamp	Sample Type	Dil. Conc.	Average Conc.	%RSD Conc.	Conc. Units
Cal Blank - 0 ug/mL	2/27/2023 12:21	Standard	0	0	0	ppb
Std. 1 - 0.1ug/mL	2/27/2023 12:24	Standard	0.1	0.1	0	ppb
Std. 2 - 1.0 ug/mL	2/27/2023 12:26	Standard	1	1	0	ppb
Std. 3 - 2.0 ug/mL	2/27/2023 12:28	Standard	2	2	0	ppb
Std. 4 - 5.0 ug/mL	2/27/2023 12:31	Standard	5	5	0	ppb
Std. 5 - 10.0 ug/mL	2/27/2023 12:33	Standard	10	10	0	ppb
ICV	2/27/2023 12:35	ICV	4.92	4.92	0	ppb
ICB	2/27/2023 12:37	ICB	-0.006	-0.006	0	ppb
0223-176.LB	2/27/2023 12:40	Unknown	-0.002	-0.002	0	ppb
0223-176.LCS	2/27/2023 12:42	Unknown	5	5	0	ppb
0223-176.1-3A	2/27/2023 12:44	Unknown	0.033	0.033	0	ppb
0223-176.1-3A MS	2/27/2023 12:46	Unknown	5.03	5.03	0	ppb
0223-176.2-3A	2/27/2023 12:49	Unknown	0.026	0.026	0	ppb
0223-176.2-3A DUP	2/27/2023 12:51	Unknown	0.028	0.028	0	ppb
0223-176.3-3A	2/27/2023 12:53	Unknown	-0.002	-0.002	0	ppb
0223-176.4-3A	2/27/2023 12:56	Unknown	0.01	0.01	0	ppb
0223-176.5-3A	2/27/2023 12:58	Unknown	0	0	0	ppb
0223-176.6-3A	2/27/2023 13:00	Unknown	0.002	0.002	0	ppb
CCV	2/27/2023 13:02	CCV	4.92	4.92	0	ppb
CCB	2/27/2023 13:05	CCB	-0.005	-0.005	0	ppb
0223-176.7-3A	2/27/2023 13:07	Unknown	0.003	0.003	0	ppb
0223-176.8-3A	2/27/2023 13:09	Unknown	-0.002	-0.002	0	ppb
0223-176.9-3A	2/27/2023 13:12	Unknown	-0.003	-0.003	0	ppb
0223-176.10-3A	2/27/2023 13:14	Unknown	-0.002	-0.002	0	ppb
0223-176.11-3A	2/27/2023 13:16	Unknown	0.011	0.011	0	ppb
0223-176.12-3A	2/27/2023 13:18	Unknown	-0.001	-0.001	0	ppb
0223-176.13-3A	2/27/2023 13:21	Unknown	0.004	0.004	0	ppb
0223-176.14-3A	2/27/2023 13:23	Unknown	0.002	0.002	0	ppb
0223-176.15-3A	2/27/2023 13:25	Unknown	0.002	0.002	0	ppb
0223-176.16-3A	2/27/2023 13:28	Unknown	0.001	0.001	0	ppb
CCV	2/27/2023 13:30	CCV	4.83	4.83	0	ppb
CCB	2/27/2023 13:32	CCB	-0.006	-0.006	0	ppb
0223-176.17-3A	2/27/2023 13:34	Unknown	0	0	0	ppb
0223-176.18-3A	2/27/2023 13:37	Unknown	-0.001	-0.001	0	ppb
CCV	2/27/2023 13:39	CCV	4.86	4.86	0	ppb
CCB	2/27/2023 13:41	CCB	-0.006	-0.006	0	ppb

Job #s	Describe Work Documented on This Page
0223-176	M29 Hg Analysis

1386A = CvAA std prep log
1386B = M29 Hg prep sheet

Supplies, Ancillary Equipment Serial #s, Lot #s, Etc

NA

LMP 2/28/23

Reviewer's Initials & Date: Metals Prep

ENTHALPY
ANALYTICAL

138bA

CVAA Standard Preparation Log *Stds must be prepared fresh daily

EA Std ID#Hg (Job #-1, 2, 3, etc.)	Std/Reagent Name	Conc.	Stock Standard/Reagent	Conc.	EA ID# & Exp Date	Amount Added	Final Volume (mL) & Diluent	Pipette & Exp Date	Analyst	Date	Exp. Date
Primary Intermediate Standard											
1	Primary Int. Std.	1000 ppb	Hg Standard	1000 ppm	F07164 4/28/23 ① 9/24	0.10 mL	100 DI	133 5/9/23	LMD	2/28/23	3/1/23
"	"	"	HNO3	67-70%		0.5 mL	"	134 5/9/23			
Secondary Intermediate Standard											
2	Secondary Int. Std.	1000 ppb	Hg Standard (2nd Source)	1000 ppm	F0752 4/28/23 ① 9/24	0.10 mL	100 DI	133 5/9/23			
"	"	"	HNO3	67-70%		0.5 mL	"	134 5/9/23			
Primary Working Standard											
3	Primary Working Std.	50 ppb	Primary Int. Std.	1000 ppb	1 3/1/23 ① 9/24	5.0 mL	100 DI	141 3/4/23			
"	"	"	HNO3	67-70%		0.5 mL	"	134 5/9/23			
Secondary Working Standard											
4	Secondary Working Std.	50 ppb	Secondary Int. Std.	1000 ppb	2 3/1/23 ① 9/24	5.0 mL	100 DI	141 3/4/23			
"	"	"	HNO3	67-70%		0.5 mL	"	134 5/9/23			

① 22380017 LMD 2/28/23

1386B

Method 29 Hg Prepsheet

ENTHALPY ANALYTICAL

Job Nos: 0223-176
Prep Date(s): 2/28/23
Analyst(s) LMP
Instrument: Naht jr

Calibration Standards and QC

Spike Used	Calibration Standard	Spike Amount (mL)	Pip & Exp	Final Vol. (mL)
--	Calibration Blank	--	N/A	50
1st WS	Standard 1 - 0.1 ppb	0.1	133 5/9/23	50
1st WS	Standard 2 - 1.0 ppb	1.0	134	50
1st WS	Standard 3 - 2.0 ppb	2.0	⊥	50
1st WS	Standard 4 - 5.0 ppb	5.0	141 3/4/23	50
1st WS	Standard 5 - 10 ppb	10.0		50
2nd WS	ICV/CCV - 5.0 ppb	5.0	⊥	50
--	ICB/CCB	--	N/A	50

Temp (°C): 95.5   Hotplate # 3

1st WS ID: 3   Exp Date: 2/28/23 3/1/23

2nd WS ID: 4   Exp Date: ⊥ ⊥

H2SO4 ID: 62252   Exp Date: 10/24

HNO3 ID: 22380017   Exp Date: 9/24

KMnO4 ID: ES-0842   Exp Date: 8/23/23

K2S2O8 ID: ES-0828   Exp Date: 8/8/23

HAS ID: ES-0836   Exp Date: 8/17/23

SnCl2 ID: ES-0847   Exp Date: 3/6/23

H2SO4 Pip & Exp: 139 3/8/23   HNO3 Pip & Exp: 139 3/8/23

KMnO4 Pip & Exp: K2S2O8 Pip & Exp: ⊥

HAS Pip & Exp: ⊥   Digitube ID: J506384-4932

LCS Pip & Exp: 141 3/4/23   MS Pip & Exp: 141 3/4/23

Samples

Sample ID	Aliquot Volume (mL)	Final Vol. (mL)
0223-176.1-2B	5	50
.2		50
.3		50
.4		50
.5		50
.6		50
.7		50
.8		50
.9		50
.10		50
.11		50
.12		50
.13		50
.14		50
.15		50
.16		50
.17		50
.18		50
		50
		50

Digestion Time
Start: 7:37am Finish: 9:37 am

Quality Control

QC Sample	Sample ID	Aliq. Vol. (mL)	Final Vol. (mL)	Spike ID	ID Exp Date	Stock Conc	Volume Added (mL)
MB	N/A	20	50	N/A	N/A	N/A	N/A
LCS	N/A	20	50	3	3/1/23	50 ppb	5.0
MS	0223-176.1-2B	10	50	⊥	⊥	⊥	⊥
Duplicate	⊥ .2 ⊥	⊥	50	N/A	N/A	N/A	N/A

① EE LMP
2/28/23

Q Leeman QuickTrace Mercury Analysis System - 0223-176 022823

File Edit View Log Analyze Options Window Help

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Time	Sample Label	Conc (ppb)	µAbs	%RSD	Flag	%Residual
1:13	0223-176.13-2B	0.017	1588.4	3.95		
1:14	0223-176.14-2B	0.013	1489.2	2.72		
1:15	0223-176.15-2B	0.014	1523.0	3.96		
1:16	0223-176.16-2B	0.010	1418.5	11.92		
S:7	CCV	4.940	116699.7	0.99		
S:8	CCB	-0.003	1121.1	29.15		
1:21	0223-176.17-2B	0.003	1260.8	13.88		
1:22	0223-176.18-2B	0.032	1942.6	1.53		
S:7	CCV	4.890	115474.8	1.00		
S:8	CCB	-0.004	1095.1	18.01		
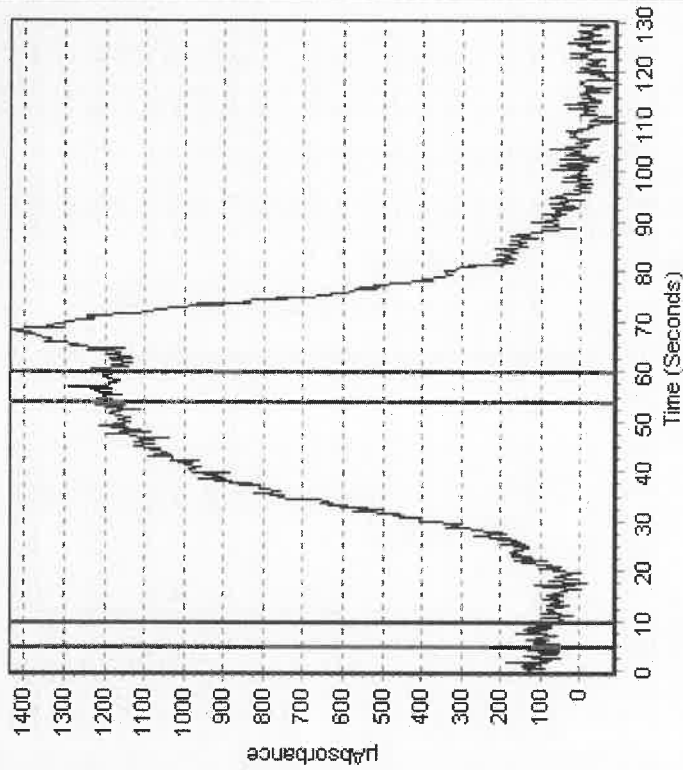
2/28/2023	11:21 AM	Worksheet Saved
2/28/2023	11:21 AM	Analysis completed normally
2/28/2023	11:21 AM	Sample 'CCB' measured. Conc.: -4.0700E-003 ppb (not diln. corrected)
2/28/2023	11:18 AM	QC Sample 'CCV'. Recovery was measured at 97.73 percent
2/28/2023	11:18 AM	Sample 'CCV' measured. Conc.: 4.890 ppb (not diln. corrected)
2/28/2023	11:16 AM	Sample '0223-176.18-2B' measured. Conc.: 3.2200E-002 ppb (not diln. corrected)
2/28/2023	11:14 AM	Sample '0223-176.17-2B' measured. Conc.: 3.0200E-003 ppb (not diln. corrected)
2/28/2023	11:11 AM	Sample 'CCB' measured. Conc.: -2.9600E-003 ppb (not diln. corrected)
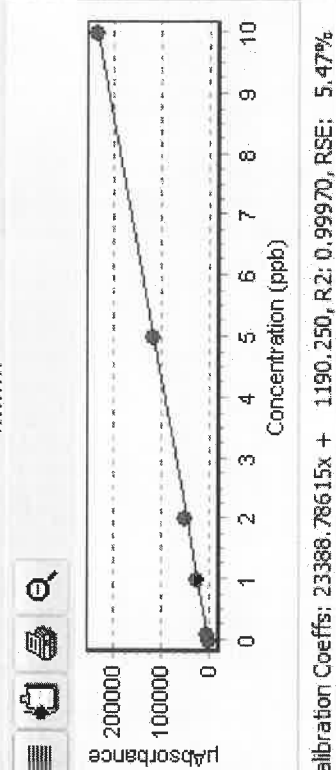
Calibration Coeffs: 23388.78615x + 1190.250, R2: 0.99970, RSE: 5.47%

0223-176 022823

Analysis Complete   Idle

Sample ID	Time Stamp	Sample Type	Dil. Conc.	Average Conc.	%RSD Conc.	Conc. Units
Cal Blank - 0 ug/mL	2/28/2023 10:01	Standard	0	0	0	ppb
Std. 1 - 0.1ug/mL	2/28/2023 10:03	Standard	0.1	0.1	0	ppb
Std. 2 - 1.0 ug/mL	2/28/2023 10:05	Standard	1	1	0	ppb
Std. 3 - 2.0 ug/mL	2/28/2023 10:07	Standard	2	2	0	ppb
Std. 4 - 5.0 ug/mL	2/28/2023 10:10	Standard	5	5	0	ppb
Std. 5 - 10.0 ug/mL	2/28/2023 10:12	Standard	10	10	0	ppb
ICV	2/28/2023 10:14	ICV	5.01	5.01	0	ppb
ICB	2/28/2023 10:17	ICB	-0.002	-0.002	0	ppb
0223-176.LB	2/28/2023 10:19	Unknown	0	0	0	ppb
0223-176.LCS	2/28/2023 10:21	Unknown	5.14	5.14	0	ppb
0223-176.1-2B	2/28/2023 10:23	Unknown	0.009	0.009	0	ppb
0223-176.1-2B MS	2/28/2023 10:26	Unknown	5.1	5.1	0	ppb
0223-176.2-2B	2/28/2023 10:28	Unknown	0.029	0.029	0	ppb
0223-176.2-2B DUP	2/28/2023 10:30	Unknown	0.032	0.032	0	ppb
0223-176.3-2B	2/28/2023 10:33	Unknown	0.011	0.011	0	ppb
0223-176.4-2B	2/28/2023 10:35	Unknown	0.038	0.038	0	ppb
0223-176.5-2B	2/28/2023 10:37	Unknown	0.013	0.013	0	ppb
0223-176.6-2B	2/28/2023 10:39	Unknown	0.02	0.02	0	ppb
CCV	2/28/2023 10:42	CCV	4.95	4.95	0	ppb
CCB	2/28/2023 10:44	CCB	-0.004	-0.004	0	ppb
0223-176.7-2B	2/28/2023 10:46	Unknown	0.002	0.002	0	ppb
0223-176.8-2B	2/28/2023 10:49	Unknown	-0.001	-0.001	0	ppb
0223-176.9-2B	2/28/2023 10:51	Unknown	0.035	0.035	0	ppb
0223-176.10-2B	2/28/2023 10:53	Unknown	0.007	0.007	0	ppb
0223-176.11-2B	2/28/2023 10:55	Unknown	0.028	0.028	0	ppb
0223-176.12-2B	2/28/2023 10:58	Unknown	0.021	0.021	0	ppb
0223-176.13-2B	2/28/2023 11:00	Unknown	0.017	0.017	0	ppb
0223-176.14-2B	2/28/2023 11:02	Unknown	0.013	0.013	0	ppb
0223-176.15-2B	2/28/2023 11:04	Unknown	0.014	0.014	0	ppb
0223-176.16-2B	2/28/2023 11:07	Unknown	0.01	0.01	0	ppb
CCV	2/28/2023 11:09	CCV	4.94	4.94	0	ppb
CCB	2/28/2023 11:11	CCB	-0.003	-0.003	0	ppb
0223-176.17-2B	2/28/2023 11:14	Unknown	0.003	0.003	0	ppb
0223-176.18-2B	2/28/2023 11:16	Unknown	0.032	0.032	0	ppb
CCV	2/28/2023 11:18	CCV	4.89	4.89	0	ppb
CCB	2/28/2023 11:21	CCB	-0.004	-0.004	0	ppb

Job #s	Describe Work Documented on This Page	Supplies, Ancillary Equipment Serial #s, Lot #s, Etc
0223-176	Hg Analysis	

1388A= CVAA Standard Preparation Log
1388B= Method 29 Hg Prepsheet

N/A

Reviewer's Initials & Date:

Metals Prep

EA Job# 0223-176R Page 154 of 186

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W002AS-023392-RT-4542

ENTHALPY
ANALYTICAL

1388A

CVAA Standard Preparation Log *Stds must be prepared fresh daily

EA Std ID#Hg (Job #-1, 2, 3, etc.)	Std/Reagent Name	Conc.	Stock Standard/Reagent	Conc.	EA ID# & Exp Date	Amount Added	Final Volume (mL) & Diluent	Pipette & Exp Date	Analyst	Date	Exp. Date
Primary Intermediate Standard											
1	Primary Int. Std.	1000 ppb	Hg Standard	1000 ppm	F0752 4/28/23 ①	0.10 mL	100 DI	133 5/9/23	MAL	3/1/23	3/2/23
"	"	"	HNO3	67-70%		0.5 mL	"	134 5/9/23			
Secondary Intermediate Standard											
2	Secondary Int. Std.	1000 ppb	Hg Standard (2nd Source)	1000 ppm	F0764 12/31/28 ①	0.10 mL	100 DI	133 5/9/23			
"	"	"	HNO3	67-70%		0.5 mL	"	134 5/9/23			
Primary Working Standard											
3	Primary Working Std.	50 ppb	Primary Int. Std.	1000 ppb	1 3/2/23 ①	5.0 mL	100 DI	141 3/9/23			
"	"	"	HNO3	67-70%		0.5 mL	"	134 5/9/23			
Secondary Working Standard											
4	Secondary Working Std.	50 ppb	Secondary Int. Std.	1000 ppb	2 3/2/23 ①	5.0 mL	100 DI	14 3/4/23			
"	"	"	HNO3	67-70%		0.5 mL	"	134 5/9/23			

① 2238COO17 exp. 9/24 LMP for MAL 3/16/23
O2704 E6
exp. 5/4/24 LMP for MAL 3/16/23

EA Job# 0223-176R Page 155 of 186

Method 29 Hg Prepsheet

ENTHALPY ANALYTICAL

Job Nos:	0223-176
Prep Date(s):	3/1/23
Analyst(s)	MAL Instrument: Walt Jr.

Calibration Standards and QC

Spike Used	Calibration Standard	Spike Amount (mL)	Pip & Exp	Final Vol. (mL)
--	Calibration Blank	--	N/A	50
1st WS	Standard 1 - 0.1 ppb	0.1	133 5/9/23	50
1st WS	Standard 2 - 1.0 ppb	1.0	134	50
1st WS	Standard 3 - 2.0 ppb	2.0	134	50
1st WS	Standard 4 - 5.0 ppb	5.0	141 3/4/23	50
1st WS	Standard 5 - 10 ppb	10.0		50
2nd WS	ICV/CCV - 5.0 ppb	5.0		50
--	ICB/CCB	--	N/A	50

Temp (°C): 95.8	Hotplate # 3
1st WS ID: 3	Exp Date: 8/2/23
2nd WS ID: 4	Exp Date:
① H2SO4 ID: 62252	Exp Date: 10/24
HNO3 ID: ~~62104~~ 22380017	Exp Date: ~~5/4/23~~ 9/24
KMnO4 ID: ES-0842	Exp Date: 8/23/23
K2S2O8 ID: ES-0828	Exp Date: 8/8/23
HAS ID: ES-0836	Exp Date: 8/17/23
SnCl2 ID: ES-0847	Exp Date: 3/6/23
H2SO4 Pip & Exp: 139 3/8/23	HNO3 Pip & Exp: 139 3/8/23
KMnO4 Pip & Exp:	K2S2O8 Pip & Exp:
HAS Pip & Exp:	Digitube ID: J506384-4932
LCS Pip & Exp: 141 3/4/23	MS Pip & Exp: 141 3/4/23

Samples

Sample ID	Aliquot Volume (mL)	Final Vol. (mL)
0223-176.1-3B	10.0	50
2		50
3		50
4		50
5		50
6		50
7		50
8		50
9		50
10		50
11		50
12		50
13		50
14		50
15		50
16		50
17		50
18		50
		50
		50

Digestion Time
Start: 8:33am   Finish: 10:33am

Quality Control

QC Sample	Sample ID	Aliq. Vol. (mL)	Final Vol. (mL)	Spike ID	ID Exp Date	Stock Conc	Volume Added (mL)
MB	N/A	20	50	N/A	N/A	N/A	N/A
LCS	N/A	20	50	3	3/2/23	50 ppb	5.0
MS	0223-176.1-3B MS	10	50	4			
Duplicate	0223-176.2-3B DUP	10	50	N/A	N/A	N/A	N/A

① EE LMP for MAL 3/10/23

Q Iaamar - QuickTrace Mercury Analyzer System

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Tube	Sample Label	Conc (ppb)	µAbs	%RSD	Flag	%ResidLbs
1:18	0223-176.14-3B	0.021	636.3	2.12		
1:19	0223-176.15-3B	0.022	647.1	1.54		
1:20	0223-176.16-3B	0.020	613.1	3.42		
S:7	CCV	5.260	112285.0	0.57		
S:8	CCB	-0.004	99.2	10.38		
1:21	0223-176.17-3B	0.061	1486.5	1.21		
1:22	0223-176.18-3B	0.022	647.9	1.34		
S:7	CCV	5.250	112188.8	0.83		
S:8	CCB	-0.003	115.3	11.18		

3/1/2023 12:30 PM Worksheet Saved
3/1/2023 12:30 PM Analysis completed normally
3/1/2023 12:30 PM Sample 'CCB' measured. Conc.: -3.2300E-003 ppb (not diln. corrected)
3/1/2023 12:28 PM QC Sample 'CCV'. Recovery was measured at 105.07 percent
3/1/2023 12:28 PM Sample 'CCV' measured. Conc.: 5.250 ppb (not diln. corrected)
3/1/2023 12:26 PM Sample 0223-176.18-3B measured. Conc.: 2.1600E-002 ppb (not diln. corrected)
3/1/2023 12:23 PM Sample 0223-176.17-3B measured. Conc.: 6.1100E-002 ppb (not diln. corrected)
3/1/2023 12:21 PM Sample 'CCB' measured. Conc.: -3.9800E-003 ppb (not diln. corrected)

0223-176 030123
Export Complete

QuickTrace.exe
Export Complete
OK

Time (Seconds)
µAbsorbance

Calibration Coeffs: 21130.5128x + 184.1:13, R2: 0.99874, RSE: 3.55%
Concentration (ppb)

Idle

59°F Mostly cloudy
12:31 PM
3/1/2023

Sample ID	Time Stamp	Sample Type	Dil. Conc.	Average Conc.	%RSD Conc.	Conc. Units
Cal Blank - 0 ug/mL	3/1/2023 11:10	Standard	0	0	0	ppb
Std. 1 - 0.1ug/mL	3/1/2023 11:13	Standard	0.1	0.1	0	ppb
Std. 2 - 1.0 ug/mL	3/1/2023 11:15	Standard	1	1	0	ppb
Std. 3 - 2.0 ug/mL	3/1/2023 11:17	Standard	2	2	0	ppb
Std. 4 - 5.0 ug/mL	3/1/2023 11:19	Standard	5	5	0	ppb
Std. 5 - 10.0 ug/mL	3/1/2023 11:22	Standard	10	10	0	ppb
ICV	3/1/2023 11:24	ICV	5.51	5.51	0	ppb
ICB	3/1/2023 11:26	ICB	-0.004	-0.004	0	ppb
0223-176.LB	3/1/2023 11:29	Unknown	0	0	0	ppb
0223-176.LCS	3/1/2023 11:31	Unknown	5.07	5.07	0	ppb
0223-176.1-3B	3/1/2023 11:33	Unknown	-0.001	-0.001	0	ppb
0233-176.1-3B MS	3/1/2023 11:35	Unknown	5.29	5.29	0	ppb
0223-176.2-3B	3/1/2023 11:38	Unknown	0.014	0.014	0	ppb
0223-176.2-3B DUP	3/1/2023 11:40	Unknown	0.017	0.017	0	ppb
0223-176.3-3B	3/1/2023 11:42	Unknown	0.017	0.017	0	ppb
0223-176.4-3B	3/1/2023 11:45	Unknown	0.021	0.021	0	ppb
0223-176.5-3B	3/1/2023 11:47	Unknown	0.017	0.017	0	ppb
0223-176.6-3B	3/1/2023 11:49	Unknown	0.026	0.026	0	ppb
CCV	3/1/2023 11:51	CCV	5.29	5.29	0	ppb
CCB	3/1/2023 11:54	CCB	-0.002	-0.002	0	ppb
0223-176.7-3B	3/1/2023 11:56	Unknown	0.022	0.022	0	ppb
0223-176.8-3B	3/1/2023 11:58	Unknown	0.021	0.021	0	ppb
0223-176.9-3B	3/1/2023 12:01	Unknown	0.02	0.02	0	ppb
0223-176.10-3B	3/1/2023 12:03	Unknown	0.022	0.022	0	ppb
0223-176.11-3B	3/1/2023 12:05	Unknown	0.019	0.019	0	ppb
0223-176.12-3B	3/1/2023 12:07	Unknown	0.018	0.018	0	ppb
0223-176.13-3B	3/1/2023 12:10	Unknown	0.021	0.021	0	ppb
0223-176.14-3B	3/1/2023 12:12	Unknown	0.021	0.021	0	ppb
0223-176.15-3B	3/1/2023 12:14	Unknown	0.022	0.022	0	ppb
0223-176.16-3B	3/1/2023 12:16	Unknown	0.02	0.02	0	ppb
CCV	3/1/2023 12:19	CCV	5.26	5.26	0	ppb
CCB	3/1/2023 12:21	CCB	-0.004	-0.004	0	ppb
0223-176.17-3B	3/1/2023 12:23	Unknown	0.061	0.061	0	ppb
0223-176.18-3B	3/1/2023 12:26	Unknown	0.022	0.022	0	ppb
CCV	3/1/2023 12:28	CCV	5.25	5.25	0	ppb
CCB	3/1/2023 12:30	CCB	-0.003	-0.003	0	ppb

Analyst: LMP   Date: 3/6/25

Job #s	Describe Work Documented on This Page
0223-176	M29 Hg Analysis

Supplies, Ancillary Equipment Serial #s, Lot #s, Etc

NA

1395A = CVAA std prep log

1395B = M29 Hg prep sheet

ENTHALPY
ANALYTICAL

1395A

CVAA Standard Preparation Log *Stds must be prepared fresh daily

EA Std ID#Hg (Job #-1, 2, 3, etc.)	Std/Reagent Name	Conc.	Stock Standard/Reagent	Conc.	EA ID# & Exp Date	Amount Added	Final Volume (mL) & Diluent	Pipette & Exp Date	Analyst	Date	Exp. Date
	Primary Intermediate Standard										
1	Primary Int. Std.	1000 ppb	Hg Standard	1000 ppm	F07904 4/28/23 ①	0.10 mL	100 DI	133 5/9/23	LMP	3/10/23	3/7/23
"	"	"	HNO3	67-70%	9/24	0.5 mL	"	134 5/9/23			
	Secondary Intermediate Standard										
2	Secondary Int. Std.	1000 ppb	Hg Standard (2nd Source)	1000 ppm	F07752 4/28/23 ①	0.10 mL	100 DI	133 5/9/23			
"	"	"	HNO3	67-70%	9/24	0.5 mL	"	134 5/9/23			
	Primary Working Standard										
3	Primary Working Std.	50 ppb	Primary Int. Std.	1000 ppb	1 3/1/23 ①	5.0 mL	100 DI	143 5/9/23			
"	"	"	HNO3	67-70%	9/24	0.5 mL	"	134 5/9/23			
	Secondary Working Standard										
4	Secondary Working Std.	50 ppb	Secondary Int. Std.	1000 ppb	2 3/7/23 ①	5.0 mL	100 DI	143 5/9/23			
"	"	"	HNO3	67-70%	9/24	0.5 mL	"	134 5/9/23			

① 2238 0017
LMP 3/10/23

EA Job# 0223-176R Page 160 of 186

1395B

	Method 29 Hg Prepsheet	
Job Nos: 0223-176		
Prep Date(s): 3/6/23		
Analyst(s) LMP		**Instrument:** wal+jr

Calibration Standards and QC · Samples

Spike Used	Calibration Standard	Spike Amount (mL)	Pip & Exp	Final Vol. (mL)	Sample ID	Aliquot Volume (mL)	Final Vol. (mL)
--	Calibration Blank	--	N/A	50	0223-176.1-3C	10	50
1st WS	Standard 1 - 0.1 ppb	0.1	133 5/9/23	50	.2		50
1st WS	Standard 2 - 1.0 ppb	1.0	134	50	.3		50
1st WS	Standard 3 - 2.0 ppb	2.0	⊥	50	.4		50
1st WS	Standard 4 - 5.0 ppb	5.0	143	50	.5		50
1st WS	Standard 5 - 10 ppb	10.0		50	.6		50
2nd WS	ICV/CCV - 5.0 ppb	5.0		50	.7		50
--	ICB/CCB	--	N/A	50	-8		50

Temp (°C): 95.9	Hotplate # 3	-9 ··· 50
1st WS ID: 3	Exp Date: 3/7/23	.10 ··· 50
2nd WS ID: 4	Exp Date: ⊥	.11 ··· 50
H2SO4 ID: 62252	Exp Date: 10/24	-12 ··· 50
HNO3 ID: 2238 0017	Exp Date: 9/24	-13 ··· 50
KMnO4 ID: ES-0846	Exp Date: 8/27/23	.14 ··· 50
K2S2O8 ID: ES-04843	Exp Date: 8/24/23	.15 ··· 50
HAS ID: ES-0840	Exp Date: 8/22/23	-16 ··· 50
SnCl2 ID: ES-0847	Exp Date: 3/6/23	-17 ··· 50
H2SO4 Pip & Exp: 139 3/8/23	HNO3 Pip & Exp: 139 3/8/23	.18 ··· 50
KMnO4 Pip & Exp:	K2S2O8 Pip & Exp: ⊥	50
HAS Pip & Exp:	Digitube ID: J5D6384-4932	50
LCS Pip & Exp: 143 5/9/23	MS Pip & Exp: 143 5/9/23	**Digestion Time** Start: 7:11 am Finish: 9:11 am

Quality Control

QC Sample	Sample ID	Aliq. Vol. (mL)	Final Vol. (mL)	Spike ID	ID Exp Date	Stock Conc	Volume Added (mL)
MB	N/A	20	50	N/A	N/A	N/A	N/A
LCS	N/A	20	50	3	3/7/23	50 ppb	5.0
MS	0223-176.1-3C	10	50	⊥	⊥	⊥	⊥
Duplicate	⊥ .2⊥	⊥	50	N/A	N/A	N/A	N/A

Q Leeman QuickTrace Mercury Analysis System - 0223-176 030623

File Edit View Log Analyze Options Window Help

Time	Sample Label	Conc (ppb)	µAbs	%RSD	Flag	%Residual
1:15	0223-176.11-3C	0.083	2022.4	0.73		
1:16	0223-176.12-3C	0.072	1764.2	0.77		
1:17	0223-176.13-3C	0.075	1829.3	0.45		
1:18	0223-176.14-3C	0.070	1713.6	1.34		
1:19	0223-176.15-3C	0.085	2067.8	1.10		
1:20	0223-176.16-3C	0.072	1748.3	1.47		
S:7	CCV	5.020	116849.3	0.83		
S:8	CCB	-0.003	7.0	18.95		
1:21	0223-176.17-3C	0.733	17122.1	1.18		
	0223-176.18-3C	0.018	504.9	4.69		
S:9	CCV	5.050	117618.6	0.98		
S:9	CCB	-0.003	8.7	18.68		
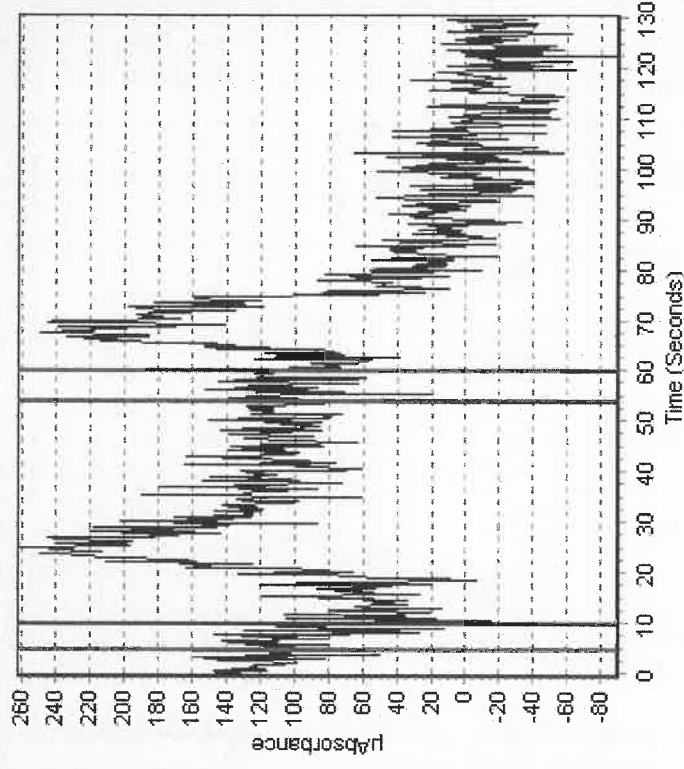
3/6/2023 10:52 AM   Sample 'CCB' measured. Conc.: -3.2500E-003 ppb (not diln. corrected)
3/6/2023 10:50 AM   QC Sample 'CCV'. Recovery was measured at 100.44 percent
3/6/2023 10:50 AM   Sample 'CCV' measured. Conc.:   5.020 ppb (not diln. corrected)
3/6/2023 10:48 AM   Sample '0223-176.16-3C' measured. Conc.: 7.1600E-002 ppb (not diln. corrected)
3/6/2023 10:45 AM   Sample '0223-176.15-3C' measured. Conc.: 8.5400E-002 ppb (not diln. corrected)
3/6/2023 10:43 AM   Sample '0223-176.14-3C' measured. Conc.: 7.0100E-002 ppb (not diln. corrected)
3/6/2023 10:41 AM   Sample '0223-176.13-3C' measured. Conc.: 7.5100E-002 ppb (not diln. corrected)
3/6/2023 10:38 AM   Sample '0223-176.12-3C' measured. Conc.: 7.2300E-002 ppb (not diln. corrected)

0223-176 030623

Analysis Complete

Idle

Calibration Coeffs: 23251.55730x +   82.655, R2: 0.99950, RSE: 4.49%
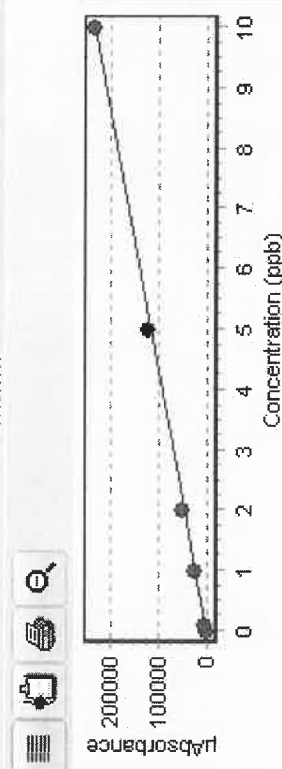
Sample ID	Time Stamp	Sample Type	Dil. Conc.	Average Conc.	%RSD Conc.	Conc. Units
Cal Blank - 0 ug/mL	3/6/2023 9:41	Standard	0	0	0	ppb
Std. 1 - 0.1ug/mL	3/6/2023 9:44	Standard	0.1	0.1	0	ppb
Std. 2 - 1.0 ug/mL	3/6/2023 9:46	Standard	1	1	0	ppb
Std. 3 - 2.0 ug/mL	3/6/2023 9:48	Standard	2	2	0	ppb
Std. 4 - 5.0 ug/mL	3/6/2023 9:50	Standard	5	5	0	ppb
Std. 5 - 10.0 ug/mL	3/6/2023 9:53	Standard	10	10	0	ppb
ICV	3/6/2023 9:55	ICV	5.12	5.12	0	ppb
ICB	3/6/2023 9:57	ICB	-0.005	-0.005	0	ppb
0223-176.LB	3/6/2023 10:00	Unknown	0.009	0.009	0	ppb
0223-176.LCS	3/6/2023 10:02	Unknown	5.08	5.08	0	ppb
0223-176.1-3C	3/6/2023 10:04	Unknown	0.288	0.288	0	ppb
0223-176.1-3C MS	3/6/2023 10:06	Unknown	5.13	5.13	0	ppb
0223-176.2-3C	3/6/2023 10:09	Unknown	0.153	0.153	0	ppb
0223-176.2-3C DUP	3/6/2023 10:11	Unknown	0.156	0.156	0	ppb
0223-176.3-3C	3/6/2023 10:13	Unknown	0.471	0.471	0	ppb
0223-176.4-3C	3/6/2023 10:16	Unknown	0.134	0.134	0	ppb
0223-176.5-3C	3/6/2023 10:18	Unknown	0.072	0.072	0	ppb
0223-176.6-3C	3/6/2023 10:20	Unknown	0.115	0.115	0	ppb
CCV	3/6/2023 10:22	CCV	5.08	5.08	0	ppb
CCB	3/6/2023 10:25	CCB	-0.004	-0.004	0	ppb
0223-176.7-3C	3/6/2023 10:27	Unknown	0.058	0.058	0	ppb
0223-176.8-3C	3/6/2023 10:29	Unknown	0.301	0.301	0	ppb
0223-176.9-3C	3/6/2023 10:32	Unknown	0.02	0.02	0	ppb
0223-176.10-3C	3/6/2023 10:34	Unknown	0.067	0.067	0	ppb
0223-176.11-3C	3/6/2023 10:36	Unknown	0.083	0.083	0	ppb
0223-176.12-3C	3/6/2023 10:38	Unknown	0.072	0.072	0	ppb
0223-176.13-3C	3/6/2023 10:41	Unknown	0.075	0.075	0	ppb
0223-176.14-3C	3/6/2023 10:43	Unknown	0.07	0.07	0	ppb
0223-176.15-3C	3/6/2023 10:45	Unknown	0.085	0.085	0	ppb
0223-176.16-3C	3/6/2023 10:48	Unknown	0.072	0.072	0	ppb
CCV	3/6/2023 10:50	CCV	5.02	5.02	0	ppb
CCB	3/6/2023 10:52	CCB	-0.003	-0.003	0	ppb
0223-176.17-3C	3/6/2023 10:54	Unknown	0.733	0.733	0	ppb
0223-176.18-3C	3/6/2023 10:57	Unknown	0.018	0.018	0	ppb
CCV	3/6/2023 10:59	CCV	5.05	5.05	0	ppb
CCB	3/6/2023 11:01	CCB	-0.003	-0.003	0	ppb

Job #s	Describe Work Documented on This Page
0223-176	M29 Hg Analysis

Supplies, Ancillary Equipment
Serial #s, Lot #s, Etc

1398A = CVAA std prep log

1398B = M29 Hg prep sheet

NA

ENTHALPY
ANALYTICAL

1398A

CVAA Standard Preparation Log *Stds must be prepared fresh daily

EA Std ID#Hg (Job #-1, 2, 3, etc.)	Std/Reagent Name	Conc.	Stock Standard/Reagent	Conc.	EA ID# & Exp Date	Amount Added	Final Volume (mL) & Diluent	Pipette & Exp Date	Analyst	Date	Exp. Date
			Primary Intermediate Standard								
1	Primary Int. Std.	1000 ppb	Hg Standard	1000 ppm	F0704 4/28/23	0.10 mL	100 DI	133 5/9/23	LMP	3/7/23	3/8/23
"	"	"	HNO3	67-70%	① 9/24	0.5 mL	"	134 5/9/23			
			Secondary Intermediate Standard								
2	Secondary Int. Std.	1000 ppb	Hg Standard (2nd Source)	1000 ppm	F0752 4/28/23	0.10 mL	100 DI	133 5/9/23			
"	"	"	HNO3	67-70%	① 9/24	0.5 mL	"	134 5/9/23			
			Primary Working Standard								
3	Primary Working Std.	50 ppb	Primary Int. Std.	1000 ppb	1 3/8/23	5.0 mL	100 DI	143 5/9/23			
"	"	"	HNO3	67-70%	① 9/24	0.5 mL	"	134 5/9/23			
			Secondary Working Standard								
4	Secondary Working Std.	50 ppb	Secondary Int. Std.	1000 ppb	2 3/8/23	5.0 mL	100 DI	143 5/9/23			
"	"	"	HNO3	67-70%	① 9/24	0.5 mL	"	134 5/9/23			

① 0223800017
LMP 3/7/23

W002AS-023392-RT-4542   370 of 688

Method 29 Hg Prepsheet

ENTHALPY ANALYTICAL

Job Nos: 0223-176
Prep Date(s): 3/7/23
Analyst(s) LMP
Instrument: walt jr

Calibration Standards and QC | Samples

Spike Used	Calibration Standard	Spike Amount (mL)	Pip & Exp	Final Vol. (mL)	Sample ID	Aliquot Volume (mL)	Final Vol. (mL)
--	Calibration Blank	--	N/A	50	0223-176.1-1B	10	50
1st WS	Standard 1 - 0.1 ppb	0.1	133 5/9/23	50	.2		50
1st WS	Standard 2 - 1.0 ppb	1.0	134	50	.3		50
1st WS	Standard 3 - 2.0 ppb	2.0	⊥	50	.4		50
1st WS	Standard 4 - 5.0 ppb	5.0	143	50	.5		50
1st WS	Standard 5 - 10 ppb	10.0		50	.6		50
2nd WS	ICV/CCV - 5.0 ppb	5.0	⊥ ⊥	50	.7		50
--	ICB/CCB	--	N/A	50	.8		50

Temp (°C): 95.5   Hotplate # 3   .9   50

1st WS ID: 3   Exp Date: 3/8/23   .10   50

2nd WS ID: 4   Exp Date: ⊥   .11   50

H2SO4 ID: 62252   Exp Date: 10/24   .12   50

HNO3 ID: 22380017   Exp Date: 9/24   .13   50

KMnO4 ID: ES-0846   Exp Date: 8/27/23   .14   50

K2S2O8 ID: ES-0843   Exp Date: 8/24/23   .15   50

HAS ID: ES-0840   Exp Date: 8/22/23   .16   50

SnCl2 ID: ES-0854   Exp Date: 3/14/23   .17   50

H2SO4 Pip & Exp: 139 3/8/23   HNO3 Pip & Exp: 139 3/8/23   .18   50

KMnO4 Pip & Exp: K2S2O8 Pip & Exp: ⊥   50

HAS Pip & Exp: ⊥   Digitube ID: J506384-4932   50

LCS Pip & Exp: 143 5/9/23   MS Pip & Exp: 143 5/9/23

Digestion Time
Start: 8:02 am   Finish: 10:02 am

Quality Control

QC Sample	Sample ID	Aliq. Vol. (mL)	Final Vol. (mL)	Spike ID	ID Exp Date	Stock Conc	Volume Added (mL)
MB	N/A	20	50	N/A	N/A	N/A	N/A
LCS	N/A	20	50	3	3/8/23	50 ppb	5.0
MS	0223-176.1-1B	10	50	⊥	⊥	⊥	⊥
Duplicate	⊥ .2 ⊥	⊥	50	N/A	N/A	N/A	N/A

Leeman QuickTrace Mercury Analysis System - 0223-176 030723

File Edit View Log Analyze Options Window Help

Type	Sample Label	Conc (ppb)	µAbs	%RSD	Flag %Residual
S:1	Cal Blank - 0 ug/mL	0.000	1478.8	0.57	
S:2	Std. 1 - 0.1ug/mL	0.100	4242.6	0.24	24.91
S:3	Std. 2 - 1.0 ug/mL	1.000	24884.2	0.27	5.78
S:4	Std. 3 - 2.0 ug/mL	2.000	47391.0	0.29	3.75
S:5	Std. 4 - 5.0 ug/mL	5.000	114661.4	0.45	2.30
S:6	Std. 5 - 10.0 ug/mL	10.000	221015.6	0.51	-0.79
S:7	ICV	5.090	114196.5	0.37	
S:8	ICB	-0.004	1383.8	11.64	
1:1	0223-176.LB	0.658	16042.2	0.24	
1:2	0223-176.LCS	4.970	111515.1	0.47	
1:3	0223-176.1-1B	-0.018	1077.0	3.41	
1:4	0223-176.1-1B MS	4.650	104464.8	0.70	
1:5	0223-176.2-1B	-0.048	419.7	3.43	
1:6	0223-176.2-1B DUP	-0.014	1175.6	5.71	
1:7	0223-176.3-1B	-0.031	793.7	0.58	
1:8	0223-176.4-1B	-0.020	1032.2	3.33	
	0223-176.5-1B	0.010	1067.1	3.61	
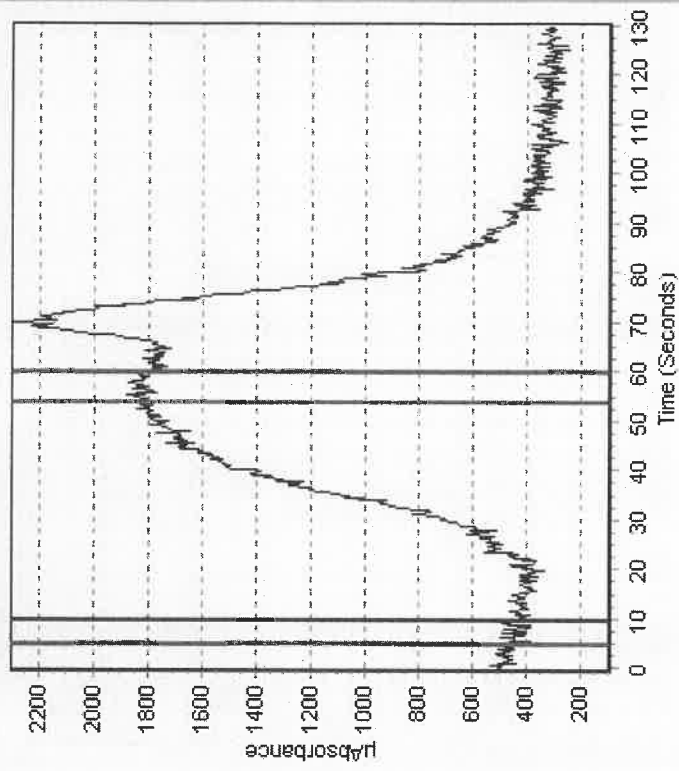
3/7/2023	12:05 PM	Worksheet Saved
3/7/2023	12:04 PM	Analysis completed normally
3/7/2023	12:04 PM	Sample 'CCB' measured. Conc.: -3.8400E-003 ppb (not diln. corrected)
3/7/2023	12:02 PM	QC Sample 'CCV'. Recovery was measured at 102.92 percent
3/7/2023	12:02 PM	Sample 'CCV' measured. Conc.: 5.150 ppb (not diln. corrected)
3/7/2023	12:00 PM	Sample 0223-176.LB Repour' measured. Conc.: 1.2700E-003 ppb (not diln. corrected)
3/7/2023	11:57 AM	Worksheet Saved
3/7/2023	11:56 AM	Analysis Aborted by Operator

0223-176 030723

Analysis Complete

Time (Seconds)

µAbsorbance

Concentration (ppb)

µAbsorbance
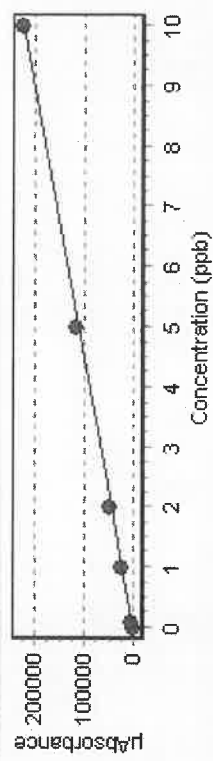
Calibration Coeffs: 22127.43463x + 1478.756, R2: 0.99954, RSE: 14.98%

EA Job# 0223-176R Page 167 of 186

Idle

Sample ID	Time Stamp	Sample Type	Average Conc	%RSD Conc.	Conc. Units
Cal Blank - 0 ug/mL	3/7/2023 10:34	Standard	0	0	ppb
Std. 1 - 0.1ug/mL	3/7/2023 10:37	Standard	0.1	0	ppb
Std. 2 - 1.0 ug/mL	3/7/2023 10:39	Standard	1	0	ppb
Std. 3 - 2.0 ug/mL	3/7/2023 10:41	Standard	2	0	ppb
Std. 4 - 5.0 ug/mL	3/7/2023 10:43	Standard	5	0	ppb
Std. 5 - 10.0 ug/mL	3/7/2023 10:46	Standard	10	0	ppb
ICV	3/7/2023 10:48	ICV	5.09	0	ppb
ICB	3/7/2023 10:50	ICB	-0.004	0	ppb
0223-176.LB	3/7/2023 10:53	Unknown	0.658 ①	0	ppb
0223-176.LCS	3/7/2023 10:55	Unknown	4.97	0	ppb
0223-176.1-1B	3/7/2023 10:57	Unknown	-0.018	0	ppb
0223-176.1-1B MS	3/7/2023 10:59	Unknown	4.65	0	ppb
0223-176.2-1B	3/7/2023 11:02	Unknown	-0.048	0	ppb
0223-176.2-1B DUP	3/7/2023 11:04	Unknown	-0.014	0	ppb
0223-176.3-1B	3/7/2023 11:06	Unknown	-0.031	0	ppb
0223-176.4-1B	3/7/2023 11:09	Unknown	-0.02	0	ppb
0223-176.5-1B	3/7/2023 11:11	Unknown	-0.019	0	ppb
0223-176.6-1B	3/7/2023 11:13	Unknown	-0.016	0	ppb
CCV	3/7/2023 11:15	CCV	5.06	0	ppb
CCB	3/7/2023 11:18	CCB	-0.007	0	ppb
0223-176.7-1B	3/7/2023 11:20	Unknown	-0.021	0	ppb
0223-176.8-1B	3/7/2023 11:22	Unknown	-0.017	0	ppb
0223-176.9-1B	3/7/2023 11:25	Unknown	-0.027	0	ppb
0223-176.10-1B	3/7/2023 11:27	Unknown	-0.028	0	ppb
0223-176.11-1B	3/7/2023 11:29	Unknown	-0.023	0	ppb
0223-176.12-1B	3/7/2023 11:32	Unknown	-0.031	0	ppb
0223-176.13-1B	3/7/2023 11:34	Unknown	-0.03	0	ppb
0223-176.14-1B	3/7/2023 11:36	Unknown	-0.031	0	ppb
0223-176.15-1B	3/7/2023 11:39	Unknown	-0.03	0	ppb
0223-176.16-1B	3/7/2023 11:41	Unknown	-0.027	0	ppb
CCV	3/7/2023 11:43	CCV	5.09	0	ppb
CCB	3/7/2023 11:46	CCB	-0.005	0	ppb
0223-176.17-1B	3/7/2023 11:48	Unknown	-0.025	0	ppb
0223-176.18-1B	3/7/2023 11:50	Unknown	-0.029	0	ppb
0223-176.LB Repour	3/7/2023 12:00	Unknown	0.001 ①	0	ppb
CCV	3/7/2023 12:02	CCV	5.15	0	ppb
CCB	3/7/2023 12:04	CCB	-0.004	0	ppb

① See repour + reanalysis

MR 3/9/23

Location:_____ Drawer:_____ Analyst: LMP

Cabinet:_____ Folder:_____ Date: 2/27/23

Job #s 0123-099 0223-176	Describe Work Documented on This Page M29 Hg Analysis	Supplies, Ancillary Equipment Serial #s, Lot #s, Etc

walt jr 201A = Analytical Sequence
   1   201B   1

NA

Reviewer's Initials & Date:

Walt Jr.
page 201

ENTHALPY
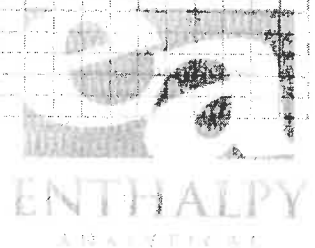
walt jr 201B

Sample ID	Time Stamp	Sample Type
Cal Blank - 0 ug/mL	2/27/2023 12:21	Standard
Std. 1 - 0.1ug/mL	2/27/2023 12:24	Standard
Std. 2 - 1.0 ug/mL	2/27/2023 12:26	Standard
Std. 3 - 2.0 ug/mL	2/27/2023 12:28	Standard
Std. 4 - 5.0 ug/mL	2/27/2023 12:31	Standard
Std. 5 - 10.0 ug/mL	2/27/2023 12:33	Standard
ICV	2/27/2023 12:35	ICV
ICB	2/27/2023 12:37	ICB
0223-176.LB	2/27/2023 12:40	Unknown
0223-176.LCS	2/27/2023 12:42	Unknown
0223-176.1-3A	2/27/2023 12:44	Unknown
0223-176.1-3A MS	2/27/2023 12:46	Unknown
0223-176.2-3A	2/27/2023 12:49	Unknown
0223-176.2-3A DUP	2/27/2023 12:51	Unknown
0223-176.3-3A	2/27/2023 12:53	Unknown
0223-176.4-3A	2/27/2023 12:56	Unknown
0223-176.5-3A	2/27/2023 12:58	Unknown
0223-176.6-3A	2/27/2023 13:00	Unknown
CCV	2/27/2023 13:02	CCV
CCB	2/27/2023 13:05	CCB
0223-176.7-3A	2/27/2023 13:07	Unknown
0223-176.8-3A	2/27/2023 13:09	Unknown
0223-176.9-3A	2/27/2023 13:12	Unknown
0223-176.10-3A	2/27/2023 13:14	Unknown
0223-176.11-3A	2/27/2023 13:16	Unknown
0223-176.12-3A	2/27/2023 13:18	Unknown
0223-176.13-3A	2/27/2023 13:21	Unknown
0223-176.14-3A	2/27/2023 13:23	Unknown
0223-176.15-3A	2/27/2023 13:25	Unknown
0223-176.16-3A	2/27/2023 13:28	Unknown
CCV	2/27/2023 13:30	CCV
CCB	2/27/2023 13:32	CCB
0223-176.17-3A	2/27/2023 13:34	Unknown
0223-176.18-3A	2/27/2023 13:37	Unknown
CCV	2/27/2023 13:39	CCV
CCB	2/27/2023 13:41	CCB

Location:_____ Drawer:_____ Analyst: LMP

Cabinet:_____ Folder:_____ Date: 2/28/23

Job #s	Describe Work Documented on This Page
0223-176	M29 Hg Analysis

waltjr 203A = Analytical Sequence

Supplies, Ancillary Equipment
Serial #s, Lot #s, Etc

NA

Reviewer's Initials & Date:

Walt Jr.
page 203

W002AS-023392-RT-4542

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ANALYTICAL

walt-jr 203A

Sample ID	Time Stamp	Sample Type
Cal Blank - 0 ug/mL	2/28/2023 10:01	Standard
Std. 1 - 0.1ug/mL	2/28/2023 10:03	Standard
Std. 2 - 1.0 ug/mL	2/28/2023 10:05	Standard
Std. 3 - 2.0 ug/mL	2/28/2023 10:07	Standard
Std. 4 - 5.0 ug/mL	2/28/2023 10:10	Standard
Std. 5 - 10.0 ug/mL	2/28/2023 10:12	Standard
ICV	2/28/2023 10:14	ICV
ICB	2/28/2023 10:17	ICB
0223-176.LB	2/28/2023 10:19	Unknown
0223-176.LCS	2/28/2023 10:21	Unknown
0223-176.1-2B	2/28/2023 10:23	Unknown
0223-176.1-2B MS	2/28/2023 10:26	Unknown
0223-176.2-2B	2/28/2023 10:28	Unknown
0223-176.2-2B DUP	2/28/2023 10:30	Unknown
0223-176.3-2B	2/28/2023 10:33	Unknown
0223-176.4-2B	2/28/2023 10:35	Unknown
0223-176.5-2B	2/28/2023 10:37	Unknown
0223-176.6-2B	2/28/2023 10:39	Unknown
CCV	2/28/2023 10:42	CCV
CCB	2/28/2023 10:44	CCB
0223-176.7-2B	2/28/2023 10:46	Unknown
0223-176.8-2B	2/28/2023 10:49	Unknown
0223-176.9-2B	2/28/2023 10:51	Unknown
0223-176.10-2B	2/28/2023 10:53	Unknown
0223-176.11-2B	2/28/2023 10:55	Unknown
0223-176.12-2B	2/28/2023 10:58	Unknown
0223-176.13-2B	2/28/2023 11:00	Unknown
0223-176.14-2B	2/28/2023 11:02	Unknown
0223-176.15-2B	2/28/2023 11:04	Unknown
0223-176.16-2B	2/28/2023 11:07	Unknown
CCV	2/28/2023 11:09	CCV
CCB	2/28/2023 11:11	CCB
0223-176.17-2B	2/28/2023 11:14	Unknown
0223-176.18-2B	2/28/2023 11:16	Unknown
CCV	2/28/2023 11:18	CCV
CCB	2/28/2023 11:21	CCB

Location:_____ Drawer:_____ Analyst: LMP

Cabinet:_____ Folder:_____ Date: 3/1/23

Job #s	Describe Work Documented on This Page
0223-176	M29 Hg Analysis

Walt jr 204A = Analytical Sequence

Supplies, Ancillary Equipment
Serial #s, Lot #s, Etc

NA

Reviewer's Initials & Date: _____

Walt Jr.
page 204

ENTHALPY
ANALYTICAL

walt jr 204A

Sample ID	Time Stamp
Cal Blank - 0 ug/mL	3/1/2023 11:10
Std. 1 - 0.1ug/mL	3/1/2023 11:13
Std. 2 - 1.0 ug/mL	3/1/2023 11:15
Std. 3 - 2.0 ug/mL	3/1/2023 11:17
Std. 4 - 5.0 ug/mL	3/1/2023 11:19
Std. 5 - 10.0 ug/mL	3/1/2023 11:22
ICV	3/1/2023 11:24
ICB	3/1/2023 11:26
0223-176.LB	3/1/2023 11:29
0223-176.LCS	3/1/2023 11:31
0223-176.1-3B	3/1/2023 11:33
0233-176.1-3B MS	3/1/2023 11:35
0223-176.2-3B	3/1/2023 11:38
0223-176.2-3B DUP	3/1/2023 11:40
0223-176.3-3B	3/1/2023 11:42
0223-176.4-3B	3/1/2023 11:45
0223-176.5-3B	3/1/2023 11:47
0223-176.6-3B	3/1/2023 11:49
CCV	3/1/2023 11:51
CCB	3/1/2023 11:54
0223-176.7-3B	3/1/2023 11:56
0223-176.8-3B	3/1/2023 11:58
0223-176.9-3B	3/1/2023 12:01
0223-176.10-3B	3/1/2023 12:03
0223-176.11-3B	3/1/2023 12:05
0223-176.12-3B	3/1/2023 12:07
0223-176.13-3B	3/1/2023 12:10
0223-176.14-3B	3/1/2023 12:12
0223-176.15-3B	3/1/2023 12:14
0223-176.16-3B	3/1/2023 12:16
CCV	3/1/2023 12:19
CCB	3/1/2023 12:21
0223-176.17-3B	3/1/2023 12:23
0223-176.18-3B	3/1/2023 12:26
CCV	3/1/2023 12:28
CCB	3/1/2023 12:30

Location:_____ Drawer:_____ Analyst: _LMP_

Cabinet:_____ Folder:_____ Date: _3/16/23_

Job #s	Describe Work Documented on This Page
0223-176	m29 Hg Analysis

Walt Jr 205 A = Analytical Sequence

Supplies, Ancillary Equipment Serial #s, Lot #s, Etc

NA

Reviewer's Initials & Date:

_____

Walt Jr.
page 205

W002AS-023392-RT-4542

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Sample ID	Time Stamp	Sample Type
Cal Blank - 0 ug/mL	3/6/2023 9:41	Standard
Std. 1 - 0.1ug/mL	3/6/2023 9:44	Standard
Std. 2 - 1.0 ug/mL	3/6/2023 9:46	Standard
Std. 3 - 2.0 ug/mL	3/6/2023 9:48	Standard
Std. 4 - 5.0 ug/mL	3/6/2023 9:50	Standard
Std. 5 - 10.0 ug/mL	3/6/2023 9:53	Standard
ICV	3/6/2023 9:55	ICV
ICB	3/6/2023 9:57	ICB
0223-176.LB	3/6/2023 10:00	Unknown
0223-176.LCS	3/6/2023 10:02	Unknown
0223-176.1-3C	3/6/2023 10:04	Unknown
0223-176.1-3C MS	3/6/2023 10:06	Unknown
0223-176.2-3C	3/6/2023 10:09	Unknown
0223-176.2-3C DUP	3/6/2023 10:11	Unknown
0223-176.3-3C	3/6/2023 10:13	Unknown
0223-176.4-3C	3/6/2023 10:16	Unknown
0223-176.5-3C	3/6/2023 10:18	Unknown
0223-176.6-3C	3/6/2023 10:20	Unknown
CCV	3/6/2023 10:22	CCV
CCB	3/6/2023 10:25	CCB
0223-176.7-3C	3/6/2023 10:27	Unknown
0223-176.8-3C	3/6/2023 10:29	Unknown
0223-176.9-3C	3/6/2023 10:32	Unknown
0223-176.10-3C	3/6/2023 10:34	Unknown
0223-176.11-3C	3/6/2023 10:36	Unknown
0223-176.12-3C	3/6/2023 10:38	Unknown
0223-176.13-3C	3/6/2023 10:41	Unknown
0223-176.14-3C	3/6/2023 10:43	Unknown
0223-176.15-3C	3/6/2023 10:45	Unknown
0223-176.16-3C	3/6/2023 10:48	Unknown
CCV	3/6/2023 10:50	CCV
CCB	3/6/2023 10:52	CCB
0223-176.17-3C	3/6/2023 10:54	Unknown
0223-176.18-3C	3/6/2023 10:57	Unknown
CCV	3/6/2023 10:59	CCV
CCB	3/6/2023 11:01	CCB

Location:_____   Drawer:_____   Analyst: _LMP_

Cabinet:_____   Folder:_____   Date: _3/7/23_

Job #s	Describe Work Documented on This Page
0223-176	m29 Hg Analysis
0123-137	

walt jr 206A = Analytical sequence

⊥ 206B =   ⊥

Supplies, Ancillary Equipment Serial #s, Lot #s, Etc

NA

Reviewer's Initials & Date:

Walt Jr.

W002AS-023392-RT-4542

ENTHALPY
ANALYTICAL

walt jr 206B

Sample ID	Time Stamp	Sample Type
Cal Blank - 0 ug/mL	3/7/2023 10:34	Standard
Std. 1 - 0.1ug/mL	3/7/2023 10:37	Standard
Std. 2 - 1.0 ug/mL	3/7/2023 10:39	Standard
Std. 3 - 2.0 ug/mL	3/7/2023 10:41	Standard
Std. 4 - 5.0 ug/mL	3/7/2023 10:43	Standard
Std. 5 - 10.0 ug/mL	3/7/2023 10:46	Standard
ICV	3/7/2023 10:48	ICV
ICB	3/7/2023 10:50	ICB
0223-176.LB	3/7/2023 10:53	Unknown
0223-176.LCS	3/7/2023 10:55	Unknown
0223-176.1-1B	3/7/2023 10:57	Unknown
0223-176.1-1B MS	3/7/2023 10:59	Unknown
0223-176.2-1B	3/7/2023 11:02	Unknown
0223-176.2-1B DUP	3/7/2023 11:04	Unknown
0223-176.3-1B	3/7/2023 11:06	Unknown
0223-176.4-1B	3/7/2023 11:09	Unknown
0223-176.5-1B	3/7/2023 11:11	Unknown
0223-176.6-1B	3/7/2023 11:13	Unknown
CCV	3/7/2023 11:15	CCV
CCB	3/7/2023 11:18	CCB
0223-176.7-1B	3/7/2023 11:20	Unknown
0223-176.8-1B	3/7/2023 11:22	Unknown
0223-176.9-1B	3/7/2023 11:25	Unknown
0223-176.10-1B	3/7/2023 11:27	Unknown
0223-176.11-1B	3/7/2023 11:29	Unknown
0223-176.12-1B	3/7/2023 11:32	Unknown
0223-176.13-1B	3/7/2023 11:34	Unknown
0223-176.14-1B	3/7/2023 11:36	Unknown
0223-176.15-1B	3/7/2023 11:39	Unknown
0223-176.16-1B	3/7/2023 11:41	Unknown
CCV	3/7/2023 11:43	CCV
CCB	3/7/2023 11:46	CCB
0223-176.17-1B	3/7/2023 11:48	Unknown
0223-176.18-1B	3/7/2023 11:50	Unknown
0223-176.LB Repour	3/7/2023 12:00	Unknown
CCV	3/7/2023 12:02	CCV
CCB	3/7/2023 12:04	CCB

Calculation of MDL per SOP ENT-027

Enter values into the highlighted cells

Date Analyzed 8/5/22
Analyst R Burnette
Date Reviewed 8/15/22
Reviewed By AMC

Instrument Walt Jr
Logbook Page Metals Prep 1015
Injector (F,R,NA) NA
Column NA
Injector (F,R,NA) NA
Column NA

Job #(s)
Applicable Method(s) 7470 & EPA Method 29 & EPA Method 101A
Matrix
Solvent

Seven (or more) replicates of a low concentration pr
(farthest from the mean area) may be removed assun
shows the value(s) to be an outlier. At lea

MDL =   Stdev * Student's t-value

t-value =   3.143   N=7   Degrees
t-value =   2.998   N=8   Degrees
t-value =   2.896   N=9   Degrees
t-value =   2.821   N=10   Degrees

Compound #	1	2	3	4	5
Compound Name	Hg				
Notes (if needed)					
Units	ppb	ppb	ppb	ppb	ppb
Test Std Concentrations #1	0.10300	0.00000	0.00000	0.00000	0.00000
#2	0.10200	0.00000	0.00000	0.00000	0.00000
#3	0.08500	0.00000	0.00000	0.00000	0.00000
#4	0.09800	0.00000	0.00000	0.00000	0.00000
#5	0.11100	0.00000	0.00000	0.00000	0.00000
#6	0.12600	0.00000	0.00000	0.00000	0.00000
#7	0.12000	0.00000	0.00000	0.00000	0.00000
#8	0.10900	0.00000	0.00000	0.00000	0.00000
#9		0.00000	0.00000	0.00000	0.00000
#10		0.00000	0.00000	0.00000	0.00000
!! Remove extra zeros !!					
Standard Deviation	0.0128	0.0000	0.0000	0.0000	0.0000
Student's T factor	2.998	2.821	2.821	2.821	2.821
Calculated MDL = StDev * t	0.039	0.000	0.000	0.000	0.000
Slope of Cal Curve	0.99989	0.00000	0.00000	0.00000	0.00000
Integration Area Reject	0	0	0	0	0
Lowest Integratable Conc.	0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Concentration of Std	0.100	0.000	0.000	0.000	0.000
Lowest Part 136 App B value*	0.010	0.000	0.000	0.000	0.000
MDL value <1/10 Std Value?	Pass	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
MDL to Use	0.03852	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

USE   0.050 due to noise

*40 CFR Part 136 Appendix B, a common detection limit guidance, indicates that the MDL can not be <1/10th the standard used to set the MDL.
MDL to use is the maximum of the Calculated MDL, lowest integratable concentration and the Lowest Part 136 B value.

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Analyst: RRB   Date: 8/5/22

Job #s	Describe Work Documented on This Page	Supplies, Ancillary Equipment Serial #s, Lot #s, Etc
0722-161, MDL Study	M29 Hg Prep	

1015 A: CVAA Standard Preparation Log

1015 B: Method 29 Hg Prepsheet

N/A

Reviewer's Initials & Date:

Metals Prep
page 1015

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101SA

CVAA Standard Preparation Log *Stds must be prepared fresh daily

EA Std ID#Hg (Job #: 1, 2, 3, etc.)	Std/Reagent Name	Conc.	Stock Standard/Reagent	Conc.	EA ID# & Exp Date	Amount Added	Final Volume (mL) & Diluent	Pipette & Exp Date	Analyst	Date	Exp. Date
	Primary Intermediate Standard										
1	Primary Int. Std.	1000 ppb	Hg Standard	1000 ppm	F0794 / 10/11/23	0.10 mL	100 / DI	133 / 9/7/22	RAG	8/5/22	8/6/22
	"	"	HNO3	67-70%	SA208A056 / 3-24	0.5 mL	"	134 / 9/7/22			
	Secondary Intermediate Standard										
2	Secondary Int. Std.	1000 ppb	Hg Standard (2nd source)	1000 ppm	F0764 / 4/25/23	0.10 mL	100 / DI	133 / 9/7/22			
	"	"	HNO3	67-70%	SA208A056 / 3-24	0.5 mL	"	134 / 9/7/22			
	Primary Working Standard										
3	Primary Working Std.	50 ppb	Primary Int. Std.	1000 ppb	① 8/6/22	5.0 mL	100 / DI	141 / 8/6/22			
	"	"	HNO3	67-70%	SA208A056 / 3-24	0.5 mL	"	134 / 9/7/22			
	Secondary Working Standard										
5	Secondary Working Std.	50 ppb	Secondary Int. Std.	1000 ppb	2 / 8/6/22	5.0 mL	100 / DI	141 / 8/6/22			
	"	"	HNO3	67-70%	SA208A056 / 3-24	0.5 mL	"	134 / 9/7/22			

ENTHALPY ANALYTICAL

Method 29 Hg Prepsheet

Job Nos: 0722-161, MDL Study

Prep Date(s): 8/5/22

Analyst(s) RAB

Instrument: Walt Jr.

Calibration Standards and QC

Spike Used	Calibration Standard	Spike Amount (mL)	Pip & Exp	Final Vol. (mL)
--	Calibration Blank	--		50
1st WS	Standard 1 - 0.1 ppb	0.1	133 9/7/22	50
1st WS	Standard 2 - 1.0 ppb	1.0	134 9/7/22	50
1st WS	Standard 3 - 2.0 ppb	2.0		50
1st WS	Standard 4 - 5.0 ppb	5.0	141 9/6/22	50
1st WS	Standard 5 - 10 ppb	10.0		50
2nd WS	ICV/CCV - 5.0 ppb	5.0		50
--	ICB/CCB	--		50

Samples

Sample ID	Aliquot Volume (mL)	Final Vol. (mL)
0722-161.1-1B	10.0	50
.2		50
.3		50
.4		50
MDL.1	0.1 ①	50
.2		50
.3		50
.4		50
.5		50
.6		50
.7		50
.8		50
		50
		50
		50
		50
		50
		50
		50

Temp (°C): 95.1   Hotplate # 3

1st WS ID: 3	Exp Date: 8/6/22
2nd WS ID: 4	Exp Date: 8/6/22
H2SO4 ID: SCA 1349977	Exp Date: 6/24 ②
HNO3 ID: SCA 2089036	Exp Date: 3-24
KMnO4 ID: ES-0689	Exp Date: 2/3/23
K2S2O8 ID: ES-0689 ③	Exp Date: 2/3/23 ④
HAS ID: ES-0675	Exp Date: 1/15/23
SnCl2 ID: ES-0688	Exp Date: 8/7/22
H2SO4 Pip & Exp: 139 9/7/22	HNO3 Pip & Exp: 139 9/7/22
KMnO4 Pip & Exp:	K2S2O8 Pip & Exp:
HAS Pip & Exp:	Digitube ID: J537215-2104
LCS Pip & Exp: 141 9/6/22	MS Pip & Exp: 141 9/6/22

Digestion Time

Start: 9:57 AM Finish: 11:57 AM

Quality Control

QC Sample	Sample ID	Aliq. Vol. (mL)	Final Vol. (mL)	Spike ID	ID Exp Date	Stock Conc	Volume Added (mL)
MB	N/A	20	50	N/A	N/A	N/A	N/A
LCS	N/A	20	50	3	8/6/22	50 ppb	5.0
MS	0722-161.1-1B	10.0	50	1	1	1	
Duplicate	1 .2	1	50	N/A	N/A	N/A	N/A

Controlled Document
Confidential Property/Business Information of Enthalpy Analytical

① 0.1 mL of WS1
② ← 6-24 RAB 8/5/22
③ ← ES-0683 RAB 8/5/22
④ ← 2/1/23 RAB 8/5/22

Page 1 of 1

EA Job# 0223-176R Page 182 of 186
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Sample ID	Time Stamp	Sample Type	Average Conc.	%RSD Conc.	Conc. Units
Cal Blank - 0 ug/mL	8/5/2022 12:42	Standard	0	0	ppb
Std. 1 - 0.1ug/mL	8/5/2022 12:45	Standard	0.1	0	ppb
Std. 2 - 1.0 ug/mL	8/5/2022 12:47	Standard	1	0	ppb
Std. 3 - 2.0 ug/mL	8/5/2022 12:49	Standard	2	0	ppb
Std. 4 - 5.0 ug/mL	8/5/2022 12:51	Standard	5	0	ppb
Std. 5 - 10.0 ug/mL	8/5/2022 12:54	Standard	10	0	ppb
ICV	8/5/2022 12:56	ICV	5.12	0.001	ppb
ICB	8/5/2022 12:58	ICB	0.011	0.014	ppb
0722-161.LB	8/5/2022 13:01	Unknown	0	0.79	ppb
0722-161.LCS	8/5/2022 13:03	Unknown	5.01	0.001	ppb
MDL.1	8/5/2022 13:05	Unknown	0.103	0.001	ppb
MDL.2	8/5/2022 13:08	Unknown	0.102	0.001	ppb
MDL.3	8/5/2022 13:10	Unknown	0.085	0.002	ppb
MDL.4	8/5/2022 13:12	Unknown	0.098	0.001	ppb
MDL.5	8/5/2022 13:14	Unknown	0.111	0.002	ppb
MDL.6	8/5/2022 13:17	Unknown	0.126	0.001	ppb
MDL.7	8/5/2022 13:19	Unknown	0.12	0.001	ppb
MDL.8	8/5/2022 13:21	Unknown	0.109	0.002	ppb
CCV	8/5/2022 13:24	CCV	5.43	0.001	ppb
CCB	8/5/2022 13:26	CCB	-0.002	0.04	ppb
0722-161.1-1B	8/5/2022 13:28	Unknown	0.035	0.006	ppb
0722-161.1-1B MS	8/5/2022 13:31	Unknown	4.86	0.001	ppb
0722-161.2-1B	8/5/2022 13:33	Unknown	0.057	0.002	ppb
0722-161.2-1B DUP	8/5/2022 13:35	Unknown	0.063	0.002	ppb
0722-161.3-1B	8/5/2022 13:37	Unknown	0.011	0.006	ppb
0722-161.4-1B	8/5/2022 13:40	Unknown	0.036	0.002	ppb
CCV	8/5/2022 13:42	CCV	4.65	0.001	ppb
CCB	8/5/2022 13:44	CCB	0.01	0.005	ppb

CETAC QuickTrace Mercury Analysis System - 0722-161 MDLs 080522B

File Edit View Log Analyze Options Window Help

Analysis

Tube	Sample Label	Conc ppb	μAbs	Flag	%RSD Abs
1:8	MDL6	0.126	2033.18		0.6
1:9	MDL.7	0.120	1950.14		1.0
1:10	MDL.8	0.109	1807.27		1.7
S:7	CCV	5.430	74077.57		0.5
S:8	CCB	-0.002	293.35		4.0
1:11	0722-161.1-1B	0.035	793.29		3.7
1:12	0722-161.1-1B MS	4.860	66267.06		1.1
1:13	0722-161.2-1B	0.057	1102.79		1.4
1:14	0722-161.2-1B DUP	0.063	1170.92		1.7
1:15	0722-161.3-1B	0.011	471.68		1.9
1:16	0722-161.4-1B	0.036	807.84		1.2
S:7	CCV	4.650	63482.34		1.2
S:8	CCB	0.010	460.20		1.4

8/5/2022 1:44:48 PM	Worksheet Saved
8/5/2022 1:44:48 PM	Sample 'CCB' measured. Conc.: 1.0100E-002 ppb (not diln. correc
8/5/2022 1:42:28 PM	QC Sample 'CCV' recovery was measured at 93.03 percent
8/5/2022 1:42:28 PM	Sample 'CCV' measured. Conc.: 4.650 ppb (not diln. corrected]
8/5/2022 1:40:08 PM	Sample '0722-161.4-1B' measured. Conc.: 3.5700E-002 ppb (not
8/5/2022 1:37:52 PM	Sample '0722-161.3-1B' measured. Conc.: 1.1100E-002 ppb (not
8/5/2022 1:35:36 PM	Sample '0722-161.2-1B DUP' measured.Conc.: 6.2500E-002 ppb
8/5/2022 1:33:21 PM	Sample '0722-161.2-1B' measured. Conc.: 5.7400E-002 ppb (not
8/5/2022 1:31:05 PM	Sample '0722-161.1-1B MS' measured. Conc.: 4.860 ppb (not dil
8/5/2022 1:28:47 PM	Sample '0722-161.1-1B' measured. Conc.: 3.4600E-002 ppb (not
8/5/2022 1:26:28 PM	Sample 'CCB' measured. Conc.: -2.1700E-003 ppb (not diln. corre
8/5/2022 1:24:08 PM	QC Sample 'CCV' recovery was measured at 108.64 percent

Calibration Coeffs: 13577.635x + 322.857, R2: 0.99989

Time (Seconds)

Concentration (ppb)

μAbsorbance

0722-161 MDLs 080522B   Idle

Analysis Complete
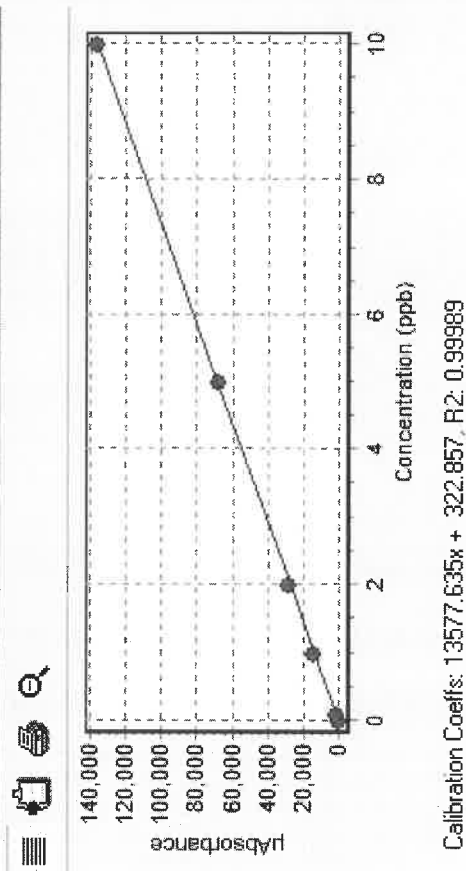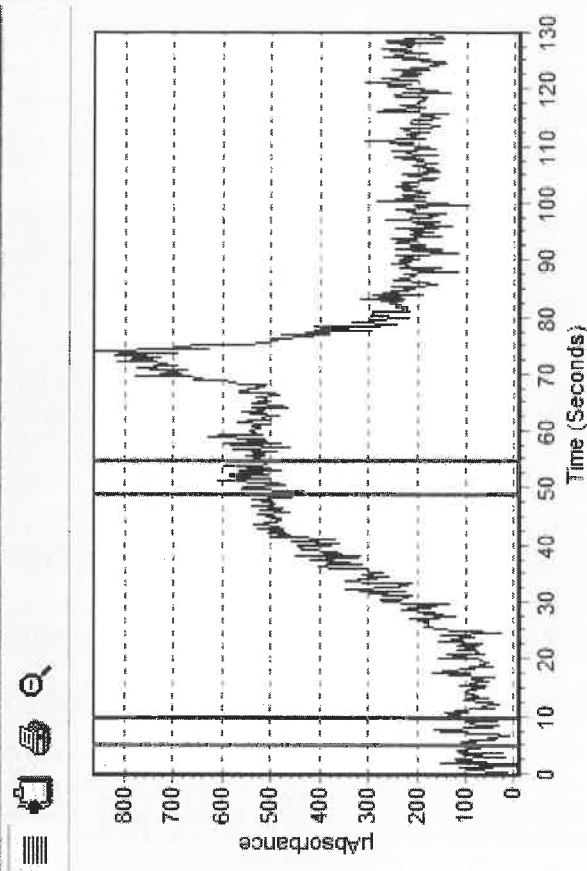
Sheet1

Sample ID	Time Stamp	Sample Type
Cal Blank - 0 ug/mL	8/5/2022 12:42:51 PM	Standard
Std. 1 - 0.1ug/mL	8/5/2022 12:45:07 PM	Standard
Std. 2 - 1.0 ug/mL	8/5/2022 12:47:24 PM	Standard
Std. 3 - 2.0 ug/mL	8/5/2022 12:49:41 PM	Standard
Std. 4 - 5.0 ug/mL	8/5/2022 12:51:59 PM	Standard
Std. 5 - 10.0 ug/mL	8/5/2022 12:54:19 PM	Standard
ICV	8/5/2022 12:56:38 PM	ICV
ICB	8/5/2022 12:58:59 PM	ICB
0722-161.LB	8/5/2022 1:01:14 PM	Unknown
0722-161.LCS	8/5/2022 1:03:30 PM	Unknown
MDL.1	8/5/2022 1:05:46 PM	Unknown
MDL.2	8/5/2022 1:08:03 PM	Unknown
MDL.3	8/5/2022 1:10:20 PM	Unknown
MDL.4	8/5/2022 1:12:37 PM	Unknown
MDL.5	8/5/2022 1:14:54 PM	Unknown
MDL.6	8/5/2022 1:17:12 PM	Unknown
MDL.7	8/5/2022 1:19:30 PM	Unknown
MDL.8	8/5/2022 1:21:48 PM	Unknown
CCV	8/5/2022 1:24:08 PM	CCV
CCB	8/5/2022 1:26:28 PM	CCB
0722-161.1-1B	8/5/2022 1:28:47 PM	Unknown
0722-161.1-1B MS	8/5/2022 1:31:05 PM	Unknown
0722-161.2-1B	8/5/2022 1:33:21 PM	Unknown
0722-161.2-1B DUP	8/5/2022 1:35:36 PM	Unknown
0722-161.3-1B	8/5/2022 1:37:52 PM	Unknown
0722-161.4-1B	8/5/2022 1:40:08 PM	Unknown
CCV	8/5/2022 1:42:28 PM	CCV
CCB	8/5/2022 1:44:48 PM	CCB

This Is The Last Page
Of This Report.

ENTHALPY
ANALYTICAL

Appendix A.5
EPA Method 320 Data

MONTROSE
AIR QUALITY SERVICES

MONTROSE
AIR QUALITY SERVICES

Sunshine Canyon Landfill
Sylmar, CA
Turbine 4 & Turbine 5
USEPA Method 320 Testing

February 7, 8, 14 & 15, 2023
PROJ-023392

By

Phillip Kauppi
District Manager / Chemist

April 12, 2023

MONTROSE
AIR QUALITY SERVICES

Sunshine Canyon Landfill
Sylmar, CA
Turbine 4 & Turbine 5
USEPA Method 320 Testing
February 7, 8, 14 & 15, 2023
PROJ-023392

Scope

Montrose Air Quality Services (MAQS, Mt. Pleasant, MI) was contracted to conduct emissions testing on Turbine 4 and Turbine 5 at Sunshine Canyon Landfill in Sylmar, CA. Testing was performed February 7, 8, 14 and 15, 2023 to determine concentrations of gaseous formaldehyde (CH_2O), hydrochloric acid (HCl), hydrofluoric acid (HF), and moisture (H_2O) from the turbines.

US EPA Method 320 was performed to quantify the concentration levels of gaseous emissions. Trevor Tilmann (MAQS) performed data collection. Phillip Kauppi (MAQS) performed data validation, and report generation.

Procedures

FTIR Method 320 Instrumental Configuration & Sample Collection

FTIR data were collected using an MKS MultiGas 2030 FTIR spectrometer. The FTIR was equipped with a temperature-controlled, 5.11-meter multipass gas cell maintained at 191°C. All data were collected at 0.5 cm-1 resolution. Each FTIR spectrum was derived from the coaddition of 64 scans, with a new data point generated approximately every 60 seconds.

Sample gas continuously passed through the FTIR gas cell via heated head sampling pump. Total sample flow was approximately ten liters per minute. Gas flow and sampling system pressure were monitored using a rotameter and pressure transducer. See Table 1 below for sampling system details.

Table 1 – FTIR Sampling System

Source	MKS Serial #	Sampling Line	Probe Assembly	Particulate Filter Media	Operating Temperatures
Turbine 4	017796313	50', 3/8" dia. Teflon	3', 3/8" dia. SS + heated filter element	0.01µ borosilicate	191°C FTIR + system
Turbine 5					

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FTIR diagnostics were performed on the instrument daily to ensure signal intensity and line shape were acceptable to make measurements. See these results in the FTIR Diagnostics appendix.

FTIR QA/QC Methodology

QA/QC procedures followed US EPA Method 320. See Tables 2 and 3 below for QA/QC procedure details and list of calibration gas standards. All calibration gases were introduced to the analyzer and sampling system using instrument grade stainless steel rotameters. All QA/QC procedures were within the acceptance criteria allowance of the EPA methodology. QA/QC calculations are presented in detail below.

Table 2 – FTIR QA/QC Procedures

QAQC Specification	Purpose	Calibration Gas Analyte	Delivery	Frequency	Acceptance Criteria	Result
M320: Zero	Verify that the FTIR is free of contaminants & zero the FTIR	Nitrogen (zero)	Direct to FTIR	Daily - pre/post test	< MDL or Noise	Pass
M320: Calibration Transfer Standard (CTS) Direct	Verify FTIR stability, confirm optical path length	Ethylene	Direct to FTIR	Daily - pre-test	+/- 5% cert. value	Pass
M320: Analyte Direct	Verify FTIR calibration	Formaldehyde/SF6 HCl/SF6 HF/SF6	Direct to FTIR	Daily - pre-test	Determine FTIR response to be used for analyte spike calcs	Pass
M320: CTS Response	Verify system stability, recovery, RT	Ethylene	Sampling System	Daily - pre/post test runs	+/- 5% of Direct Measurement	Pass
M320: Zero Response	Verify system is free of contaminants, system bias	Nitrogen (zero)	Sampling System	Daily - pre/post test	Bias correct data	Pass
M320: Analyte Spike	Verify system ability to deliver and quantify analyte of interest in the presence of other effluent gases	Formaldehyde/SF6 HCl/SF6 HF/SF6	Dynamic Addition to Sampling System, 1:10 effluent	Daily - pre-test	+/- 30% theoretical recovery	Pass

Table 3 – Calibration Gas Standards

Components	Concentration (ppm)	Vendor	Cylinder #	Standard Type
Formaldehyde/SF6	19.71, 4.97	Apel Reimer	CC751990	Certified Standard +/- 5%, 2%
HCl, SF6	99.9, 5.0	Airgas	CC715847	GMACS +/- 2.30%, 0.96%
HF, SF6	111.2, 4.999	Airgas	EB01146042	Certified Standard +/- 10%
Ethylene	100.2	Airgas	CC14351	Primary +/- 1%
Nitrogen	Zero gas	Praxair	CC700873	UHP Grade

FTIR QA/QC Calculations

Method 320: Analyte Spiking

Formaldehyde, HCl and HF spiking was performed daily at each source prior to testing to verify the ability of the sampling system to quantitatively deliver a sample containing formaldehyde, HCl and HF from the base of the probe to the FTIR. The spike target dilution ratio was 1:10 or

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less. Analyte spiking assures the ability of the FTIR to quantify formaldehyde, HCl and HF in the presence of effluent gas.

As part of the spiking procedure, samples from the sources were measured to determine native formaldehyde, HCl and HF concentrations to be used in the spike recovery calculations. The spiking gases contained a low concentration of sulfur hexafluoride (SF_6). The determined SF_6 concentration in the spiked sample was used to calculate the dilution factor of the spike and thus used to calculate the concentration of the spiked formaldehyde, HCl and HF. The following equations illustrates the percent recovery calculation.

$$DF = \frac{SF6(spk)}{SF6(dir)}$$ (Sec. 9.3.1 (3) USEPA Method 320)

$$CS = DF * Spike(dir) + Unspike(1 - DF)$$ (Sec. 9.3.1 (2) USEPA Method 320)

DF = Dilution factor of the spike gas
$SF_{6\,(nat)}$ = SF_6 concentration measured directly in unspiked sample
$SF_{6\,(dir)}$ = SF_6 concentration measured directly in undiluted spike gas
$SF_{6\,(spk)}$ = Diluted SF_6 concentration measured in a spiked sample
$H_2O_{(nat)}$ = Native H_2O concentration measured in unspiked samples
$H_2O_{(spk)}$ = Diluted H_2O concentration measured in a spiked sample
$Spike_{dir}$ = Concentration of the analyte in the spike standard measure by the FTIR directly
CS = Expected concentration of the spiked samples
Unspike = Native concentration of analytes in unspiked samples

FTIR Post Collection Data Validation

As part of the data validation procedure, reference spectra are manually fit to that of the sample spectra and a concentration is determined. The reference spectra are scaled to match the peak amplitude of the sample, thus providing a scale factor. The scale factor multiplied by the reference spectra concentration is used to determine the concentration value for the sample spectra. Sample pressure and temperature corrections are then applied to compute the final sample concentration. The manually calculated results are then compared with the software-generated results. The data is then validated if the two concentrations are within ± 20% agreement. If there is a difference greater than ± 20% the spectra are reviewed for possible spectra interferences or any other potential causes leading to misquantified data.

Results and Discussion

Detection Limit

The FTIR detection limit for each analyte was calculated following Annex A2 of ASTM D6348-12 procedure using spectra that contained similar amounts of moisture. The minimum detectable concentration of the analytes was calculated as three times the standard deviation of the noise in

the FTIR system. This minimum concentration can be detected with a probability of 99.7 %. See Table 4 below for determined minimum detectable concentrations.

Table 4 - FTIR Detection Limits

Analyte	Detection Limit (ppmv wet)	Detection Limit (%v wet)
H_2O	–	0.1
Formaldehyde	0.2	-
HCl	0.2	-
HF	0.4	-

Turbine 4 & Turbine 5

Seven, sixty-minute test runs were performed on Turbine 4 over February 7 and 8, 2023. Seven, sixty-minute test runs were performed on Turbine 5 on February 14 and 15, 2023. All Method 320 FTIR data concentration data were determined on a wet concentration (ppmvw) volume basis. The determined moisture content was used to calculate formaldehyde, HCl and HF on a dry basis (ppmvd).

Analyte spiking was performed to confirm the ability of the measurement system to deliver and quantify formaldehyde, HCl and HF. See the FTIR QA/QC Data and Run Results Appendix for all concentration results. See Tables 5 and 6 below for a summary of test run results.

Table 5 – Turbine 4 – Test Run Averages

Test Detail	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)
02/07/2023 Turbine 4 - Run 1 10:50 - 11:50	5.61	0.51	1.62	< 0.2	0.54	1.72	< 0.2
02/07/2023 Turbine 4 - Run 2 12:00 - 12:56 ; 13:04 - 13:08	5.57	0.46	1.58	< 0.2	0.49	1.67	< 0.2
02/07/2023 Turbine 4 - Run 3 13:15 - 14:15	5.56	0.48	1.69	< 0.2	0.50	1.79	< 0.2
02/08/2023 Turbine 4 - Run 4 09:06 - 10:06	5.69	0.42	1.53	< 0.2	0.45	1.62	< 0.2
02/08/2023 Turbine 4 - Run 5 10:19 - 11:19	5.69	0.48	1.71	< 0.2	0.51	1.81	< 0.2
02/08/2023 Turbine 4 - Run 6 11:23 - 12:18 ; 12:27 - 12:32	5.70	0.53	1.80	< 0.2	0.56	1.90	< 0.2
02/08/2023 Turbine 4 - Run 7 13:05 - 14:05	5.65	0.56	1.89	< 0.2	0.60	2.00	< 0.2

Table 6 – Turbine 5 – Test Run Averages

Test Detail	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)
02/14/2023 Turbine 5 - Run 1 9:15 - 10:15	5.85	0.27	1.19	< 0.2	0.29	1.26	< 0.2
02/14/2023 Turbine 5 - Run 2 10:20 - 11:20	5.70	0.30	1.26	< 0.2	0.31	1.34	< 0.2
02/14/2023 Turbine 5 - Run 3 11:25 - 12:09; 12:18 - 12:34	5.68	0.33	1.32	< 0.2	0.35	1.40	< 0.2
02/14/2023 Turbine 5 - Run 4 12:40 - 13:40	5.63	0.36	1.37	< 0.2	0.38	1.45	< 0.2
02/15/2023 Turbine 5 - Run 5 9:05 - 10:05	5.46	0.27	1.14	< 0.2	0.29	1.21	< 0.2
02/15/2023 Turbine 5 - Run 6 10:10 - 11:10	5.37	0.31	1.44	< 0.2	0.33	1.52	< 0.2
02/15/2023 Turbine 5 - Run 7 11:15 - 11:45; 12:00 - 12:30	5.31	0.37	1.56	< 0.2	0.39	1.64	< 0.2

The following Appendices are included:

- FTIR QA/QC Data
- FTIR Run Data
- Certificates of Analysis

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SunshineCanyonLandfill_2023Feb_PROJ-023392_txt

Date: April 12th, 2023

APPENDIX

FTIR Test Run Data

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Turbine 4 - Run 1

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T4_001183.LAB	2/7/2023	10:50:59	5.63	0.50	1.63	0.02	0.53	1.73	0.02	191.9	1.004
T4_001184.LAB	2/7/2023	10:51:59	5.60	0.54	1.66	0.03	0.58	1.76	0.03	191.8	1.004
T4_001185.LAB	2/7/2023	10:52:59	5.58	0.46	1.62	0.05	0.49	1.71	0.05	191.8	1.004
T4_001186.LAB	2/7/2023	10:53:59	5.59	0.51	1.58	0.08	0.54	1.68	0.09	191.8	1.005
T4_001187.LAB	2/7/2023	10:54:59	5.59	0.53	1.56	0.02	0.57	1.65	0.02	191.8	1.005
T4_001188.LAB	2/7/2023	10:55:59	5.59	0.49	1.56	0.05	0.52	1.66	0.05	191.7	1.005
T4_001189.LAB	2/7/2023	10:56:59	5.59	0.49	1.53	0.08	0.52	1.62	0.08	191.8	1.007
T4_001190.LAB	2/7/2023	10:57:59	5.61	0.48	1.54	-0.09	0.51	1.64	-0.10	191.8	1.006
T4_001191.LAB	2/7/2023	10:58:59	5.61	0.51	1.56	-0.02	0.54	1.66	-0.02	191.9	1.006
T4_001192.LAB	2/7/2023	10:59:59	5.62	0.49	1.55	-0.02	0.52	1.65	-0.02	191.8	1.006
T4_001193.LAB	2/7/2023	11:00:59	5.62	0.49	1.60	-0.07	0.52	1.69	-0.07	191.7	1.004
T4_001194.LAB	2/7/2023	11:01:59	5.58	0.53	1.64	0.02	0.56	1.74	0.02	191.6	1.005
T4_001195.LAB	2/7/2023	11:02:59	5.61	0.54	1.64	0.06	0.57	1.74	0.06	191.6	1.003
T4_001196.LAB	2/7/2023	11:03:58	5.60	0.57	1.63	-0.03	0.61	1.72	-0.03	191.7	1.003
T4_001197.LAB	2/7/2023	11:04:59	5.61	0.53	1.60	0.07	0.56	1.70	0.07	191.8	1.005
T4_001198.LAB	2/7/2023	11:05:59	5.62	0.46	1.61	0.01	0.48	1.71	0.01	191.8	1.004
T4_001199.LAB	2/7/2023	11:06:58	5.61	0.51	1.59	0.05	0.54	1.68	0.05	191.7	1.006
T4_001200.LAB	2/7/2023	11:07:58	5.61	0.49	1.61	-0.01	0.52	1.70	-0.01	191.7	1.005
T4_001201.LAB	2/7/2023	11:08:58	5.61	0.47	1.61	0.01	0.49	1.70	0.01	191.6	1.006
T4_001202.LAB	2/7/2023	11:09:58	5.59	0.51	1.61	0.03	0.54	1.70	0.04	191.7	1.006
T4_001203.LAB	2/7/2023	11:10:58	5.61	0.57	1.64	0.05	0.60	1.74	0.05	191.7	1.006
T4_001204.LAB	2/7/2023	11:11:58	5.62	0.53	1.70	-0.02	0.56	1.80	-0.02	191.7	1.004
T4_001205.LAB	2/7/2023	11:12:58	5.60	0.50	1.71	0.05	0.53	1.81	0.06	191.8	1.004
T4_001206.LAB	2/7/2023	11:13:58	5.61	0.55	1.66	0.08	0.59	1.76	0.08	191.7	1.003
T4_001207.LAB	2/7/2023	11:14:58	5.60	0.47	1.61	-0.06	0.49	1.71	-0.07	191.7	1.004
T4_001208.LAB	2/7/2023	11:15:58	5.62	0.56	1.61	0.09	0.60	1.70	0.10	191.7	1.004
T4_001209.LAB	2/7/2023	11:16:58	5.63	0.50	1.61	0.05	0.53	1.71	0.05	191.7	1.004
T4_001210.LAB	2/7/2023	11:17:58	5.63	0.44	1.60	0.01	0.47	1.69	0.01	191.7	1.005
T4_001211.LAB	2/7/2023	11:18:58	5.61	0.50	1.60	0.01	0.53	1.70	0.01	191.7	1.006
T4_001212.LAB	2/7/2023	11:19:58	5.61	0.47	1.60	-0.04	0.50	1.70	-0.04	191.7	1.007
T4_001213.LAB	2/7/2023	11:20:57	5.61	0.51	1.60	0.02	0.54	1.69	0.02	191.7	1.006
T4_001214.LAB	2/7/2023	11:21:57	5.63	0.48	1.66	0.08	0.51	1.76	0.09	191.7	1.004
T4_001215.LAB	2/7/2023	11:22:57	5.66	0.51	1.70	0.00	0.54	1.80	0.00	191.8	1.003
T4_001216.LAB	2/7/2023	11:23:57	5.63	0.50	1.67	0.02	0.53	1.76	0.02	191.8	1.005
T4_001217.LAB	2/7/2023	11:24:57	5.62	0.53	1.63	-0.03	0.56	1.73	-0.03	191.7	1.004
T4_001218.LAB	2/7/2023	11:25:57	5.64	0.52	1.60	0.02	0.55	1.70	0.02	191.7	1.004
T4_001219.LAB	2/7/2023	11:26:57	5.63	0.49	1.62	0.01	0.52	1.72	0.01	191.6	1.005
T4_001220.LAB	2/7/2023	11:27:57	5.61	0.51	1.63	0.12	0.54	1.73	0.12	191.6	1.005
T4_001221.LAB	2/7/2023	11:28:57	5.59	0.50	1.62	0.04	0.53	1.71	0.05	191.7	1.006
T4_001222.LAB	2/7/2023	11:29:57	5.63	0.52	1.61	-0.02	0.56	1.71	-0.02	191.7	1.005
T4_001223.LAB	2/7/2023	11:30:57	5.65	0.52	1.63	0.06	0.55	1.73	0.06	191.7	1.007
T4_001224.LAB	2/7/2023	11:31:57	5.71	0.52	1.70	0.07	0.55	1.81	0.07	193.1	1.000
T4_001225.LAB	2/7/2023	11:32:57	5.63	0.54	1.69	0.04	0.57	1.79	0.04	191.6	1.003
T4_001226.LAB	2/7/2023	11:33:57	5.60	0.52	1.70	-0.06	0.55	1.80	-0.06	191.6	1.004
T4_001227.LAB	2/7/2023	11:34:57	5.63	0.51	1.66	0.07	0.54	1.76	0.07	191.6	1.004
T4_001228.LAB	2/7/2023	11:35:56	5.60	0.49	1.64	0.05	0.52	1.74	0.05	191.6	1.003
T4_001229.LAB	2/7/2023	11:36:57	5.63	0.52	1.63	0.05	0.56	1.73	0.06	191.8	1.004
T4_001230.LAB	2/7/2023	11:37:57	5.60	0.49	1.61	-0.05	0.52	1.71	-0.05	191.7	1.006
T4_001231.LAB	2/7/2023	11:38:57	5.58	0.49	1.61	0.01	0.52	1.71	0.01	191.7	1.007
T4_001232.LAB	2/7/2023	11:39:57	5.60	0.53	1.59	-0.02	0.56	1.68	-0.02	191.6	1.005
T4_001233.LAB	2/7/2023	11:40:56	5.59	0.50	1.57	0.06	0.53	1.66	0.06	191.7	1.006
T4_001234.LAB	2/7/2023	11:41:56	5.62	0.47	1.59	0.06	0.50	1.69	0.06	191.6	1.006
T4_001235.LAB	2/7/2023	11:42:56	5.61	0.51	1.65	0.06	0.54	1.75	0.06	191.7	1.003
T4_001236.LAB	2/7/2023	11:43:56	5.61	0.54	1.66	-0.01	0.58	1.76	-0.01	191.7	1.004
T4_001237.LAB	2/7/2023	11:44:56	5.63	0.55	1.63	0.03	0.58	1.72	0.03	191.6	1.003
T4_001238.LAB	2/7/2023	11:45:56	5.63	0.53	1.61	-0.04	0.56	1.70	-0.04	191.6	1.004
T4_001239.LAB	2/7/2023	11:46:56	5.60	0.49	1.59	-0.03	0.52	1.69	-0.03	191.6	1.005
T4_001240.LAB	2/7/2023	11:47:56	5.61	0.49	1.61	-0.01	0.52	1.70	-0.01	191.6	1.004
T4_001241.LAB	2/7/2023	11:48:56	5.62	0.51	1.58	0.07	0.54	1.68	0.07	191.6	1.004
T4_001242.LAB	2/7/2023	11:49:56	5.62	0.51	1.60	0.05	0.54	1.69	0.05	191.6	1.005
T4_001243.LAB	2/7/2023	11:50:56	5.61	0.49	1.56	-0.04	0.52	1.66	-0.04	191.6	1.004
02/07/2023	Minimum		5.58	0.44	1.53	-0.09	0.47	1.62	-0.10		
Turbine 4 - Run 1	Maximum		5.71	0.57	1.71	0.12	0.61	1.81	0.12		
10:50 - 11:50	Average		5.61	0.51	1.62	0.02	0.54	1.72	0.02		

Turbine 4 - Run 2

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T4_001259.LAB	2/7/2023	12:00:59	5.61	0.41	1.49	0.02	0.43	1.58	0.02	191.7	1.006
T4_001260.LAB	2/7/2023	12:01:59	5.59	0.44	1.50	0.01	0.47	1.59	0.02	191.6	1.006
T4_001261.LAB	2/7/2023	12:02:59	5.60	0.48	1.56	-0.01	0.51	1.65	-0.01	191.6	1.005
T4_001262.LAB	2/7/2023	12:03:59	5.61	0.51	1.60	-0.09	0.54	1.70	-0.10	191.6	1.004
T4_001263.LAB	2/7/2023	12:04:59	5.60	0.47	1.58	-0.01	0.49	1.67	-0.01	191.7	1.003
T4_001264.LAB	2/7/2023	12:05:58	5.60	0.49	1.58	0.04	0.52	1.67	0.04	191.6	1.004
T4_001265.LAB	2/7/2023	12:06:58	5.59	0.47	1.55	-0.04	0.50	1.64	-0.05	191.7	1.004
T4_001266.LAB	2/7/2023	12:07:58	5.59	0.47	1.57	-0.01	0.50	1.66	-0.01	191.7	1.002
T4_001267.LAB	2/7/2023	12:08:58	5.60	0.48	1.55	-0.02	0.51	1.64	-0.02	191.7	1.004
T4_001268.LAB	2/7/2023	12:09:59	5.56	0.45	1.54	0.03	0.48	1.63	0.03	191.7	1.005
T4_001269.LAB	2/7/2023	12:10:58	5.59	0.44	1.57	0.01	0.46	1.66	0.01	191.6	1.005
T4_001270.LAB	2/7/2023	12:11:58	5.59	0.49	1.54	0.07	0.52	1.64	0.07	191.6	1.006
T4_001271.LAB	2/7/2023	12:12:58	5.57	0.48	1.57	0.10	0.50	1.66	0.10	191.6	1.006
T4_001272.LAB	2/7/2023	12:13:58	5.57	0.49	1.62	-0.01	0.52	1.71	-0.01	191.7	1.004
T4_001273.LAB	2/7/2023	12:14:58	5.56	0.48	1.61	0.02	0.50	1.70	0.03	191.7	1.004
T4_001274.LAB	2/7/2023	12:15:58	5.60	0.48	1.57	0.00	0.51	1.67	0.00	191.7	1.002
T4_001275.LAB	2/7/2023	12:16:58	5.60	0.50	1.55	0.09	0.53	1.64	0.10	191.6	1.003
T4_001276.LAB	2/7/2023	12:17:58	5.59	0.45	1.54	-0.01	0.47	1.63	-0.01	191.6	1.003
T4_001277.LAB	2/7/2023	12:18:58	5.57	0.48	1.55	-0.06	0.51	1.64	-0.06	191.6	1.005
T4_001278.LAB	2/7/2023	12:19:58	5.58	0.46	1.55	0.07	0.49	1.64	0.07	191.7	1.005
T4_001279.LAB	2/7/2023	12:20:58	5.60	0.43	1.56	0.03	0.46	1.65	0.03	191.6	1.005
T4_001280.LAB	2/7/2023	12:21:58	5.58	0.49	1.55	0.05	0.52	1.64	0.06	191.7	1.006
T4_001281.LAB	2/7/2023	12:22:58	5.58	0.45	1.59	0.03	0.48	1.68	0.03	191.7	1.004
T4_001282.LAB	2/7/2023	12:23:57	5.57	0.48	1.64	-0.02	0.50	1.74	-0.02	191.7	1.003
T4_001283.LAB	2/7/2023	12:24:57	5.56	0.51	1.63	0.01	0.54	1.73	0.02	191.7	1.004
T4_001284.LAB	2/7/2023	12:25:58	5.58	0.50	1.60	0.06	0.53	1.70	0.06	191.6	1.002
T4_001285.LAB	2/7/2023	12:26:57	5.56	0.49	1.57	0.03	0.52	1.67	0.03	191.7	1.003
T4_001286.LAB	2/7/2023	12:27:57	5.54	0.43	1.57	0.03	0.46	1.66	0.04	191.7	1.003
T4_001287.LAB	2/7/2023	12:28:57	5.57	0.43	1.54	0.05	0.46	1.63	0.05	191.7	1.003
T4_001288.LAB	2/7/2023	12:29:57	5.55	0.42	1.54	-0.04	0.44	1.63	-0.04	191.7	1.004
T4_001289.LAB	2/7/2023	12:30:57	5.53	0.43	1.52	-0.04	0.46	1.61	-0.04	191.7	1.005
T4_001290.LAB	2/7/2023	12:31:57	5.54	0.42	1.55	-0.05	0.45	1.64	-0.06	191.6	1.005
T4_001291.LAB	2/7/2023	12:32:57	5.53	0.45	1.57	0.02	0.48	1.66	0.02	191.6	1.005
T4_001292.LAB	2/7/2023	12:33:57	5.57	0.44	1.60	0.02	0.47	1.69	0.02	191.7	1.002
T4_001293.LAB	2/7/2023	12:34:57	5.54	0.49	1.62	0.04	0.52	1.71	0.04	191.8	1.002
T4_001294.LAB	2/7/2023	12:35:57	5.54	0.42	1.57	0.04	0.44	1.66	0.04	191.7	1.000
T4_001295.LAB	2/7/2023	12:36:57	5.55	0.44	1.56	0.02	0.46	1.65	0.03	191.7	1.003
T4_001296.LAB	2/7/2023	12:37:57	5.52	0.45	1.54	0.02	0.47	1.63	0.02	191.6	1.004
T4_001297.LAB	2/7/2023	12:38:57	5.57	0.44	1.56	0.04	0.47	1.65	0.05	191.6	1.003
T4_001298.LAB	2/7/2023	12:39:57	5.54	0.47	1.56	0.05	0.50	1.65	0.05	191.6	1.003
T4_001299.LAB	2/7/2023	12:40:57	5.57	0.48	1.56	0.06	0.51	1.65	0.07	191.7	1.004
T4_001300.LAB	2/7/2023	12:41:56	5.64	0.44	1.59	-0.01	0.47	1.68	-0.01	234.1	1.085
T4_001301.LAB	2/7/2023	12:42:56	5.57	0.45	1.60	-0.04	0.48	1.69	-0.04	191.7	1.003
T4_001302.LAB	2/7/2023	12:43:56	5.61	0.48	1.65	0.08	0.51	1.75	0.09	193.1	0.999
T4_001303.LAB	2/7/2023	12:44:56	5.56	0.47	1.67	0.06	0.49	1.76	0.07	191.7	1.002
T4_001304.LAB	2/7/2023	12:45:56	5.58	0.50	1.66	0.06	0.53	1.76	0.07	191.6	1.003
T4_001305.LAB	2/7/2023	12:46:56	5.55	0.48	1.61	0.03	0.50	1.70	0.03	191.6	1.001
T4_001306.LAB	2/7/2023	12:47:56	5.59	0.47	1.58	0.04	0.50	1.68	0.05	191.7	1.002
T4_001307.LAB	2/7/2023	12:48:56	5.58	0.45	1.59	0.01	0.48	1.68	0.01	191.8	1.003
T4_001308.LAB	2/7/2023	12:49:56	5.63	0.47	1.61	0.03	0.50	1.70	0.03	232.5	1.082
T4_001309.LAB	2/7/2023	12:50:56	5.56	0.45	1.59	-0.02	0.48	1.68	-0.02	191.7	1.003
T4_001310.LAB	2/7/2023	12:51:56	5.53	0.44	1.57	0.02	0.47	1.66	0.02	191.6	1.004
T4_001311.LAB	2/7/2023	12:52:56	5.52	0.45	1.56	0.05	0.48	1.65	0.05	191.7	1.004
T4_001312.LAB	2/7/2023	12:53:56	5.52	0.46	1.59	0.03	0.49	1.68	0.03	191.7	1.003
T4_001313.LAB	2/7/2023	12:54:56	5.58	0.46	1.65	0.03	0.49	1.75	0.03	191.7	1.003
T4_001314.LAB	2/7/2023	12:55:56	5.54	0.50	1.62	0.06	0.53	1.71	0.07	191.7	1.002
T4_001315.LAB	2/7/2023	12:56:56	5.55	0.48	1.59	0.08	0.51	1.68	0.09	191.7	1.001
T4_001323.LAB	2/7/2023	13:04:55	5.51	0.45	1.58	0.01	0.48	1.67	0.02	191.7	1.002
T4_001324.LAB	2/7/2023	13:05:55	5.55	0.45	1.62	0.06	0.47	1.72	0.06	191.7	1.002
T4_001325.LAB	2/7/2023	13:06:55	5.53	0.44	1.61	-0.02	0.47	1.71	-0.02	191.6	1.001
T4_001326.LAB	2/7/2023	13:07:55	5.54	0.44	1.58	0.00	0.46	1.67	0.00	191.7	1.002
T4_001327.LAB	2/7/2023	13:08:55	5.55	0.43	1.58	-0.01	0.46	1.67	-0.01	191.7	1.001
02/07/2023	Minimum		5.51	0.41	1.49	-0.09	0.43	1.58	-0.10		
Turbine 4 - Run 2	Maximum		5.64	0.51	1.67	0.10	0.54	1.76	0.10		
12:00 - 12:56 ; 13:04 -	Average		5.57	0.46	1.58	0.02	0.49	1.67	0.02		

Turbine 4 - Run 3

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T4_001340.LAB	2/7/2023	13:15:47	5.54	0.40	1.60	-0.10	0.43	1.70	-0.11	191.7	1.002
T4_001341.LAB	2/7/2023	13:16:47	5.57	0.41	1.62	0.13	0.43	1.71	0.14	191.7	1.001
T4_001342.LAB	2/7/2023	13:17:47	5.55	0.41	1.60	0.05	0.43	1.70	0.05	191.7	1.001
T4_001343.LAB	2/7/2023	13:18:47	5.51	0.41	1.58	0.01	0.43	1.67	0.01	191.7	1.001
T4_001344.LAB	2/7/2023	13:19:47	5.55	0.42	1.59	-0.06	0.45	1.68	-0.07	191.7	1.003
T4_001345.LAB	2/7/2023	13:20:47	5.54	0.46	1.58	0.05	0.49	1.67	0.05	191.6	1.003
T4_001346.LAB	2/7/2023	13:21:47	5.57	0.39	1.61	0.06	0.41	1.70	0.06	191.7	1.002
T4_001347.LAB	2/7/2023	13:22:47	5.54	0.47	1.57	-0.07	0.50	1.67	-0.07	191.7	1.002
T4_001348.LAB	2/7/2023	13:23:46	5.56	0.42	1.59	0.03	0.45	1.68	0.04	191.6	1.003
T4_001349.LAB	2/7/2023	13:24:47	5.56	0.42	1.60	0.02	0.44	1.69	0.02	191.6	1.004
T4_001350.LAB	2/7/2023	13:25:46	5.56	0.45	1.67	0.07	0.47	1.77	0.07	191.6	1.003
T4_001351.LAB	2/7/2023	13:26:46	5.58	0.50	1.70	0.03	0.53	1.81	0.04	191.7	1.002
T4_001352.LAB	2/7/2023	13:27:46	5.53	0.49	1.68	0.03	0.52	1.78	0.03	191.6	1.001
T4_001353.LAB	2/7/2023	13:28:46	5.57	0.48	1.64	-0.02	0.51	1.74	-0.02	191.7	1.002
T4_001354.LAB	2/7/2023	13:29:46	5.56	0.48	1.66	0.03	0.51	1.76	0.03	191.6	1.002
T4_001355.LAB	2/7/2023	13:30:46	5.55	0.47	1.62	-0.01	0.49	1.71	-0.01	191.6	1.003
T4_001356.LAB	2/7/2023	13:31:46	5.56	0.41	1.65	-0.01	0.44	1.75	-0.02	191.7	1.004
T4_001357.LAB	2/7/2023	13:32:46	5.56	0.46	1.64	0.00	0.49	1.74	0.00	191.7	1.005
T4_001358.LAB	2/7/2023	13:33:46	5.58	0.46	1.65	0.01	0.49	1.75	0.02	191.7	1.003
T4_001359.LAB	2/7/2023	13:34:46	5.58	0.46	1.68	-0.04	0.49	1.78	-0.04	191.8	1.003
T4_001360.LAB	2/7/2023	13:35:46	5.60	0.50	1.74	-0.04	0.53	1.84	-0.04	191.7	1.003
T4_001361.LAB	2/7/2023	13:36:46	5.58	0.46	1.79	-0.04	0.48	1.90	-0.05	191.7	1.002
T4_001362.LAB	2/7/2023	13:37:46	5.56	0.49	1.77	0.10	0.52	1.87	0.11	191.7	1.002
T4_001363.LAB	2/7/2023	13:38:46	5.56	0.50	1.72	0.06	0.53	1.82	0.06	191.7	1.002
T4_001364.LAB	2/7/2023	13:39:46	5.60	0.54	1.73	0.04	0.57	1.83	0.04	191.7	1.001
T4_001365.LAB	2/7/2023	13:40:46	5.56	0.51	1.71	0.08	0.54	1.82	0.08	191.6	1.002
T4_001366.LAB	2/7/2023	13:41:46	5.58	0.53	1.72	0.03	0.56	1.82	0.03	191.7	1.002
T4_001367.LAB	2/7/2023	13:42:45	5.58	0.47	1.72	0.07	0.49	1.83	0.07	191.7	1.002
T4_001368.LAB	2/7/2023	13:43:45	5.58	0.49	1.71	0.05	0.52	1.81	0.05	191.7	1.004
T4_001369.LAB	2/7/2023	13:44:46	5.59	0.52	1.73	-0.01	0.55	1.83	-0.01	191.7	1.004
T4_001370.LAB	2/7/2023	13:45:45	5.54	0.48	1.76	0.07	0.51	1.86	0.08	191.7	1.002
T4_001371.LAB	2/7/2023	13:46:45	5.57	0.47	1.78	0.07	0.50	1.88	0.07	191.7	1.003
T4_001372.LAB	2/7/2023	13:47:45	5.51	0.52	1.76	0.04	0.55	1.86	0.04	191.7	1.001
T4_001373.LAB	2/7/2023	13:48:45	5.53	0.48	1.72	0.02	0.50	1.82	0.02	191.7	1.003
T4_001374.LAB	2/7/2023	13:49:45	5.59	0.50	1.72	0.09	0.53	1.82	0.09	191.7	1.001
T4_001375.LAB	2/7/2023	13:50:45	5.54	0.49	1.70	0.04	0.51	1.80	0.04	191.7	1.003
T4_001376.LAB	2/7/2023	13:51:45	5.55	0.50	1.67	0.04	0.53	1.77	0.05	191.7	1.003
T4_001377.LAB	2/7/2023	13:52:45	5.55	0.50	1.68	0.07	0.53	1.78	0.07	191.7	1.003
T4_001378.LAB	2/7/2023	13:53:45	5.56	0.50	1.69	0.07	0.52	1.79	0.08	191.7	1.002
T4_001379.LAB	2/7/2023	13:54:45	5.55	0.49	1.68	0.00	0.52	1.78	0.00	191.7	1.005
T4_001380.LAB	2/7/2023	13:55:45	5.55	0.45	1.70	0.02	0.47	1.80	0.02	191.7	1.003
T4_001381.LAB	2/7/2023	13:56:45	5.59	0.54	1.74	0.04	0.57	1.84	0.04	191.7	1.002
T4_001382.LAB	2/7/2023	13:57:45	5.59	0.50	1.76	0.05	0.53	1.86	0.05	191.7	1.002
T4_001383.LAB	2/7/2023	13:58:44	5.60	0.51	1.73	0.02	0.54	1.84	0.02	191.7	1.002
T4_001384.LAB	2/7/2023	13:59:44	5.56	0.44	1.71	0.06	0.47	1.81	0.06	191.7	1.002
T4_001385.LAB	2/7/2023	14:00:44	5.58	0.48	1.69	0.01	0.51	1.80	0.01	191.7	1.002
T4_001386.LAB	2/7/2023	14:01:45	5.55	0.48	1.67	0.05	0.50	1.77	0.05	191.7	1.003
T4_001387.LAB	2/7/2023	14:02:44	5.57	0.50	1.68	0.08	0.53	1.78	0.09	191.7	1.003
T4_001388.LAB	2/7/2023	14:03:44	5.59	0.50	1.67	0.00	0.53	1.77	0.00	191.7	1.002
T4_001389.LAB	2/7/2023	14:04:44	5.58	0.47	1.67	-0.01	0.50	1.77	-0.01	191.7	1.004
T4_001390.LAB	2/7/2023	14:05:44	5.57	0.49	1.72	0.07	0.52	1.82	0.08	191.7	1.002
T4_001391.LAB	2/7/2023	14:06:44	5.60	0.52	1.77	0.03	0.55	1.87	0.03	191.7	1.001
T4_001392.LAB	2/7/2023	14:07:44	5.59	0.54	1.77	0.05	0.58	1.87	0.05	191.7	1.002
T4_001393.LAB	2/7/2023	14:08:44	5.60	0.48	1.74	-0.03	0.51	1.84	-0.03	191.7	1.000
T4_001394.LAB	2/7/2023	14:09:44	5.56	0.46	1.71	0.07	0.48	1.81	0.07	191.7	1.001
T4_001395.LAB	2/7/2023	14:10:44	5.56	0.49	1.68	0.02	0.52	1.78	0.02	191.8	1.001
T4_001396.LAB	2/7/2023	14:11:44	5.58	0.45	1.68	-0.03	0.47	1.78	-0.03	191.8	1.002
T4_001397.LAB	2/7/2023	14:12:44	5.56	0.46	1.69	0.05	0.49	1.79	0.06	191.7	1.003
T4_001398.LAB	2/7/2023	14:13:44	5.56	0.50	1.69	0.00	0.52	1.79	0.00	191.7	1.003
T4_001399.LAB	2/7/2023	14:14:44	5.56	0.47	1.66	0.02	0.49	1.76	0.02	191.7	1.004
T4_001400.LAB	2/7/2023	14:15:44	5.59	0.50	1.70	0.01	0.52	1.80	0.01	191.7	1.002
02/07/2023	Minimum		5.51	0.39	1.57	-0.10	0.41	1.67	-0.11		
Turbine 4 - Run 3	Maximum		5.60	0.54	1.79	0.13	0.58	1.90	0.14		
13:15 - 14:15	Average		5.56	0.48	1.69	0.03	0.50	1.79	0.03		

Turbine 4 - Run 4

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T4_001761.LAB	2/8/2023	9:06:02	5.66	0.36	1.52	0.11	0.39	1.61	0.12	191.8	1.002
T4_001762.LAB	2/8/2023	9:07:02	5.66	0.38	1.52	-0.01	0.40	1.61	-0.01	191.8	1.003
T4_001763.LAB	2/8/2023	9:08:02	5.68	0.40	1.50	0.00	0.43	1.59	0.00	191.8	1.004
T4_001764.LAB	2/8/2023	9:09:02	5.67	0.37	1.48	-0.09	0.39	1.57	-0.10	191.8	1.005
T4_001765.LAB	2/8/2023	9:10:02	5.65	0.35	1.47	0.09	0.37	1.56	0.09	191.7	1.004
T4_001766.LAB	2/8/2023	9:11:02	5.67	0.38	1.46	0.04	0.40	1.55	0.04	191.7	1.005
T4_001767.LAB	2/8/2023	9:12:02	5.69	0.37	1.45	0.01	0.39	1.54	0.01	191.7	1.005
T4_001768.LAB	2/8/2023	9:13:02	5.67	0.37	1.50	0.12	0.40	1.59	0.13	191.8	1.005
T4_001769.LAB	2/8/2023	9:14:02	5.68	0.36	1.53	0.08	0.39	1.62	0.09	191.8	1.003
T4_001770.LAB	2/8/2023	9:15:02	5.68	0.41	1.52	0.01	0.43	1.61	0.01	191.9	1.003
T4_001771.LAB	2/8/2023	9:16:02	5.68	0.43	1.49	0.05	0.46	1.58	0.06	191.8	1.002
T4_001772.LAB	2/8/2023	9:17:02	5.68	0.34	1.46	-0.05	0.36	1.55	-0.05	191.8	1.003
T4_001773.LAB	2/8/2023	9:18:01	5.68	0.42	1.45	-0.05	0.44	1.54	-0.06	191.8	1.003
T4_001774.LAB	2/8/2023	9:19:02	5.69	0.39	1.46	-0.03	0.42	1.55	-0.03	191.7	1.003
T4_001775.LAB	2/8/2023	9:20:01	5.68	0.40	1.47	-0.01	0.42	1.56	-0.01	191.7	1.004
T4_001776.LAB	2/8/2023	9:21:01	5.66	0.37	1.47	0.03	0.39	1.55	0.03	191.8	1.006
T4_001777.LAB	2/8/2023	9:22:01	5.65	0.37	1.44	0.01	0.40	1.53	0.01	191.8	1.005
T4_001778.LAB	2/8/2023	9:23:02	5.66	0.41	1.44	0.05	0.43	1.53	0.05	191.8	1.006
T4_001779.LAB	2/8/2023	9:24:01	5.69	0.38	1.52	0.01	0.40	1.61	0.01	191.8	1.004
T4_001780.LAB	2/8/2023	9:25:01	5.69	0.42	1.55	-0.05	0.45	1.65	-0.05	191.8	1.003
T4_001781.LAB	2/8/2023	9:26:01	5.68	0.42	1.51	0.01	0.44	1.60	0.01	191.8	1.002
T4_001782.LAB	2/8/2023	9:27:01	5.69	0.41	1.50	0.03	0.43	1.59	0.04	191.7	1.003
T4_001783.LAB	2/8/2023	9:28:01	5.67	0.38	1.46	0.13	0.41	1.54	0.13	191.7	1.003
T4_001784.LAB	2/8/2023	9:29:01	5.68	0.42	1.47	0.08	0.45	1.56	0.08	191.7	1.003
T4_001785.LAB	2/8/2023	9:30:01	5.69	0.38	1.47	0.04	0.40	1.56	0.04	191.8	1.005
T4_001786.LAB	2/8/2023	9:31:01	5.70	0.41	1.46	0.00	0.44	1.55	0.00	191.8	1.004
T4_001787.LAB	2/8/2023	9:32:01	5.70	0.42	1.46	-0.01	0.45	1.55	-0.01	191.8	1.006
T4_001788.LAB	2/8/2023	9:33:01	5.72	0.42	1.49	0.01	0.44	1.58	0.02	191.8	1.005
T4_001789.LAB	2/8/2023	9:34:01	5.69	0.43	1.50	0.02	0.46	1.59	0.02	191.7	1.006
T4_001790.LAB	2/8/2023	9:35:01	5.71	0.39	1.56	0.01	0.41	1.65	0.01	191.7	1.004
T4_001791.LAB	2/8/2023	9:36:00	5.71	0.47	1.58	0.07	0.49	1.68	0.07	191.8	1.003
T4_001792.LAB	2/8/2023	9:37:00	5.69	0.46	1.57	0.08	0.48	1.66	0.08	191.8	1.003
T4_001793.LAB	2/8/2023	9:38:01	5.67	0.45	1.53	0.02	0.48	1.62	0.02	191.8	1.003
T4_001794.LAB	2/8/2023	9:39:01	5.68	0.41	1.54	0.02	0.44	1.64	0.02	191.9	1.004
T4_001795.LAB	2/8/2023	9:40:00	5.68	0.43	1.52	0.04	0.46	1.61	0.04	191.8	1.003
T4_001796.LAB	2/8/2023	9:41:00	5.68	0.38	1.50	0.05	0.41	1.59	0.06	191.7	1.004
T4_001797.LAB	2/8/2023	9:42:00	5.69	0.41	1.50	0.04	0.44	1.59	0.05	191.7	1.005
T4_001798.LAB	2/8/2023	9:43:00	5.65	0.41	1.52	0.03	0.44	1.61	0.03	191.6	1.004
T4_001799.LAB	2/8/2023	9:44:00	5.67	0.40	1.50	0.14	0.43	1.59	0.15	191.7	1.007
T4_001800.LAB	2/8/2023	9:45:00	5.69	0.48	1.53	0.04	0.51	1.62	0.05	191.8	1.007
T4_001801.LAB	2/8/2023	9:46:00	5.71	0.44	1.58	0.01	0.46	1.67	0.01	191.9	1.004
T4_001802.LAB	2/8/2023	9:47:00	5.70	0.44	1.60	0.01	0.47	1.70	0.02	191.8	1.004
T4_001803.LAB	2/8/2023	9:48:00	5.69	0.46	1.57	0.05	0.49	1.67	0.05	191.7	1.002
T4_001804.LAB	2/8/2023	9:49:00	5.68	0.44	1.55	0.03	0.47	1.65	0.03	191.7	1.003
T4_001805.LAB	2/8/2023	9:50:00	5.71	0.46	1.57	0.06	0.48	1.67	0.06	191.7	1.004
T4_001806.LAB	2/8/2023	9:51:00	5.70	0.48	1.54	0.07	0.51	1.63	0.07	191.8	1.004
T4_001807.LAB	2/8/2023	9:51:59	5.69	0.44	1.54	0.03	0.46	1.63	0.03	191.8	1.004
T4_001808.LAB	2/8/2023	9:52:59	5.70	0.47	1.57	-0.03	0.49	1.66	-0.03	191.8	1.005
T4_001809.LAB	2/8/2023	9:53:59	5.69	0.42	1.57	0.11	0.45	1.66	0.12	191.8	1.005
T4_001810.LAB	2/8/2023	9:54:59	5.68	0.44	1.56	0.03	0.46	1.65	0.03	191.7	1.006
T4_001811.LAB	2/8/2023	9:55:59	5.69	0.46	1.60	0.02	0.49	1.70	0.03	191.6	1.005
T4_001812.LAB	2/8/2023	9:56:59	5.71	0.44	1.63	0.11	0.46	1.73	0.11	191.7	1.003
T4_001813.LAB	2/8/2023	9:57:59	5.71	0.49	1.65	0.08	0.51	1.75	0.09	191.7	1.002
T4_001814.LAB	2/8/2023	9:58:59	5.72	0.45	1.62	0.03	0.48	1.71	0.03	191.8	1.003
T4_001815.LAB	2/8/2023	9:59:59	5.71	0.46	1.59	0.08	0.49	1.69	0.09	191.8	1.005
T4_001816.LAB	2/8/2023	10:00:59	5.73	0.50	1.60	0.03	0.53	1.70	0.03	191.7	1.004
T4_001817.LAB	2/8/2023	10:01:59	5.71	0.46	1.58	-0.01	0.49	1.68	-0.01	191.7	1.004
T4_001818.LAB	2/8/2023	10:02:59	5.70	0.48	1.58	0.02	0.51	1.67	0.02	191.6	1.004
T4_001819.LAB	2/8/2023	10:03:59	5.70	0.44	1.58	0.11	0.46	1.67	0.12	191.8	1.005
T4_001820.LAB	2/8/2023	10:04:59	5.69	0.45	1.56	-0.05	0.47	1.66	-0.05	191.8	1.005
T4_001821.LAB	2/8/2023	10:05:59	5.69	0.44	1.58	0.00	0.47	1.67	0.00	191.9	1.005
T4_001822.LAB	2/8/2023	10:06:59	5.70	0.49	1.60	0.03	0.52	1.70	0.03	191.9	1.007
02/08/2023	Minimum		5.65	0.34	1.44	-0.09	0.36	1.53	-0.10		
Turbine 4 - Run 4	Maximum		5.73	0.50	1.65	0.14	0.53	1.75	0.15		
09:06 - 10:06	Average		5.69	0.42	1.53	0.03	0.45	1.62	0.03		

Turbine 4 - Run 5

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T4_001840.LAB	2/8/2023	10:19:05	5.68	0.42	1.62	-0.01	0.44	1.71	-0.01	191.9	1.003
T4_001841.LAB	2/8/2023	10:20:05	5.68	0.38	1.60	0.04	0.40	1.69	0.04	191.9	1.004
T4_001842.LAB	2/8/2023	10:21:05	5.69	0.40	1.54	0.08	0.43	1.63	0.08	191.8	1.003
T4_001843.LAB	2/8/2023	10:22:05	5.68	0.43	1.58	-0.05	0.45	1.67	-0.05	191.7	1.005
T4_001844.LAB	2/8/2023	10:23:05	5.66	0.41	1.56	0.03	0.43	1.66	0.03	191.7	1.004
T4_001845.LAB	2/8/2023	10:24:04	5.66	0.41	1.60	-0.01	0.43	1.69	-0.01	191.7	1.005
T4_001846.LAB	2/8/2023	10:25:04	5.70	0.39	1.59	0.07	0.41	1.69	0.07	191.8	1.005
T4_001847.LAB	2/8/2023	10:26:05	5.69	0.42	1.60	0.05	0.45	1.70	0.05	191.9	1.004
T4_001848.LAB	2/8/2023	10:27:04	5.70	0.43	1.63	0.04	0.46	1.73	0.05	191.8	1.005
T4_001849.LAB	2/8/2023	10:28:04	5.68	0.47	1.66	0.03	0.50	1.76	0.03	191.7	1.005
T4_001850.LAB	2/8/2023	10:29:04	5.68	0.46	1.71	0.08	0.49	1.81	0.08	191.7	1.003
T4_001851.LAB	2/8/2023	10:30:04	5.69	0.47	1.72	-0.02	0.50	1.82	-0.02	191.7	1.003
T4_001852.LAB	2/8/2023	10:31:04	5.69	0.50	1.68	0.03	0.54	1.78	0.03	191.7	1.003
T4_001853.LAB	2/8/2023	10:32:04	5.69	0.49	1.67	0.00	0.52	1.77	0.00	191.8	1.003
T4_001854.LAB	2/8/2023	10:33:04	5.68	0.41	1.66	0.01	0.44	1.76	0.01	191.8	1.005
T4_001855.LAB	2/8/2023	10:34:04	5.70	0.46	1.66	0.07	0.49	1.76	0.07	191.8	1.003
T4_001856.LAB	2/8/2023	10:35:04	5.68	0.46	1.68	-0.01	0.49	1.78	-0.01	191.7	1.005
T4_001857.LAB	2/8/2023	10:36:04	5.71	0.46	1.67	0.00	0.49	1.77	0.00	191.6	1.005
T4_001858.LAB	2/8/2023	10:37:04	5.70	0.47	1.69	0.05	0.49	1.80	0.05	191.6	1.006
T4_001859.LAB	2/8/2023	10:38:04	5.70	0.50	1.71	0.01	0.53	1.81	0.01	191.7	1.006
T4_001860.LAB	2/8/2023	10:39:04	5.69	0.48	1.75	0.08	0.51	1.86	0.09	191.8	1.005
T4_001861.LAB	2/8/2023	10:40:04	5.70	0.49	1.79	0.10	0.52	1.90	0.10	191.8	1.003
T4_001862.LAB	2/8/2023	10:41:03	5.71	0.53	1.74	0.03	0.56	1.84	0.03	191.8	1.001
T4_001863.LAB	2/8/2023	10:42:03	5.71	0.50	1.71	0.03	0.53	1.82	0.03	191.7	1.002
T4_001864.LAB	2/8/2023	10:43:03	5.69	0.51	1.72	0.01	0.54	1.82	0.01	191.7	1.005
T4_001865.LAB	2/8/2023	10:44:03	5.71	0.49	1.71	-0.07	0.52	1.82	-0.07	191.7	1.005
T4_001866.LAB	2/8/2023	10:45:03	5.70	0.46	1.72	-0.06	0.49	1.83	-0.06	191.7	1.006
T4_001867.LAB	2/8/2023	10:46:03	5.72	0.49	1.74	0.07	0.51	1.84	0.07	191.7	1.005
T4_001868.LAB	2/8/2023	10:47:03	5.70	0.48	1.73	0.04	0.51	1.83	0.04	191.8	1.005
T4_001869.LAB	2/8/2023	10:48:03	5.71	0.50	1.75	0.03	0.53	1.85	0.03	191.7	1.005
T4_001870.LAB	2/8/2023	10:49:03	5.69	0.51	1.78	-0.03	0.54	1.89	-0.03	191.6	1.005
T4_001871.LAB	2/8/2023	10:50:03	5.71	0.54	1.83	0.05	0.57	1.94	0.05	191.6	1.004
T4_001872.LAB	2/8/2023	10:51:03	5.68	0.51	1.82	0.00	0.54	1.93	0.00	191.6	1.005
T4_001873.LAB	2/8/2023	10:52:03	5.68	0.53	1.78	0.04	0.56	1.88	0.04	191.7	1.003
T4_001874.LAB	2/8/2023	10:53:03	5.69	0.52	1.76	0.04	0.55	1.86	0.04	191.7	1.002
T4_001875.LAB	2/8/2023	10:54:03	5.69	0.51	1.75	0.03	0.54	1.86	0.03	191.7	1.004
T4_001876.LAB	2/8/2023	10:55:02	5.68	0.50	1.73	0.03	0.53	1.83	0.03	191.7	1.004
T4_001877.LAB	2/8/2023	10:56:02	5.65	0.45	1.69	0.02	0.47	1.79	0.03	191.8	1.005
T4_001878.LAB	2/8/2023	10:57:02	5.66	0.45	1.70	0.03	0.47	1.80	0.03	191.7	1.005
T4_001879.LAB	2/8/2023	10:58:02	5.66	0.50	1.72	0.05	0.53	1.82	0.05	191.6	1.005
T4_001880.LAB	2/8/2023	10:59:02	5.65	0.45	1.72	0.04	0.48	1.83	0.04	191.6	1.005
T4_001881.LAB	2/8/2023	11:00:02	5.69	0.52	1.75	-0.04	0.55	1.85	-0.05	191.6	1.003
T4_001882.LAB	2/8/2023	11:01:02	5.71	0.51	1.79	0.01	0.54	1.90	0.01	191.6	1.004
T4_001883.LAB	2/8/2023	11:02:02	5.71	0.51	1.77	0.02	0.54	1.87	0.02	191.7	1.003
T4_001884.LAB	2/8/2023	11:03:02	5.70	0.52	1.76	0.02	0.55	1.87	0.02	191.7	1.001
T4_001885.LAB	2/8/2023	11:04:02	5.69	0.50	1.75	0.06	0.53	1.85	0.07	191.6	1.003
T4_001886.LAB	2/8/2023	11:05:02	5.68	0.50	1.74	0.02	0.53	1.85	0.02	191.6	1.005
T4_001887.LAB	2/8/2023	11:06:02	5.68	0.49	1.71	0.04	0.52	1.82	0.05	191.7	1.006
T4_001888.LAB	2/8/2023	11:07:02	5.69	0.46	1.73	-0.01	0.49	1.83	-0.01	191.7	1.005
T4_001889.LAB	2/8/2023	11:08:02	5.68	0.49	1.72	0.05	0.52	1.83	0.05	191.7	1.006
T4_001890.LAB	2/8/2023	11:09:02	5.67	0.50	1.73	0.03	0.53	1.83	0.03	191.7	1.006
T4_001891.LAB	2/8/2023	11:10:02	5.62	0.53	1.76	0.09	0.56	1.86	0.10	191.6	1.004
T4_001892.LAB	2/8/2023	11:11:02	5.64	0.50	1.78	-0.09	0.53	1.89	-0.09	191.6	1.003
T4_001893.LAB	2/8/2023	11:12:01	5.66	0.47	1.78	-0.01	0.49	1.89	-0.01	191.6	1.001
T4_001894.LAB	2/8/2023	11:13:02	5.66	0.46	1.75	0.12	0.49	1.86	0.13	191.7	1.003
T4_001895.LAB	2/8/2023	11:14:01	5.68	0.44	1.73	0.03	0.47	1.84	0.03	191.7	1.004
T4_001896.LAB	2/8/2023	11:15:01	5.67	0.50	1.69	0.06	0.53	1.79	0.06	191.7	1.005
T4_001897.LAB	2/8/2023	11:16:01	5.69	0.48	1.70	0.08	0.51	1.80	0.08	191.7	1.003
T4_001898.LAB	2/8/2023	11:17:01	5.67	0.47	1.70	0.03	0.50	1.80	0.03	191.6	1.005
T4_001899.LAB	2/8/2023	11:18:01	5.69	0.55	1.72	-0.05	0.59	1.82	-0.05	191.6	1.006
T4_001900.LAB	2/8/2023	11:19:01	5.69	0.50	1.72	0.02	0.53	1.82	0.02	191.6	1.006
02/08/2023	Minimum		5.62	0.38	1.54	-0.09	0.40	1.63	-0.09		
Turbine 4 - Run 5	Maximum		5.72	0.55	1.83	0.12	0.59	1.94	0.13		
10:19 - 11:19	Average		5.69	0.48	1.71	0.02	0.51	1.81	0.03		

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Turbine 4 - Run 6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T4_001910.LAB	2/8/2023	11:23:04	5.69	0.46	1.73	0.07	0.49	1.84	0.08	191.6	1.002
T4_001911.LAB	2/8/2023	11:24:04	5.71	0.52	1.71	0.11	0.55	1.81	0.12	191.6	1.003
T4_001912.LAB	2/8/2023	11:25:04	5.69	0.50	1.69	-0.02	0.53	1.79	-0.02	191.6	1.002
T4_001913.LAB	2/8/2023	11:26:04	5.69	0.48	1.70	0.04	0.50	1.80	0.04	191.6	1.005
T4_001914.LAB	2/8/2023	11:27:04	5.68	0.49	1.70	0.04	0.52	1.81	0.04	191.6	1.005
T4_001915.LAB	2/8/2023	11:28:04	5.70	0.44	1.67	0.05	0.47	1.78	0.05	191.6	1.004
T4_001916.LAB	2/8/2023	11:29:04	5.68	0.47	1.72	0.00	0.50	1.82	0.00	191.6	1.006
T4_001917.LAB	2/8/2023	11:30:03	5.69	0.48	1.72	-0.01	0.51	1.83	-0.01	191.6	1.006
T4_001918.LAB	2/8/2023	11:31:04	5.68	0.53	1.76	-0.02	0.56	1.87	-0.02	191.6	1.006
T4_001919.LAB	2/8/2023	11:32:03	5.70	0.48	1.79	0.09	0.51	1.90	0.10	191.6	1.004
T4_001920.LAB	2/8/2023	11:33:03	5.70	0.49	1.80	0.02	0.52	1.91	0.02	191.7	1.002
T4_001921.LAB	2/8/2023	11:34:03	5.71	0.47	1.79	0.01	0.50	1.90	0.01	191.7	1.002
T4_001922.LAB	2/8/2023	11:35:03	5.71	0.50	1.74	-0.01	0.53	1.84	-0.01	191.7	1.004
T4_001923.LAB	2/8/2023	11:36:03	5.72	0.52	1.77	-0.01	0.55	1.88	-0.01	191.6	1.003
T4_001924.LAB	2/8/2023	11:37:03	5.72	0.53	1.74	0.02	0.57	1.85	0.02	191.6	1.004
T4_001925.LAB	2/8/2023	11:38:03	5.73	0.55	1.76	0.05	0.58	1.87	0.05	191.6	1.004
T4_001926.LAB	2/8/2023	11:39:03	5.73	0.52	1.74	-0.01	0.55	1.84	-0.01	191.6	1.005
T4_001927.LAB	2/8/2023	11:40:03	5.72	0.50	1.78	0.01	0.53	1.88	0.01	191.6	1.006
T4_001928.LAB	2/8/2023	11:41:03	5.73	0.56	1.83	0.04	0.59	1.94	0.04	191.6	1.005
T4_001929.LAB	2/8/2023	11:42:03	5.71	0.57	1.87	0.06	0.60	1.99	0.06	191.6	1.005
T4_001930.LAB	2/8/2023	11:43:03	5.73	0.55	1.89	0.03	0.59	2.00	0.03	191.6	1.002
T4_001931.LAB	2/8/2023	11:44:03	5.71	0.53	1.83	0.04	0.56	1.94	0.04	191.6	1.004
T4_001932.LAB	2/8/2023	11:45:03	5.74	0.56	1.85	0.00	0.60	1.96	0.00	191.6	1.003
T4_001933.LAB	2/8/2023	11:46:02	5.74	0.53	1.84	0.02	0.57	1.95	0.02	191.6	1.003
T4_001934.LAB	2/8/2023	11:47:02	5.74	0.55	1.83	0.09	0.58	1.95	0.09	191.6	1.003
T4_001935.LAB	2/8/2023	11:48:02	5.71	0.54	1.80	-0.01	0.57	1.91	-0.01	191.6	1.004
T4_001936.LAB	2/8/2023	11:49:02	5.70	0.55	1.81	-0.03	0.58	1.92	-0.03	191.6	1.004
T4_001937.LAB	2/8/2023	11:50:02	5.68	0.52	1.81	0.08	0.55	1.92	0.08	191.6	1.005
T4_001938.LAB	2/8/2023	11:51:02	5.70	0.57	1.84	-0.01	0.60	1.95	-0.01	191.6	1.005
T4_001939.LAB	2/8/2023	11:52:02	5.73	0.56	1.89	0.05	0.59	2.01	0.05	191.6	1.004
T4_001940.LAB	2/8/2023	11:53:02	5.72	0.55	1.89	-0.02	0.58	2.00	-0.02	191.6	1.003
T4_001941.LAB	2/8/2023	11:54:02	5.73	0.51	1.85	0.12	0.54	1.97	0.13	191.6	1.002
T4_001942.LAB	2/8/2023	11:55:02	5.69	0.53	1.82	0.05	0.57	1.93	0.06	191.5	1.004
T4_001943.LAB	2/8/2023	11:56:02	5.70	0.55	1.83	-0.01	0.58	1.94	-0.01	191.6	1.002
T4_001944.LAB	2/8/2023	11:57:02	5.73	0.53	1.80	0.05	0.56	1.91	0.05	191.6	1.003
T4_001945.LAB	2/8/2023	11:58:02	5.72	0.47	1.81	0.10	0.50	1.92	0.11	191.5	1.003
T4_001946.LAB	2/8/2023	11:59:02	5.70	0.57	1.79	0.07	0.60	1.90	0.07	191.5	1.004
T4_001947.LAB	2/8/2023	12:00:02	5.69	0.56	1.78	-0.05	0.60	1.89	-0.06	191.6	1.005
T4_001948.LAB	2/8/2023	12:01:02	5.71	0.54	1.82	0.04	0.58	1.93	0.05	191.6	1.005
T4_001949.LAB	2/8/2023	12:02:01	5.72	0.57	1.85	-0.08	0.61	1.96	-0.08	191.5	1.003
T4_001950.LAB	2/8/2023	12:03:01	5.71	0.57	1.89	0.03	0.61	2.00	0.03	191.6	1.002
T4_001951.LAB	2/8/2023	12:04:01	5.70	0.53	1.83	0.01	0.56	1.94	0.01	191.6	1.003
T4_001952.LAB	2/8/2023	12:05:01	5.71	0.57	1.83	0.11	0.60	1.94	0.12	191.6	1.002
T4_001953.LAB	2/8/2023	12:06:01	5.72	0.60	1.79	-0.01	0.64	1.90	-0.01	191.6	1.001
T4_001954.LAB	2/8/2023	12:07:01	5.71	0.56	1.80	0.02	0.59	1.91	0.03	191.6	1.003
T4_001955.LAB	2/8/2023	12:08:01	5.69	0.54	1.80	-0.01	0.57	1.90	-0.01	191.6	1.004
T4_001956.LAB	2/8/2023	12:09:01	5.68	0.58	1.80	0.00	0.62	1.90	0.00	191.6	1.005
T4_001957.LAB	2/8/2023	12:10:01	5.67	0.52	1.80	0.01	0.55	1.91	0.01	191.6	1.003
T4_001958.LAB	2/8/2023	12:11:01	5.67	0.57	1.79	0.01	0.61	1.90	0.01	191.6	1.005
T4_001959.LAB	2/8/2023	12:12:01	5.70	0.52	1.84	-0.07	0.55	1.96	-0.08	191.6	1.003
T4_001960.LAB	2/8/2023	12:13:01	5.70	0.56	1.88	0.01	0.59	1.99	0.02	191.6	1.001
T4_001961.LAB	2/8/2023	12:14:01	5.68	0.54	1.84	0.02	0.58	1.95	0.03	191.6	1.002
T4_001962.LAB	2/8/2023	12:15:01	5.68	0.55	1.81	-0.04	0.58	1.92	-0.05	191.6	1.002
T4_001963.LAB	2/8/2023	12:16:01	5.68	0.54	1.79	-0.01	0.57	1.90	-0.01	191.6	1.002
T4_001964.LAB	2/8/2023	12:17:00	5.68	0.56	1.78	0.10	0.60	1.89	0.11	191.6	1.004
T4_001965.LAB	2/8/2023	12:18:01	5.66	0.58	1.80	0.06	0.62	1.91	0.07	191.6	1.003
T4_001974.LAB	2/8/2023	12:27:00	5.65	0.53	1.76	0.08	0.56	1.87	0.09	191.6	1.003
T4_001975.LAB	2/8/2023	12:28:00	5.67	0.53	1.76	0.04	0.56	1.86	0.04	191.6	1.003
T4_001976.LAB	2/8/2023	12:29:00	5.67	0.55	1.78	0.02	0.58	1.88	0.02	191.6	1.004
T4_001977.LAB	2/8/2023	12:30:00	5.65	0.49	1.75	0.02	0.52	1.85	0.02	191.6	1.004
T4_001978.LAB	2/8/2023	12:31:00	5.65	0.53	1.77	0.13	0.56	1.88	0.14	191.6	1.005
T4_001979.LAB	2/8/2023	12:32:00	5.66	0.53	1.84	0.04	0.56	1.95	0.05	191.6	1.003
02/08/2023	Minimum		5.65	0.44	1.67	-0.08	0.47	1.78	-0.08		
Turbine 4 - Run 6	Maximum		5.74	0.60	1.89	0.13	0.64	2.01	0.14		
11:23 - 12:18 ; 12:27 -	Average		5.70	0.53	1.80	0.03	0.56	1.90	0.03		

Turbine 4 - Run 7

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T4_002018.LAB	2/8/2023	13:05:20	5.66	0.56	1.85	0.00	0.60	1.96	0.00	191.6	1.000
T4_002019.LAB	2/8/2023	13:06:20	5.65	0.53	1.84	0.01	0.56	1.95	0.01	191.6	1.001
T4_002020.LAB	2/8/2023	13:07:20	5.65	0.58	1.84	0.03	0.61	1.95	0.03	191.5	1.002
T4_002021.LAB	2/8/2023	13:08:20	5.65	0.54	1.83	-0.01	0.57	1.94	-0.01	191.6	1.002
T4_002022.LAB	2/8/2023	13:09:20	5.64	0.52	1.83	0.11	0.56	1.94	0.12	191.5	1.002
T4_002023.LAB	2/8/2023	13:10:20	5.64	0.57	1.82	0.02	0.61	1.93	0.02	191.6	1.002
T4_002024.LAB	2/8/2023	13:11:20	5.62	0.50	1.85	0.06	0.53	1.96	0.06	191.6	1.004
T4_002025.LAB	2/8/2023	13:12:20	5.65	0.56	1.88	0.09	0.60	2.00	0.10	191.6	1.002
T4_002026.LAB	2/8/2023	13:13:19	5.63	0.56	1.92	0.03	0.59	2.03	0.04	191.6	1.001
T4_002027.LAB	2/8/2023	13:14:20	5.63	0.57	1.92	0.08	0.61	2.04	0.09	191.6	1.002
T4_002028.LAB	2/8/2023	13:15:19	5.60	0.50	1.87	0.04	0.53	1.98	0.05	191.6	1.001
T4_002029.LAB	2/8/2023	13:16:19	5.69	0.58	1.88	0.03	0.62	2.00	0.03	191.5	1.002
T4_002030.LAB	2/8/2023	13:17:19	5.60	0.52	1.85	0.04	0.55	1.95	0.05	191.5	1.003
T4_002031.LAB	2/8/2023	13:18:19	5.67	0.58	1.88	0.08	0.62	1.99	0.08	191.5	1.001
T4_002032.LAB	2/8/2023	13:19:19	5.66	0.56	1.87	0.03	0.59	1.98	0.03	191.6	1.001
T4_002033.LAB	2/8/2023	13:20:19	5.66	0.53	1.84	0.04	0.57	1.95	0.04	191.6	1.002
T4_002034.LAB	2/8/2023	13:21:19	5.66	0.55	1.85	0.13	0.58	1.96	0.13	191.6	1.003
T4_002035.LAB	2/8/2023	13:22:19	5.68	0.59	1.91	0.02	0.62	2.02	0.03	191.6	1.002
T4_002036.LAB	2/8/2023	13:23:19	5.65	0.56	1.96	0.11	0.59	2.07	0.12	191.6	1.002
T4_002037.LAB	2/8/2023	13:24:19	5.66	0.60	1.96	-0.07	0.64	2.08	-0.08	191.6	1.000
T4_002038.LAB	2/8/2023	13:25:19	5.67	0.54	1.90	0.07	0.57	2.02	0.07	191.6	0.999
T4_002039.LAB	2/8/2023	13:26:19	5.67	0.57	1.89	-0.02	0.61	2.00	-0.02	191.6	0.999
T4_002040.LAB	2/8/2023	13:27:19	5.67	0.58	1.86	-0.02	0.62	1.97	-0.02	191.6	1.001
T4_002041.LAB	2/8/2023	13:28:19	5.68	0.61	1.87	0.08	0.64	1.98	0.08	191.6	1.002
T4_002042.LAB	2/8/2023	13:29:18	5.65	0.56	1.86	0.06	0.59	1.97	0.06	191.6	1.002
T4_002043.LAB	2/8/2023	13:30:19	5.63	0.56	1.84	-0.04	0.59	1.95	-0.05	191.6	1.002
T4_002044.LAB	2/8/2023	13:31:18	5.61	0.56	1.83	-0.02	0.59	1.94	-0.03	191.6	1.003
T4_002045.LAB	2/8/2023	13:32:19	5.63	0.58	1.86	0.08	0.62	1.97	0.08	191.6	1.003
T4_002046.LAB	2/8/2023	13:33:18	5.64	0.54	1.92	0.05	0.57	2.04	0.05	191.6	1.001
T4_002047.LAB	2/8/2023	13:34:18	5.64	0.57	1.96	0.06	0.61	2.08	0.06	191.6	1.001
T4_002048.LAB	2/8/2023	13:35:18	5.63	0.58	1.92	0.03	0.61	2.04	0.03	191.6	1.000
T4_002049.LAB	2/8/2023	13:36:18	5.63	0.59	1.87	0.06	0.62	1.99	0.07	191.6	1.000
T4_002050.LAB	2/8/2023	13:37:18	5.64	0.58	1.89	-0.01	0.61	2.01	-0.01	191.6	1.000
T4_002051.LAB	2/8/2023	13:38:18	5.66	0.55	1.89	-0.03	0.59	2.01	-0.03	191.6	1.000
T4_002052.LAB	2/8/2023	13:39:18	5.63	0.57	1.84	0.02	0.60	1.95	0.02	191.6	1.002
T4_002053.LAB	2/8/2023	13:40:18	5.64	0.61	1.88	0.05	0.64	1.99	0.05	191.6	1.002
T4_002054.LAB	2/8/2023	13:41:18	5.64	0.58	1.85	0.02	0.61	1.96	0.02	191.6	1.001
T4_002055.LAB	2/8/2023	13:42:18	5.64	0.57	1.89	0.09	0.61	2.00	0.10	191.6	1.003
T4_002056.LAB	2/8/2023	13:43:18	5.63	0.55	1.92	0.03	0.58	2.03	0.03	191.6	1.001
T4_002057.LAB	2/8/2023	13:44:18	5.63	0.58	1.97	0.03	0.62	2.08	0.03	191.6	1.001
T4_002058.LAB	2/8/2023	13:45:17	5.65	0.61	1.98	0.02	0.65	2.10	0.02	191.6	0.998
T4_002059.LAB	2/8/2023	13:46:17	5.64	0.56	1.92	0.06	0.60	2.03	0.06	191.6	1.001
T4_002060.LAB	2/8/2023	13:47:17	5.66	0.56	1.90	0.01	0.59	2.02	0.01	191.6	1.001
T4_002061.LAB	2/8/2023	13:48:17	5.64	0.54	1.86	-0.01	0.57	1.97	-0.02	191.6	1.001
T4_002062.LAB	2/8/2023	13:49:17	5.65	0.57	1.86	-0.10	0.60	1.97	-0.10	191.5	1.001
T4_002063.LAB	2/8/2023	13:50:17	5.66	0.56	1.90	0.01	0.59	2.01	0.01	191.6	1.002
T4_002064.LAB	2/8/2023	13:51:17	5.67	0.56	1.89	0.09	0.60	2.00	0.09	191.6	1.002
T4_002065.LAB	2/8/2023	13:52:17	5.64	0.56	1.88	0.05	0.59	1.99	0.06	191.6	1.003
T4_002066.LAB	2/8/2023	13:53:17	5.64	0.57	1.88	0.03	0.60	1.99	0.03	191.6	1.002
T4_002067.LAB	2/8/2023	13:54:17	5.63	0.59	1.92	0.01	0.63	2.03	0.01	191.6	1.002
T4_002068.LAB	2/8/2023	13:55:17	5.65	0.61	1.96	0.02	0.65	2.08	0.03	191.6	1.000
T4_002069.LAB	2/8/2023	13:56:17	5.66	0.59	1.93	0.02	0.62	2.04	0.02	191.6	1.000
T4_002070.LAB	2/8/2023	13:57:17	5.65	0.53	1.89	0.03	0.56	2.00	0.03	191.5	1.000
T4_002071.LAB	2/8/2023	13:58:17	5.65	0.57	1.89	-0.02	0.61	2.00	-0.02	191.5	1.000
T4_002072.LAB	2/8/2023	13:59:17	5.64	0.56	1.87	0.10	0.59	1.98	0.11	191.5	1.000
T4_002073.LAB	2/8/2023	14:00:17	5.65	0.55	1.87	-0.08	0.59	1.98	-0.09	191.5	1.001
T4_002074.LAB	2/8/2023	14:01:17	5.66	0.55	1.89	0.01	0.58	2.01	0.01	191.5	1.000
T4_002075.LAB	2/8/2023	14:02:16	5.65	0.56	1.87	0.05	0.59	1.98	0.05	191.5	1.002
T4_002076.LAB	2/8/2023	14:03:16	5.66	0.56	1.88	0.05	0.60	1.99	0.06	191.6	1.002
T4_002077.LAB	2/8/2023	14:04:16	5.65	0.54	1.92	-0.05	0.57	2.03	-0.05	191.5	1.002
T4_002078.LAB	2/8/2023	14:05:16	5.64	0.57	1.94	0.00	0.61	2.05	0.00	191.5	1.001
02/08/2023	Minimum		5.60	0.50	1.82	-0.10	0.53	1.93	-0.10		
Turbine 4 - Run 7	Maximum		5.69	0.61	1.98	0.13	0.65	2.10	0.13		
13:05 - 14:05	Average		5.65	0.56	1.89	0.03	0.60	2.00	0.03		

Turbine 5 - Run 1

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T5_003226.LAB	2/14/2023	9:15:11	6.03	0.26	1.29	0.14	0.28	1.37	0.15	191.9	1.004
T5_003227.LAB	2/14/2023	9:16:11	6.02	0.28	1.24	0.09	0.29	1.32	0.09	191.9	1.004
T5_003228.LAB	2/14/2023	9:17:11	6.03	0.26	1.23	0.18	0.28	1.31	0.19	191.8	1.004
T5_003229.LAB	2/14/2023	9:18:11	6.04	0.25	1.24	0.05	0.27	1.32	0.05	191.8	1.005
T5_003230.LAB	2/14/2023	9:19:11	6.04	0.26	1.23	0.12	0.27	1.30	0.13	191.8	1.007
T5_003231.LAB	2/14/2023	9:20:11	6.03	0.28	1.23	0.06	0.30	1.30	0.07	191.8	1.007
T5_003232.LAB	2/14/2023	9:21:11	6.03	0.27	1.21	0.13	0.28	1.29	0.14	191.8	1.007
T5_003233.LAB	2/14/2023	9:22:11	6.02	0.29	1.25	0.04	0.31	1.33	0.04	191.8	1.005
T5_003234.LAB	2/14/2023	9:23:11	5.99	0.27	1.25	0.15	0.29	1.33	0.16	191.8	1.006
T5_003235.LAB	2/14/2023	9:24:10	6.02	0.27	1.26	0.04	0.29	1.34	0.04	191.8	1.003
T5_003236.LAB	2/14/2023	9:25:11	5.99	0.31	1.23	0.14	0.33	1.30	0.15	191.8	1.003
T5_003237.LAB	2/14/2023	9:26:10	5.97	0.27	1.19	0.07	0.29	1.27	0.08	191.8	1.006
T5_003238.LAB	2/14/2023	9:27:10	5.99	0.28	1.15	0.15	0.30	1.23	0.16	191.9	1.005
T5_003239.LAB	2/14/2023	9:28:10	5.97	0.26	1.17	0.11	0.28	1.25	0.12	191.9	1.006
T5_003240.LAB	2/14/2023	9:29:10	5.97	0.24	1.16	0.15	0.26	1.24	0.16	191.9	1.006
T5_003241.LAB	2/14/2023	9:30:10	5.97	0.25	1.16	0.12	0.26	1.23	0.12	191.9	1.007
T5_003242.LAB	2/14/2023	9:31:10	5.97	0.27	1.15	0.08	0.28	1.22	0.09	191.9	1.007
T5_003243.LAB	2/14/2023	9:32:10	5.97	0.26	1.20	0.15	0.28	1.28	0.16	191.8	1.005
T5_003244.LAB	2/14/2023	9:33:10	5.96	0.30	1.23	0.19	0.32	1.31	0.20	191.7	1.005
T5_003245.LAB	2/14/2023	9:34:10	5.94	0.27	1.22	0.12	0.29	1.30	0.12	191.7	1.005
T5_003246.LAB	2/14/2023	9:35:10	5.93	0.27	1.17	0.19	0.29	1.24	0.20	191.7	1.005
T5_003247.LAB	2/14/2023	9:36:10	5.95	0.25	1.18	0.12	0.26	1.25	0.12	191.8	1.005
T5_003248.LAB	2/14/2023	9:37:10	5.94	0.23	1.13	0.10	0.25	1.21	0.10	191.9	1.004
T5_003249.LAB	2/14/2023	9:38:10	5.93	0.22	1.12	0.11	0.24	1.19	0.11	191.9	1.006
T5_003250.LAB	2/14/2023	9:39:10	5.90	0.25	1.14	0.07	0.26	1.21	0.07	191.8	1.006
T5_003251.LAB	2/14/2023	9:40:09	5.90	0.25	1.13	0.06	0.26	1.20	0.06	191.8	1.007
T5_003252.LAB	2/14/2023	9:41:09	5.86	0.27	1.10	0.06	0.29	1.17	0.06	191.8	1.007
T5_003253.LAB	2/14/2023	9:42:09	5.88	0.23	1.14	0.04	0.25	1.21	0.04	191.7	1.006
T5_003254.LAB	2/14/2023	9:43:09	5.86	0.23	1.18	0.09	0.24	1.26	0.09	191.7	1.005
T5_003255.LAB	2/14/2023	9:44:09	5.85	0.31	1.22	0.06	0.33	1.30	0.06	191.7	1.003
T5_003256.LAB	2/14/2023	9:45:09	5.83	0.26	1.18	0.04	0.28	1.25	0.04	191.8	1.002
T5_003257.LAB	2/14/2023	9:46:09	5.83	0.29	1.15	0.14	0.31	1.23	0.15	191.8	1.005
T5_003258.LAB	2/14/2023	9:47:09	5.85	0.23	1.15	0.14	0.25	1.23	0.15	191.8	1.003
T5_003259.LAB	2/14/2023	9:48:09	5.82	0.24	1.14	0.05	0.25	1.21	0.05	191.8	1.007
T5_003260.LAB	2/14/2023	9:49:09	5.81	0.27	1.11	0.10	0.29	1.18	0.11	191.8	1.005
T5_003261.LAB	2/14/2023	9:50:09	5.79	0.26	1.14	0.05	0.27	1.21	0.05	191.8	1.006
T5_003262.LAB	2/14/2023	9:51:09	5.76	0.28	1.11	0.09	0.30	1.18	0.10	191.8	1.008
T5_003263.LAB	2/14/2023	9:52:09	5.76	0.26	1.15	0.07	0.28	1.22	0.08	191.8	1.007
T5_003264.LAB	2/14/2023	9:53:09	5.77	0.31	1.20	0.11	0.33	1.28	0.12	191.8	1.007
T5_003265.LAB	2/14/2023	9:54:09	5.76	0.25	1.19	0.09	0.26	1.27	0.10	191.7	1.004
T5_003266.LAB	2/14/2023	9:55:08	5.76	0.30	1.20	0.03	0.31	1.27	0.03	191.7	1.003
T5_003267.LAB	2/14/2023	9:56:09	5.74	0.31	1.19	0.12	0.33	1.27	0.13	191.7	1.004
T5_003268.LAB	2/14/2023	9:57:08	5.76	0.30	1.16	0.12	0.32	1.23	0.13	191.7	1.004
T5_003269.LAB	2/14/2023	9:58:08	5.74	0.28	1.17	0.06	0.30	1.24	0.06	191.6	1.004
T5_003270.LAB	2/14/2023	9:59:08	5.74	0.28	1.16	0.06	0.30	1.23	0.07	191.7	1.006
T5_003271.LAB	2/14/2023	10:00:08	5.74	0.23	1.15	0.07	0.25	1.22	0.08	191.7	1.005
T5_003272.LAB	2/14/2023	10:01:08	5.73	0.27	1.16	-0.02	0.28	1.23	-0.02	191.8	1.008
T5_003273.LAB	2/14/2023	10:02:08	5.73	0.23	1.19	0.11	0.25	1.26	0.12	191.9	1.006
T5_003274.LAB	2/14/2023	10:03:08	5.71	0.27	1.20	0.03	0.29	1.28	0.03	191.9	1.006
T5_003275.LAB	2/14/2023	10:04:08	5.70	0.29	1.24	0.12	0.30	1.31	0.13	191.9	1.005
T5_003276.LAB	2/14/2023	10:05:08	5.69	0.31	1.25	0.07	0.33	1.33	0.08	191.9	1.004
T5_003277.LAB	2/14/2023	10:06:08	5.73	0.31	1.21	0.12	0.33	1.28	0.12	191.8	1.004
T5_003278.LAB	2/14/2023	10:07:08	5.71	0.26	1.20	0.06	0.28	1.27	0.06	191.7	1.004
T5_003279.LAB	2/14/2023	10:08:08	5.70	0.30	1.17	0.00	0.32	1.24	0.00	191.7	1.004
T5_003280.LAB	2/14/2023	10:09:08	5.72	0.29	1.17	0.08	0.31	1.25	0.08	191.7	1.004
T5_003281.LAB	2/14/2023	10:10:07	5.72	0.30	1.15	0.03	0.32	1.22	0.03	191.7	1.005
T5_003282.LAB	2/14/2023	10:11:08	5.72	0.28	1.19	0.03	0.29	1.26	0.03	191.8	1.007
T5_003283.LAB	2/14/2023	10:12:08	5.70	0.26	1.16	0.07	0.27	1.23	0.08	191.9	1.007
T5_003284.LAB	2/14/2023	10:13:07	5.67	0.25	1.17	0.08	0.27	1.24	0.09	191.9	1.006
T5_003285.LAB	2/14/2023	10:14:07	5.69	0.30	1.23	0.16	0.32	1.30	0.16	191.9	1.005
T5_003286.LAB	2/14/2023	10:15:07	5.69	0.28	1.25	0.09	0.29	1.32	0.09	191.8	1.004
02/14/2023	Minimum		5.67	0.22	1.10	-0.02	0.24	1.17	-0.02		
Turbine 5 - Run 1	Maximum		6.04	0.31	1.29	0.19	0.33	1.37	0.20		
9:15 - 10:15	Average		5.85	0.27	1.19	0.09	0.29	1.26	0.10		

MONTROSE

Turbine 5 - Run 2

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T5_003297.LAB	2/14/2023	10:20:08	5.68	0.28	1.14	0.12	0.30	1.21	0.13	191.9	1.007
T5_003298.LAB	2/14/2023	10:21:08	5.67	0.24	1.15	0.12	0.26	1.22	0.12	191.8	1.007
T5_003299.LAB	2/14/2023	10:22:08	5.67	0.26	1.14	0.15	0.28	1.21	0.16	191.8	1.007
T5_003300.LAB	2/14/2023	10:23:08	5.67	0.26	1.16	0.06	0.27	1.23	0.07	191.8	1.007
T5_003301.LAB	2/14/2023	10:24:08	5.68	0.25	1.19	0.09	0.27	1.27	0.09	191.8	1.004
T5_003302.LAB	2/14/2023	10:25:08	5.68	0.30	1.23	0.04	0.32	1.30	0.04	191.8	1.005
T5_003303.LAB	2/14/2023	10:26:08	5.69	0.27	1.23	0.17	0.28	1.31	0.18	191.8	1.004
T5_003304.LAB	2/14/2023	10:27:08	5.69	0.24	1.21	0.04	0.25	1.28	0.04	191.8	1.004
T5_003305.LAB	2/14/2023	10:28:08	5.69	0.27	1.21	0.04	0.28	1.29	0.04	191.8	1.004
T5_003306.LAB	2/14/2023	10:29:08	5.67	0.27	1.18	0.00	0.28	1.26	0.00	191.8	1.006
T5_003307.LAB	2/14/2023	10:30:08	5.70	0.27	1.19	-0.06	0.28	1.27	-0.07	191.8	1.006
T5_003308.LAB	2/14/2023	10:31:08	5.71	0.26	1.18	0.00	0.28	1.26	0.01	191.7	1.005
T5_003309.LAB	2/14/2023	10:32:08	5.69	0.25	1.21	0.04	0.26	1.28	0.04	191.8	1.007
T5_003310.LAB	2/14/2023	10:33:08	5.68	0.28	1.20	0.16	0.29	1.28	0.17	191.8	1.007
T5_003311.LAB	2/14/2023	10:34:07	5.70	0.25	1.25	0.01	0.26	1.32	0.01	191.9	1.007
T5_003312.LAB	2/14/2023	10:35:07	5.69	0.25	1.28	0.11	0.26	1.36	0.11	191.8	1.005
T5_003313.LAB	2/14/2023	10:36:07	5.69	0.26	1.28	0.09	0.27	1.36	0.09	191.8	1.005
T5_003314.LAB	2/14/2023	10:37:07	5.71	0.24	1.25	0.08	0.26	1.33	0.08	191.7	1.004
T5_003315.LAB	2/14/2023	10:38:07	5.72	0.32	1.24	0.13	0.34	1.31	0.14	191.7	1.003
T5_003316.LAB	2/14/2023	10:39:07	5.67	0.29	1.22	0.10	0.31	1.29	0.11	191.7	1.006
T5_003317.LAB	2/14/2023	10:40:07	5.69	0.28	1.22	0.05	0.30	1.29	0.06	191.8	1.004
T5_003318.LAB	2/14/2023	10:41:07	5.73	0.27	1.25	0.01	0.29	1.32	0.01	191.9	1.005
T5_003319.LAB	2/14/2023	10:42:07	5.70	0.29	1.21	0.03	0.31	1.28	0.03	191.9	1.008
T5_003320.LAB	2/14/2023	10:43:07	5.71	0.31	1.25	0.03	0.33	1.33	0.03	191.8	1.008
T5_003321.LAB	2/14/2023	10:44:07	5.71	0.28	1.27	0.04	0.30	1.35	0.04	191.8	1.006
T5_003322.LAB	2/14/2023	10:45:07	5.71	0.29	1.31	0.06	0.31	1.39	0.07	191.7	1.005
T5_003323.LAB	2/14/2023	10:46:07	5.68	0.29	1.33	0.13	0.31	1.41	0.14	191.7	1.003
T5_003324.LAB	2/14/2023	10:47:07	5.70	0.29	1.32	0.07	0.31	1.40	0.07	191.7	1.003
T5_003325.LAB	2/14/2023	10:48:07	5.72	0.31	1.29	0.11	0.33	1.36	0.12	191.8	1.003
T5_003326.LAB	2/14/2023	10:49:06	5.71	0.29	1.26	0.02	0.31	1.34	0.02	191.8	1.005
T5_003327.LAB	2/14/2023	10:50:06	5.69	0.29	1.28	0.07	0.31	1.35	0.08	191.8	1.006
T5_003328.LAB	2/14/2023	10:51:06	5.68	0.27	1.23	0.10	0.29	1.31	0.10	191.8	1.006
T5_003329.LAB	2/14/2023	10:52:07	5.69	0.26	1.28	0.09	0.28	1.35	0.09	191.7	1.006
T5_003330.LAB	2/14/2023	10:53:06	5.69	0.28	1.25	0.11	0.29	1.32	0.12	191.7	1.007
T5_003331.LAB	2/14/2023	10:54:06	5.72	0.28	1.28	0.01	0.30	1.35	0.02	191.7	1.007
T5_003332.LAB	2/14/2023	10:55:06	5.68	0.32	1.33	0.15	0.34	1.41	0.16	191.8	1.005
T5_003333.LAB	2/14/2023	10:56:06	5.71	0.31	1.35	0.08	0.33	1.43	0.08	191.9	1.004
T5_003334.LAB	2/14/2023	10:57:06	5.71	0.32	1.32	0.13	0.34	1.40	0.14	191.9	1.004
T5_003335.LAB	2/14/2023	10:58:06	5.74	0.33	1.31	0.02	0.35	1.39	0.02	191.8	1.004
T5_003336.LAB	2/14/2023	10:59:06	5.70	0.32	1.29	0.05	0.34	1.37	0.05	191.7	1.004
T5_003337.LAB	2/14/2023	11:00:06	5.66	0.33	1.26	0.02	0.35	1.34	0.02	191.6	1.006
T5_003338.LAB	2/14/2023	11:01:06	5.68	0.32	1.26	0.13	0.34	1.34	0.13	191.6	1.005
T5_003339.LAB	2/14/2023	11:02:06	5.70	0.36	1.27	0.05	0.38	1.35	0.06	191.7	1.005
T5_003340.LAB	2/14/2023	11:03:06	5.67	0.31	1.27	0.09	0.32	1.34	0.09	191.8	1.007
T5_003341.LAB	2/14/2023	11:04:06	5.70	0.31	1.26	0.05	0.32	1.34	0.06	191.8	1.007
T5_003342.LAB	2/14/2023	11:05:05	5.72	0.37	1.34	0.12	0.39	1.42	0.13	191.9	1.006
T5_003343.LAB	2/14/2023	11:06:05	5.70	0.29	1.37	0.02	0.31	1.45	0.02	191.8	1.004
T5_003344.LAB	2/14/2023	11:07:06	5.70	0.32	1.35	0.08	0.34	1.43	0.08	191.7	1.004
T5_003345.LAB	2/14/2023	11:08:05	5.68	0.33	1.32	0.04	0.35	1.40	0.04	191.7	1.005
T5_003346.LAB	2/14/2023	11:09:05	5.71	0.31	1.31	0.17	0.33	1.39	0.18	191.8	1.003
T5_003347.LAB	2/14/2023	11:10:05	5.72	0.35	1.28	0.10	0.37	1.35	0.11	191.9	1.005
T5_003348.LAB	2/14/2023	11:11:05	5.70	0.34	1.28	0.12	0.36	1.36	0.13	191.9	1.007
T5_003349.LAB	2/14/2023	11:12:05	5.74	0.31	1.31	0.13	0.33	1.39	0.14	191.9	1.006
T5_003350.LAB	2/14/2023	11:13:05	5.75	0.34	1.28	0.11	0.36	1.36	0.11	191.8	1.005
T5_003351.LAB	2/14/2023	11:14:05	5.70	0.30	1.29	0.09	0.31	1.37	0.10	191.6	1.006
T5_003352.LAB	2/14/2023	11:15:05	5.70	0.37	1.33	0.03	0.39	1.41	0.03	191.6	1.005
T5_003353.LAB	2/14/2023	11:16:05	5.73	0.31	1.35	0.11	0.33	1.43	0.11	191.6	1.003
T5_003354.LAB	2/14/2023	11:17:05	5.69	0.32	1.33	0.16	0.34	1.41	0.17	191.7	1.003
T5_003355.LAB	2/14/2023	11:18:05	5.71	0.31	1.29	0.06	0.33	1.37	0.06	191.8	1.003
T5_003356.LAB	2/14/2023	11:19:05	5.72	0.35	1.25	0.06	0.37	1.32	0.07	191.8	1.001
T5_003357.LAB	2/14/2023	11:20:05	5.71	0.32	1.24	0.12	0.34	1.31	0.12	191.8	1.004
02/14/2023	Minimum		5.66	0.24	1.14	-0.06	0.25	1.21	-0.07		
Turbine 5 - Run 2	Maximum		5.75	0.37	1.37	0.17	0.39	1.45	0.18		
10:20 - 11:20	Average		5.70	0.30	1.26	0.08	0.31	1.34	0.08		

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Turbine 5 - Run 3

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T5_003368.LAB	2/14/2023	11:25:38	5.73	0.27	1.24	0.12	0.29	1.31	0.12	191.9	1.004
T5_003369.LAB	2/14/2023	11:26:38	5.73	0.28	1.27	0.11	0.30	1.35	0.11	191.9	1.002
T5_003370.LAB	2/14/2023	11:27:38	5.68	0.31	1.26	0.11	0.33	1.33	0.12	191.9	1.004
T5_003371.LAB	2/14/2023	11:28:38	5.69	0.29	1.23	0.07	0.31	1.30	0.08	191.8	1.003
T5_003372.LAB	2/14/2023	11:29:38	5.71	0.29	1.22	0.06	0.31	1.30	0.07	191.7	1.002
T5_003373.LAB	2/14/2023	11:30:38	5.70	0.25	1.21	0.01	0.27	1.29	0.01	191.7	1.005
T5_003374.LAB	2/14/2023	11:31:38	5.71	0.29	1.21	0.13	0.30	1.29	0.14	191.7	1.004
T5_003375.LAB	2/14/2023	11:32:38	5.71	0.25	1.23	0.10	0.26	1.30	0.11	191.7	1.003
T5_003376.LAB	2/14/2023	11:33:37	5.69	0.27	1.26	0.02	0.29	1.33	0.02	191.8	1.007
T5_003377.LAB	2/14/2023	11:34:37	5.74	0.30	1.25	0.11	0.31	1.33	0.12	191.9	1.005
T5_003378.LAB	2/14/2023	11:35:38	5.73	0.29	1.32	0.08	0.31	1.40	0.08	191.8	1.004
T5_003379.LAB	2/14/2023	11:36:37	5.64	0.28	1.33	0.09	0.29	1.41	0.09	191.7	1.003
T5_003380.LAB	2/14/2023	11:37:37	5.65	0.31	1.32	0.11	0.33	1.40	0.12	191.6	1.003
T5_003381.LAB	2/14/2023	11:38:37	5.69	0.30	1.29	0.09	0.32	1.37	0.10	191.6	1.004
T5_003382.LAB	2/14/2023	11:39:37	5.70	0.26	1.29	0.11	0.28	1.37	0.11	191.7	1.003
T5_003383.LAB	2/14/2023	11:40:37	5.71	0.28	1.27	0.20	0.29	1.35	0.22	191.8	1.004
T5_003384.LAB	2/14/2023	11:41:37	5.71	0.30	1.28	0.04	0.32	1.36	0.04	191.9	1.005
T5_003385.LAB	2/14/2023	11:42:37	5.69	0.31	1.27	0.04	0.33	1.35	0.05	191.8	1.005
T5_003386.LAB	2/14/2023	11:43:37	5.69	0.32	1.29	0.12	0.34	1.37	0.12	191.7	1.005
T5_003387.LAB	2/14/2023	11:44:37	5.69	0.32	1.29	0.05	0.34	1.37	0.05	191.6	1.006
T5_003388.LAB	2/14/2023	11:45:37	5.69	0.31	1.33	0.10	0.33	1.41	0.11	191.6	1.004
T5_003389.LAB	2/14/2023	11:46:37	5.68	0.34	1.37	0.13	0.36	1.45	0.14	191.6	1.003
T5_003390.LAB	2/14/2023	11:47:37	5.69	0.35	1.37	0.00	0.37	1.45	0.01	191.7	1.002
T5_003391.LAB	2/14/2023	11:48:37	5.70	0.30	1.35	-0.03	0.32	1.43	-0.03	191.8	1.001
T5_003392.LAB	2/14/2023	11:49:36	5.68	0.29	1.30	0.22	0.31	1.38	0.24	191.8	1.003
T5_003393.LAB	2/14/2023	11:50:36	5.71	0.31	1.34	0.08	0.32	1.42	0.09	191.8	1.003
T5_003394.LAB	2/14/2023	11:51:36	5.69	0.33	1.31	0.05	0.35	1.39	0.05	191.7	1.004
T5_003395.LAB	2/14/2023	11:52:37	5.71	0.34	1.32	0.11	0.36	1.40	0.11	191.6	1.004
T5_003396.LAB	2/14/2023	11:53:36	5.68	0.31	1.31	0.08	0.33	1.39	0.09	191.6	1.003
T5_003397.LAB	2/14/2023	11:54:36	5.67	0.34	1.30	0.10	0.36	1.38	0.10	191.7	1.005
T5_003398.LAB	2/14/2023	11:55:36	5.69	0.32	1.33	0.11	0.34	1.41	0.11	191.7	1.005
T5_003399.LAB	2/14/2023	11:56:36	5.67	0.35	1.37	0.11	0.37	1.45	0.12	191.8	1.004
T5_003400.LAB	2/14/2023	11:57:36	5.71	0.37	1.40	0.08	0.39	1.49	0.09	191.8	1.002
T5_003401.LAB	2/14/2023	11:58:36	5.70	0.35	1.36	0.04	0.37	1.44	0.04	191.7	1.003
T5_003402.LAB	2/14/2023	11:59:36	5.69	0.34	1.33	0.03	0.37	1.41	0.03	191.6	1.002
T5_003403.LAB	2/14/2023	12:00:36	5.68	0.35	1.31	0.05	0.37	1.39	0.06	191.7	1.002
T5_003404.LAB	2/14/2023	12:01:36	5.68	0.36	1.31	0.10	0.38	1.39	0.10	191.7	1.002
T5_003405.LAB	2/14/2023	12:02:36	5.66	0.35	1.28	0.05	0.37	1.35	0.06	191.8	1.003
T5_003406.LAB	2/14/2023	12:03:36	5.67	0.31	1.30	0.14	0.33	1.37	0.14	191.9	1.003
T5_003407.LAB	2/14/2023	12:04:36	5.67	0.34	1.30	0.12	0.36	1.38	0.12	191.9	1.003
T5_003408.LAB	2/14/2023	12:05:35	5.67	0.32	1.31	0.04	0.34	1.39	0.04	191.8	1.005
T5_003409.LAB	2/14/2023	12:06:35	5.67	0.34	1.38	0.14	0.36	1.47	0.15	191.7	1.005
T5_003410.LAB	2/14/2023	12:07:36	5.65	0.34	1.38	0.03	0.36	1.47	0.03	191.7	1.003
T5_003411.LAB	2/14/2023	12:08:35	5.70	0.36	1.38	0.05	0.39	1.46	0.06	191.7	1.002
T5_003412.LAB	2/14/2023	12:09:35	5.67	0.35	1.37	-0.03	0.37	1.45	-0.03	191.6	1.002
T5_003421.LAB	2/14/2023	12:18:35	5.64	0.37	1.39	0.09	0.40	1.48	0.09	191.8	1.002
T5_003422.LAB	2/14/2023	12:19:35	5.66	0.39	1.36	0.09	0.41	1.45	0.10	191.8	1.002
T5_003423.LAB	2/14/2023	12:20:34	5.67	0.37	1.36	0.03	0.39	1.44	0.03	191.8	1.001
T5_003424.LAB	2/14/2023	12:21:35	5.67	0.38	1.35	0.10	0.40	1.43	0.11	191.7	1.002
T5_003425.LAB	2/14/2023	12:22:34	5.65	0.37	1.35	0.10	0.40	1.43	0.11	191.6	1.004
T5_003426.LAB	2/14/2023	12:23:34	5.67	0.39	1.36	0.08	0.42	1.44	0.08	191.6	1.004
T5_003427.LAB	2/14/2023	12:24:34	5.66	0.38	1.34	0.11	0.40	1.42	0.11	191.6	1.004
T5_003428.LAB	2/14/2023	12:25:34	5.63	0.37	1.35	0.09	0.39	1.43	0.09	191.7	1.004
T5_003429.LAB	2/14/2023	12:26:34	5.67	0.37	1.42	0.08	0.39	1.50	0.08	191.8	1.004
T5_003430.LAB	2/14/2023	12:27:34	5.64	0.40	1.44	0.04	0.42	1.53	0.05	191.8	1.003
T5_003431.LAB	2/14/2023	12:28:34	5.67	0.38	1.44	0.08	0.40	1.52	0.09	191.7	1.001
T5_003432.LAB	2/14/2023	12:29:34	5.68	0.35	1.41	0.14	0.37	1.49	0.15	191.7	1.002
T5_003433.LAB	2/14/2023	12:30:34	5.68	0.37	1.34	0.12	0.39	1.42	0.12	191.6	1.001
T5_003434.LAB	2/14/2023	12:31:34	5.63	0.35	1.36	0.11	0.37	1.44	0.12	191.6	1.001
T5_003435.LAB	2/14/2023	12:32:34	5.61	0.39	1.31	0.12	0.42	1.39	0.13	191.7	1.002
T5_003436.LAB	2/14/2023	12:33:34	5.66	0.36	1.33	0.13	0.38	1.41	0.14	191.7	1.004
T5_003437.LAB	2/14/2023	12:34:34	5.63	0.39	1.32	0.17	0.41	1.40	0.18	191.8	1.004
02/14/2023	Minimum		5.61	0.25	1.21	-0.03	0.26	1.29	-0.03		
Turbine 5 - Run 3	Maximum		5.74	0.40	1.44	0.22	0.42	1.53	0.24		
11:25 - 12:09; 12:18 -	Average		5.68	0.33	1.32	0.09	0.35	1.40	0.09		

Turbine 5 - Run 4

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T5_003449.LAB	2/14/2023	12:40:57	5.64	0.37	1.31	-0.03	0.39	1.39	-0.03	191.7	1.001
T5_003450.LAB	2/14/2023	12:41:57	5.63	0.34	1.27	0.00	0.36	1.35	0.00	191.8	1.003
T5_003451.LAB	2/14/2023	12:42:57	5.63	0.34	1.30	0.09	0.36	1.38	0.09	191.8	1.004
T5_003452.LAB	2/14/2023	12:43:56	5.64	0.32	1.29	0.10	0.34	1.36	0.10	191.7	1.003
T5_003453.LAB	2/14/2023	12:44:56	5.64	0.35	1.32	0.05	0.37	1.40	0.05	191.6	1.002
T5_003454.LAB	2/14/2023	12:45:56	5.63	0.37	1.32	0.07	0.39	1.40	0.07	191.6	1.005
T5_003455.LAB	2/14/2023	12:46:56	5.62	0.36	1.36	0.09	0.38	1.44	0.09	191.6	1.004
T5_003456.LAB	2/14/2023	12:47:56	5.60	0.34	1.39	0.00	0.36	1.47	0.00	191.7	1.002
T5_003457.LAB	2/14/2023	12:48:56	5.62	0.34	1.41	0.06	0.36	1.49	0.06	191.8	1.001
T5_003458.LAB	2/14/2023	12:49:56	5.64	0.34	1.36	0.09	0.36	1.44	0.09	191.8	1.000
T5_003459.LAB	2/14/2023	12:50:56	5.63	0.37	1.36	0.10	0.39	1.44	0.10	191.7	1.002
T5_003460.LAB	2/14/2023	12:51:56	5.63	0.33	1.35	0.09	0.35	1.43	0.10	191.7	1.002
T5_003461.LAB	2/14/2023	12:52:56	5.60	0.30	1.33	0.09	0.32	1.41	0.09	191.6	1.003
T5_003462.LAB	2/14/2023	12:53:56	5.60	0.37	1.33	0.16	0.39	1.41	0.17	191.6	1.003
T5_003463.LAB	2/14/2023	12:54:56	5.64	0.34	1.33	0.09	0.36	1.41	0.09	191.7	1.003
T5_003464.LAB	2/14/2023	12:55:56	5.62	0.36	1.34	0.12	0.39	1.42	0.13	191.8	1.004
T5_003465.LAB	2/14/2023	12:56:56	5.64	0.37	1.35	0.04	0.39	1.44	0.04	191.8	1.004
T5_003466.LAB	2/14/2023	12:57:56	5.66	0.38	1.39	0.09	0.41	1.47	0.10	191.8	1.002
T5_003467.LAB	2/14/2023	12:58:56	5.63	0.38	1.41	0.04	0.40	1.50	0.04	191.7	1.002
T5_003468.LAB	2/14/2023	12:59:55	5.62	0.34	1.37	0.17	0.36	1.46	0.18	191.6	1.002
T5_003469.LAB	2/14/2023	13:00:55	5.61	0.35	1.35	0.11	0.38	1.44	0.11	191.6	1.001
T5_003470.LAB	2/14/2023	13:01:55	5.63	0.37	1.36	0.08	0.39	1.44	0.09	191.6	1.001
T5_003471.LAB	2/14/2023	13:02:55	5.62	0.36	1.35	0.00	0.38	1.43	0.00	191.7	1.001
T5_003472.LAB	2/14/2023	13:03:56	5.62	0.34	1.34	0.11	0.36	1.42	0.12	191.8	1.002
T5_003473.LAB	2/14/2023	13:04:55	5.63	0.40	1.34	0.05	0.42	1.42	0.05	191.8	1.004
T5_003474.LAB	2/14/2023	13:05:55	5.63	0.33	1.36	0.06	0.35	1.44	0.06	191.8	1.004
T5_003475.LAB	2/14/2023	13:06:55	5.64	0.35	1.37	0.13	0.37	1.45	0.14	191.7	1.004
T5_003476.LAB	2/14/2023	13:07:55	5.66	0.37	1.41	0.11	0.39	1.50	0.12	191.7	1.003
T5_003477.LAB	2/14/2023	13:08:55	5.63	0.38	1.43	0.13	0.40	1.52	0.14	191.6	1.001
T5_003478.LAB	2/14/2023	13:09:55	5.62	0.37	1.41	0.06	0.39	1.50	0.07	191.6	1.002
T5_003479.LAB	2/14/2023	13:10:55	5.64	0.35	1.37	0.10	0.38	1.45	0.11	191.7	1.001
T5_003480.LAB	2/14/2023	13:11:55	5.68	0.36	1.38	0.07	0.39	1.46	0.07	191.7	1.000
T5_003481.LAB	2/14/2023	13:12:55	5.68	0.37	1.37	0.07	0.40	1.45	0.08	191.7	1.001
T5_003482.LAB	2/14/2023	13:13:55	5.65	0.36	1.36	0.06	0.38	1.44	0.07	191.8	1.003
T5_003483.LAB	2/14/2023	13:14:55	5.64	0.37	1.35	0.10	0.39	1.43	0.11	191.7	1.002
T5_003484.LAB	2/14/2023	13:15:55	5.63	0.36	1.33	0.09	0.39	1.41	0.10	191.6	1.002
T5_003485.LAB	2/14/2023	13:16:54	5.65	0.36	1.36	0.00	0.38	1.44	0.00	191.6	1.004
T5_003486.LAB	2/14/2023	13:17:55	5.62	0.36	1.37	0.15	0.38	1.46	0.15	191.7	1.003
T5_003487.LAB	2/14/2023	13:18:54	5.63	0.39	1.42	0.06	0.42	1.50	0.06	191.7	1.001
T5_003488.LAB	2/14/2023	13:19:54	5.65	0.38	1.41	0.05	0.40	1.49	0.05	191.8	1.001
T5_003489.LAB	2/14/2023	13:20:54	5.68	0.40	1.40	0.13	0.42	1.49	0.14	191.7	1.000
T5_003490.LAB	2/14/2023	13:21:54	5.60	0.32	1.35	0.08	0.34	1.43	0.09	191.7	1.002
T5_003491.LAB	2/14/2023	13:22:54	5.60	0.33	1.34	0.01	0.35	1.42	0.01	191.7	1.002
T5_003492.LAB	2/14/2023	13:23:54	5.58	0.35	1.30	0.06	0.37	1.38	0.06	191.7	1.002
T5_003493.LAB	2/14/2023	13:24:54	5.67	0.37	1.34	0.00	0.39	1.42	0.00	191.7	1.002
T5_003494.LAB	2/14/2023	13:25:54	5.62	0.35	1.34	0.07	0.37	1.42	0.08	191.7	1.004
T5_003495.LAB	2/14/2023	13:26:54	5.60	0.31	1.35	0.10	0.32	1.43	0.11	191.8	1.005
T5_003496.LAB	2/14/2023	13:27:54	5.63	0.33	1.36	0.06	0.35	1.44	0.07	191.7	1.003
T5_003497.LAB	2/14/2023	13:28:54	5.65	0.41	1.41	0.01	0.44	1.50	0.01	191.7	1.002
T5_003498.LAB	2/14/2023	13:29:54	5.63	0.40	1.43	0.04	0.42	1.52	0.04	191.6	1.000
T5_003499.LAB	2/14/2023	13:30:54	5.62	0.35	1.38	0.01	0.37	1.46	0.01	191.7	0.999
T5_003500.LAB	2/14/2023	13:31:54	5.63	0.40	1.38	0.13	0.43	1.46	0.14	191.7	1.001
T5_003501.LAB	2/14/2023	13:32:54	5.64	0.41	1.38	0.08	0.43	1.46	0.08	191.7	1.000
T5_003502.LAB	2/14/2023	13:33:53	5.67	0.38	1.36	0.10	0.40	1.44	0.10	191.8	1.000
T5_003503.LAB	2/14/2023	13:34:54	5.62	0.37	1.36	0.07	0.39	1.44	0.07	191.7	1.002
T5_003504.LAB	2/14/2023	13:35:53	5.64	0.41	1.38	0.03	0.43	1.46	0.03	191.7	1.003
T5_003505.LAB	2/14/2023	13:36:53	5.63	0.38	1.37	0.04	0.41	1.45	0.05	191.6	1.003
T5_003506.LAB	2/14/2023	13:37:53	5.63	0.38	1.41	0.07	0.40	1.49	0.07	191.6	1.003
T5_003507.LAB	2/14/2023	13:38:53	5.65	0.40	1.44	0.11	0.42	1.53	0.12	191.7	1.002
T5_003508.LAB	2/14/2023	13:39:53	5.62	0.39	1.43	0.05	0.42	1.52	0.05	191.7	1.000
T5_003509.LAB	2/14/2023	13:40:53	5.63	0.38	1.41	0.06	0.40	1.50	0.06	191.8	1.000
02/14/2023	Minimum		5.58	0.30	1.27	-0.03	0.32	1.35	-0.03		
Turbine 5 - Run 4	Maximum		5.68	0.41	1.44	0.17	0.44	1.53	0.18		
12:40 - 13:40	Average		5.63	0.36	1.37	0.07	0.38	1.45	0.08		

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Turbine 5 - Run 5

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T5_003872.LAB	2/15/2023	9:05:29	5.47	0.22	1.15	0.10	0.24	1.21	0.10	191.9	0.998
T5_003873.LAB	2/15/2023	9:06:29	5.47	0.27	1.11	0.05	0.28	1.18	0.06	191.9	1.000
T5_003874.LAB	2/15/2023	9:07:29	5.49	0.29	1.09	0.05	0.30	1.15	0.06	191.9	0.999
T5_003875.LAB	2/15/2023	9:08:29	5.49	0.24	1.11	0.01	0.25	1.18	0.01	191.9	1.000
T5_003876.LAB	2/15/2023	9:09:29	5.44	0.24	1.09	-0.01	0.25	1.15	-0.01	191.9	1.001
T5_003877.LAB	2/15/2023	9:10:29	5.48	0.29	1.10	0.03	0.30	1.16	0.03	191.9	0.999
T5_003878.LAB	2/15/2023	9:11:29	5.46	0.29	1.12	-0.02	0.31	1.18	-0.02	191.9	0.999
T5_003879.LAB	2/15/2023	9:12:29	5.50	0.28	1.14	0.01	0.29	1.21	0.01	191.9	0.997
T5_003880.LAB	2/15/2023	9:13:28	5.49	0.28	1.08	0.03	0.30	1.14	0.04	191.9	0.997
T5_003881.LAB	2/15/2023	9:14:28	5.48	0.25	1.07	0.09	0.27	1.13	0.10	191.9	0.998
T5_003882.LAB	2/15/2023	9:15:28	5.49	0.25	1.06	0.08	0.26	1.13	0.08	191.9	0.998
T5_003883.LAB	2/15/2023	9:16:28	5.47	0.24	1.05	0.04	0.25	1.11	0.04	191.9	0.998
T5_003884.LAB	2/15/2023	9:17:28	5.47	0.25	1.05	0.02	0.26	1.11	0.02	191.9	1.000
T5_003885.LAB	2/15/2023	9:18:28	5.48	0.25	1.03	0.07	0.26	1.09	0.07	191.9	1.001
T5_003886.LAB	2/15/2023	9:19:28	5.48	0.29	1.04	0.11	0.31	1.10	0.12	191.9	1.001
T5_003887.LAB	2/15/2023	9:20:28	5.48	0.28	1.06	0.07	0.29	1.12	0.07	191.9	1.000
T5_003888.LAB	2/15/2023	9:21:28	5.46	0.27	1.08	0.07	0.28	1.14	0.07	191.9	1.000
T5_003889.LAB	2/15/2023	9:22:28	5.46	0.28	1.10	0.04	0.29	1.16	0.04	191.8	0.999
T5_003890.LAB	2/15/2023	9:23:28	5.46	0.26	1.09	0.03	0.28	1.15	0.03	191.8	0.998
T5_003891.LAB	2/15/2023	9:24:28	5.48	0.27	1.08	0.01	0.28	1.15	0.01	191.9	0.997
T5_003892.LAB	2/15/2023	9:25:28	5.48	0.25	1.07	0.12	0.26	1.13	0.12	191.9	0.998
T5_003893.LAB	2/15/2023	9:26:28	5.47	0.25	1.05	0.03	0.27	1.12	0.03	191.8	0.999
T5_003894.LAB	2/15/2023	9:27:27	5.46	0.26	1.03	0.06	0.28	1.09	0.07	191.8	1.000
T5_003895.LAB	2/15/2023	9:28:28	5.46	0.27	1.05	0.09	0.28	1.11	0.10	191.8	1.000
T5_003896.LAB	2/15/2023	9:29:27	5.46	0.26	1.06	-0.11	0.28	1.12	-0.12	191.9	1.001
T5_003897.LAB	2/15/2023	9:30:27	5.46	0.28	1.07	0.14	0.29	1.13	0.14	191.9	1.001
T5_003898.LAB	2/15/2023	9:31:27	5.45	0.25	1.08	0.03	0.27	1.14	0.03	191.9	1.000
T5_003899.LAB	2/15/2023	9:32:27	5.46	0.28	1.11	0.11	0.30	1.18	0.12	191.9	0.999
T5_003900.LAB	2/15/2023	9:33:27	5.46	0.28	1.11	0.05	0.30	1.18	0.05	191.9	0.997
T5_003901.LAB	2/15/2023	9:34:27	5.47	0.25	1.10	0.12	0.27	1.17	0.13	191.9	0.997
T5_003902.LAB	2/15/2023	9:35:27	5.46	0.29	1.09	0.05	0.31	1.16	0.05	191.9	0.999
T5_003903.LAB	2/15/2023	9:36:27	5.45	0.29	1.10	0.08	0.30	1.16	0.08	191.9	0.998
T5_003904.LAB	2/15/2023	9:37:27	5.46	0.27	1.08	0.15	0.29	1.15	0.16	191.9	0.999
T5_003905.LAB	2/15/2023	9:38:27	5.46	0.28	1.09	-0.04	0.29	1.16	-0.04	191.9	1.000
T5_003906.LAB	2/15/2023	9:39:27	5.46	0.24	1.11	0.01	0.25	1.17	0.01	191.9	1.000
T5_003907.LAB	2/15/2023	9:40:27	5.47	0.27	1.14	0.04	0.29	1.21	0.04	191.9	1.000
T5_003908.LAB	2/15/2023	9:41:27	5.45	0.31	1.16	0.04	0.33	1.23	0.04	191.9	1.000
T5_003909.LAB	2/15/2023	9:42:27	5.44	0.28	1.20	0.03	0.29	1.27	0.04	191.8	0.999
T5_003910.LAB	2/15/2023	9:43:26	5.45	0.27	1.23	0.01	0.29	1.30	0.01	191.8	0.998
T5_003911.LAB	2/15/2023	9:44:26	5.47	0.32	1.21	-0.01	0.34	1.28	-0.01	191.9	0.998
T5_003912.LAB	2/15/2023	9:45:26	5.45	0.30	1.20	0.05	0.32	1.27	0.06	191.9	0.999
T5_003913.LAB	2/15/2023	9:46:26	5.45	0.27	1.18	0.04	0.29	1.25	0.04	191.9	0.999
T5_003914.LAB	2/15/2023	9:47:26	5.45	0.26	1.18	0.06	0.28	1.25	0.06	191.9	1.000
T5_003915.LAB	2/15/2023	9:48:26	5.42	0.24	1.19	-0.02	0.26	1.26	-0.02	191.9	1.001
T5_003916.LAB	2/15/2023	9:49:26	5.43	0.29	1.19	0.06	0.31	1.26	0.06	191.9	1.001
T5_003917.LAB	2/15/2023	9:50:26	5.45	0.28	1.20	0.11	0.30	1.27	0.12	191.9	1.001
T5_003918.LAB	2/15/2023	9:51:26	5.45	0.25	1.20	0.04	0.26	1.27	0.04	191.9	1.001
T5_003919.LAB	2/15/2023	9:52:26	5.45	0.29	1.24	0.06	0.31	1.31	0.06	191.9	1.001
T5_003920.LAB	2/15/2023	9:53:26	5.44	0.28	1.25	0.04	0.30	1.32	0.04	191.9	1.000
T5_003921.LAB	2/15/2023	9:54:26	5.45	0.28	1.25	0.05	0.30	1.33	0.06	191.9	0.998
T5_003922.LAB	2/15/2023	9:55:26	5.45	0.28	1.23	0.12	0.29	1.30	0.13	191.9	0.998
T5_003923.LAB	2/15/2023	9:56:26	5.44	0.27	1.23	0.09	0.29	1.30	0.09	191.9	0.999
T5_003924.LAB	2/15/2023	9:57:26	5.44	0.25	1.22	0.11	0.26	1.29	0.11	191.8	1.000
T5_003925.LAB	2/15/2023	9:58:26	5.43	0.28	1.22	0.02	0.29	1.29	0.02	191.8	1.000
T5_003926.LAB	2/15/2023	9:59:26	5.44	0.28	1.22	-0.02	0.29	1.29	-0.02	191.8	1.001
T5_003927.LAB	2/15/2023	10:00:25	5.45	0.26	1.22	0.04	0.27	1.29	0.04	191.9	1.001
T5_003928.LAB	2/15/2023	10:01:25	5.45	0.30	1.25	0.08	0.32	1.33	0.09	191.9	1.000
T5_003929.LAB	2/15/2023	10:02:25	5.44	0.30	1.29	0.02	0.31	1.37	0.02	191.8	1.000
T5_003930.LAB	2/15/2023	10:03:25	5.42	0.29	1.31	0.06	0.31	1.39	0.06	191.9	0.999
T5_003931.LAB	2/15/2023	10:04:25	5.43	0.31	1.32	0.06	0.32	1.40	0.06	191.9	0.997
T5_003932.LAB	2/15/2023	10:05:25	5.42	0.25	1.31	0.01	0.27	1.38	0.01	191.9	0.999
02/15/2023	Minimum		5.42	0.22	1.03	-0.11	0.24	1.09	-0.12		
Turbine 5 - Run 5	Maximum		5.50	0.32	1.32	0.15	0.34	1.40	0.16		
9:05 - 10:05	Average		5.46	0.27	1.14	0.05	0.29	1.21	0.05		

Turbine 5 - Run 6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T5_003943.LAB	2/15/2023	10:10:34	5.41	0.24	1.36	0.05	0.26	1.44	0.05	191.8	1.000
T5_003944.LAB	2/15/2023	10:11:34	5.41	0.28	1.36	0.07	0.29	1.44	0.07	191.8	1.002
T5_003945.LAB	2/15/2023	10:12:34	5.42	0.30	1.37	0.02	0.32	1.44	0.02	191.8	1.000
T5_003946.LAB	2/15/2023	10:13:34	5.43	0.34	1.40	0.06	0.36	1.48	0.06	191.8	1.000
T5_003947.LAB	2/15/2023	10:14:34	5.43	0.28	1.40	0.10	0.29	1.48	0.11	191.8	0.999
T5_003948.LAB	2/15/2023	10:15:34	5.40	0.30	1.37	0.14	0.32	1.45	0.15	191.8	0.999
T5_003949.LAB	2/15/2023	10:16:34	5.41	0.30	1.37	0.11	0.31	1.45	0.11	191.8	0.999
T5_003950.LAB	2/15/2023	10:17:34	5.39	0.28	1.36	0.04	0.30	1.43	0.04	191.7	1.000
T5_003951.LAB	2/15/2023	10:18:34	5.39	0.31	1.37	0.03	0.33	1.45	0.03	191.7	1.001
T5_003952.LAB	2/15/2023	10:19:34	5.41	0.30	1.37	0.03	0.32	1.45	0.03	191.8	1.000
T5_003953.LAB	2/15/2023	10:20:34	5.42	0.33	1.38	0.03	0.35	1.46	0.04	191.9	1.001
T5_003954.LAB	2/15/2023	10:21:34	5.40	0.27	1.38	0.04	0.28	1.46	0.04	191.9	1.002
T5_003955.LAB	2/15/2023	10:22:34	5.40	0.28	1.41	0.01	0.29	1.49	0.01	191.8	1.000
T5_003956.LAB	2/15/2023	10:23:34	5.40	0.26	1.45	0.06	0.28	1.54	0.06	191.8	1.000
T5_003957.LAB	2/15/2023	10:24:34	5.40	0.31	1.43	0.04	0.33	1.51	0.04	191.8	0.998
T5_003958.LAB	2/15/2023	10:25:34	5.39	0.30	1.42	0.03	0.32	1.50	0.04	191.7	1.000
T5_003959.LAB	2/15/2023	10:26:33	5.39	0.27	1.41	0.04	0.29	1.49	0.05	191.8	0.999
T5_003960.LAB	2/15/2023	10:27:34	5.40	0.31	1.38	0.03	0.33	1.46	0.04	191.9	1.000
T5_003961.LAB	2/15/2023	10:28:33	5.39	0.31	1.40	0.03	0.33	1.48	0.03	191.9	1.000
T5_003962.LAB	2/15/2023	10:29:33	5.39	0.33	1.38	0.12	0.35	1.46	0.13	191.9	0.999
T5_003963.LAB	2/15/2023	10:30:33	5.39	0.28	1.40	0.09	0.30	1.47	0.09	191.8	1.001
T5_003964.LAB	2/15/2023	10:31:33	5.38	0.32	1.38	0.08	0.34	1.46	0.09	191.9	1.001
T5_003965.LAB	2/15/2023	10:32:33	5.40	0.32	1.46	0.07	0.34	1.54	0.08	191.8	1.000
T5_003966.LAB	2/15/2023	10:33:33	5.37	0.32	1.47	-0.01	0.34	1.55	-0.01	191.7	1.001
T5_003967.LAB	2/15/2023	10:34:33	5.38	0.31	1.48	0.00	0.33	1.56	0.00	191.8	0.999
T5_003968.LAB	2/15/2023	10:35:33	5.39	0.32	1.48	0.05	0.34	1.57	0.05	191.8	0.999
T5_003969.LAB	2/15/2023	10:36:33	5.38	0.31	1.46	0.05	0.32	1.54	0.05	191.9	0.999
T5_003970.LAB	2/15/2023	10:37:33	5.37	0.34	1.42	0.07	0.36	1.50	0.08	191.9	1.001
T5_003971.LAB	2/15/2023	10:38:33	5.39	0.28	1.45	0.01	0.30	1.54	0.01	191.8	1.000
T5_003972.LAB	2/15/2023	10:39:33	5.37	0.31	1.40	0.06	0.32	1.48	0.06	191.8	1.001
T5_003973.LAB	2/15/2023	10:40:33	5.37	0.33	1.44	0.03	0.35	1.52	0.03	191.8	1.002
T5_003974.LAB	2/15/2023	10:41:33	5.36	0.37	1.42	0.05	0.39	1.51	0.05	191.7	1.003
T5_003975.LAB	2/15/2023	10:42:32	5.36	0.33	1.47	0.04	0.35	1.55	0.05	191.7	1.002
T5_003976.LAB	2/15/2023	10:43:32	5.35	0.31	1.47	0.06	0.33	1.56	0.06	191.8	1.001
T5_003977.LAB	2/15/2023	10:44:32	5.35	0.34	1.50	0.02	0.36	1.58	0.02	191.9	1.000
T5_003978.LAB	2/15/2023	10:45:32	5.36	0.33	1.45	0.09	0.35	1.53	0.10	191.9	0.998
T5_003979.LAB	2/15/2023	10:46:32	5.36	0.36	1.46	0.02	0.38	1.54	0.02	191.8	0.998
T5_003980.LAB	2/15/2023	10:47:32	5.37	0.30	1.46	0.04	0.31	1.54	0.04	191.8	0.999
T5_003981.LAB	2/15/2023	10:48:32	5.36	0.30	1.42	0.02	0.32	1.50	0.02	191.8	1.000
T5_003982.LAB	2/15/2023	10:49:32	5.35	0.30	1.41	0.11	0.31	1.49	0.11	191.7	1.000
T5_003983.LAB	2/15/2023	10:50:32	5.35	0.29	1.45	0.09	0.31	1.53	0.09	191.7	1.002
T5_003984.LAB	2/15/2023	10:51:32	5.37	0.29	1.45	0.04	0.31	1.53	0.04	191.8	1.002
T5_003985.LAB	2/15/2023	10:52:32	5.37	0.33	1.45	0.06	0.35	1.54	0.06	191.9	1.002
T5_003986.LAB	2/15/2023	10:53:32	5.35	0.34	1.49	0.10	0.36	1.58	0.10	191.9	1.000
T5_003987.LAB	2/15/2023	10:54:32	5.34	0.33	1.53	0.00	0.34	1.61	0.00	191.8	1.000
T5_003988.LAB	2/15/2023	10:55:32	5.34	0.35	1.52	0.00	0.37	1.61	0.00	191.7	0.998
T5_003989.LAB	2/15/2023	10:56:32	5.36	0.34	1.48	0.05	0.36	1.57	0.05	191.7	0.999
T5_003990.LAB	2/15/2023	10:57:32	5.34	0.33	1.46	0.12	0.35	1.54	0.12	191.7	0.999
T5_003991.LAB	2/15/2023	10:58:31	5.34	0.30	1.45	-0.02	0.32	1.54	-0.02	191.8	1.000
T5_003992.LAB	2/15/2023	10:59:31	5.35	0.30	1.47	0.13	0.32	1.55	0.14	191.8	1.001
T5_003993.LAB	2/15/2023	11:00:31	5.33	0.26	1.45	-0.02	0.28	1.53	-0.02	191.8	1.001
T5_003994.LAB	2/15/2023	11:01:31	5.33	0.28	1.45	0.10	0.30	1.54	0.11	191.8	1.002
T5_003995.LAB	2/15/2023	11:02:31	5.33	0.36	1.47	0.05	0.38	1.56	0.05	191.7	1.000
T5_003996.LAB	2/15/2023	11:03:31	5.33	0.36	1.52	0.07	0.38	1.60	0.08	191.7	0.999
T5_003997.LAB	2/15/2023	11:04:31	5.32	0.39	1.52	0.03	0.41	1.60	0.03	191.7	1.000
T5_003998.LAB	2/15/2023	11:05:31	5.33	0.36	1.53	-0.02	0.38	1.62	-0.02	191.8	0.998
T5_003999.LAB	2/15/2023	11:06:31	5.35	0.32	1.46	0.05	0.34	1.54	0.05	191.8	0.998
T5_004000.LAB	2/15/2023	11:07:31	5.32	0.37	1.47	0.07	0.39	1.56	0.07	191.8	0.999
T5_004001.LAB	2/15/2023	11:08:31	5.30	0.33	1.46	0.15	0.35	1.54	0.16	191.7	1.002
T5_004002.LAB	2/15/2023	11:09:31	5.33	0.35	1.47	0.02	0.37	1.55	0.02	191.7	1.001
T5_004003.LAB	2/15/2023	11:10:31	5.35	0.33	1.48	0.02	0.35	1.57	0.02	191.8	1.000
02/15/2023	Minimum		5.30	0.24	1.36	-0.02	0.26	1.43	-0.02		
Turbine 5 - Run 6	Maximum		5.43	0.39	1.53	0.15	0.41	1.62	0.16		
10:10 - 11:10	Average		5.37	0.31	1.44	0.05	0.33	1.52	0.05		

Turbine 5 - Run 7

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	HCl (ppmv dry)	HF (ppmv dry)	Formaldehyde (ppmv dry)	FTIR Gas Cell Temperature (°C)	FTIR Gas Cell Pressure (atm)
T5_004014.LAB	2/15/2023	11:15:31	5.31	0.32	1.50	-0.01	0.33	1.58	-0.01	191.8	0.999
T5_004015.LAB	2/15/2023	11:16:31	5.32	0.35	1.48	0.10	0.37	1.57	0.11	191.7	0.999
T5_004016.LAB	2/15/2023	11:17:31	5.34	0.31	1.47	0.13	0.33	1.55	0.14	191.8	0.999
T5_004017.LAB	2/15/2023	11:18:31	5.32	0.32	1.45	0.03	0.34	1.53	0.04	191.8	1.001
T5_004018.LAB	2/15/2023	11:19:31	5.32	0.31	1.44	0.02	0.33	1.52	0.03	191.9	1.001
T5_004019.LAB	2/15/2023	11:20:31	5.32	0.29	1.44	0.03	0.31	1.53	0.03	191.8	1.000
T5_004020.LAB	2/15/2023	11:21:31	5.32	0.33	1.48	0.03	0.35	1.56	0.03	191.8	1.000
T5_004021.LAB	2/15/2023	11:22:31	5.31	0.32	1.48	0.07	0.34	1.56	0.08	191.8	1.001
T5_004022.LAB	2/15/2023	11:23:31	5.32	0.36	1.50	0.06	0.38	1.59	0.06	191.7	1.000
T5_004023.LAB	2/15/2023	11:24:31	5.32	0.34	1.52	0.03	0.36	1.60	0.03	191.8	0.999
T5_004024.LAB	2/15/2023	11:25:31	5.32	0.35	1.53	0.07	0.36	1.62	0.07	191.9	0.999
T5_004025.LAB	2/15/2023	11:26:31	5.33	0.37	1.52	0.09	0.39	1.61	0.09	191.9	0.999
T5_004026.LAB	2/15/2023	11:27:31	5.31	0.34	1.49	0.04	0.36	1.57	0.04	191.8	0.998
T5_004027.LAB	2/15/2023	11:28:31	5.30	0.36	1.50	0.11	0.38	1.58	0.12	191.6	1.000
T5_004028.LAB	2/15/2023	11:29:30	5.32	0.35	1.51	0.06	0.37	1.59	0.06	191.6	1.000
T5_004029.LAB	2/15/2023	11:30:30	5.32	0.36	1.50	0.14	0.38	1.59	0.15	191.7	1.000
T5_004030.LAB	2/15/2023	11:31:30	5.34	0.32	1.48	0.06	0.34	1.57	0.06	191.8	1.001
T5_004031.LAB	2/15/2023	11:32:30	5.32	0.35	1.51	0.05	0.36	1.59	0.06	191.8	1.002
T5_004032.LAB	2/15/2023	11:33:30	5.33	0.33	1.54	0.02	0.35	1.63	0.02	191.8	1.001
T5_004033.LAB	2/15/2023	11:34:30	5.31	0.36	1.59	0.05	0.38	1.68	0.05	191.7	1.000
T5_004034.LAB	2/15/2023	11:35:30	5.31	0.37	1.57	0.04	0.39	1.66	0.04	191.6	0.998
T5_004035.LAB	2/15/2023	11:36:30	5.30	0.36	1.54	0.03	0.38	1.63	0.03	191.7	0.998
T5_004036.LAB	2/15/2023	11:37:30	5.31	0.38	1.54	0.06	0.40	1.63	0.06	191.8	1.000
T5_004037.LAB	2/15/2023	11:38:30	5.32	0.37	1.53	0.04	0.39	1.62	0.04	191.9	1.000
T5_004038.LAB	2/15/2023	11:39:30	5.31	0.36	1.51	0.04	0.38	1.60	0.04	191.9	1.000
T5_004039.LAB	2/15/2023	11:40:30	5.31	0.34	1.52	0.03	0.35	1.60	0.03	191.8	1.000
T5_004040.LAB	2/15/2023	11:41:30	5.30	0.33	1.52	0.05	0.35	1.60	0.05	191.7	1.001
T5_004041.LAB	2/15/2023	11:42:30	5.30	0.36	1.52	0.03	0.38	1.60	0.03	191.7	1.001
T5_004042.LAB	2/15/2023	11:43:30	5.30	0.38	1.54	0.02	0.40	1.63	0.02	191.8	1.002
T5_004043.LAB	2/15/2023	11:44:29	5.31	0.37	1.60	0.11	0.39	1.69	0.12	191.8	1.000
T5_004044.LAB	2/15/2023	11:45:29	5.30	0.38	1.58	0.03	0.41	1.67	0.03	191.9	0.999
T5_004059.LAB	2/15/2023	12:00:29	5.34	0.41	1.58	0.02	0.43	1.67	0.02	191.7	0.999
T5_004060.LAB	2/15/2023	12:01:28	5.32	0.39	1.59	0.02	0.41	1.67	0.02	191.8	1.000
T5_004061.LAB	2/15/2023	12:02:28	5.30	0.38	1.58	-0.04	0.41	1.67	-0.04	191.8	1.001
T5_004062.LAB	2/15/2023	12:03:28	5.31	0.42	1.59	-0.01	0.44	1.68	-0.01	191.8	1.001
T5_004063.LAB	2/15/2023	12:04:28	5.31	0.40	1.62	-0.03	0.42	1.71	-0.03	191.7	1.000
T5_004064.LAB	2/15/2023	12:05:28	5.30	0.42	1.64	0.05	0.44	1.73	0.06	191.7	0.998
T5_004065.LAB	2/15/2023	12:06:28	5.29	0.43	1.62	0.10	0.46	1.71	0.11	191.7	0.999
T5_004066.LAB	2/15/2023	12:07:28	5.31	0.40	1.61	0.03	0.42	1.71	0.03	191.8	0.998
T5_004067.LAB	2/15/2023	12:08:28	5.29	0.38	1.58	0.03	0.40	1.67	0.03	191.8	0.999
T5_004068.LAB	2/15/2023	12:09:28	5.30	0.37	1.57	-0.02	0.39	1.66	-0.02	191.8	1.000
T5_004069.LAB	2/15/2023	12:10:28	5.29	0.39	1.57	0.06	0.42	1.66	0.06	191.7	1.000
T5_004070.LAB	2/15/2023	12:11:28	5.29	0.38	1.58	-0.04	0.40	1.67	-0.04	191.6	1.001
T5_004071.LAB	2/15/2023	12:12:28	5.28	0.41	1.57	-0.01	0.44	1.66	-0.01	191.6	1.001
T5_004072.LAB	2/15/2023	12:13:28	5.29	0.40	1.61	-0.04	0.42	1.70	-0.04	191.7	1.001
T5_004073.LAB	2/15/2023	12:14:28	5.30	0.41	1.66	0.11	0.43	1.75	0.12	191.8	1.001
T5_004074.LAB	2/15/2023	12:15:27	5.30	0.40	1.66	-0.05	0.43	1.75	-0.05	191.8	0.999
T5_004075.LAB	2/15/2023	12:16:28	5.29	0.41	1.62	0.09	0.43	1.72	0.09	191.6	0.998
T5_004076.LAB	2/15/2023	12:17:27	5.29	0.39	1.60	-0.05	0.41	1.69	-0.05	191.6	0.997
T5_004077.LAB	2/15/2023	12:18:27	5.29	0.38	1.57	0.01	0.41	1.66	0.01	191.6	1.000
T5_004078.LAB	2/15/2023	12:19:27	5.29	0.42	1.59	0.04	0.44	1.68	0.04	191.8	0.999
T5_004079.LAB	2/15/2023	12:20:27	5.30	0.38	1.58	0.01	0.40	1.66	0.01	191.9	1.000
T5_004080.LAB	2/15/2023	12:21:27	5.29	0.40	1.56	0.08	0.42	1.65	0.09	191.9	1.002
T5_004081.LAB	2/15/2023	12:22:27	5.29	0.40	1.55	0.03	0.42	1.63	0.04	191.7	1.002
T5_004082.LAB	2/15/2023	12:23:27	5.32	0.39	1.61	-0.03	0.41	1.70	-0.03	191.7	1.000
T5_004083.LAB	2/15/2023	12:24:27	5.31	0.42	1.65	-0.02	0.44	1.74	-0.02	191.6	0.999
T5_004084.LAB	2/15/2023	12:25:27	5.31	0.46	1.66	-0.01	0.49	1.75	-0.01	191.7	0.999
T5_004085.LAB	2/15/2023	12:26:27	5.32	0.40	1.62	0.09	0.42	1.71	0.09	191.7	0.999
T5_004086.LAB	2/15/2023	12:27:27	5.34	0.37	1.60	0.04	0.39	1.69	0.04	191.9	0.999
T5_004087.LAB	2/15/2023	12:28:27	5.34	0.36	1.58	0.01	0.38	1.67	0.02	191.8	0.998
T5_004088.LAB	2/15/2023	12:29:27	5.32	0.43	1.58	0.13	0.45	1.67	0.14	191.7	0.998
T5_004089.LAB	2/15/2023	12:30:27	5.30	0.42	1.55	0.03	0.44	1.64	0.03	191.7	1.001
02/15/2023		Minimum	5.28	0.29	1.44	-0.05	0.31	1.52	-0.05		
Turbine 5 - Run 7		Maximum	5.34	0.46	1.66	0.14	0.49	1.75	0.15		
11:15 - 11:45; 12:00 -		Average	5.31	0.37	1.56	0.04	0.39	1.64	0.04		

APPENDIX

FTIR QA/QC Data

Nitrogen (Zero) Direct Purge to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_N2_DIR_000629BKG.LAB	2/7/2023	7:39:14	0.00	0.00	0.00	0.00	0.00	0.00
T4_N2_DIR_000630.LAB	2/7/2023	7:39:27	0.00	-0.02	0.00	-0.14	-0.02	0.00
T4_N2_DIR_000631.LAB	2/7/2023	7:39:34	0.00	0.01	0.01	0.31	0.20	0.00
T4_N2_DIR_000632.LAB	2/7/2023	7:39:42	0.00	-0.02	0.01	0.17	0.14	0.00
T4_N2_DIR_000633.LAB	2/7/2023	7:39:49	0.00	-0.01	0.00	-0.08	-0.15	0.00
T4_N2_DIR_000634.LAB	2/7/2023	7:39:57	0.01	-0.03	0.01	-0.08	0.11	0.01
T4_N2_DIR_000635.LAB	2/7/2023	7:40:04	0.00	0.01	0.03	0.06	0.08	0.00
T4_N2_DIR_000636.LAB	2/7/2023	7:40:12	0.02	-0.01	-0.04	0.10	0.04	0.00
T4_N2_DIR_000637.LAB	2/7/2023	7:40:19	0.00	0.03	-0.02	-0.21	0.06	0.00

CTS, 100.2 ppm Ethylene/5.000 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_DIR_000640.LAB	2/7/2023	7:41:15	0.00	-0.12	0.05	0.10	100.27	5.08	100.1%
T4_CTS_DIR_000641.LAB	2/7/2023	7:41:22	0.01	-0.04	-0.04	0.14	100.85	5.11	100.6%
T4_CTS_DIR_000642.LAB	2/7/2023	7:41:29	0.01	-0.02	0.07	0.10	100.90	5.11	100.7%
T4_CTS_DIR_000643.LAB	2/7/2023	7:41:37	0.01	-0.03	-0.03	0.02	101.22	5.11	101.0%
T4_CTS_DIR_000644.LAB	2/7/2023	7:41:44	0.01	-0.03	0.03	0.26	101.06	5.11	100.9%
T4_CTS_DIR_000645.LAB	2/7/2023	7:41:52	0.01	-0.10	-0.01	0.11	100.48	5.11	100.3%
T4_CTS_DIR_000646.LAB	2/7/2023	7:41:59	0.00	0.08	0.01	-0.05	100.72	5.10	100.5%
T4_CTS_DIR_000647.LAB	2/7/2023	7:42:07	0.00	-0.01	0.00	-0.08	101.20	5.11	101.0%
		Average					100.84		

19.71 ppm Formaldehyde/4.97 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_HCHO_DIR_000659.LAB	2/7/2023	7:50:57	0.00	-0.08	0.00	16.20	-0.36	5.02
T4_HCHO_DIR_000660.LAB	2/7/2023	7:51:04	0.01	-0.18	0.01	16.30	-0.36	5.02
T4_HCHO_DIR_000661.LAB	2/7/2023	7:51:11	0.01	-0.12	0.00	16.09	-0.31	5.01
T4_HCHO_DIR_000662.LAB	2/7/2023	7:51:19	0.00	-0.04	-0.04	16.22	-0.30	5.01
T4_HCHO_DIR_000663.LAB	2/7/2023	7:51:27	0.00	-0.12	-0.08	16.16	-0.66	5.02
T4_HCHO_DIR_000664.LAB	2/7/2023	7:51:34	0.01	-0.19	-0.06	16.10	-0.19	5.03
T4_HCHO_DIR_000665.LAB	2/7/2023	7:51:41	0.00	-0.15	-0.04	16.47	-0.26	5.02
T4_HCHO_DIR_000666.LAB	2/7/2023	7:51:49	0.00	-0.12	0.03	16.15	-0.38	5.03
		Average				16.21		5.02

99.9 ppm HCl/5.00 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_HCL_DIR_000668.LAB	2/7/2023	7:59:05	-0.01	95.74	0.18	-0.14	-0.31	4.98
T4_HCL_DIR_000669.LAB	2/7/2023	7:59:12	0.01	97.66	0.14	0.18	-0.30	4.97
T4_HCL_DIR_000670.LAB	2/7/2023	7:59:20	0.01	97.71	0.22	0.20	-0.29	4.97
T4_HCL_DIR_000671.LAB	2/7/2023	7:59:27	0.00	97.63	0.18	0.11	-0.16	4.99
T4_HCL_DIR_000672.LAB	2/7/2023	7:59:35	0.01	97.84	0.22	0.40	-0.43	4.98
T4_HCL_DIR_000673.LAB	2/7/2023	7:59:42	0.00	96.11	0.15	0.10	-0.34	4.99
T4_HCL_DIR_000674.LAB	2/7/2023	7:59:50	-0.01	96.13	0.16	0.09	-0.26	4.97
T4_HCL_DIR_000675.LAB	2/7/2023	7:59:57	0.00	95.98	0.15	-0.02	-0.21	4.99
		Average		96.85				4.98

111.2 ppm HF/4.999 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_HF_DIR_000709.LAB	2/7/2023	8:18:47	0.00	1.20	103.19	-0.17	-0.48	4.97
T4_HF_DIR_000710.LAB	2/7/2023	8:18:55	0.00	1.29	103.09	0.09	-0.06	4.96
T4_HF_DIR_000711.LAB	2/7/2023	8:19:02	0.01	1.22	102.59	-0.04	-0.08	4.98
T4_HF_DIR_000712.LAB	2/7/2023	8:19:10	0.00	1.13	102.54	0.04	-0.02	4.98
T4_HF_DIR_000713.LAB	2/7/2023	8:19:17	0.00	1.17	102.87	-0.22	-0.37	4.98
T4_HF_DIR_000714.LAB	2/7/2023	8:19:25	0.01	1.13	102.71	0.21	-0.20	4.97
T4_HF_DIR_000715.LAB	2/7/2023	8:19:32	0.00	1.03	102.61	-0.01	-0.17	4.97
T4_HF_DIR_000716.LAB	2/7/2023	8:19:40	0.00	1.05	102.88	0.13	-0.14	4.97
		Average			102.81			4.97

100.2 ppm Ethylene/5.000 ppm SF6 System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %	Response Time (sec)
T4_CTS_RT_000717.LAB	2/7/2023	8:23:08	5.61	1.07	2.52	-0.08	0.07	0.04	0.1%	-
T4_CTS_RT_000718.LAB	2/7/2023	8:23:15	4.89	1.17	2.30	0.23	1.54	0.16	1.5%	8
T4_CTS_RT_000719.LAB	2/7/2023	8:23:22	0.21	0.24	0.20	0.46	89.38	4.77	88.6%	16
T4_CTS_RT_000720.LAB	2/7/2023	8:23:30	0.04	0.18	0.03	0.24	101.58	5.14	100.7%	23
T4_CTS_RT_000721.LAB	2/7/2023	8:23:37	0.02	0.28	0.06	-0.07	101.73	5.14	100.9%	
T4_CTS_RT_000722.LAB	2/7/2023	8:23:45	0.03	0.23	0.06	0.12	101.80	5.15	101.0%	
T4_CTS_RT_000723.LAB	2/7/2023	8:23:52	0.02	0.09	-0.01	-0.20	101.92	5.17	101.1%	
T4_CTS_RT_000724.LAB	2/7/2023	8:24:00	0.00	0.09	-0.01	0.15	101.81	5.17	101.0%	
T4_CTS_RT_000725.LAB	2/7/2023	8:24:07	0.02	0.12	0.00	0.02	100.23	5.11	99.4%	
T4_CTS_RT_000726.LAB	2/7/2023	8:24:15	0.01	0.13	-0.01	0.21	101.47	5.15	100.6%	
T4_CTS_RT_000727.LAB	2/7/2023	8:24:22	0.02	0.18	0.00	0.00	100.83	5.14	100.0%	

Nitrogen (Zero) System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %	Response Time (sec)
T4_N2_RT_000728.LAB	2/7/2023	8:24:49	0.01	0.10	0.01	0.17	101.40	5.13	100.6%	-
T4_N2_RT_000729.LAB	2/7/2023	8:24:57	0.52	0.25	0.44	-0.10	81.41	4.17	80.7%	8
T4_N2_RT_000730.LAB	2/7/2023	8:25:04	0.10	0.33	0.18	0.02	2.64	0.13	2.6%	15
T4_N2_RT_000731.LAB	2/7/2023	8:25:12	0.02	0.16	-0.02	-0.11	0.24	0.01	0.2%	23
T4_N2_RT_000732.LAB	2/7/2023	8:25:19	0.02	0.15	0.02	-0.01	0.15	0.01	0.1%	
T4_N2_RT_000733.LAB	2/7/2023	8:25:27	0.01	0.09	0.01	-0.08	0.08	0.00	0.1%	
T4_N2_RT_000734.LAB	2/7/2023	8:25:34	0.02	0.08	-0.06	-0.04	-0.03	0.00	0.0%	
T4_N2_RT_000735.LAB	2/7/2023	8:25:42	0.01	0.14	-0.07	0.04	-0.01	0.00	0.0%	
T4_N2_RT_000736.LAB	2/7/2023	8:25:49	0.01	0.13	-0.03	0.01	-0.05	0.00	0.0%	
T4_N2_RT_000737.LAB	2/7/2023	8:25:56	0.01	0.06	-0.01	0.04	-0.33	0.01	-0.3%	
T4_N2_RT_000738.LAB	2/7/2023	8:26:04	0.01	0.01	-0.01	-0.08	0.13	-0.01	0.1%	
		Average	0.01	0.10	-0.02	-0.03	0.02	0.00		

Turbine 4 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_000739.LAB	2/7/2023	8:27:33	5.63	1.08	2.46	0.09	0.24	0.00
T4_000740.LAB	2/7/2023	8:28:33	5.63	1.02	2.21	-0.05	0.25	0.00
T4_000741.LAB	2/7/2023	8:29:33	5.63	1.03	2.13	0.08	0.17	0.00
		Average		1.04		0.04		0.00

Turbine 4 Analyte Spike, Using 19.71 ppm Formaldehyde/4.97 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	Formaldehyde Recovery %
T4_HCHO_SPK_000766.LAB	2/7/2023	8:33:22	5.18	0.86	1.95	1.30	0.15	0.39	0.077	100.6%
T4_HCHO_SPK_000767.LAB	2/7/2023	8:33:29	5.18	0.84	1.97	1.21	0.21	0.39	0.078	93.3%
T4_HCHO_SPK_000768.LAB	2/7/2023	8:33:37	5.17	1.00	1.88	1.10	0.11	0.39	0.078	84.6%
T4_HCHO_SPK_000769.LAB	2/7/2023	8:33:44	5.17	0.83	1.91	1.10	0.10	0.39	0.077	85.6%
T4_HCHO_SPK_000770.LAB	2/7/2023	8:33:51	5.18	0.78	1.96	1.36	0.19	0.39	0.077	106.0%
T4_HCHO_SPK_000771.LAB	2/7/2023	8:33:59	5.20	0.78	1.91	1.14	0.02	0.38	0.076	89.5%
T4_HCHO_SPK_000772.LAB	2/7/2023	8:34:06	5.19	0.94	1.95	1.40	0.23	0.38	0.077	109.2%
T4_HCHO_SPK_000773.LAB	2/7/2023	8:34:14	5.17	0.94	1.89	1.16	0.11	0.39	0.078	88.6%
	Spike Average									94.7%

Turbine 4 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_000775.LAB	2/7/2023	8:36:51	5.61	0.92	1.93	0.01	0.17	0.00
T4_000776.LAB	2/7/2023	8:37:51	5.63	0.86	1.95	-0.07	0.14	0.00
T4_000777.LAB	2/7/2023	8:38:51	5.61	0.90	1.91	-0.08	0.16	0.00
		Average		0.89		-0.04		0.00

Turbine 4 Analyte Spike, Using 99.9 ppm HCl/5.00 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	HCl Recovery %
T4_HCL_SPK_000831.LAB	2/7/2023	8:46:31	5.17	8.19	1.99	0.29	0.10	0.42	0.084	91.2%
T4_HCL_SPK_000832.LAB	2/7/2023	8:46:38	5.13	8.30	2.05	0.04	0.15	0.40	0.081	96.1%
T4_HCL_SPK_000833.LAB	2/7/2023	8:46:46	5.17	8.20	2.04	0.04	0.01	0.41	0.083	92.6%
T4_HCL_SPK_000834.LAB	2/7/2023	8:46:53	5.16	8.39	2.05	0.14	0.20	0.42	0.084	93.9%
T4_HCL_SPK_000835.LAB	2/7/2023	8:47:01	5.15	8.16	2.00	0.05	0.06	0.42	0.084	91.0%
T4_HCL_SPK_000836.LAB	2/7/2023	8:47:08	5.12	8.19	2.00	0.04	0.07	0.41	0.082	94.0%
T4_HCL_SPK_000837.LAB	2/7/2023	8:47:16	5.15	8.25	1.99	0.07	0.01	0.42	0.084	92.0%
T4_HCL_SPK_000838.LAB	2/7/2023	8:47:23	5.19	8.32	2.03	0.31	-0.03	0.42	0.085	92.3%
	Spike Average									92.9%

Turbine 4 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_000839.LAB	2/7/2023	8:49:41	5.63	1.72	1.69	0.03	0.16	0.00
T4_000840.LAB	2/7/2023	8:50:41	5.62	1.42	1.67	-0.01	0.18	0.00
T4_000841.LAB	2/7/2023	8:51:41	5.63	1.27	1.68	0.03	0.17	0.00
	Average				1.68			0.00

Turbine 4 Analyte Spike, Using 111.2 ppm HF/4.999 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	HF Recovery %
T4_HF_SPK_001083.LAB	2/7/2023	9:22:22	5.16	0.71	9.03	0.06	0.11	0.41	0.082	90.3%
T4_HF_SPK_001084.LAB	2/7/2023	9:22:30	5.11	0.63	9.09	-0.14	-0.01	0.41	0.081	91.7%
T4_HF_SPK_001085.LAB	2/7/2023	9:22:37	5.17	0.56	9.07	0.10	0.05	0.42	0.084	89.2%
T4_HF_SPK_001086.LAB	2/7/2023	9:22:44	5.14	0.59	9.07	-0.10	0.36	0.41	0.081	91.5%
T4_HF_SPK_001087.LAB	2/7/2023	9:22:52	5.12	0.63	9.01	0.09	0.11	0.40	0.080	92.5%
T4_HF_SPK_001088.LAB	2/7/2023	9:23:00	5.16	0.63	9.10	-0.03	0.12	0.41	0.082	91.2%
T4_HF_SPK_001089.LAB	2/7/2023	9:23:07	5.11	0.66	9.08	-0.01	0.18	0.41	0.082	90.6%
T4_HF_SPK_001090.LAB	2/7/2023	9:23:14	5.16	0.69	9.04	0.12	0.15	0.41	0.081	91.6%
	Spike Average									91.1%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_SYS_001091.LAB	2/7/2023	9:24:48	0.02	0.10	0.04	-0.06	100.20	5.09	99.4%
T4_CTS_SYS_001092.LAB	2/7/2023	9:24:55	0.02	0.13	0.08	-0.02	100.64	5.11	99.8%
T4_CTS_SYS_001093.LAB	2/7/2023	9:25:03	0.03	0.02	0.03	0.17	101.30	5.12	100.5%
T4_CTS_SYS_001094.LAB	2/7/2023	9:25:10	0.01	-0.03	0.04	-0.06	101.28	5.11	100.4%
T4_CTS_SYS_001095.LAB	2/7/2023	9:25:18	0.01	0.06	0.00	0.15	100.27	5.10	99.4%
T4_CTS_SYS_001096.LAB	2/7/2023	9:25:25	0.00	0.01	-0.05	0.06	100.87	5.09	100.0%
T4_CTS_SYS_001097.LAB	2/7/2023	9:25:33	0.01	-0.02	0.03	-0.03	100.88	5.12	100.0%
T4_CTS_SYS_001098.LAB	2/7/2023	9:25:40	0.00	-0.09	0.00	-0.12	100.85	5.11	100.0%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_SYS_001247.LAB	2/7/2023	11:54:44	0.05	0.04	-0.05	-0.03	100.68	5.11	99.8%
T4_CTS_SYS_001248.LAB	2/7/2023	11:54:51	0.04	0.09	0.00	-0.13	100.74	5.10	99.9%
T4_CTS_SYS_001249.LAB	2/7/2023	11:54:59	0.03	0.06	-0.05	0.01	100.47	5.11	99.6%
T4_CTS_SYS_001250.LAB	2/7/2023	11:55:06	0.03	0.10	-0.07	-0.15	101.13	5.12	100.3%
T4_CTS_SYS_001251.LAB	2/7/2023	11:55:14	0.02	-0.03	-0.12	-0.09	100.88	5.13	100.0%
T4_CTS_SYS_001252.LAB	2/7/2023	11:55:21	0.02	0.00	-0.08	-0.24	101.15	5.13	100.3%
T4_CTS_SYS_001253.LAB	2/7/2023	11:55:29	0.02	0.14	-0.05	-0.04	101.66	5.15	100.8%
T4_CTS_SYS_001254.LAB	2/7/2023	11:55:36	0.02	0.02	-0.06	-0.05	101.32	5.13	100.5%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_SYS_001329.LAB	2/7/2023	13:10:33	0.02	-0.02	-0.08	-0.02	100.80	5.11	100.0%
T4_CTS_SYS_001330.LAB	2/7/2023	13:10:41	0.02	0.01	-0.06	0.09	101.19	5.13	100.3%
T4_CTS_SYS_001331.LAB	2/7/2023	13:10:48	0.02	0.03	-0.03	-0.17	101.37	5.12	100.5%
T4_CTS_SYS_001332.LAB	2/7/2023	13:10:56	0.01	0.05	-0.04	-0.12	101.04	5.12	100.2%
T4_CTS_SYS_001333.LAB	2/7/2023	13:11:03	0.01	0.03	-0.10	-0.24	101.23	5.14	100.4%
T4_CTS_SYS_001334.LAB	2/7/2023	13:11:11	0.01	-0.07	-0.07	0.03	101.01	5.12	100.2%
T4_CTS_SYS_001335.LAB	2/7/2023	13:11:18	0.02	-0.08	-0.09	-0.07	101.55	5.13	100.7%
T4_CTS_SYS_001336.LAB	2/7/2023	13:11:26	0.01	0.00	-0.08	0.11	101.40	5.12	100.6%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_SYS_001401.LAB	2/7/2023	14:16:23	0.02	0.07	-0.05	0.15	100.71	5.12	99.9%
T4_CTS_SYS_001402.LAB	2/7/2023	14:16:31	0.02	-0.12	-0.09	0.08	100.76	5.12	99.9%
T4_CTS_SYS_001403.LAB	2/7/2023	14:16:38	0.02	0.08	-0.08	-0.11	101.64	5.13	100.8%
T4_CTS_SYS_001404.LAB	2/7/2023	14:16:46	0.02	0.01	-0.07	0.22	100.70	5.11	99.9%
T4_CTS_SYS_001405.LAB	2/7/2023	14:16:53	0.01	-0.01	-0.06	-0.02	100.82	5.11	100.0%
T4_CTS_SYS_001406.LAB	2/7/2023	14:17:01	0.02	-0.09	-0.12	-0.07	101.52	5.13	100.7%
T4_CTS_SYS_001407.LAB	2/7/2023	14:17:08	0.00	-0.07	-0.12	0.07	100.99	5.12	100.2%
T4_CTS_SYS_001408.LAB	2/7/2023	14:17:16	0.00	0.07	-0.08	-0.13	101.06	5.12	100.2%

Nitrogen (Zero) System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_N2_SYS_001409.LAB	2/7/2023	14:17:53	0.01	0.03	-0.10	0.13	-0.01	0.00
T4_N2_SYS_001410.LAB	2/7/2023	14:18:00	0.01	-0.09	-0.05	-0.03	-0.08	0.00
T4_N2_SYS_001411.LAB	2/7/2023	14:18:07	0.00	-0.05	-0.09	0.02	-0.10	0.01
T4_N2_SYS_001412.LAB	2/7/2023	14:18:15	0.01	-0.08	-0.10	0.16	0.16	0.00
T4_N2_SYS_001413.LAB	2/7/2023	14:18:22	0.00	0.03	-0.10	0.11	0.19	0.00
T4_N2_SYS_001414.LAB	2/7/2023	14:18:30	0.01	-0.04	-0.12	0.09	-0.03	0.00
T4_N2_SYS_001415.LAB	2/7/2023	14:18:38	0.00	0.00	-0.06	0.03	0.05	0.00
T4_N2_SYS_001416.LAB	2/7/2023	14:18:45	0.02	0.00	-0.04	-0.09	-0.03	0.00
		Average	0.01	-0.03	-0.08	0.05	0.02	0.00

Nitrogen Direct Purge to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_N2_DIR_001417.LAB	2/7/2023	14:23:09	0.00	-0.04	-0.09	0.00	-0.11	0.00
T4_N2_DIR_001418.LAB	2/7/2023	14:25:10	0.00	-0.05	-0.09	0.07	-0.08	0.00
T4_N2_DIR_001419.LAB	2/7/2023	14:27:09	0.00	-0.03	-0.09	-0.08	-0.05	0.00

Nitrogen (Zero) Direct Purge to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_N2_DIR_001422.LAB	2/8/2023	7:18:11	0.00	-0.02	-0.06	0.01	-0.01	0.00
T4_N2_DIR_001423BKG.LAB	2/8/2023	7:20:17	0.00	0.00	0.00	0.00	0.00	0.00
T4_N2_DIR_001424.LAB	2/8/2023	7:20:30	0.00	-0.13	-0.02	0.19	0.11	-0.01
T4_N2_DIR_001425.LAB	2/8/2023	7:20:38	0.00	0.01	0.04	-0.15	0.03	-0.01
T4_N2_DIR_001426.LAB	2/8/2023	7:20:45	0.01	0.10	-0.01	0.26	-0.22	0.00
T4_N2_DIR_001427.LAB	2/8/2023	7:20:53	0.01	0.00	0.03	0.28	0.04	0.00
T4_N2_DIR_001428.LAB	2/8/2023	7:21:00	-0.01	-0.04	-0.03	0.01	-0.01	0.00
T4_N2_DIR_001429.LAB	2/8/2023	7:21:08	0.00	-0.03	-0.02	-0.24	0.02	-0.01
T4_N2_DIR_001430.LAB	2/8/2023	7:21:15	0.00	-0.05	-0.04	-0.09	-0.02	0.00
T4_N2_DIR_001431.LAB	2/8/2023	7:21:23	-0.01	-0.01	0.00	-0.06	0.05	0.00

MONTROSE AIR QUALITY SERVICES

CTS, 100.2 ppm Ethylene/5.000 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_DIR_001434.LAB	2/8/2023	7:22:24	0.00	0.01	0.04	-0.19	100.92	5.12	100.7%
T4_CTS_DIR_001435.LAB	2/8/2023	7:22:32	0.01	0.06	0.08	0.35	100.94	5.12	100.7%
T4_CTS_DIR_001436.LAB	2/8/2023	7:22:39	0.01	0.03	0.08	0.05	101.33	5.16	101.1%
T4_CTS_DIR_001437.LAB	2/8/2023	7:22:47	0.00	0.02	0.04	-0.05	100.80	5.12	100.6%
T4_CTS_DIR_001438.LAB	2/8/2023	7:22:54	0.01	0.06	-0.01	-0.21	100.67	5.12	100.5%
T4_CTS_DIR_001439.LAB	2/8/2023	7:23:02	0.01	-0.01	0.04	-0.01	100.75	5.11	100.5%
T4_CTS_DIR_001440.LAB	2/8/2023	7:23:09	0.01	-0.07	0.00	0.12	100.85	5.12	100.6%
T4_CTS_DIR_001441.LAB	2/8/2023	7:23:16	0.01	0.14	-0.01	0.15	100.74	5.12	100.5%
		Average					100.87		

19.71 ppm Formaldehyde/4.97 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_HCHO_DIR_001472.LAB	2/8/2023	7:27:44	0.00	-0.06	0.01	16.15	-0.29	5.04
T4_HCHO_DIR_001473.LAB	2/8/2023	7:27:52	0.00	0.03	-0.05	16.26	-0.23	5.04
T4_HCHO_DIR_001474.LAB	2/8/2023	7:27:59	-0.01	-0.11	-0.01	16.16	-0.06	5.04
T4_HCHO_DIR_001475.LAB	2/8/2023	7:28:07	-0.01	-0.05	-0.02	16.27	-0.13	5.03
T4_HCHO_DIR_001476.LAB	2/8/2023	7:28:14	0.00	-0.10	0.03	16.21	-0.36	5.05
T4_HCHO_DIR_001477.LAB	2/8/2023	7:28:22	0.00	-0.05	0.01	16.22	0.02	5.05
T4_HCHO_DIR_001478.LAB	2/8/2023	7:28:29	0.00	-0.13	0.03	16.24	-0.27	5.05
T4_HCHO_DIR_001479.LAB	2/8/2023	7:28:37	0.00	-0.18	0.00	15.97	0.09	5.03
		Average				16.19		5.04

99.9 ppm HCl/5.00 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_HCL_DIR_001486.LAB	2/8/2023	7:33:31	0.00	101.76	0.24	0.39	0.07	5.00
T4_HCL_DIR_001487.LAB	2/8/2023	7:33:38	0.00	101.86	0.21	0.29	-0.10	4.99
T4_HCL_DIR_001488.LAB	2/8/2023	7:33:46	0.00	99.41	0.17	0.46	0.15	5.00
T4_HCL_DIR_001489.LAB	2/8/2023	7:33:53	0.00	99.46	0.22	0.13	-0.29	5.00
T4_HCL_DIR_001490.LAB	2/8/2023	7:34:01	0.00	101.72	0.14	0.22	-0.17	5.00
T4_HCL_DIR_001491.LAB	2/8/2023	7:34:08	-0.01	99.81	0.20	0.11	-0.27	5.01
T4_HCL_DIR_001492.LAB	2/8/2023	7:34:16	0.00	99.60	0.21	0.32	-0.12	5.00
T4_HCL_DIR_001493.LAB	2/8/2023	7:34:23	0.00	101.85	0.24	0.17	-0.01	5.01
		Average		100.68				5.00

111.2 ppm HF/4.999 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_HF_DIR_001508.LAB	2/8/2023	7:47:13	0.00	0.61	106.77	0.07	-0.08	4.95
T4_HF_DIR_001509.LAB	2/8/2023	7:47:20	0.00	0.59	106.09	-0.38	-0.06	4.97
T4_HF_DIR_001510.LAB	2/8/2023	7:47:28	0.00	0.60	105.96	-0.06	0.00	4.97
T4_HF_DIR_001511.LAB	2/8/2023	7:47:35	0.00	0.58	106.22	0.05	-0.32	4.97
T4_HF_DIR_001512.LAB	2/8/2023	7:47:43	-0.01	0.62	106.37	0.04	-0.27	4.97
T4_HF_DIR_001513.LAB	2/8/2023	7:47:50	0.00	0.56	105.99	0.00	-0.14	4.97
T4_HF_DIR_001514.LAB	2/8/2023	7:47:58	-0.01	0.57	105.93	-0.06	-0.12	4.95
T4_HF_DIR_001515.LAB	2/8/2023	7:48:05	0.01	0.56	106.14	0.02	-0.33	4.97
		Average			106.18			4.97

100.2 ppm Ethylene/5.000 ppm SF6 System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %	Response Time (sec)
T4_CTS_RT_001516.LAB	2/8/2023	7:51:31	5.58	0.52	2.19	0.12	0.32	0.03	0.3%	-
T4_CTS_RT_001517.LAB	2/8/2023	7:51:39	4.91	0.46	1.94	-0.09	2.29	0.13	2.3%	8
T4_CTS_RT_001518.LAB	2/8/2023	7:51:46	0.20	0.19	0.23	0.23	92.50	4.69	91.7%	15
T4_CTS_RT_001519.LAB	2/8/2023	7:51:54	0.03	0.01	0.08	-0.22	101.16	5.19	100.3%	23
T4_CTS_RT_001520.LAB	2/8/2023	7:52:01	0.02	0.10	0.08	0.07	101.17	5.16	100.3%	
T4_CTS_RT_001521.LAB	2/8/2023	7:52:09	0.01	-0.02	0.06	0.18	101.15	5.14	100.3%	
T4_CTS_RT_001522.LAB	2/8/2023	7:52:16	0.01	0.17	-0.01	0.00	101.44	5.16	100.6%	
T4_CTS_RT_001523.LAB	2/8/2023	7:52:24	0.01	0.18	0.02	-0.03	102.28	5.18	101.4%	
T4_CTS_RT_001524.LAB	2/8/2023	7:52:31	-0.01	0.13	0.08	-0.17	101.70	5.19	100.8%	
T4_CTS_RT_001525.LAB	2/8/2023	7:52:39	-0.01	0.10	0.00	-0.13	101.74	5.15	100.9%	
T4_CTS_RT_001526.LAB	2/8/2023	7:52:46	0.02	0.12	0.00	-0.20	101.30	5.15	100.4%	

Nitrogen (Zero) System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %	Response Time (sec)
T4_N2_RT_001527.LAB	2/8/2023	7:53:14	0.01	0.11	-0.02	-0.06	101.87	5.15	101.0%	-
T4_N2_RT_001528.LAB	2/8/2023	7:53:21	1.00	0.09	0.78	-0.17	66.95	3.48	66.4%	8
T4_N2_RT_001529.LAB	2/8/2023	7:53:28	0.09	0.08	0.19	-0.12	2.68	0.13	2.7%	15
T4_N2_RT_001530.LAB	2/8/2023	7:53:36	0.02	0.02	0.04	0.12	0.45	0.01	0.4%	23
T4_N2_RT_001531.LAB	2/8/2023	7:53:43	0.00	0.04	0.05	0.15	0.24	0.00	0.2%	
T4_N2_RT_001532.LAB	2/8/2023	7:53:51	0.00	0.09	0.01	-0.05	0.17	-0.01	0.2%	
T4_N2_RT_001533.LAB	2/8/2023	7:53:58	0.01	0.03	0.06	-0.30	0.11	0.00	0.1%	
T4_N2_RT_001534.LAB	2/8/2023	7:54:06	-0.01	0.03	-0.01	-0.26	0.18	0.01	0.2%	
T4_N2_RT_001535.LAB	2/8/2023	7:54:13	0.00	-0.06	0.03	-0.36	0.10	0.00	0.1%	
T4_N2_RT_001536.LAB	2/8/2023	7:54:21	0.00	0.02	0.02	0.07	0.18	-0.01	0.2%	
T4_N2_RT_001537.LAB	2/8/2023	7:54:28	0.01	0.00	-0.01	0.05	0.17	0.00	0.2%	
		Average	0.00	0.02	0.02	-0.07	0.20	0.00		

Turbine 4 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_001538.LAB	2/8/2023	7:55:49	5.58	0.44	1.94	0.02	0.28	0.00
T4_001539.LAB	2/8/2023	7:56:49	5.62	0.44	1.74	0.07	0.35	0.00
T4_001540.LAB	2/8/2023	7:57:50	5.65	0.41	1.64	-0.01	0.25	0.00
		Average		0.43		0.03		0.00

Turbine 4 Analyte Spike, Using 19.71 ppm Formaldehyde/4.97 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	Formaldehyde Recovery %
T4_HCHO_SPK_001556.LAB	2/8/2023	8:00:40	5.14	0.26	1.44	1.56	0.35	0.44	0.088	107.8%
T4_HCHO_SPK_001557.LAB	2/8/2023	8:00:47	5.17	0.30	1.32	1.52	0.13	0.44	0.088	105.0%
T4_HCHO_SPK_001558.LAB	2/8/2023	8:00:55	5.13	0.30	1.41	1.24	0.24	0.44	0.086	87.4%
T4_HCHO_SPK_001559.LAB	2/8/2023	8:01:02	5.15	0.21	1.40	1.47	0.29	0.44	0.088	101.9%
T4_HCHO_SPK_001560.LAB	2/8/2023	8:01:10	5.14	0.27	1.39	1.61	0.33	0.44	0.087	112.6%
T4_HCHO_SPK_001561.LAB	2/8/2023	8:01:17	5.17	0.34	1.43	1.59	0.23	0.43	0.086	112.2%
T4_HCHO_SPK_001562.LAB	2/8/2023	8:01:25	5.15	0.24	1.43	1.75	0.22	0.44	0.087	122.0%
T4_HCHO_SPK_001563.LAB	2/8/2023	8:01:32	5.17	0.35	1.37	1.54	0.37	0.44	0.088	105.9%
	Spike Average									106.8%

Turbine 4 Analyte Spike, Using 99.9 ppm HCl/5.00 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	HCl Recovery %
T4_HCL_SPK_001609.LAB	2/8/2023	8:08:22	5.14	8.15	1.78	-0.05	0.07	0.42	0.084	92.0%
T4_HCL_SPK_001610.LAB	2/8/2023	8:08:30	5.16	8.08	1.74	0.15	0.14	0.42	0.084	91.8%
T4_HCL_SPK_001611.LAB	2/8/2023	8:08:38	5.17	8.07	1.74	0.19	0.06	0.41	0.082	93.0%
T4_HCL_SPK_001612.LAB	2/8/2023	8:08:45	5.15	8.14	1.77	0.13	0.01	0.41	0.082	94.2%
T4_HCL_SPK_001613.LAB	2/8/2023	8:08:53	5.18	8.17	1.72	-0.03	0.07	0.42	0.084	92.7%
T4_HCL_SPK_001614.LAB	2/8/2023	8:09:00	5.18	8.15	1.81	-0.06	0.21	0.42	0.084	92.0%
T4_HCL_SPK_001615.LAB	2/8/2023	8:09:07	5.15	8.22	1.79	0.17	0.20	0.42	0.083	93.5%
T4_HCL_SPK_001616.LAB	2/8/2023	8:09:15	5.15	8.37	1.78	0.01	0.26	0.43	0.085	93.4%
	Spike Average									92.8%

Turbine 4 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_001618.LAB	2/8/2023	8:11:58	5.65	0.97	1.55	-0.02	0.35	0.00
T4_001619.LAB	2/8/2023	8:12:58	5.65	0.77	1.53	-0.05	0.25	0.00
T4_001620.LAB	2/8/2023	8:13:58	5.64	0.68	1.55	-0.03	0.26	0.00
		Average			1.54			0.00

Turbine 4 Analyte Spike, Using 111.2 ppm HF/4.999 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	HF Recovery %
T4_HF_SPK_001710.LAB	2/8/2023	8:25:41	5.20	0.60	8.91	0.01	0.20	0.40	0.080	89.5%
T4_HF_SPK_001711.LAB	2/8/2023	8:25:48	5.15	0.69	8.96	-0.06	0.28	0.40	0.081	89.3%
T4_HF_SPK_001712.LAB	2/8/2023	8:25:56	5.20	0.68	9.00	-0.05	0.04	0.41	0.082	89.1%
T4_HF_SPK_001713.LAB	2/8/2023	8:26:03	5.23	0.63	9.07	0.13	0.07	0.41	0.082	89.4%
T4_HF_SPK_001714.LAB	2/8/2023	8:26:11	5.18	0.59	9.02	-0.03	0.05	0.40	0.081	90.4%
T4_HF_SPK_001715.LAB	2/8/2023	8:26:18	5.13	0.63	9.05	-0.01	0.28	0.40	0.080	91.3%
T4_HF_SPK_001716.LAB	2/8/2023	8:26:26	5.16	0.54	9.00	0.03	0.14	0.40	0.081	90.2%
T4_HF_SPK_001717.LAB	2/8/2023	8:26:33	5.27	0.64	9.13	0.08	0.05	0.40	0.081	91.3%
	Spike Average									90.0%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_SYS_001718.LAB	2/8/2023	8:28:47	0.02	0.09	0.08	-0.01	100.75	5.09	99.9%
T4_CTS_SYS_001719.LAB	2/8/2023	8:28:55	0.01	0.19	0.07	-0.05	100.39	5.10	99.5%
T4_CTS_SYS_001720.LAB	2/8/2023	8:29:02	0.02	0.16	0.07	0.13	100.96	5.11	100.1%
T4_CTS_SYS_001721.LAB	2/8/2023	8:29:09	0.01	0.21	0.05	0.08	100.83	5.11	100.0%
T4_CTS_SYS_001722.LAB	2/8/2023	8:29:17	0.00	0.12	0.03	-0.12	100.95	5.11	100.1%
T4_CTS_SYS_001723.LAB	2/8/2023	8:29:24	0.01	0.03	0.08	0.20	101.47	5.12	100.6%
T4_CTS_SYS_001724.LAB	2/8/2023	8:29:32	0.01	0.08	0.01	-0.02	100.60	5.09	99.7%
T4_CTS_SYS_001725.LAB	2/8/2023	8:29:39	0.01	0.09	0.11	0.05	101.07	5.10	100.2%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_SYS_001823.LAB	2/8/2023	10:07:48	0.08	0.07	0.00	0.05	101.15	5.11	100.3%
T4_CTS_SYS_001824.LAB	2/8/2023	10:07:56	0.06	0.11	0.03	0.13	100.71	5.10	99.8%
T4_CTS_SYS_001825.LAB	2/8/2023	10:08:03	0.03	0.10	-0.04	0.07	101.02	5.11	100.1%
T4_CTS_SYS_001826.LAB	2/8/2023	10:08:11	0.02	0.03	-0.01	0.04	100.59	5.12	99.7%
T4_CTS_SYS_001827.LAB	2/8/2023	10:08:18	0.04	0.08	-0.02	0.05	100.87	5.13	100.0%
T4_CTS_SYS_001828.LAB	2/8/2023	10:08:26	0.03	0.10	0.00	-0.03	100.57	5.10	99.7%
T4_CTS_SYS_001829.LAB	2/8/2023	10:08:33	0.02	0.00	0.04	0.11	100.85	5.07	100.0%
T4_CTS_SYS_001830.LAB	2/8/2023	10:08:41	0.01	-0.07	-0.04	0.14	101.68	5.13	100.8%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_SYS_001901.LAB	2/8/2023	11:19:49	0.04	0.12	-0.03	-0.08	101.09	5.13	100.2%
T4_CTS_SYS_001902.LAB	2/8/2023	11:19:57	0.03	-0.01	-0.03	-0.13	100.64	5.15	99.8%
T4_CTS_SYS_001903.LAB	2/8/2023	11:20:04	0.01	-0.04	-0.03	0.05	100.91	5.12	100.0%
T4_CTS_SYS_001904.LAB	2/8/2023	11:20:12	0.01	0.08	-0.07	0.00	101.02	5.10	100.1%
T4_CTS_SYS_001905.LAB	2/8/2023	11:20:19	0.01	0.06	-0.03	-0.17	101.66	5.14	100.8%
T4_CTS_SYS_001906.LAB	2/8/2023	11:20:27	0.02	-0.01	-0.07	0.00	101.78	5.13	100.9%
T4_CTS_SYS_001907.LAB	2/8/2023	11:20:34	0.01	0.13	-0.04	0.13	100.66	5.11	99.8%
T4_CTS_SYS_001908.LAB	2/8/2023	11:20:42	0.01	0.04	-0.05	-0.07	100.67	5.10	99.8%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_SYS_001981.LAB	2/8/2023	12:34:01	0.02	0.00	0.00	0.11	100.70	5.10	99.8%
T4_CTS_SYS_001982.LAB	2/8/2023	12:34:08	0.01	0.09	-0.03	0.14	100.79	5.11	99.9%
T4_CTS_SYS_001983.LAB	2/8/2023	12:34:16	0.01	0.04	-0.03	0.02	102.03	5.16	101.1%
T4_CTS_SYS_001984.LAB	2/8/2023	12:34:23	0.01	0.10	-0.04	-0.11	101.43	5.14	100.6%
T4_CTS_SYS_001985.LAB	2/8/2023	12:34:31	0.01	0.04	-0.01	-0.06	101.81	5.15	100.9%
T4_CTS_SYS_001986.LAB	2/8/2023	12:34:38	-0.01	0.01	-0.01	0.05	101.13	5.10	100.3%
T4_CTS_SYS_001987.LAB	2/8/2023	12:34:46	0.01	0.05	-0.02	-0.02	101.19	5.14	100.3%
T4_CTS_SYS_001988.LAB	2/8/2023	12:34:53	0.01	0.00	-0.01	0.05	101.49	5.14	100.6%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T4_CTS_SYS_002079.LAB	2/8/2023	14:06:17	0.02	0.04	0.00	0.17	101.23	5.11	100.3%
T4_CTS_SYS_002080.LAB	2/8/2023	14:06:25	0.01	0.16	-0.01	-0.10	101.18	5.12	100.3%
T4_CTS_SYS_002081.LAB	2/8/2023	14:06:32	0.02	0.12	0.02	0.06	100.88	5.13	100.0%
T4_CTS_SYS_002082.LAB	2/8/2023	14:06:39	0.00	0.11	0.00	0.13	101.38	5.12	100.5%
T4_CTS_SYS_002083.LAB	2/8/2023	14:06:47	0.00	0.00	-0.04	-0.31	100.91	5.12	100.0%
T4_CTS_SYS_002084.LAB	2/8/2023	14:06:54	0.00	0.12	0.00	0.06	101.20	5.13	100.3%
T4_CTS_SYS_002085.LAB	2/8/2023	14:07:02	0.01	0.14	0.01	0.31	101.29	5.12	100.4%
T4_CTS_SYS_002086.LAB	2/8/2023	14:07:10	0.01	0.10	-0.06	-0.13	101.74	5.12	100.9%

Nitrogen (Zero) System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_N2_SYS_002087.LAB	2/8/2023	14:07:50	0.00	0.09	-0.05	-0.13	-0.07	-0.01
T4_N2_SYS_002088.LAB	2/8/2023	14:07:58	0.00	0.05	-0.04	-0.12	0.21	0.00
T4_N2_SYS_002089.LAB	2/8/2023	14:08:05	0.00	0.11	-0.05	-0.28	0.14	0.00
T4_N2_SYS_002090.LAB	2/8/2023	14:08:13	0.01	0.02	0.04	0.13	-0.08	0.01
T4_N2_SYS_002091.LAB	2/8/2023	14:08:20	0.00	-0.11	-0.06	0.24	-0.04	0.01
T4_N2_SYS_002092.LAB	2/8/2023	14:08:28	0.00	0.00	-0.07	-0.01	0.17	0.00
T4_N2_SYS_002093.LAB	2/8/2023	14:08:35	0.01	0.14	-0.02	-0.08	-0.07	0.00
T4_N2_SYS_002094.LAB	2/8/2023	14:08:43	0.01	0.02	-0.05	0.10	0.02	-0.01
		Average	0.01	0.04	-0.04	-0.02	0.04	0.00

Nitrogen Direct Purge to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T4_N2_DIR_002095.LAB	2/8/2023	14:13:38	0.00	0.02	-0.04	0.01	0.04	0.00
T4_N2_DIR_002096.LAB	2/8/2023	14:15:38	0.00	-0.02	-0.02	-0.02	0.11	0.00
T4_N2_DIR_002097.LAB	2/8/2023	14:17:38	0.00	-0.01	-0.04	0.05	0.05	0.00

MONTROSE AIR QUALITY SERVICES

Nitrogen (Zero) Direct Purge to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_N2_DIR_002881BKG.LAB	2/14/2023	7:29:09	0.00	0.00	0.00	0.00	0.00	0.00
T5_N2_DIR_002882.LAB	2/14/2023	7:29:22	0.00	0.04	-0.02	-0.07	0.05	-0.01
T5_N2_DIR_002883.LAB	2/14/2023	7:29:29	0.00	-0.02	-0.04	-0.04	0.13	0.00
T5_N2_DIR_002884.LAB	2/14/2023	7:29:37	0.00	0.04	-0.04	0.06	0.06	0.00
T5_N2_DIR_002885.LAB	2/14/2023	7:29:44	0.00	0.07	-0.06	0.11	0.01	0.00
T5_N2_DIR_002886.LAB	2/14/2023	7:29:52	0.01	-0.03	-0.06	-0.15	-0.02	-0.01
T5_N2_DIR_002887.LAB	2/14/2023	7:29:59	0.01	0.06	-0.07	0.16	0.12	0.00
T5_N2_DIR_002888.LAB	2/14/2023	7:30:07	0.00	0.04	-0.04	-0.23	-0.06	0.00
T5_N2_DIR_002889.LAB	2/14/2023	7:30:14	0.00	-0.05	-0.02	0.12	-0.08	0.00

CTS, 100.2 ppm Ethylene/5.000 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T5_CTS_DIR_002898.LAB	2/14/2023	7:31:56	0.01	-0.02	0.04	0.21	100.32	5.09	100.1%
T5_CTS_DIR_002899.LAB	2/14/2023	7:32:03	0.00	0.09	-0.01	-0.03	100.76	5.11	100.6%
T5_CTS_DIR_002900.LAB	2/14/2023	7:32:11	0.00	-0.04	-0.04	-0.02	100.45	5.13	100.3%
T5_CTS_DIR_002901.LAB	2/14/2023	7:32:18	0.01	0.01	-0.06	0.17	101.23	5.13	101.0%
T5_CTS_DIR_002902.LAB	2/14/2023	7:32:26	-0.01	0.03	-0.09	0.08	100.24	5.08	100.0%
T5_CTS_DIR_002903.LAB	2/14/2023	7:32:33	0.00	0.05	-0.08	0.17	100.99	5.11	100.8%
T5_CTS_DIR_002904.LAB	2/14/2023	7:32:41	0.00	0.01	-0.12	0.06	100.32	5.10	100.1%
T5_CTS_DIR_002905.LAB	2/14/2023	7:32:48	0.01	-0.08	-0.11	-0.02	100.62	5.11	100.4%
		Average					100.62	5.11	

99.9 ppm HCl/5.00 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_HCL_DIR_002912.LAB	2/14/2023	7:37:09	0.00	99.18	0.17	0.19	-0.27	4.98
T5_HCL_DIR_002913.LAB	2/14/2023	7:37:16	0.01	101.33	0.15	0.16	-0.31	4.99
T5_HCL_DIR_002914.LAB	2/14/2023	7:37:24	0.00	101.35	0.17	0.14	-0.21	5.00
T5_HCL_DIR_002915.LAB	2/14/2023	7:37:31	0.00	101.25	0.14	0.16	-0.17	4.99
T5_HCL_DIR_002916.LAB	2/14/2023	7:37:39	0.00	101.70	0.17	-0.01	-0.11	4.98
T5_HCL_DIR_002917.LAB	2/14/2023	7:37:46	0.01	101.39	0.12	-0.05	-0.27	4.99
T5_HCL_DIR_002918.LAB	2/14/2023	7:37:54	0.00	101.86	0.11	0.12	-0.12	4.99
T5_HCL_DIR_002919.LAB	2/14/2023	7:38:01	0.00	99.76	0.13	0.19	-0.22	4.97
		Average		100.98				4.99

19.71 ppm Formaldehyde/4.97 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_HCHO_DIR_002937.LAB	2/14/2023	7:40:50	0.00	0.10	-0.14	16.23	-0.24	5.01
T5_HCHO_DIR_002938.LAB	2/14/2023	7:40:57	-0.01	0.20	-0.17	16.27	-0.21	5.02
T5_HCHO_DIR_002939.LAB	2/14/2023	7:41:05	0.01	0.14	-0.22	16.10	-0.36	5.02
T5_HCHO_DIR_002940.LAB	2/14/2023	7:41:12	0.00	0.23	-0.11	16.29	-0.33	5.00
T5_HCHO_DIR_002941.LAB	2/14/2023	7:41:20	0.00	0.12	-0.15	16.10	-0.29	5.01
T5_HCHO_DIR_002942.LAB	2/14/2023	7:41:27	0.00	0.07	-0.15	16.45	-0.33	5.01
T5_HCHO_DIR_002943.LAB	2/14/2023	7:41:35	0.00	0.17	-0.18	16.22	-0.20	5.03
T5_HCHO_DIR_002944.LAB	2/14/2023	7:41:42	0.00	0.06	-0.19	16.20	-0.28	5.01
		Average				16.23		5.01

111.2 ppm HF/4.999 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_HF_DIR_002963.LAB	2/14/2023	7:49:15	-0.01	0.41	105.60	0.11	-0.19	4.96
T5_HF_DIR_002964.LAB	2/14/2023	7:49:23	0.00	0.47	105.80	-0.07	-0.33	4.96
T5_HF_DIR_002965.LAB	2/14/2023	7:49:30	-0.01	0.42	105.77	0.02	0.13	4.96
T5_HF_DIR_002966.LAB	2/14/2023	7:49:38	-0.01	0.45	105.95	-0.06	-0.16	4.96
T5_HF_DIR_002967.LAB	2/14/2023	7:49:45	0.00	0.41	105.94	-0.03	-0.02	4.97
T5_HF_DIR_002968.LAB	2/14/2023	7:49:53	-0.01	0.37	106.25	-0.06	-0.23	4.96
T5_HF_DIR_002969.LAB	2/14/2023	7:50:00	0.00	0.42	105.74	-0.02	-0.37	4.98
T5_HF_DIR_002970.LAB	2/14/2023	7:50:08	0.00	0.45	106.19	0.10	-0.25	4.97
		Average			105.90			4.97

100.2 ppm Ethylene/5.000 ppm SF6 System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %	Response Time (sec)
T5_CTS_RT_002971.LAB	2/14/2023	7:55:19	5.98	0.90	2.05	0.19	0.26	0.03	0.3%	-
T5_CTS_RT_002972.LAB	2/14/2023	7:55:26	5.46	0.82	1.94	0.56	3.01	0.25	3.0%	8
T5_CTS_RT_002973.LAB	2/14/2023	7:55:33	0.97	0.46	0.37	0.58	93.25	4.87	92.7%	15
T5_CTS_RT_002974.LAB	2/14/2023	7:55:41	0.19	0.24	-0.07	0.15	101.26	5.12	100.6%	23
T5_CTS_RT_002975.LAB	2/14/2023	7:55:48	0.12	0.21	-0.09	0.15	101.10	5.13	100.5%	
T5_CTS_RT_002976.LAB	2/14/2023	7:55:56	0.09	0.21	-0.13	0.19	101.42	5.15	100.8%	
T5_CTS_RT_002977.LAB	2/14/2023	7:56:03	0.07	0.27	-0.13	-0.01	101.28	5.14	100.7%	
T5_CTS_RT_002978.LAB	2/14/2023	7:56:11	0.05	0.15	-0.11	0.33	101.34	5.14	100.7%	
T5_CTS_RT_002979.LAB	2/14/2023	7:56:18	0.04	0.11	-0.16	0.14	101.44	5.15	100.8%	
T5_CTS_RT_002980.LAB	2/14/2023	7:56:26	0.03	0.15	-0.16	0.05	101.30	5.15	100.7%	
T5_CTS_RT_002981.LAB	2/14/2023	7:56:33	0.03	0.09	-0.17	0.17	101.61	5.14	101.0%	

Nitrogen (Zero) System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %	Response Time (sec)
T5_N2_RT_002982.LAB	2/14/2023	7:56:59	0.02	0.05	-0.21	0.06	101.02	5.14	100.4%	-
T5_N2_RT_002983.LAB	2/14/2023	7:57:06	0.70	0.10	0.13	-0.01	80.80	4.16	80.3%	8
T5_N2_RT_002984.LAB	2/14/2023	7:57:14	0.51	0.30	0.17	0.12	9.16	0.47	9.1%	16
T5_N2_RT_002985.LAB	2/14/2023	7:57:21	0.03	0.19	-0.20	0.11	0.25	0.00	0.2%	23
T5_N2_RT_002986.LAB	2/14/2023	7:57:28	0.02	0.11	-0.22	0.04	0.09	-0.01	0.1%	
T5_N2_RT_002987.LAB	2/14/2023	7:57:36	0.01	0.13	-0.11	0.02	0.10	0.01	0.1%	
T5_N2_RT_002988.LAB	2/14/2023	7:57:44	0.03	0.02	-0.21	0.00	-0.06	0.00	-0.1%	
T5_N2_RT_002989.LAB	2/14/2023	7:57:51	-0.01	-0.01	-0.23	0.09	0.15	0.00	0.2%	
T5_N2_RT_002990.LAB	2/14/2023	7:57:59	0.02	0.15	-0.21	0.04	0.33	0.01	0.3%	
T5_N2_RT_002991.LAB	2/14/2023	7:58:06	0.00	0.12	-0.19	0.16	0.05	0.00	0.0%	
T5_N2_RT_002992.LAB	2/14/2023	7:58:13	0.01	0.08	-0.22	0.01	0.04	0.00	0.0%	
		Average	0.01	0.10	-0.20	0.06	0.12	0.00		

Turbine 5 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_002994.LAB	2/14/2023	8:00:19	6.01	0.62	1.86	0.10	0.26	0.00
T5_002995.LAB	2/14/2023	8:01:19	6.01	0.50	1.68	0.06	0.33	0.00
T5_002996.LAB	2/14/2023	8:02:19	6.01	0.48	1.60	0.11	0.26	0.00
		Average		0.53		0.09		0.00

Turbine 5 Analyte Spike, Using 19.71 ppm Formaldehyde/4.97 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	Formaldehyde Recovery %
T5_HCHO_SPK_003007.LAB	2/14/2023	8:04:37	5.49	0.38	1.35	1.47	0.10	0.45	0.089	95.9%
T5_HCHO_SPK_003008.LAB	2/14/2023	8:04:44	5.48	0.41	1.34	1.55	0.22	0.45	0.090	100.4%
T5_HCHO_SPK_003009.LAB	2/14/2023	8:04:51	5.47	0.34	1.39	1.73	0.14	0.46	0.091	110.5%
T5_HCHO_SPK_003010.LAB	2/14/2023	8:04:59	5.46	0.40	1.37	1.63	0.12	0.45	0.091	105.1%
T5_HCHO_SPK_003011.LAB	2/14/2023	8:05:06	5.48	0.45	1.40	1.53	0.00	0.45	0.089	100.0%
T5_HCHO_SPK_003012.LAB	2/14/2023	8:05:14	5.48	0.34	1.30	1.46	0.09	0.44	0.089	95.8%
T5_HCHO_SPK_003013.LAB	2/14/2023	8:05:22	5.49	0.38	1.36	1.35	0.12	0.45	0.090	87.2%
T5_HCHO_SPK_003014.LAB	2/14/2023	8:05:29	5.46	0.46	1.40	1.36	0.16	0.44	0.089	89.0%
	Spike Average									98.0%

Turbine 5 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_003020.LAB	2/14/2023	8:12:01	6.02	0.42	1.55	0.08	0.21	0.00
T5_003021.LAB	2/14/2023	8:13:01	6.02	0.42	1.54	0.06	0.15	0.00
T5_003022.LAB	2/14/2023	8:14:01	6.03	0.40	1.52	0.13	0.22	0.00
		Average		0.41		0.09		0.00

Turbine 5 Analyte Spike, Using 99.9 ppm HCl/5.00 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	HCl Recovery %
T5_HCL_SPK_003065.LAB	2/14/2023	8:19:47	5.56	7.76	1.70	0.21	0.20	0.40	0.080	92.2%
T5_HCL_SPK_003066.LAB	2/14/2023	8:19:54	5.53	7.74	1.72	0.22	0.08	0.40	0.080	91.3%
T5_HCL_SPK_003067.LAB	2/14/2023	8:20:02	5.54	7.79	1.73	-0.03	0.17	0.40	0.080	92.6%
T5_HCL_SPK_003068.LAB	2/14/2023	8:20:09	5.54	7.76	1.68	0.33	0.23	0.39	0.078	93.5%
T5_HCL_SPK_003069.LAB	2/14/2023	8:20:17	5.55	7.78	1.72	0.17	0.01	0.39	0.079	93.3%
T5_HCL_SPK_003070.LAB	2/14/2023	8:20:24	5.53	7.83	1.68	-0.05	0.26	0.40	0.081	91.8%
T5_HCL_SPK_003071.LAB	2/14/2023	8:20:32	5.57	7.87	1.70	-0.02	0.16	0.39	0.079	94.6%
T5_HCL_SPK_003072.LAB	2/14/2023	8:20:40	5.55	7.80	1.67	0.08	0.12	0.39	0.078	94.2%
	Spike Average									92.9%

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Turbine 5 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_003076.LAB	2/14/2023	8:25:11	6.04	0.63	1.42	0.06	0.23	0.00
T5_003077.LAB	2/14/2023	8:26:11	6.05	0.56	1.39	0.10	0.15	0.00
T5_003078.LAB	2/14/2023	8:27:11	6.05	0.53	1.39	0.02	0.24	0.00
		Average			1.40			0.00

Turbine 5 Analyte Spike, Using 111.2 ppm HF/4.999 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	HF Recovery %
T5_HF_SPK_003180.LAB	2/14/2023	8:40:18	5.49	0.47	9.58	0.05	0.03	0.43	0.086	91.8%
T5_HF_SPK_003181.LAB	2/14/2023	8:40:26	5.49	0.47	9.52	0.10	0.16	0.42	0.085	92.2%
T5_HF_SPK_003182.LAB	2/14/2023	8:40:33	5.51	0.53	9.54	-0.06	0.12	0.43	0.086	91.7%
T5_HF_SPK_003183.LAB	2/14/2023	8:40:40	5.50	0.46	9.55	-0.04	0.06	0.43	0.087	90.9%
T5_HF_SPK_003184.LAB	2/14/2023	8:40:48	5.49	0.51	9.57	-0.03	0.17	0.44	0.088	90.4%
T5_HF_SPK_003185.LAB	2/14/2023	8:40:55	5.50	0.48	9.66	0.03	0.15	0.44	0.089	90.6%
T5_HF_SPK_003186.LAB	2/14/2023	8:41:03	5.48	0.49	9.64	0.01	0.09	0.43	0.087	91.9%
T5_HF_SPK_003187.LAB	2/14/2023	8:41:10	5.47	0.51	9.53	-0.10	0.19	0.44	0.089	88.9%
	Spike Average									91.1%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T5_CTS_SYS_003287.LAB	2/14/2023	10:15:49	0.05	-0.08	-0.20	-0.04	101.10	5.10	100.5%
T5_CTS_SYS_003288.LAB	2/14/2023	10:15:57	0.03	0.02	-0.28	0.10	101.05	5.12	100.4%
T5_CTS_SYS_003289.LAB	2/14/2023	10:16:04	0.01	0.06	-0.24	0.06	101.64	5.12	101.0%
T5_CTS_SYS_003290.LAB	2/14/2023	10:16:11	0.01	0.04	-0.27	-0.01	101.51	5.13	100.9%
T5_CTS_SYS_003291.LAB	2/14/2023	10:16:19	0.00	0.02	-0.24	0.00	101.40	5.12	100.8%
T5_CTS_SYS_003292.LAB	2/14/2023	10:16:26	0.01	0.16	-0.25	-0.08	100.40	5.11	99.8%
T5_CTS_SYS_003293.LAB	2/14/2023	10:16:34	0.00	0.06	-0.23	-0.13	100.63	5.10	100.0%
T5_CTS_SYS_003294.LAB	2/14/2023	10:16:41	-0.01	0.07	-0.27	-0.12	100.85	5.12	100.2%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T5_CTS_SYS_003358.LAB	2/14/2023	11:21:17	0.01	0.11	-0.23	0.19	101.17	5.11	100.6%
T5_CTS_SYS_003359.LAB	2/14/2023	11:21:24	0.02	-0.01	-0.31	-0.04	100.58	5.11	100.0%
T5_CTS_SYS_003360.LAB	2/14/2023	11:21:32	0.02	0.05	-0.25	-0.07	100.52	5.12	99.9%
T5_CTS_SYS_003361.LAB	2/14/2023	11:21:39	0.01	0.06	-0.22	0.12	100.70	5.12	100.1%
T5_CTS_SYS_003362.LAB	2/14/2023	11:21:47	0.01	-0.02	-0.23	0.15	100.84	5.10	100.2%
T5_CTS_SYS_003363.LAB	2/14/2023	11:21:54	0.01	0.12	-0.24	-0.24	100.98	5.10	100.4%
T5_CTS_SYS_003364.LAB	2/14/2023	11:22:02	0.01	0.08	-0.26	0.15	101.38	5.11	100.8%
T5_CTS_SYS_003365.LAB	2/14/2023	11:22:09	0.01	0.10	-0.25	0.07	101.03	5.11	100.4%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T5_CTS_SYS_003438.LAB	2/14/2023	12:35:37	0.03	0.22	-0.24	0.17	101.21	5.10	100.6%
T5_CTS_SYS_003439.LAB	2/14/2023	12:35:44	0.02	-0.04	-0.25	-0.02	101.11	5.11	100.5%
T5_CTS_SYS_003440.LAB	2/14/2023	12:35:52	0.01	0.01	-0.26	0.04	100.72	5.11	100.1%
T5_CTS_SYS_003441.LAB	2/14/2023	12:35:59	0.01	0.03	-0.24	0.10	100.75	5.12	100.1%
T5_CTS_SYS_003442.LAB	2/14/2023	12:36:07	0.01	0.02	-0.24	0.29	100.22	5.12	99.6%
T5_CTS_SYS_003443.LAB	2/14/2023	12:36:14	0.02	0.05	-0.24	0.01	101.03	5.11	100.4%
T5_CTS_SYS_003444.LAB	2/14/2023	12:36:22	0.00	0.11	-0.29	-0.07	101.22	5.12	100.6%
T5_CTS_SYS_003445.LAB	2/14/2023	12:36:29	0.00	0.09	-0.26	0.02	101.17	5.12	100.5%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T5_CTS_SYS_003510.LAB	2/14/2023	13:41:42	0.03	0.08	-0.21	-0.09	100.67	5.10	100.1%
T5_CTS_SYS_003511.LAB	2/14/2023	13:41:50	0.03	0.04	-0.20	-0.03	101.36	5.13	100.7%
T5_CTS_SYS_003512.LAB	2/14/2023	13:41:57	0.02	0.03	-0.26	0.14	101.37	5.12	100.8%
T5_CTS_SYS_003513.LAB	2/14/2023	13:42:05	0.02	0.05	-0.21	0.01	100.79	5.10	100.2%
T5_CTS_SYS_003514.LAB	2/14/2023	13:42:12	0.01	-0.06	-0.28	-0.29	100.53	5.12	99.9%
T5_CTS_SYS_003515.LAB	2/14/2023	13:42:20	0.02	0.02	-0.25	0.00	100.89	5.11	100.3%
T5_CTS_SYS_003516.LAB	2/14/2023	13:42:27	0.01	-0.03	-0.22	0.04	100.88	5.12	100.3%
T5_CTS_SYS_003517.LAB	2/14/2023	13:42:35	0.01	0.00	-0.23	0.10	100.90	5.10	100.3%

Nitrogen (Zero) System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_N2_SYS_003518.LAB	2/14/2023	13:43:12	0.01	-0.09	-0.27	-0.04	0.21	0.00
T5_N2_SYS_003519.LAB	2/14/2023	13:43:20	0.01	0.04	-0.27	0.01	0.08	0.00
T5_N2_SYS_003520.LAB	2/14/2023	13:43:27	0.00	0.01	-0.20	0.07	0.08	0.00
T5_N2_SYS_003521.LAB	2/14/2023	13:43:35	0.01	0.02	-0.26	0.02	-0.10	0.00
T5_N2_SYS_003522.LAB	2/14/2023	13:43:42	0.01	0.01	-0.26	0.00	0.12	0.00
T5_N2_SYS_003523.LAB	2/14/2023	13:43:49	0.00	0.07	-0.21	0.11	0.05	0.00
T5_N2_SYS_003524.LAB	2/14/2023	13:43:57	0.01	0.01	-0.27	0.20	0.18	0.00
T5_N2_SYS_003525.LAB	2/14/2023	13:44:04	0.02	-0.01	-0.24	0.22	0.05	0.00
		Average	0.01	0.01	-0.25	0.08	0.08	0.00

Nitrogen (Zero) Direct Purge to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_N2_DIR_003526.LAB	2/14/2023	13:49:05	0.00	-0.01	-0.25	0.04	0.04	0.00
T5_N2_DIR_003527.LAB	2/14/2023	13:51:05	0.00	0.00	-0.27	-0.01	0.05	0.00
T5_N2_DIR_003528.LAB	2/14/2023	13:53:05	0.00	0.00	-0.28	-0.03	0.01	0.00

Nitrogen (Zero) Direct Purge to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_N2_DIR_003532BKG.LAB	2/15/2023	7:21:22	0.00	0.00	0.00	0.00	0.00	0.00
T5_N2_DIR_003533.LAB	2/15/2023	7:21:35	0.00	-0.03	-0.07	0.16	0.19	0.00
T5_N2_DIR_003534.LAB	2/15/2023	7:21:43	0.00	-0.02	-0.04	0.00	0.08	0.00
T5_N2_DIR_003535.LAB	2/15/2023	7:21:50	0.00	-0.08	-0.03	0.04	0.07	0.00
T5_N2_DIR_003536.LAB	2/15/2023	7:21:58	0.01	0.01	-0.02	-0.01	0.06	0.00
T5_N2_DIR_003537.LAB	2/15/2023	7:22:05	0.00	0.04	-0.03	0.03	0.04	0.00
T5_N2_DIR_003538.LAB	2/15/2023	7:22:13	-0.01	0.01	-0.01	-0.11	0.09	0.00
T5_N2_DIR_003539.LAB	2/15/2023	7:22:20	-0.01	-0.02	-0.02	-0.14	-0.06	0.00
T5_N2_DIR_003540.LAB	2/15/2023	7:22:28	0.00	-0.01	-0.04	0.11	0.17	0.00

CTS, 100.2 ppm Ethylene/5.000 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T5_CTS_DIR_003541.LAB	2/15/2023	7:23:08	0.00	-0.05	-0.01	0.03	100.26	5.09	100.1%
T5_CTS_DIR_003542.LAB	2/15/2023	7:23:16	0.01	0.06	0.00	0.07	100.78	5.11	100.6%
T5_CTS_DIR_003543.LAB	2/15/2023	7:23:23	0.01	0.03	0.09	0.06	100.55	5.10	100.4%
T5_CTS_DIR_003544.LAB	2/15/2023	7:23:30	0.01	-0.11	-0.02	0.30	100.47	5.09	100.3%
T5_CTS_DIR_003545.LAB	2/15/2023	7:23:38	0.01	0.05	0.01	0.15	100.44	5.10	100.2%
T5_CTS_DIR_003546.LAB	2/15/2023	7:23:46	0.00	0.01	0.01	-0.06	100.60	5.11	100.4%
T5_CTS_DIR_003547.LAB	2/15/2023	7:23:53	0.00	-0.02	0.00	-0.10	100.07	5.10	99.9%
T5_CTS_DIR_003548.LAB	2/15/2023	7:24:01	0.01	0.02	0.00	-0.07	100.26	5.10	100.1%
		Average					100.43	* 5.10	

19.71 ppm Formaldehyde/4.97 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_HCHO_DIR_003560.LAB	2/15/2023	7:26:03	0.00	-0.10	-0.07	16.19	-0.19	5.02
T5_HCHO_DIR_003561.LAB	2/15/2023	7:26:11	0.00	-0.13	-0.04	15.98	-0.39	5.02
T5_HCHO_DIR_003562.LAB	2/15/2023	7:26:18	0.00	-0.18	-0.04	16.16	-0.24	5.03
T5_HCHO_DIR_003563.LAB	2/15/2023	7:26:26	0.00	-0.09	-0.07	16.10	-0.14	5.01
T5_HCHO_DIR_003564.LAB	2/15/2023	7:26:33	-0.01	-0.03	-0.06	16.02	-0.25	5.00
T5_HCHO_DIR_003565.LAB	2/15/2023	7:26:41	0.00	-0.14	-0.01	15.88	-0.19	5.02
T5_HCHO_DIR_003566.LAB	2/15/2023	7:26:48	0.00	-0.04	-0.02	16.18	-0.46	5.02
T5_HCHO_DIR_003567.LAB	2/15/2023	7:26:56	0.00	-0.21	-0.05	15.87	-0.19	5.01
		Average				16.05		5.02

99.9 ppm HCl/5.00 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_HCL_DIR_003579.LAB	2/15/2023	7:30:56	0.00	104.49	0.18	0.09	-0.27	4.99
T5_HCL_DIR_003580.LAB	2/15/2023	7:31:04	0.00	104.57	0.14	0.06	-0.28	5.00
T5_HCL_DIR_003581.LAB	2/15/2023	7:31:11	0.00	102.33	0.14	0.03	-0.16	4.97
T5_HCL_DIR_003582.LAB	2/15/2023	7:31:18	0.00	104.42	0.16	0.03	-0.18	4.97
T5_HCL_DIR_003583.LAB	2/15/2023	7:31:26	0.00	104.70	0.18	0.09	-0.23	4.98
T5_HCL_DIR_003584.LAB	2/15/2023	7:31:33	-0.01	102.75	0.17	0.22	-0.22	4.98
T5_HCL_DIR_003585.LAB	2/15/2023	7:31:41	-0.01	102.68	0.15	0.15	-0.25	4.98
T5_HCL_DIR_003586.LAB	2/15/2023	7:31:48	0.01	104.71	0.17	0.23	-0.32	4.96
		Average		103.83				4.98

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111.2 ppm HF/4.999 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_HF_DIR_003607.LAB	2/15/2023	7:44:23	0.00	0.28	102.13	-0.03	-0.10	4.96
T5_HF_DIR_003608.LAB	2/15/2023	7:44:31	-0.01	0.33	102.34	-0.01	-0.33	4.96
T5_HF_DIR_003609.LAB	2/15/2023	7:44:38	-0.01	0.48	102.55	-0.07	0.00	4.95
T5_HF_DIR_003610.LAB	2/15/2023	7:44:45	-0.01	0.38	102.38	-0.29	-0.01	4.95
T5_HF_DIR_003611.LAB	2/15/2023	7:44:53	0.01	0.37	102.41	-0.22	-0.08	4.95
T5_HF_DIR_003612.LAB	2/15/2023	7:45:00	0.00	0.21	102.66	-0.20	-0.04	4.95
T5_HF_DIR_003613.LAB	2/15/2023	7:45:08	0.01	0.36	102.68	-0.06	-0.16	4.96
T5_HF_DIR_003614.LAB	2/15/2023	7:45:15	0.00	0.32	102.31	0.04	-0.14	4.96
		Average			102.43			4.95

100.2 ppm Ethylene/5.000 ppm SF6 System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %	Response Time (sec)
T5_CTS_RT_003615.LAB	2/15/2023	7:48:51	5.43	0.43	2.38	0.09	0.27	0.04	0.3%	-
T5_CTS_RT_003616.LAB	2/15/2023	7:48:59	4.29	0.27	2.01	0.35	6.41	0.33	6.4%	8
T5_CTS_RT_003617.LAB	2/15/2023	7:49:06	0.12	0.14	0.20	0.06	97.58	5.00	97.2%	15
T5_CTS_RT_003618.LAB	2/15/2023	7:49:14	0.03	0.11	0.05	-0.04	102.27	5.18	101.8%	
T5_CTS_RT_003619.LAB	2/15/2023	7:49:21	0.02	0.00	0.05	-0.09	101.97	5.17	101.5%	
T5_CTS_RT_003620.LAB	2/15/2023	7:49:29	0.00	0.10	0.02	-0.22	102.27	5.17	101.8%	
T5_CTS_RT_003621.LAB	2/15/2023	7:49:36	0.01	-0.05	0.05	-0.06	101.72	5.18	101.3%	
T5_CTS_RT_003622.LAB	2/15/2023	7:49:44	0.01	0.09	-0.01	-0.05	101.29	5.16	100.9%	
T5_CTS_RT_003623.LAB	2/15/2023	7:49:51	0.01	0.12	0.01	-0.04	101.42	5.15	101.0%	
T5_CTS_RT_003624.LAB	2/15/2023	7:49:59	0.01	0.00	0.00	0.06	101.92	5.17	101.5%	
T5_CTS_RT_003625.LAB	2/15/2023	7:50:06	0.00	0.01	-0.01	0.07	101.22	5.15	100.8%	

Nitrogen (Zero) System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %	Response Time (sec)
T5_N2_RT_003626.LAB	2/15/2023	7:50:31	0.01	-0.05	0.01	0.29	101.32	5.15	100.9%	-
T5_N2_RT_003627.LAB	2/15/2023	7:50:38	0.78	0.03	0.65	0.06	70.19	3.64	69.9%	8
T5_N2_RT_003628.LAB	2/15/2023	7:50:46	0.07	0.01	0.20	0.23	1.87	0.10	1.9%	15
T5_N2_RT_003629.LAB	2/15/2023	7:50:53	0.01	0.11	0.01	-0.03	0.37	-0.01	0.4%	
T5_N2_RT_003630.LAB	2/15/2023	7:51:01	-0.01	-0.06	-0.04	-0.19	0.18	0.00	0.2%	
T5_N2_RT_003631.LAB	2/15/2023	7:51:08	0.00	0.05	-0.02	-0.11	0.03	0.01	0.0%	
T5_N2_RT_003632.LAB	2/15/2023	7:51:16	0.00	0.04	-0.01	0.13	-0.02	0.01	0.0%	
T5_N2_RT_003633.LAB	2/15/2023	7:51:23	-0.01	0.07	-0.02	0.18	-0.06	0.00	-0.1%	
T5_N2_RT_003634.LAB	2/15/2023	7:51:31	0.01	0.02	-0.02	-0.02	0.16	-0.01	0.2%	
T5_N2_RT_003635.LAB	2/15/2023	7:51:38	0.00	-0.04	-0.04	0.11	-0.08	0.00	-0.1%	
T5_N2_RT_003636.LAB	2/15/2023	7:51:46	0.01	-0.02	-0.03	0.10	0.02	0.00	0.0%	
		Average	0.00	0.02	-0.02	0.02	0.07	0.00		

Turbine 5 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_003638.LAB	2/15/2023	7:53:24	5.46	0.41	1.77	0.07	0.15	0.00
T5_003639.LAB	2/15/2023	7:54:24	5.46	0.42	1.60	0.06	0.16	0.00
T5_003640.LAB	2/15/2023	7:55:24	5.46	0.40	1.53	0.10	0.23	0.00
		Average		0.41		0.07		0.00

Turbine 5 Analyte Spike, Using 19.71 ppm Formaldehyde/4.97 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	Formaldehyde Recovery %
T5_HCHO_SPK_003659.LAB	2/15/2023	7:58:13	5.04	0.33	1.45	1.11	0.23	0.39	0.077	85.1%
T5_HCHO_SPK_003660.LAB	2/15/2023	7:58:21	5.05	0.26	1.44	1.37	0.02	0.38	0.076	106.5%
T5_HCHO_SPK_003661.LAB	2/15/2023	7:58:28	5.05	0.30	1.52	1.00	0.00	0.38	0.075	78.7%
T5_HCHO_SPK_003662.LAB	2/15/2023	7:58:36	5.04	0.26	1.46	1.06	0.12	0.39	0.077	80.7%
T5_HCHO_SPK_003663.LAB	2/15/2023	7:58:43	5.05	0.26	1.46	1.10	0.25	0.39	0.078	83.4%
T5_HCHO_SPK_003664.LAB	2/15/2023	7:58:51	5.06	0.35	1.40	1.05	-0.01	0.38	0.076	81.3%
T5_HCHO_SPK_003665.LAB	2/15/2023	7:58:58	5.07	0.31	1.37	1.35	0.11	0.39	0.077	103.7%
T5_HCHO_SPK_003666.LAB	2/15/2023	7:59:06	5.09	0.22	1.41	1.24	0.16	0.39	0.078	94.4%
	Spike Average									89.2%

Turbine 5 Analyte Spike, Using 99.9 ppm HCl/5.00 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	HCl Recovery %
T5_HCL_SPK_003721.LAB	2/15/2023	8:06:22	5.13	7.68	1.26	-0.02	0.18	0.38	0.076	92.7%
T5_HCL_SPK_003722.LAB	2/15/2023	8:06:29	5.12	7.85	1.30	-0.02	0.17	0.39	0.078	92.7%
T5_HCL_SPK_003723.LAB	2/15/2023	8:06:37	5.09	7.74	1.27	0.08	0.07	0.37	0.075	94.9%
T5_HCL_SPK_003724.LAB	2/15/2023	8:06:44	5.08	7.69	1.32	0.12	0.08	0.37	0.074	94.8%
T5_HCL_SPK_003725.LAB	2/15/2023	8:06:52	5.10	7.75	1.31	-0.13	0.23	0.37	0.075	95.1%
T5_HCL_SPK_003726.LAB	2/15/2023	8:06:59	5.10	7.57	1.25	0.06	0.18	0.38	0.076	91.0%
T5_HCL_SPK_003727.LAB	2/15/2023	8:07:07	5.11	7.74	1.29	-0.01	0.17	0.37	0.075	95.1%
T5_HCL_SPK_003728.LAB	2/15/2023	8:07:14	5.07	7.68	1.24	0.03	-0.04	0.37	0.074	95.1%
	Spike Average									93.9%

Turbine 5 Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_003730.LAB	2/15/2023	8:09:46	5.48	0.73	1.30	0.05	0.17	0.00
T5_003731.LAB	2/15/2023	8:10:45	5.49	0.57	1.30	0.00	0.20	0.00
T5_003732.LAB	2/15/2023	8:11:45	5.48	0.53	1.27	0.02	0.19	0.00
	Average				1.29			0.00

Turbine 5 Analyte Spike, Using 111.2 ppm HF/4.999 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Dilution Factor	HF Recovery %
T5_HF_SPK_003825.LAB	2/15/2023	8:23:45	5.15	0.39	6.99	0.03	-0.06	0.31	0.063	91.6%
T5_HF_SPK_003826.LAB	2/15/2023	8:23:53	5.17	0.45	6.99	0.08	0.31	0.32	0.064	90.3%
T5_HF_SPK_003827.LAB	2/15/2023	8:24:00	5.18	0.46	6.94	-0.22	0.04	0.31	0.063	91.0%
T5_HF_SPK_003828.LAB	2/15/2023	8:24:08	5.18	0.48	7.07	0.06	0.17	0.31	0.063	91.9%
T5_HF_SPK_003829.LAB	2/15/2023	8:24:15	5.17	0.34	6.99	0.03	0.15	0.32	0.064	89.5%
T5_HF_SPK_003830.LAB	2/15/2023	8:24:23	5.20	0.42	7.09	-0.08	0.29	0.32	0.065	89.8%
T5_HF_SPK_003831.LAB	2/15/2023	8:24:30	5.20	0.33	7.01	0.18	-0.14	0.31	0.063	91.2%
T5_HF_SPK_003832.LAB	2/15/2023	8:24:38	5.15	0.47	6.98	-0.29	0.16	0.31	0.063	91.3%
	Spike Average									90.8%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T5_CTS_SYS_003933.LAB	2/15/2023	10:06:14	0.03	0.13	-0.03	-0.27	100.95	5.11	100.5%
T5_CTS_SYS_003934.LAB	2/15/2023	10:06:22	0.03	0.18	-0.04	-0.18	100.72	5.10	100.3%
T5_CTS_SYS_003935.LAB	2/15/2023	10:06:29	0.01	0.05	-0.04	-0.18	100.78	5.13	100.3%
T5_CTS_SYS_003936.LAB	2/15/2023	10:06:37	0.01	0.04	-0.07	-0.20	100.75	5.11	100.3%
T5_CTS_SYS_003937.LAB	2/15/2023	10:06:44	0.01	0.06	-0.02	0.03	101.11	5.11	100.7%
T5_CTS_SYS_003938.LAB	2/15/2023	10:06:52	0.00	0.00	-0.09	-0.12	100.30	5.08	99.9%
T5_CTS_SYS_003939.LAB	2/15/2023	10:06:59	0.00	-0.12	-0.04	0.05	101.36	5.11	100.9%
T5_CTS_SYS_003940.LAB	2/15/2023	10:07:07	0.02	-0.01	-0.07	-0.26	101.30	5.12	100.9%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T5_CTS_SYS_004004.LAB	2/15/2023	11:11:04	0.03	0.01	-0.03	-0.03	100.44	5.11	100.0%
T5_CTS_SYS_004005.LAB	2/15/2023	11:11:12	0.02	0.01	-0.05	-0.09	100.68	5.10	100.2%
T5_CTS_SYS_004006.LAB	2/15/2023	11:11:19	0.01	0.10	-0.03	0.12	101.10	5.11	100.7%
T5_CTS_SYS_004007.LAB	2/15/2023	11:11:27	0.00	0.11	-0.06	-0.04	101.45	5.11	101.0%
T5_CTS_SYS_004008.LAB	2/15/2023	11:11:34	0.00	0.01	-0.04	0.06	101.20	5.12	100.8%
T5_CTS_SYS_004009.LAB	2/15/2023	11:11:42	0.01	0.14	-0.09	0.02	100.92	5.10	100.5%
T5_CTS_SYS_004010.LAB	2/15/2023	11:11:49	0.02	0.01	-0.09	-0.19	101.41	5.11	101.0%
T5_CTS_SYS_004011.LAB	2/15/2023	11:11:57	0.02	0.10	-0.04	-0.04	101.24	5.12	100.8%

100.2 ppm Ethylene/5.000 ppm SF6 System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)	Ethylene Recovery %
T5_CTS_SYS_004091.LAB	2/15/2023	12:32:44	0.02	0.16	-0.07	-0.03	101.27	5.12	100.8%
T5_CTS_SYS_004092.LAB	2/15/2023	12:32:52	0.02	0.02	-0.02	0.08	101.09	5.12	100.7%
T5_CTS_SYS_004093.LAB	2/15/2023	12:32:59	0.01	0.11	-0.04	-0.12	100.55	5.10	100.1%
T5_CTS_SYS_004094.LAB	2/15/2023	12:33:07	0.00	0.19	-0.07	-0.26	100.96	5.10	100.5%
T5_CTS_SYS_004095.LAB	2/15/2023	12:33:14	0.01	0.10	-0.07	0.07	101.68	5.14	101.2%
T5_CTS_SYS_004096.LAB	2/15/2023	12:33:22	0.00	0.17	-0.05	0.19	101.28	5.12	100.8%
T5_CTS_SYS_004097.LAB	2/15/2023	12:33:29	0.01	0.16	-0.05	-0.16	101.41	5.13	101.0%
T5_CTS_SYS_004098.LAB	2/15/2023	12:33:37	0.01	0.03	-0.08	-0.17	101.16	5.10	100.7%

Nitrogen (Zero) System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_N2_SYS_004099.LAB	2/15/2023	12:34:13	0.01	-0.02	-0.05	0.20	0.10	0.00
T5_N2_SYS_004100.LAB	2/15/2023	12:34:21	0.01	0.03	-0.05	-0.16	-0.04	0.00
T5_N2_SYS_004101.LAB	2/15/2023	12:34:28	0.00	0.13	-0.05	0.11	0.08	0.00
T5_N2_SYS_004102.LAB	2/15/2023	12:34:36	0.01	0.10	-0.03	-0.01	-0.04	0.00
T5_N2_SYS_004103.LAB	2/15/2023	12:34:43	0.01	0.12	-0.06	0.11	-0.10	-0.01
T5_N2_SYS_004104.LAB	2/15/2023	12:34:50	0.00	0.06	-0.09	-0.21	0.26	0.00
T5_N2_SYS_004105.LAB	2/15/2023	12:34:58	0.00	0.09	-0.08	-0.38	0.02	0.00
T5_N2_SYS_004106.LAB	2/15/2023	12:35:06	0.01	0.02	-0.09	-0.24	0.07	-0.01
		Average	0.01	0.07	-0.06	-0.07	0.04	0.00

Nitrogen (Zero) Direct Purge to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	HF (ppmv wet)	Formaldehyde (ppmv wet)	Ethylene (ppmv wet)	SF6 (ppmv wet)
T5_N2_DIR_004107.LAB	2/15/2023	12:39:31	0.00	0.01	-0.05	0.06	0.03	0.00
T5_N2_DIR_004108.LAB	2/15/2023	12:41:31	0.00	0.03	-0.06	0.03	0.03	0.00
T5_N2_DIR_004109.LAB	2/15/2023	12:43:31	0.00	0.01	-0.06	-0.02	0.01	0.00

APPENDIX

Certificates of Analysis

APEL-RIEMER ENVIRONMENTAL, INC

REFERENCE GASES AND ATMOSPHERIC CHEMISTRY

Certificate of Analysis

Gas-phase Calibration Standard

This gas-phase standard is intended to be used as a reference material for the calibration of instruments.

Statement about preparation and traceability:

Standards are gravimetrically prepared in high-pressure aluminum cylinders (Luxfer, Inc., Riverside, California). Cylinders are cleaned and treated to eliminate contamination and ensure inertness. Standards are prepared in N150 cylinders (~4000 Liters calibration gas), N033 cylinders (~800 Liters calibration gas), or N006 cylinders (~125 Liters calibration gas at a pressure of 2000 psia UHP nitrogen. Valves are high purity stainless steel (Ceodeux, Lintgen, Luxembourg) with a CGA-350 fitting. Pure compounds as liquids and gases are obtained from a number of sources. All lot numbers are cataloged. The gravimetric preparation is performed using calibrated microbalances (Mettler-Toledo, Columbus, Ohio) and microsyringes (Hamilton, Reno, Nevada and SGE, Austin, Texas) for measuring the compounds and cylinder balances (Mettler-Toledo, Columbus, Ohio) for the balance gas. Balances are calibrated with NIST traceable weights.

We prepare each cylinder individually. Accuracy is better than +/- 5%. Analysis confirms the accuracy of the gravimetric preparation. We use a series of NIST, NIST-traceable, NPL, and in-house gravimetric standards to perform the instrument calibrations.

Stability varies depending on the compound, concentration, and cylinder size. Many compounds are stable for several years.

The calibration gas mixture in cylinder CC751990 is certified from the analysis date for 12 months.

Daniel D. Riemer, Ph.D.

May 15, 2022
Date

W002AS-023392-RT-4542   431 of 688

Cylinder: CC751990
Cylinder Date: 10/21
Valve: CGA350 SS 21/153406
Lot No.: 22117.3
Cylinder Pressure: 2000 psia
Analysis Date: May 15, 2022

Multi-component calibration mixture in ultra-pure nitrogen

Compound	CAS#	Concentration (ppm)	Uncertainty
Formaldehyde	50-0-0	19.71	±5%
Sulfur Hexafluoride	2551-62-4	4.97	±2%

Uncertainty is a conservative estimate of the combination of the uncertainties of the gravimetric preparation and analysis.

Formaldehyde Raw Material Lot No. - AA 10136752
Sulfur Hexafluoride Raw Material Lot No. - SQ Q9B-79

CERTIFICATE OF ANALYSIS
Grade of Product: PRIMARY STANDARD

Part Number:	X03NI99P15AC267	Reference Number:	54-401485086-1
Cylinder Number:	CC14351	Cylinder Volume:	144.4 CF
Laboratory:	124 - Chicago (SAP) - IL	Cylinder Pressure:	2015 PSIG
Analysis Date:	May 03, 2019	Valve Outlet:	350
Lot Number:	54-401485086-1		

Expiration Date: May 03, 2027

Primary Standard Gas Mixtures are 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	5.000 PPM	+/- 1%
ETHYLENE	100.0 PPM	100.2 PPM	+/- 1%
NITROGEN	Balance		

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

Customer:	MONTROSE AIR QUALITY SERVICES LLC		
Part Number:	X03NI99C15A05C5	Reference Number:	160-402627146-1
Cylinder Number:	EB0116042	Cylinder Volume:	144.0 CF
Laboratory:	124 - Plumsteadville - PA	Cylinder Pressure:	2016 PSIG
Analysis Date:	Jan 25, 2023	Valve Outlet:	330
Lot Number:	160-402627146-1		

Expiration Date: Jan 25, 2024

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	4.999 PPM	+/- 10%
HYDROGEN FLUORIDE	100.0 PPM	111.2 PPM	+/- 10%
NITROGEN	Balance		

Permanent Notes:-NA-
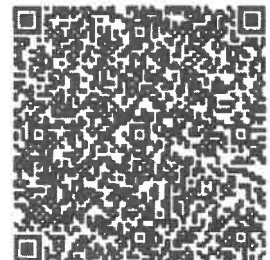
_____
Approved for Release

Airgas.
an Air Liquide company

CERTIFICATE OF ACCURACY: **HCI GMACS** (Gas Manufacturer Alternative Certified Standard)

ASSAY LABORATORY		CUSTOMER INFORMATION
AIRGAS SPECIALTY GASES	Lot No.: 160-402456622-1	Montrose Air Quality Services, LLC
Exploratory Products Group	P.O. No.: 28292	951 N. Old Rand Rd., STE 106
6141 Easton Road		Wauconda, IL 60084
Plumsteadville, PA 18949		USA

PRODUCT INFORMATION

COMPOSITION	CERTIFIED CONCENTRATION		UNCERTAINTY (Abs)		UNCERTAINTY (Rel)	
Hydrogen Chloride	99.9	PPM	2.87	PPM	2.30	%
Sulfur Hexafluoride	5.0	PPM	0.05	PPM	0.96	%
Nitrogen	Bal					

Cylinder Number:	**CC715847**	Certification Date:	**26-Jul-2022**
Cylinder Type:	**30L Aluminum**	Prior Certification Date:	**None**
Cylinder Pressure:	**1900 PSIG**	Expiration Date:	**26-Jul-2024**
Mixture Dew Point:	**N / A**	Part No.:	**EO2NI99T15EC013**

CERTIFICATION DATA

GravStat™ Blending Process

COMPOSITION	MEASURED CONCENTRATION		UNCERTAINTY (Abs)		UNCERTAINTY (Rel)	
Hydrogen Chloride	100.1	PPM	0.867	PPM	0.87	%
Sulfur Hexafluoride	5.03	PPM	0.049	PPM	0.96	%

Confirming Analysis

COMPOSITION	MEASURED CONCENTRATION		UNCERTAINTY (Abs)		UNCERTAINTY (Rel)	
Hydrogen Chloride	99.7	PPM	2.12	PPM	2.13	%

INSTRUMENT MODEL / ANALYTICAL PRINCIPLE
CAI Model 700 FTIR

Reference Standard(s)

Cylinder Number: **GMPS ND65251**

COMPOSITION	CERTIFIED CONCENTRATION		UNCERTAINTY (Abs)		UNCERTAINTY (Rel)		EXPIRES:
Hydrogen Chloride	103.0	PPM	2.11	PPM	2.05	%	11-Feb-2023

Calibration Curve Data:

Curve Order	Correlation	Slope	Intercept
1st Order -	0.9998875	0.996220	0.654920
6 points, with zero			

INTERLOCK STATISTICS

	MEASURED CONCENTRATION		UNCERTAINTY (Abs)		UNCERTAINTY (Rel)	
GravStat Result	100.1	PPM	0.867	PPM	0.87	%
Analysis Result	99.7	PPM	2.12	PPM	2.13	%
Interlock Result	99.9	PPM	2.87	PPM	2.30	%

COMMENTS / SPECIAL INSTRUCTIONS

1. This GMACS was certified according to the EPA approved alternative (Alt-114) found at:
https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NRMRL&dirEntryId=336073
2. Do not use this standard if pressure is less than 200 psig.
3. Do not use or store this product at or below the stated dew point.
4. Replace valve plug when not in use.

APPROVED BY: _____

Appendix A.6
Fuel Analysis Report

MONTROSE
AIR QUALITY SERVICES

Quantum
Analytical Services Inc.

www.quantumairlab.com

1210 E. 223rd Street, Suite #314 · Carson, California 90745 · 310/830-2226 · Fax 310/830-2227

CLIENT:	**Montrose**
CLIENT PROJ NO:	**DTE Sunshine**
LABORATORY NO:	**23-147**
SAMPLING DATE:	02/10/23
RECEIVING DATE:	02/10/23
ANALYSIS DATE:	02/10/23
REPORT DATE:	02/15/23

Laboratory Analysis Report
Analysis Methods: ASTM 1945-03 ; HHV Calculations: ASTM 3588-98

Analyte, Units	Sample ID	Sunshine LFG Inlet Eng 4
	Sampling Date	**02/10/23**
	Lab ID	**04123-17**
	Units	**Mole %**
Methane, %		45.24
Ethane, %		<0.01
Ethylene, %		<0.01
Propane, %		<0.01
Propylene, %		<0.01
i-Butane, %		<0.01
n-Butane, %		<0.01
1-Butene, %		<0.01
i-Butylene, %		<0.01
trans-2-Butene,%		<0.01
cis-2-Butene,%		<0.01
i-Pentane, %		<0.01
n-Pentane, %		<0.01
2,2-Dimethyl Butane, %		<0.01
2,3-Dimethyl Butane, %		<0.01
2-Methyl Pentane, %		<0.01
3-Methyl Pentane, %		<0.01
n-Hexane, %		<0.01
C6+, %		<0.01
CO2, %		34.62
CO, %		<0.01
O2, %		2.69
N2, %		17.41
H2, %		<0.01
H2S, %		<0.01
NH3, %		<0.01
Average Molecular Weight		**28.265**
Total Wt.% Adjusted Sp. Gravity		**0.9759**
Compressibility Factor (14.696 Psi, 60 F)		**0.9978**
NET BTU/Cub. Ft		**413**
GROSS BTU/Cub. Ft		**459**
CHONS		%
Carbon		34.04
Hydrogen		6.47
Oxygen		42.23
Nitrogen		17.26
Sulfur		<0.01
Dry F Factor (60 F, 1 Atm); SDCF/MMBTU, ASTM 3588		9476

Dr. Andrew Kitto
President

Quantum Analytical Services Inc.

www.quantumairlab.com

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CLIENT   **Montrose**
CLIENT PROJ NO: **DTE Sunshine**
LABORATORY NO: **23-147**
SAMPLING DATE: 02/10/23
RECEIVING DATE: 02/10/23
ANALYSIS DATE: 02/10/23
REPORT DATE: 02/15/23

Laboratory Results

Analysis Method	EPA 3C					
Detection Limits	0.10%					
		CH4	CO2	CO	O2	N2
Sample ID	Lab ID No.	%	%	%	%	%
Sunshine LFG Inlet Eng 4	04123-17	45.24	34.62	<0.01	2.7	17.4

Dr. Andrew Kitto
President

Quantum Analytical Services Inc.

www.quantumairlab.com

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CLIENT	**Montrose**
CLIENT PROJ NO:	**DTE Sunshine**
LABORATORY NO:	**23-147**
SAMPLING DATE:	**02/10/23**
RECEIVING DATE:	02/10/23
ANALYSIS DATE:	02/10/23
REPORT DATE:	02/15/23

Standard Verification

EPA 3C - Fixed Gases

Lab ID	Analyte	Theoretical Value Mole %	Tested Value Mole %	% Recovery*
SCOTT STD	CO2	15.00	15.30	102%
SCOTT STD	O2	4.00	3.98	100%
SCOTT STD	N2	69.50	69.86	101%
SCOTT STD	CH4	4.50	4.52	100%
SCOTT STD	CO	7.00	6.93	99%

* Must be ±10%

Dr. Andrew Kitto
President

quantum
Analytical Services Inc.

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23-147

CHAIN OF CUSTODY

Email: andrewkitto.quantum@gmail.com

Page: 1 of: 1

Client: MONTROSE ALS

Project No.: PROJ - 003392

Project Name: DTE SUNSHINE

Contact Person: PETE SAN JUAN

Project Manager: PSANJUAN

tel: 626-617-6313

P.O. Number:

fax:

Turnaround Time:

☐ Same Day
☐ 24 Hours
☐ 48 Hours
☒ Normal

Analysis

ASTM D1945
8286 TO4

Client Sample ID	Tag #	Date	Time	Lab ID Number			Remarks
SUNSHINE LFG INLET ENG 4		2/10/23		04|23-17	X		

Relinquished by: (signature) James Navarro	Date/Time 2-10-23 14:00	Received by: (signature)	Date/time 2/10/23 1400
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time

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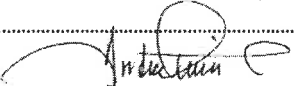
CLIENT:	**Montrose**
CLIENT PROJ NO:	**DTE Sunshine**
LABORATORY NO:	**23-171**
SAMPLING DATE:	02/16/23
RECEIVING DATE:	02/16/23
ANALYSIS DATE:	02/17/23
REPORT DATE:	02/20/23

Laboratory Analysis Report

Analysis Methods: ASTM 1945-03 ; HHV Calculations: ASTM 3588-98

Analyte, Units	Sample ID	Sunshine LFG Inlet Eng 5
	Sampling Date	**02/16/23**
	Lab ID	**04723-8**
	Units	Mole %
Methane, %		44.50
Ethane, %		<0.01
Ethylene, %		<0.01
Propane, %		<0.01
Propylene, %		<0.01
i-Butane, %		<0.01
n-Butane, %		<0.01
1-Butene, %		<0.01
i-Butylene, %		<0.01
trans-2-Butene,%		<0.01
cis-2-Butene,%		<0.01
i-Pentane, %		<0.01
n-Pentane, %		<0.01
2,2-Dimethyl Butane, %		<0.01
2,3-Dimethyl Butane, %		<0.01
2-Methyl Pentane, %		<0.01
3-Methyl Pentane, %		<0.01
n-Hexane, %		<0.01
C6+, %		<0.01
CO2, %		36.06
CO, %		<0.01
O2, %		3.28
N2, %		16.17
H2, %		<0.01
H2S, %		<0.01
NH3, %		<0.01
Average Molecular Weight		**28.585**
Total Wt.% Adjusted Sp. Gravity		**0.9869**
Compressibility Factor (14.696 Psi, 60 F)		**0.9977**
NET BTU/Cub. Ft		**405**
GROSS BTU/Cub. Ft		**449**
CHONS		%
Carbon		33.85
Hydrogen		6.28
Oxygen		44.03
Nitrogen		15.85
Sulfur		<0.01
Dry F Factor (60 F, 1 Atm); SDCF/MMBTU, ASTM 3588		9444

Dr. Andrew Kitto
President

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CLIENT   **Montrose**
CLIENT PROJ NO: **DTE Sunshine**
LABORATORY NO: **23-171**
SAMPLING DATE: 02/16/23
RECEIVING DATE: 02/16/23
ANALYSIS DATE: 02/17/23
REPORT DATE: 02/20/23

Laboratory Results

Analysis Method	EPA 3C					
Detection Limits	0.10%					
		CH4	CO2	CO	O2	N2
Sample ID	Lab ID No.	%	%	%	%	%
Sunshine LFG Inlet Eng 5	04723-8	44.50	36.06	<0.01	3.3	16.2

Dr. Andrew Kitto
President

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CLIENT	**Montrose**
CLIENT PROJ NO:	**DTE Sunshine**
LABORATORY NO:	**23-171**
SAMPLING DATE:	**02/16/23**
RECEIVING DATE:	02/16/23
ANALYSIS DATE:	02/17/23
REPORT DATE:	02/20/23

Standard Verification

EPA 3C - Fixed Gases

Lab ID	Analyte	Theoretical Value Mole %	Tested Value Mole %	% Recovery*
SCOTT STD	CO2	15.00	15.30	102%
SCOTT STD	O2	4.00	3.98	100%
SCOTT STD	N2	69.50	69.86	101%
SCOTT STD	CH4	4.50	4.52	100%
SCOTT STD	CO	7.00	6.93	99%

* Must be ±10%

Dr. Andrew Kitto
President

№ 10305

23-171

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CHAIN OF CUSTODY

Email: andrewkitto.quantum@gmail.com

Page: 1 of: 1

Client: MONTROSE AOS

Contact Person: PETE San Juan

tel: 626 617 2312

fax:

Project No.: Proj - 023392

Project Name: DTE Sunshine

Project Manager: P. San Juan

P.O. Number: _____

Turnaround Time:

- [ ] Same Day
- [ ] 24 Hours
- [ ] 48 Hours
- [X] Normal

Analysis

ASTM D-1745 / DUEL 3586

Client Sample ID	Tag #	Date	Time	Lab ID Number		Remarks
Sunshine LPG Inlet ENG 5		2/6/23		04723-8	X	

Relinquished by: (signature) James Navarrete	Date/Time 2-6-23 / 11:25	Received by: (signature)	Date/time 2/6/23 11:26
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time

Appendix A.7
Quality Assurance Data

MONTROSE
AIR QUALITY SERVICES

SPAN GAS RECORD AND SCAQMD CALIBRATION ERROR/LINEARITY

CLIENT/LOCATION: Sunshine Gas CT 4   DATE: 2/7/23
TRUCK/CEM I.D.: Trailer 2   BY: PSJ

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	CC241060	0.0			
O₂	Mid	CC106542	10.13	5/19/30	F22022	50.7%
O₂	High	CC258464	19.31	4/5/30	F22022	96.6%
CO₂	Mid	CC106542	4.92	5/19/30	F22022	49.2%
CO₂	High	CC258464	9.66	4/5/30	F22022	96.6%
CO	Mid	CC205667	4.680	6/2/30	F22022	46.8%
CO	High	CC181175	9.650	5/6/30	F22022	96.5%

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O₂	CO₂	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.03	-0.02	-0.10		--
Error (% of scale)	-0.1%	-0.2%	-1.0%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.29	9.64	9.64		--
Error (% of scale)	-0.1%	-0.3%	-0.1%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.12	4.90	4.66		--
Error (% of scale)	0.0%	-0.2%	-0.2%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O₂	CO₂	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.01	-0.02	-0.04		--
Error (% of scale)	-0.1%	-0.2%	-0.4%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.33	9.71	9.57		--
Error (% of scale)	0.1%	0.5%	-0.9%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.14	4.98	4.64		--
Error (% of scale)	0.1%	0.6%	-0.4%		PASS

SPAN GAS RECORD AND EPA CALIBRATION ERROR

CLIENT/LOCATION: Sunshine Gas CT 4　　　　　　DATE: 2/7/23
TRUCK/CEM I.D.: Trailer 2　　　　　　　　　　BY: PSJ

	Gas	Cylinder Number	Value	Exp. Date	Vendor ID	% of Cal Span
ZERO	Low	CC241060	0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	52.5%
O_2	High	CC258464	19.31	4/5/30	F22022	
CO_2	Mid	CC106542	4.92	5/19/30	F22022	50.9%
CO_2	High	CC258464	9.66	4/5/30	F22022	
CO	Mid	CC205667	4.68	6/2/30	F22022	48.5%
CO	High	CC181175	9.65	5/6/30	F22022	

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Calibration Span	19.31	9.66	4.68		
Zero Gas Value	0.0	0.0	0.0		
Analyzer Reads	-0.03	-0.02	-0.10		
Difference (% or ppm)	0.0	0.0	-0.1		
Error (% of Cal. Span)	-0.1%	-0.2%	-2.1%		
Status[1]	PASS	PASS	PASS		
High Gas Value	19.31	9.66	9.650		
Analyzer Reads	19.29	9.64	9.64		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.1%	-0.3%	-0.3%		
Status[1]	PASS	PASS	PASS		
Mid Gas Value	10.13	4.92	4.68		
Analyzer Reads	10.12	4.90	4.66		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	0.0%	-0.2%	-0.3%		
Status[1]	PASS	PASS	PASS		

1) Calibration Error must be within +/- 2.0% of the Calibration Span; alternatively the results are acceptable if the difference is less than or equal to 0.5 ppm.

SPAN GAS RECORD AND SCAQMD CALIBRATION ERROR/LINEARITY

CLIENT/LOCATION: Sunshine Gas CT 4   DATE: 2/8/23
TRUCK/CEM I.D.: Trailer 2   BY: PSJ

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	CC241060	0.0			
O$_2$	Mid	CC106542	10.13	5/19/30	F22022	50.7%
O$_2$	High	CC258464	19.31	4/5/30	F22022	96.6%
CO$_2$	Mid	CC106542	4.92	5/19/30	F22022	49.2%
CO$_2$	High	CC258464	9.66	4/5/30	F22022	96.6%
CO	Mid	CC205667	4.680	6/2/30	F22022	46.8%
CO	High	CC181175	9.650	5/6/30	F22022	96.5%

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O$_2$	CO$_2$	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.01	-0.02	-0.02		--
Error (% of scale)	-0.1%	-0.2%	-0.2%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.28	9.63	9.66		--
Error (% of scale)	-0.1%	-0.3%	0.1%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.22	4.90	4.72		--
Error (% of scale)	0.4%	-0.2%	0.4%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O$_2$	CO$_2$	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.01	-0.02	-0.08		--
Error (% of scale)	0.0%	-0.2%	-0.8%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.28	9.62	9.58		--
Error (% of scale)	-0.1%	-0.4%	-0.7%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.13	4.89	4.65		--
Error (% of scale)	0.0%	-0.3%	-0.3%		PASS

SPAN GAS RECORD AND EPA CALIBRATION ERROR

CLIENT/LOCATION: Sunshine Gas CT 4　　　　　DATE: 2/8/23

TRUCK/CEM I.D.: Trailer 2　　　　　BY: PSJ

	Gas	Cylinder Number	Value	Exp. Date	Vendor ID	% of Cal Span
ZERO	Low	CC241060	0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	52.5%
O_2	High	CC258464	19.31	4/5/30	F22022	
CO_2	Mid	CC106542	4.92	5/19/30	F22022	50.9%
CO_2	High	CC258464	9.66	4/5/30	F22022	
CO	Mid	CC205667	4.68	6/2/30	F22022	48.5%
CO	High	CC181175	9.65	5/6/30	F22022	

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Calibration Span	19.31	9.66	4.68		
Zero Gas Value	0.0	0.0	0.0		
Analyzer Reads	-0.01	-0.02	-0.02		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.1%	-0.2%	-0.5%		
Status[1]	PASS	PASS	PASS		
High Gas Value	19.31	9.66	9.650		
Analyzer Reads	19.28	9.63	9.66		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.1%	-0.3%	0.3%		
Status[1]	PASS	PASS	PASS		
Mid Gas Value	10.13	4.92	4.68		
Analyzer Reads	10.22	4.90	4.72		
Difference (% or ppm)	0.1	0.0	0.0		
Error (% of Cal. Span)	0.5%	-0.2%	0.7%		
Status[1]	PASS	PASS	PASS		

1) Calibration Error must be within +/- 2.0% of the Calibration Span; alternatively the results are acceptable if the difference is less than or equal to 0.5 ppm.

SPAN GAS RECORD AND SCAQMD CALIBRATION ERROR/LINEARITY

MON AIR QUALI

CLIENT/LOCATION: Sunshine Gas CT 4   DATE: 2/9/23
TRUCK/CEM I.D.: Trailer 2   BY: PSJ

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	CC241060	0.0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	50.7%
O_2	High	CC258464	19.31	4/5/30	F22022	96.6%
CO_2	Mid	CC106542	4.92	5/19/30	F22022	49.2%
CO_2	High	CC258464	9.66	4/5/30	F22022	96.6%
CO	Mid	CC205667	4.680	6/2/30	F22022	46.8%
CO	High	CC181175	9.650	5/6/30	F22022	96.5%

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	0.00	-0.07	-0.08		--
Error (% of scale)	0.0%	-0.7%	-0.8%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.31	9.69	9.62		--
Error (% of scale)	0.0%	0.3%	-0.3%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.13	4.93	4.63		--
Error (% of scale)	0.0%	0.1%	-0.5%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.04	-0.01	-0.04		--
Error (% of scale)	-0.2%	-0.1%	-0.4%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.30	9.63	9.64		--
Error (% of scale)	0.0%	-0.3%	-0.1%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.10	4.92	4.70		--
Error (% of scale)	-0.2%	0.0%	0.2%		PASS

SPAN GAS RECORD AND EPA CALIBRATION ERROR

CLIENT/LOCATION: Sunshine Gas CT 4   DATE: 2/9/23

TRUCK/CEM I.D.: Trailer 2   BY: PSJ

	Gas	Cylinder Number	Value	Exp. Date	Vendor ID	% of Cal Span
ZERO	Low	CC241060	0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	52.5%
O_2	High	CC258464	19.31	4/5/30	F22022	
CO_2	Mid	CC106542	4.92	5/19/30	F22022	50.9%
CO_2	High	CC258464	9.66	4/5/30	F22022	
CO	Mid	CC205667	4.68	6/2/30	F22022	48.5%
CO	High	CC181175	9.65	5/6/30	F22022	

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Calibration Span	19.31	9.66	4.68		
Zero Gas Value	0.0	0.0	0.0		
Analyzer Reads	0.00	-0.07	-0.08		
Difference (% or ppm)	0.0	-0.1	-0.1		
Error (% of Cal. Span)	0.0%	-0.7%	-1.8%		
Status[1]	PASS	PASS	PASS		
High Gas Value	19.31	9.66	9.650		
Analyzer Reads	19.31	9.69	9.62		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	0.0%	0.3%	-0.7%		
Status[1]	PASS	PASS	PASS		
Mid Gas Value	10.13	4.92	4.68		
Analyzer Reads	10.13	4.93	4.63		
Difference (% or ppm)	0.0	0.0	-0.1		
Error (% of Cal. Span)	0.0%	0.1%	-1.2%		
Status[1]	PASS	PASS	PASS		

1) Calibration Error must be within +/- 2.0% of the Calibration Span; alternatively the results are acceptable if the difference is less than or equal to 0.5 ppm.

SPAN GAS RECORD AND SCAQMD CALIBRATION ERROR/LINEARITY

CLIENT/LOCATION: Sunshine Gas CT 4   DATE: 2/10/23
TRUCK/CEM I.D.: Trailer 2   BY: PSJ

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	CC241060	0.0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	50.7%
O_2	High	CC258464	19.31	4/5/30	F22022	96.6%
CO_2	Mid	CC106542	4.92	5/19/30	F22022	49.2%
CO_2	High	CC258464	9.66	4/5/30	F22022	96.6%
CO	Mid	CC205667	4.680	6/2/30	F22022	46.8%
CO	High	CC181175	9.650	5/6/30	F22022	96.5%

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.03	-0.04	-0.07		--
Error (% of scale)	-0.2%	-0.4%	-0.7%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.29	9.63	9.67		--
Error (% of scale)	-0.1%	-0.3%	0.1%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.11	4.91	4.62		--
Error (% of scale)	-0.1%	-0.1%	-0.6%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.01	-0.07	0.00		--
Error (% of scale)	0.0%	-0.7%	0.0%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.32	9.66	9.64		--
Error (% of scale)	0.1%	0.0%	-0.1%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.15	5.00	4.68		--
Error (% of scale)	0.1%	0.8%	0.0%		PASS

SPAN GAS RECORD AND EPA CALIBRATION ERROR

CLIENT/LOCATION: Sunshine Gas CT 4   DATE: 2/10/23
TRUCK/CEM I.D.: Trailer 2   BY: PSJ

	Gas	Cylinder Number	Value	Exp. Date	Vendor ID	% of Cal Span
ZERO	Low	CC241060	0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	52.5%
O_2	High	CC258464	19.31	4/5/30	F22022	
CO_2	Mid	CC106542	4.92	5/19/30	F22022	50.9%
CO_2	High	CC258464	9.66	4/5/30	F22022	
CO	Mid	CC205667	4.68	6/2/30	F22022	48.5%
CO	High	CC181175	9.65	5/6/30	F22022	

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Calibration Span	19.31	9.66	4.68		
Zero Gas Value	0.0	0.0	0.0		
Analyzer Reads	-0.03	-0.04	-0.07		
Difference (% or ppm)	0.0	0.0	-0.1		
Error (% of Cal. Span)	-0.2%	-0.4%	-1.4%		
Status[1]	PASS	PASS	PASS		
High Gas Value	19.31	9.66	9.650		
Analyzer Reads	19.29	9.63	9.67		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.1%	-0.3%	0.3%		
Status[1]	PASS	PASS	PASS		
Mid Gas Value	10.13	4.92	4.68		
Analyzer Reads	10.11	4.91	4.62		
Difference (% or ppm)	0.0	0.0	-0.1		
Error (% of Cal. Span)	-0.1%	-0.1%	-1.2%		
Status[1]	PASS	PASS	PASS		

1) Calibration Error must be within +/- 2.0% of the Calibration Span; alternatively the results are acceptable if the difference is less than or equal to 0.5 ppm.

SPAN GAS RECORD AND SCAQMD CALIBRATION ERROR/LINEARITY

CLIENT/LOCATION: Sunshine Gas CT 5　　　　　DATE: 2/14/23
TRUCK/CEM I.D.: Trailer 2　　　　　　　　　　BY: PSJ

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	CC241060	0.0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	50.7%
O_2	High	CC258464	19.31	4/5/30	F22022	96.6%
CO_2	Mid	CC106542	4.92	5/19/30	F22022	49.2%
CO_2	High	CC258464	9.66	4/5/30	F22022	96.6%
CO	Mid	CC205667	4.680	6/2/30	F22022	46.8%
CO	High	CC181175	9.650	5/6/30	F22022	96.5%

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.03	-0.03	0.04		--
Error (% of scale)	-0.1%	-0.3%	0.4%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.28	9.63	9.65		--
Error (% of scale)	-0.1%	-0.3%	0.0%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.08	4.90	4.63		--
Error (% of scale)	-0.3%	-0.2%	-0.5%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.04	-0.01	0.01		--
Error (% of scale)	-0.2%	-0.1%	0.1%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.27	9.66	9.65		--
Error (% of scale)	-0.2%	0.0%	0.0%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.11	4.90	4.61		--
Error (% of scale)	-0.1%	-0.2%	-0.7%		PASS

SPAN GAS RECORD AND EPA CALIBRATION ERROR

CLIENT/LOCATION: Sunshine Gas CT 5 DATE: 2/14/23
TRUCK/CEM I.D.: Trailer 2 BY: PSJ

	Gas	Cylinder Number	Value	Exp. Date	Vendor ID	% of Cal Span
ZERO	Low	CC241060	0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	52.5%
O_2	High	CC258464	19.31	4/5/30	F22022	
CO_2	Mid	CC106542	4.92	5/19/30	F22022	50.9%
CO_2	High	CC258464	9.66	4/5/30	F22022	
CO	Mid	CC205667	4.68	6/2/30	F22022	48.5%
CO	High	CC181175	9.65	5/6/30	F22022	

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Calibration Span	19.31	9.66	4.68		
Zero Gas Value	0.0	0.0	0.0		
Analyzer Reads	-0.03	-0.03	0.04		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.1%	-0.3%	0.9%		
Status[1]	PASS	PASS	PASS		
High Gas Value	19.31	9.66	9.650		
Analyzer Reads	19.28	9.63	9.65		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.2%	-0.3%	0.0%		
Status[1]	PASS	PASS	PASS		
Mid Gas Value	10.13	4.92	4.68		
Analyzer Reads	10.08	4.90	4.63		
Difference (% or ppm)	-0.1	0.0	-0.1		
Error (% of Cal. Span)	-0.3%	-0.2%	-1.1%		
Status[1]	PASS	PASS	PASS		

1) Calibration Error must be within +/- 2.0% of the Calibration Span; alternatively the results are acceptable if the difference is less than or equal to 0.5 ppm.

SPAN GAS RECORD AND SCAQMD CALIBRATION ERROR/LINEARITY

CLIENT/LOCATION: Sunshine Gas CT 5　　　　　　　　　DATE: 2/15/23
TRUCK/CEM I.D.: Trailer 2　　　　　　　　　　　　　　BY: PSJ

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	CC241060	0.0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	50.7%
O_2	High	CC258464	19.31	4/5/30	F22022	96.6%
CO_2	Mid	CC106542	4.92	5/19/30	F22022	49.2%
CO_2	High	CC258464	9.66	4/5/30	F22022	96.6%
CO	Mid	CC205667	4.680	6/2/30	F22022	46.8%
CO	High	CC181175	9.650	5/6/30	F22022	96.5%

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.03	-0.04	-0.06		--
Error (% of scale)	-0.1%	-0.4%	-0.6%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.28	9.62	9.62		--
Error (% of scale)	-0.1%	-0.4%	-0.3%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.10	4.97	4.66		--
Error (% of scale)	-0.1%	0.5%	-0.2%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.03	0.07	-0.01		--
Error (% of scale)	-0.1%	0.7%	-0.1%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.28	9.65	9.66		--
Error (% of scale)	-0.1%	-0.1%	0.0%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.10	4.98	4.58		--
Error (% of scale)	-0.2%	0.6%	-1.0%		PASS

SPAN GAS RECORD AND EPA CALIBRATION ERROR

CLIENT/LOCATION: Sunshine Gas CT 5　　　　　DATE: 2/15/23
TRUCK/CEM I.D.: Trailer 2　　　　　　　　　　BY: PSJ

	Gas	Cylinder Number	Value	Exp. Date	Vendor ID	% of Cal Span
ZERO	Low	CC241060	0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	52.5%
O_2	High	CC258464	19.31	4/5/30	F22022	
CO_2	Mid	CC106542	4.92	5/19/30	F22022	50.9%
CO_2	High	CC258464	9.66	4/5/30	F22022	
CO	Mid	CC205667	4.68	6/2/30	F22022	48.5%
CO	High	CC181175	9.65	5/6/30	F22022	

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Calibration Span	19.31	9.66	4.68		
Zero Gas Value	0.0	0.0	0.0		
Analyzer Reads	-0.03	-0.04	-0.06		
Difference (% or ppm)	0.0	0.0	-0.1		
Error (% of Cal. Span)	-0.1%	-0.4%	-1.3%		
Status[1]	PASS	PASS	PASS		
High Gas Value	19.31	9.66	9.650		
Analyzer Reads	19.28	9.62	9.62		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.1%	-0.5%	-0.6%		
Status[1]	PASS	PASS	PASS		
Mid Gas Value	10.13	4.92	4.68		
Analyzer Reads	10.10	4.97	4.66		
Difference (% or ppm)	0.0	0.1	0.0		
Error (% of Cal. Span)	-0.1%	0.5%	-0.5%		
Status[1]	PASS	PASS	PASS		

1) Calibration Error must be within +/- 2.0% of the Calibration Span; alternatively the results are acceptable if the difference is less than or equal to 0.5 ppm.

SPAN GAS RECORD AND SCAQMD CALIBRATION ERROR/LINEARITY

CLIENT/LOCATION: Sunshine Gas CT 5   DATE: 2/16/23

TRUCK/CEM I.D.: Trailer 2   BY: PSJ

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	CC241060	0.0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	50.7%
O_2	High	CC258464	19.31	4/5/30	F22022	96.6%
CO_2	Mid	CC106542	4.92	5/19/30	F22022	49.2%
CO_2	High	CC258464	9.66	4/5/30	F22022	96.6%
CO	Mid	CC205667	4.680	6/2/30	F22022	46.8%
CO	High	CC181175	9.650	5/6/30	F22022	96.5%

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.03	-0.04	-0.03		--
Error (% of scale)	-0.2%	-0.4%	-0.3%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.29	9.63	9.60		--
Error (% of scale)	-0.1%	-0.3%	-0.5%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.10	4.91	4.61		--
Error (% of scale)	-0.1%	-0.1%	-0.7%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.04	-0.04	0.07		--
Error (% of scale)	-0.2%	-0.4%	0.7%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.28	9.64	9.62		--
Error (% of scale)	-0.1%	-0.2%	-0.3%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.11	4.90	4.69		--
Error (% of scale)	-0.1%	-0.3%	0.1%		PASS

SPAN GAS RECORD AND EPA CALIBRATION ERROR

CLIENT/LOCATION: Sunshine Gas CT 5   DATE: 2/16/23
TRUCK/CEM I.D.: Trailer 2   BY: PSJ

	Gas	Cylinder Number	Value	Exp. Date	Vendor ID	% of Cal Span
ZERO	Low	CC241060	0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	52.5%
O_2	High	CC258464	19.31	4/5/30	F22022	
CO_2	Mid	CC106542	4.92	5/19/30	F22022	50.9%
CO_2	High	CC258464	9.66	4/5/30	F22022	
CO	Mid	CC205667	4.68	6/2/30	F22022	48.5%
CO	High	CC181175	9.65	5/6/30	F22022	

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Calibration Span	19.31	9.66	4.68		
Zero Gas Value	0.0	0.0	0.0		
Analyzer Reads	-0.03	-0.04	-0.03		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.2%	-0.4%	-0.7%		
Status[1]	PASS	PASS	PASS		
High Gas Value	19.31	9.66	9.650		
Analyzer Reads	19.29	9.63	9.60		
Difference (% or ppm)	0.0	0.0	-0.1		
Error (% of Cal. Span)	-0.1%	-0.3%	-1.1%		
Status[1]	PASS	PASS	PASS		
Mid Gas Value	10.13	4.92	4.68		
Analyzer Reads	10.10	4.91	4.61		
Difference (% or ppm)	0.0	0.0	-0.1		
Error (% of Cal. Span)	-0.1%	-0.1%	-1.5%		
Status[1]	PASS	PASS	PASS		

1) Calibration Error must be within +/- 2.0% of the Calibration Span; alternatively the results are acceptable if the difference is less than or equal to 0.5 ppm.

SPAN GAS RECORD AND SCAQMD CALIBRATION ERROR/LINEARITY

CLIENT/LOCATION: Sunshine Gas CT 5   DATE: 2/17/23

TRUCK/CEM I.D.: Trailer 2   BY: PSJ

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	CC241060	0.0			
O$_2$	Mid	CC106542	10.13	5/19/30	F22022	50.7%
O$_2$	High	CC258464	19.31	4/5/30	F22022	96.6%
CO$_2$	Mid	CC106542	4.92	5/19/30	F22022	49.2%
CO$_2$	High	CC258464	9.66	4/5/30	F22022	96.6%
CO	Mid	CC205667	4.680	6/2/30	F22022	46.8%
CO	High	CC181175	9.650	5/6/30	F22022	96.5%

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O$_2$	CO$_2$	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.03	-0.02	-0.03		--
Error (% of scale)	-0.2%	-0.2%	-0.3%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.28	9.63	9.60		--
Error (% of scale)	-0.2%	-0.3%	-0.5%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.10	4.91	4.59		--
Error (% of scale)	-0.1%	-0.1%	-0.9%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				STATUS
	O$_2$	CO$_2$	CO		
Analyzer Range	20	10	10		
Zero Gas Value	0.0	0.0	0.0		--
Analyzer Reads	-0.03	-0.02	-0.03		--
Error (% of scale)	-0.2%	-0.2%	-0.3%		PASS
High Gas Value	19.31	9.66	9.65		--
Analyzer Reads	19.28	9.63	9.65		--
Error (% of scale)	-0.2%	-0.3%	0.0%		PASS
Mid Gas Value	10.13	4.92	4.68		--
Analyzer Reads	10.10	4.90	4.63		--
Error (% of scale)	-0.2%	-0.2%	-0.5%		PASS

SPAN GAS RECORD AND EPA CALIBRATION ERROR

MONTROSE

CLIENT/LOCATION: Sunshine Gas CT 5 DATE: 2/17/23
TRUCK/CEM I.D.: Trailer 2 BY: PSJ

	Gas	Cylinder Number	Value	Exp. Date	Vendor ID	% of Cal Span
ZERO	Low	CC241060	0			
O_2	Mid	CC106542	10.13	5/19/30	F22022	52.5%
O_2	High	CC258464	19.31	4/5/30	F22022	
CO_2	Mid	CC106542	4.92	5/19/30	F22022	50.9%
CO_2	High	CC258464	9.66	4/5/30	F22022	
CO	Mid	CC205667	4.68	6/2/30	F22022	48.5%
CO	High	CC181175	9.65	5/6/30	F22022	

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER				
	O_2	CO_2	CO		
Analyzer Range	20	10	10		
Calibration Span	19.31	9.66	4.68		
Zero Gas Value	0.0	0.0	0.0		
Analyzer Reads	-0.03	-0.02	-0.03		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.2%	-0.2%	-0.7%		
Status[1]	PASS	PASS	PASS		
High Gas Value	19.31	9.66	9.650		
Analyzer Reads	19.28	9.63	9.60		
Difference (% or ppm)	0.0	0.0	0.0		
Error (% of Cal. Span)	-0.2%	-0.3%	-1.0%		
Status[1]	PASS	PASS	PASS		
Mid Gas Value	10.13	4.92	4.68		
Analyzer Reads	10.10	4.91	4.59		
Difference (% or ppm)	0.0	0.0	-0.1		
Error (% of Cal. Span)	-0.1%	-0.1%	-1.9%		
Status[1]	PASS	PASS	PASS		

1) Calibration Error must be within +/- 2.0% of the Calibration Span; alternatively the results are acceptable if the difference is less than or equal to 0.5 ppm.

Linde
Making our world more productive

M MONTROSE

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705

Linde Order Number: **72116641**
Customer PO Number: **80120587**

Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles, CA 90058
Tel: 323-585-2154
Fax: 714-542-6689

Certificate Issuance Date: **7/12/2022**

Certification Date: **7/12/2022**
Lot Number: **N70086217204**
Part Number: **NI 5.5CE-AS**
DocNumber: **559820**

CERTIFICATE OF ANALYSIS
Nitrogen, 5.5 Continuous Emission Monitoring Zero

(handwritten: N₂ CC241060 A.D. 7/5/22)

Analytes	Specification	Analytical Results	Analytical Reference	Analytical Uncertainty
Nitrogen	≥ 99.9995 %	≥ 99.9995 %	5	N/A
Carbon Dioxide	≤ 1 ppm	≤ 0.5 ppm	3	± 10%
Carbon Monoxide	≤ 0.5 ppm	≤ 0.5 ppm	3	± 15%
Total Hydrocarbons	≤ 0.1 ppm	≤ 0.1 ppm	6	± 15%
Oxides of Nitrogen	≤ 0.1 ppm	≤ 0.1 ppm	7	± 15%
Oxygen	≤ 0.5 ppm	≤ 0.5 ppm	2	± 15%
Sulfur Dioxide	≤ 0.1 ppm	≤ 0.1 ppm	1	± 15%
Water	≤ 2 ppm	≤ 1.0 ppm	4	± 10%

Cylinder Style: **AS**   Fill Date: **6/21/2022**   Filling Method: **Pressure/Temperature**
Cylinder Pressure @ 70 F: **2000 psig**   Analysis Date: **7/5/2022**
Cylinder Volume: **142 ft3**
Valve Outlet Connection: **CGA 580**

Cylinder Number(s): **CC79327, CC243496, CC320298, CC39253, DT0025644, CC241060, DT0036679, CC165749, SA3614, CC332474, CC323960CC113610, DT0040987CC78171, CC198351, DT0028851, CC265793, DT0025628**

Analyzed Cylinder Number(s): **CC79327**

Analyst: **Amalia Real**

Approved Signer: **Ying Yu**

Key to Analytical Techniques:

Reference	Analytical Instrument - Analytical Principle
1	Ametek 921CE S/N AW-921-S321 - UV Spectrometry
2	Delta F DF-550 Nanotrace - Electrolytic Cell/Electrochemical
3	Horiba Instruments Inc. GA-360E - NDIR
4	Meeco Aquavolt PLUS - Specific Water Analyzer
5	N/A - By Difference of Typical Impurities
6	Rosemount/Beckman 400A - FID Total Hydrocarbon Analyzer
7	Thermo Electron 42i-LS S/N 1030645077 - Chemiluminescence

(handwritten: LU 7-20-22)

This analysis of the product described herein was prepared by Linde Gas & Equipment Inc. using instruments whose calibration is certified using Linde Gas & Equipment Inc. Reference Materials which are traceable to the International System of Units (SI) through either weights traceable to the National Institute of Standards and Technology (NIST) or Measurement Canada, or through NIST Standard Reference Materials or equivalent where available.

Note: All expressions for concentration (a.g. % or ppm) are for gas phase, by mole unless otherwise noted. Analytical uncertainty is expressed as a Relative % unless otherwise noted.

IMPORTANT
The information contained herein has been prepared at your request by personnel within Linde Gas & Equipment Inc. While we believe the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall liability of Linde Gas & Equipment Inc. arising out of the use of the information contained herein exceed the fee established for providing such information.

DocNumber: 475059

Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

MONTROSE AIR QUALITY SERVICES
1631 E ST ANDREWS PLACE
SANTA ANA CA 92705

Certificate Issuance Date: 05/23/2022
Linde Order Number: 68405833
Part Number: EV NICDOXE78-AS
Customer PO Number: LUIS OLIVARES

Fill Date: 05/10/2022
Lot Number: 70086213002
Cylinder Style & Outlet: AS   CGA 590
Cylinder Pressure and Volume: 2000 psig   140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	05/19/2030	NIST Traceable
Cylinder Number:	CC106542	Expanded Uncertainty
4.92 %	Carbon dioxide	± 0.02 %
10.13 %	Oxygen	± 0.05 %
Balance	Nitrogen	

Certification Information:

Certification Date: 05/19/2022   Term: 96 Months   Expiration Date: 05/19/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

CO_2 responses have been corrected for Oxygen IR Broadening effect. O_2 responses have been corrected for CO_2 interference.

Analytical Data: (R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component: Carbon dioxide

Requested Concentration: 5 %
Certified Concentration: 4.92 %
Instrument Used: Horiba VIA-510 S/N 20C194WK
Analytical Method: NDIR
Last Multipoint Calibration: 04/21/2022

Reference Standard: Type / Cylinder #: GMIS / CC256638
Concentration / Uncertainty: 6.99 % ±0.02 %
Expiration Date: 05/24/2027
Traceable to: SRM # / Sample # / Cylinder #: SRM 1674b / 7-H-07 / FF10631
SRM Concentration / Uncertainty: 6.944% / ±0.013%
SRM Expiration Date: 06/17/2019

First Analysis Data:						Date	05/19/2022
Z:	0	R:	6.99	C:	4.92	Conc:	4.92
R:	6.99	Z:	0	C:	4.92	Conc:	4.92
Z:	0	C:	4.92	R:	6.99	Conc:	4.92
UOM:	%				Mean Test Assay:	4.92	%

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	%				Mean Test Assay:		%

2. Component: Oxygen

Requested Concentration: 10 %
Certified Concentration: 10.13 %
Instrument Used: Siemens Oxymat 6E S/N 7MB20211AA000CA1
Analytical Method: Paramagnetic
Last Multipoint Calibration: 05/09/2022

Reference Standard: Type / Cylinder #: NTRM / DT0010262
Concentration / Uncertainty: 9.875 % ±0.040 %
Expiration Date: 11/18/2022
Traceable to: SRM # / Sample # / Cylinder #: NTRM / 170701 / DT0010262
SRM Concentration / Uncertainty: 9.875% / ±0.040%
SRM Expiration Date: 11/18/2022

First Analysis Data:						Date	05/19/2022
Z:	0	R:	9.875	C:	10.14	Conc:	10.14
R:	9.879	Z:	0	C:	10.12	Conc:	10.12
Z:	0	C:	10.12	R:	9.869	Conc:	10.12
UOM:	%				Mean Test Assay:	10.13	%

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	%				Mean Test Assay:		%

Analyzed By   Courtney Zielke

Certified By   Ying Yu

O2% 10.13
CO2% 4.92
CC106542
EXP 5-19-30
F22022

AS 6-3-22

Linde Gas & Equipment Inc.
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Fax: 714-542-6689
PGVP ID: F22022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Cu:

MONTROSE
AIR QUALITY SERVICES

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705

Certificate Issuance Date: 04/06/2022
Linde Order Number: 59924698
Part Number: NI CD9.5O3E-AS
Customer PO Number: LUIS OLIVARES

Fill Date: 04/01/2022
Lot Number: 70086209103
Cylinder Style & Outlet: AS   CGA 590
Cylinder Pressure and Volume: 2000 psig   140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	04/05/2030	NIST Traceable
Cylinder Number:	CC258464	Expanded Uncertainty
9.66 %	Carbon dioxide	± 0.05 %
19.31 %	Oxygen	± 0.03 %
Balance	Nitrogen	

Certification Information:

Certification Date: 04/05/2022   Term: 96 Months   Expiration Date: 04/05/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

CO2 responses have been corrected for Oxygen IR Broadening effect. O2 responses have been corrected for CO2 interference.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. **Component:** Carbon dioxide

Requested Concentration: 9.5 %
Certified Concentration: 9.66 %
Instrument Used: Horiba VIA-510 S/N 20C194WK
Analytical Method: NDIR
Last Multipoint Calibration: 03/21/2022

Reference Standard: Type / Cylinder #: GMIS / CC176580
Concentration / Uncertainty: 14.26 % ±0.03 %
Expiration Date: 01/21/2030
Traceable to: SRM # / Sample # / Cylinder #: NTRM / N/A / CC726055
SRM Concentration / Uncertainty: 19.34% / ±0.03%
SRM Expiration Date: 01/12/2027

First Analysis Data:						Date	04/05/2022
Z:	0	R:	14.26	C:	9.66	Conc:	9.66
R:	14.26	Z:	0	C:	9.66	Conc:	9.66
Z:	0	C:	9.67	R:	14.27	Conc:	9.67
UOM:	%				Mean Test Assay:	9.66	%

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	%				Mean Test Assay:		%

2. **Component:** Oxygen

Requested Concentration: 19 %
Certified Concentration: 19.31 %
Instrument Used: Siemens Oxymat 6E S/N 7M820211AA000CA1
Analytical Method: Paramagnetic
Last Multipoint Calibration: 03/11/2022

Reference Standard: Type / Cylinder #: GMIS / ND29287
Concentration / Uncertainty: 20.90 % ±0.02 %
Expiration Date: 09/01/2028
Traceable to: SRM # / Sample # / Cylinder #: SRM 2659a / 71-E-19 / FF22331
SRM Concentration / Uncertainty: 20.863% / ±0.021%
SRM Expiration Date: 08/23/2021

First Analysis Data:						Date	04/05/2022
Z:	0	R:	20.9	C:	19.31	Conc:	19.31
R:	20.9	Z:	0	C:	19.32	Conc:	19.32
Z:	0	C:	19.32	R:	20.91	Conc:	19.32
UOM:	%				Mean Test Assay:	19.31	%

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	%				Mean Test Assay:		%

Analyzed By   Jose Vasquez

Certified By   Amalia Real

O₂ 19.31
CO₂ 9.66
CC258464
Exp 4-5-30
AS 4-22-22
F22022

Making our world more productive

DocNumber: 476135

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

MONTROSE AIR QUALITY SERVICES
1631 E ST ANDREWS PLACE
SANTA ANA CA 92705

Certificate Issuance Date: 06/03/2022
Linde Order Number: 69438296
Part Number: NI CO4.7ME-AS
Customer PO Number: LUIS OLIVARES

Fill Date: 05/09/2022
Lot Number: 70086212908
Cylinder Style & Outlet: AS   CGA 350
Cylinder Pressure and Volume: 2000 psig   140 ft3

Certified Concentration | ProSpec EZ Cert

Expiration Date:	06/02/2030	NIST Traceable
Cylinder Number:	CC205667	Expanded Uncertainty
4.68 ppm	Carbon monoxide	± 0.08 ppm
Balance	Nitrogen	

Certification Information:

Certification Date: 06/02/2022   Term: 96 Months   Expiration Date: 06/02/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. **Component:** Carbon monoxide

Requested Concentration: 4.7 ppm
Certified Concentration: 4.68 ppm
Instrument Used: Horiba VIA-510 S/N 43627990042
Analytical Method: NDIR
Last Multipoint Calibration: 05/27/2022

Reference Standard: Type / Cylinder #: GMIS / CC707397
Concentration / Uncertainty: 9.897 ppm ±0.048 ppm
Expiration Date: 09/05/2026
Traceable to: SRM # / Sample # / Cylinder #: SRM 1677c / 5-J-42 / CAL015337
SRM Concentration / Uncertainty: 9.825 PPM / ±0.047 PPM
SRM Expiration Date: 06/24/2024

First Analysis Data:

								Date	06/02/2022
Z:	1.1	R:	99.8	C:	47.6	Conc:	4.62		
R:	99.1	Z:	2.4	C:	48.4	Conc:	4.71		
Z:	1.5	C:	48.5	R:	101	Conc:	4.72		
UOM:	mV					Mean Test Assay:	4.68	ppm	

Second Analysis Data:

								Date	
Z:	0	R:	0	C:	0	Conc:	0		
R:	0	Z:	0	C:	0	Conc:	0		
Z:	0	C:	0	R:	0	Conc:	0		
UOM:	mV					Mean Test Assay:		ppm	

Analyzed By   Courtney Zielke

Certified By   Nelson Ma

handwritten:
CO 4.68
CC205667
EXP 6-2-30
F22022

AS 6-15-22

Linde *Making our world more productive*

DocNumber: 464049

Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

MONTROSE AIR QUALITY SERVICES
1631 E ST ANDREWS PLACE
SANTA ANA CA 92705

Certificate Issuance Date: 05/06/2022
Linde Order Number: 71995830
Part Number: NI CO9.5ME-AS
Customer PO Number: 79998098

Fill Date: 04/15/2022
Lot Number: 70086210505
Cylinder Style & Outlet: AS   CGA 350
Cylinder Pressure and Volume: 2000 psig   140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	05/06/2030	NIST Traceable
Cylinder Number:	CC181175	Expanded Uncertainty
9.65 ppm	Carbon monoxide	± 0.07 ppm
Balance	Nitrogen	

Certification Information:

Certification Date: 05/06/2022   Term: 96 Months   Expiration Date: 05/06/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. **Component:** Carbon monoxide

Requested Concentration: 9.5 ppm
Certified Concentration: 9.65 ppm
Instrument Used: Horiba VIA-510 S/N 43627990042
Analytical Method: NDIR
Last Multipoint Calibration: 04/26/2022

Reference Standard: Type / Cylinder #: GMIS / CC707397
Concentration / Uncertainty: 9.897 ppm ±0.048 ppm
Expiration Date: 09/05/2026
Traceable to: SRM # / Sample # / Cylinder #: SRM 1677c / 5-J-42 / CAL015337
SRM Concentration / Uncertainty: 9.825 PPM / ±0.047 PPM
SRM Expiration Date: 06/24/2024

First Analysis Data: Date 05/06/2022

Z:	6	R:	104.1	C:	101	Conc:	9.63
R:	103.2	Z:	6.2	C:	101.2	Conc:	9.65
Z:	5.9	C:	101.4	R:	103.5	Conc:	9.67
UOM:	ppm				Mean Test Assay:	9.65	ppm

Second Analysis Data: Date

Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	ppm				Mean Test Assay:		ppm

Analyzed By   Courtney Zielke

Certified By   Jose Vasquez

Handwritten: CO 9.65   CC 181175   EXP 5-6-30   F22022

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\42-WCS\2022\[42WCS Semi Annual Cal 9-23-2022.xls]WCS
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

Model #:	522-D Source Sampler
ID #:	42-WCS
Date:	9/23/2022
Bar. Pressure:	29.84 (in. Hg)
Performed By:	L.Olivares
Reviewed By:	M.Chowsanitphon

DRY GAS METER READINGS / CRITICAL ORIFICE READINGS

dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temp. Initial (deg F)	Ambient Temp. Final (deg F)	Ambient Temp. Average (deg F)
0.14	26.00	50.000	55.585	5.585		74.0		74.0	14742-33	0.1635	19.0	73.0	73.0	73.0
0.14	26.00	55.585	61.160	5.575		74.0		74.0	14742-33	0.1635	19.0	73.0	73.0	73.0
0.14	26.00	61.160	66.740	5.580		74.0		75.0	14742-33	0.1635	19.0	73.0	74.0	73.5
0.63	12.00	33.000	38.520	5.520		74.0		74.0	PK-48	0.3491	18.0	73.0	73.0	73.0
0.63	12.00	38.520	44.050	5.530		74.0		75.0	PK-48	0.3491	18.0	73.0	72.0	72.5
0.63	12.00	44.050	49.580	5.530		75.0		76.0	PK-48	0.3491	18.0	72.0	73.0	72.5
1.90	7.00	16.000	21.325	5.325		73.0		74.0	PK-63	0.5729	17.0	72.0	73.0	72.5
1.90	7.00	21.325	26.655	5.330		74.0		75.0	PK-63	0.5729	17.0	73.0	72.0	72.5
1.90	7.00	26.655	31.985	5.330		75.0		76.0	PK-63	0.5729	17.0	72.0	72.0	72.0
3.40	5.00	0.000	5.245	5.245		71.0		72.0	PK-73	0.7978	16.0	72.0	72.0	72.0
3.40	5.00	5.245	10.485	5.240		72.0		75.0	PK-73	0.7978	16.0	72.0	72.0	72.0
3.40	5.00	10.485	15.720	5.235		75.0		75.0	PK-73	0.7978	16.0	72.0	72.0	72.0

DRY GAS METER / ORIFICE / CALIBRATION FACTORS

DGM Vm(std) (cu ft)	DGM Vm(std) (liters)	ORIFICE Vcr(std) (cu ft)	ORIFICE Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y Value (number)	dH@ Value (in H2O)	Individual Run 0.95<Y<1.05?	Individual Orifice Ymax-Ymin <0.010?	Orifice Average 0.98<Y/Yd <1.02?	Orifice Average dH@-dH@av <0.155?
5.507	156.0	5.494	155.6	5.564	0.998	1.739	Pass			
5.497	155.7	5.494	155.6	5.564	0.999	1.739	Pass			
5.497	155.7	5.492	155.5	5.566	0.999	1.739	Pass			
				Average	0.999	1.739		Pass	Pass	Pass
5.450	154.3	5.415	153.3	5.483	0.994	1.716	Pass			
5.454	154.5	5.417	153.4	5.480	0.993	1.713	Pass			
5.444	154.2	5.417	153.4	5.480	0.995	1.710	Pass			
				Average	0.994	1.713		Pass	Pass	Pass
5.279	149.5	5.186	146.9	5.246	0.982	1.922	Pass			
5.274	149.3	5.186	146.9	5.246	0.983	1.918	Pass			
5.264	149.1	5.188	146.9	5.244	0.986	1.913	Pass			
				Average	0.984	1.918		Pass	Pass	Pass
5.238	148.3	5.161	146.2	5.216	0.985	1.779	Pass			
5.213	147.6	5.161	146.2	5.216	0.990	1.772	Pass			
5.194	147.1	5.161	146.2	5.216	0.994	1.767	Pass			
				Average	0.990	1.773		Pass	Pass	Pass

Average Yd: 0.992   dH@: 1.786

dH@: 0.992   Q @ dH = 1: 0.561

SIGNED: Signature on File

Date: 9/23/2022

Note: Control box not equipped with meter inlet temperature reading.

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename:
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

Model #: C-5000 (SN 2578)
ID #: 45-WCS
Date: 12/6/2022
Bar. Pressure: 29.90 (in. Hg)
Performed By: L.Olivares
Reviewed By: M.Chowsanitphon

DRY GAS METER READINGS / CRITICAL ORIFICE READINGS

dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temp. Initial (deg F)	Ambient Temp. Final (deg F)	Ambient Temp. Average (deg F)
0.14	26.00	396.200	401.655	5.455		69.0		69.0	14742-33	0.1635	17.0	63.0	66.0	64.5
0.14	26.00	401.655	407.110	5.455		69.0		70.0	14742-33	0.1635	17.0	66.0	67.0	66.5
0.14	26.00	407.110	412.565	5.455		70.0		71.0	14742-33	0.1635	17.0	67.0	67.0	67.0
0.65	12.00	376.400	381.780	5.380		67.0		68.0	PK-48	0.3491	17.0	64.0	63.0	63.5
0.65	12.00	381.780	387.155	5.375		68.0		68.0	PK-48	0.3491	17.0	63.0	66.0	64.5
0.65	12.00	387.155	392.540	5.385		68.0		68.0	PK-48	0.3491	17.0	66.0	64.0	65.0
1.80	7.00	360.100	365.250	5.150		67.0		67.0	PK-63	0.5729	16.0	65.0	64.0	64.5
1.80	7.00	365.250	370.400	5.150		67.0		67.0	PK-63	0.5729	16.0	64.0	65.0	64.5
1.80	7.00	370.400	375.550	5.150		67.0		67.0	PK-63	0.5729	16.0	65.0	65.0	65.0
3.60	5.00	343.300	348.410	5.110		67.0		67.0	PK-73	0.7978	15.0	65.0	63.0	64.0
3.60	5.00	348.410	353.525	5.115		67.0		67.0	PK-73	0.7978	15.0	63.0	63.0	63.0
3.60	5.00	353.525	358.625	5.100		67.0		67.0	PK-73	0.7978	15.0	63.0	64.0	63.5

DRY GAS METER / ORIFICE

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	DRY GAS METER CALIBRATION FACTOR Y Value (number)	ORIFICE CALIBRATION FACTOR dH@ Value (in H2O)	Individual Run 0.95 < Y < 1.05?	Individual Orifice Ymax - Ymin < 0.010?	Orifice Average 0.98 < Y/Yd < 1.02?	Orifice Average dH@ - dH@ av < 0.155?
5.441	154.1	5.550	157.2	5.519	1.020	1.724	Pass			
5.436	153.9	5.539	156.9	5.530	1.019	1.729	Pass			
5.425	153.6	5.537	156.8	5.532	1.021	1.727	Pass			
Average					1.020	1.727		Pass	Pass	Pass
5.388	152.6	5.474	155.0	5.434	1.016	1.757	Pass			
5.378	152.3	5.469	154.9	5.439	1.017	1.759	Pass			
5.388	152.6	5.467	154.8	5.441	1.015	1.761	Pass			
Average					1.016	1.759		Pass	Pass	Pass
5.177	146.6	5.236	148.3	5.207	1.011	1.812	Pass			
5.177	146.6	5.236	148.3	5.207	1.011	1.812	Pass			
5.177	146.6	5.233	148.2	5.209	1.011	1.814	Pass			
Average					1.011	1.813		Pass	Pass	Pass
5.160	146.1	5.210	147.6	5.176	1.010	1.867	Pass			
5.165	146.3	5.215	147.7	5.171	1.010	1.863	Pass			
5.149	145.8	5.213	147.6	5.174	1.012	1.865	Pass			
Average					1.011	1.865		Pass	Pass	Pass

Average Yd: 1.014   dH@: 1.791

Q @ dH = 1: 0.560

SIGNED: Signature on File

Date: 12/6/2022

Note: Control box not equipped with meter inlet temperature reading.

Alternative Method 5 Post-Test Calibration (ALT-009)

Client name								DTE Sunshine
Source Name								CT4
Date	2/7/2023	2/8/2023	2/8/2023	2/9/2023	2/9/2023	2/10/2023	2/10/2023	
Y (dry gas meter calibration value), dimensionless	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992
Y_{qa} (dry gas meter calibration check value), dimensionless	0.988	0.986	1.002	0.981	0.998	1.008	1.028	0.999
Reference temperature, °F	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0
• (total run time), min	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00
V_m (meter box volume), acf	199.991	198.273	196.276	201.295	199.297	194.565	192.868	197.51
T_m (average dry gas meter temperature), °F	84.5	76.6	91.5	84.8	91.5	74.4	86.3	84.2
P_b (barometric pressure), in. Hg	28.36	28.34	28.34	28.32	28.32	28.26	28.26	28.31
$0.0319 = (29.92/(460+Tref))*(0.75*0.75)$, in. Hg/°R * cfm2	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319
• ΔH_{avg} (average orifice meter differential), in. H_2O	2.013	2.000	1.967	2.004	2.008	2.013	2.013	2.002
• H@ (orifice meter calibration coefficient), in. H_2O	1.786	1.786	1.786	1.786	1.786	1.786	1.786	1.786
M_d (dry molecular weight of stack gas), lb/lb-mole	29.35	29.36	29.36	29.34	29.33	29.36	29.37	29.35
29 (dry molecular weight of air), lb/lb-mole	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00
13.6 (specific gravity of mercury)	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60
							Criteria	Result
Calibration check, % difference:							< 5	0.7

Alternative Method 29 Post-Test Calibration (ALT-009)

Client name								DTE Sunshine
Source Name								CT4
Date	2/7/2023	2/8/2023	2/8/2023	2/9/2023	2/9/2023	2/10/2023	2/10/2023	
Y (dry gas meter calibration value), dimensionless	1.014	1.014	1.014	1.014	1.014	1.014	1.014	1.014
Y_{qa} (dry gas meter calibration check value), dimensionless	1.028	1.026	1.015	1.010	1.029	1.062	1.060	1.033
Reference temperature, °F	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0
• (total run time), min	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00
V_m (meter box volume), acf	189.103	189.463	193.355	193.079	191.724	183.187	184.559	189.21
T_m (average dry gas meter temperature), °F	80.4	76.9	90.8	82.4	90.0	77.3	86.6	83.5
P_b (barometric pressure), in. Hg	28.36	28.34	28.34	28.32	28.32	28.26	28.26	28.31
$0.0319 = (29.92/(460+Tref))*(0.75*0.75)$, in. Hg/°R * cfm2	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319
• ΔH_{avg} (average orifice meter differential), in. H_2O	1.967	1.979	1.967	1.971	1.988	1.975	1.967	1.973
• H@ (orifice meter calibration coefficient), in. H_2O	1.791	1.791	1.791	1.791	1.791	1.791	1.791	1.791
M_d (dry molecular weight of stack gas), lb/lb-mole	29.35	29.36	29.36	29.34	29.33	29.36	29.37	29.35
29 (dry molecular weight of air), lb/lb-mole	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00
13.6 (specific gravity of mercury)	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60

	Criteria	Result
Calibration check, % difference:	**< 5**	**1.9**

Alternative Method 5 Post-Test Calibration (ALT-009)

Client name								DTE Sunshine
Source Name								CT5
Date	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/16/2023	2/16/2023	2/17/2023	
Y (dry gas meter calibration value), dimensionless	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992
Y_{qa} (dry gas meter calibration check value), dimensionless	1.029	1.016	1.004	1.013	1.011	1.016	1.007	1.014
Reference temperature, °F	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0
• (total run time), min	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00
V_m (meter box volume), acf	189.534	192.261	190.825	191.308	189.553	190.937	191.228	190.81
T_m (average dry gas meter temperature), °F	68.6	76.1	57.9	72.7	61.7	76.0	68.3	68.8
P_b (barometric pressure), in. Hg	27.98	27.98	28.15	28.15	28.33	28.33	28.14	28.15
$0.0319 = (29.92/(460+Tref))*(0.75*0.75)$, in. Hg/°R * cfm2	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319
• ΔH_{avg} (average orifice meter differential), in. H_2O	1.992	1.971	1.971	1.963	1.971	1.967	1.954	1.970
• H@ (orifice meter calibration coefficient), in. H_2O	1.786	1.786	1.786	1.786	1.786	1.786	1.786	1.786
M_d (dry molecular weight of stack gas), lb/lb-mole	29.33	29.32	29.32	29.31	29.32	29.31	29.33	29.32
29 (dry molecular weight of air), lb/lb-mole	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00
13.6 (specific gravity of mercury)	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60

	Criteria	Result
Calibration check, % difference:	< 5	2.2

Alternative Method 29 Post-Test Calibration (ALT-009)

Client name								DTE Sunshine
Source Name								CT5
Date	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/16/2023	2/16/2023	2/17/2023	
Y (dry gas meter calibration value), dimensionless	1.014	1.014	1.014	1.014	1.014	1.014	1.014	1.014
Y_{qa} (dry gas meter calibration check value), dimensionless	1.059	1.081	1.057	1.064	1.045	1.069	1.059	1.062
Reference temperature, °F	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0
• (total run time), min	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00
V_m (meter box volume), acf	182.643	181.832	183.055	183.156	183.107	182.271	183.135	182.74
T_m (average dry gas meter temperature), °F	63.2	73.4	58.8	70.5	60.8	76.8	70.7	67.7
P_b (barometric pressure), in. Hg	27.98	27.98	28.15	28.15	28.33	28.33	28.14	28.15
$0.0319 = (29.92/(460+Tref))*(0.75*0.75)$, in. Hg/°R * cfm2	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319	0.0319
• ΔH_{avg} (average orifice meter differential), in. H_2O	1.983	2.008	2.013	1.996	1.975	1.988	1.979	1.992
• H@ (orifice meter calibration coefficient), in. H_2O	1.791	1.791	1.791	1.791	1.791	1.791	1.791	1.791
M_d (dry molecular weight of stack gas), lb/lb-mole	29.33	29.32	29.32	29.31	29.32	29.31	29.33	29.32
29 (dry molecular weight of air), lb/lb-mole	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00
13.6 (specific gravity of mercury)	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60

	Criteria	Result
Calibration check, % difference:	< 5	4.7

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 42-WCS
Readout Description: Control Box
Date: 1/3/2023
Performed By: LO, RMo, DA

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. **TC-CAL**	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	42-WCS	363	363	364	363	361	361	361	361	2.3	0.3%	Pass
T2 (Boiling H$_2$O)	42-WCS	213	213	212	213	212	212	212	212	0.7	0.1%	Pass
T1 (Ice/Water)	42-WCS	35	34	34	34	32	32	32	32	2.3	0.5%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	651	651	651	651	650	650	650	650	1.0	0.1%	Pass
T3 (~370 F)	129103	363	363	363	363	370	370	370	370	7.0	0.8%	Pass
T2 (~212 F)	129103	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (~32 F)	129103	34	34	34	34	32	32	32	32	2.0	0.4%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 45-WCS
Readout Description: Control box
Date: 1/3/2023
Performed By: LO, RMo, DA

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. TC-CAL	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	45-WCS	362	362	362	362	361	361	361	361	1.0	0.1%	Pass
T2 (Boiling H$_2$O)	45-WCS	217	217	217	217	212	212	212	212	5.0	0.7%	Pass
T1 (Ice/Water)	45-WCS	38	38	38	38	32	32	32	32	6.0	1.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	655	655	655	655	650	650	650	650	5.0	0.5%	Pass
T3 (~370 F)	129103	373	373	373	373	370	370	370	370	3.0	0.4%	Pass
T2 (~212 F)	129103	215	215	215	215	212	212	212	212	3.0	0.4%	Pass
T1 (~32 F)	129103	34	34	34	34	32	32	32	32	2.0	0.4%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 6
Date: 1/4/2023
Performed By: LO, RMo, DA

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 6	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-80	360	363	366	363	365	365	365	365	2.0	0.2%	Pass
T2 (Boiling H$_2$O)	PTC-80	207	210	211	209	212	212	212	212	2.7	0.4%	Pass
T1 (Ice/Water)	PTC-80	37	37	37	37	32	32	32	32	5.0	1.0%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

THERMOCOUPLE CALIBRATION

Thermocouple ID: 7
Date: 1/4/2023
Performed By: LO, RMo, DA

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 7	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-80	362	361	361	361	365	365	365	365	3.7	0.4%	Pass
T2 (Boiling H$_2$O)	PTC-80	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	PTC-80	34	34	34	34	32	32	32	32	2.0	0.4%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 170
Date: 1/5/2023
Performed By: LO, RMo, DA

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. **170**	Readout I.D.	T/C - Readout $^{\circ}$F				Reference Thermometer $^{\circ}$F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	$^{\circ}$F	%, ($^{\circ}$R)	
T3 (OIL)	PTC-80	366	366	366	366	365	365	365	365	1.0	0.1%	Pass
T2 (Boiling H_2O)	PTC-80	212	212	211	212	212	212	212	212	0.3	0.0%	Pass
T1 (Ice/Water)	PTC-80	36	35	35	35	32	32	32	32	3.3	0.7%	Pass

1) Difference % ($^{\circ}$R) = Difference ($^{\circ}$F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% ($^{\circ}$R)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 172
Date: 1/5/2023
Performed By: LO, RMo, DA

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 172	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-80	364	365	366	365	365	365	365	365	0.0	0.0%	Pass
T2 (Boiling H$_2$O)	PTC-80	210	211	211	211	212	212	212	212	1.3	0.2%	Pass
T1 (Ice/Water)	PTC-80	35	35	34	35	32	32	32	32	2.7	0.5%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 75
Date: 1/4/2023
Performed By: LO, RMo, DA

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 75	Readout I.D.	T/C - Readout $^{\circ}$F				Reference Thermometer $^{\circ}$F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	$^{\circ}$F	%, ($^{\circ}$R)	
T3 (OIL)	PTC-80	366	368	368	367	365	365	365	365	2.3	0.3%	Pass
T2 (Boiling H_2O)	PTC-80	216	216	216	216	212	212	212	212	4.0	0.6%	Pass
T1 (Ice/Water)	PTC-80	35	33	32	33	32	32	32	32	1.3	0.3%	Pass

1) Difference % ($^{\circ}$R) = Difference ($^{\circ}$F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% ($^{\circ}$R)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 6
Date: 3/23/2023
Performed By: LO

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 6	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-80	356	356	356	356	360	360	360	360	4.0	0.5%	Pass
T2 (Boiling H$_2$O)	PTC-80	210	210	209	210	212	212	212	212	2.3	0.3%	Pass
T1 (Ice/Water)	PTC-80	31	31	31	31	32	32	32	32	1.0	0.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 7
Date: 3/23/2023
Performed By: LO

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 7	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-80	357	357	357	357	360	360	360	360	3.0	0.4%	Pass
T2 (Boiling H_2O)	PTC-80	211	211	210	211	212	212	212	212	1.3	0.2%	Pass
T1 (Ice/Water)	PTC-80	31	31	31	31	32	32	32	32	1.0	0.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 75
Date: 3/23/2023
Performed By: LO

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 75	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-80	357	357	358	357	360	360	360	360	2.7	0.3%	Pass
T2 (Boiling H$_2$O)	PTC-80	209	209	210	209	212	212	212	212	2.7	0.4%	Pass
T1 (Ice/Water)	PTC-80	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 170
Date: 3/23/2023
Performed By: LO

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. **170**	Readout I.D.	T/C - Readout ^oF				Reference Thermometer ^oF				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	^oF	%, (^oR)	
T3 (OIL)	PTC-80	362	362	362	362	360	360	360	360	2.0	0.2%	Pass
T2 (Boiling H_2O)	PTC-80	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (Ice/Water)	PTC-80	33	33	32	33	32	32	32	32	0.7	0.1%	Pass

1) Difference % (^oR) = Difference (^oF) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (^oR)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 172
Date: 3/23/2023
Performed By: LO

Calibrated Digital Temperature Readout ID: PTC-80
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 172	Readout I.D.	T/C - Readout ^{o}F				Reference Thermometer ^{o}F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	^{o}F	%, (^{o}R)	
T3 (OIL)	PTC-80	364	364	364	364	360	360	360	360	4.0	0.5%	Pass
T2 (Boiling H_2O)	PTC-80	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	PTC-80	34	33	33	33	32	32	32	32	1.3	0.3%	Pass

1) Difference % (^{o}R) = Difference (^{o}F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (^{o}R)

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 42-WCS
Readout Description: Control Box
Date: 3/23/2023
Performed By: LO

Calibrated Thermocouple ID: 7
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 7	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	42-WCS	358	358	358	358	360	360	360	360	2.0	0.2%	Pass
T2 (Boiling H$_2$O)	42-WCS	210	211	211	211	212	212	212	212	1.3	0.2%	Pass
T1 (Ice/Water)	42-WCS	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	649	649	649	649	650	650	650	650	1.0	0.1%	Pass
T3 (~370 F)	129103	368	369	369	369	370	370	370	370	1.3	0.2%	Pass
T2 (~212 F)	129103	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (~32 F)	129103	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

MONTROSE

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 45-WCS
Readout Description: Control Box
Date: 3/23/2023
Performed By: LO

Calibrated Thermocouple ID: 7
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 805002770

T/C I.D. 7	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	45-WCS	360	360	360	360	360	360	360	360	0.0	0.0%	Pass
T2 (Boiling H$_2$O)	45-WCS	211	211	211	211	212	212	212	212	1.0	0.1%	Pass
T1 (Ice/Water)	45-WCS	32	32	31	32	32	32	32	32	0.3	0.1%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	648	648	648	648	650	650	650	650	2.0	0.2%	Pass
T3 (~370 F)	129103	367	367	367	367	370	370	370	370	3.0	0.4%	Pass
T2 (~212 F)	129103	210	210	210	210	212	212	212	212	2.0	0.3%	Pass
T1 (~32 F)	129103	31	31	31	31	32	32	32	32	1.0	0.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)

MONTROSE
AIR QUALITY SERVICES

S Type Pitot Tube Dimensional Calibration Record

Side View

End View

Top View

Acceptability Criteria			z < 1/8"	w < 1/32"	Yes	"3/16" < Dt < 3/8"	n/a	n/a	n/a	n/a	n/a	n/a	10 degrees	5 degrees	1.05 Dt < P < 1.5 Dt	
Pitot ID	Date	Calibrated By	Side View, Impact openings Properly aligned, z < 1/8"	Side View, Impact openings Properly aligned, w < 1/32"	Pa = Pb	Tubing Diameter, dt	M1	M2	M3	M4	M5	M6	Average Face Opening Plane Angle, offset from perpendicular to transverse axis	Average Face Opening Plane Frontal Angle from parallel to Longitudinal Axis	Ratio of P/Dt	Status
075	1/3/23	N.G.	Y	Y	Y	0.375	0.933	0.933	0.945	0.937	0.411	0.400	0.0	0.6	1.2	Pass

Notes: Reference "A Type-S Pitot Tube Calibration Study", Robert F. Vollaro, October 15, 1975
If tube is not visibly deformed it is assumed that Pa = Pb = .5 x avg. of M1 & M2, and that average face opening plane angles represent individual angles to tube axis

MONTROSE AIR QUALITY SERVICES

S Type Pitot Tube Dimensional Calibration Record

Side View

End View

Top View

			Acceptability Criteria													
			z < 1/8"	w < 1/32"	Yes	"3/16" < Dt < 3/8"	n/a	n/a	n/a	n/a	n/a	n/a	10 degrees	5 degrees	1.05 Dt < P < 1.5 Dt	
Pitot ID	Date	Calibrated By	Side View, Impact openings Properly aligned, z < 1/8"	Side View, Impact openings Properly aligned, w < 1/32"	$Pa = Pb$	Tubing Diameter, dt	M1	M2	M3	M4	M5	M6	Average Face Opening Plane Angle, offset from perpendicular to transverse axis	Average Face Opening Plane Frontal Angle from parallel to Longitudinal Axis	Ratio of P/Dt	Status
006	1/3/23	N.G.	Y	Y	Y	0.375	0.944	0.947	0.949	0.946	0.365	0.355	-0.2	0.2	1.3	Pass
007	1/3/23	N.G.	Y	Y	Y	0.375	0.929	0.930	0.936	0.936	0.369	0.370	-0.1	0.0	1.2	Pass

Notes: Reference "A Type-S Pitot Tube Calibration Study", Robert F. Vollaro, October 15, 1975

If tube is not visibly deformed it is assumed that Pa = Pb = .5 x avg. of M1 & M2, and that average face opening plane angles represent individual angles to tube axis

MONTROSE
AIR QUALITY SERVICES

S Type Pitot Tube Dimensional Calibration Record

Side View

End View

Top View

Acceptability Criteria		z < 1/8"	w < 1/32"	Yes	"3/16" < Dt < 3/8"	n/a	n/a	n/a	n/a	n/a	n/a	10 degrees	5 degrees	1.05 Dt < P < 1.5 Dt	
Pitot ID	Date	Calibrated By	Side View, Impact openings Properly aligned, z < 1/8"	Side View, Impact openings Properly aligned, w < 1/32"	Pa = Pb	Tubing Diameter, dt	M1	M2	M3	M4	M5	M6	Average Face Opening Plane Angle, offset from perpendicular to transverse axis	Average Face Opening Plane Frontal Angle from parallel to Longitudinal Axis	Ratio of P/Dt	Status
170	1/3/23	N.G.	Y	Y	Y	0.370	0.880	0.881	0.880	0.888	0.419	0.409	-0.1	-0.6	1.2	Pass
172	1/3/23	N.G.	Y	Y	Y	0.375	0.816	0.809	0.812	0.806	0.434	0.426	0.5	0.4	1.1	Pass

Notes: Reference "A Type-S Pitot Tube Calibration Study", Robert F. Vollaro, October 15, 1975

If tube is not visibly deformed it is assumed that Pa = Pb = .5 x avg. of M1 & M2, and that average face opening plane angles represent individual angles to tube axis

FACILITY: _SUNSHINE_
SOURCE TESTED: _TURBIN/COGEN_ 4 to 5
CALIBRATED BY: _oo_
DATE: _2/6/23_
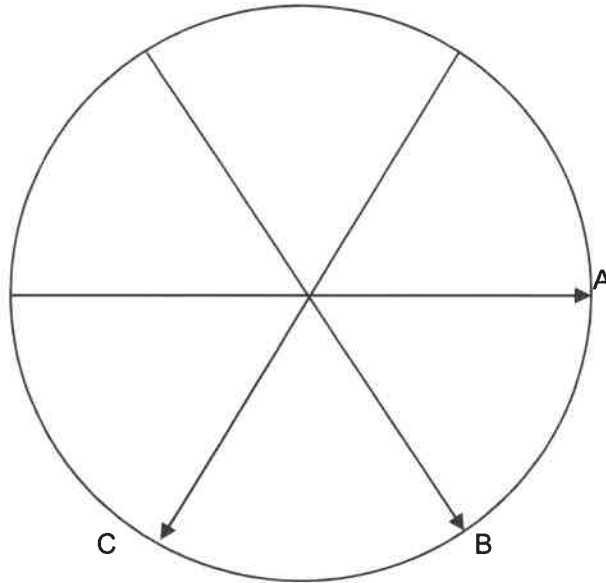
NOZZLE ID	READING (INCHES)			AVG DIA.
	A	B	C	
NG-15	0.254	0.254	0.254	0.254

Calibrated by: _[signature]_

Measuring Device Used : Mitutoyo Digital Calipers
Serial Number : 0247955
Model Number : CD-6" CS
Resolution : 0.01mm or 0.0005"/0.01mm
Accuracy : ±0.02mm or ± 0.001"/±0.02mm

FACILITY: SUNSHINE
SOURCE TESTED: TURBINE/COGEN 4&5
CALIBRATED BY: Barton
DATE: 2/6/23
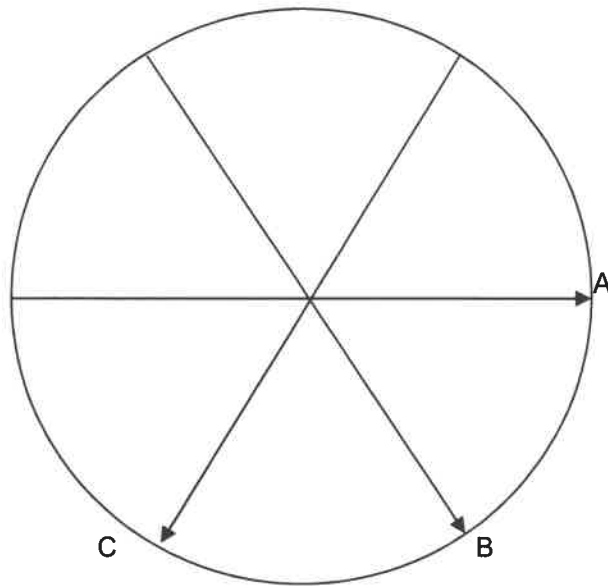
NOZZLE ID	READING (INCHES)			AVG DIA.
	A	B	C	
296	0.254	0.255	0.254	0.254

Calibrated by: _____

Measuring Device Used : Mitutoyo Digital Calipers
Serial Number : 0247955
Model Number : CD-6" CS
Resolution : 0.01mm or 0.0005"/0.01mm
Accuracy : ±0.02mm or ± 0.001"/±0.02mm

FACILITY: Sunshine
SOURCE TESTED: Turbine Cooler YES
CALIBRATED BY: Sav
DATE: 2/6/22

NOZZLE ID	READING (INCHES)			AVG DIA.
	A	B	C	
NG2-2	0.258	0.257	0.257	0.257

Calibrated by: _____

Measuring Device Used : Mitutoyo Digital Calipers
Serial Number : 0247955
Model Number : CD-6" CS
Resolution : 0.01mm or 0.0005"/0.01mm
Accuracy : ±0.02mm or ± 0.001"/±0.02mm

FACILITY: SUNSHINE
SOURCE TESTED: TURBINE COOLER 4 E 5
CALIBRATED BY: Sunshine
DATE: 2/6/23

NOZZLE ID	READING (INCHES)			AVG DIA.
	A	B	C	
266	0.257	0.257	0.257	0.257

Calibrated by: _PS_

Measuring Device Used : Mitutoyo Digital Calipers
Serial Number : 0247955
Model Number : CD-6" CS
Resolution : 0.01mm or 0.0005"/0.01mm
Accuracy : ±0.02mm or ± 0.001"/±0.02mm

APPENDIX B
PLANT DATA

MONTROSE
AIR QUALITY SERVICES

Appendix B.1
CT-4 Data

MONTROSE
AIR QUALITY SERVICES

CeDAR 1-Minute Data

Sunshine Gas Producers, LLC

Data for 2/7/2023 8:00 AM thru 2/7/2023 6:00 PM

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 8:00	104388.0	47.90	4.2	1199.8
2/7 8:01	105141.0	48.23	4.2	1200.0
2/7 8:02	103899.0	47.65	4.2	1200.0
2/7 8:03	104771.0	48.05	4.2	1200.0
2/7 8:04	106331.0	48.79	4.2	1200.2
2/7 8:05	105420.0	48.36	4.2	1200.0
2/7 8:06	105163.0	48.26	4.2	1199.8
2/7 8:07	107116.0	49.16	4.2	1199.8
2/7 8:08	105750.0	48.53	4.2	1200.0
2/7 8:09	105054.0	48.21	4.2	1200.2
2/7 8:10	103899.0	47.71	4.2	1200.2
2/7 8:11	107030.0	49.23	4.2	1200.0
2/7 8:12	104601.0	48.12	4.2	1199.8
2/7 8:13	105332.0	48.42	4.2	1200.0
2/7 8:14	105054.0	48.21	4.2	1200.0
2/7 8:15	103763.0	47.62	4.2	1200.0
2/7 8:16	105705.0	48.54	4.2	1200.3
2/7 8:17	103628.0	47.67	4.2	1200.0
2/7 8:18	103893.0	47.79	4.2	1200.2
2/7 8:19	103278.0	47.51	4.2	1199.8
2/7 8:20	104625.0	48.11	4.2	1199.8
2/7 8:21	105395.0	48.34	4.2	1199.8
2/7 8:22	104058.0	47.73	4.2	1199.7
2/7 8:23	103690.0	47.56	4.2	1200.2
2/7 8:24	104748.0	48.07	4.2	1200.2
2/7 8:25	103324.0	47.41	4.2	1200.2
2/7 8:26	103857.0	47.66	4.2	1200.0
2/7 8:27	105607.0	48.32	4.2	1199.8
2/7 8:28	105191.0	48.10	4.2	1199.8
2/7 8:29	105320.0	48.13	4.2	1200.0
2/7 8:30	105654.0	48.37	4.2	1199.8
2/7 8:31	105412.0	48.26	4.2	1199.8
2/7 8:32	106026.0	48.54	4.2	1199.8
2/7 8:33	104610.0	47.89	4.2	1199.8
2/7 8:34	103401.0	47.25	4.2	1200.0
2/7 8:35	104984.0	47.98	4.2	1200.0
2/7 8:36	105221.0	48.20	4.2	1200.0
2/7 8:37	104839.0	48.11	4.2	1200.0
2/7 8:38	103374.0	47.52	4.2	1200.3
2/7 8:39	103532.0	47.62	4.2	1200.2
2/7 8:40	104200.0	47.93	4.2	1200.0
2/7 8:41	104455.0	48.05	4.2	1200.0
2/7 8:42	104905.0	48.26	4.2	1199.8
2/7 8:43	104406.0	48.03	4.2	1199.8
2/7 8:44	102909.0	47.34	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 8:45	104582.0	48.09	4.2	1200.0
2/7 8:46	104259.0	47.96	4.2	1200.2
2/7 8:47	103847.0	47.77	4.2	1200.0
2/7 8:48	104681.0	48.13	4.2	1200.0
2/7 8:49	104404.0	47.91	4.2	1200.0
2/7 8:50	103910.0	47.68	4.2	1200.0
2/7 8:51	102602.0	47.10	4.2	1199.8
2/7 8:52	102731.0	47.17	4.2	1199.7
2/7 8:53	105686.0	48.42	4.2	1200.0
2/7 8:54	104075.0	47.65	4.2	1200.0
2/7 8:55	105171.0	48.18	4.2	1200.0
2/7 8:56	104945.0	48.16	4.2	1200.2
2/7 8:57	104485.0	47.93	4.2	1199.8
2/7 8:58	103987.0	47.61	4.2	1200.2
2/7 8:59	104301.0	47.86	4.2	1200.0
2/7 9:00	104856.0	48.04	4.2	1199.7
2/7 9:01	104476.0	47.78	4.2	1199.8
2/7 9:02	104375.0	47.67	4.2	1200.3
2/7 9:03	102777.0	46.94	4.2	1200.2
2/7 9:04	104675.0	47.87	4.2	1200.2
2/7 9:05	106145.0	48.60	4.2	1200.0
2/7 9:06	104662.0	47.91	4.2	1199.8
2/7 9:07	104374.0	47.78	4.2	1199.8
2/7 9:08	103985.0	47.38	4.2	1199.2
2/7 9:09	103242.0	46.67	4.2	1200.7
2/7 9:10	104636.0	47.22	4.2	1200.2
2/7 9:11	105428.0	48.10	4.2	1200.2
2/7 9:12	105074.0	47.99	4.2	1200.0
2/7 9:13	103554.0	47.29	4.2	1200.2
2/7 9:14	103498.0	47.27	4.2	1199.7
2/7 9:15	104027.0	47.49	4.2	1199.7
2/7 9:16	104603.0	47.72	4.2	1200.0
2/7 9:17	103493.0	47.26	4.2	1200.0
2/7 9:18	104000.0	47.44	4.2	1200.0
2/7 9:19	105338.0	47.99	4.2	1200.0
2/7 9:20	105114.0	47.81	4.2	1200.2
2/7 9:21	104651.0	47.56	4.2	1199.8
2/7 9:22	104123.0	47.32	4.2	1200.0
2/7 9:23	103476.0	47.03	4.2	1200.0
2/7 9:24	104951.0	47.79	4.2	1200.0
2/7 9:25	104222.0	47.48	4.2	1200.3
2/7 9:26	103601.0	47.20	4.2	1200.0
2/7 9:27	106218.0	48.46	4.2	1199.8
2/7 9:28	104898.0	47.79	4.2	1200.2
2/7 9:29	104315.0	47.53	4.2	1200.0
2/7 9:30	105539.0	48.06	4.2	1200.2
2/7 9:31	104958.0	47.70	4.2	1199.5
2/7 9:32	105547.0	47.80	4.2	1199.8
2/7 9:33	104251.0	47.02	4.2	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 9:34	104561.0	47.01	4.2	1199.7
2/7 9:35	104527.0	47.09	4.2	1200.2
2/7 9:36	104663.0	47.32	4.2	1200.0
2/7 9:37	104295.0	47.19	4.2	1199.8
2/7 9:38	104666.0	47.24	4.2	1199.8
2/7 9:39	105418.0	47.44	4.2	1200.0
2/7 9:40	107856.0	48.42	4.2	1200.0
2/7 9:41	106300.0	47.72	4.2	1200.3
2/7 9:42	108417.0	48.83	4.2	1198.8
2/7 9:43	106916.0	47.35	4.2	1199.8
2/7 9:44	106449.0	46.97	4.2	1201.0
2/7 9:45	104114.0	46.83	4.2	1200.7
2/7 9:46	107450.0	48.12	4.2	1198.5
2/7 9:47	108892.0	47.72	4.2	1200.5
2/7 9:48	107915.0	47.44	4.2	1199.7
2/7 9:49	107319.0	47.84	4.2	1201.2
2/7 9:50	104191.0	46.98	4.2	1200.0
2/7 9:51	107625.0	48.27	4.2	1199.7
2/7 9:52	105917.0	47.34	4.2	1200.0
2/7 9:53	105339.0	47.08	4.2	1200.2
2/7 9:54	103696.0	46.72	4.2	1201.0
2/7 9:55	104349.0	47.47	4.2	1200.2
2/7 9:56	105664.0	48.17	4.2	1199.7
2/7 9:57	104297.0	47.45	4.2	1199.8
2/7 9:58	103546.0	46.99	4.2	1200.2
2/7 9:59	104105.0	47.10	4.2	1199.3
2/7 10:00	106014.0	47.64	4.2	1199.7
2/7 10:01	105637.0	47.35	4.2	1200.7
2/7 10:02	102815.0	46.65	4.2	1200.7
2/7 10:03	103872.0	47.32	4.2	1199.8
2/7 10:04	103850.0	47.26	4.2	1200.0
2/7 10:05	105064.0	47.72	4.2	1199.5
2/7 10:06	104790.0	47.41	4.2	1199.7
2/7 10:07	104438.0	47.25	4.2	1200.0
2/7 10:08	106364.0	48.22	4.2	1200.5
2/7 10:09	102714.0	46.77	4.2	1200.0
2/7 10:10	103144.0	47.01	4.2	1200.2
2/7 10:11	104244.0	47.61	4.2	1198.7
2/7 10:12	104711.0	47.10	4.2	1200.7
2/7 10:13	103832.0	47.00	4.2	1200.8
2/7 10:14	102719.0	46.88	4.2	1200.0
2/7 10:15	103564.0	47.30	4.2	1199.7
2/7 10:16	103049.0	46.95	4.2	1199.7
2/7 10:17	104094.0	47.28	4.2	1200.2
2/7 10:18	105537.0	48.05	4.2	1200.0
2/7 10:19	103409.0	47.13	4.2	1200.5
2/7 10:20	101673.0	46.43	4.2	1199.8
2/7 10:21	103552.0	47.20	4.2	1199.7
2/7 10:22	104189.0	47.30	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 10:23	103734.0	47.21	4.2	1200.7
2/7 10:24	104496.0	47.67	4.2	1200.0
2/7 10:25	104046.0	47.52	4.2	1199.8
2/7 10:26	102253.0	46.70	4.2	1200.2
2/7 10:27	103279.0	47.17	4.2	1199.7
2/7 10:28	104394.0	47.58	4.2	1200.0
2/7 10:29	104177.0	47.33	4.2	1199.2
2/7 10:30	106506.0	48.10	4.2	1200.5
2/7 10:31	104283.0	47.13	4.2	1200.2
2/7 10:32	101786.0	46.13	4.2	1200.0
2/7 10:33	102677.0	46.56	4.2	1200.2
2/7 10:34	104379.0	47.31	4.2	1200.3
2/7 10:35	104772.0	47.48	4.2	1200.2
2/7 10:36	101688.0	46.11	4.2	1200.5
2/7 10:37	101887.0	46.35	4.2	1200.2
2/7 10:38	102510.0	46.70	4.2	1200.0
2/7 10:39	103352.0	47.09	4.2	1200.0
2/7 10:40	104771.0	47.73	4.2	1200.0
2/7 10:41	103220.0	47.03	4.2	1199.8
2/7 10:42	103610.0	47.13	4.2	1200.2
2/7 10:43	101481.0	46.23	4.2	1199.7
2/7 10:44	102936.0	46.96	4.2	1200.0
2/7 10:45	100899.0	46.08	4.2	1199.8
2/7 10:46	103233.0	47.09	4.2	1200.2
2/7 10:47	104955.0	47.94	4.2	1199.7
2/7 10:48	103273.0	46.94	4.2	1200.0
2/7 10:49	104835.0	47.67	4.2	1200.3
2/7 10:50	105670.0	48.14	4.2	1200.0
2/7 10:51	102467.0	46.72	4.2	1200.0
2/7 10:52	104267.0	47.57	4.2	1199.5
2/7 10:53	103641.0	47.17	4.2	1200.3
2/7 10:54	102167.0	46.64	4.2	1200.0
2/7 10:55	103342.0	47.23	4.2	1200.2
2/7 10:56	103907.0	47.59	4.2	1199.8
2/7 10:57	102899.0	47.11	4.2	1200.0
2/7 10:58	101856.0	46.61	4.2	1199.8
2/7 10:59	103772.0	47.39	4.2	1200.2
2/7 11:00	103921.0	47.54	4.2	1200.0
2/7 11:01	103324.0	47.30	4.2	1200.0
2/7 11:02	103760.0	47.50	4.2	1200.2
2/7 11:03	101793.0	46.62	4.2	1199.7
2/7 11:04	105043.0	48.09	4.2	1200.3
2/7 11:05	103123.0	47.21	4.2	1200.2
2/7 11:06	102476.0	46.94	4.2	1199.8
2/7 11:07	104310.0	47.75	4.2	1200.0
2/7 11:08	103609.0	47.45	4.2	1200.2
2/7 11:09	99523.0	45.64	4.2	1200.0
2/7 11:10	102697.0	47.07	4.2	1200.0
2/7 11:11	103728.0	47.54	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 11:12	104177.0	47.69	4.2	1200.3
2/7 11:13	103218.0	47.31	4.2	1200.0
2/7 11:14	101910.0	46.77	4.2	1200.0
2/7 11:15	100967.0	46.34	4.2	1199.7
2/7 11:16	103052.0	47.29	4.2	1200.0
2/7 11:17	103368.0	47.44	4.2	1200.0
2/7 11:18	101725.0	46.66	4.2	1200.0
2/7 11:19	102194.0	46.87	4.2	1199.8
2/7 11:20	105316.0	48.33	4.2	1200.0
2/7 11:21	103833.0	47.63	4.2	1200.2
2/7 11:22	101863.0	46.77	4.2	1200.0
2/7 11:23	103583.0	47.53	4.2	1200.0
2/7 11:24	102952.0	47.24	4.2	1200.0
2/7 11:25	101651.0	46.65	4.2	1200.3
2/7 11:26	102637.0	47.12	4.2	1200.3
2/7 11:27	103445.0	47.47	4.2	1198.2
2/7 11:28	105075.0	47.38	4.2	1199.0
2/7 11:29	108341.0	47.67	4.2	1200.0
2/7 11:30	108133.0	47.06	4.2	1199.3
2/7 11:31	107944.0	47.50	4.2	1202.8
2/7 11:32	102878.0	46.63	4.2	1200.8
2/7 11:33	104262.0	47.41	4.1	1197.5
2/7 11:34	106369.0	47.23	4.2	1202.7
2/7 11:35	102566.0	46.64	4.2	1199.8
2/7 11:36	105489.0	48.04	4.2	1200.8
2/7 11:37	102894.0	47.24	4.2	1199.2
2/7 11:38	104240.0	47.59	4.2	1200.2
2/7 11:39	102480.0	47.01	4.2	1199.8
2/7 11:40	103511.0	47.36	4.2	1200.3
2/7 11:41	102507.0	47.02	4.2	1200.5
2/7 11:42	101007.0	46.52	4.2	1200.2
2/7 11:43	101696.0	46.89	4.2	1200.2
2/7 11:44	103909.0	47.89	4.2	1199.8
2/7 11:45	100137.0	46.06	4.2	1200.0
2/7 11:46	103370.0	47.55	4.2	1200.5
2/7 11:47	102455.0	47.16	4.2	1200.2
2/7 11:48	101309.0	46.71	4.2	1200.0
2/7 11:49	101345.0	46.78	4.2	1200.0
2/7 11:50	101078.0	46.68	4.2	1200.0
2/7 11:51	101491.0	46.80	4.2	1200.0
2/7 11:52	101023.0	46.58	4.2	1199.8
2/7 11:53	100647.0	46.41	4.2	1199.8
2/7 11:54	101995.0	47.03	4.2	1200.2
2/7 11:55	102737.0	47.37	4.2	1200.0
2/7 11:56	101627.0	46.86	4.2	1199.7
2/7 11:57	101270.0	46.70	4.2	1200.2
2/7 11:58	102940.0	47.47	4.2	1200.2
2/7 11:59	101891.0	46.98	4.2	1200.2
2/7 12:00	103767.0	47.87	4.2	1200.3

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 12:01	101436.0	46.91	4.2	1199.8
2/7 12:02	101959.0	47.13	4.2	1200.0
2/7 12:03	100440.0	46.42	4.2	1200.2
2/7 12:04	100178.0	46.30	4.2	1200.0
2/7 12:05	100840.0	46.61	4.2	1199.8
2/7 12:06	100340.0	46.32	4.2	1199.8
2/7 12:07	101730.0	47.02	4.2	1200.0
2/7 12:08	101933.0	47.11	4.2	1200.0
2/7 12:09	102387.0	47.32	4.2	1200.3
2/7 12:10	100241.0	46.40	4.2	1200.0
2/7 12:11	99675.0	46.14	4.2	1200.0
2/7 12:12	102770.0	47.50	4.1	1199.8
2/7 12:13	103397.0	47.79	4.1	1200.2
2/7 12:14	99475.0	45.98	4.1	1200.0
2/7 12:15	99669.0	46.09	4.1	1200.2
2/7 12:16	100756.0	46.62	4.1	1199.8
2/7 12:17	100283.0	46.42	4.1	1200.2
2/7 12:18	100023.0	46.34	4.2	1200.0
2/7 12:19	100566.0	46.55	4.2	1199.8
2/7 12:20	100296.0	46.39	4.2	1200.0
2/7 12:21	100872.0	46.73	4.2	1199.7
2/7 12:22	102993.0	47.68	4.2	1200.2
2/7 12:23	101728.0	47.16	4.2	1200.0
2/7 12:24	100663.0	46.64	4.2	1199.8
2/7 12:25	100240.0	46.47	4.2	1200.2
2/7 12:26	100171.0	46.48	4.2	1199.8
2/7 12:27	103282.0	47.90	4.2	1199.8
2/7 12:28	100122.0	46.39	4.2	1200.0
2/7 12:29	101740.0	47.14	4.1	1200.0
2/7 12:30	100375.0	46.40	4.2	1200.2
2/7 12:31	101012.0	46.77	4.1	1199.7
2/7 12:32	102820.0	47.43	4.1	1200.0
2/7 12:33	100621.0	46.42	4.2	1200.3
2/7 12:34	102027.0	47.24	4.1	1200.5
2/7 12:35	101223.0	46.90	4.1	1199.8
2/7 12:36	100864.0	46.73	4.2	1200.0
2/7 12:37	100697.0	46.65	4.2	1200.0
2/7 12:38	102038.0	47.31	4.2	1200.0
2/7 12:39	100870.0	46.83	4.2	1200.0
2/7 12:40	100468.0	46.65	4.2	1200.0
2/7 12:41	100961.0	46.81	4.2	1199.7
2/7 12:42	102354.0	47.42	4.2	1199.8
2/7 12:43	103820.0	47.87	4.2	1199.8
2/7 12:44	101348.0	46.64	4.1	1200.0
2/7 12:45	101111.0	46.49	4.1	1200.2
2/7 12:46	102465.0	47.12	4.1	1199.7
2/7 12:47	101771.0	46.70	4.1	1199.8
2/7 12:48	101327.0	46.53	4.2	1200.2
2/7 12:49	101774.0	46.78	4.2	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 12:50	102275.0	47.03	4.2	1199.8
2/7 12:51	100798.0	46.35	4.2	1199.8
2/7 12:52	102373.0	47.01	4.2	1200.0
2/7 12:53	101592.0	46.73	4.2	1200.7
2/7 12:54	103447.0	47.81	4.1	1199.8
2/7 12:55	101306.0	46.73	4.1	1199.8
2/7 12:56	102247.0	47.07	4.2	1200.2
2/7 12:57	102539.0	47.22	4.2	1200.0
2/7 12:58	102737.0	47.40	4.2	1200.0
2/7 12:59	100388.0	46.42	4.2	1200.2
2/7 13:00	102898.0	47.63	4.2	1200.0
2/7 13:01	100704.0	46.62	4.2	1200.0
2/7 13:02	101280.0	47.02	4.2	1200.0
2/7 13:03	100849.0	46.82	4.2	1200.2
2/7 13:04	100482.0	46.65	4.1	1200.0
2/7 13:05	100345.0	46.65	4.1	1199.7
2/7 13:06	100239.0	46.54	4.2	1199.8
2/7 13:07	100333.0	46.56	4.2	1200.0
2/7 13:08	100863.0	46.81	4.2	1200.3
2/7 13:09	102626.0	47.65	4.2	1200.0
2/7 13:10	103567.0	48.09	4.2	1200.2
2/7 13:11	101337.0	47.05	4.1	1200.2
2/7 13:12	100304.0	46.57	4.1	1199.8
2/7 13:13	101634.0	47.22	4.2	1200.0
2/7 13:14	101090.0	46.97	4.1	1200.0
2/7 13:15	101661.0	47.23	4.2	1199.7
2/7 13:16	101813.0	47.27	4.2	1200.0
2/7 13:17	101571.0	47.16	4.1	1200.0
2/7 13:18	100605.0	46.69	4.1	1199.7
2/7 13:19	100334.0	46.58	4.2	1199.8
2/7 13:20	101333.0	47.09	4.2	1199.8
2/7 13:21	100902.0	46.96	4.2	1200.0
2/7 13:22	100433.0	46.74	4.2	1200.0
2/7 13:23	101871.0	47.39	4.1	1200.2
2/7 13:24	100217.0	46.64	4.1	1199.7
2/7 13:25	100685.0	46.86	4.2	1200.3
2/7 13:26	100805.0	46.90	4.2	1200.5
2/7 13:27	100080.0	46.58	4.2	1199.8
2/7 13:28	99949.0	46.49	4.1	1200.0
2/7 13:29	100620.0	46.83	4.2	1200.0
2/7 13:30	102513.0	47.71	4.2	1200.0
2/7 13:31	102003.0	47.45	4.2	1200.0
2/7 13:32	101815.0	47.28	4.2	1199.8
2/7 13:33	100695.0	46.76	4.2	1199.8
2/7 13:34	100990.0	46.89	4.2	1199.7
2/7 13:35	101419.0	47.09	4.2	1199.8
2/7 13:36	103179.0	47.77	4.2	1200.2
2/7 13:37	101965.0	47.21	4.2	1200.2
2/7 13:38	101183.0	46.85	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 13:39	101954.0	47.14	4.1	1200.2
2/7 13:40	102777.0	47.54	4.2	1199.8
2/7 13:41	102047.0	47.19	4.2	1200.3
2/7 13:42	102112.0	47.28	4.2	1199.7
2/7 13:43	101807.0	47.06	4.2	1199.8
2/7 13:44	101201.0	46.77	4.2	1199.7
2/7 13:45	103307.0	47.75	4.2	1200.2
2/7 13:46	100009.0	46.29	4.2	1200.3
2/7 13:47	102448.0	47.47	4.2	1200.3
2/7 13:48	101366.0	46.96	4.1	1200.3
2/7 13:49	101093.0	46.84	4.1	1199.8
2/7 13:50	101488.0	47.07	4.2	1200.0
2/7 13:51	100992.0	46.79	4.1	1200.0
2/7 13:52	101301.0	46.93	4.2	1199.7
2/7 13:53	100393.0	46.48	4.1	1200.2
2/7 13:54	100302.0	46.43	4.1	1200.0
2/7 13:55	100674.0	46.60	4.1	1200.0
2/7 13:56	101131.0	46.79	4.2	1199.8
2/7 13:57	100656.0	46.61	4.2	1199.8
2/7 13:58	101876.0	47.17	4.2	1200.3
2/7 13:59	102077.0	47.23	4.2	1199.7
2/7 14:00	100940.0	46.65	4.2	1200.0
2/7 14:01	99658.0	46.08	4.2	1200.2
2/7 14:02	101573.0	47.06	4.2	1199.8
2/7 14:03	100711.0	46.57	4.2	1200.2
2/7 14:04	101049.0	46.82	4.2	1200.2
2/7 14:05	104967.0	48.25	4.2	1198.7
2/7 14:06	102836.0	46.82	4.2	1201.3
2/7 14:07	101702.0	46.85	4.2	1200.2
2/7 14:08	100288.0	46.24	4.2	1200.3
2/7 14:09	101653.0	46.95	4.1	1199.7
2/7 14:10	101353.0	46.73	4.2	1200.0
2/7 14:11	100829.0	46.47	4.1	1199.8
2/7 14:12	100084.0	46.06	4.2	1200.2
2/7 14:13	103388.0	47.67	4.2	1200.2
2/7 14:14	102221.0	47.13	4.2	1200.5
2/7 14:15	102195.0	47.14	4.2	1199.7
2/7 14:16	101002.0	46.59	4.2	1199.8
2/7 14:17	100677.0	46.42	4.2	1200.0
2/7 14:18	102305.0	47.18	4.2	1200.3
2/7 14:19	100331.0	46.34	4.2	1200.0
2/7 14:20	100761.0	46.53	4.2	1200.0
2/7 14:21	101961.0	46.93	4.2	1199.2
2/7 14:22	106233.0	47.82	4.2	1200.5
2/7 14:23	103213.0	46.22	4.2	1201.7
2/7 14:24	100241.0	46.33	4.2	1201.2
2/7 14:25	101044.0	46.97	4.2	1200.0
2/7 14:26	100257.0	46.74	4.2	1199.7
2/7 14:27	100809.0	46.84	4.2	1199.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 14:28	102102.0	47.10	4.2	1200.3
2/7 14:29	100559.0	46.59	4.2	1200.2
2/7 14:30	100507.0	46.57	4.2	1200.2
2/7 14:31	101459.0	47.01	4.2	1199.8
2/7 14:32	100536.0	46.54	4.2	1200.0
2/7 14:33	100678.0	46.60	4.2	1200.0
2/7 14:34	101104.0	46.84	4.2	1200.0
2/7 14:35	101368.0	46.96	4.2	1200.2
2/7 14:36	101556.0	47.10	4.2	1199.8
2/7 14:37	102880.0	47.68	4.2	1199.8
2/7 14:38	103790.0	47.99	4.2	1200.0
2/7 14:39	103358.0	47.68	4.1	1198.2
2/7 14:40	103422.0	46.63	4.2	1200.7
2/7 14:41	100452.0	45.99	4.2	1201.8
2/7 14:42	100782.0	46.76	4.2	1200.0
2/7 14:43	102377.0	47.54	4.2	1199.3
2/7 14:44	100177.0	46.35	4.2	1199.3
2/7 14:45	101043.0	46.59	4.2	1200.3
2/7 14:46	101170.0	46.81	4.2	1199.8
2/7 14:47	102203.0	47.24	4.2	1200.2
2/7 14:48	102053.0	47.28	4.2	1200.0
2/7 14:49	101680.0	47.14	4.1	1200.2
2/7 14:50	102300.0	47.36	4.2	1200.0
2/7 14:51	101106.0	46.84	4.2	1200.0
2/7 14:52	101588.0	47.07	4.2	1199.8
2/7 14:53	102759.0	47.66	4.2	1199.5
2/7 14:54	102130.0	47.35	4.2	1198.8
2/7 14:55	103048.0	47.42	4.2	1201.2
2/7 14:56	103828.0	47.37	4.2	1201.0
2/7 14:57	102410.0	47.33	4.2	1200.2
2/7 14:58	102507.0	47.66	4.2	1200.2
2/7 14:59	102072.0	47.48	4.2	1199.7
2/7 15:00	102246.0	47.42	4.2	1199.3
2/7 15:01	100450.0	46.34	4.2	1200.5
2/7 15:02	101391.0	46.94	4.2	1200.0
2/7 15:03	101755.0	47.17	4.2	1200.2
2/7 15:04	101776.0	47.24	4.2	1200.0
2/7 15:05	100440.0	46.60	4.2	1199.7
2/7 15:06	101229.0	46.98	4.2	1200.0
2/7 15:07	101610.0	47.15	4.2	1199.8
2/7 15:08	102599.0	47.56	4.2	1199.8
2/7 15:09	100139.0	46.39	4.2	1200.3
2/7 15:10	101757.0	47.25	4.2	1199.3
2/7 15:11	103521.0	47.39	4.2	1199.8
2/7 15:12	102201.0	46.93	4.2	1200.3
2/7 15:13	101294.0	46.74	4.2	1200.2
2/7 15:14	102540.0	47.17	4.2	1199.5
2/7 15:15	100213.0	46.17	4.2	1200.5
2/7 15:16	102410.0	47.36	4.2	1199.7
Run 1 Average	**101924.9**	**47.0**	**4.2**	**1200.0**

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 15:17	104457.0	48.17	4.2	1200.2
2/7 15:18	100333.0	46.39	4.2	1200.2
2/7 15:19	103803.0	48.06	4.2	1200.2
2/7 15:20	99931.0	46.27	4.2	1200.2
2/7 15:21	101791.0	47.13	4.1	1200.2
2/7 15:22	102156.0	47.33	4.2	1200.0
2/7 15:23	103751.0	48.07	4.1	1200.2
2/7 15:24	102988.0	47.63	4.2	1200.0
2/7 15:25	100948.0	46.68	4.2	1200.2
2/7 15:26	101154.0	46.82	4.2	1200.2
2/7 15:27	101793.0	47.16	4.2	1200.2
2/7 15:28	101276.0	47.02	4.2	1200.0
2/7 15:29	102338.0	47.49	4.2	1200.0
2/7 15:30	102332.0	47.44	4.2	1199.7
2/7 15:31	103294.0	47.81	4.2	1200.0
2/7 15:32	102469.0	47.39	4.2	1200.0
2/7 15:33	101561.0	46.96	4.2	1200.2
2/7 15:34	100390.0	46.48	4.2	1199.8
2/7 15:35	102503.0	47.09	4.2	1199.8
2/7 15:36	101065.0	46.51	4.2	1200.5
2/7 15:37	101104.0	46.73	4.1	1200.0
2/7 15:38	101270.0	46.92	4.1	1200.0
2/7 15:39	99704.0	46.19	4.2	1199.8
2/7 15:40	100857.0	46.73	4.2	1200.0
2/7 15:41	101896.0	47.21	4.2	1199.8
2/7 15:42	100267.0	46.43	4.2	1200.0
2/7 15:43	101101.0	46.73	4.1	1200.0
2/7 15:44	101641.0	47.05	4.1	1200.2
2/7 15:45	101337.0	46.91	4.1	1200.5
2/7 15:46	101120.0	46.95	4.1	1200.0
2/7 15:47	100575.0	46.70	4.1	1200.0
2/7 15:48	100889.0	46.82	4.1	1199.5
2/7 15:49	100836.0	46.68	4.1	1199.5
2/7 15:50	102193.0	47.31	4.2	1200.3
2/7 15:51	100528.0	46.58	4.2	1199.7
2/7 15:52	101825.0	47.28	4.2	1200.2
2/7 15:53	99253.0	46.11	4.2	1199.8
2/7 15:54	101249.0	47.04	4.2	1199.8
2/7 15:55	102659.0	47.67	4.2	1200.0
2/7 15:56	100201.0	46.42	4.2	1200.0
2/7 15:57	101195.0	46.89	4.2	1200.0
2/7 15:58	102118.0	47.31	4.2	1200.2
2/7 15:59	100975.0	46.80	4.2	1200.0
2/7 16:00	101213.0	46.99	4.2	1200.2
2/7 16:01	102306.0	47.50	4.2	1199.7
2/7 16:02	102145.0	47.35	4.2	1200.0
2/7 16:03	102310.0	47.40	4.2	1200.0
2/7 16:04	102098.0	47.30	4.2	1199.8
2/7 16:05	102983.0	47.76	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 16:06	102609.0	47.64	4.2	1199.8
2/7 16:07	101691.0	47.19	4.2	1200.2
2/7 16:08	100974.0	46.88	4.2	1199.7
2/7 16:09	101284.0	47.00	4.2	1200.2
2/7 16:10	102596.0	47.64	4.2	1200.0
2/7 16:11	101235.0	46.90	4.2	1200.5
2/7 16:12	103164.0	47.87	4.2	1200.0
2/7 16:13	101843.0	47.28	4.2	1200.2
2/7 16:14	102223.0	47.46	4.2	1200.2
2/7 16:15	102046.0	47.42	4.1	1200.0
2/7 16:16	100099.0	46.51	4.1	1199.8
2/7 16:17	99640.0	46.30	4.2	1199.5
2/7 16:18	101582.0	47.20	4.2	1200.0
2/7 16:19	99796.0	46.42	4.2	1199.5
2/7 16:20	100375.0	46.61	4.2	1200.2
2/7 16:21	100496.0	46.69	4.2	1200.0
2/7 16:22	98985.0	45.96	4.2	1200.0
2/7 16:23	101261.0	47.08	4.2	1199.8
2/7 16:24	100979.0	46.89	4.2	1200.0
2/7 16:25	99963.0	46.34	4.2	1199.8
2/7 16:26	100629.0	46.62	4.2	1199.8
2/7 16:27	99832.0	46.27	4.2	1200.2
2/7 16:28	102607.0	47.64	4.2	1199.8
2/7 16:29	100715.0	46.80	4.2	1199.8
2/7 16:30	102243.0	47.51	4.2	1200.0
2/7 16:31	100429.0	46.63	4.2	1200.0
2/7 16:32	99036.0	45.96	4.2	1200.0
2/7 16:33	101191.0	46.98	4.2	1199.7
2/7 16:34	102462.0	47.47	4.2	1199.8
2/7 16:35	100510.0	46.57	4.2	1200.2
2/7 16:36	101390.0	46.97	4.2	1199.8
2/7 16:37	101917.0	47.22	4.2	1199.8
2/7 16:38	102498.0	47.49	4.2	1200.0
2/7 16:39	103051.0	47.74	4.2	1200.0
2/7 16:40	102035.0	47.33	4.2	1200.5
2/7 16:41	99523.0	46.21	4.2	1199.8
2/7 16:42	102193.0	47.43	4.2	1199.8
2/7 16:43	100742.0	46.74	4.2	1200.2
2/7 16:44	99796.0	46.34	4.2	1199.7
2/7 16:45	102034.0	47.30	4.2	1199.7
2/7 16:46	100748.0	46.68	4.2	1200.0
2/7 16:47	104000.0	48.12	4.2	1200.2
2/7 16:48	101633.0	47.09	4.2	1199.7
2/7 16:49	101091.0	46.86	4.2	1200.3
2/7 16:50	102107.0	47.39	4.2	1200.2
2/7 16:51	100790.0	46.80	4.2	1200.2
2/7 16:52	101644.0	47.17	4.2	1199.7
2/7 16:53	101713.0	47.12	4.2	1199.8
2/7 16:54	101908.0	47.18	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 16:55	101943.0	47.12	4.2	1200.2
2/7 16:56	100956.0	46.71	4.2	1200.2
2/7 16:57	103244.0	47.83	4.2	1200.3
2/7 16:58	102537.0	47.53	4.2	1199.5
2/7 16:59	101983.0	47.27	4.2	1199.5
2/7 17:00	101187.0	46.90	4.2	1200.0
2/7 17:01	103101.0	47.68	4.2	1199.8
2/7 17:02	102305.0	47.29	4.2	1200.0
2/7 17:03	102664.0	47.47	4.2	1200.0
2/7 17:04	101840.0	47.07	4.2	1199.8
2/7 17:05	101941.0	47.23	4.2	1200.5
2/7 17:06	102369.0	47.43	4.2	1199.8
2/7 17:07	101633.0	47.09	4.2	1200.0
2/7 17:08	102553.0	47.51	4.2	1199.3
2/7 17:09	103769.0	48.05	4.2	1200.0
2/7 17:10	101110.0	46.80	4.2	1200.0
2/7 17:11	102448.0	47.35	4.2	1199.8
2/7 17:12	102436.0	47.35	4.2	1200.0
2/7 17:13	102841.0	47.55	4.2	1200.3
2/7 17:14	101279.0	46.84	4.2	1200.0
2/7 17:15	101293.0	46.89	4.2	1200.0
2/7 17:16	104264.0	48.26	4.2	1199.8
2/7 17:17	101994.0	47.17	4.2	1200.2
2/7 17:18	101655.0	46.99	4.2	1200.0
2/7 17:19	101348.0	46.84	4.2	1200.0
2/7 17:20	101960.0	47.13	4.2	1199.8
2/7 17:21	101074.0	46.67	4.2	1199.8
2/7 17:22	100717.0	46.44	4.2	1200.3
2/7 17:23	101139.0	46.72	4.2	1200.2
2/7 17:24	102913.0	47.57	4.2	1200.2
2/7 17:25	100070.0	46.25	4.2	1200.0
2/7 17:26	102512.0	47.34	4.2	1200.3
2/7 17:27	102844.0	47.53	4.2	1199.7
2/7 17:28	101766.0	47.04	4.2	1200.2
2/7 17:29	102430.0	47.34	4.2	1200.0
2/7 17:30	101768.0	47.04	4.2	1200.0
2/7 17:31	101423.0	46.85	4.2	1199.8
2/7 17:32	101801.0	47.05	4.2	1199.8
2/7 17:33	102873.0	47.55	4.2	1199.7
2/7 17:34	101510.0	46.81	4.2	1200.2
2/7 17:35	103335.0	47.57	4.2	1199.8
2/7 17:36	102876.0	47.42	4.2	1200.0
2/7 17:37	102128.0	47.07	4.2	1200.2
2/7 17:38	102632.0	47.39	4.2	1200.2
2/7 17:39	103350.0	47.74	4.2	1200.0
2/7 17:40	102832.0	47.50	4.2	1200.2
2/7 17:41	102985.0	47.57	4.2	1200.2
2/7 17:42	100897.0	46.55	4.2	1200.0
2/7 17:43	103044.0	47.49	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/7 17:44	102729.0	47.37	4.2	1200.0
2/7 17:45	103626.0	47.70	4.2	1200.2
2/7 17:46	101241.0	46.57	4.2	1200.3
2/7 17:47	100723.0	46.38	4.2	1200.2
2/7 17:48	103638.0	47.73	4.2	1199.8
2/7 17:49	103060.0	47.52	4.2	1200.0
2/7 17:50	100694.0	46.43	4.2	1199.8
2/7 17:51	102767.0	47.39	4.2	1200.2
2/7 17:52	101649.0	46.87	4.2	1200.0
2/7 17:53	100898.0	46.52	4.2	1200.3
2/7 17:54	102346.0	47.19	4.2	1200.2
2/7 17:55	101048.0	46.59	4.2	1200.0
2/7 17:56	103661.0	47.70	4.2	1199.8
2/7 17:57	102555.0	47.20	4.2	1200.0
2/7 17:58	102620.0	47.21	4.2	1200.0
2/7 17:59	101839.0	46.92	4.2	1200.0
2/7 18:00	102387.0	47.19	4.2	1200.2
Average (all)	102590.5	47.19	4.2	1200.0
Total (all)	--	--	--	--
Minimum (all)	98985.0	45.64	4.1	1197.5
Maximum (all)	108892.0	49.23	4.2	1202.8
Average (valid values only)	102590.5	47.19	4.2	1200.0
Total (valid values only)	--	--	--	--
Count (valid values only)	601	601	601	601

CeDAR 1-Minute Data

Sunshine Gas Producers, LLC

Data for 2/8/2023 6:00 AM thru 2/8/2023 7:00 PM

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 6:00	104195.0	47.82	4.2	1199.8
2/8 6:01	103059.0	47.29	4.2	1200.0
2/8 6:02	104084.0	47.88	4.2	1200.0
2/8 6:03	104517.0	48.08	4.2	1200.2
2/8 6:04	103508.0	47.61	4.2	1199.7
2/8 6:05	104013.0	47.78	4.2	1200.2
2/8 6:06	104613.0	48.09	4.2	1200.0
2/8 6:07	103100.0	47.33	4.2	1199.8
2/8 6:08	102756.0	47.16	4.2	1200.0
2/8 6:09	104065.0	47.78	4.2	1200.0
2/8 6:10	103553.0	47.52	4.2	1200.2
2/8 6:11	104905.0	48.26	4.2	1200.2
2/8 6:12	104532.0	48.08	4.2	1200.0
2/8 6:13	102576.0	47.26	4.2	1199.8
2/8 6:14	102974.0	47.39	4.2	1199.8
2/8 6:15	103513.0	47.59	4.2	1199.7
2/8 6:16	104246.0	47.93	4.2	1200.0
2/8 6:17	102815.0	47.18	4.2	1199.8
2/8 6:18	105610.0	48.52	4.2	1199.8
2/8 6:19	103910.0	47.71	4.2	1200.2
2/8 6:20	102457.0	47.04	4.2	1200.2
2/8 6:21	103748.0	47.61	4.2	1200.0
2/8 6:22	102079.0	46.84	4.2	1200.0
2/8 6:23	103125.0	47.44	4.2	1200.0
2/8 6:24	105578.0	48.54	4.2	1200.2
2/8 6:25	103194.0	47.47	4.2	1200.0
2/8 6:26	103240.0	47.41	4.2	1200.2
2/8 6:27	102623.0	47.12	4.2	1199.8
2/8 6:28	103514.0	47.50	4.2	1199.8
2/8 6:29	102994.0	47.23	4.2	1200.0
2/8 6:30	103270.0	47.39	4.2	1200.0
2/8 6:31	103634.0	47.59	4.2	1199.8
2/8 6:32	103492.0	47.61	4.2	1200.2
2/8 6:33	101431.0	46.75	4.2	1200.0
2/8 6:34	104403.0	48.08	4.2	1200.0
2/8 6:35	104362.0	48.08	4.2	1200.0
2/8 6:36	103698.0	47.70	4.2	1199.7
2/8 6:37	103807.0	47.67	4.2	1200.0
2/8 6:38	104458.0	47.87	4.2	1200.0
2/8 6:39	104347.0	47.85	4.2	1200.2
2/8 6:40	105671.0	48.54	4.2	1200.0
2/8 6:41	102322.0	47.05	4.2	1200.2
2/8 6:42	104209.0	47.94	4.2	1199.8
2/8 6:43	103496.0	47.61	4.2	1199.7
2/8 6:44	101880.0	46.77	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 6:45	104746.0	48.04	4.2	1200.0
2/8 6:46	104987.0	48.10	4.2	1200.2
2/8 6:47	105030.0	48.10	4.2	1200.3
2/8 6:48	104160.0	47.78	4.2	1200.0
2/8 6:49	103705.0	47.59	4.2	1199.8
2/8 6:50	103578.0	47.62	4.2	1199.8
2/8 6:51	105104.0	48.23	4.2	1200.0
2/8 6:52	104531.0	47.99	4.2	1200.0
2/8 6:53	103829.0	47.65	4.2	1200.0
2/8 6:54	103589.0	47.54	4.2	1200.0
2/8 6:55	104693.0	48.04	4.2	1200.0
2/8 6:56	105698.0	48.41	4.2	1199.7
2/8 6:57	105561.0	48.33	4.2	1199.7
2/8 6:58	102431.0	46.97	4.2	1199.8
2/8 6:59	104735.0	47.97	4.2	1200.0
2/8 7:00	103786.0	47.63	4.2	1200.0
2/8 7:01	105138.0	48.25	4.2	1199.8
2/8 7:02	103944.0	47.70	4.2	1199.8
2/8 7:03	104217.0	47.80	4.2	1199.8
2/8 7:04	104346.0	47.79	4.2	1199.8
2/8 7:05	104296.0	47.73	4.2	1199.8
2/8 7:06	103478.0	47.34	4.2	1200.0
2/8 7:07	104705.0	47.90	4.2	1200.2
2/8 7:08	103302.0	47.20	4.2	1199.8
2/8 7:09	105251.0	48.15	4.2	1200.2
2/8 7:10	105243.0	48.20	4.2	1200.0
2/8 7:11	106001.0	48.61	4.2	1200.2
2/8 7:12	103056.0	47.29	4.2	1200.0
2/8 7:13	103826.0	47.65	4.2	1199.7
2/8 7:14	103965.0	47.69	4.2	1200.2
2/8 7:15	103895.0	47.57	4.2	1199.8
2/8 7:16	106757.0	48.87	4.2	1200.0
2/8 7:17	104535.0	47.86	4.2	1199.7
2/8 7:18	105027.0	48.08	4.2	1200.0
2/8 7:19	105048.0	48.09	4.2	1200.2
2/8 7:20	105298.0	48.29	4.2	1200.2
2/8 7:21	106048.0	48.75	4.2	1200.2
2/8 7:22	104158.0	47.91	4.2	1200.3
2/8 7:23	104376.0	48.01	4.2	1200.0
2/8 7:24	105694.0	48.55	4.2	1200.0
2/8 7:25	102462.0	47.04	4.2	1200.0
2/8 7:26	104385.0	47.90	4.2	1200.2
2/8 7:27	104401.0	47.91	4.2	1200.0
2/8 7:28	105096.0	48.23	4.2	1199.8
2/8 7:29	103694.0	47.58	4.2	1200.0
2/8 7:30	105074.0	48.27	4.2	1200.0
2/8 7:31	105141.0	48.36	4.2	1199.8
2/8 7:32	101824.0	46.84	4.2	1200.2
2/8 7:33	103990.0	47.84	4.2	1199.7

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 7:34	103626.0	47.59	4.2	1200.0
2/8 7:35	102593.0	47.19	4.2	1199.8
2/8 7:36	104048.0	47.77	4.2	1199.7
2/8 7:37	105230.0	48.29	4.2	1199.8
2/8 7:38	104217.0	47.83	4.2	1200.2
2/8 7:39	103816.0	47.67	4.2	1200.0
2/8 7:40	104425.0	48.01	4.2	1200.0
2/8 7:41	103669.0	47.66	4.2	1200.0
2/8 7:42	102433.0	47.04	4.2	1200.0
2/8 7:43	103551.0	47.57	4.2	1200.0
2/8 7:44	104701.0	48.07	4.2	1199.8
2/8 7:45	105220.0	48.26	4.2	1199.7
2/8 7:46	104613.0	48.01	4.2	1200.0
2/8 7:47	102934.0	47.23	4.2	1200.0
2/8 7:48	106321.0	48.77	4.2	1199.8
2/8 7:49	104933.0	48.07	4.2	1200.3
2/8 7:50	104323.0	47.87	4.2	1200.3
2/8 7:51	103843.0	47.65	4.2	1200.0
2/8 7:52	104355.0	47.80	4.2	1200.3
2/8 7:53	103743.0	47.69	4.2	1200.0
2/8 7:54	105433.0	48.40	4.2	1200.2
2/8 7:55	104194.0	47.84	4.2	1199.8
2/8 7:56	105810.0	48.67	4.2	1200.3
2/8 7:57	103647.0	47.59	4.2	1199.8
2/8 7:58	106231.0	48.75	4.2	1200.0
2/8 7:59	103804.0	47.63	4.2	1200.0
2/8 8:00	103077.0	47.30	4.2	1200.0
2/8 8:01	102782.0	47.15	4.2	1200.0
2/8 8:02	104149.0	47.73	4.2	1200.2
2/8 8:03	105004.0	48.18	4.2	1200.0
2/8 8:04	104121.0	47.78	4.2	1200.2
2/8 8:05	103171.0	47.34	4.2	1200.0
2/8 8:06	105250.0	48.30	4.2	1200.2
2/8 8:07	103745.0	47.59	4.2	1200.0
2/8 8:08	104723.0	47.96	4.2	1200.3
2/8 8:09	102052.0	46.83	4.2	1200.2
2/8 8:10	102968.0	47.25	4.2	1199.7
2/8 8:11	103625.0	47.56	4.2	1200.2
2/8 8:12	105497.0	48.41	4.2	1200.0
2/8 8:13	104532.0	47.97	4.2	1200.0
2/8 8:14	104712.0	48.03	4.2	1199.7
2/8 8:15	103255.0	47.37	4.2	1200.2
2/8 8:16	103135.0	47.33	4.2	1200.0
2/8 8:17	105650.0	48.50	4.2	1200.0
2/8 8:18	102589.0	47.16	4.2	1200.0
2/8 8:19	104143.0	47.90	4.2	1200.2
2/8 8:20	103155.0	47.45	4.2	1200.0
2/8 8:21	101967.0	46.91	4.2	1200.0
2/8 8:22	103675.0	47.69	4.2	1200.2

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 8:23	104152.0	47.85	4.2	1200.0
2/8 8:24	105920.0	48.61	4.2	1199.8
2/8 8:25	104912.0	48.14	4.2	1200.0
2/8 8:26	104038.0	47.86	4.2	1200.0
2/8 8:27	103029.0	47.41	4.2	1200.0
2/8 8:28	102946.0	47.36	4.2	1200.2
2/8 8:29	103204.0	47.47	4.2	1200.0
2/8 8:30	102247.0	47.04	4.2	1200.0
2/8 8:31	104067.0	47.87	4.2	1200.0
2/8 8:32	104588.0	48.11	4.2	1200.0
2/8 8:33	103867.0	47.72	4.2	1199.8
2/8 8:34	103532.0	47.59	4.2	1199.8
2/8 8:35	103818.0	47.85	4.2	1200.0
2/8 8:36	102638.0	47.31	4.2	1199.8
2/8 8:37	104398.0	47.99	4.2	1200.0
2/8 8:38	103831.0	47.65	4.2	1200.0
2/8 8:39	103218.0	47.37	4.2	1200.0
2/8 8:40	103920.0	47.69	4.2	1200.2
2/8 8:41	103322.0	47.50	4.2	1200.0
2/8 8:42	104331.0	47.99	4.2	1200.0
2/8 8:43	102124.0	46.98	4.2	1200.2
2/8 8:44	103717.0	47.73	4.2	1199.8
2/8 8:45	104302.0	47.96	4.2	1200.0
2/8 8:46	101683.0	46.68	4.2	1200.0
2/8 8:47	102741.0	47.15	4.2	1200.0
2/8 8:48	103626.0	47.58	4.2	1200.0
2/8 8:49	102853.0	47.25	4.2	1200.0
2/8 8:50	104733.0	48.21	4.2	1200.2
2/8 8:51	101322.0	46.70	4.2	1200.0
2/8 8:52	103751.0	47.82	4.2	1200.0
2/8 8:53	104846.0	48.28	4.2	1199.7
2/8 8:54	102553.0	47.17	4.2	1199.7
2/8 8:55	104447.0	48.05	4.2	1200.0
2/8 8:56	103403.0	47.54	4.2	1200.2
2/8 8:57	103539.0	47.63	4.2	1200.3
2/8 8:58	103648.0	47.68	4.2	1200.0
2/8 8:59	102395.0	47.10	4.2	1200.0
2/8 9:00	103819.0	47.73	4.2	1200.0
2/8 9:01	102813.0	47.29	4.2	1200.0
2/8 9:02	101665.0	46.77	4.2	1199.8
2/8 9:03	103419.0	47.55	4.2	1200.0
2/8 9:04	102233.0	47.03	4.2	1200.2
2/8 9:05	103096.0	47.43	4.2	1200.2
2/8 9:06	102936.0	47.35	4.2	1200.0
2/8 9:07	103516.0	47.54	4.2	1200.0
2/8 9:08	102349.0	46.97	4.2	1200.0
2/8 9:09	104247.0	47.84	4.2	1199.8
2/8 9:10	104225.0	47.75	4.2	1200.2
2/8 9:11	102246.0	46.94	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 9:12	102740.0	47.23	4.2	1200.2
2/8 9:13	103513.0	47.61	4.2	1199.8
2/8 9:14	104775.0	48.20	4.2	1200.0
2/8 9:15	101557.0	46.63	4.2	1199.8
2/8 9:16	104119.0	47.78	4.2	1200.0
2/8 9:17	103585.0	47.54	4.2	1200.0
2/8 9:18	103273.0	47.37	4.2	1200.0
2/8 9:19	104317.0	47.81	4.2	1199.8
2/8 9:20	104397.0	47.88	4.2	1200.2
2/8 9:21	100906.0	46.29	4.2	1200.2
2/8 9:22	100941.0	46.32	4.2	1199.8
2/8 9:23	102567.0	47.05	4.2	1200.0
2/8 9:24	102763.0	47.09	4.2	1200.0
2/8 9:25	103188.0	47.24	4.2	1199.8
2/8 9:26	102771.0	47.05	4.2	1200.0
2/8 9:27	103741.0	47.49	4.2	1200.0
2/8 9:28	103202.0	47.36	4.2	1200.0
2/8 9:29	101943.0	46.78	4.2	1200.0
2/8 9:30	104224.0	47.83	4.2	1200.0
2/8 9:31	103951.0	47.68	4.2	1199.7
2/8 9:32	105383.0	48.24	4.2	1200.2
2/8 9:33	104824.0	47.89	4.2	1200.0
2/8 9:34	105141.0	48.02	4.2	1200.0
2/8 9:35	103993.0	47.58	4.2	1200.2
2/8 9:36	103450.0	47.44	4.2	1200.0
2/8 9:37	102028.0	46.82	4.2	1200.0
2/8 9:38	103771.0	47.53	4.2	1200.2
2/8 9:39	103531.0	47.40	4.2	1200.3
2/8 9:40	101055.0	46.27	4.2	1200.0
2/8 9:41	102914.0	47.09	4.2	1200.0
2/8 9:42	102104.0	46.66	4.1	1200.0
2/8 9:43	102782.0	46.94	4.1	1200.0
2/8 9:44	102538.0	46.83	4.1	1200.2
2/8 9:45	101414.0	46.45	4.1	1200.2
2/8 9:46	102748.0	47.06	4.1	1200.0
2/8 9:47	100722.0	46.19	4.1	1199.8
2/8 9:48	103645.0	47.45	4.1	1199.8
2/8 9:49	104070.0	47.64	4.2	1200.0
2/8 9:50	103224.0	47.25	4.1	1200.0
2/8 9:51	101476.0	46.46	4.1	1200.2
2/8 9:52	103488.0	47.40	4.2	1200.0
2/8 9:53	103800.0	47.55	4.1	1199.7
2/8 9:54	103044.0	47.09	4.2	1200.0
2/8 9:55	103341.0	47.23	4.2	1200.0
2/8 9:56	103123.0	47.19	4.2	1200.0
2/8 9:57	102692.0	46.98	4.2	1199.7
2/8 9:58	102656.0	46.88	4.2	1199.8
2/8 9:59	103407.0	47.23	4.2	1199.7
2/8 10:00	102372.0	46.59	4.2	1200.3

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 10:01	103400.0	47.17	4.2	1200.3
2/8 10:02	103331.0	47.33	4.2	1200.2
2/8 10:03	103899.0	47.66	4.2	1199.8
2/8 10:04	100204.0	45.95	4.2	1200.3
2/8 10:05	103539.0	47.48	4.2	1199.8
2/8 10:06	101604.0	46.51	4.2	1200.0
2/8 10:07	102055.0	46.74	4.2	1200.2
2/8 10:08	103387.0	47.45	4.2	1200.2
2/8 10:09	103319.0	47.44	4.2	1200.0
2/8 10:10	102558.0	47.16	4.2	1200.2
2/8 10:11	101421.0	46.52	4.2	1200.0
2/8 10:12	100554.0	46.14	4.1	1200.0
2/8 10:13	102311.0	46.98	4.2	1199.8
2/8 10:14	102938.0	47.33	4.2	1200.0
2/8 10:15	101387.0	46.51	4.2	1199.7
2/8 10:16	103125.0	47.24	4.2	1200.2
2/8 10:17	104125.0	47.76	4.2	1200.2
2/8 10:18	102191.0	46.86	4.2	1200.0
2/8 10:19	100095.0	46.02	4.2	1199.8
2/8 10:20	101459.0	46.67	4.2	1200.2
2/8 10:21	103276.0	47.45	4.2	1200.0
2/8 10:22	100986.0	46.37	4.2	1200.0
2/8 10:23	103562.0	47.52	4.2	1199.7
2/8 10:24	102374.0	47.03	4.2	1200.0
2/8 10:25	102487.0	47.11	4.2	1199.8
2/8 10:26	101820.0	46.75	4.2	1200.0
2/8 10:27	103224.0	47.46	4.2	1199.5
2/8 10:28	103145.0	47.30	4.2	1199.2
2/8 10:29	102023.0	46.57	4.2	1200.2
2/8 10:30	100996.0	46.05	4.2	1200.2
2/8 10:31	102109.0	46.66	4.2	1200.2
2/8 10:32	102568.0	46.96	4.2	1200.0
2/8 10:33	103700.0	47.47	4.2	1200.0
2/8 10:34	102248.0	46.81	4.2	1199.7
2/8 10:35	104391.0	47.74	4.2	1199.8
2/8 10:36	104193.0	47.55	4.2	1199.7
2/8 10:37	104966.0	47.85	4.2	1200.3
2/8 10:38	102710.0	46.89	4.2	1200.0
2/8 10:39	102498.0	46.89	4.2	1200.3
2/8 10:40	103439.0	47.32	4.2	1200.2
2/8 10:41	102850.0	47.05	4.2	1200.3
2/8 10:42	104022.0	47.71	4.2	1199.8
2/8 10:43	102859.0	47.20	4.2	1200.2
2/8 10:44	103590.0	47.62	4.2	1200.0
2/8 10:45	101242.0	46.49	4.2	1199.8
2/8 10:46	103321.0	47.41	4.2	1199.8
2/8 10:47	103786.0	47.61	4.2	1199.8
2/8 10:48	101132.0	46.39	4.2	1200.0
2/8 10:49	102211.0	46.92	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 10:50	102225.0	46.91	4.2	1200.3
2/8 10:51	102448.0	47.13	4.2	1200.2
2/8 10:52	100598.0	46.30	4.2	1200.2
2/8 10:53	101864.0	46.91	4.2	1199.8
2/8 10:54	102192.0	47.01	4.1	1200.0
2/8 10:55	102571.0	47.18	4.1	1200.0
2/8 10:56	102196.0	47.01	4.1	1200.2
2/8 10:57	101236.0	46.57	4.1	1200.2
2/8 10:58	101807.0	46.83	4.1	1200.0
2/8 10:59	101499.0	46.69	4.1	1200.0
2/8 11:00	102028.0	47.03	4.2	1200.0
2/8 11:01	102445.0	47.15	4.2	1200.2
2/8 11:02	101505.0	46.75	4.2	1200.3
2/8 11:03	100419.0	46.38	4.2	1200.2
2/8 11:04	99861.0	46.19	4.1	1199.8
2/8 11:05	102741.0	47.46	4.2	1200.0
2/8 11:06	102704.0	47.38	4.2	1199.8
2/8 11:07	103421.0	47.72	4.2	1200.0
2/8 11:08	100763.0	46.46	4.1	1200.5
2/8 11:09	101644.0	46.89	4.1	1200.3
2/8 11:10	103790.0	47.97	4.1	1200.0
2/8 11:11	101878.0	47.06	4.1	1200.0
2/8 11:12	100792.0	46.67	4.1	1200.0
2/8 11:13	100833.0	46.67	4.1	1200.0
2/8 11:14	100489.0	46.53	4.1	1200.0
2/8 11:15	102347.0	47.42	4.1	1200.0
2/8 11:16	102546.0	47.48	4.1	1199.8
2/8 11:17	104080.0	48.11	4.2	1199.7
2/8 11:18	100629.0	46.45	4.2	1199.8
2/8 11:19	100704.0	46.45	4.2	1200.0
2/8 11:20	101261.0	46.76	4.2	1200.0
2/8 11:21	100561.0	46.48	4.2	1200.3
2/8 11:22	102626.0	47.44	4.2	1199.5
2/8 11:23	103515.0	47.82	4.2	1200.2
2/8 11:24	99555.0	46.02	4.2	1200.0
2/8 11:25	99513.0	46.01	4.2	1200.5
2/8 11:26	102637.0	47.51	4.1	1200.0
2/8 11:27	101809.0	47.14	4.1	1200.5
2/8 11:28	99886.0	46.24	4.1	1199.7
2/8 11:29	103189.0	47.73	4.1	1200.2
2/8 11:30	101284.0	46.83	4.2	1199.7
2/8 11:31	99392.0	45.94	4.2	1200.2
2/8 11:32	101809.0	47.06	4.2	1200.0
2/8 11:33	100883.0	46.74	4.1	1200.3
2/8 11:34	100614.0	46.61	4.1	1200.0
2/8 11:35	99752.0	46.21	4.1	1199.8
2/8 11:36	101523.0	47.03	4.1	1199.8
2/8 11:37	99980.0	46.32	4.1	1200.2
2/8 11:38	99674.0	46.18	4.1	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 11:39	100836.0	46.72	4.1	1199.8
2/8 11:40	101715.0	47.05	4.1	1199.7
2/8 11:41	101884.0	47.12	4.2	1200.2
2/8 11:42	101112.0	46.84	4.2	1200.0
2/8 11:43	100815.0	46.71	4.2	1200.2
2/8 11:44	101758.0	47.18	4.2	1200.0
2/8 11:45	100254.0	46.48	4.2	1199.8
2/8 11:46	99595.0	46.14	4.1	1200.0
2/8 11:47	100319.0	46.40	4.1	1200.0
2/8 11:48	100309.0	46.44	4.1	1199.8
2/8 11:49	101447.0	47.00	4.1	1200.3
2/8 11:50	102233.0	47.43	4.1	1200.8
2/8 11:51	100789.0	46.86	4.1	1200.0
2/8 11:52	101568.0	47.27	4.1	1199.7
2/8 11:53	101165.0	47.00	4.1	1199.5
2/8 11:54	101836.0	47.28	4.1	1200.0
2/8 11:55	99519.0	46.19	4.1	1199.8
2/8 11:56	102572.0	47.54	4.1	1199.8
2/8 11:57	101239.0	46.99	4.1	1200.2
2/8 11:58	100078.0	46.47	4.1	1199.8
2/8 11:59	103371.0	47.97	4.1	1200.0
2/8 12:00	100443.0	46.63	4.1	1200.0
2/8 12:01	101371.0	47.07	4.1	1199.8
2/8 12:02	101829.0	47.28	4.1	1200.0
2/8 12:03	101014.0	46.99	4.1	1199.8
2/8 12:04	100484.0	46.69	4.1	1200.3
2/8 12:05	101030.0	47.02	4.1	1200.5
2/8 12:06	99897.0	46.49	4.1	1200.0
2/8 12:07	98584.0	45.88	4.1	1200.0
2/8 12:08	100358.0	46.71	4.1	1200.0
2/8 12:09	101131.0	47.07	4.1	1199.8
2/8 12:10	100469.0	46.78	4.1	1199.8
2/8 12:11	102079.0	47.53	4.1	1199.8
2/8 12:12	102116.0	47.50	4.1	1200.0
2/8 12:13	101968.0	47.48	4.1	1200.2
2/8 12:14	101342.0	47.28	4.1	1200.0
2/8 12:15	102477.0	47.78	4.1	1199.5
2/8 12:16	100527.0	46.79	4.1	1200.2
2/8 12:17	102202.0	47.56	4.1	1200.3
2/8 12:18	99649.0	46.38	4.1	1199.8
2/8 12:19	101961.0	47.37	4.1	1200.3
2/8 12:20	100300.0	46.72	4.1	1200.3
2/8 12:21	101150.0	47.12	4.1	1199.8
2/8 12:22	100520.0	46.82	4.1	1200.2
2/8 12:23	100534.0	46.83	4.1	1199.8
2/8 12:24	101238.0	47.12	4.1	1200.0
2/8 12:25	100103.0	46.59	4.1	1200.0
2/8 12:26	100668.0	46.85	4.1	1200.0
2/8 12:27	101220.0	47.17	4.1	1200.0
Average	**102464.1**	**47.2**	**4.2**	**1200.0**

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 12:28	101114.0	47.10	4.1	1199.8
2/8 12:29	99942.0	46.51	4.1	1199.7
2/8 12:30	100884.0	46.88	4.1	1199.8
2/8 12:31	99442.0	46.23	4.1	1200.8
2/8 12:32	101638.0	47.36	4.1	1199.8
2/8 12:33	100378.0	46.83	4.1	1199.8
2/8 12:34	99621.0	46.40	4.1	1199.7
2/8 12:35	99731.0	46.41	4.1	1200.0
2/8 12:36	100682.0	46.86	4.1	1200.3
2/8 12:37	100120.0	46.60	4.1	1200.3
2/8 12:38	101201.0	47.19	4.1	1200.2
2/8 12:39	101239.0	47.23	4.1	1200.3
2/8 12:40	99790.0	46.55	4.1	1200.0
2/8 12:41	100232.0	46.76	4.1	1200.0
2/8 12:42	100279.0	46.78	4.1	1199.8
2/8 12:43	101859.0	47.52	4.1	1199.8
2/8 12:44	99548.0	46.44	4.1	1200.0
2/8 12:45	99108.0	46.23	4.1	1199.8
2/8 12:46	102405.0	47.77	4.1	1200.0
2/8 12:47	100296.0	46.79	4.1	1200.0
2/8 12:48	100575.0	46.92	4.1	1199.8
2/8 12:49	99753.0	46.55	4.1	1200.0
2/8 12:50	99949.0	46.63	4.1	1199.8
2/8 12:51	100848.0	47.11	4.1	1198.0
2/8 12:52	105541.0	48.05	4.2	1199.0
2/8 12:53	100213.0	45.53	4.2	1202.5
2/8 12:54	99962.0	46.54	4.1	1200.5
2/8 12:55	101349.0	47.31	4.1	1199.7
2/8 12:56	99263.0	46.30	4.1	1199.8
2/8 12:57	100098.0	46.67	4.1	1200.0
2/8 12:58	99438.0	46.28	4.1	1200.2
2/8 12:59	100299.0	46.74	4.1	1200.3
2/8 13:00	99143.0	46.25	4.1	1200.0
2/8 13:01	99038.0	46.23	4.1	1200.2
2/8 13:02	100617.0	47.00	4.1	1200.3
2/8 13:03	98904.0	46.14	4.1	1199.8
2/8 13:04	98010.0	45.72	4.1	1199.8
2/8 13:05	100381.0	46.83	4.1	1200.2
2/8 13:06	99086.0	46.30	4.1	1200.0
2/8 13:07	93325.0	46.43	4.1	1199.8
2/8 13:08	100228.0	46.87	4.1	1200.0
2/8 13:09	99218.0	46.35	4.1	1199.5
2/8 13:10	99638.0	46.48	4.1	1200.0
2/8 13:11	100181.0	46.73	4.1	1200.2
2/8 13:12	100131.0	46.64	4.1	1199.8
2/8 13:13	99590.0	46.39	4.1	1200.5
2/8 13:14	100162.0	46.61	4.1	1196.8
2/8 13:15	105722.0	47.50	4.1	1201.0
2/8 13:16	100557.0	45.82	4.1	1200.2

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Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 13:17	103314.0	47.02	4.1	1200.2
2/8 13:18	101505.0	46.23	4.1	1200.0
2/8 13:19	102020.0	46.46	4.1	1200.0
2/8 13:20	104229.0	47.47	4.1	1199.8
2/8 13:21	102155.0	46.54	4.1	1200.2
2/8 13:22	101785.0	46.58	4.1	1201.0
2/8 13:23	101993.0	46.99	4.1	1199.7
2/8 13:24	103255.0	47.27	4.1	1199.7
2/8 13:25	102804.0	46.95	4.1	1200.0
2/8 13:26	102762.0	46.93	4.1	1200.0
2/8 13:27	102695.0	46.92	4.1	1201.0
2/8 13:28	101636.0	46.98	4.1	1201.2
2/8 13:29	101065.0	47.12	4.1	1199.8
2/8 13:30	100889.0	47.05	4.1	1199.3
2/8 13:31	100942.0	46.84	4.1	1199.7
2/8 13:32	100531.0	46.60	4.1	1200.2
2/8 13:33	101625.0	47.28	4.1	1200.3
2/8 13:34	100684.0	47.00	4.1	1200.2
2/8 13:35	100157.0	46.83	4.1	1200.2
2/8 13:36	100771.0	47.12	4.1	1199.8
2/8 13:37	100845.0	47.07	4.1	1200.0
2/8 13:38	100198.0	46.74	4.1	1200.0
2/8 13:39	101883.0	47.53	4.1	1200.5
2/8 13:40	99229.0	46.37	4.1	1200.5
2/8 13:41	99671.0	46.59	4.1	1200.0
2/8 13:42	100352.0	46.94	4.1	1199.8
2/8 13:43	100312.0	46.87	4.1	1200.0
2/8 13:44	100714.0	46.98	4.1	1199.5
2/8 13:45	99722.0	46.54	4.1	1200.0
2/8 13:46	99720.0	46.58	4.1	1200.0
2/8 13:47	99905.0	46.61	4.1	1199.8
2/8 13:48	98867.0	46.12	4.1	1200.0
2/8 13:49	99991.0	46.58	4.1	1200.2
2/8 13:50	100611.0	46.79	4.1	1199.8
2/8 13:51	101895.0	47.31	4.1	1200.7
2/8 13:52	100244.0	46.65	4.1	1200.5
2/8 13:53	99825.0	46.55	4.1	1200.0
2/8 13:54	99433.0	46.35	4.1	1200.0
2/8 13:55	99337.0	46.25	4.1	1199.8
2/8 13:56	99624.0	46.40	4.1	1200.0
2/8 13:57	98261.0	45.79	4.1	1200.2
2/8 13:58	99266.0	46.33	4.1	1199.3
2/8 13:59	100073.0	46.68	4.1	1200.0
2/8 14:00	100428.0	46.85	4.1	1200.2
2/8 14:01	97648.0	45.55	4.1	1199.8
2/8 14:02	101476.0	47.34	4.1	1199.8
2/8 14:03	100041.0	46.67	4.1	1199.8
2/8 14:04	101835.0	47.54	4.1	1200.0
2/8 14:05	102113.0	47.70	4.1	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 14:06	100919.0	47.08	4.1	1200.0
2/8 14:07	100579.0	46.94	4.1	1200.0
2/8 14:08	99981.0	46.64	4.1	1199.8
2/8 14:09	101030.0	47.13	4.1	1200.0
2/8 14:10	100542.0	46.90	4.1	1199.7
2/8 14:11	99964.0	46.61	4.1	1200.0
2/8 14:12	100533.0	46.88	4.1	1200.0
2/8 14:13	99806.0	46.47	4.1	1200.3
2/8 14:14	101131.0	47.07	4.1	1200.2
2/8 14:15	100506.0	46.73	4.1	1199.5
2/8 14:16	102184.0	47.37	4.1	1200.0
2/8 14:17	99681.0	46.28	4.1	1200.2
2/8 14:18	99524.0	46.21	4.1	1200.2
2/8 14:19	101276.0	47.02	4.1	1200.2
2/8 14:20	100438.0	46.60	4.1	1199.8
2/8 14:21	99816.0	46.33	4.1	1199.8
2/8 14:22	100509.0	46.67	4.1	1200.3
2/8 14:23	102095.0	47.41	4.1	1199.8
2/8 14:24	99989.0	46.00	4.1	1199.8
2/8 14:25	100623.0	46.76	4.1	1200.2
2/8 14:26	101222.0	47.00	4.1	1199.8
2/8 14:27	101824.0	47.24	4.1	1199.7
2/8 14:28	101610.0	47.11	4.1	1200.3
2/8 14:29	101494.0	47.04	4.1	1199.8
2/8 14:30	100841.0	46.79	4.1	1200.2
2/8 14:31	101441.0	47.10	4.1	1200.0
2/8 14:32	99904.0	46.46	4.1	1200.3
2/8 14:33	101682.0	47.32	4.1	1199.8
2/8 14:34	100357.0	46.80	4.1	1200.0
2/8 14:35	99774.0	46.47	4.1	1200.3
2/8 14:36	99446.0	46.39	4.1	1199.8
2/8 14:37	101252.0	47.21	4.1	1200.2
2/8 14:38	100264.0	46.75	4.1	1199.7
2/8 14:39	100804.0	46.99	4.1	1199.2
2/8 14:40	101458.0	47.15	4.1	1200.5
2/8 14:41	99174.0	46.26	4.1	1200.3
2/8 14:42	101296.0	47.26	4.1	1199.8
2/8 14:43	100274.0	46.75	4.1	1200.0
2/8 14:44	99420.0	46.38	4.1	1200.0
2/8 14:45	97981.0	45.68	4.1	1199.7
2/8 14:46	101043.0	46.84	4.1	1198.8
2/8 14:47	102119.0	47.17	4.1	1200.5
2/8 14:48	99785.0	46.36	4.1	1200.0
2/8 14:49	101894.0	47.31	4.1	1200.2
2/8 14:50	100355.0	46.60	4.1	1199.8
2/8 14:51	101168.0	46.97	4.1	1199.7
2/8 14:52	100696.0	46.76	4.1	1200.2
2/8 14:53	100236.0	46.58	4.1	1199.7
2/8 14:54	103090.0	47.81	4.1	1199.5

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 14:55	102437.0	47.24	4.1	1200.0
2/8 14:56	101707.0	46.82	4.1	1199.8
2/8 14:57	101784.0	46.93	4.1	1200.7
2/8 14:58	100192.0	46.28	4.1	1200.2
2/8 14:59	101523.0	46.97	4.1	1200.7
2/8 15:00	100740.0	46.86	4.1	1200.0
2/8 15:01	100193.0	46.65	4.1	1200.2
2/8 15:02	101715.0	47.38	4.1	1199.8
2/8 15:03	98768.0	45.97	4.1	1200.2
2/8 15:04	99438.0	46.25	4.1	1199.8
2/8 15:05	98927.0	46.02	4.1	1200.0
2/8 15:06	99743.0	46.35	4.1	1200.0
2/8 15:07	101816.0	47.31	4.1	1199.8
2/8 15:08	99659.0	46.35	4.1	1199.7
2/8 15:09	100481.0	46.65	4.1	1200.3
2/8 15:10	100210.0	46.56	4.1	1200.2
2/8 15:11	101365.0	47.07	4.1	1200.0
2/8 15:12	99608.0	46.33	4.1	1200.0
2/8 15:13	102049.0	47.42	4.1	1199.5
2/8 15:14	99217.0	46.15	4.1	1199.8
2/8 15:15	101116.0	47.04	4.1	1200.2
2/8 15:16	99823.0	46.35	4.1	1199.7
2/8 15:17	100842.0	46.82	4.1	1200.3
2/8 15:18	103311.0	48.03	4.1	1199.8
2/8 15:19	102009.0	47.46	4.1	1200.0
2/8 15:20	98920.0	46.04	4.1	1200.0
2/8 15:21	102011.0	47.48	4.1	1200.2
2/8 15:22	102452.0	47.66	4.1	1200.3
2/8 15:23	99939.0	46.60	4.1	1199.7
2/8 15:24	102418.0	47.18	4.1	1196.8
2/8 15:25	102568.0	46.14	4.2	1202.5
2/8 15:26	99657.0	46.06	4.1	1201.5
2/8 15:27	100485.0	46.83	4.1	1200.2
2/8 15:28	99908.0	46.59	4.1	1199.5
2/8 15:29	98876.0	46.02	4.1	1199.8
2/8 15:30	100028.0	46.47	4.1	1199.8
2/8 15:31	98776.0	45.86	4.1	1200.0
2/8 15:32	100870.0	46.87	4.1	1200.2
2/8 15:33	100223.0	46.70	4.1	1200.0
2/8 15:34	100307.0	46.79	4.1	1200.0
2/8 15:35	101054.0	47.11	4.1	1199.8
2/8 15:36	99729.0	46.41	4.1	1199.8
2/8 15:37	99922.0	46.50	4.1	1200.2
2/8 15:38	99263.0	46.20	4.1	1200.0
2/8 15:39	100370.0	46.73	4.1	1200.2
2/8 15:40	99781.0	46.55	4.1	1200.2
2/8 15:41	100122.0	46.71	4.1	1200.0
2/8 15:42	100196.0	46.65	4.1	1199.8
2/8 15:43	101074.0	47.04	4.1	1200.3

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 15:44	100449.0	46.75	4.1	1199.8
2/8 15:45	100944.0	46.98	4.1	1200.2
2/8 15:46	100768.0	46.98	4.1	1199.7
2/8 15:47	99098.0	46.20	4.1	1200.2
2/8 15:48	100610.0	46.77	4.1	1199.2
2/8 15:49	101643.0	47.01	4.1	1200.5
2/8 15:50	101019.0	46.90	4.1	1200.2
2/8 15:51	101245.0	47.05	4.1	1198.5
2/8 15:52	103773.0	47.36	4.2	1199.2
2/8 15:53	100377.0	45.87	4.1	1202.2
2/8 15:54	99755.0	46.36	4.1	1200.3
2/8 15:55	99249.0	46.25	4.1	1199.5
2/8 15:56	101162.0	47.10	4.1	1199.3
2/8 15:57	99416.0	46.11	4.1	1199.7
2/8 15:58	101450.0	47.10	4.1	1200.0
2/8 15:59	100058.0	46.46	4.1	1200.2
2/8 16:00	100324.0	46.62	4.1	1200.2
2/8 16:01	99956.0	46.56	4.1	1200.0
2/8 16:02	101610.0	47.40	4.1	1200.0
2/8 16:03	100758.0	46.97	4.1	1199.7
2/8 16:04	101298.0	47.15	4.1	1200.0
2/8 16:05	100361.0	46.71	4.1	1200.2
2/8 16:06	100648.0	46.88	4.1	1200.7
2/8 16:07	99102.0	46.10	4.1	1198.7
2/8 16:08	102304.0	47.08	4.1	1198.3
2/8 16:09	100519.0	46.07	4.2	1202.2
2/8 16:10	100138.0	46.63	4.1	1201.2
2/8 16:11	101799.0	47.57	4.1	1197.3
2/8 16:12	103472.0	46.84	4.2	1200.2
2/8 16:13	100542.0	45.92	4.1	1202.0
2/8 16:14	99881.0	46.09	4.1	1200.5
2/8 16:15	101691.0	47.52	4.1	1200.3
2/8 16:16	101075.0	47.15	4.1	1199.5
2/8 16:17	100540.0	46.88	4.1	1199.8
2/8 16:18	99540.0	46.37	4.1	1200.0
2/8 16:19	99389.0	46.32	4.1	1200.7
2/8 16:20	99860.0	46.69	4.1	1200.0
2/8 16:21	99396.0	46.46	4.1	1199.3
2/8 16:22	101865.0	47.45	4.1	1199.8
2/8 16:23	100847.0	46.87	4.1	1198.2
2/8 16:24	110741.0	49.27	4.2	1196.2
2/8 16:25	111585.0	46.59	4.2	1196.7
2/8 16:26	113285.0	47.03	4.2	1203.2
2/8 16:27	113018.0	47.10	4.2	1197.8
2/8 16:28	113940.0	47.60	4.2	1198.7
2/8 16:29	114191.0	47.55	4.2	1200.5
2/8 16:30	116174.0	47.80	4.2	1201.2
2/8 16:31	113964.0	46.70	4.2	1200.2
2/8 16:32	115826.0	47.47	4.2	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 16:33	113961.0	46.70	4.2	1199.0
2/8 16:34	113357.0	46.38	4.2	1200.0
2/8 16:35	113660.0	46.46	4.2	1199.5
2/8 16:36	114517.0	46.82	4.2	1199.8
2/8 16:37	114265.0	46.87	4.2	1200.8
2/8 16:38	113691.0	46.86	4.2	1200.0
2/8 16:39	110848.0	45.91	4.2	1198.5
2/8 16:40	110469.0	46.64	4.2	1201.0
2/8 16:41	106416.0	46.02	4.2	1203.2
2/8 16:42	101568.0	45.73	4.2	1203.2
2/8 16:43	101939.0	47.00	4.1	1199.7
2/8 16:44	101459.0	46.81	4.1	1199.3
2/8 16:45	101330.0	46.74	4.1	1200.5
2/8 16:46	98722.0	45.65	4.1	1200.3
2/8 16:47	100727.0	46.77	4.1	1200.2
2/8 16:48	100366.0	46.71	4.1	1199.8
2/8 16:49	99964.0	46.52	4.1	1199.8
2/8 16:50	101490.0	47.29	4.1	1199.8
2/8 16:51	100282.0	46.75	4.1	1200.0
2/8 16:52	98012.0	45.72	4.1	1199.7
2/8 16:53	100510.0	46.89	4.1	1200.0
2/8 16:54	100218.0	46.75	4.1	1200.0
2/8 16:55	100414.0	46.84	4.1	1200.0
2/8 16:56	98220.0	45.82	4.1	1200.0
2/8 16:57	101083.0	47.15	4.2	1200.0
2/8 16:58	98251.0	45.83	4.1	1190.7
2/8 16:59	100999.0	47.12	4.2	1199.3
2/8 17:00	100516.0	46.89	4.2	1200.3
2/8 17:01	99583.0	46.34	4.2	1200.0
2/8 17:02	100833.0	46.93	4.2	1200.7
2/8 17:03	100151.0	46.70	4.2	1199.8
2/8 17:04	101353.0	47.34	4.1	1199.5
2/8 17:05	100399.0	46.82	4.2	1199.5
2/8 17:06	100171.0	46.54	4.2	1200.0
2/8 17:07	100398.0	46.65	4.2	1200.3
2/8 17:08	101117.0	47.06	4.2	1199.5
2/8 17:09	103698.0	47.64	4.2	1199.5
2/8 17:10	100296.0	46.27	4.2	1201.2
2/8 17:11	101810.0	47.46	4.2	1200.2
2/8 17:12	100212.0	46.75	4.2	1199.8
2/8 17:13	101462.0	47.24	4.2	1199.3
2/8 17:14	101312.0	46.97	4.2	1200.5
2/8 17:15	101321.0	47.08	4.2	1200.7
2/8 17:16	101263.0	47.24	4.2	1200.5
2/8 17:17	99076.0	46.33	4.2	1199.8
2/8 17:18	102497.0	47.88	4.2	1199.7
2/8 17:19	101171.0	47.15	4.2	1199.8
2/8 17:20	101839.0	47.33	4.2	1199.8
2/8 17:21	100759.0	46.87	4.2	1200.7
Average	**101541.9**	**46.8**	**4.1**	**1199.9**

Run 3

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 17:22	101060.0	47.14	4.2	1199.8
2/8 17:23	101533.0	47.36	4.2	1200.0
2/8 17:24	100096.0	46.70	4.2	1199.7
2/8 17:25	102980.0	47.95	4.2	1199.8
2/8 17:26	100444.0	46.72	4.2	1200.2
2/8 17:27	101493.0	47.16	4.2	1200.2
2/8 17:28	101355.0	47.09	4.2	1200.2
2/8 17:29	99114.0	46.08	4.2	1200.2
2/8 17:30	101398.0	47.19	4.2	1200.0
2/8 17:31	100937.0	46.98	4.2	1199.8
2/8 17:32	101493.0	47.23	4.2	1200.0
2/8 17:33	101555.0	47.27	4.2	1199.5
2/8 17:34	101224.0	47.11	4.2	1200.3
2/8 17:35	102296.0	47.61	4.2	1200.0
2/8 17:36	101133.0	47.07	4.2	1199.8
2/8 17:37	101585.0	47.17	4.2	1199.7
2/8 17:38	101081.0	46.93	4.2	1200.0
2/8 17:39	99365.0	46.14	4.2	1199.8
2/8 17:40	103181.0	47.91	4.2	1200.2
2/8 17:41	99791.0	46.33	4.2	1199.8
2/8 17:42	100529.0	46.68	4.2	1200.2
2/8 17:43	101996.0	47.36	4.2	1199.8
2/8 17:44	101828.0	47.28	4.2	1200.0
2/8 17:45	102243.0	47.47	4.2	1200.0
2/8 17:46	101636.0	47.19	4.2	1200.2
2/8 17:47	101196.0	47.07	4.2	1199.8
2/8 17:48	101197.0	46.99	4.2	1200.2
2/8 17:49	102112.0	47.38	4.2	1200.0
2/8 17:50	100850.0	46.72	4.2	1199.8
2/8 17:51	102018.0	47.32	4.2	1199.8
2/8 17:52	101548.0	47.15	4.2	1200.0
2/8 17:53	100147.0	46.53	4.2	1200.2
2/8 17:54	101929.0	47.33	4.2	1199.8
2/8 17:55	103463.0	48.07	4.2	1200.0
2/8 17:56	102266.0	47.48	4.2	1200.2
2/8 17:57	98548.0	45.73	4.2	1199.3
2/8 17:58	101128.0	46.85	4.2	1200.2
2/8 17:59	101325.0	46.97	4.2	1200.0
2/8 18:00	99792.0	46.28	4.2	1200.2
2/8 18:01	101396.0	47.08	4.2	1200.2
2/8 18:02	101744.0	47.22	4.2	1199.8
2/8 18:03	101201.0	46.99	4.2	1199.7
2/8 18:04	101754.0	47.17	4.2	1200.0
2/8 18:05	101604.0	47.07	4.2	1199.8
2/8 18:06	100501.0	46.56	4.2	1199.7
2/8 18:07	101699.0	47.12	4.2	1200.0
2/8 18:08	102324.0	47.40	4.2	1200.0
2/8 18:09	102681.0	47.57	4.2	1200.0
2/8 18:10	101394.0	46.97	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 18:11	101334.0	46.95	4.2	1200.2
2/8 18:12	101355.0	47.01	4.2	1199.8
2/8 18:13	101957.0	47.21	4.2	1199.7
2/8 18:14	101950.0	47.09	4.2	1200.2
2/8 18:15	100581.0	46.43	4.2	1200.0
2/8 18:16	102999.0	47.61	4.2	1200.0
2/8 18:17	101635.0	46.98	4.2	1200.2
2/8 18:18	102092.0	47.19	4.2	1199.8
2/8 18:19	102361.0	47.20	4.2	1200.2
2/8 18:20	101821.0	47.03	4.2	1199.8
2/8 18:21	101487.0	46.82	4.2	1200.2
2/8 18:22	101561.0	46.88	4.2	1200.3
2/8 18:23	101414.0	46.83	4.2	1200.2
2/8 18:24	101652.0	46.87	4.2	1200.0
2/8 18:25	100640.0	46.44	4.2	1200.0
2/8 18:26	100814.0	46.59	4.2	1199.8
2/8 18:27	101619.0	46.97	4.2	1199.8
2/8 18:28	102073.0	47.10	4.2	1199.7
2/8 18:29	101254.0	46.69	4.2	1199.8
2/8 18:30	102439.0	47.17	4.2	1200.0
2/8 18:31	101238.0	46.57	4.2	1200.0
2/8 18:32	101149.0	46.60	4.2	1200.0
2/8 18:33	102462.0	47.18	4.2	1200.2
2/8 18:34	101892.0	46.98	4.2	1200.0
2/8 18:35	102305.0	47.20	4.2	1200.3
2/8 18:36	102437.0	47.31	4.2	1200.0
2/8 18:37	101666.0	46.88	4.2	1200.0
2/8 18:38	102790.0	47.40	4.2	1199.8
2/8 18:39	100881.0	46.52	4.2	1199.8
2/8 18:40	100112.0	46.16	4.2	1199.8
2/8 18:41	103478.0	47.69	4.2	1199.8
2/8 18:42	100091.0	46.15	4.2	1200.0
2/8 18:43	102199.0	47.12	4.2	1200.2
2/8 18:44	100552.0	46.34	4.2	1199.7
2/8 18:45	103869.0	47.87	4.2	1200.0
2/8 18:46	102526.0	47.19	4.2	1200.3
2/8 18:47	102411.0	47.22	4.2	1200.0
2/8 18:48	102187.0	47.12	4.2	1200.2
2/8 18:49	100275.0	46.18	4.2	1200.5
2/8 18:50	102206.0	47.13	4.2	1199.8
2/8 18:51	101619.0	46.88	4.2	1200.0
2/8 18:52	101814.0	47.02	4.2	1199.8
2/8 18:53	101996.0	47.06	4.2	1200.0
2/8 18:54	102609.0	47.43	4.2	1199.8
2/8 18:55	102233.0	47.14	4.2	1199.8
2/8 18:56	103085.0	47.56	4.2	1199.8
2/8 18:57	102447.0	47.24	4.2	1199.5
2/8 18:58	102427.0	47.25	4.2	1200.0
2/8 18:59	102090.0	46.98	4.2	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/8 19:00	100965.0	46.45	4.2	1200.0
Average (all)	102194.1	47.09	4.2	1200.0
Total (all)	--	--	--	--
Minimum (all)	97648.0	45.53	4.1	1190.7
Maximum (all)	116174.0	49.27	4.2	1203.2
Average (valid values only)	102194.1	47.09	4.2	1200.0
Total (valid values only)	--	--	--	--
Count (valid values only)	781	781	781	781

CeDAR 1-Minute Data
Sunshine Gas Producers, LLC
Data for 2/9/2023 6:00 AM thru 2/9/2023 7:00 PM

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 6:00	101278.0	46.42	4.2	1200.2
2/9 6:01	105057.0	48.21	4.2	1200.0
2/9 6:02	103513.0	47.50	4.2	1200.0
2/9 6:03	102432.0	47.01	4.2	1199.7
2/9 6:04	103617.0	47.52	4.2	1200.0
2/9 6:05	103327.0	47.30	4.2	1200.0
2/9 6:06	103804.0	47.61	4.2	1200.0
2/9 6:07	102593.0	47.06	4.2	1200.3
2/9 6:08	103497.0	47.43	4.2	1200.3
2/9 6:09	103355.0	47.40	4.2	1199.8
2/9 6:10	101568.0	46.53	4.2	1200.0
2/9 6:11	104950.0	48.05	4.2	1200.2
2/9 6:12	102971.0	47.14	4.2	1200.2
2/9 6:13	102654.0	46.99	4.2	1200.0
2/9 6:14	101104.0	46.28	4.2	1200.0
2/9 6:15	103258.0	47.27	4.2	1199.8
2/9 6:16	103981.0	47.60	4.2	1200.2
2/9 6:17	103235.0	47.29	4.2	1200.0
2/9 6:18	103957.0	47.64	4.2	1199.7
2/9 6:19	103294.0	47.37	4.2	1199.8
2/9 6:20	102150.0	46.78	4.2	1200.0
2/9 6:21	104467.0	47.81	4.2	1200.0
2/9 6:22	104739.0	47.86	4.2	1200.2
2/9 6:23	103084.0	47.11	4.2	1200.2
2/9 6:24	102587.0	46.97	4.2	1199.8
2/9 6:25	103291.0	47.32	4.2	1199.8
2/9 6:26	102360.0	46.97	4.2	1200.0
2/9 6:27	104139.0	47.79	4.2	1200.0
2/9 6:28	101213.0	46.41	4.2	1200.2
2/9 6:29	102977.0	47.14	4.2	1200.0
2/9 6:30	103729.0	47.49	4.2	1200.3
2/9 6:31	101876.0	46.66	4.2	1199.8
2/9 6:32	102636.0	46.96	4.2	1200.0
2/9 6:33	103909.0	47.57	4.2	1200.0
2/9 6:34	103847.0	47.54	4.2	1199.8
2/9 6:35	102485.0	46.92	4.2	1199.8
2/9 6:36	101806.0	46.63	4.2	1200.0
2/9 6:37	103421.0	47.37	4.2	1200.0
2/9 6:38	103389.0	47.35	4.2	1200.2
2/9 6:39	102521.0	46.91	4.2	1199.7
2/9 6:40	103877.0	47.47	4.2	1200.2
2/9 6:41	102469.0	46.83	4.2	1199.8
2/9 6:42	103405.0	47.32	4.2	1200.0
2/9 6:43	104064.0	47.52	4.2	1199.7
2/9 6:44	104752.0	47.84	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 6:45	103727.0	47.37	4.2	1200.0
2/9 6:46	103639.0	47.33	4.2	1200.0
2/9 6:47	102268.0	46.71	4.2	1200.2
2/9 6:48	102843.0	46.97	4.2	1199.5
2/9 6:49	102133.0	46.62	4.2	1200.0
2/9 6:50	102527.0	46.86	4.2	1200.2
2/9 6:51	101449.0	46.36	4.2	1200.0
2/9 6:52	103954.0	47.54	4.2	1200.0
2/9 6:53	103239.0	47.17	4.2	1200.0
2/9 6:54	103389.0	47.22	4.2	1200.0
2/9 6:55	104211.0	47.54	4.2	1200.2
2/9 6:56	103817.0	47.30	4.2	1200.0
2/9 6:57	102865.0	46.89	4.2	1200.5
2/9 6:58	103213.0	47.16	4.2	1200.2
2/9 6:59	102603.0	46.95	4.2	1199.8
2/9 7:00	103926.0	47.46	4.2	1200.0
2/9 7:01	104557.0	47.70	4.2	1199.7
2/9 7:02	103138.0	46.99	4.2	1200.2
2/9 7:03	102081.0	46.59	4.2	1200.2
2/9 7:04	104538.0	47.77	4.2	1200.0
2/9 7:05	102967.0	47.03	4.2	1200.2
2/9 7:06	103036.0	47.15	4.2	1199.8
2/9 7:07	103623.0	47.32	4.2	1200.0
2/9 7:08	102117.0	46.64	4.2	1200.2
2/9 7:09	103915.0	47.57	4.2	1200.2
2/9 7:10	101460.0	46.59	4.2	1200.2
2/9 7:11	102934.0	47.32	4.2	1199.3
2/9 7:12	105156.0	48.12	4.2	1199.5
2/9 7:13	105307.0	48.01	4.2	1199.8
2/9 7:14	106217.0	48.34	4.2	1200.0
2/9 7:15	103108.0	47.07	4.2	1200.5
2/9 7:16	102430.0	46.97	4.2	1200.3
2/9 7:17	102096.0	47.04	4.2	1199.8
2/9 7:18	103464.0	47.50	4.2	1200.2
2/9 7:19	101742.0	46.72	4.2	1200.0
2/9 7:20	103605.0	47.68	4.2	1202.0
2/9 7:21	101737.0	47.67	4.2	1201.2
2/9 7:22	99960.0	47.18	4.2	1200.2
2/9 7:23	99734.0	47.15	4.2	1199.3
2/9 7:24	99496.0	46.96	4.2	1199.7
2/9 7:25	102555.0	48.21	4.2	1199.3
2/9 7:26	100852.0	47.19	4.2	1199.7
2/9 7:27	102962.0	48.00	4.2	1199.3
2/9 7:28	102369.0	47.50	4.2	1199.5
2/9 7:29	102265.0	47.27	4.2	1199.8
2/9 7:30	102895.0	47.36	4.2	1199.8
2/9 7:31	104243.0	47.89	4.2	1200.0
2/9 7:32	105581.0	48.45	4.2	1200.2
2/9 7:33	103576.0	47.53	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 7:34	102739.0	47.15	4.2	1199.8
2/9 7:35	102382.0	46.95	4.2	1199.8
2/9 7:36	102349.0	46.88	4.2	1199.8
2/9 7:37	105121.0	48.12	4.2	1200.0
2/9 7:38	104394.0	47.82	4.2	1200.2
2/9 7:39	104638.0	46.66	4.2	1200.2
2/9 7:40	103463.0	47.71	4.2	1200.3
2/9 7:41	101114.0	46.80	4.2	1200.2
2/9 7:42	101469.0	47.06	4.2	1200.2
2/9 7:43	101776.0	47.26	4.2	1200.0
2/9 7:44	101369.0	47.13	4.2	1200.0
2/9 7:45	101012.0	47.03	4.2	1200.0
2/9 7:46	100944.0	47.07	4.2	1200.0
2/9 7:47	100949.0	47.00	4.2	1200.2
2/9 7:48	100519.0	46.89	4.2	1200.0
2/9 7:49	101297.0	47.35	4.2	1200.2
2/9 7:50	99986.0	46.79	4.2	1200.0
2/9 7:51	102000.0	47.70	4.2	1200.0
2/9 7:52	100727.0	47.10	4.2	1200.0
2/9 7:53	100666.0	47.13	4.2	1199.8
2/9 7:54	99631.0	46.59	4.2	1200.0
2/9 7:55	100707.0	47.09	4.2	1200.0
2/9 7:56	100730.0	47.16	4.2	1200.0
2/9 7:57	100315.0	46.94	4.2	1200.0
2/9 7:58	101684.0	47.61	4.2	1199.8
2/9 7:59	100233.0	46.89	4.2	1200.0
2/9 8:00	103103.0	48.23	4.2	1200.2
2/9 8:01	99943.0	46.75	4.2	1200.0
2/9 8:02	100321.0	46.91	4.2	1200.0
2/9 8:03	100440.0	47.00	4.2	1200.0
2/9 8:04	100666.0	47.16	4.2	1200.0
2/9 8:05	101266.0	47.37	4.2	1199.8
2/9 8:06	100490.0	47.07	4.2	1200.2
2/9 8:07	101126.0	47.29	4.2	1199.8
2/9 8:08	99979.0	46.75	4.2	1200.2
2/9 8:09	101875.0	47.64	4.2	1200.0
2/9 8:10	102192.0	47.78	4.2	1200.0
2/9 8:11	102026.0	47.71	4.2	1200.0
2/9 8:12	100074.0	46.79	4.2	1200.0
2/9 8:13	101290.0	47.36	4.2	1200.0
2/9 8:14	100906.0	47.19	4.2	1200.0
2/9 8:15	100874.0	47.17	4.2	1199.8
2/9 8:16	100283.0	46.89	4.2	1200.2
2/9 8:17	102397.0	47.96	4.2	1200.3
2/9 8:18	101162.0	47.30	4.2	1199.7
2/9 8:19	101573.0	47.51	4.2	1200.0
2/9 8:20	100475.0	47.00	4.2	1200.0
2/9 8:21	98492.0	46.08	4.2	1200.0
2/9 8:22	99603.0	46.68	4.2	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 8:23	101557.0	47.60	4.2	1200.0
2/9 8:24	100986.0	47.33	4.2	1200.0
2/9 8:25	100197.0	46.94	4.2	1199.8
2/9 8:26	101009.0	47.34	4.2	1200.0
2/9 8:27	100531.0	47.12	4.2	1200.0
2/9 8:28	101300.0	47.40	4.2	1200.0
2/9 8:29	100402.0	46.95	4.2	1200.0
2/9 8:30	99869.0	46.78	4.2	1200.2
2/9 8:31	100199.0	46.94	4.2	1200.2
2/9 8:32	100821.0	47.17	4.2	1200.0
2/9 8:33	100736.0	47.13	4.2	1200.0
2/9 8:34	98716.0	46.22	4.2	1200.0
2/9 8:35	100076.0	46.89	4.2	1200.0
2/9 8:36	100484.0	47.09	4.2	1200.2
2/9 8:37	101231.0	47.47	4.2	1200.0
2/9 8:38	101344.0	47.42	4.2	1199.8
2/9 8:39	101977.0	47.63	4.2	1199.8
2/9 8:40	99601.0	46.54	4.2	1200.2
2/9 8:41	101563.0	47.46	4.2	1200.0
2/9 8:42	101575.0	47.50	4.2	1200.0
2/9 8:43	100252.0	46.90	4.2	1200.2
2/9 8:44	101038.0	47.33	4.2	1200.3
2/9 8:45	101530.0	47.67	4.2	1199.8
2/9 8:46	101527.0	47.57	4.2	1200.2
2/9 8:47	101105.0	47.39	4.2	1200.0
2/9 8:48	99424.0	46.58	4.2	1200.3
2/9 8:49	99696.0	46.73	4.2	1199.8
2/9 8:50	100993.0	47.33	4.2	1200.0
2/9 8:51	100365.0	47.04	4.2	1200.0
2/9 8:52	99825.0	46.77	4.1	1198.8
2/9 8:53	100726.0	46.85	4.2	1199.3
2/9 8:54	101352.0	46.96	4.2	1200.2
2/9 8:55	101548.0	47.15	4.2	1200.7
2/9 8:56	100601.0	46.96	4.2	1200.5
2/9 8:57	101475.0	47.53	4.2	1200.0
2/9 8:58	99082.0	46.30	4.1	1198.5
2/9 8:59	101570.0	47.09	4.2	1199.8
2/9 9:00	101555.0	46.96	4.2	1200.0
2/9 9:01	101570.0	47.03	4.2	1199.8
2/9 9:02	100781.0	46.74	4.2	1199.8
2/9 9:03	101603.0	47.15	4.2	1199.8
2/9 9:04	99628.0	46.26	4.2	1200.0
2/9 9:05	101218.0	47.19	4.2	1200.5
2/9 9:06	100170.0	46.84	4.2	1200.2
2/9 9:07	101131.0	47.29	4.2	1200.2
2/9 9:08	100644.0	47.15	4.2	1200.2
2/9 9:09	100246.0	46.97	4.2	1200.2
2/9 9:10	100960.0	47.32	4.1	1200.2
2/9 9:11	100335.0	47.05	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 9:12	100251.0	46.99	4.2	1199.8
2/9 9:13	100972.0	47.32	4.2	1200.2
2/9 9:14	100719.0	47.16	4.2	1199.8
2/9 9:15	101121.0	47.28	4.1	1199.5
2/9 9:16	101165.0	47.20	4.2	1199.8
2/9 9:17	101007.0	47.01	4.1	1198.8
2/9 9:18	102124.0	47.22	4.2	1199.5
2/9 9:19	102022.0	46.85	4.2	1199.8
2/9 9:20	102441.0	46.90	4.2	1199.8
2/9 9:21	102097.0	46.63	4.2	1200.2
2/9 9:22	101796.0	46.55	4.1	1198.3
2/9 9:23	107623.0	48.10	4.2	1199.8
2/9 9:24	109254.0	47.61	4.2	1199.3
2/9 9:25	105497.0	46.49	4.2	1199.5
2/9 9:26	104059.0	46.24	4.2	1200.7
2/9 9:27	104399.0	46.87	4.2	1201.3
2/9 9:28	104483.0	47.43	4.1	1199.2
2/9 9:29	103209.0	46.66	4.2	1200.3
2/9 9:30	103532.0	46.97	4.2	1200.2
2/9 9:31	102012.0	46.40	4.2	1200.3
2/9 9:32	104554.0	47.75	4.2	1200.2
2/9 9:33	103476.0	47.23	4.2	1199.8
2/9 9:34	103124.0	46.95	4.2	1200.2
2/9 9:35	103120.0	46.89	4.2	1199.7
2/9 9:36	104442.0	47.47	4.2	1200.2
2/9 9:37	103163.0	46.93	4.2	1200.3
2/9 9:38	103449.0	47.13	4.2	1200.2
2/9 9:39	103217.0	47.03	4.2	1199.8
2/9 9:40	103440.0	47.13	4.2	1200.0
2/9 9:41	103608.0	47.27	4.2	1199.8
2/9 9:42	101690.0	46.44	4.2	1200.2
2/9 9:43	103596.0	47.41	4.2	1200.3
2/9 9:44	102163.0	46.77	4.2	1200.2
2/9 9:45	100997.0	46.26	4.2	1200.0
2/9 9:46	104412.0	47.89	4.2	1200.0
2/9 9:47	102961.0	47.14	4.2	1200.0
2/9 9:48	101343.0	46.39	4.2	1200.0
2/9 9:49	103977.0	47.69	4.2	1200.5
2/9 9:50	103465.0	47.57	4.2	1199.8
2/9 9:51	101555.0	46.70	4.2	1200.2
2/9 9:52	102888.0	47.33	4.2	1200.2
2/9 9:53	102035.0	46.94	4.2	1199.8
2/9 9:54	100785.0	46.36	4.1	1200.0
2/9 9:55	101692.0	46.78	4.1	1200.2
2/9 9:56	102322.0	47.07	4.1	1200.3
2/9 9:57	102999.0	47.45	4.1	1200.2
2/9 9:58	101466.0	46.79	4.1	1200.3
2/9 9:59	103572.0	47.76	4.1	1199.7
2/9 10:00	102841.0	47.42	4.1	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 10:01	100647.0	46.37	4.1	1200.3
2/9 10:02	101911.0	46.99	4.1	1200.0
2/9 10:03	103377.0	47.67	4.1	1199.8
2/9 10:04	102882.0	47.35	4.1	1200.2
2/9 10:05	102857.0	47.32	4.2	1200.2
2/9 10:06	101321.0	46.70	4.1	1200.0
2/9 10:07	101914.0	46.99	4.1	1200.0
2/9 10:08	102688.0	47.35	4.1	1200.2
2/9 10:09	100783.0	46.47	4.1	1200.2
2/9 10:10	101910.0	46.99	4.1	1199.8
2/9 10:11	101598.0	46.88	4.1	1199.8
2/9 10:12	102322.0	47.12	4.1	1199.7
2/9 10:13	100781.0	46.41	4.1	1200.2
2/9 10:14	101675.0	46.80	4.1	1200.0
2/9 10:15	102088.0	46.96	4.1	1200.2
2/9 10:16	102725.0	47.33	4.1	1200.2
2/9 10:17	101201.0	46.66	4.1	1200.3
2/9 10:18	99748.0	45.90	4.1	1200.2
2/9 10:19	103610.0	47.66	4.1	1199.8
2/9 10:20	102459.0	47.13	4.1	1200.2
2/9 10:21	102322.0	47.05	4.1	1200.0
2/9 10:22	101104.0	46.45	4.1	1200.3
2/9 10:23	102891.0	47.40	4.1	1199.8
2/9 10:24	103096.0	47.48	4.1	1200.2
2/9 10:25	101122.0	46.57	4.1	1200.5
2/9 10:26	100593.0	46.38	4.1	1200.0
2/9 10:27	101877.0	47.05	4.1	1200.2
2/9 10:28	102444.0	47.32	4.1	1199.5
2/9 10:29	101239.0	46.70	4.1	1199.8
2/9 10:30	102618.0	47.37	4.1	1200.0
2/9 10:31	102136.0	47.12	4.1	1200.0
2/9 10:32	102026.0	47.16	4.1	1200.0
2/9 10:33	99842.0	46.15	4.1	1200.0
2/9 10:34	100459.0	46.43	4.1	1200.2
2/9 10:35	101148.0	46.72	4.1	1200.0
2/9 10:36	102374.0	47.27	4.1	1200.0
2/9 10:37	100635.0	46.41	4.1	1200.0
2/9 10:38	101035.0	46.64	4.1	1199.8
2/9 10:39	100143.0	46.17	4.1	1200.0
2/9 10:40	100887.0	46.52	4.1	1200.0
2/9 10:41	101789.0	46.94	4.1	1200.3
2/9 10:42	101763.0	46.92	4.1	1200.0
2/9 10:43	102510.0	47.27	4.1	1199.7
2/9 10:44	104293.0	47.99	4.1	1199.2
2/9 10:45	103465.0	47.28	4.1	1199.5
2/9 10:46	102299.0	46.67	4.1	1200.2
2/9 10:47	101002.0	46.19	4.1	1200.5
2/9 10:48	101416.0	46.63	4.1	1200.5
2/9 10:49	100122.0	46.22	4.1	1199.8

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Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 10:50	100419.0	46.41	4.1	1199.8
2/9 10:51	100733.0	46.56	4.1	1200.0
2/9 10:52	102543.0	47.39	4.1	1200.2
2/9 10:53	101699.0	47.01	4.1	1200.0
2/9 10:54	100431.0	46.42	4.1	1200.0
2/9 10:55	102314.0	47.31	4.1	1199.8
2/9 10:56	102178.0	47.28	4.1	1199.7
2/9 10:57	100417.0	46.41	4.1	1200.0
2/9 10:58	99521.0	45.96	4.1	1200.2
2/9 10:59	101221.0	46.78	4.1	1199.8
2/9 11:00	101753.0	47.06	4.1	1200.2
2/9 11:01	100747.0	46.68	4.1	1199.7
2/9 11:02	99883.0	46.27	4.1	1200.2
2/9 11:03	100143.0	46.39	4.1	1199.8
2/9 11:04	101930.0	47.14	4.1	1200.0
2/9 11:05	100612.0	46.52	4.1	1200.0
2/9 11:06	103129.0	47.70	4.1	1200.2
2/9 11:07	102225.0	47.33	4.1	1200.0
2/9 11:08	99000.0	45.87	4.1	1200.0
2/9 11:09	100631.0	46.56	4.1	1200.2
2/9 11:10	100201.0	46.33	4.1	1199.8
2/9 11:11	101899.0	47.10	4.1	1200.0
2/9 11:12	100925.0	46.68	4.1	1200.0
2/9 11:13	100796.0	46.64	4.1	1200.0
2/9 11:14	99600.0	46.14	4.1	1200.2
2/9 11:15	99428.0	46.07	4.1	1199.8
2/9 11:16	102069.0	47.29	4.1	1200.2
2/9 11:17	101185.0	46.84	4.1	1199.8
2/9 11:18	101543.0	46.93	4.1	1200.0
2/9 11:19	100286.0	46.40	4.1	1200.0
2/9 11:20	100474.0	46.52	4.1	1200.0
2/9 11:21	101600.0	46.99	4.1	1200.2
2/9 11:22	100388.0	46.42	4.1	1200.3
2/9 11:23	100911.0	46.64	4.1	1200.0
2/9 11:24	101500.0	46.91	4.1	1200.0
2/9 11:25	100680.0	46.53	4.1	1200.0
2/9 11:26	99747.0	46.15	4.1	1200.2
2/9 11:27	100377.0	46.45	4.1	1199.8
2/9 11:28	101229.0	46.81	4.1	1200.3
2/9 11:29	100085.0	46.37	4.1	1199.3
2/9 11:30	100549.0	46.55	4.1	1200.2
2/9 11:31	98884.0	45.81	4.1	1200.0
2/9 11:32	98937.0	45.84	4.1	1200.0
2/9 11:33	101576.0	47.06	4.1	1200.0
2/9 11:34	101101.0	46.80	4.1	1199.7
2/9 11:35	99912.0	46.21	4.1	1200.2
2/9 11:36	100952.0	46.74	4.1	1200.0
2/9 11:37	101056.0	46.84	4.1	1200.3
2/9 11:38	98670.0	45.78	4.1	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 11:39	99735.0	46.31	4.1	1200.0
2/9 11:40	99706.0	46.27	4.1	1199.8
2/9 11:41	101505.0	47.06	4.1	1199.5
2/9 11:42	99941.0	46.30	4.1	1200.0
2/9 11:43	100640.0	46.63	4.1	1200.3
2/9 11:44	101183.0	46.88	4.1	1200.2
2/9 11:45	101615.0	47.15	4.1	1200.0
2/9 11:46	101252.0	46.98	4.1	1200.0
2/9 11:47	100437.0	46.58	4.1	1200.2
2/9 11:48	101305.0	47.04	4.1	1199.8
2/9 11:49	101988.0	47.25	4.1	1199.8
2/9 11:50	100339.0	46.57	4.1	1200.5
2/9 11:51	100031.0	46.47	4.1	1200.0
2/9 11:52	102462.0	47.66	4.1	1200.2
2/9 11:53	99999.0	46.49	4.1	1199.7
2/9 11:54	99835.0	46.34	4.1	1199.5
2/9 11:55	100860.0	46.70	4.1	1199.8
2/9 11:56	99201.0	45.92	4.1	1200.2
2/9 11:57	100641.0	46.63	4.1	1200.5
2/9 11:58	100332.0	46.56	4.1	1200.3
2/9 11:59	100380.0	46.61	4.1	1200.0
2/9 12:00	100599.0	46.71	4.1	1199.8
2/9 12:01	101466.0	47.09	4.1	1200.2
2/9 12:02	100362.0	46.52	4.1	1199.8
2/9 12:03	100423.0	46.52	4.1	1200.0
2/9 12:04	100367.0	46.50	4.1	1200.2
2/9 12:05	99952.0	46.34	4.1	1200.2
2/9 12:06	99549.0	46.22	4.1	1200.5
2/9 12:07	100411.0	46.68	4.1	1200.2
2/9 12:08	98760.0	45.85	4.1	1200.0
2/9 12:09	100744.0	46.75	4.1	1199.8
2/9 12:10	100437.0	46.63	4.1	1199.8
2/9 12:11	99943.0	46.40	4.1	1200.3
2/9 12:12	100630.0	46.81	4.1	1199.7
2/9 12:13	99104.0	46.07	4.1	1199.8
2/9 12:14	99914.0	46.39	4.1	1199.8
2/9 12:15	100344.0	46.57	4.1	1199.8
2/9 12:16	100334.0	46.51	4.1	1200.2
2/9 12:17	101271.0	47.02	4.1	1200.0
2/9 12:18	100507.0	46.67	4.1	1200.2
2/9 12:19	100941.0	46.87	4.1	1199.7
2/9 12:20	100417.0	46.66	4.1	1200.2
2/9 12:21	101633.0	47.19	4.1	1199.7
2/9 12:22	101526.0	47.06	4.1	1200.0
2/9 12:23	101510.0	47.06	4.1	1200.2
2/9 12:24	100660.0	46.74	4.1	1199.7
2/9 12:25	100693.0	46.68	4.1	1199.8
2/9 12:26	99930.0	46.35	4.1	1199.8
2/9 12:27	100765.0	46.71	4.1	1200.5

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 12:28	102087.0	47.40	4.1	1200.2
2/9 12:29	100070.0	46.54	4.1	1200.2
2/9 12:30	99808.0	46.38	4.1	1199.8
2/9 12:31	99935.0	46.40	4.1	1200.0
2/9 12:32	100912.0	46.85	4.1	1199.7
2/9 12:33	100997.0	46.71	4.1	1200.0
2/9 12:34	99934.0	46.22	4.1	1200.0
2/9 12:35	101862.0	47.19	4.1	1200.3
2/9 12:36	98988.0	45.96	4.1	1199.7
2/9 12:37	101404.0	47.01	4.1	1199.8
2/9 12:38	102369.0	47.48	4.1	1199.8
2/9 12:39	99491.0	46.03	4.1	1200.2
2/9 12:40	101753.0	47.05	4.1	1199.8
2/9 12:41	101952.0	47.12	4.1	1200.2
2/9 12:42	101174.0	46.76	4.1	1199.8
2/9 12:43	100399.0	46.46	4.1	1200.0
2/9 12:44	99978.0	46.32	4.1	1199.8
2/9 12:45	104129.0	48.24	4.1	1200.0
2/9 12:46	99778.0	46.23	4.1	1199.8
2/9 12:47	101896.0	47.21	4.1	1200.2
2/9 12:48	102598.0	47.53	4.1	1199.8
2/9 12:49	101530.0	47.06	4.1	1200.2
2/9 12:50	100573.0	46.69	4.1	1200.2
2/9 12:51	99941.0	46.30	4.1	1200.3
2/9 12:52	100156.0	46.47	4.1	1199.8
2/9 12:53	100992.0	46.95	4.1	1200.0
2/9 12:54	99095.0	46.05	4.1	1199.7
2/9 12:55	101785.0	47.26	4.1	1200.2
2/9 12:56	102150.0	47.47	4.1	1200.2
2/9 12:57	99875.0	46.37	4.1	1200.0
2/9 12:58	101588.0	47.21	4.1	1200.2
2/9 12:59	101282.0	47.11	4.1	1200.3
2/9 13:00	101023.0	47.01	4.1	1199.8
2/9 13:01	99815.0	46.46	4.1	1200.2
2/9 13:02	101212.0	47.16	4.1	1200.2
2/9 13:03	99245.0	46.19	4.1	1200.0
2/9 13:04	101095.0	47.05	4.1	1200.2
2/9 13:05	100490.0	46.83	4.1	1199.7
2/9 13:06	101157.0	47.12	4.1	1200.0
2/9 13:07	101071.0	47.04	4.1	1200.0
2/9 13:08	101218.0	47.09	4.1	1199.8
2/9 13:09	99371.0	46.14	4.1	1200.0
2/9 13:10	100766.0	46.79	4.1	1199.8
2/9 13:11	101834.0	47.36	4.1	1200.2
2/9 13:12	100596.0	46.82	4.1	1199.8
2/9 13:13	101067.0	47.04	4.1	1199.8
2/9 13:14	100623.0	46.80	4.1	1200.2
2/9 13:15	99896.0	46.41	4.1	1200.0
2/9 13:16	101768.0	47.18	4.1	1199.8

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Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 13:17	99779.0	46.31	4.1	1200.2
2/9 13:18	100042.0	46.45	4.1	1200.3
2/9 13:19	99679.0	46.28	4.1	1200.2
2/9 13:20	99950.0	46.47	4.1	1200.2
2/9 13:21	100842.0	46.80	4.1	1200.0
2/9 13:22	100493.0	46.64	4.1	1199.8
2/9 13:23	101830.0	47.28	4.1	1200.0
2/9 13:24	101004.0	46.89	4.1	1200.2
2/9 13:25	100740.0	46.77	4.1	1200.0
2/9 13:26	100578.0	46.76	4.1	1200.0
2/9 13:27	101390.0	47.12	4.1	1200.0
2/9 13:28	101225.0	47.03	4.1	1199.8
2/9 13:29	100242.0	46.65	4.1	1200.7
2/9 13:30	101796.0	47.36	4.1	1199.3
2/9 13:31	99831.0	46.44	4.1	1200.0
2/9 13:32	100202.0	46.61	4.1	1200.2
2/9 13:33	98467.0	45.83	4.1	1199.8
2/9 13:34	101049.0	46.90	4.1	1199.7
2/9 13:35	101150.0	46.77	4.1	1199.3
2/9 13:36	101514.0	46.79	4.1	1200.2
2/9 13:37	102198.0	47.10	4.1	1200.0
2/9 13:38	100657.0	46.37	4.1	1199.8
2/9 13:39	103763.0	47.76	4.1	1200.0
2/9 13:40	101464.0	46.76	4.1	1199.7
2/9 13:41	102119.0	47.07	4.1	1199.8
2/9 13:42	103355.0	47.66	4.1	1199.8
2/9 13:43	101596.0	46.77	4.1	1199.8
2/9 13:44	102283.0	47.14	4.1	1200.2
2/9 13:45	100275.0	46.16	4.1	1200.2
2/9 13:46	101952.0	47.03	4.1	1200.2
2/9 13:47	101895.0	46.99	4.1	1199.8
2/9 13:48	100985.0	46.57	4.1	1199.8
2/9 13:49	103437.0	47.60	4.1	1200.2
2/9 13:50	99722.0	46.03	4.1	1200.3
2/9 13:51	100526.0	46.54	4.1	1200.3
2/9 13:52	100884.0	46.74	4.1	1200.0
2/9 13:53	100222.0	46.46	4.1	1200.0
2/9 13:54	101982.0	47.41	4.1	1200.0
2/9 13:55	101093.0	46.97	4.1	1200.0
2/9 13:56	100575.0	46.79	4.1	1200.0
2/9 13:57	103483.0	48.14	4.1	1200.2
2/9 13:58	100396.0	46.65	4.1	1199.8
2/9 13:59	101097.0	46.94	4.1	1199.7
2/9 14:00	100025.0	46.44	4.1	1200.2
2/9 14:01	100685.0	46.78	4.1	1200.3
2/9 14:02	101508.0	47.24	4.1	1199.7
2/9 14:03	100527.0	46.81	4.1	1200.2
2/9 14:04	100351.0	46.70	4.1	1199.7
2/9 14:05	100283.0	46.67	4.1	1199.7

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 14:06	100438.0	46.74	4.1	1199.8
2/9 14:07	99702.0	46.40	4.1	1199.7
2/9 14:08	101896.0	47.42	4.1	1200.2
2/9 14:09	101820.0	47.39	4.1	1200.0
2/9 14:10	100521.0	46.75	4.1	1200.0
2/9 14:11	100220.0	46.61	4.1	1200.3
2/9 14:12	99550.0	46.33	4.1	1200.0
2/9 14:13	99775.0	46.44	4.1	1200.2
2/9 14:14	100384.0	46.72	4.1	1199.5
2/9 14:15	100099.0	46.51	4.1	1200.2
2/9 14:16	101367.0	46.96	4.1	1200.0
2/9 14:17	102206.0	47.24	4.1	1199.5
2/9 14:18	101230.0	46.79	4.1	1200.5
2/9 14:19	101590.0	46.95	4.1	1199.8
2/9 14:20	100040.0	46.16	4.1	1200.2
2/9 14:21	100910.0	46.60	4.1	1199.8
2/9 14:22	99661.0	46.08	4.1	1200.2
2/9 14:23	100110.0	46.46	4.1	1200.2
2/9 14:24	99295.0	46.21	4.1	1200.0
2/9 14:25	99016.0	46.08	4.1	1199.8
2/9 14:26	100759.0	46.87	4.1	1200.0
2/9 14:27	99655.0	46.35	4.1	1199.7
2/9 14:28	101980.0	47.43	4.1	1200.0
2/9 14:29	101034.0	47.00	4.1	1200.0
2/9 14:30	100497.0	46.77	4.1	1199.8
2/9 14:31	100546.0	46.80	4.1	1200.0
2/9 14:32	101416.0	47.07	4.1	1199.7
2/9 14:33	100351.0	46.46	4.1	1199.8
2/9 14:34	101178.0	46.88	4.1	1200.3
2/9 14:35	99178.0	46.05	4.1	1200.5
2/9 14:36	98545.0	45.87	4.1	1200.2
2/9 14:37	99649.0	46.38	4.1	1200.0
2/9 14:38	100543.0	46.79	4.1	1199.7
2/9 14:39	100013.0	46.56	4.1	1199.8
2/9 14:40	98480.0	45.80	4.1	1199.8
2/9 14:41	101704.0	47.22	4.1	1200.3
2/9 14:42	99000.0	46.04	4.1	1200.2
2/9 14:43	100956.0	46.99	4.1	1200.0
2/9 14:44	101255.0	47.13	4.1	1200.2
2/9 14:45	100159.0	46.63	4.1	1199.8
2/9 14:46	101373.0	47.07	4.1	1200.0
2/9 14:47	100752.0	46.78	4.1	1199.7
2/9 14:48	102160.0	47.11	4.1	1199.3
2/9 14:49	99895.0	45.73	4.1	1200.2
2/9 14:50	100895.0	46.19	4.1	1200.2
2/9 14:51	101224.0	46.59	4.1	1201.3
2/9 14:52	102038.0	47.30	4.1	1199.8
2/9 14:53	99263.0	46.09	4.1	1199.7
2/9 14:54	100227.0	46.54	4.1	1200.0

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Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 14:55	100834.0	46.82	4.1	1199.7
2/9 14:56	99351.0	46.11	4.1	1200.3
2/9 14:57	100321.0	46.69	4.1	1200.3
2/9 14:58	100121.0	46.58	4.1	1200.3
2/9 14:59	100404.0	46.73	4.1	1199.8
2/9 15:00	100463.0	46.70	4.1	1199.3
2/9 15:01	101323.0	47.08	4.1	1199.8
2/9 15:02	100579.0	46.70	4.1	1199.8
2/9 15:03	101001.0	46.99	4.1	1200.2
2/9 15:04	99037.0	46.07	4.1	1200.5
2/9 15:05	98872.0	46.01	4.1	1200.0
2/9 15:06	100314.0	46.68	4.1	1200.0
2/9 15:07	100537.0	46.79	4.1	1200.0
2/9 15:08	100343.0	46.70	4.1	1199.8
2/9 15:09	98863.0	45.98	4.1	1200.0
2/9 15:10	99685.0	46.35	4.1	1200.2
2/9 15:11	98582.0	45.77	4.1	1199.8
2/9 15:12	99721.0	46.30	4.1	1200.2
2/9 15:13	100504.0	46.69	4.1	1200.0
2/9 15:14	98322.0	45.69	4.1	1199.8
2/9 15:15	99910.0	46.34	4.1	1199.3
2/9 15:16	101013.0	46.61	4.1	1199.5
2/9 15:17	100847.0	46.42	4.1	1200.8
2/9 15:18	99728.0	46.22	4.1	1200.7
2/9 15:19	99268.0	46.18	4.1	1200.0
2/9 15:20	99656.0	46.38	4.1	1200.0
2/9 15:21	98006.0	45.63	4.1	1200.2
2/9 15:22	99432.0	46.29	4.1	1199.5
2/9 15:23	99103.0	46.09	4.1	1199.5
2/9 15:24	100556.0	46.73	4.1	1199.8
2/9 15:25	102068.0	47.48	4.1	1199.7
2/9 15:26	101036.0	47.00	4.1	1200.3
2/9 15:27	100747.0	46.89	4.1	1200.0
2/9 15:28	98884.0	46.02	4.1	1200.0
2/9 15:29	100176.0	46.59	4.1	1199.8
2/9 15:30	100343.0	46.59	4.1	1199.8
2/9 15:31	100979.0	46.89	4.1	1200.0
2/9 15:32	100478.0	46.71	4.1	1200.3
2/9 15:33	100850.0	46.96	4.1	1200.0
2/9 15:34	99954.0	46.56	4.1	1199.8
2/9 15:35	99273.0	46.20	4.1	1199.3
2/9 15:36	100367.0	46.71	4.1	1200.0
2/9 15:37	100560.0	46.80	4.1	1200.0
2/9 15:38	98788.0	45.98	4.1	1200.2
2/9 15:39	100438.0	46.74	4.1	1200.2
2/9 15:40	99847.0	46.45	4.1	1199.7
2/9 15:41	99626.0	46.19	4.1	1199.7
2/9 15:42	102082.0	47.26	4.1	1199.7
2/9 15:43	102244.0	47.33	4.1	1200.2

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 15:44	101386.0	47.08	4.1	1200.2
2/9 15:45	101491.0	47.09	4.1	1200.0
2/9 15:46	100090.0	46.40	4.1	1199.5
2/9 15:47	100943.0	46.50	4.1	1200.0
2/9 15:48	102431.0	47.19	4.1	1200.8
2/9 15:49	101364.0	47.06	4.1	1200.5
2/9 15:50	100350.0	46.70	4.1	1200.0
2/9 15:51	101257.0	47.13	4.1	1199.8
2/9 15:52	100746.0	46.89	4.1	1199.8
2/9 15:53	100005.0	46.51	4.1	1199.5
2/9 15:54	100932.0	46.89	4.1	1200.0
2/9 15:55	100416.0	46.63	4.1	1200.3
2/9 15:56	99667.0	46.37	4.1	1200.5
2/9 15:57	101377.0	47.18	4.1	1200.2
2/9 15:58	98691.0	45.93	4.1	1200.0
2/9 15:59	100996.0	47.01	4.1	1199.8
2/9 16:00	99937.0	46.43	4.1	1199.7
2/9 16:01	99568.0	46.32	4.1	1199.8
2/9 16:02	101453.0	47.21	4.1	1200.0
2/9 16:03	99708.0	46.38	4.1	1199.8
2/9 16:04	100652.0	46.73	4.1	1199.8
2/9 16:05	99748.0	46.18	4.1	1199.3
2/9 16:06	100993.0	46.70	4.1	1200.2
2/9 16:07	100595.0	46.55	4.1	1200.0
2/9 16:08	101043.0	46.75	4.1	1199.8
2/9 16:09	101193.0	46.77	4.1	1200.0
2/9 16:10	102557.0	47.40	4.1	1200.0
2/9 16:11	101044.0	46.70	4.1	1200.2
2/9 16:12	100378.0	46.37	4.1	1199.8
2/9 16:13	100409.0	46.41	4.1	1200.0
2/9 16:14	100464.0	46.43	4.1	1200.2
2/9 16:15	99851.0	46.15	4.1	1200.0
2/9 16:16	102330.0	47.30	4.1	1200.0
2/9 16:17	101791.0	47.07	4.1	1199.8
2/9 16:18	102102.0	47.15	4.1	1199.7
2/9 16:19	102553.0	47.36	4.1	1200.2
2/9 16:20	100565.0	46.53	4.1	1200.2
2/9 16:21	99979.0	46.23	4.1	1200.0
2/9 16:22	103924.0	48.06	4.1	1199.7
2/9 16:23	99891.0	46.17	4.1	1200.0
2/9 16:24	101553.0	46.94	4.1	1200.0
2/9 16:25	100880.0	46.66	4.1	1199.8
2/9 16:26	101229.0	46.76	4.1	1200.0
2/9 16:27	101240.0	46.68	4.1	1200.0
2/9 16:28	103027.0	47.54	4.1	1200.3
2/9 16:29	101514.0	46.92	4.1	1200.0
2/9 16:30	101531.0	46.95	4.1	1200.0
2/9 16:31	101010.0	46.76	4.1	1200.0
2/9 16:32	101082.0	46.75	4.1	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 16:33	100622.0	46.51	4.1	1200.0
2/9 16:34	100251.0	46.28	4.1	1199.7
2/9 16:35	100792.0	46.47	4.1	1200.7
2/9 16:36	101075.0	46.72	4.1	1200.0
2/9 16:37	100823.0	46.60	4.1	1200.2
2/9 16:38	102344.0	47.30	4.1	1199.5
2/9 16:39	99926.0	46.19	4.1	1200.0
2/9 16:40	102326.0	47.30	4.1	1199.7
2/9 16:41	100468.0	46.35	4.1	1199.8
2/9 16:42	101139.0	46.64	4.1	1199.8
2/9 16:43	101727.0	46.91	4.1	1200.2
2/9 16:44	101675.0	46.88	4.1	1200.3
2/9 16:45	101469.0	46.86	4.1	1200.0
2/9 16:46	101940.0	47.12	4.1	1199.8
2/9 16:47	101356.0	46.76	4.1	1199.7
2/9 16:48	101823.0	46.95	4.1	1200.0
2/9 16:49	102571.0	47.30	4.1	1200.0
2/9 16:50	102222.0	47.13	4.1	1200.2
2/9 16:51	101464.0	46.80	4.1	1199.8
2/9 16:52	101264.0	46.61	4.1	1200.2
2/9 16:53	102274.0	47.14	4.1	1199.3
2/9 16:54	102562.0	47.32	4.1	1200.3
2/9 16:55	102851.0	47.65	4.1	1199.7
2/9 16:56	102170.0	47.22	4.2	1199.7
2/9 16:57	101603.0	46.99	4.2	1200.7
2/9 16:58	100149.0	46.48	4.1	1200.0
2/9 16:59	100243.0	46.54	4.1	1199.7
2/9 17:00	99667.0	46.26	4.1	1199.5
2/9 17:01	101110.0	46.76	4.2	1200.2
2/9 17:02	102159.0	47.25	4.2	1199.8
2/9 17:03	101786.0	47.08	4.2	1200.3
2/9 17:04	102149.0	47.33	4.2	1199.8
2/9 17:05	101511.0	46.92	4.2	1199.8
2/9 17:06	100470.0	46.46	4.2	1200.0
2/9 17:07	101116.0	46.77	4.2	1200.2
2/9 17:08	101247.0	46.91	4.2	1200.0
2/9 17:09	100814.0	46.71	4.2	1200.0
2/9 17:10	100529.0	46.50	4.2	1200.0
2/9 17:11	100919.0	46.65	4.2	1200.2
2/9 17:12	101396.0	46.87	4.2	1199.8
2/9 17:13	102190.0	47.23	4.2	1200.3
2/9 17:14	101060.0	46.71	4.1	1199.3
2/9 17:15	101634.0	46.75	4.2	1199.2
2/9 17:16	101121.0	46.34	4.2	1200.2
2/9 17:17	103093.0	47.44	4.2	1200.3
2/9 17:18	100236.0	46.35	4.2	1200.2
2/9 17:19	99964.0	46.25	4.1	1200.0
2/9 17:20	100910.0	46.75	4.2	1199.8
2/9 17:21	102880.0	47.57	4.2	1200.0

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Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 17:22	100436.0	46.42	4.2	1200.0
2/9 17:23	102686.0	47.48	4.2	1200.2
2/9 17:24	101245.0	46.85	4.2	1200.0
2/9 17:25	102790.0	47.62	4.2	1200.0
2/9 17:26	100661.0	46.61	4.2	1200.0
2/9 17:27	100738.0	46.58	4.2	1200.0
2/9 17:28	101788.0	47.05	4.2	1199.8
2/9 17:29	102539.0	47.36	4.2	1200.0
2/9 17:30	103627.0	47.86	4.2	1200.0
2/9 17:31	104803.0	48.41	4.2	1200.2
2/9 17:32	101200.0	46.77	4.2	1200.0
2/9 17:33	101748.0	47.08	4.2	1200.0
2/9 17:34	103226.0	47.74	4.2	1200.2
2/9 17:35	100292.0	46.37	4.2	1200.0
2/9 17:36	103635.0	47.93	4.2	1199.8
2/9 17:37	101802.0	47.05	4.2	1200.0
2/9 17:38	102335.0	47.21	4.2	1200.0
2/9 17:39	102974.0	47.53	4.2	1199.8
2/9 17:40	100581.0	46.40	4.2	1200.3
2/9 17:41	101519.0	46.97	4.2	1200.2
2/9 17:42	102086.0	47.19	4.2	1200.0
2/9 17:43	101714.0	47.04	4.2	1199.8
2/9 17:44	101386.0	46.86	4.2	1200.2
2/9 17:45	101487.0	46.88	4.2	1200.0
2/9 17:46	103035.0	47.63	4.2	1200.0
2/9 17:47	99903.0	46.13	4.2	1199.8
2/9 17:48	99566.0	45.80	4.2	1200.3
2/9 17:49	100653.0	46.41	4.2	1200.2
2/9 17:50	101255.0	46.80	4.2	1200.0
2/9 17:51	102132.0	47.17	4.2	1199.8
2/9 17:52	103786.0	47.91	4.2	1199.8
2/9 17:53	101504.0	46.85	4.2	1200.0
2/9 17:54	101581.0	46.95	4.2	1200.2
2/9 17:55	102276.0	47.36	4.2	1200.3
2/9 17:56	103316.0	47.87	4.2	1199.8
2/9 17:57	102196.0	47.26	4.2	1200.2
2/9 17:58	101294.0	46.82	4.2	1199.8
2/9 17:59	103568.0	47.78	4.2	1199.8
2/9 18:00	100354.0	46.29	4.2	1200.0
2/9 18:01	103289.0	47.63	4.2	1200.0
2/9 18:02	102171.0	47.11	4.2	1199.7
2/9 18:03	103162.0	47.57	4.2	1200.2
2/9 18:04	101889.0	47.06	4.2	1199.8
2/9 18:05	102550.0	47.40	4.2	1200.2
2/9 18:06	101592.0	46.95	4.2	1200.0
2/9 18:07	100969.0	46.56	4.2	1200.3
2/9 18:08	102028.0	47.16	4.2	1199.8
2/9 18:09	102636.0	47.38	4.2	1200.3
2/9 18:10	103281.0	47.64	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 18:11	101385.0	46.77	4.2	1200.0
2/9 18:12	103717.0	47.86	4.2	1200.3
2/9 18:13	102556.0	47.32	4.2	1199.5
2/9 18:14	103614.0	47.81	4.2	1199.8
2/9 18:15	102170.0	47.11	4.2	1200.0
2/9 18:16	101208.0	46.70	4.2	1200.0
2/9 18:17	102503.0	47.22	4.2	1200.0
2/9 18:18	100523.0	46.27	4.2	1200.0
2/9 18:19	101265.0	46.70	4.2	1199.8
2/9 18:20	102296.0	47.11	4.2	1200.2
2/9 18:21	103768.0	47.85	4.2	1200.2
2/9 18:22	102135.0	47.10	4.2	1200.0
2/9 18:23	102656.0	47.34	4.2	1199.8
2/9 18:24	102301.0	47.17	4.2	1200.0
2/9 18:25	103375.0	47.63	4.2	1200.0
2/9 18:26	101275.0	46.59	4.2	1200.3
2/9 18:27	101723.0	46.79	4.2	1200.0
2/9 18:28	102982.0	47.42	4.2	1200.2
2/9 18:29	102336.0	47.15	4.2	1200.0
2/9 18:30	100591.0	46.36	4.2	1200.0
2/9 18:31	102421.0	47.23	4.2	1200.0
2/9 18:32	101458.0	46.78	4.2	1200.0
2/9 18:33	102527.0	47.24	4.2	1200.0
2/9 18:34	104514.0	48.11	4.2	1200.0
2/9 18:35	101833.0	46.84	4.2	1200.0
2/9 18:36	101885.0	46.89	4.2	1200.2
2/9 18:37	102715.0	47.28	4.2	1200.0
2/9 18:38	101455.0	46.76	4.2	1199.7
2/9 18:39	102299.0	47.11	4.2	1200.0
2/9 18:40	101650.0	46.76	4.2	1200.0
2/9 18:41	101880.0	46.86	4.2	1199.8
2/9 18:42	102655.0	47.22	4.2	1199.8
2/9 18:43	103700.0	47.70	4.2	1200.2
2/9 18:44	102264.0	47.13	4.2	1200.0
2/9 18:45	101917.0	47.00	4.2	1199.7
2/9 18:46	102033.0	47.01	4.2	1199.8
2/9 18:47	103363.0	47.55	4.2	1200.0
2/9 18:48	101323.0	46.61	4.2	1200.0
2/9 18:49	101210.0	46.54	4.2	1200.2
2/9 18:50	101746.0	46.81	4.2	1200.0
2/9 18:51	102751.0	47.27	4.2	1200.0
2/9 18:52	104485.0	48.09	4.2	1200.0
2/9 18:53	102847.0	47.31	4.2	1199.8
2/9 18:54	102857.0	47.32	4.2	1199.8
2/9 18:55	101324.0	46.61	4.2	1200.3
2/9 18:56	101625.0	46.78	4.2	1200.0
2/9 18:57	103343.0	47.61	4.2	1200.0
2/9 18:58	103241.0	47.49	4.2	1200.0
2/9 18:59	102837.0	47.31	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/9 19:00	101940.0	46.86	4.2	1200.0
Average (all)	101447.7	46.92	4.1	1200.0
Total (all)	--	--	--	--
Minimum (all)	98006.0	45.63	4.1	1198.3
Maximum (all)	109254.0	48.45	4.2	1202.0
Average (valid values only)	101447.7	46.92	4.1	1200.0
Total (valid values only)	--	--	--	--
Count (valid values only)	781	781	781	781

CeDAR 1-Minute Data

Sunshine Gas Producers, LLC

Data for 2/10/2023 6:00 AM thru 2/10/2023 7:00 PM

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 6:00	102370.0	47.53	4.2	1200.0
2/10 6:01	102298.0	47.50	4.2	1200.0
2/10 6:02	104187.0	48.38	4.2	1200.2
2/10 6:03	100569.0	46.69	4.2	1199.5
2/10 6:04	103255.0	47.97	4.2	1199.8
2/10 6:05	103452.0	48.11	4.2	1200.2
2/10 6:06	101105.0	47.06	4.2	1200.0
2/10 6:07	104217.0	48.50	4.2	1200.0
2/10 6:08	103430.0	48.06	4.2	1200.0
2/10 6:09	101361.0	47.06	4.2	1200.0
2/10 6:10	100999.0	47.01	4.2	1200.2
2/10 6:11	103633.0	48.21	4.2	1200.0
2/10 6:12	103179.0	48.00	4.2	1199.8
2/10 6:13	103905.0	48.31	4.2	1200.0
2/10 6:14	102080.0	47.46	4.2	1199.8
2/10 6:15	102474.0	47.61	4.2	1200.0
2/10 6:16	103746.0	48.17	4.2	1200.0
2/10 6:17	102503.0	47.59	4.2	1200.0
2/10 6:18	102912.0	47.76	4.2	1199.5
2/10 6:19	101202.0	46.99	4.2	1200.3
2/10 6:20	102741.0	47.67	4.2	1200.0
2/10 6:21	103298.0	47.96	4.2	1199.7
2/10 6:22	102962.0	47.80	4.2	1199.8
2/10 6:23	103744.0	48.17	4.2	1200.0
2/10 6:24	103708.0	48.18	4.2	1200.0
2/10 6:25	104212.0	48.38	4.2	1200.0
2/10 6:26	103270.0	47.88	4.2	1200.0
2/10 6:27	104315.0	48.33	4.2	1200.2
2/10 6:28	101572.0	47.06	4.2	1200.2
2/10 6:29	104055.0	48.21	4.2	1200.0
2/10 6:30	103988.0	48.23	4.2	1200.2
2/10 6:31	101739.0	47.24	4.2	1199.8
2/10 6:32	104269.0	48.41	4.2	1200.0
2/10 6:33	103268.0	47.98	4.2	1200.2
2/10 6:34	102098.0	47.52	4.2	1200.0
2/10 6:35	102937.0	47.91	4.2	1199.8
2/10 6:36	100894.0	46.95	4.2	1200.0
2/10 6:37	102229.0	47.53	4.2	1200.2
2/10 6:38	103003.0	47.91	4.2	1199.8
2/10 6:39	103065.0	47.89	4.2	1200.3
2/10 6:40	104180.0	48.49	4.2	1200.3
2/10 6:41	102258.0	47.54	4.2	1200.7
2/10 6:42	102401.0	47.58	4.2	1199.7
2/10 6:43	101660.0	47.20	4.2	1200.2
2/10 6:44	100885.0	46.82	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 6:45	103549.0	48.03	4.2	1200.2
2/10 6:46	102961.0	47.73	4.2	1200.2
2/10 6:47	101609.0	47.18	4.2	1200.2
2/10 6:48	103012.0	47.76	4.2	1200.2
2/10 6:49	102508.0	47.60	4.2	1200.2
2/10 6:50	102136.0	47.40	4.2	1200.2
2/10 6:51	102214.0	47.37	4.2	1199.7
2/10 6:52	102140.0	47.32	4.2	1200.0
2/10 6:53	104148.0	48.27	4.2	1200.0
2/10 6:54	103371.0	47.99	4.2	1200.0
2/10 6:55	101498.0	47.05	4.2	1200.0
2/10 6:56	104687.0	48.50	4.2	1200.0
2/10 6:57	102571.0	47.52	4.2	1200.5
2/10 6:58	103824.0	48.20	4.2	1200.0
2/10 6:59	100627.0	46.72	4.2	1200.0
2/10 7:00	102230.0	47.38	4.2	1199.8
2/10 7:01	102471.0	47.47	4.1	1200.0
2/10 7:02	103377.0	47.83	4.1	1200.2
2/10 7:03	101148.0	46.82	4.1	1200.2
2/10 7:04	101524.0	46.99	4.2	1199.8
2/10 7:05	101175.0	46.77	4.2	1199.8
2/10 7:06	102479.0	47.37	4.2	1199.8
2/10 7:07	102359.0	47.31	4.2	1200.0
2/10 7:08	102570.0	47.41	4.2	1200.0
2/10 7:09	102473.0	47.41	4.2	1200.2
2/10 7:10	101017.0	46.87	4.2	1200.5
2/10 7:11	101746.0	47.27	4.2	1200.2
2/10 7:12	104011.0	48.39	4.2	1200.0
2/10 7:13	101546.0	47.26	4.2	1200.0
2/10 7:14	104098.0	48.43	4.2	1200.0
2/10 7:15	103296.0	48.00	4.2	1200.2
2/10 7:16	101512.0	47.11	4.2	1199.5
2/10 7:17	104813.0	48.41	4.2	1200.0
2/10 7:18	102903.0	47.56	4.2	1200.0
2/10 7:19	104410.0	48.33	4.2	1200.0
2/10 7:20	102421.0	47.41	4.2	1199.8
2/10 7:21	103319.0	47.84	4.2	1199.8
2/10 7:22	103641.0	48.02	4.2	1200.2
2/10 7:23	104183.0	48.29	4.2	1199.7
2/10 7:24	102593.0	47.55	4.2	1200.0
2/10 7:25	103748.0	48.12	4.2	1200.0
2/10 7:26	103567.0	48.07	4.2	1199.8
2/10 7:27	102894.0	47.77	4.2	1200.2
2/10 7:28	103837.0	48.21	4.2	1200.0
2/10 7:29	102262.0	47.48	4.2	1200.0
2/10 7:30	103056.0	47.77	4.2	1199.8
2/10 7:31	101828.0	47.20	4.2	1200.2
2/10 7:32	101841.0	47.18	4.2	1200.0
2/10 7:33	102727.0	47.59	4.2	1199.7

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 7:34	103646.0	47.93	4.2	1200.3
2/10 7:35	103181.0	47.80	4.2	1199.8
2/10 7:36	102764.0	47.57	4.2	1200.2
2/10 7:37	101444.0	47.00	4.2	1200.0
2/10 7:38	103624.0	48.01	4.2	1200.0
2/10 7:39	103916.0	48.15	4.2	1199.8
2/10 7:40	103096.0	47.68	4.2	1199.8
2/10 7:41	102380.0	47.32	4.2	1199.8
2/10 7:42	104020.0	48.08	4.2	1200.0
2/10 7:43	104029.0	48.08	4.2	1200.2
2/10 7:44	105675.0	48.88	4.2	1200.0
2/10 7:45	103660.0	47.98	4.2	1200.0
2/10 7:46	101346.0	46.86	4.2	1200.0
2/10 7:47	104757.0	48.50	4.2	1200.2
2/10 7:48	101565.0	46.95	4.2	1200.3
2/10 7:49	102240.0	47.26	4.2	1200.0
2/10 7:50	103326.0	47.78	4.2	1200.2
2/10 7:51	103394.0	47.87	4.2	1199.8
2/10 7:52	102698.0	47.43	4.2	1200.2
2/10 7:53	103869.0	47.89	4.2	1199.7
2/10 7:54	103689.0	47.70	4.2	1200.0
2/10 7:55	103913.0	47.85	4.2	1200.2
2/10 7:56	103097.0	47.57	4.2	1200.5
2/10 7:57	102213.0	47.24	4.2	1200.3
2/10 7:58	104138.0	48.09	4.2	1199.7
2/10 7:59	102580.0	47.24	4.2	1199.7
2/10 8:00	102808.0	47.29	4.2	1200.3
2/10 8:01	103037.0	47.38	4.2	1200.0
2/10 8:02	103838.0	47.77	4.2	1200.0
2/10 8:03	103343.0	47.56	4.2	1200.0
2/10 8:04	104644.0	48.25	4.2	1200.0
2/10 8:05	103632.0	47.78	4.2	1200.0
2/10 8:06	104729.0	48.29	4.2	1200.2
2/10 8:07	103827.0	47.88	4.2	1200.0
2/10 8:08	103520.0	47.73	4.2	1200.0
2/10 8:09	103120.0	47.55	4.2	1199.8
2/10 8:10	103417.0	47.62	4.2	1200.2
2/10 8:11	102996.0	47.43	4.2	1200.0
2/10 8:12	104543.0	48.20	4.2	1200.0
2/10 8:13	104247.0	47.99	4.2	1200.2
2/10 8:14	104685.0	48.16	4.2	1200.0
2/10 8:15	103647.0	47.68	4.2	1200.5
2/10 8:16	102498.0	47.20	4.2	1200.2
2/10 8:17	102650.0	47.33	4.2	1200.2
2/10 8:18	103616.0	47.85	4.2	1199.8
2/10 8:19	103289.0	47.63	4.2	1200.0
2/10 8:20	101447.0	46.80	4.2	1199.8
2/10 8:21	103367.0	47.68	4.2	1200.0
2/10 8:22	102432.0	47.23	4.2	1200.2

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 8:23	102846.0	47.42	4.2	1200.0
2/10 8:24	104616.0	48.24	4.2	1200.2
2/10 8:25	102464.0	47.22	4.2	1199.3
2/10 8:26	105926.0	48.61	4.2	1200.0
2/10 8:27	104355.0	47.80	4.2	1200.0
2/10 8:28	105339.0	48.22	4.2	1200.2
2/10 8:29	102711.0	47.07	4.2	1200.0
2/10 8:30	103369.0	47.41	4.2	1200.0
2/10 8:31	102999.0	47.27	4.2	1199.8
2/10 8:32	103848.0	47.63	4.2	1199.8
2/10 8:33	103182.0	47.33	4.2	1200.0
2/10 8:34	104224.0	47.85	4.2	1200.2
2/10 8:35	103795.0	47.75	4.2	1200.2
2/10 8:36	101750.0	46.81	4.2	1200.0
2/10 8:37	105177.0	48.41	4.2	1200.3
2/10 8:38	101902.0	46.99	4.2	1200.2
2/10 8:39	105172.0	48.47	4.2	1200.2
2/10 8:40	104435.0	48.07	4.2	1200.0
2/10 8:41	103085.0	47.53	4.2	1200.0
2/10 8:42	101956.0	47.01	4.2	1200.0
2/10 8:43	102757.0	47.41	4.2	1200.0
2/10 8:44	103581.0	47.87	4.2	1199.8
2/10 8:45	103349.0	47.77	4.2	1199.8
2/10 8:46	103222.0	47.76	4.2	1200.0
2/10 8:47	102887.0	47.56	4.2	1200.0
2/10 8:48	103620.0	47.94	4.2	1200.0
2/10 8:49	102490.0	47.37	4.2	1200.0
2/10 8:50	102495.0	47.38	4.2	1199.7
2/10 8:51	101641.0	46.98	4.2	1200.2
2/10 8:52	104775.0	48.45	4.2	1199.8
2/10 8:53	101110.0	46.75	4.2	1200.3
2/10 8:54	101293.0	46.93	4.2	1200.0
2/10 8:55	101447.0	46.92	4.2	1199.8
2/10 8:56	102274.0	47.30	4.2	1199.7
2/10 8:57	99796.0	46.07	4.2	1200.5
2/10 8:58	103002.0	47.61	4.2	1200.3
2/10 8:59	102046.0	47.24	4.2	1200.0
2/10 9:00	102166.0	47.24	4.2	1200.3
2/10 9:01	99770.0	46.18	4.2	1199.8
2/10 9:02	102560.0	47.52	4.2	1200.2
2/10 9:03	104576.0	48.39	4.2	1200.2
2/10 9:04	102714.0	47.55	4.2	1200.2
2/10 9:05	102135.0	47.32	4.2	1200.0
2/10 9:06	101847.0	47.10	4.2	1200.0
2/10 9:07	100787.0	46.59	4.2	1199.8
2/10 9:08	102402.0	47.33	4.2	1199.7
2/10 9:09	101746.0	47.00	4.2	1199.8
2/10 9:10	100812.0	46.53	4.2	1200.2
2/10 9:11	102174.0	47.18	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 9:12	100780.0	46.54	4.2	1200.0
2/10 9:13	101779.0	47.04	4.2	1200.0
2/10 9:14	100137.0	46.33	4.2	1200.2
2/10 9:15	102480.0	47.48	4.2	1200.0
2/10 9:16	103211.0	47.76	4.2	1200.0
2/10 9:17	103043.0	47.65	4.2	1199.7
2/10 9:18	102310.0	47.25	4.2	1199.7
2/10 9:19	103624.0	47.86	4.2	1200.3
2/10 9:20	101431.0	46.85	4.2	1200.7
2/10 9:21	101546.0	46.97	4.2	1200.0
2/10 9:22	101215.0	46.78	4.2	1200.0
2/10 9:23	101769.0	47.04	4.2	1200.0
2/10 9:24	104334.0	48.22	4.2	1200.0
2/10 9:25	100716.0	46.55	4.2	1200.0
2/10 9:26	102397.0	47.33	4.1	1200.0
2/10 9:27	102322.0	47.18	4.2	1200.2
2/10 9:28	103530.0	47.74	4.1	1200.0
2/10 9:29	101402.0	46.76	4.2	1200.0
2/10 9:30	103124.0	47.63	4.2	1200.2
2/10 9:31	101746.0	47.03	4.2	1200.3
2/10 9:32	102815.0	47.52	4.2	1200.0
2/10 9:33	101776.0	47.04	4.1	1200.0
2/10 9:34	102767.0	47.44	4.1	1200.0
2/10 9:35	101634.0	46.86	4.1	1199.8
2/10 9:36	100733.0	46.52	4.1	1200.0
2/10 9:37	102471.0	47.38	4.1	1200.0
2/10 9:38	101427.0	46.91	4.2	1200.0
2/10 9:39	101378.0	46.86	4.2	1199.7
2/10 9:40	102041.0	47.16	4.2	1200.3
2/10 9:41	102833.0	47.41	4.2	1199.8
2/10 9:42	102144.0	47.04	4.2	1200.0
2/10 9:43	101186.0	46.64	4.2	1200.2
2/10 9:44	100405.0	46.33	4.2	1200.5
2/10 9:45	101333.0	46.83	4.1	1200.0
2/10 9:46	100516.0	46.40	4.2	1199.8
2/10 9:47	103286.0	47.63	4.1	1199.5
2/10 9:48	103218.0	47.51	4.2	1199.7
2/10 9:49	103004.0	47.38	4.1	1200.2
2/10 9:50	101747.0	46.86	4.1	1200.2
2/10 9:51	101922.0	47.08	4.1	1200.0
2/10 9:52	100493.0	46.45	4.1	1200.0
2/10 9:53	101871.0	47.08	4.1	1199.8
2/10 9:54	102109.0	47.20	4.1	1199.8
2/10 9:55	100745.0	46.49	4.1	1200.2
2/10 9:56	102330.0	47.18	4.1	1200.2
2/10 9:57	102028.0	47.05	4.1	1200.0
2/10 9:58	100013.0	46.18	4.1	1199.8
2/10 9:59	100774.0	46.47	4.1	1200.2
2/10 10:00	101163.0	46.76	4.1	1200.2

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 10:01	102462.0	47.24	4.1	1199.8
2/10 10:02	102724.0	47.36	4.1	1199.8
2/10 10:03	101902.0	46.99	4.1	1200.2
2/10 10:04	102231.0	47.14	4.2	1199.8
2/10 10:05	101826.0	46.95	4.2	1200.0
2/10 10:06	102870.0	47.43	4.1	1200.2
2/10 10:07	101692.0	46.91	4.1	1200.0
2/10 10:08	102225.0	47.22	4.1	1200.2
2/10 10:09	101423.0	46.88	4.1	1199.7
2/10 10:10	103175.0	47.60	4.1	1199.8
2/10 10:11	101650.0	46.92	4.1	1200.0
2/10 10:12	101427.0	46.79	4.1	1200.3
2/10 10:13	101929.0	47.00	4.1	1200.0
2/10 10:14	103213.0	47.61	4.1	1200.0
2/10 10:15	100086.0	46.15	4.1	1200.0
2/10 10:16	102452.0	47.24	4.1	1200.2
2/10 10:17	102206.0	47.13	4.1	1200.3
2/10 10:18	101115.0	46.65	4.1	1199.8
2/10 10:19	102941.0	47.54	4.1	1200.2
2/10 10:20	102256.0	47.26	4.1	1199.7
2/10 10:21	99926.0	46.19	4.1	1200.0
2/10 10:22	101222.0	46.74	4.1	1199.7
2/10 10:23	101044.0	46.61	4.1	1200.0
2/10 10:24	101754.0	46.97	4.1	1200.2
2/10 10:25	101123.0	46.76	4.1	1200.7
2/10 10:26	101866.0	47.20	4.1	1200.3
2/10 10:27	102302.0	47.50	4.1	1199.2
2/10 10:28	101763.0	46.79	4.1	1199.0
2/10 10:29	102812.0	46.95	4.2	1199.8
2/10 10:30	104137.0	47.39	4.2	1200.7
2/10 10:31	102948.0	47.00	4.2	1200.3
2/10 10:32	102680.0	47.01	4.1	1200.2
2/10 10:33	103424.0	47.46	4.1	1200.2
2/10 10:34	100699.0	46.21	4.1	1199.8
2/10 10:35	103029.0	47.28	4.1	1200.0
2/10 10:36	102205.0	46.90	4.1	1200.7
2/10 10:37	101744.0	46.87	4.1	1200.5
2/10 10:38	101320.0	46.96	4.1	1200.7
2/10 10:39	100636.0	46.76	4.1	1199.7
2/10 10:40	101418.0	47.09	4.1	1199.7
2/10 10:41	100664.0	46.74	4.1	1200.2
2/10 10:42	101394.0	47.08	4.1	1200.2
2/10 10:43	102021.0	47.46	4.1	1200.5
2/10 10:44	100790.0	46.88	4.1	1200.0
2/10 10:45	101197.0	47.03	4.1	1200.0
2/10 10:46	99635.0	46.30	4.1	1200.0
2/10 10:47	99221.0	46.07	4.1	1199.7
2/10 10:48	101120.0	46.98	4.1	1200.0
2/10 10:49	100221.0	46.53	4.1	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 10:50	99871.0	46.37	4.1	1200.0
2/10 10:51	102348.0	47.56	4.1	1200.0
2/10 10:52	101742.0	47.32	4.1	1199.7
2/10 10:53	100811.0	46.81	4.1	1200.0
2/10 10:54	99921.0	46.47	4.1	1199.7
2/10 10:55	100557.0	46.78	4.1	1200.2
2/10 10:56	102726.0	47.83	4.1	1200.0
2/10 10:57	100210.0	46.64	4.1	1200.0
2/10 10:58	101159.0	47.08	4.1	1200.0
2/10 10:59	99290.0	46.23	4.1	1200.3
2/10 11:00	100930.0	47.01	4.1	1200.0
2/10 11:01	100272.0	46.78	4.1	1200.3
2/10 11:02	100377.0	46.83	4.1	1200.0
2/10 11:03	99857.0	46.58	4.1	1200.0
2/10 11:04	101132.0	47.16	4.1	1199.7
2/10 11:05	99617.0	46.36	4.1	1200.0
2/10 11:06	98488.0	45.84	4.1	1200.0
2/10 11:07	99384.0	46.25	4.1	1200.0
2/10 11:08	99891.0	46.51	4.1	1200.0
2/10 11:09	99516.0	46.41	4.1	1200.0
2/10 11:10	99214.0	46.25	4.1	1200.2
2/10 11:11	100219.0	46.75	4.1	1200.0
2/10 11:12	99200.0	46.28	4.1	1199.8
2/10 11:13	100060.0	46.68	4.1	1200.0
2/10 11:14	102059.0	47.61	4.1	1200.0
2/10 11:15	99787.0	46.48	4.1	1199.8
2/10 11:16	101208.0	47.16	4.1	1200.0
2/10 11:17	100423.0	46.85	4.1	1199.8
2/10 11:18	99972.0	46.70	4.1	1200.0
2/10 11:19	101138.0	47.29	4.1	1200.0
2/10 11:20	100240.0	46.84	4.1	1200.0
2/10 11:21	99746.0	46.61	4.1	1200.2
2/10 11:22	100881.0	47.08	4.1	1199.8
2/10 11:23	101727.0	47.52	4.1	1200.0
2/10 11:24	101260.0	47.41	4.1	1200.5
2/10 11:25	100911.0	47.30	4.1	1200.0
2/10 11:26	100640.0	47.15	4.1	1200.0
2/10 11:27	100117.0	46.88	4.1	1200.0
2/10 11:28	98581.0	46.10	4.1	1199.8
2/10 11:29	101376.0	47.41	4.1	1199.7
2/10 11:30	99702.0	46.62	4.1	1199.8
2/10 11:31	99689.0	46.63	4.1	1200.2
2/10 11:32	101207.0	47.33	4.1	1200.2
2/10 11:33	100600.0	47.04	4.1	1200.0
2/10 11:34	99611.0	46.58	4.1	1200.2
2/10 11:35	100814.0	47.12	4.1	1200.0
2/10 11:36	100490.0	46.97	4.1	1200.2
2/10 11:37	99490.0	46.52	4.1	1199.8
2/10 11:38	99598.0	46.65	4.1	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 11:39	100619.0	47.08	4.1	1200.2
2/10 11:40	100079.0	46.82	4.1	1200.0
2/10 11:41	97748.0	45.82	4.1	1200.0
2/10 11:42	99361.0	46.57	4.1	1200.0
2/10 11:43	99904.0	46.82	4.1	1200.0
2/10 11:44	99928.0	46.81	4.1	1200.0
2/10 11:45	99501.0	46.61	4.1	1200.2
2/10 11:46	99268.0	46.51	4.1	1200.0
2/10 11:47	98159.0	46.01	4.1	1200.2
2/10 11:48	98644.0	46.25	4.1	1200.0
2/10 11:49	102120.0	47.86	4.1	1200.0
2/10 11:50	100816.0	47.25	4.1	1200.0
2/10 11:51	100403.0	47.06	4.1	1199.8
2/10 11:52	100062.0	46.82	4.1	1200.3
2/10 11:53	101769.0	47.70	4.1	1200.3
2/10 11:54	99113.0	46.47	4.1	1200.2
2/10 11:55	100057.0	47.01	4.1	1200.0
2/10 11:56	100074.0	47.01	4.1	1200.2
2/10 11:57	100275.0	47.11	4.1	1199.5
2/10 11:58	100872.0	47.36	4.1	1200.2
2/10 11:59	99950.0	46.82	4.1	1199.8
2/10 12:00	99853.0	46.75	4.1	1200.5
2/10 12:01	99894.0	46.87	4.1	1200.2
2/10 12:02	99989.0	47.01	4.1	1200.2
2/10 12:03	100134.0	47.13	4.1	1200.0
2/10 12:04	100297.0	47.12	4.1	1199.8
2/10 12:05	98735.0	46.36	4.1	1199.8
2/10 12:06	99242.0	46.49	4.1	1199.8
2/10 12:07	99702.0	46.68	4.1	1200.2
2/10 12:08	99803.0	46.78	4.1	1200.3
2/10 12:09	99402.0	46.68	4.1	1200.2
2/10 12:10	100071.0	47.01	4.1	1199.8
2/10 12:11	100625.0	47.28	4.1	1200.0
2/10 12:12	98951.0	46.47	4.1	1199.8
2/10 12:13	100663.0	47.18	4.1	1200.0
2/10 12:14	98512.0	46.28	4.1	1200.0
2/10 12:15	100354.0	47.14	4.1	1200.0
2/10 12:16	99363.0	46.68	4.1	1200.0
2/10 12:17	101053.0	47.45	4.1	1200.5
2/10 12:18	100316.0	47.13	4.1	1199.7
2/10 12:19	97803.0	45.95	4.1	1200.0
2/10 12:20	100543.0	47.26	4.1	1200.2
2/10 12:21	98931.0	46.53	4.1	1200.0
2/10 12:22	99007.0	46.56	4.1	1200.0
2/10 12:23	99159.0	46.62	4.1	1200.0
2/10 12:24	100890.0	47.42	4.1	1199.8
2/10 12:25	100954.0	47.43	4.1	1199.8
2/10 12:26	100356.0	47.15	4.1	1200.0
2/10 12:27	101495.0	47.68	4.1	1200.2
Average Run 6	**101773.4**	**47.1**	**4.1**	**1200.0**

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Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 12:28	99580.0	46.78	4.1	1200.2
2/10 12:29	99259.0	46.72	4.1	1200.3
2/10 12:30	100573.0	47.33	4.1	1200.0
2/10 12:31	98928.0	46.57	4.1	1200.0
2/10 12:32	100110.0	47.14	4.1	1200.2
2/10 12:33	100239.0	47.20	4.1	1200.0
2/10 12:34	100086.0	47.11	4.1	1199.7
2/10 12:35	99613.0	46.91	4.1	1200.5
2/10 12:36	98823.0	46.53	4.1	1200.0
2/10 12:37	97762.0	46.12	4.1	1200.2
2/10 12:38	100175.0	47.17	4.1	1199.8
2/10 12:39	99405.0	46.84	4.1	1200.2
2/10 12:40	100731.0	47.43	4.1	1199.7
2/10 12:41	99786.0	46.96	4.1	1200.0
2/10 12:42	98340.0	46.22	4.1	1200.0
2/10 12:43	100016.0	47.01	4.1	1200.0
2/10 12:44	99908.0	47.05	4.1	1200.3
2/10 12:45	99221.0	46.72	4.1	1199.5
2/10 12:46	99653.0	46.93	4.1	1200.2
2/10 12:47	98463.0	46.34	4.1	1199.8
2/10 12:48	99955.0	46.99	4.1	1200.2
2/10 12:49	97700.0	46.01	4.1	1200.3
2/10 12:50	98265.0	46.28	4.1	1200.0
2/10 12:51	100576.0	47.34	4.1	1199.5
2/10 12:52	97680.0	45.80	4.1	1200.2
2/10 12:53	99214.0	46.66	4.1	1200.7
2/10 12:54	100752.0	47.44	4.1	1199.8
2/10 12:55	100075.0	47.13	4.1	1200.3
2/10 12:56	100484.0	47.32	4.1	1200.0
2/10 12:57	99080.0	46.68	4.1	1200.0
2/10 12:58	98446.0	46.36	4.1	1200.0
2/10 12:59	99293.0	46.76	4.1	1200.0
2/10 13:00	99924.0	47.05	4.1	1200.0
2/10 13:01	100245.0	47.21	4.1	1200.2
2/10 13:02	97875.0	46.12	4.1	1200.0
2/10 13:03	99702.0	46.98	4.1	1200.0
2/10 13:04	98949.0	46.60	4.1	1200.0
2/10 13:05	99109.0	46.76	4.1	1199.8
2/10 13:06	98720.0	46.49	4.1	1200.0
2/10 13:07	98398.0	46.36	4.1	1200.0
2/10 13:08	99021.0	46.63	4.1	1200.0
2/10 13:09	98458.0	46.47	4.1	1200.0
2/10 13:10	99568.0	47.00	4.1	1200.0
2/10 13:11	99442.0	46.94	4.1	1200.0
2/10 13:12	99357.0	46.88	4.1	1200.0
2/10 13:13	99570.0	46.86	4.1	1200.0
2/10 13:14	97059.0	45.65	4.1	1200.2
2/10 13:15	100405.0	47.33	4.1	1200.2
2/10 13:16	100372.0	47.37	4.1	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 13:17	99872.0	47.14	4.1	1200.0
2/10 13:18	97354.0	45.95	4.1	1200.2
2/10 13:19	99831.0	47.08	4.1	1200.0
2/10 13:20	98567.0	46.53	4.1	1200.0
2/10 13:21	100482.0	47.43	4.1	1200.0
2/10 13:22	100204.0	47.32	4.1	1199.8
2/10 13:23	99706.0	47.06	4.1	1199.7
2/10 13:24	97765.0	46.15	4.1	1200.0
2/10 13:25	98074.0	46.23	4.1	1200.0
2/10 13:26	97523.0	46.03	4.1	1199.8
2/10 13:27	100970.0	47.66	4.1	1200.0
2/10 13:28	98215.0	46.36	4.1	1200.2
2/10 13:29	98583.0	46.51	4.1	1200.0
2/10 13:30	99812.0	47.09	4.1	1200.0
2/10 13:31	99309.0	46.83	4.1	1200.0
2/10 13:32	98385.0	46.44	4.1	1200.0
2/10 13:33	98366.0	46.32	4.1	1200.0
2/10 13:34	98415.0	46.43	4.1	1200.0
2/10 13:35	99941.0	47.17	4.1	1199.8
2/10 13:36	97685.0	46.03	4.1	1199.8
2/10 13:37	99006.0	46.62	4.1	1200.0
2/10 13:38	98493.0	46.45	4.1	1200.0
2/10 13:39	98623.0	46.55	4.1	1200.0
2/10 13:40	98387.0	46.44	4.1	1200.2
2/10 13:41	99412.0	46.92	4.1	1199.7
2/10 13:42	99369.0	46.68	4.1	1197.7
2/10 13:43	101074.0	46.63	4.1	1199.0
2/10 13:44	102154.0	46.88	4.1	1200.0
2/10 13:45	102778.0	47.22	4.1	1200.0
2/10 13:46	100489.0	46.17	4.1	1200.3
2/10 13:47	102882.0	47.26	4.1	1200.0
2/10 13:48	99862.0	45.83	4.1	1200.0
2/10 13:49	102115.0	47.00	4.1	1201.0
2/10 13:50	100981.0	46.95	4.1	1201.5
2/10 13:51	99309.0	46.66	4.1	1201.0
2/10 13:52	99229.0	46.73	4.1	1200.0
2/10 13:53	99857.0	47.02	4.1	1199.8
2/10 13:54	99396.0	46.81	4.1	1199.8
2/10 13:55	99226.0	46.73	4.1	1200.3
2/10 13:56	99836.0	47.08	4.1	1200.5
2/10 13:57	99211.0	46.83	4.1	1200.3
2/10 13:58	99601.0	47.04	4.1	1199.8
2/10 13:59	97530.0	45.95	4.1	1199.3
2/10 14:00	100797.0	47.39	4.1	1199.3
2/10 14:01	100259.0	46.96	4.1	1200.8
2/10 14:02	99113.0	46.61	4.1	1200.2
2/10 14:03	100566.0	47.36	4.1	1200.0
2/10 14:04	100019.0	47.13	4.1	1200.0
2/10 14:05	99256.0	46.74	4.1	1199.7

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Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 14:06	99508.0	46.86	4.1	1200.0
2/10 14:07	98768.0	46.51	4.1	1200.2
2/10 14:08	100017.0	47.17	4.1	1199.8
2/10 14:09	97984.0	46.25	4.1	1200.0
2/10 14:10	99154.0	46.80	4.1	1199.8
2/10 14:11	99256.0	46.83	4.1	1199.8
2/10 14:12	99376.0	46.80	4.1	1200.2
2/10 14:13	98557.0	46.41	4.1	1199.8
2/10 14:14	98413.0	46.36	4.1	1199.7
2/10 14:15	98665.0	46.48	4.1	1199.7
2/10 14:16	100190.0	47.29	4.1	1200.0
2/10 14:17	100878.0	47.53	4.1	1200.2
2/10 14:18	97706.0	46.08	4.1	1199.8
2/10 14:19	99285.0	46.76	4.1	1200.2
2/10 14:20	98340.0	46.31	4.1	1199.7
2/10 14:21	98318.0	46.32	4.1	1199.8
2/10 14:22	99057.0	46.68	4.1	1200.0
2/10 14:23	99272.0	46.80	4.1	1200.0
2/10 14:24	98656.0	46.53	4.1	1199.8
2/10 14:25	99110.0	46.72	4.1	1200.2
2/10 14:26	97376.0	45.90	4.1	1199.8
2/10 14:27	97975.0	46.23	4.1	1200.3
2/10 14:28	99838.0	47.03	4.1	1200.2
2/10 14:29	99334.0	46.82	4.1	1199.7
2/10 14:30	98234.0	46.28	4.1	1200.0
2/10 14:31	98718.0	46.51	4.1	1199.8
2/10 14:32	98465.0	46.40	4.1	1199.7
2/10 14:33	98666.0	46.57	4.1	1200.2
2/10 14:34	98953.0	46.70	4.1	1200.2
2/10 14:35	99371.0	46.95	4.1	1200.2
2/10 14:36	98944.0	46.73	4.1	1200.2
2/10 14:37	99155.0	46.80	4.1	1200.3
2/10 14:38	99677.0	47.05	4.1	1199.7
2/10 14:39	99500.0	46.96	4.1	1200.0
2/10 14:40	97735.0	46.09	4.1	1199.8
2/10 14:41	100098.0	47.19	4.1	1200.3
2/10 14:42	99692.0	46.99	4.1	1200.2
2/10 14:43	99175.0	46.81	4.1	1199.8
2/10 14:44	99142.0	46.79	4.1	1200.5
2/10 14:45	99845.0	47.15	4.1	1200.0
2/10 14:46	99157.0	46.83	4.1	1200.0
2/10 14:47	98262.0	46.40	4.1	1200.0
2/10 14:48	97313.0	45.93	4.1	1200.0
2/10 14:49	98034.0	46.32	4.1	1200.2
2/10 14:50	99720.0	47.09	4.1	1200.2
2/10 14:51	98747.0	46.64	4.1	1200.0
2/10 14:52	98128.0	46.37	4.1	1200.0
2/10 14:53	99937.0	47.17	4.1	1200.2
2/10 14:54	97161.0	45.86	4.1	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 14:55	97646.0	46.03	4.1	1199.3
2/10 14:56	98287.0	46.20	4.1	1199.8
2/10 14:57	99589.0	46.88	4.1	1200.7
2/10 14:58	99417.0	46.91	4.1	1200.0
2/10 14:59	97218.0	45.97	4.1	1200.0
2/10 15:00	98756.0	46.72	4.1	1199.8
2/10 15:01	98901.0	46.75	4.1	1199.5
2/10 15:02	99282.0	46.86	4.1	1200.0
2/10 15:03	99199.0	46.82	4.1	1199.7
2/10 15:04	100059.0	47.23	4.1	1200.5
2/10 15:05	100274.0	47.33	4.1	1200.0
2/10 15:06	98525.0	46.51	4.1	1200.0
2/10 15:07	100281.0	47.35	4.1	1200.2
2/10 15:08	97207.0	45.96	4.1	1200.0
2/10 15:09	100574.0	47.58	4.1	1200.0
2/10 15:10	97403.0	46.02	4.1	1200.2
2/10 15:11	99554.0	46.99	4.1	1199.8
2/10 15:12	97408.0	46.06	4.1	1200.0
2/10 15:13	98381.0	46.46	4.1	1200.2
2/10 15:14	99582.0	47.11	4.1	1200.0
2/10 15:15	98917.0	46.80	4.1	1200.0
2/10 15:16	97542.0	46.06	4.1	1199.5
2/10 15:17	97529.0	46.03	4.1	1200.2
2/10 15:18	98698.0	46.62	4.1	1200.2
2/10 15:19	97881.0	46.31	4.1	1200.0
2/10 15:20	99309.0	46.98	4.1	1200.2
2/10 15:21	99939.0	47.24	4.1	1200.0
2/10 15:22	99078.0	46.82	4.1	1200.2
2/10 15:23	99069.0	46.87	4.1	1200.2
2/10 15:24	99671.0	47.04	4.1	1199.5
2/10 15:25	98772.0	46.62	4.1	1199.7
2/10 15:26	99396.0	46.92	4.1	1200.2
2/10 15:27	98381.0	46.44	4.1	1199.8
2/10 15:28	100081.0	47.18	4.1	1199.8
2/10 15:29	99254.0	46.81	4.1	1200.5
2/10 15:30	99241.0	46.84	4.1	1200.0
2/10 15:31	99351.0	46.89	4.1	1200.0
2/10 15:32	99456.0	47.05	4.1	1199.5
2/10 15:33	98579.0	46.53	4.1	1200.2
2/10 15:34	98752.0	46.61	4.1	1200.3
2/10 15:35	98134.0	46.32	4.1	1200.2
2/10 15:36	97860.0	46.27	4.1	1200.0
2/10 15:37	98609.0	46.59	4.1	1200.0
2/10 15:38	100087.0	47.26	4.1	1200.0
2/10 15:39	99745.0	47.10	4.1	1199.2
2/10 15:40	98282.0	46.39	4.1	1200.2
2/10 15:41	98858.0	46.66	4.1	1200.2
2/10 15:42	97871.0	46.24	4.1	1200.0
2/10 15:43	99034.0	46.82	4.1	1199.8

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 15:44	99987.0	47.23	4.1	1199.7
2/10 15:45	99116.0	46.81	4.1	1200.3
2/10 15:46	98872.0	46.70	4.1	1200.2
2/10 15:47	100791.0	47.53	4.1	1199.8
2/10 15:48	99634.0	46.92	4.1	1199.7
2/10 15:49	99961.0	47.09	4.1	1200.2
2/10 15:50	100368.0	47.45	4.1	1200.0
2/10 15:51	99875.0	47.25	4.1	1200.0
2/10 15:52	98561.0	46.57	4.1	1200.0
2/10 15:53	98545.0	46.55	4.1	1200.0
2/10 15:54	98431.0	46.46	4.1	1200.2
2/10 15:55	99315.0	46.95	4.1	1199.7
2/10 15:56	98629.0	46.55	4.1	1200.0
2/10 15:57	99607.0	47.02	4.1	1200.3
2/10 15:58	99440.0	46.96	4.1	1200.5
2/10 15:59	96626.0	45.61	4.1	1200.0
2/10 16:00	99748.0	47.10	4.1	1200.0
2/10 16:01	98058.0	46.31	4.1	1199.7
2/10 16:02	98533.0	46.51	4.1	1199.8
2/10 16:03	98233.0	46.36	4.1	1200.5
2/10 16:04	98354.0	46.42	4.1	1199.8
2/10 16:05	99254.0	46.85	4.1	1199.7
2/10 16:06	95939.0	45.26	4.1	1199.8
2/10 16:07	97572.0	46.05	4.1	1200.0
2/10 16:08	98888.0	46.72	4.1	1200.0
2/10 16:09	99691.0	47.05	4.1	1200.2
2/10 16:10	99767.0	47.09	4.1	1200.0
2/10 16:11	99020.0	46.74	4.1	1200.0
2/10 16:12	98761.0	46.61	4.1	1200.0
2/10 16:13	98490.0	46.49	4.1	1200.0
2/10 16:14	98368.0	46.35	4.1	1200.0
2/10 16:15	98144.0	46.21	4.1	1200.3
2/10 16:16	98801.0	46.61	4.1	1200.0
2/10 16:17	100006.0	47.20	4.1	1199.8
2/10 16:18	99888.0	47.13	4.1	1200.0
2/10 16:19	101509.0	47.91	4.1	1201.0
2/10 16:20	99437.0	46.97	4.1	1200.5
2/10 16:21	97361.0	46.03	4.1	1200.2
2/10 16:22	98338.0	46.42	4.1	1199.8
2/10 16:23	100079.0	47.22	4.1	1200.0
2/10 16:24	99840.0	47.08	4.1	1199.7
2/10 16:25	100616.0	47.49	4.1	1200.2
2/10 16:26	98499.0	46.49	4.1	1199.3
2/10 16:27	99044.0	46.75	4.1	1200.0
2/10 16:28	100122.0	47.26	4.1	1200.0
2/10 16:29	100081.0	47.16	4.1	1199.7
2/10 16:30	98605.0	46.52	4.1	1199.7
2/10 16:31	99578.0	46.94	4.1	1200.2
2/10 16:32	100561.0	47.46	4.1	1200.2

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 16:33	99137.0	46.79	4.1	1200.2
2/10 16:34	98072.0	46.29	4.1	1200.0
2/10 16:35	100354.0	47.40	4.1	1199.8
2/10 16:36	99130.0	46.79	4.1	1200.2
2/10 16:37	98667.0	46.57	4.1	1200.0
2/10 16:38	98945.0	46.70	4.1	1199.7
2/10 16:39	97483.0	45.95	4.1	1199.8
2/10 16:40	99155.0	46.78	4.1	1200.0
2/10 16:41	100140.0	47.18	4.1	1199.8
2/10 16:42	99116.0	46.68	4.1	1200.0
2/10 16:43	99313.0	46.79	4.1	1199.8
2/10 16:44	99326.0	46.79	4.1	1199.2
2/10 16:45	98823.0	46.53	4.1	1200.2
2/10 16:46	98628.0	46.44	4.1	1200.3
2/10 16:47	99718.0	47.05	4.1	1200.0
2/10 16:48	99101.0	46.67	4.1	1200.0
2/10 16:49	97408.0	45.98	4.1	1199.8
2/10 16:50	100263.0	47.32	4.1	1200.0
2/10 16:51	98105.0	46.25	4.1	1199.7
2/10 16:52	98918.0	46.67	4.1	1199.8
2/10 16:53	99763.0	47.09	4.1	1200.3
2/10 16:54	99417.0	46.96	4.1	1200.2
2/10 16:55	97902.0	46.24	4.1	1200.0
2/10 16:56	100065.0	47.21	4.1	1200.0
2/10 16:57	99508.0	46.93	4.1	1199.2
2/10 16:58	99060.0	46.65	4.1	1200.0
2/10 16:59	99364.0	46.79	4.1	1200.0
2/10 17:00	98800.0	46.52	4.1	1200.0
2/10 17:01	99399.0	46.81	4.1	1200.3
2/10 17:02	101341.0	47.72	4.1	1200.0
2/10 17:03	99945.0	47.04	4.1	1199.8
2/10 17:04	100647.0	47.40	4.1	1199.7
2/10 17:05	100455.0	47.31	4.1	1199.7
2/10 17:06	99707.0	46.95	4.1	1199.7
2/10 17:07	97195.0	45.77	4.1	1200.2
2/10 17:08	99475.0	46.87	4.1	1200.0
2/10 17:09	100477.0	47.32	4.1	1199.7
2/10 17:10	99908.0	47.05	4.1	1200.0
2/10 17:11	98780.0	46.52	4.1	1199.7
2/10 17:12	99799.0	46.92	4.1	1200.2
2/10 17:13	99766.0	46.96	4.1	1200.0
2/10 17:14	100669.0	47.39	4.1	1200.0
2/10 17:15	100218.0	47.19	4.1	1200.2
2/10 17:16	99900.0	47.06	4.1	1200.3
2/10 17:17	99706.0	46.97	4.1	1200.0
2/10 17:18	100155.0	47.17	4.1	1200.0
2/10 17:19	97753.0	46.05	4.1	1200.3
2/10 17:20	99799.0	47.00	4.1	1199.7
2/10 17:21	98895.0	46.55	4.1	1199.8

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Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 17:22	99647.0	46.82	4.1	1199.8
2/10 17:23	99609.0	46.89	4.1	1199.8
2/10 17:24	99879.0	47.03	4.1	1200.0
2/10 17:25	99294.0	46.70	4.1	1199.8
2/10 17:26	101167.0	47.53	4.1	1199.7
2/10 17:27	99561.0	46.75	4.1	1200.0
2/10 17:28	99767.0	46.87	4.1	1200.2
2/10 17:29	101058.0	47.48	4.1	1200.2
2/10 17:30	100222.0	47.08	4.1	1200.0
2/10 17:31	99567.0	46.83	4.1	1200.2
2/10 17:32	99528.0	46.79	4.1	1200.0
2/10 17:33	100320.0	47.24	4.1	1200.0
2/10 17:34	100077.0	47.05	4.1	1200.0
2/10 17:35	98204.0	46.13	4.1	1199.5
2/10 17:36	100324.0	47.13	4.1	1200.5
2/10 17:37	101113.0	47.52	4.1	1199.7
2/10 17:38	100034.0	46.99	4.2	1200.0
2/10 17:39	100391.0	47.16	4.2	1200.2
2/10 17:40	98556.0	46.30	4.1	1199.8
2/10 17:41	101256.0	47.55	4.1	1199.8
2/10 17:42	100504.0	47.18	4.1	1199.8
2/10 17:43	99426.0	46.60	4.1	1199.8
2/10 17:44	100082.0	46.91	4.1	1200.0
2/10 17:45	99803.0	46.78	4.1	1200.2
2/10 17:46	99604.0	46.73	4.1	1200.5
2/10 17:47	98983.0	46.50	4.1	1199.7
2/10 17:48	109959.0	47.35	4.1	1200.2
2/10 17:49	100222.0	47.05	4.1	1200.0
2/10 17:50	99633.0	46.78	4.1	1199.5
2/10 17:51	100604.0	47.15	4.1	1200.0
2/10 17:52	99895.0	46.82	4.2	1199.7
2/10 17:53	99201.0	46.50	4.2	1200.0
2/10 17:54	100112.0	46.92	4.2	1200.2
2/10 17:55	101337.0	47.50	4.2	1199.7
2/10 17:56	99256.0	46.52	4.1	1200.0
2/10 17:57	101149.0	47.41	4.1	1200.0
2/10 17:58	100428.0	47.15	4.1	1200.3
2/10 17:59	99687.0	46.81	4.1	1199.8
2/10 18:00	99464.0	46.64	4.1	1199.5
2/10 18:01	100634.0	47.14	4.1	1199.7
2/10 18:02	100673.0	47.04	4.2	1199.7
2/10 18:03	100767.0	47.07	4.2	1200.0
2/10 18:04	101456.0	47.44	4.2	1200.0
2/10 18:05	100514.0	47.11	4.2	1200.7
2/10 18:06	100073.0	47.01	4.2	1200.0
2/10 18:07	100064.0	46.95	4.2	1199.7
2/10 18:08	101147.0	47.38	4.2	1200.0
2/10 18:09	99819.0	46.71	4.2	1200.0
2/10 18:10	100418.0	46.96	4.2	1200.0

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 18:11	99793.0	46.69	4.2	1200.0
2/10 18:12	100444.0	47.03	4.2	1199.8
2/10 18:13	99995.0	46.82	4.2	1200.0
2/10 18:14	99499.0	46.62	4.2	1200.0
2/10 18:15	101134.0	47.31	4.2	1200.0
2/10 18:16	100099.0	46.81	4.2	1200.2
2/10 18:17	99560.0	46.55	4.2	1200.0
2/10 18:18	99689.0	46.67	4.2	1200.2
2/10 18:19	102426.0	47.98	4.1	1199.5
2/10 18:20	99572.0	46.58	4.1	1200.0
2/10 18:21	100584.0	47.09	4.1	1199.8
2/10 18:22	100541.0	47.01	4.2	1200.2
2/10 18:23	101095.0	47.27	4.2	1200.0
2/10 18:24	102041.0	47.71	4.2	1200.0
2/10 18:25	99352.0	46.46	4.2	1199.7
2/10 18:26	99615.0	46.60	4.1	1200.0
2/10 18:27	99581.0	46.56	4.1	1200.0
2/10 18:28	101401.0	47.41	4.2	1200.0
2/10 18:29	100016.0	46.77	4.1	1199.7
2/10 18:30	101922.0	47.66	4.2	1199.8
2/10 18:31	101204.0	47.32	4.2	1200.0
2/10 18:32	99927.0	46.71	4.2	1199.8
2/10 18:33	101668.0	47.52	4.2	1199.7
2/10 18:34	100268.0	46.86	4.2	1200.0
2/10 18:35	101354.0	47.36	4.2	1199.8
2/10 18:36	101334.0	47.27	4.2	1200.2
2/10 18:37	100115.0	46.71	4.2	1200.2
2/10 18:38	100292.0	46.79	4.2	1200.0
2/10 18:39	99916.0	46.72	4.2	1200.0
2/10 18:40	100435.0	46.97	4.2	1200.2
2/10 18:41	100498.0	46.97	4.2	1199.8
2/10 18:42	101458.0	47.42	4.2	1200.0
2/10 18:43	100676.0	47.08	4.2	1199.8
2/10 18:44	98935.0	46.26	4.2	1200.0
2/10 18:45	101070.0	47.21	4.2	1200.2
2/10 18:46	100864.0	47.05	4.2	1200.2
2/10 18:47	102116.0	47.64	4.2	1200.0
2/10 18:48	99553.0	46.44	4.2	1200.2
2/10 18:49	101037.0	47.14	4.2	1200.0
2/10 18:50	99294.0	46.43	4.2	1200.2
2/10 18:51	100700.0	47.09	4.2	1200.0
2/10 18:52	101155.0	47.30	4.2	1200.0
2/10 18:53	100396.0	46.98	4.2	1200.0
2/10 18:54	101638.0	47.53	4.2	1199.8
2/10 18:55	99284.0	46.40	4.2	1200.0
2/10 18:56	100431.0	46.91	4.2	1199.8
2/10 18:57	100662.0	46.96	4.2	1200.0
2/10 18:58	99954.0	46.63	4.2	1199.8
2/10 18:59	100325.0	46.80	4.2	1200.0

Cedar 5 Reports 3/6/2023 6:42 AM, CeDAR 1-Minute Data

Timestamp	(TG-741) Landfill Gas Flow scf/hr 1-Min	(TG-741) Heat Input mmBtu/hr 1-Min	(TG-741) Megawatts 1-Min	(TG-741) T7 Exhaust Temp °F 1-Min
2/10 19:00	100331.0	46.82	4.2	1200.2
Average (all)	100700.8	47.04	4.1	1200.0
Total (all)	--	--	--	--
Minimum (all)	95939.0	45.26	4.1	1197.7
Maximum (all)	105926.0	48.88	4.2	1201.5
Average (valid values only)	100700.8	47.04	4.1	1200.0
Total (valid values only)	--	--	--	--
Count (valid values only)	781	781	781	781

W002AS-023392-RT-4542

Appendix B.2
CT-5 Data

CeDAR 1-Minute Data

Sunshine Gas Producers, LLC

Data for 2/14/2023 6:00 AM thru 2/14/2023 7:00 PM

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 6:00	94959.0	44.43	3.8	1200.2
2/14 6:01	95936.0	44.88	3.8	1200.0
2/14 6:02	96550.0	45.17	3.8	1200.0
2/14 6:03	96672.0	45.23	3.8	1200.0
2/14 6:04	95467.0	44.67	3.8	1200.2
2/14 6:05	95554.0	44.78	3.8	1199.8
2/14 6:06	96191.0	45.06	3.8	1200.0
2/14 6:07	95400.0	44.63	3.8	1200.0
2/14 6:08	95354.0	44.67	3.8	1200.0
2/14 6:09	95525.0	44.77	3.8	1200.0
2/14 6:10	95513.0	44.77	3.8	1200.0
2/14 6:11	95543.0	44.78	3.8	1200.0
2/14 6:12	95076.0	44.56	3.8	1200.0
2/14 6:13	95910.0	44.93	3.8	1200.0
2/14 6:14	95791.0	44.88	3.8	1200.0
2/14 6:15	95548.0	44.68	3.8	1200.0
2/14 6:16	95521.0	44.68	3.8	1200.2
2/14 6:17	97006.0	45.36	3.8	1200.0
2/14 6:18	96085.0	44.93	3.8	1200.0
2/14 6:19	95282.0	44.55	3.8	1200.0
2/14 6:20	95797.0	44.80	3.8	1200.0
2/14 6:21	96959.0	45.32	3.8	1200.2
2/14 6:22	95903.0	44.84	3.8	1200.0
2/14 6:23	95915.0	44.83	3.8	1200.0
2/14 6:24	96497.0	45.12	3.8	1200.0
2/14 6:25	95116.0	44.48	3.8	1200.0
2/14 6:26	94833.0	44.37	3.8	1200.2
2/14 6:27	96681.0	45.29	3.8	1200.0
2/14 6:28	96015.0	44.90	3.8	1200.0
2/14 6:29	96648.0	45.11	3.8	1200.0
2/14 6:30	96370.0	44.96	3.8	1199.5
2/14 6:31	96193.0	44.84	3.8	1200.0
2/14 6:32	95621.0	44.61	3.8	1200.2
2/14 6:33	96333.0	44.94	3.8	1200.0
2/14 6:34	95934.0	44.75	3.8	1200.0
2/14 6:35	96046.0	44.81	3.8	1200.0
2/14 6:36	97095.0	45.33	3.8	1199.7
2/14 6:37	95755.0	44.67	3.8	1199.8
2/14 6:38	95829.0	44.60	3.8	1199.8
2/14 6:39	95822.0	44.61	3.8	1199.8
2/14 6:40	95923.0	44.64	3.8	1199.8
2/14 6:41	96213.0	44.78	3.8	1199.8
2/14 6:42	96307.0	44.90	3.8	1199.8
2/14 6:43	95592.0	44.51	3.8	1200.3
2/14 6:44	96157.0	44.86	3.8	1199.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 6:45	95252.0	44.43	3.8	1200.3
2/14 6:46	96504.0	45.02	3.8	1199.8
2/14 6:47	96195.0	44.79	3.8	1200.0
2/14 6:48	94631.0	44.13	3.8	1199.8
2/14 6:49	97006.0	45.15	3.8	1200.0
2/14 6:50	96489.0	44.91	3.8	1200.0
2/14 6:51	96527.0	44.96	3.8	1200.0
2/14 6:52	95222.0	44.32	3.8	1200.0
2/14 6:53	95383.0	44.41	3.8	1200.0
2/14 6:54	96305.0	44.86	3.8	1200.0
2/14 6:55	96014.0	44.72	3.8	1199.8
2/14 6:56	96133.0	44.74	3.8	1200.0
2/14 6:57	96728.0	45.06	3.8	1200.7
2/14 6:58	96184.0	44.87	3.8	1199.7
2/14 6:59	95776.0	44.68	3.8	1200.2
2/14 7:00	96177.0	44.78	3.8	1199.7
2/14 7:01	97130.0	45.18	3.8	1199.8
2/14 7:02	97145.0	45.17	3.8	1200.0
2/14 7:03	95569.0	44.40	3.8	1200.2
2/14 7:04	96330.0	44.83	3.8	1200.0
2/14 7:05	95470.0	44.40	3.8	1200.2
2/14 7:06	95866.0	44.51	3.8	1200.0
2/14 7:07	96114.0	44.56	3.8	1200.0
2/14 7:08	96059.0	44.58	3.8	1200.3
2/14 7:09	95344.0	44.37	3.8	1200.3
2/14 7:10	95646.0	44.50	3.8	1200.0
2/14 7:11	95530.0	44.46	3.8	1199.8
2/14 7:12	95864.0	44.61	3.8	1200.0
2/14 7:13	95454.0	44.42	3.8	1200.2
2/14 7:14	95920.0	44.64	3.8	1200.0
2/14 7:15	95590.0	44.38	3.8	1200.0
2/14 7:16	96292.0	44.81	3.8	1200.0
2/14 7:17	96028.0	44.64	3.8	1199.8
2/14 7:18	95380.0	44.39	3.8	1200.0
2/14 7:19	96231.0	44.79	3.8	1199.7
2/14 7:20	98844.0	45.07	3.8	1199.8
2/14 7:21	95457.0	44.43	3.8	1199.8
2/14 7:22	95399.0	44.40	3.8	1200.0
2/14 7:23	95396.0	44.37	3.8	1200.0
2/14 7:24	95386.0	44.39	3.8	1200.0
2/14 7:25	96369.0	44.87	3.8	1200.0
2/14 7:26	96073.0	44.82	3.8	1200.3
2/14 7:27	95720.0	44.63	3.8	1199.8
2/14 7:28	96124.0	44.81	3.8	1200.0
2/14 7:29	95792.0	44.62	3.8	1200.0
2/14 7:30	95569.0	44.58	3.8	1200.0
2/14 7:31	96344.0	44.84	3.8	1200.0
2/14 7:32	94477.0	44.01	3.8	1199.8
2/14 7:33	96070.0	44.71	3.8	1200.3

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 7:34	96312.0	44.82	3.8	1200.0
2/14 7:35	95599.0	44.49	3.8	1200.0
2/14 7:36	95544.0	44.46	3.8	1200.0
2/14 7:37	95814.0	44.67	3.8	1199.8
2/14 7:38	95861.0	44.69	3.8	1200.0
2/14 7:39	96009.0	44.77	3.8	1200.0
2/14 7:40	96224.0	44.89	3.8	1199.8
2/14 7:41	96070.0	44.73	3.8	1200.0
2/14 7:42	95994.0	44.76	3.8	1200.2
2/14 7:43	95872.0	44.69	3.8	1200.0
2/14 7:44	95976.0	44.69	3.8	1200.0
2/14 7:45	95818.0	44.65	3.8	1199.8
2/14 7:46	96820.0	45.06	3.8	1199.8
2/14 7:47	96090.0	44.72	3.8	1200.0
2/14 7:48	95027.0	44.23	3.8	1200.0
2/14 7:49	95687.0	44.55	3.8	1200.2
2/14 7:50	94577.0	44.06	3.8	1199.7
2/14 7:51	95822.0	44.59	3.8	1200.0
2/14 7:52	95850.0	44.61	3.8	1200.0
2/14 7:53	95015.0	44.24	3.8	1200.0
2/14 7:54	95193.0	44.30	3.8	1199.8
2/14 7:55	96258.0	44.80	3.8	1200.0
2/14 7:56	96638.0	44.98	3.8	1199.5
2/14 7:57	96220.0	44.71	3.8	1200.0
2/14 7:58	96046.0	44.60	3.8	1200.0
2/14 7:59	96289.0	44.71	3.8	1200.0
2/14 8:00	96767.0	44.99	3.8	1200.2
2/14 8:01	95148.0	44.28	3.8	1200.0
2/14 8:02	96196.0	44.70	3.8	1200.0
2/14 8:03	95537.0	44.40	3.8	1199.8
2/14 8:04	94830.0	44.13	3.8	1200.2
2/14 8:05	94828.0	44.13	3.8	1200.2
2/14 8:06	96808.0	45.06	3.8	1200.0
2/14 8:07	95714.0	44.54	3.8	1200.2
2/14 8:08	95943.0	44.65	3.8	1200.2
2/14 8:09	96748.0	45.03	3.8	1200.0
2/14 8:10	94674.0	44.08	3.8	1200.0
2/14 8:11	95007.0	44.22	3.8	1199.8
2/14 8:12	94963.0	44.17	3.8	1200.0
2/14 8:13	95263.0	44.29	3.8	1200.2
2/14 8:14	96465.0	44.85	3.8	1200.2
2/14 8:15	95824.0	44.57	3.8	1200.0
2/14 8:16	95778.0	44.58	3.8	1200.0
2/14 8:17	95341.0	44.37	3.8	1200.0
2/14 8:18	95779.0	44.58	3.8	1200.0
2/14 8:19	96183.0	44.78	3.8	1200.0
2/14 8:20	94928.0	44.18	3.8	1200.0
2/14 8:21	95156.0	44.29	3.8	1200.0
2/14 8:22	95796.0	44.60	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 8:23	95965.0	44.66	3.8	1200.0
2/14 8:24	96510.0	44.92	3.8	1200.0
2/14 8:25	95309.0	44.36	3.8	1200.0
2/14 8:26	94797.0	44.12	3.8	1200.0
2/14 8:27	96105.0	44.73	3.8	1200.0
2/14 8:28	95607.0	44.50	3.8	1200.0
2/14 8:29	95713.0	44.54	3.8	1200.0
2/14 8:30	95495.0	44.45	3.8	1200.0
2/14 8:31	95688.0	44.51	3.8	1200.0
2/14 8:32	94784.0	44.11	3.8	1200.2
2/14 8:33	95595.0	44.46	3.8	1199.8
2/14 8:34	95550.0	44.47	3.8	1199.7
2/14 8:35	95210.0	44.31	3.8	1199.8
2/14 8:36	95515.0	44.49	3.8	1200.2
2/14 8:37	95274.0	44.40	3.8	1199.7
2/14 8:38	94851.0	44.14	3.8	1200.0
2/14 8:39	96291.0	44.85	3.8	1200.0
2/14 8:40	95544.0	44.55	3.8	1199.8
2/14 8:41	95446.0	44.42	3.8	1200.0
2/14 8:42	95703.0	44.54	3.8	1200.0
2/14 8:43	95947.0	44.64	3.8	1200.2
2/14 8:44	94966.0	44.09	3.8	1199.8
2/14 8:45	95553.0	44.36	3.8	1199.8
2/14 8:46	95449.0	44.32	3.8	1200.3
2/14 8:47	95347.0	44.35	3.8	1200.0
2/14 8:48	95492.0	44.34	3.8	1200.0
2/14 8:49	95295.0	44.25	3.8	1200.2
2/14 8:50	95555.0	44.37	3.8	1200.0
2/14 8:51	94688.0	43.96	3.8	1199.8
2/14 8:52	95280.0	44.24	3.8	1200.2
2/14 8:53	96230.0	44.68	3.8	1200.0
2/14 8:54	95735.0	44.45	3.8	1200.0
2/14 8:55	96385.0	44.75	3.8	1199.8
2/14 8:56	95644.0	44.34	3.8	1200.0
2/14 8:57	95394.0	44.21	3.8	1200.3
2/14 8:58	95686.0	44.36	3.8	1200.3
2/14 8:59	95503.0	44.31	3.8	1200.0
2/14 9:00	94481.0	43.80	3.8	1199.8
2/14 9:01	95215.0	44.12	3.8	1200.0
2/14 9:02	94630.0	43.81	3.8	1200.0
2/14 9:03	95718.0	44.18	3.8	1200.5
2/14 9:04	95304.0	44.12	3.8	1200.0
2/14 9:05	95676.0	44.33	3.8	1200.0
2/14 9:06	95015.0	44.02	3.8	1200.0
2/14 9:07	95026.0	43.97	3.8	1199.5
2/14 9:08	94722.0	43.74	3.8	1199.8
2/14 9:09	95834.0	44.29	3.8	1200.2
2/14 9:10	95026.0	43.92	3.8	1200.2
2/14 9:11	95542.0	44.13	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 9:12	94801.0	43.85	3.8	1200.7
2/14 9:13	95484.0	44.28	3.8	1200.7
2/14 9:14	95721.0	44.53	3.8	1200.0
2/14 9:15	94835.0	44.14	3.8	1199.5
2/14 9:16	95197.0	44.18	3.8	1199.7
2/14 9:17	96369.0	44.68	3.8	1200.0
2/14 9:18	95664.0	44.28	3.8	1200.2
2/14 9:19	95959.0	44.40	3.8	1200.0
2/14 9:20	95429.0	44.14	3.8	1200.2
2/14 9:21	94525.0	43.89	3.8	1200.0
2/14 9:22	95999.0	44.57	3.8	1199.7
2/14 9:23	94778.0	44.04	3.8	1200.0
2/14 9:24	95922.0	44.62	3.8	1199.8
2/14 9:25	95172.0	44.19	3.8	1199.7
2/14 9:26	96295.0	44.74	3.8	1199.8
2/14 9:27	96555.0	44.83	3.8	1200.0
2/14 9:28	96346.0	44.74	3.8	1199.7
2/14 9:29	96210.0	44.67	3.8	1200.0
2/14 9:30	95054.0	44.16	3.8	1200.5
2/14 9:31	96005.0	44.62	3.8	1200.0
2/14 9:32	94944.0	44.14	3.8	1200.3
2/14 9:33	95946.0	44.58	3.8	1199.8
2/14 9:34	95332.0	44.26	3.8	1199.8
2/14 9:35	95269.0	44.21	3.8	1200.2
2/14 9:36	95406.0	44.23	3.8	1199.5
2/14 9:37	95404.0	44.11	3.8	1200.0
2/14 9:38	95465.0	44.17	3.8	1200.5
2/14 9:39	95219.0	44.18	3.8	1200.0
2/14 9:40	94883.0	44.05	3.8	1199.7
2/14 9:41	96068.0	44.47	3.8	1199.5
2/14 9:42	95757.0	44.15	3.8	1200.2
2/14 9:43	95672.0	44.19	3.8	1200.8
2/14 9:44	95745.0	44.46	3.8	1199.7
2/14 9:45	96464.0	44.72	3.8	1199.7
2/14 9:46	95297.0	43.94	3.8	1199.7
2/14 9:47	95078.0	43.87	3.8	1200.3
2/14 9:48	95116.0	44.01	3.8	1200.3
2/14 9:49	95557.0	44.27	3.8	1199.5
2/14 9:50	95616.0	44.30	3.8	1199.7
2/14 9:51	96119.0	44.45	3.8	1200.0
2/14 9:52	95833.0	44.37	3.8	1199.8
2/14 9:53	96105.0	44.56	3.8	1200.3
2/14 9:54	95287.0	44.35	3.8	1199.8
2/14 9:55	95635.0	44.31	3.8	1199.0
2/14 9:56	96335.0	44.32	3.8	1200.0
2/14 9:57	96933.0	44.48	3.8	1200.0
2/14 9:58	96784.0	44.41	3.8	1200.0
2/14 9:59	96400.0	44.32	3.8	1200.7
2/14 10:00	95598.0	44.25	3.8	1200.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 10:01	94952.0	44.11	3.8	1200.2
2/14 10:02	95367.0	44.31	3.8	1199.5
2/14 10:03	96689.0	44.89	3.8	1199.8
2/14 10:04	95535.0	44.36	3.8	1199.8
2/14 10:05	94970.0	44.12	3.8	1200.2
2/14 10:06	95668.0	44.48	3.8	1199.7
2/14 10:07	95363.0	44.30	3.8	1200.2
2/14 10:08	94776.0	44.11	3.8	1200.2
2/14 10:09	96875.0	45.09	3.8	1200.0
2/14 10:10	95038.0	44.18	3.8	1200.5
2/14 10:11	94365.0	43.92	3.7	1199.8
2/14 10:12	95537.0	44.46	3.8	1200.0
2/14 10:13	94451.0	43.99	3.8	1199.8
2/14 10:14	95323.0	44.36	3.8	1200.0
2/14 10:15	95130.0	44.29	3.8	1200.0
2/14 10:16	95126.0	44.27	3.8	1199.8
2/14 10:17	95209.0	44.26	3.8	1200.0
2/14 10:18	95516.0	44.39	3.8	1200.0
2/14 10:19	94920.0	44.11	3.8	1200.0
2/14 10:20	95588.0	44.41	3.8	1200.2
2/14 10:21	95113.0	44.26	3.8	1199.7
2/14 10:22	95028.0	44.23	3.8	1200.2
2/14 10:23	95012.0	44.22	3.8	1200.0
2/14 10:24	96188.0	44.77	3.8	1199.8
2/14 10:25	95567.0	44.40	3.8	1200.2
2/14 10:26	95781.0	44.58	3.8	1200.2
2/14 10:27	94638.0	44.05	3.8	1200.2
2/14 10:28	95262.0	44.39	3.8	1199.8
2/14 10:29	94628.0	44.04	3.8	1199.8
2/14 10:30	94144.0	43.78	3.8	1200.0
2/14 10:31	93856.0	43.66	3.7	1200.2
2/14 10:32	94981.0	44.16	3.7	1200.0
2/14 10:33	94484.0	43.87	3.7	1199.8
2/14 10:34	94513.0	43.91	3.8	1200.0
2/14 10:35	94426.0	43.93	3.8	1200.0
2/14 10:36	95543.0	44.46	3.8	1200.0
2/14 10:37	94584.0	44.04	3.8	1200.0
2/14 10:38	94544.0	44.07	3.8	1200.0
2/14 10:39	94195.0	43.94	3.8	1199.2
2/14 10:40	94939.0	44.00	3.8	1200.2
2/14 10:41	94292.0	43.90	3.8	1200.7
2/14 10:42	93887.0	43.80	3.8	1200.0
2/14 10:43	94604.0	44.05	3.7	1199.8
2/14 10:44	94733.0	44.09	3.7	1200.0
2/14 10:45	93537.0	43.57	3.7	1200.2
2/14 10:46	95267.0	44.40	3.7	1199.7
2/14 10:47	94992.0	44.31	3.7	1200.0
2/14 10:48	94934.0	44.28	3.7	1200.0
2/14 10:49	94177.0	43.99	3.7	1199.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 10:50	93818.0	43.85	3.8	1200.0
2/14 10:51	94583.0	44.12	3.8	1199.7
2/14 10:52	95334.0	44.49	3.8	1200.2
2/14 10:53	95598.0	44.63	3.8	1200.0
2/14 10:54	93699.0	43.71	3.8	1199.7
2/14 10:55	94621.0	44.16	3.8	1200.3
2/14 10:56	95492.0	44.60	3.7	1199.7
2/14 10:57	94156.0	43.93	3.7	1200.5
2/14 10:58	94489.0	44.03	3.7	1199.7
2/14 10:59	94635.0	44.06	3.7	1200.0
2/14 11:00	95128.0	44.35	3.7	1200.0
2/14 11:01	96070.0	44.26	3.7	1199.5
2/14 11:02	95803.0	44.64	3.8	1200.0
2/14 11:03	95148.0	44.37	3.8	1200.0
2/14 11:04	94942.0	44.31	3.8	1200.2
2/14 11:05	94961.0	44.40	3.8	1200.0
2/14 11:06	94444.0	44.16	3.8	1199.7
2/14 11:07	94687.0	44.25	3.8	1200.2
2/14 11:08	93656.0	43.80	3.8	1200.0
2/14 11:09	93557.0	43.75	3.8	1200.0
2/14 11:10	95012.0	44.43	3.8	1200.0
2/14 11:11	94943.0	44.41	3.7	1200.0
2/14 11:12	93402.0	43.69	3.7	1200.2
2/14 11:13	94145.0	44.04	3.7	1200.2
2/14 11:14	94127.0	44.02	3.7	1200.0
2/14 11:15	94022.0	43.96	3.7	1200.2
2/14 11:16	94327.0	44.08	3.7	1200.0
2/14 11:17	94294.0	44.07	3.7	1199.8
2/14 11:18	93184.0	43.57	3.7	1200.3
2/14 11:19	93148.0	43.61	3.7	1199.8
2/14 11:20	94374.0	44.15	3.7	1200.2
2/14 11:21	94221.0	44.16	3.7	1200.2
2/14 11:22	94793.0	44.46	3.7	1200.0
2/14 11:23	93999.0	44.09	3.7	1200.0
2/14 11:24	94524.0	44.30	3.7	1199.8
2/14 11:25	94396.0	44.25	3.7	1200.0
2/14 11:26	95135.0	44.59	3.7	1200.2
2/14 11:27	95210.0	44.64	3.7	1200.2
2/14 11:28	93789.0	43.98	3.7	1200.2
2/14 11:29	93954.0	44.03	3.7	1199.8
2/14 11:30	94672.0	44.37	3.7	1199.8
2/14 11:31	94114.0	44.08	3.7	1200.0
2/14 11:32	93483.0	43.80	3.7	1200.0
2/14 11:33	94325.0	44.13	3.7	1200.0
2/14 11:34	94361.0	44.12	3.7	1200.0
2/14 11:35	94898.0	44.46	3.7	1200.2
2/14 11:36	94183.0	44.14	3.7	1200.0
2/14 11:37	93566.0	43.93	3.7	1200.0
2/14 11:38	93907.0	44.04	3.7	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 11:39	94142.0	44.20	3.7	1199.8
2/14 11:40	94116.0	44.13	3.7	1200.0
2/14 11:41	93865.0	44.07	3.7	1200.0
2/14 11:42	94084.0	44.10	3.7	1200.2
2/14 11:43	93900.0	44.11	3.7	1200.2
2/14 11:44	93441.0	43.90	3.7	1200.0
2/14 11:45	94811.0	44.54	3.7	1200.0
2/14 11:46	93658.0	43.97	3.7	1200.0
2/14 11:47	92750.0	43.47	3.7	1200.0
2/14 11:48	94643.0	44.34	3.7	1199.8
2/14 11:49	93991.0	44.05	3.7	1200.0
2/14 11:50	93867.0	44.02	3.7	1200.2
2/14 11:51	94081.0	44.20	3.7	1200.0
2/14 11:52	94076.0	44.23	3.7	1200.0
2/14 11:53	94294.0	44.40	3.7	1200.0
2/14 11:54	92984.0	43.78	3.7	1199.7
2/14 11:55	93637.0	44.07	3.7	1199.7
2/14 11:56	93586.0	43.95	3.7	1199.8
2/14 11:57	94028.0	44.10	3.7	1200.2
2/14 11:58	92781.0	43.59	3.7	1200.0
2/14 11:59	94076.0	44.27	3.7	1200.2
2/14 12:00	93792.0	44.08	3.7	1200.0
2/14 12:01	93778.0	44.08	3.7	1199.8
2/14 12:02	92873.0	43.63	3.7	1199.3
2/14 12:03	94363.0	44.20	3.7	1200.0
2/14 12:04	94937.0	44.50	3.7	1200.0
2/14 12:05	94009.0	44.14	3.7	1199.8
2/14 12:06	93330.0	43.85	3.7	1199.8
2/14 12:07	93788.0	44.08	3.7	1200.3
2/14 12:08	94219.0	44.39	3.7	1200.2
2/14 12:09	93397.0	43.98	3.7	1199.8
2/14 12:10	94016.0	44.34	3.7	1200.0
2/14 12:11	92733.0	43.75	3.7	1200.0
2/14 12:12	92880.0	43.82	3.7	1200.0
2/14 12:13	93090.0	43.92	3.7	1200.0
2/14 12:14	92791.0	43.80	3.7	1199.7
2/14 12:15	94124.0	44.37	3.7	1200.0
2/14 12:16	93312.0	44.04	3.7	1200.0
2/14 12:17	93262.0	43.93	3.7	1200.0
2/14 12:18	94135.0	44.40	3.7	1200.0
2/14 12:19	92594.0	43.68	3.7	1200.0
2/14 12:20	92070.0	43.46	3.7	1200.0
2/14 12:21	93444.0	44.08	3.7	1199.3
2/14 12:22	93768.0	44.08	3.7	1199.8
2/14 12:23	93507.0	43.98	3.7	1200.0
2/14 12:24	93624.0	44.06	3.7	1200.0
2/14 12:25	93136.0	43.76	3.7	1200.3
2/14 12:26	93508.0	43.93	3.7	1199.8
2/14 12:27	93458.0	43.91	3.7	1199.8
Average Run 1	**95006.7**	**44.2**	**3.8**	**1200.0**

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 12:28	94765.0	44.57	3.7	1200.2
2/14 12:29	93678.0	44.11	3.7	1200.3
2/14 12:30	93071.0	43.89	3.7	1200.2
2/14 12:31	93568.0	44.17	3.7	1200.2
2/14 12:32	93280.0	44.10	3.7	1200.0
2/14 12:33	92902.0	43.90	3.7	1199.2
2/14 12:34	94396.0	44.14	3.7	1199.5
2/14 12:35	94885.0	44.20	3.7	1200.2
2/14 12:36	93927.0	43.82	3.7	1199.8
2/14 12:37	93471.0	43.60	3.7	1200.0
2/14 12:38	93888.0	43.90	3.7	1200.2
2/14 12:39	93746.0	43.94	3.7	1200.2
2/14 12:40	93554.0	43.83	3.7	1200.0
2/14 12:41	93409.0	43.80	3.7	1200.2
2/14 12:42	92931.0	43.63	3.7	1199.5
2/14 12:43	93744.0	43.83	3.7	1200.2
2/14 12:44	93962.0	44.02	3.7	1200.2
2/14 12:45	93269.0	43.73	3.7	1200.0
2/14 12:46	94796.0	44.43	3.7	1200.0
2/14 12:47	93663.0	43.90	3.7	1199.7
2/14 12:48	93986.0	44.08	3.7	1200.2
2/14 12:49	94287.0	44.30	3.7	1199.8
2/14 12:50	94503.0	44.40	3.7	1200.2
2/14 12:51	93785.0	43.98	3.7	1199.8
2/14 12:52	93594.0	43.95	3.7	1200.7
2/14 12:53	93716.0	44.16	3.7	1199.7
2/14 12:54	94127.0	44.33	3.7	1199.8
2/14 12:55	94338.0	44.34	3.7	1200.0
2/14 12:56	94089.0	44.29	3.7	1200.5
2/14 12:57	93268.0	44.02	3.7	1200.2
2/14 12:58	92658.0	43.84	3.7	1200.0
2/14 12:59	93490.0	44.17	3.7	1200.3
2/14 13:00	92667.0	43.77	3.7	1199.8
2/14 13:01	93032.0	43.91	3.7	1200.0
2/14 13:02	93134.0	44.02	3.7	1199.8
2/14 13:03	93397.0	44.05	3.7	1199.5
2/14 13:04	94052.0	44.35	3.7	1200.2
2/14 13:05	93181.0	43.98	3.7	1200.0
2/14 13:06	94154.0	44.34	3.7	1199.5
2/14 13:07	94021.0	44.25	3.7	1200.7
2/14 13:08	92781.0	43.86	3.7	1200.5
2/14 13:09	92570.0	43.72	3.7	1198.7
2/14 13:10	95245.0	44.45	3.7	1199.0
2/14 13:11	94479.0	44.09	3.7	1201.7
2/14 13:12	93642.0	44.22	3.7	1200.3
2/14 13:13	92987.0	43.99	3.7	1199.8
2/14 13:14	92332.0	43.70	3.7	1200.2
2/14 13:15	92987.0	44.07	3.7	1199.3
2/14 13:16	93719.0	44.03	3.7	1200.3

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 13:17	93617.0	44.13	3.7	1197.3
2/14 13:18	99671.0	45.34	3.7	1196.2
2/14 13:19	101180.0	44.92	3.8	1200.3
2/14 13:20	96803.0	43.54	3.8	1205.5
2/14 13:21	92875.0	43.58	3.7	1201.0
2/14 13:22	92270.0	43.55	3.7	1199.5
2/14 13:23	95013.0	44.65	3.7	1196.2
2/14 13:24	96599.0	44.38	3.8	1202.8
2/14 13:25	94132.0	44.22	3.7	1201.7
2/14 13:26	93374.0	44.24	3.7	1199.7
2/14 13:27	93292.0	44.24	3.7	1199.7
2/14 13:28	93943.0	44.39	3.7	1199.7
2/14 13:29	94001.0	44.28	3.7	1200.0
2/14 13:30	93576.0	44.09	3.7	1200.2
2/14 13:31	93463.0	44.09	3.7	1200.3
2/14 13:32	92902.0	43.85	3.7	1200.0
2/14 13:33	93667.0	44.23	3.7	1200.0
2/14 13:34	93322.0	44.09	3.7	1200.2
2/14 13:35	93617.0	44.26	3.7	1199.8
2/14 13:36	93777.0	44.37	3.7	1200.0
2/14 13:37	93518.0	44.26	3.7	1200.0
2/14 13:38	93097.0	44.12	3.7	1200.0
2/14 13:39	92654.0	43.83	3.7	1199.8
2/14 13:40	93165.0	44.08	3.7	1200.0
2/14 13:41	93360.0	44.17	3.7	1199.8
2/14 13:42	92959.0	43.98	3.7	1200.2
2/14 13:43	93555.0	44.23	3.7	1200.3
2/14 13:44	93297.0	44.14	3.7	1199.8
2/14 13:45	93840.0	44.27	3.7	1199.0
2/14 13:46	93643.0	43.86	3.7	1200.5
2/14 13:47	93266.0	43.95	3.7	1200.2
2/14 13:48	92942.0	43.81	3.7	1200.0
2/14 13:49	94100.0	44.33	3.7	1200.0
2/14 13:50	92323.0	43.49	3.7	1200.2
2/14 13:51	93214.0	43.94	3.7	1199.8
2/14 13:52	93253.0	44.01	3.7	1199.8
2/14 13:53	93183.0	43.96	3.7	1199.3
2/14 13:54	92966.0	43.49	3.7	1200.5
2/14 13:55	92930.0	43.74	3.7	1200.3
2/14 13:56	93575.0	44.22	3.7	1200.0
2/14 13:57	93436.0	44.18	3.7	1199.7
2/14 13:58	92708.0	43.78	3.7	1199.8
2/14 13:59	92820.0	43.79	3.7	1199.8
2/14 14:00	93784.0	44.21	3.7	1200.2
2/14 14:01	94029.0	44.38	3.7	1200.0
2/14 14:02	93951.0	44.34	3.7	1200.0
2/14 14:03	93267.0	44.02	3.7	1199.3
2/14 14:04	93506.0	44.05	3.7	1200.0
2/14 14:05	93392.0	44.06	3.7	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 14:06	92976.0	43.89	3.7	1200.0
2/14 14:07	92797.0	43.80	3.7	1200.0
2/14 14:08	93409.0	44.14	3.7	1199.3
2/14 14:09	93809.0	44.09	3.7	1200.0
2/14 14:10	93022.0	43.70	3.7	1200.2
2/14 14:11	94276.0	44.32	3.7	1200.0
2/14 14:12	93613.0	44.05	3.7	1200.0
2/14 14:13	93485.0	44.01	3.7	1200.0
2/14 14:14	93395.0	43.98	3.7	1200.2
2/14 14:15	92885.0	43.83	3.7	1200.0
2/14 14:16	93899.0	44.22	3.7	1200.0
2/14 14:17	93613.0	44.08	3.7	1199.8
2/14 14:18	93415.0	43.99	3.7	1200.2
2/14 14:19	94449.0	44.56	3.7	1200.0
2/14 14:20	93678.0	44.16	3.7	1199.8
2/14 14:21	93719.0	44.11	3.7	1199.8
2/14 14:22	93014.0	43.80	3.7	1200.0
2/14 14:23	93088.0	43.84	3.7	1200.0
2/14 14:24	93309.0	43.91	3.7	1200.2
2/14 14:25	94167.0	44.29	3.7	1199.8
2/14 14:26	93063.0	43.72	3.7	1200.2
2/14 14:27	93318.0	43.79	3.7	1200.0
2/14 14:28	93725.0	43.93	3.7	1199.8
2/14 14:29	93858.0	43.99	3.7	1200.0
2/14 14:30	94316.0	44.21	3.7	1200.0
2/14 14:31	93369.0	43.76	3.7	1200.0
2/14 14:32	94840.0	44.45	3.7	1200.2
2/14 14:33	92475.0	43.35	3.7	1200.2
2/14 14:34	93898.0	44.06	3.7	1200.2
2/14 14:35	93738.0	43.95	3.7	1199.8
2/14 14:36	94888.0	44.43	3.7	1199.7
2/14 14:37	94168.0	44.03	3.7	1199.8
2/14 14:38	93995.0	43.94	3.7	1200.0
2/14 14:39	93611.0	43.74	3.7	1200.0
2/14 14:40	93858.0	43.89	3.7	1199.7
2/14 14:41	94566.0	44.22	3.7	1200.0
2/14 14:42	94183.0	44.07	3.7	1200.2
2/14 14:43	93475.0	43.79	3.7	1199.8
2/14 14:44	93976.0	43.96	3.7	1200.0
2/14 14:45	93923.0	43.92	3.7	1200.0
2/14 14:46	94283.0	44.09	3.7	1199.8
2/14 14:47	94082.0	43.97	3.7	1200.2
2/14 14:48	94821.0	44.26	3.7	1200.0
2/14 14:49	93007.0	43.39	3.7	1199.8
2/14 14:50	93481.0	43.63	3.7	1200.0
2/14 14:51	93994.0	43.85	3.7	1200.0
2/14 14:52	94118.0	43.91	3.7	1199.8
2/14 14:53	94482.0	44.07	3.7	1200.0
2/14 14:54	94428.0	44.05	3.7	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 14:55	94917.0	44.28	3.7	1199.8
2/14 14:56	94849.0	44.30	3.7	1200.0
2/14 14:57	93457.0	43.70	3.8	1200.0
2/14 14:58	93614.0	43.77	3.7	1200.2
2/14 14:59	93398.0	43.70	3.7	1200.0
2/14 15:00	93209.0	43.59	3.7	1200.0
2/14 15:01	92821.0	43.42	3.7	1199.8
2/14 15:02	93839.0	43.86	3.7	1200.0
2/14 15:03	95069.0	44.37	3.7	1200.0
2/14 15:04	94413.0	44.04	3.7	1200.0
2/14 15:05	94471.0	44.07	3.7	1200.2
2/14 15:06	94338.0	44.03	3.7	1199.7
2/14 15:07	94596.0	44.13	3.8	1200.0
2/14 15:08	93730.0	43.66	3.8	1199.7
2/14 15:09	94968.0	44.28	3.8	1200.2
2/14 15:10	93986.0	43.85	3.8	1199.8
2/14 15:11	95273.0	44.41	3.8	1200.0
2/14 15:12	94513.0	44.02	3.8	1200.2
2/14 15:13	94847.0	44.28	3.7	1200.0
2/14 15:14	93946.0	43.83	3.7	1200.0
2/14 15:15	94427.0	44.03	3.7	1200.0
2/14 15:16	93290.0	43.52	3.7	1200.2
2/14 15:17	94719.0	44.19	3.7	1200.0
2/14 15:18	94038.0	43.87	3.7	1199.8
2/14 15:19	94189.0	43.91	3.7	1200.2
2/14 15:20	94334.0	44.00	3.7	1200.0
2/14 15:21	95004.0	44.30	3.7	1200.0
2/14 15:22	94763.0	44.12	3.7	1200.2
2/14 15:23	95189.0	44.34	3.7	1200.5
2/14 15:24	94765.0	44.19	3.7	1199.8
2/14 15:25	94863.0	44.15	3.7	1199.8
2/14 15:26	92939.0	43.29	3.7	1199.7
2/14 15:27	94868.0	44.15	3.8	1199.8
2/14 15:28	95707.0	44.54	3.7	1200.0
2/14 15:29	94918.0	44.16	3.7	1200.0
2/14 15:30	94766.0	44.12	3.7	1200.3
2/14 15:31	94525.0	44.07	3.7	1200.0
2/14 15:32	93415.0	43.60	3.7	1200.0
2/14 15:33	94116.0	43.91	3.7	1199.8
2/14 15:34	93836.0	43.78	3.7	1199.8
2/14 15:35	93619.0	43.67	3.7	1200.0
2/14 15:36	95041.0	44.25	3.7	1199.8
2/14 15:37	95118.0	44.27	3.7	1200.0
2/14 15:38	95111.0	44.28	3.7	1200.0
2/14 15:39	93766.0	43.72	3.7	1200.0
2/14 15:40	94273.0	43.98	3.7	1200.0
2/14 15:41	94441.0	44.08	3.7	1200.0
2/14 15:42	95973.0	44.79	3.7	1200.2
2/14 15:43	95913.0	44.71	3.7	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 15:44	93562.0	43.62	3.7	1199.8
2/14 15:45	94975.0	44.20	3.7	1199.8
2/14 15:46	94404.0	44.02	3.7	1200.0
2/14 15:47	94112.0	43.86	3.7	1199.7
2/14 15:48	94904.0	44.22	3.7	1200.0
2/14 15:49	93454.0	43.51	3.7	1200.2
2/14 15:50	94656.0	44.16	3.7	1200.0
2/14 15:51	94563.0	44.09	3.7	1200.0
2/14 15:52	94447.0	44.06	3.7	1200.0
2/14 15:53	94660.0	44.16	3.7	1200.0
2/14 15:54	94605.0	44.11	3.7	1200.2
2/14 15:55	95181.0	44.33	3.7	1199.7
2/14 15:56	94955.0	44.19	3.7	1200.0
2/14 15:57	94413.0	43.94	3.7	1200.2
2/14 15:58	94539.0	44.00	3.7	1200.0
2/14 15:59	95651.0	44.52	3.7	1200.0
2/14 16:00	94264.0	43.93	3.7	1199.8
2/14 16:01	94584.0	44.10	3.7	1199.7
2/14 16:02	94372.0	43.96	3.7	1199.8
2/14 16:03	94427.0	43.95	3.7	1200.0
2/14 16:04	95090.0	44.29	3.7	1200.0
2/14 16:05	94410.0	44.02	3.7	1199.8
2/14 16:06	94563.0	44.09	3.7	1200.3
2/14 16:07	94203.0	43.97	3.7	1200.3
2/14 16:08	94712.0	44.20	3.7	1200.0
2/14 16:09	94188.0	43.99	3.7	1200.2
2/14 16:10	93420.0	43.64	3.7	1199.7
2/14 16:11	94839.0	44.27	3.7	1199.8
2/14 16:12	95142.0	44.38	3.7	1199.8
2/14 16:13	95480.0	44.47	3.7	1199.8
2/14 16:14	93969.0	43.79	3.7	1200.0
2/14 16:15	94737.0	44.09	3.7	1200.5
2/14 16:16	94467.0	44.07	3.7	1200.3
2/14 16:17	93317.0	43.55	3.7	1200.0
2/14 16:18	94557.0	44.11	3.7	1200.0
2/14 16:19	93197.0	43.53	3.7	1200.0
2/14 16:20	94612.0	44.14	3.7	1200.0
2/14 16:21	95649.0	44.62	3.7	1199.8
2/14 16:22	94551.0	44.08	3.7	1200.2
2/14 16:23	94395.0	44.06	3.7	1199.8
2/14 16:24	94406.0	44.10	3.7	1200.3
2/14 16:25	94336.0	44.03	3.7	1200.2
2/14 16:26	94289.0	44.06	3.7	1200.2
2/14 16:27	93735.0	43.83	3.7	1200.0
2/14 16:28	94670.0	44.24	3.7	1200.0
2/14 16:29	94435.0	44.08	3.7	1200.2
2/14 16:30	95143.0	44.40	3.7	1200.0
2/14 16:31	94281.0	43.98	3.7	1200.2
2/14 16:32	95571.0	44.58	3.7	1200.0
Average Run 2	**94007.0**	**44.0**	**3.7**	**1200.0**

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 16:33	93480.0	43.66	3.7	1200.2
2/14 16:34	94410.0	44.13	3.7	1200.0
2/14 16:35	94617.0	44.24	3.7	1200.0
2/14 16:36	94515.0	44.20	3.7	1200.0
2/14 16:37	94517.0	44.17	3.7	1200.0
2/14 16:38	93946.0	43.90	3.7	1199.8
2/14 16:39	94714.0	44.21	3.7	1199.8
2/14 16:40	94223.0	43.97	3.7	1200.0
2/14 16:41	94867.0	44.34	3.7	1200.0
2/14 16:42	93658.0	43.69	3.7	1200.0
2/14 16:43	94021.0	43.94	3.7	1199.8
2/14 16:44	94457.0	44.17	3.7	1200.2
2/14 16:45	94161.0	44.03	3.7	1199.7
2/14 16:46	95255.0	44.52	3.7	1200.0
2/14 16:47	93050.0	43.51	3.7	1200.0
2/14 16:48	95779.0	44.74	3.7	1200.0
2/14 16:49	95659.0	44.73	3.7	1200.0
2/14 16:50	94543.0	44.16	3.7	1200.0
2/14 16:51	95732.0	44.66	3.8	1200.0
2/14 16:52	95003.0	44.32	3.8	1200.0
2/14 16:53	94725.0	44.27	3.7	1200.0
2/14 16:54	94704.0	44.18	3.7	1200.2
2/14 16:55	95489.0	44.63	3.7	1200.0
2/14 16:56	95515.0	44.65	3.8	1199.8
2/14 16:57	94779.0	44.30	3.8	1200.2
2/14 16:58	94836.0	44.35	3.8	1200.0
2/14 16:59	94831.0	44.34	3.8	1200.0
2/14 17:00	95116.0	44.48	3.8	1199.8
2/14 17:01	94688.0	44.28	3.8	1200.2
2/14 17:02	95449.0	44.63	3.8	1200.0
2/14 17:03	94066.0	43.99	3.8	1199.7
2/14 17:04	94968.0	44.39	3.8	1199.8
2/14 17:05	95620.0	44.71	3.8	1200.0
2/14 17:06	94835.0	44.35	3.8	1200.2
2/14 17:07	95055.0	44.45	3.8	1199.8
2/14 17:08	95793.0	44.77	3.8	1199.5
2/14 17:09	94555.0	44.14	3.8	1200.0
2/14 17:10	94531.0	44.15	3.8	1200.0
2/14 17:11	95202.0	44.49	3.8	1199.8
2/14 17:12	96168.0	44.94	3.8	1200.0
2/14 17:13	95312.0	44.52	3.8	1200.0
2/14 17:14	95643.0	44.72	3.8	1199.8
2/14 17:15	95617.0	44.71	3.8	1199.8
2/14 17:16	95617.0	44.71	3.8	1200.2
2/14 17:17	95329.0	44.58	3.8	1200.0
2/14 17:18	95254.0	44.54	3.8	1200.0
2/14 17:19	95123.0	44.51	3.8	1200.2
2/14 17:20	95176.0	44.53	3.8	1199.5
2/14 17:21	95566.0	44.76	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 17:22	95761.0	44.81	3.8	1200.2
2/14 17:23	95931.0	44.86	3.8	1200.0
2/14 17:24	94933.0	44.39	3.8	1199.8
2/14 17:25	95142.0	44.49	3.8	1200.0
2/14 17:26	94812.0	44.35	3.8	1200.0
2/14 17:27	93958.0	43.94	3.8	1199.8
2/14 17:28	95102.0	44.47	3.8	1200.0
2/14 17:29	95405.0	44.72	3.8	1200.0
2/14 17:30	94406.0	44.25	3.8	1199.7
2/14 17:31	95324.0	44.60	3.8	1200.2
2/14 17:32	95409.0	44.72	3.8	1200.0
2/14 17:33	95463.0	44.64	3.8	1199.8
2/14 17:34	95292.0	44.56	3.8	1199.8
2/14 17:35	96646.0	45.19	3.8	1200.2
2/14 17:36	95938.0	44.86	3.8	1200.0
2/14 17:37	95725.0	44.74	3.8	1200.2
2/14 17:38	95851.0	44.82	3.8	1199.8
2/14 17:39	96072.0	44.92	3.8	1200.0
2/14 17:40	95112.0	44.47	3.8	1200.0
2/14 17:41	95306.0	44.52	3.8	1200.0
2/14 17:42	95867.0	44.81	3.8	1200.0
2/14 17:43	95541.0	44.66	3.8	1199.8
2/14 17:44	95751.0	44.69	3.8	1200.0
2/14 17:45	95474.0	44.59	3.8	1200.0
2/14 17:46	96135.0	44.85	3.8	1200.0
2/14 17:47	96030.0	44.88	3.8	1200.0
2/14 17:48	96091.0	44.93	3.8	1200.0
2/14 17:49	96445.0	45.10	3.8	1200.0
2/14 17:50	95616.0	44.68	3.8	1200.0
2/14 17:51	95610.0	44.63	3.8	1200.0
2/14 17:52	96304.0	44.94	3.8	1200.3
2/14 17:53	96108.0	44.92	3.8	1200.0
2/14 17:54	95781.0	44.79	3.8	1200.0
2/14 17:55	95385.0	44.60	3.8	1199.8
2/14 17:56	95371.0	44.65	3.8	1200.0
2/14 17:57	96039.0	44.94	3.8	1199.8
2/14 17:58	96092.0	44.93	3.8	1200.0
2/14 17:59	95751.0	44.77	3.8	1200.0
2/14 18:00	95356.0	44.59	3.8	1200.0
2/14 18:01	96039.0	44.83	3.8	1200.5
2/14 18:02	95891.0	44.87	3.8	1200.0
2/14 18:03	95204.0	44.52	3.8	1200.3
2/14 18:04	96002.0	45.00	3.8	1200.0
2/14 18:05	95763.0	44.90	3.8	1200.0
2/14 18:06	95857.0	44.93	3.8	1199.7
2/14 18:07	96098.0	45.04	3.8	1199.8
2/14 18:08	96383.0	45.14	3.8	1200.0
2/14 18:09	96822.0	45.36	3.8	1200.0
2/14 18:10	96449.0	45.19	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 18:11	96108.0	45.05	3.8	1200.0
2/14 18:12	94972.0	44.51	3.8	1200.0
2/14 18:13	94719.0	44.47	3.8	1199.8
2/14 18:14	95757.0	44.99	3.8	1200.3
2/14 18:15	95875.0	45.04	3.8	1200.0
2/14 18:16	95710.0	44.96	3.8	1200.0
2/14 18:17	95852.0	45.03	3.8	1199.8
2/14 18:18	95835.0	44.90	3.8	1200.0
2/14 18:19	96356.0	45.14	3.8	1200.0
2/14 18:20	95912.0	44.95	3.8	1200.0
2/14 18:21	97230.0	45.57	3.8	1199.8
2/14 18:22	95987.0	44.88	3.8	1200.0
2/14 18:23	95544.0	44.69	3.8	1200.0
2/14 18:24	96279.0	45.11	3.8	1200.0
2/14 18:25	96905.0	45.40	3.8	1200.0
2/14 18:26	97117.0	45.52	3.8	1200.0
2/14 18:27	95617.0	44.82	3.8	1200.0
2/14 18:28	95126.0	44.66	3.8	1199.8
2/14 18:29	96258.0	45.14	3.8	1199.8
2/14 18:30	96473.0	45.22	3.8	1200.0
2/14 18:31	96818.0	45.38	3.8	1200.2
2/14 18:32	95904.0	44.95	3.8	1200.0
2/14 18:33	97040.0	45.43	3.8	1199.8
2/14 18:34	96509.0	45.13	3.8	1200.0
2/14 18:35	95678.0	44.74	3.8	1199.8
2/14 18:36	96268.0	45.00	3.8	1200.0
2/14 18:37	96104.0	44.94	3.8	1200.0
2/14 18:38	96393.0	45.07	3.8	1200.0
2/14 18:39	96408.0	45.06	3.8	1200.0
2/14 18:40	97017.0	45.34	3.8	1200.0
2/14 18:41	97434.0	45.54	3.8	1199.8
2/14 18:42	96422.0	45.04	3.8	1200.0
2/14 18:43	96099.0	44.94	3.8	1200.0
2/14 18:44	96686.0	45.21	3.8	1200.0
2/14 18:45	97160.0	45.43	3.8	1200.0
2/14 18:46	96106.0	44.94	3.8	1200.0
2/14 18:47	96174.0	44.97	3.8	1199.8
2/14 18:48	96329.0	45.04	3.8	1199.8
2/14 18:49	97319.0	45.43	3.8	1200.0
2/14 18:50	96997.0	45.33	3.8	1199.7
2/14 18:51	97553.0	45.53	3.8	1200.0
2/14 18:52	97158.0	45.33	3.8	1200.0
2/14 18:53	97677.0	45.63	3.8	1200.0
2/14 18:54	96516.0	45.11	3.8	1200.2
2/14 18:55	97143.0	45.40	3.8	1200.0
2/14 18:56	97221.0	45.38	3.8	1200.0
2/14 18:57	97387.0	45.54	3.8	1199.8
2/14 18:58	96842.0	45.18	3.8	1200.2
2/14 18:59	97100.0	45.27	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/14 19:00	96643.0	45.06	3.8	1200.2
Average (all)	94931.2	44.35	3.8	1200.0
Total (all)	--	--	--	--
Minimum (all)	92070.0	43.29	3.7	1196.2
Maximum (all)	101180.0	45.63	3.8	1205.5
Average (valid values only)	94931.2	44.35	3.8	1200.0
Total (valid values only)	--	--	--	--
Count (valid values only)	781	781	781	781

CeDAR 1-Minute Data

Sunshine Gas Producers, LLC

Data for 2/15/2023 6:00 AM thru 2/15/2023 7:00 PM

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 6:00	101878.0	46.51	3.9	1199.7
2/15 6:01	102266.0	46.59	3.9	1200.0
2/15 6:02	100971.0	46.00	3.9	1199.7
2/15 6:03	101516.0	46.20	3.9	1200.3
2/15 6:04	101673.0	46.30	3.9	1199.8
2/15 6:05	100583.0	45.82	3.9	1200.0
2/15 6:06	100880.0	45.99	3.9	1200.0
2/15 6:07	100934.0	46.00	3.9	1199.8
2/15 6:08	101609.0	46.41	3.9	1199.5
2/15 6:09	101267.0	46.16	3.9	1200.0
2/15 6:10	101811.0	46.38	3.9	1200.0
2/15 6:11	100897.0	45.95	3.9	1199.8
2/15 6:12	101849.0	46.35	3.9	1200.0
2/15 6:13	101288.0	46.10	3.9	1200.0
2/15 6:14	102153.0	46.45	3.9	1200.0
2/15 6:15	100722.0	45.78	3.9	1200.0
2/15 6:16	100732.0	45.84	3.9	1200.2
2/15 6:17	100874.0	45.94	3.9	1199.8
2/15 6:18	101319.0	46.16	3.9	1200.0
2/15 6:19	101248.0	46.13	3.9	1199.8
2/15 6:20	102404.0	46.68	3.9	1199.8
2/15 6:21	101421.0	46.23	3.9	1200.0
2/15 6:22	101323.0	46.13	3.9	1199.7
2/15 6:23	102109.0	46.43	3.9	1199.7
2/15 6:24	100704.0	45.75	3.9	1200.0
2/15 6:25	100691.0	45.85	3.9	1200.0
2/15 6:26	101390.0	46.19	3.9	1200.0
2/15 6:27	101199.0	46.11	3.9	1199.8
2/15 6:28	101048.0	45.95	3.9	1200.0
2/15 6:29	102541.0	46.70	3.9	1200.0
2/15 6:30	101589.0	46.23	3.9	1200.0
2/15 6:31	100545.0	45.81	3.9	1200.0
2/15 6:32	101863.0	46.41	3.9	1200.0
2/15 6:33	100356.0	45.72	3.9	1199.8
2/15 6:34	101563.0	46.27	3.9	1200.2
2/15 6:35	101171.0	46.09	3.9	1199.8
2/15 6:36	101981.0	46.46	3.9	1200.0
2/15 6:37	101630.0	46.32	3.9	1200.0
2/15 6:38	100354.0	45.72	3.9	1200.0
2/15 6:39	101195.0	46.11	3.9	1200.0
2/15 6:40	100526.0	45.80	3.9	1200.0
2/15 6:41	101646.0	46.31	3.9	1200.0
2/15 6:42	100999.0	45.94	3.9	1200.0
2/15 6:43	101420.0	46.10	3.9	1200.0
2/15 6:44	101540.0	46.15	3.9	1199.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 6:45	102165.0	46.44	3.9	1200.0
2/15 6:46	101063.0	46.01	3.9	1200.0
2/15 6:47	101039.0	45.92	3.9	1200.0
2/15 6:48	101202.0	46.04	3.9	1199.8
2/15 6:49	99899.0	45.51	3.9	1200.0
2/15 6:50	100908.0	45.95	3.9	1199.8
2/15 6:51	101948.0	46.32	3.9	1200.2
2/15 6:52	101385.0	46.14	3.9	1200.0
2/15 6:53	102028.0	46.37	3.9	1200.0
2/15 6:54	101568.0	46.14	3.9	1199.8
2/15 6:55	101420.0	46.10	3.9	1200.7
2/15 6:56	101514.0	46.16	3.9	1200.0
2/15 6:57	101095.0	46.04	3.9	1200.5
2/15 6:58	100597.0	45.83	3.9	1199.8
2/15 6:59	100895.0	45.97	3.9	1199.7
2/15 7:00	102128.0	46.44	3.9	1199.8
2/15 7:01	101198.0	45.98	3.9	1200.0
2/15 7:02	99677.0	45.30	3.9	1200.5
2/15 7:03	100130.0	45.62	3.9	1199.8
2/15 7:04	100326.0	45.71	3.9	1200.0
2/15 7:05	99940.0	45.40	3.9	1200.2
2/15 7:06	101194.0	45.97	3.9	1200.0
2/15 7:07	100302.0	45.59	3.9	1200.0
2/15 7:08	100150.0	45.61	3.9	1200.5
2/15 7:09	101449.0	46.25	3.9	1200.7
2/15 7:10	101205.0	46.33	3.9	1200.2
2/15 7:11	99843.0	45.71	3.9	1200.2
2/15 7:12	100291.0	45.83	3.9	1199.2
2/15 7:13	99819.0	45.37	3.9	1199.2
2/15 7:14	101356.0	45.94	3.9	1200.2
2/15 7:15	100884.0	45.77	3.9	1200.3
2/15 7:16	100193.0	45.58	3.9	1200.0
2/15 7:17	100680.0	45.85	3.9	1200.0
2/15 7:18	101051.0	46.07	3.9	1200.2
2/15 7:19	101335.0	46.28	3.9	1200.2
2/15 7:20	101016.0	46.16	3.9	1200.0
2/15 7:21	101797.0	46.60	3.9	1200.2
2/15 7:22	99802.0	45.69	3.9	1200.2
2/15 7:23	99238.0	45.43	3.9	1199.8
2/15 7:24	100523.0	46.02	3.9	1199.8
2/15 7:25	99212.0	45.37	3.9	1199.5
2/15 7:26	100638.0	45.96	3.9	1200.0
2/15 7:27	99993.0	45.64	3.9	1199.7
2/15 7:28	101597.0	46.29	3.9	1200.2
2/15 7:29	102027.0	46.57	3.9	1200.0
2/15 7:30	100264.0	45.68	3.9	1200.2
2/15 7:31	101714.0	46.29	3.9	1200.0
2/15 7:32	99711.0	45.36	3.9	1200.0
2/15 7:33	101046.0	45.97	3.9	1199.7

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 7:34	100242.0	45.60	3.9	1200.0
2/15 7:35	99943.0	45.46	3.9	1200.2
2/15 7:36	100431.0	45.76	3.9	1200.2
2/15 7:37	100919.0	45.98	3.9	1200.0
2/15 7:38	101390.0	46.19	3.8	1199.8
2/15 7:39	101014.0	46.00	3.9	1199.5
2/15 7:40	100931.0	45.93	3.9	1200.7
2/15 7:41	100137.0	45.59	3.8	1200.2
2/15 7:42	101061.0	46.04	3.9	1200.0
2/15 7:43	101168.0	46.07	3.8	1199.8
2/15 7:44	100893.0	45.85	3.8	1200.0
2/15 7:45	100101.0	45.67	3.8	1200.0
2/15 7:46	100425.0	45.87	3.8	1200.0
2/15 7:47	100572.0	45.84	3.8	1199.8
2/15 7:48	100708.0	45.81	3.8	1199.8
2/15 7:49	100134.0	45.53	3.8	1200.2
2/15 7:50	102146.0	46.49	3.8	1200.0
2/15 7:51	99648.0	45.33	3.8	1200.0
2/15 7:52	99634.0	45.28	3.8	1199.2
2/15 7:53	102402.0	46.10	3.8	1199.8
2/15 7:54	102143.0	45.76	3.8	1200.5
2/15 7:55	101177.0	45.33	3.8	1199.8
2/15 7:56	101331.0	45.45	3.8	1200.3
2/15 7:57	101757.0	45.88	3.9	1200.2
2/15 7:58	100864.0	45.68	3.9	1200.3
2/15 7:59	102169.0	46.24	3.9	1199.8
2/15 8:00	101446.0	45.75	3.9	1199.3
2/15 8:01	102166.0	45.77	3.9	1200.2
2/15 8:02	101821.0	45.73	3.9	1200.2
2/15 8:03	102430.0	46.28	3.9	1200.5
2/15 8:04	100818.0	45.74	3.9	1200.0
2/15 8:05	101132.0	45.85	3.9	1200.7
2/15 8:06	102231.0	46.35	3.9	1200.2
2/15 8:07	101496.0	45.95	3.9	1200.0
2/15 8:08	100734.0	45.67	3.9	1200.2
2/15 8:09	100220.0	45.44	3.8	1199.8
2/15 8:10	100989.0	45.69	3.8	1200.2
2/15 8:11	101055.0	45.75	3.8	1200.0
2/15 8:12	101046.0	45.79	3.8	1200.0
2/15 8:13	99607.0	45.16	3.8	1200.0
2/15 8:14	100069.0	45.37	3.8	1200.2
2/15 8:15	100462.0	45.55	3.8	1200.0
2/15 8:16	100106.0	45.39	3.8	1200.2
2/15 8:17	100530.0	45.58	3.8	1199.8
2/15 8:18	101032.0	45.81	3.8	1200.0
2/15 8:19	99733.0	45.28	3.8	1200.0
2/15 8:20	100354.0	45.53	3.8	1200.0
2/15 8:21	101102.0	45.84	3.8	1199.8
2/15 8:22	101243.0	45.74	3.8	1199.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 8:23	101420.0	45.84	3.8	1200.2
2/15 8:24	100299.0	45.38	3.8	1200.0
2/15 8:25	100938.0	45.67	3.8	1200.0
2/15 8:26	102095.0	46.22	3.9	1200.2
2/15 8:27	101609.0	46.00	3.9	1199.8
2/15 8:28	101210.0	45.86	3.8	1199.8
2/15 8:29	101681.0	46.10	3.9	1200.0
2/15 8:30	100667.0	45.67	3.8	1200.0
2/15 8:31	100020.0	45.35	3.9	1200.2
2/15 8:32	99742.0	45.31	3.9	1200.2
2/15 8:33	100200.0	45.43	3.9	1200.0
2/15 8:34	101247.0	45.74	3.9	1199.0
2/15 8:35	103527.0	46.15	3.9	1199.3
2/15 8:36	106139.0	46.68	3.9	1198.7
2/15 8:37	110052.0	46.88	3.9	1197.5
2/15 8:38	112762.0	46.30	3.9	1201.2
2/15 8:39	98034.0	40.95	3.5	1185.3
2/15 8:40	94461.0	40.45	3.5	1190.3
2/15 8:41	94303.0	40.76	3.5	1189.7
2/15 8:42	96847.0	41.65	3.5	1190.7
2/15 8:43	96458.0	41.28	3.5	1190.7
2/15 8:44	95257.0	40.84	3.5	1189.8
2/15 8:45	96351.0	41.38	3.5	1189.5
2/15 8:46	95296.0	40.96	3.5	1190.3
2/15 8:47	94789.0	40.86	3.5	1189.8
2/15 8:48	97560.0	41.69	3.5	1189.7
2/15 8:49	94328.0	40.34	3.5	1190.0
2/15 8:50	91870.0	40.96	3.5	1190.0
2/15 8:51	90393.0	41.15	3.5	1190.7
2/15 8:52	95039.0	43.49	3.7	1193.7
2/15 8:53	101169.0	46.15	3.9	1197.2
2/15 8:54	101149.0	46.01	3.9	1200.5
2/15 8:55	100737.0	45.85	3.9	1200.5
2/15 8:56	100401.0	45.80	3.8	1200.5
2/15 8:57	100599.0	45.91	3.8	1200.3
2/15 8:58	100203.0	45.73	3.8	1199.8
2/15 8:59	99511.0	45.31	3.8	1200.0
2/15 9:00	100472.0	45.66	3.8	1200.2
2/15 9:01	101214.0	46.06	3.8	1200.0
2/15 9:02	100743.0	45.93	3.8	1200.3
2/15 9:03	99749.0	45.48	3.8	1199.8
2/15 9:04	100005.0	45.62	3.8	1200.0
2/15 9:05	99353.0	45.34	3.8	1199.7
2/15 9:06	100628.0	45.85	3.8	1200.0
2/15 9:07	100023.0	45.63	3.8	1200.3
2/15 9:08	100867.0	46.07	3.8	1199.8
2/15 9:09	99213.0	45.31	3.8	1200.0
2/15 9:10	101665.0	46.34	3.8	1199.8
2/15 9:11	99384.0	45.30	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 9:12	99428.0	45.30	3.8	1200.2
2/15 9:13	101295.0	46.17	3.8	1200.0
2/15 9:14	100556.0	45.82	3.8	1200.0
2/15 9:15	99524.0	45.45	3.8	1200.0
2/15 9:16	98646.0	45.05	3.8	1200.2
2/15 9:17	99806.0	45.58	3.8	1200.0
2/15 9:18	99150.0	45.28	3.8	1200.0
2/15 9:19	99301.0	45.37	3.8	1200.3
2/15 9:20	98896.0	45.28	3.8	1200.0
2/15 9:21	101133.0	46.33	3.8	1199.7
2/15 9:22	99466.0	45.54	3.8	1200.0
2/15 9:23	100740.0	46.12	3.8	1200.0
2/15 9:24	99524.0	45.53	3.8	1200.0
2/15 9:25	100809.0	46.13	3.8	1200.0
2/15 9:26	99528.0	45.54	3.8	1200.5
2/15 9:27	98846.0	45.27	3.8	1200.0
2/15 9:28	100014.0	45.78	3.8	1200.0
2/15 9:29	99681.0	45.65	3.8	1200.2
2/15 9:30	99329.0	45.58	3.8	1199.8
2/15 9:31	98855.0	45.39	3.8	1201.0
2/15 9:32	99379.0	46.06	3.8	1200.5
2/15 9:33	99112.0	45.83	3.8	1199.5
2/15 9:34	99114.0	45.64	3.8	1199.8
2/15 9:35	98450.0	45.40	3.8	1199.7
2/15 9:36	98833.0	45.35	3.8	1199.8
2/15 9:37	99450.0	45.53	3.8	1200.0
2/15 9:38	98657.0	45.15	3.8	1199.5
2/15 9:39	99232.0	45.27	3.8	1199.8
2/15 9:40	99052.0	45.15	3.8	1200.0
2/15 9:41	99803.0	45.47	3.8	1200.2
2/15 9:42	99269.0	45.23	3.8	1199.8
2/15 9:43	99940.0	45.53	3.8	1200.2
2/15 9:44	99735.0	45.58	3.8	1200.3
2/15 9:45	98833.0	45.16	3.8	1199.3
2/15 9:46	99238.0	45.04	3.8	1199.7
2/15 9:47	100202.0	45.30	3.8	1200.0
2/15 9:48	99755.0	45.23	3.8	1199.8
2/15 9:49	100644.0	45.71	3.8	1200.5
2/15 9:50	99921.0	45.52	3.8	1200.0
2/15 9:51	100359.0	45.65	3.8	1199.5
2/15 9:52	100305.0	45.57	3.8	1200.2
2/15 9:53	99722.0	45.32	3.8	1199.8
2/15 9:54	99878.0	45.49	3.8	1200.0
2/15 9:55	99506.0	45.37	3.8	1200.5
2/15 9:56	98740.0	45.01	3.8	1199.7
2/15 9:57	99839.0	45.51	3.8	1200.0
2/15 9:58	99413.0	45.32	3.8	1200.0
2/15 9:59	99077.0	45.14	3.8	1200.2
2/15 10:00	98926.0	45.13	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 10:01	100041.0	45.64	3.8	1200.0
2/15 10:02	99174.0	45.18	3.8	1199.5
2/15 10:03	100368.0	45.55	3.8	1199.5
2/15 10:04	100191.0	45.33	3.8	1200.0
2/15 10:05	100095.0	45.39	3.8	1200.7
2/15 10:06	98565.0	45.04	3.8	1201.0
2/15 10:07	98232.0	45.10	3.8	1199.7
2/15 10:08	98096.0	44.88	3.8	1199.5
2/15 10:09	98723.0	45.11	3.8	1200.0
2/15 10:10	98684.0	44.91	3.8	1200.0
2/15 10:11	99426.0	45.25	3.8	1199.8
2/15 10:12	100042.0	45.39	3.8	1200.2
2/15 10:13	98861.0	44.98	3.8	1200.0
2/15 10:14	99275.0	45.12	3.8	1200.2
2/15 10:15	99654.0	45.27	3.8	1200.2
2/15 10:16	99505.0	45.12	3.8	1199.7
2/15 10:17	100211.0	45.25	3.8	1199.2
2/15 10:18	100548.0	45.18	3.8	1199.5
2/15 10:19	100815.0	45.35	3.8	1200.2
2/15 10:20	100229.0	45.17	3.8	1200.3
2/15 10:21	99919.0	44.64	3.8	1199.7
2/15 10:22	100243.0	45.16	3.8	1199.5
2/15 10:23	99919.0	44.89	3.8	1199.5
2/15 10:24	100116.0	44.99	3.8	1200.5
2/15 10:25	99934.0	45.12	3.8	1200.7
2/15 10:26	99259.0	45.03	3.8	1199.7
2/15 10:27	97985.0	44.41	3.8	1200.0
2/15 10:28	98358.0	44.60	3.8	1199.7
2/15 10:29	99007.0	44.86	3.8	1200.0
2/15 10:30	100619.0	45.52	3.8	1199.8
2/15 10:31	98999.0	44.79	3.8	1200.7
2/15 10:32	97608.0	44.30	3.8	1200.3
2/15 10:33	98463.0	44.73	3.8	1200.2
2/15 10:34	99063.0	45.06	3.8	1199.8
2/15 10:35	98434.0	44.67	3.8	1199.3
2/15 10:36	99718.0	45.08	3.8	1199.7
2/15 10:37	98531.0	44.57	3.8	1200.0
2/15 10:38	99653.0	45.24	3.8	1200.5
2/15 10:39	99552.0	45.33	3.8	1200.2
2/15 10:40	97850.0	44.66	3.8	1200.3
2/15 10:41	97804.0	44.67	3.8	1199.3
2/15 10:42	98099.0	44.69	3.8	1199.7
2/15 10:43	97973.0	44.45	3.8	1199.7
2/15 10:44	98339.0	44.68	3.8	1200.7
2/15 10:45	98832.0	45.12	3.8	1200.3
2/15 10:46	97911.0	44.82	3.8	1200.0
2/15 10:47	98047.0	44.81	3.8	1199.2
2/15 10:48	98742.0	44.88	3.8	1199.7
2/15 10:49	99910.0	45.30	3.8	1199.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 10:50	99909.0	45.28	3.8	1200.5
2/15 10:51	98730.0	44.93	3.8	1200.3
2/15 10:52	98339.0	44.83	3.8	1200.0
2/15 10:53	98493.0	44.98	3.8	1199.7
2/15 10:54	98937.0	45.19	3.8	1199.8
2/15 10:55	98365.0	44.84	3.8	1199.7
2/15 10:56	99312.0	45.20	3.8	1200.0
2/15 10:57	98039.0	44.56	3.8	1199.8
2/15 10:58	98437.0	44.74	3.8	1200.3
2/15 10:59	98412.0	44.75	3.8	1200.0
2/15 11:00	97929.0	44.53	3.8	1199.7
2/15 11:01	98754.0	44.90	3.8	1200.0
2/15 11:02	98046.0	44.67	3.8	1200.0
2/15 11:03	97248.0	44.31	3.8	1200.3
2/15 11:04	98749.0	45.02	3.8	1199.7
2/15 11:05	99066.0	45.09	3.8	1200.0
2/15 11:06	98458.0	44.86	3.8	1199.7
2/15 11:07	98618.0	44.86	3.8	1200.0
2/15 11:08	97552.0	44.41	3.8	1200.0
2/15 11:09	97667.0	44.45	3.8	1200.0
2/15 11:10	98409.0	44.87	3.8	1200.0
2/15 11:11	99100.0	45.23	3.8	1200.0
2/15 11:12	97704.0	44.53	3.8	1199.7
2/15 11:13	97847.0	44.61	3.8	1200.0
2/15 11:14	98236.0	44.87	3.8	1199.8
2/15 11:15	98837.0	45.06	3.8	1200.0
2/15 11:16	97492.0	44.52	3.8	1200.2
2/15 11:17	98344.0	44.86	3.8	1200.3
2/15 11:18	97838.0	44.68	3.8	1200.0
2/15 11:19	97742.0	44.72	3.8	1200.0
2/15 11:20	98127.0	44.92	3.8	1200.0
2/15 11:21	96960.0	44.44	3.8	1200.0
2/15 11:22	97353.0	44.59	3.8	1199.8
2/15 11:23	98415.0	44.98	3.8	1200.2
2/15 11:24	97943.0	44.75	3.8	1199.5
2/15 11:25	98685.0	45.05	3.8	1200.0
2/15 11:26	98258.0	44.88	3.8	1200.0
2/15 11:27	97675.0	44.72	3.8	1200.2
2/15 11:28	97978.0	44.84	3.8	1199.8
2/15 11:29	97959.0	44.83	3.8	1200.0
2/15 11:30	97527.0	44.65	3.8	1200.2
2/15 11:31	98043.0	44.88	3.8	1200.2
2/15 11:32	96600.0	45.14	3.8	1200.0
2/15 11:33	97647.0	44.70	3.8	1200.0
2/15 11:34	97987.0	44.86	3.8	1200.2
2/15 11:35	97743.0	44.75	3.8	1200.0
2/15 11:36	98061.0	44.89	3.8	1199.8
2/15 11:37	98770.0	45.22	3.8	1200.0
2/15 11:38	97937.0	44.89	3.8	1200.2

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Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 11:39	96265.0	44.21	3.8	1200.5
2/15 11:40	97872.0	44.93	3.8	1199.7
2/15 11:41	97197.0	44.61	3.8	1200.0
2/15 11:42	97735.0	44.77	3.8	1199.7
2/15 11:43	98260.0	44.98	3.8	1200.0
2/15 11:44	98177.0	45.00	3.8	1200.0
2/15 11:45	98308.0	45.09	3.8	1200.0
2/15 11:46	98304.0	45.11	3.8	1200.0
2/15 11:47	97670.0	44.79	3.8	1200.2
2/15 11:48	97838.0	44.79	3.8	1200.0
2/15 11:49	96370.0	44.17	3.8	1200.2
2/15 11:50	97989.0	44.89	3.8	1200.0
2/15 11:51	96782.0	44.39	3.8	1200.5
2/15 11:52	98280.0	45.07	3.8	1199.8
2/15 11:53	96642.0	44.27	3.8	1200.0
2/15 11:54	97272.0	44.64	3.8	1200.0
2/15 11:55	96578.0	44.32	3.8	1200.2
2/15 11:56	96682.0	44.40	3.8	1200.2
2/15 11:57	95829.0	44.05	3.8	1200.0
2/15 11:58	97852.0	44.98	3.8	1200.0
2/15 11:59	97720.0	44.86	3.8	1199.8
2/15 12:00	98357.0	45.17	3.8	1199.7
2/15 12:01	97553.0	44.77	3.8	1200.0
2/15 12:02	96880.0	44.54	3.8	1199.5
2/15 12:03	98077.0	45.01	3.8	1200.2
2/15 12:04	97030.0	44.58	3.8	1200.0
2/15 12:05	96927.0	44.48	3.8	1200.0
2/15 12:06	96884.0	44.56	3.8	1200.0
2/15 12:07	97611.0	44.88	3.8	1199.8
2/15 12:08	97619.0	44.88	3.8	1200.0
2/15 12:09	97758.0	44.97	3.8	1200.2
2/15 12:10	96820.0	44.57	3.8	1199.8
2/15 12:11	96893.0	44.60	3.8	1200.2
2/15 12:12	96894.0	44.62	3.8	1199.7
2/15 12:13	96826.0	44.51	3.8	1200.2
2/15 12:14	97875.0	45.04	3.8	1200.0
2/15 12:15	96555.0	44.44	3.8	1200.0
2/15 12:16	96685.0	44.56	3.8	1200.2
2/15 12:17	96771.0	44.62	3.8	1200.0
2/15 12:18	96978.0	44.66	3.8	1200.0
2/15 12:19	96988.0	44.62	3.8	1200.0
2/15 12:20	96726.0	44.52	3.8	1200.0
2/15 12:21	97836.0	45.01	3.8	1200.0
2/15 12:22	96800.0	44.55	3.8	1199.8
2/15 12:23	96506.0	44.42	3.8	1200.2
2/15 12:24	97582.0	44.99	3.8	1200.0
2/15 12:25	97183.0	44.81	3.8	1200.0
2/15 12:26	97146.0	44.78	3.8	1200.2
2/15 12:27	96885.0	44.68	3.8	1200.0
	99437.0	**45.1**	**3.8**	**1199.4**

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 12:28	97088.0	44.77	3.8	1200.5
2/15 12:29	96554.0	44.52	3.8	1199.7
2/15 12:30	97383.0	44.90	3.8	1200.0
2/15 12:31	97565.0	44.95	3.8	1199.8
2/15 12:32	96024.0	44.17	3.8	1200.0
2/15 12:33	96658.0	44.46	3.8	1200.0
2/15 12:34	96640.0	44.45	3.8	1200.2
2/15 12:35	97374.0	44.88	3.8	1200.0
2/15 12:36	96919.0	44.69	3.8	1200.0
2/15 12:37	96763.0	44.54	3.8	1200.3
2/15 12:38	98328.0	45.34	3.8	1199.8
2/15 12:39	97095.0	44.75	3.8	1200.2
2/15 12:40	96363.0	44.45	3.8	1200.0
2/15 12:41	96960.0	44.71	3.8	1200.0
2/15 12:42	96373.0	44.44	3.8	1200.0
2/15 12:43	97072.0	44.76	3.8	1200.3
2/15 12:44	96443.0	44.47	3.8	1200.2
2/15 12:45	96854.0	44.68	3.8	1199.8
2/15 12:46	96173.0	44.41	3.8	1200.2
2/15 12:47	97317.0	44.90	3.8	1200.0
2/15 12:48	96521.0	44.52	3.8	1200.0
2/15 12:49	97161.0	44.80	3.8	1200.0
2/15 12:50	96374.0	44.44	3.8	1200.0
2/15 12:51	97212.0	44.82	3.8	1200.0
2/15 12:52	96550.0	44.52	3.8	1200.0
2/15 12:53	95649.0	44.13	3.8	1199.8
2/15 12:54	96244.0	44.42	3.8	1199.7
2/15 12:55	96827.0	44.65	3.8	1200.0
2/15 12:56	97716.0	45.06	3.8	1200.0
2/15 12:57	96566.0	44.53	3.8	1200.3
2/15 12:58	96834.0	44.67	3.8	1200.2
2/15 12:59	95992.0	44.34	3.8	1200.0
2/15 13:00	95685.0	44.23	3.8	1200.0
2/15 13:01	95609.0	44.19	3.8	1200.0
2/15 13:02	96343.0	44.53	3.8	1199.7
2/15 13:03	97401.0	44.96	3.8	1200.0
2/15 13:04	96767.0	44.62	3.8	1199.8
2/15 13:05	95889.0	44.21	3.8	1200.0
2/15 13:06	96659.0	44.64	3.8	1199.7
2/15 13:07	97485.0	44.72	3.8	1199.3
2/15 13:08	98217.0	44.89	3.8	1200.2
2/15 13:09	98580.0	45.11	3.8	1200.0
2/15 13:10	98504.0	45.06	3.8	1199.8
2/15 13:11	96769.0	44.19	3.8	1200.0
2/15 13:12	97961.0	44.74	3.8	1199.7
2/15 13:13	98453.0	44.96	3.8	1200.0
2/15 13:14	98949.0	45.16	3.8	1200.2
2/15 13:15	97654.0	44.66	3.8	1199.8
2/15 13:16	97909.0	44.74	3.8	1199.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 13:17	97558.0	44.66	3.8	1200.0
2/15 13:18	96952.0	44.35	3.8	1199.8
2/15 13:19	98154.0	44.88	3.8	1200.5
2/15 13:20	97540.0	44.62	3.8	1200.0
2/15 13:21	96427.0	44.23	3.8	1200.7
2/15 13:22	96245.0	44.30	3.8	1200.0
2/15 13:23	96533.0	44.59	3.8	1199.3
2/15 13:24	97252.0	44.87	3.8	1200.2
2/15 13:25	96265.0	44.50	3.8	1199.8
2/15 13:26	96496.0	44.60	3.8	1200.2
2/15 13:27	97189.0	44.92	3.8	1200.0
2/15 13:28	97514.0	45.10	3.8	1199.8
2/15 13:29	96708.0	44.72	3.8	1200.0
2/15 13:30	96705.0	44.70	3.8	1199.8
2/15 13:31	96802.0	44.74	3.8	1200.0
2/15 13:32	96340.0	44.50	3.8	1200.0
2/15 13:33	96741.0	44.71	3.8	1200.3
2/15 13:34	96716.0	44.70	3.8	1200.0
2/15 13:35	97550.0	45.09	3.8	1200.2
2/15 13:36	97051.0	44.86	3.8	1199.8
2/15 13:37	96866.0	44.85	3.8	1200.0
2/15 13:38	97355.0	45.05	3.8	1199.5
2/15 13:39	98009.0	45.26	3.8	1200.0
2/15 13:40	96929.0	44.80	3.8	1200.0
2/15 13:41	95169.0	43.99	3.8	1199.8
2/15 13:42	95941.0	44.34	3.8	1200.0
2/15 13:43	96583.0	44.64	3.8	1200.5
2/15 13:44	96205.0	44.50	3.8	1199.8
2/15 13:45	96559.0	44.59	3.8	1199.8
2/15 13:46	96978.0	44.82	3.8	1200.2
2/15 13:47	96958.0	44.81	3.8	1200.0
2/15 13:48	97354.0	44.97	3.8	1200.2
2/15 13:49	96721.0	44.70	3.8	1199.8
2/15 13:50	96630.0	44.66	3.8	1200.0
2/15 13:51	95592.0	44.18	3.8	1199.8
2/15 13:52	96767.0	44.67	3.8	1200.0
2/15 13:53	95454.0	44.06	3.8	1200.3
2/15 13:54	97398.0	44.98	3.8	1200.2
2/15 13:55	95875.0	44.34	3.8	1199.5
2/15 13:56	98379.0	45.09	3.8	1199.3
2/15 13:57	97810.0	44.69	3.8	1200.8
2/15 13:58	97134.0	44.47	3.8	1200.3
2/15 13:59	96541.0	44.30	3.8	1200.0
2/15 14:00	98502.0	45.20	3.8	1200.0
2/15 14:01	98030.0	44.97	3.8	1200.0
2/15 14:02	99092.0	45.36	3.8	1200.0
2/15 14:03	98010.0	44.82	3.8	1199.7
2/15 14:04	97562.0	44.58	3.8	1200.7
2/15 14:05	96959.0	44.48	3.8	1199.3

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 14:06	98489.0	44.84	3.8	1200.5
2/15 14:07	97466.0	44.53	3.8	1200.2
2/15 14:08	97139.0	44.50	3.8	1200.2
2/15 14:09	97046.0	44.54	3.8	1200.2
2/15 14:10	98003.0	44.97	3.8	1199.8
2/15 14:11	98037.0	44.97	3.8	1200.0
2/15 14:12	96392.0	44.18	3.8	1199.7
2/15 14:13	97922.0	44.83	3.8	1199.8
2/15 14:14	97281.0	44.53	3.8	1200.2
2/15 14:15	97560.0	44.74	3.8	1199.5
2/15 14:16	98520.0	44.67	3.8	1199.7
2/15 14:17	99090.0	45.04	3.8	1200.3
2/15 14:18	98010.0	44.73	3.8	1200.7
2/15 14:19	97693.0	44.70	3.8	1200.0
2/15 14:20	97198.0	44.55	3.8	1200.0
2/15 14:21	97873.0	44.89	3.8	1199.8
2/15 14:22	96581.0	44.29	3.8	1200.5
2/15 14:23	96854.0	44.55	3.8	1200.2
2/15 14:24	97700.0	44.99	3.8	1200.7
2/15 14:25	95254.0	43.95	3.8	1199.5
2/15 14:26	96210.0	44.32	3.8	1200.0
2/15 14:27	96074.0	44.22	3.8	1199.7
2/15 14:28	97336.0	44.83	3.8	1200.3
2/15 14:29	97290.0	44.86	3.8	1200.0
2/15 14:30	96682.0	44.58	3.8	1200.0
2/15 14:31	97062.0	44.73	3.8	1200.2
2/15 14:32	96615.0	44.53	3.8	1200.2
2/15 14:33	96915.0	44.69	3.8	1199.8
2/15 14:34	97331.0	44.82	3.8	1200.0
2/15 14:35	97136.0	44.73	3.8	1200.0
2/15 14:36	96374.0	44.35	3.8	1200.3
2/15 14:37	97330.0	44.88	3.8	1200.2
2/15 14:38	97072.0	44.76	3.8	1200.0
2/15 14:39	97274.0	44.93	3.8	1200.0
2/15 14:40	97145.0	44.86	3.8	1200.0
2/15 14:41	97525.0	45.05	3.8	1200.0
2/15 14:42	96503.0	44.60	3.8	1200.0
2/15 14:43	95842.0	44.22	3.8	1200.0
2/15 14:44	96102.0	44.29	3.8	1199.0
2/15 14:45	98887.0	45.32	3.8	1200.2
2/15 14:46	97301.0	44.76	3.8	1200.5
2/15 14:47	97973.0	45.17	3.8	1199.5
2/15 14:48	97653.0	44.97	3.8	1200.5
2/15 14:49	96867.0	44.69	3.8	1200.0
2/15 14:50	96793.0	44.70	3.8	1200.5
2/15 14:51	96433.0	44.64	3.8	1199.5
2/15 14:52	96934.0	44.76	3.8	1200.2
2/15 14:53	96941.0	44.73	3.8	1200.0
2/15 14:54	96620.0	44.60	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 14:55	96388.0	44.55	3.8	1200.0
2/15 14:56	97256.0	44.95	3.8	1200.0
2/15 14:57	97266.0	44.96	3.8	1200.0
2/15 14:58	96129.0	44.45	3.8	1200.0
2/15 14:59	96823.0	44.86	3.8	1200.0
2/15 15:00	97177.0	44.95	3.8	1200.0
2/15 15:01	97255.0	44.97	3.8	1200.0
2/15 15:02	96681.0	44.79	3.8	1200.0
2/15 15:03	94854.0	43.97	3.8	1200.0
2/15 15:04	96706.0	44.77	3.8	1199.8
2/15 15:05	95725.0	44.25	3.8	1200.0
2/15 15:06	96095.0	44.38	3.8	1199.8
2/15 15:07	97754.0	45.03	3.8	1199.5
2/15 15:08	99537.0	45.65	3.8	1200.0
2/15 15:09	97866.0	44.96	3.8	1199.8
2/15 15:10	98324.0	45.17	3.8	1199.5
2/15 15:11	96974.0	44.42	3.8	1200.0
2/15 15:12	96834.0	44.33	3.8	1200.0
2/15 15:13	97613.0	44.72	3.8	1200.0
2/15 15:14	98422.0	45.09	3.8	1200.2
2/15 15:15	97590.0	44.70	3.8	1199.8
2/15 15:16	97315.0	44.55	3.8	1199.3
2/15 15:17	98278.0	44.75	3.8	1199.8
2/15 15:18	100772.0	45.44	3.8	1198.5
2/15 15:19	99918.0	45.03	3.8	1201.3
2/15 15:20	99170.0	45.04	3.8	1200.5
2/15 15:21	96776.0	44.20	3.8	1201.3
2/15 15:22	96962.0	44.69	3.8	1200.3
2/15 15:23	98051.0	45.12	3.8	1197.5
2/15 15:24	99433.0	44.79	3.8	1200.7
2/15 15:25	98610.0	44.66	3.8	1201.2
2/15 15:26	98086.0	44.93	3.8	1201.3
2/15 15:27	97295.0	44.89	3.8	1200.7
2/15 15:28	96148.0	44.44	3.8	1198.7
2/15 15:29	98267.0	44.88	3.8	1199.7
2/15 15:30	97938.0	44.65	3.8	1200.5
2/15 15:31	97248.0	44.54	3.8	1200.7
2/15 15:32	97365.0	44.76	3.8	1200.0
2/15 15:33	97974.0	45.07	3.8	1199.8
2/15 15:34	98621.0	45.35	3.8	1199.7
2/15 15:35	98421.0	45.15	3.8	1199.8
2/15 15:36	98508.0	45.08	3.8	1199.3
2/15 15:37	99008.0	45.04	3.8	1201.3
2/15 15:38	96730.0	44.33	3.8	1201.2
2/15 15:39	97277.0	45.07	3.8	1200.5
2/15 15:40	96616.0	44.86	3.8	1199.3
2/15 15:41	97838.0	45.33	3.8	1199.5
2/15 15:42	95874.0	44.38	3.8	1200.0
2/15 15:43	96377.0	44.55	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 15:44	96347.0	44.53	3.8	1200.3
2/15 15:45	95700.0	44.39	3.8	1199.8
2/15 15:46	96194.0	44.61	3.8	1199.5
2/15 15:47	96749.0	44.90	3.8	1199.7
2/15 15:48	96272.0	44.60	3.8	1200.0
2/15 15:49	96986.0	44.94	3.8	1200.0
2/15 15:50	97378.0	45.12	3.8	1200.0
2/15 15:51	96518.0	44.75	3.8	1200.3
2/15 15:52	95864.0	44.44	3.8	1200.2
2/15 15:53	95753.0	44.36	3.8	1199.7
2/15 15:54	98928.0	44.91	3.8	1200.0
2/15 15:55	97189.0	45.03	3.8	1199.8
2/15 15:56	96797.0	44.85	3.8	1199.8
2/15 15:57	96111.0	44.47	3.8	1200.0
2/15 15:58	97399.0	45.02	3.8	1200.0
2/15 15:59	96638.0	44.70	3.8	1200.3
2/15 16:00	96285.0	44.63	3.8	1199.8
2/15 16:01	95950.0	44.45	3.8	1199.5
2/15 16:02	96650.0	44.78	3.8	1200.0
2/15 16:03	96253.0	44.61	3.8	1200.2
2/15 16:04	97357.0	45.11	3.8	1200.2
2/15 16:05	96652.0	44.78	3.8	1200.0
2/15 16:06	96587.0	44.71	3.8	1200.0
2/15 16:07	96569.0	44.74	3.8	1200.0
2/15 16:08	96521.0	44.72	3.8	1200.0
2/15 16:09	96362.0	44.74	3.8	1200.0
2/15 16:10	96912.0	44.95	3.8	1199.7
2/15 16:11	96693.0	44.76	3.8	1199.5
2/15 16:12	96433.0	44.65	3.8	1200.3
2/15 16:13	97088.0	44.98	3.8	1200.2
2/15 16:14	97106.0	44.99	3.8	1200.2
2/15 16:15	96572.0	44.74	3.8	1200.0
2/15 16:16	96484.0	44.70	3.8	1199.8
2/15 16:17	96615.0	44.76	3.8	1199.8
2/15 16:18	96046.0	44.52	3.8	1199.8
2/15 16:19	97554.0	45.16	3.8	1199.8
2/15 16:20	96371.0	44.65	3.8	1200.0
2/15 16:21	97192.0	44.97	3.8	1200.0
2/15 16:22	96112.0	44.49	3.8	1199.8
2/15 16:23	96752.0	44.72	3.8	1200.0
2/15 16:24	96595.0	44.65	3.8	1200.2
2/15 16:25	95793.0	44.29	3.8	1200.0
2/15 16:26	96508.0	44.64	3.8	1200.5
2/15 16:27	96424.0	44.64	3.8	1200.2
2/15 16:28	95571.0	44.28	3.8	1200.0
2/15 16:29	96738.0	44.74	3.8	1200.0
2/15 16:30	96237.0	44.48	3.8	1200.0
2/15 16:31	96362.0	44.51	3.8	1199.8
2/15 16:32	95393.0	44.52	3.8	1199.7
	97103.2	44.7	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 16:33	98021.0	45.22	3.8	1200.2
2/15 16:34	98114.0	45.31	3.8	1200.0
2/15 16:35	96662.0	44.63	3.8	1199.8
2/15 16:36	95493.0	44.18	3.8	1200.2
2/15 16:37	95897.0	44.43	3.8	1200.0
2/15 16:38	95746.0	44.43	3.8	1199.8
2/15 16:39	95971.0	44.46	3.8	1200.0
2/15 16:40	96913.0	44.90	3.8	1199.7
2/15 16:41	97723.0	45.20	3.8	1200.2
2/15 16:42	97390.0	45.01	3.8	1200.0
2/15 16:43	97263.0	44.95	3.8	1200.2
2/15 16:44	95611.0	44.19	3.8	1200.2
2/15 16:45	97364.0	44.97	3.8	1200.3
2/15 16:46	96159.0	44.45	3.8	1199.8
2/15 16:47	96218.0	44.49	3.8	1200.0
2/15 16:48	96862.0	44.82	3.8	1200.2
2/15 16:49	95288.0	44.15	3.8	1199.8
2/15 16:50	95843.0	44.37	3.8	1199.7
2/15 16:51	97223.0	44.94	3.8	1200.2
2/15 16:52	95523.0	44.11	3.8	1199.8
2/15 16:53	97295.0	44.97	3.8	1199.8
2/15 16:54	98058.0	45.26	3.8	1200.2
2/15 16:55	97589.0	45.15	3.8	1199.8
2/15 16:56	96406.0	44.56	3.8	1199.8
2/15 16:57	97588.0	45.08	3.8	1200.0
2/15 16:58	98389.0	45.40	3.8	1199.5
2/15 16:59	98406.0	45.40	3.8	1200.2
2/15 17:00	98154.0	45.26	3.8	1200.0
2/15 17:01	97203.0	44.84	3.8	1200.0
2/15 17:02	97752.0	45.10	3.8	1200.7
2/15 17:03	96944.0	44.77	3.8	1199.7
2/15 17:04	96349.0	44.45	3.8	1200.0
2/15 17:05	98770.0	45.54	3.8	1200.0
2/15 17:06	96888.0	44.68	3.8	1200.0
2/15 17:07	96573.0	44.53	3.8	1200.0
2/15 17:08	96971.0	44.74	3.8	1200.0
2/15 17:09	96503.0	44.50	3.8	1200.2
2/15 17:10	97171.0	44.81	3.8	1199.8
2/15 17:11	98183.0	45.27	3.8	1200.0
2/15 17:12	97369.0	44.88	3.8	1200.2
2/15 17:13	96673.0	44.50	3.8	1199.5
2/15 17:14	97624.0	44.95	3.8	1200.2
2/15 17:15	97531.0	44.95	3.8	1200.0
2/15 17:16	97922.0	45.09	3.8	1200.0
2/15 17:17	97358.0	44.79	3.8	1200.0
2/15 17:18	98465.0	45.22	3.8	1200.0
2/15 17:19	97180.0	44.70	3.8	1200.2
2/15 17:20	97172.0	44.81	3.8	1200.2
2/15 17:21	96487.0	44.49	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 17:22	98052.0	45.13	3.8	1200.0
2/15 17:23	98123.0	45.14	3.8	1200.2
2/15 17:24	97741.0	44.96	3.8	1199.8
2/15 17:25	97238.0	44.65	3.8	1200.0
2/15 17:26	98164.0	45.15	3.8	1200.0
2/15 17:27	98334.0	45.25	3.8	1199.7
2/15 17:28	97644.0	44.83	3.8	1200.3
2/15 17:29	98073.0	45.11	3.8	1199.8
2/15 17:30	97015.0	44.68	3.8	1200.0
2/15 17:31	97935.0	45.08	3.8	1200.0
2/15 17:32	98136.0	45.14	3.8	1200.0
2/15 17:33	97608.0	44.88	3.8	1200.0
2/15 17:34	97990.0	45.08	3.8	1200.0
2/15 17:35	97013.0	44.55	3.8	1199.8
2/15 17:36	97655.0	44.82	3.8	1200.3
2/15 17:37	96868.0	44.45	3.8	1200.3
2/15 17:38	97161.0	44.57	3.8	1200.2
2/15 17:39	97299.0	44.73	3.8	1200.0
2/15 17:40	97141.0	44.68	3.8	1199.7
2/15 17:41	97617.0	44.89	3.8	1199.8
2/15 17:42	97268.0	44.64	3.8	1199.8
2/15 17:43	97920.0	44.94	3.8	1200.0
2/15 17:44	97158.0	44.59	3.8	1199.8
2/15 17:45	96881.0	44.46	3.8	1200.0
2/15 17:46	98558.0	45.20	3.8	1199.8
2/15 17:47	97145.0	44.49	3.8	1200.2
2/15 17:48	97876.0	44.84	3.8	1200.0
2/15 17:49	97345.0	44.60	3.8	1199.8
2/15 17:50	99277.0	45.47	3.8	1199.8
2/15 17:51	97963.0	44.83	3.8	1199.8
2/15 17:52	99186.0	45.41	3.8	1200.0
2/15 17:53	97906.0	44.82	3.8	1200.0
2/15 17:54	97895.0	44.82	3.8	1199.8
2/15 17:55	98670.0	45.17	3.8	1200.0
2/15 17:56	98512.0	45.05	3.8	1200.0
2/15 17:57	97379.0	44.55	3.8	1199.7
2/15 17:58	98210.0	44.94	3.8	1200.0
2/15 17:59	96230.0	44.95	3.8	1199.3
2/15 18:00	98970.0	45.26	3.8	1200.3
2/15 18:01	98137.0	44.82	3.8	1199.7
2/15 18:02	97705.0	44.64	3.8	1200.2
2/15 18:03	98287.0	44.87	3.8	1200.2
2/15 18:04	99575.0	45.40	3.8	1200.0
2/15 18:05	98189.0	44.86	3.8	1200.0
2/15 18:06	98126.0	44.80	3.8	1199.8
2/15 18:07	98563.0	45.01	3.8	1200.0
2/15 18:08	97978.0	44.72	3.8	1199.8
2/15 18:09	99013.0	45.19	3.8	1200.2
2/15 18:10	98501.0	44.91	3.8	

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 18:11	99276.0	45.23	3.8	1200.0
2/15 18:12	99168.0	45.20	3.8	1200.0
2/15 18:13	98198.0	44.80	3.8	1200.3
2/15 18:14	99299.0	45.35	3.8	1200.0
2/15 18:15	98277.0	44.88	3.8	1200.0
2/15 18:16	97823.0	44.70	3.8	1200.0
2/15 18:17	98413.0	44.94	3.8	1200.2
2/15 18:18	98898.0	45.15	3.8	1199.7
2/15 18:19	98494.0	44.93	3.8	1199.8
2/15 18:20	98589.0	44.95	3.8	1199.8
2/15 18:21	99517.0	45.34	3.8	1199.8
2/15 18:22	98261.0	44.77	3.8	1200.2
2/15 18:23	98546.0	44.90	3.8	1200.0
2/15 18:24	98180.0	44.71	3.8	1199.7
2/15 18:25	98492.0	44.87	3.8	1200.3
2/15 18:26	99118.0	45.19	3.8	1199.8
2/15 18:27	98177.0	44.76	3.8	1200.2
2/15 18:28	98523.0	44.92	3.8	1199.8
2/15 18:29	99127.0	45.16	3.8	1200.0
2/15 18:30	98298.0	44.79	3.8	1200.0
2/15 18:31	98532.0	44.89	3.8	1200.2
2/15 18:32	99411.0	45.18	3.8	1200.0
2/15 18:33	98192.0	44.71	3.8	1200.0
2/15 18:34	97981.0	44.61	3.8	1200.0
2/15 18:35	98240.0	44.71	3.8	1200.2
2/15 18:36	98434.0	44.84	3.8	1200.2
2/15 18:37	98779.0	45.00	3.8	1200.0
2/15 18:38	98350.0	44.81	3.8	1200.0
2/15 18:39	98500.0	44.88	3.8	1200.0
2/15 18:40	99251.0	45.22	3.8	1199.8
2/15 18:41	98467.0	44.86	3.8	1200.0
2/15 18:42	98724.0	44.93	3.8	1200.0
2/15 18:43	99155.0	45.18	3.8	1199.8
2/15 18:44	98828.0	45.01	3.8	1200.0
2/15 18:45	100000.0	45.53	3.8	1200.0
2/15 18:46	98884.0	45.00	3.8	1200.2
2/15 18:47	99210.0	45.09	3.8	1200.0
2/15 18:48	99152.0	45.15	3.8	1200.0
2/15 18:49	99776.0	45.46	3.8	1200.0
2/15 18:50	98453.0	44.78	3.8	1200.0
2/15 18:51	98990.0	45.08	3.8	1199.8
2/15 18:52	99148.0	45.08	3.8	1199.8
2/15 18:53	98805.0	44.91	3.8	1200.0
2/15 18:54	99367.0	45.18	3.8	1200.2
2/15 18:55	98742.0	44.88	3.8	1200.0
2/15 18:56	98946.0	44.97	3.8	1199.8
2/15 18:57	98780.0	44.95	3.8	1200.2
2/15 18:58	100171.0	45.64	3.8	1200.0
2/15 18:59	99140.0	45.20	3.8	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/15 19:00	98411.0	44.87	3.8	1200.0
Average (all)	98483.4	45.03	3.8	1199.8
Total (all)	--	--	--	--
Minimum (all)	90393.0	40.34	3.5	1185.3
Maximum (all)	112762.0	46.88	3.9	1201.3
Average (valid values only)	98483.4	45.03	3.8	1199.8
Total (valid values only)	--	--	--	--
Count (valid values only)	781	781	781	781

CeDAR 1-Minute Data

Sunshine Gas Producers, LLC

Data for 2/16/2023 6:00 AM thru 2/16/2023 7:00 PM

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 6:00	99259.0	45.69	3.8	1199.8
2/16 6:01	99511.0	45.77	3.8	1199.8
2/16 6:02	98632.0	45.35	3.8	1200.3
2/16 6:03	100048.0	46.02	3.8	1200.2
2/16 6:04	99797.0	45.88	3.8	1200.0
2/16 6:05	99817.0	45.86	3.8	1199.8
2/16 6:06	100495.0	46.17	3.8	1200.0
2/16 6:07	99187.0	45.61	3.8	1200.0
2/16 6:08	99497.0	45.66	3.8	1199.8
2/16 6:09	100532.0	46.22	3.8	1200.0
2/16 6:10	100002.0	46.00	3.9	1199.8
2/16 6:11	99596.0	45.80	3.8	1200.0
2/16 6:12	100120.0	46.06	3.8	1200.0
2/16 6:13	99959.0	45.98	3.9	1200.0
2/16 6:14	99382.0	45.71	3.9	1200.2
2/16 6:15	100562.0	46.15	3.8	1200.2
2/16 6:16	100384.0	46.06	3.8	1200.2
2/16 6:17	98988.0	45.45	3.8	1200.0
2/16 6:18	99227.0	45.59	3.8	1200.2
2/16 6:19	99656.0	45.75	3.8	1200.0
2/16 6:20	99613.0	45.79	3.8	1200.0
2/16 6:21	100386.0	46.07	3.8	1200.0
2/16 6:22	100077.0	45.98	3.8	1200.2
2/16 6:23	100498.0	46.12	3.8	1199.7
2/16 6:24	100433.0	46.09	3.9	1199.5
2/16 6:25	100529.0	46.10	3.9	1199.8
2/16 6:26	99373.0	45.49	3.9	1200.0
2/16 6:27	100584.0	46.08	3.9	1199.7
2/16 6:28	101179.0	46.32	3.9	1200.0
2/16 6:29	100058.0	45.92	3.9	1200.2
2/16 6:30	100541.0	46.14	3.9	1199.8
2/16 6:31	100849.0	46.28	3.8	1200.0
2/16 6:32	100296.0	46.01	3.9	1200.0
2/16 6:33	98065.0	44.92	3.9	1200.2
2/16 6:34	99094.0	45.41	3.8	1199.8
2/16 6:35	100787.0	46.14	3.9	1200.0
2/16 6:36	100067.0	45.83	3.9	1200.0
2/16 6:37	100597.0	46.10	3.9	1199.7
2/16 6:38	99641.0	45.59	3.9	1200.2
2/16 6:39	99961.0	45.76	3.9	1200.0
2/16 6:40	99560.0	45.58	3.9	1200.2
2/16 6:41	99330.0	45.47	3.9	1200.0
2/16 6:42	99103.0	45.39	3.9	1199.8
2/16 6:43	100596.0	46.03	3.9	1200.0
2/16 6:44	100125.0	45.82	3.9	1200.3

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Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 6:45	100855.0	46.17	3.9	1200.2
2/16 6:46	101082.0	46.27	3.9	1200.2
2/16 6:47	100667.0	46.09	3.9	1200.2
2/16 6:48	100032.0	45.79	3.9	1200.0
2/16 6:49	100285.0	45.91	3.9	1199.8
2/16 6:50	100965.0	46.22	3.9	1200.2
2/16 6:51	100023.0	45.71	3.9	1199.8
2/16 6:52	101828.0	46.51	3.9	1200.2
2/16 6:53	101447.0	46.36	3.9	1200.2
2/16 6:54	100988.0	46.23	3.9	1200.0
2/16 6:55	99385.0	45.52	3.9	1199.5
2/16 6:56	101892.0	46.56	3.9	1200.2
2/16 6:57	100006.0	45.76	3.9	1200.5
2/16 6:58	100192.0	45.98	3.9	1200.2
2/16 6:59	99412.0	45.54	3.9	1199.5
2/16 7:00	100857.0	46.17	3.9	1199.8
2/16 7:01	101869.0	46.61	3.9	1200.0
2/16 7:02	100823.0	46.10	3.9	1199.8
2/16 7:03	100594.0	46.05	3.9	1200.0
2/16 7:04	100119.0	45.83	3.9	1200.0
2/16 7:05	101637.0	46.45	3.9	1200.0
2/16 7:06	100608.0	45.95	3.9	1199.8
2/16 7:07	101171.0	46.15	3.9	1200.0
2/16 7:08	100096.0	45.69	3.9	1200.2
2/16 7:09	100275.0	45.80	3.9	1200.7
2/16 7:10	100271.0	45.87	3.9	1200.5
2/16 7:11	100528.0	46.11	3.9	1200.2
2/16 7:12	99008.0	45.52	3.9	1200.0
2/16 7:13	99375.0	45.74	3.9	1199.7
2/16 7:14	100163.0	46.05	3.9	1199.8
2/16 7:15	101174.0	46.52	3.9	1200.5
2/16 7:16	101360.0	46.43	3.9	1199.7
2/16 7:17	100540.0	45.92	3.9	1199.5
2/16 7:18	101298.0	46.15	3.9	1200.0
2/16 7:19	101350.0	46.27	3.9	1199.7
2/16 7:20	101079.0	46.16	3.9	1200.3
2/16 7:21	101124.0	46.24	3.9	1200.0
2/16 7:22	101262.0	46.36	3.9	1200.2
2/16 7:23	101712.0	46.58	3.9	1200.0
2/16 7:24	100521.0	46.04	3.9	1200.0
2/16 7:25	99543.0	45.57	3.9	1200.0
2/16 7:26	100961.0	46.25	3.9	1199.8
2/16 7:27	101034.0	46.20	3.9	1200.0
2/16 7:28	100584.0	46.07	3.9	1199.8
2/16 7:29	99816.0	45.81	3.9	1200.0
2/16 7:30	100453.0	46.08	3.9	1200.0
2/16 7:31	99470.0	45.56	3.9	1199.8
2/16 7:32	100531.0	46.02	3.9	1200.0
2/16 7:33	101521.0	46.48	3.9	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 7:34	100773.0	46.13	3.9	1200.0
2/16 7:35	99987.0	45.78	3.9	1199.8
2/16 7:36	109965.0	46.22	3.9	1199.8
2/16 7:37	101715.0	46.46	3.9	1200.0
2/16 7:38	101185.0	46.21	3.9	1200.0
2/16 7:39	101636.0	46.42	3.9	1200.0
2/16 7:40	100912.0	46.09	3.9	1199.8
2/16 7:41	101394.0	46.28	3.9	1200.0
2/16 7:42	101732.0	46.46	3.9	1200.3
2/16 7:43	99698.0	45.62	3.9	1200.2
2/16 7:44	100436.0	46.03	3.9	1200.3
2/16 7:45	100457.0	46.01	3.9	1200.0
2/16 7:46	100400.0	46.05	3.9	1200.3
2/16 7:47	100516.0	46.13	3.9	1200.2
2/16 7:48	100602.0	46.20	3.8	1199.8
2/16 7:49	100074.0	46.01	3.8	1199.8
2/16 7:50	99983.0	45.99	3.8	1200.2
2/16 7:51	98747.0	45.43	3.8	1200.0
2/16 7:52	101015.0	46.47	3.9	1199.7
2/16 7:53	99225.0	45.62	3.8	1200.0
2/16 7:54	99403.0	45.70	3.8	1199.8
2/16 7:55	98999.0	45.46	3.8	1200.0
2/16 7:56	100686.0	46.32	3.8	1200.2
2/16 7:57	99133.0	45.62	3.8	1199.5
2/16 7:58	99798.0	45.91	3.9	1200.2
2/16 7:59	100235.0	46.11	3.9	1200.0
2/16 8:00	99933.0	46.04	3.9	1200.0
2/16 8:01	99118.0	45.81	3.8	1200.0
2/16 8:02	99259.0	45.75	3.8	1200.0
2/16 8:03	99439.0	45.87	3.8	1200.7
2/16 8:04	97627.0	45.31	3.8	1201.7
2/16 8:05	96679.0	45.53	3.8	1201.7
2/16 8:06	96345.0	45.82	3.8	1200.0
2/16 8:07	96920.0	46.16	3.8	1199.5
2/16 8:08	96800.0	45.90	3.8	1199.2
2/16 8:09	98299.0	46.36	3.8	1199.2
2/16 8:10	98149.0	46.11	3.8	1199.7
2/16 8:11	97385.0	45.65	3.8	1200.0
2/16 8:12	98453.0	46.02	3.8	1199.0
2/16 8:13	99671.0	46.32	3.8	1200.0
2/16 8:14	98418.0	45.62	3.8	1199.8
2/16 8:15	98747.0	45.66	3.8	1200.3
2/16 8:16	99634.0	46.05	3.8	1200.0
2/16 8:17	98482.0	45.66	3.8	1200.7
2/16 8:18	98161.0	45.77	3.8	1200.2
2/16 8:19	98847.0	46.20	3.8	1200.0
2/16 8:20	98274.0	45.98	3.8	1200.3
2/16 8:21	97151.0	45.53	3.8	1200.0
2/16 8:22	97941.0	45.90	3.8	1200.0

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Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 8:23	98296.0	46.07	3.8	1200.3
2/16 8:24	98925.0	46.46	3.8	1200.0
2/16 8:25	96899.0	45.49	3.8	1200.0
2/16 8:26	97639.0	45.81	3.8	1200.3
2/16 8:27	97859.0	46.11	3.8	1200.0
2/16 8:28	97248.0	45.84	3.8	1199.8
2/16 8:29	97469.0	45.99	3.8	1200.5
2/16 8:30	97186.0	45.80	3.8	1200.0
2/16 8:31	97721.0	46.02	3.8	1200.0
2/16 8:32	96723.0	45.57	3.8	1200.0
2/16 8:33	96620.0	45.59	3.8	1200.2
2/16 8:34	98259.0	46.38	3.8	1200.0
2/16 8:35	96955.0	45.77	3.8	1200.0
2/16 8:36	96487.0	45.54	3.8	1200.0
2/16 8:37	96841.0	45.71	3.8	1199.8
2/16 8:38	97163.0	45.86	3.8	1199.7
2/16 8:39	96830.0	45.68	3.8	1200.2
2/16 8:40	98298.0	46.40	3.8	1199.7
2/16 8:41	97204.0	45.88	3.8	1200.5
2/16 8:42	97371.0	45.90	3.8	1199.8
2/16 8:43	96756.0	45.56	3.8	1200.0
2/16 8:44	97079.0	45.71	3.8	1200.5
2/16 8:45	97662.0	46.06	3.8	1200.3
2/16 8:46	97210.0	45.88	3.8	1200.0
2/16 8:47	96731.0	45.60	3.8	1199.8
2/16 8:48	97169.0	45.76	3.8	1200.0
2/16 8:49	96858.0	45.63	3.8	1199.8
2/16 8:50	97344.0	45.93	3.8	1200.0
2/16 8:51	96723.0	45.65	3.8	1200.0
2/16 8:52	96905.0	45.74	3.8	1200.0
2/16 8:53	96902.0	45.77	3.8	1199.8
2/16 8:54	96385.0	45.50	3.8	1199.7
2/16 8:55	96373.0	45.49	3.8	1199.8
2/16 8:56	96135.0	45.38	3.8	1200.2
2/16 8:57	96532.0	45.59	3.8	1200.3
2/16 8:58	96522.0	45.69	3.8	1199.8
2/16 8:59	96207.0	45.64	3.8	1200.2
2/16 9:00	96672.0	45.84	3.8	1200.2
2/16 9:01	96537.0	45.80	3.8	1200.2
2/16 9:02	95092.0	45.16	3.8	1200.0
2/16 9:03	95863.0	45.46	3.8	1200.0
2/16 9:04	96924.0	45.85	3.8	1199.0
2/16 9:05	98124.0	46.01	3.8	1199.5
2/16 9:06	97344.0	45.60	3.8	1200.7
2/16 9:07	96347.0	45.24	3.8	1200.2
2/16 9:08	97073.0	45.55	3.8	1199.8
2/16 9:09	97349.0	45.63	3.8	1199.7
2/16 9:10	96642.0	45.30	3.8	1200.2
2/16 9:11	97244.0	45.65	3.8	1200.7

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 9:12	96629.0	45.52	3.8	1200.0
2/16 9:13	95584.0	45.13	3.8	1200.5
2/16 9:14	97013.0	45.90	3.8	1199.7
2/16 9:15	96271.0	45.55	3.8	1199.8
2/16 9:16	96104.0	45.57	3.8	1199.8
2/16 9:17	96232.0	45.63	3.8	1200.0
2/16 9:18	96327.0	45.68	3.8	1199.8
2/16 9:19	96607.0	45.81	3.8	1200.0
2/16 9:20	96388.0	45.71	3.8	1200.2
2/16 9:21	97325.0	46.15	3.8	1200.0
2/16 9:22	98118.0	45.58	3.8	1200.0
2/16 9:23	97414.0	46.19	3.8	1199.8
2/16 9:24	95099.0	45.10	3.8	1200.0
2/16 9:25	96486.0	45.77	3.8	1200.0
2/16 9:26	96042.0	45.64	3.8	1200.2
2/16 9:27	96234.0	45.71	3.8	1200.0
2/16 9:28	96057.0	45.58	3.8	1200.0
2/16 9:29	96227.0	45.63	3.8	1200.0
2/16 9:30	96072.0	45.56	3.8	1200.2
2/16 9:31	96727.0	45.84	3.8	1200.2
2/16 9:32	95469.0	45.27	3.8	1199.7
2/16 9:33	96337.0	45.68	3.8	1200.7
2/16 9:34	95502.0	45.31	3.8	1200.2
2/16 9:35	94460.0	44.86	3.8	1199.8
2/16 9:36	95419.0	45.34	3.8	1200.3
2/16 9:37	96122.0	45.66	3.8	1199.5
2/16 9:38	97360.0	46.11	3.8	1199.8
2/16 9:39	96012.0	45.47	3.8	1199.8
2/16 9:40	95925.0	45.38	3.8	1200.0
2/16 9:41	95768.0	45.31	3.8	1200.2
2/16 9:42	96185.0	45.38	3.8	1199.0
2/16 9:43	96493.0	45.12	3.8	1199.0
2/16 9:44	97520.0	45.37	3.8	1200.0
2/16 9:45	96761.0	45.03	3.8	1200.0
2/16 9:46	98484.0	45.70	3.8	1199.8
2/16 9:47	99444.0	46.07	3.8	1199.7
2/16 9:48	98533.0	45.62	3.8	1200.0
2/16 9:49	98884.0	45.66	3.8	1198.5
2/16 9:50	104542.0	47.02	3.8	1198.3
2/16 9:51	103326.0	45.67	3.8	1200.3
2/16 9:52	102103.0	45.77	3.8	1200.7
2/16 9:53	100329.0	45.30	3.8	1201.5
2/16 9:54	98512.0	45.26	3.8	1201.5
2/16 9:55	98528.0	45.61	3.8	1199.2
2/16 9:56	99666.0	45.87	3.8	1199.3
2/16 9:57	99812.0	45.83	3.8	1200.0
2/16 9:58	98342.0	45.27	3.8	1200.8
2/16 9:59	97830.0	45.22	3.8	1200.7
2/16 10:00	97752.0	45.42	3.8	1200.3

Timestamp	(TG-751) Landfill Gas Flow scfh/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 10:01	98428.0	45.78	3.8	1199.7
2/16 10:02	98599.0	45.78	3.8	1199.8
2/16 10:03	97919.0	45.50	3.8	1200.3
2/16 10:04	98332.0	45.74	3.8	1200.2
2/16 10:05	97369.0	45.42	3.8	1200.0
2/16 10:06	97322.0	45.37	3.8	1199.5
2/16 10:07	98863.0	46.01	3.8	1199.5
2/16 10:08	98090.0	45.58	3.8	1200.0
2/16 10:09	97482.0	45.26	3.8	1200.3
2/16 10:10	98675.0	45.82	3.8	1200.2
2/16 10:11	98503.0	45.76	3.8	1200.3
2/16 10:12	97858.0	45.52	3.8	1199.8
2/16 10:13	98264.0	45.73	3.8	1199.7
2/16 10:14	97427.0	45.27	3.8	1199.8
2/16 10:15	98235.0	45.64	3.8	1199.8
2/16 10:16	98723.0	45.84	3.8	1200.0
2/16 10:17	97852.0	45.43	3.8	1200.3
2/16 10:18	97605.0	45.32	3.8	1200.2
2/16 10:19	96894.0	45.09	3.8	1200.5
2/16 10:20	97758.0	45.43	3.8	1199.3
2/16 10:21	97980.0	45.47	3.8	1199.7
2/16 10:22	98207.0	45.58	3.8	1199.8
2/16 10:23	98270.0	45.56	3.8	1200.0
2/16 10:24	98263.0	45.49	3.8	1200.0
2/16 10:25	98608.0	45.66	3.8	1200.2
2/16 10:26	96904.0	44.99	3.8	1200.2
2/16 10:27	97076.0	45.10	3.8	1200.2
2/16 10:28	96920.0	45.04	3.8	1199.8
2/16 10:29	97681.0	45.30	3.8	1199.8
2/16 10:30	97131.0	45.03	3.8	1199.8
2/16 10:31	97901.0	45.30	3.8	1199.8
2/16 10:32	97314.0	45.08	3.8	1200.0
2/16 10:33	97315.0	45.12	3.8	1200.5
2/16 10:34	96795.0	44.90	3.8	1199.8
2/16 10:35	96172.0	44.58	3.8	1200.2
2/16 10:36	97424.0	45.18	3.8	1200.2
2/16 10:37	97941.0	45.40	3.8	1199.7
2/16 10:38	97130.0	45.03	3.8	1200.7
2/16 10:39	96678.0	44.89	3.8	1200.2
2/16 10:40	97821.0	45.34	3.8	1200.0
2/16 10:41	96124.0	44.53	3.8	1200.0
2/16 10:42	97476.0	45.16	3.8	1199.8
2/16 10:43	97497.0	45.17	3.8	1200.0
2/16 10:44	96591.0	44.75	3.8	1200.2
2/16 10:45	98346.0	45.57	3.8	1200.3
2/16 10:46	97036.0	44.92	3.8	1199.7
2/16 10:47	97522.0	45.07	3.8	1200.0
2/16 10:48	96970.0	44.82	3.8	1200.3
2/16 10:49	96010.0	44.45	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 10:50	96479.0	44.64	3.8	1199.8
2/16 10:51	97114.0	44.99	3.8	1200.0
2/16 10:52	98657.0	45.71	3.8	1199.8
2/16 10:53	97176.0	45.02	3.8	1200.0
2/16 10:54	97617.0	45.20	3.8	1199.8
2/16 10:55	98652.0	45.60	3.8	1200.3
2/16 10:56	97625.0	45.14	3.8	1200.0
2/16 10:57	97100.0	44.90	3.8	1200.2
2/16 10:58	96935.0	44.83	3.8	1200.0
2/16 10:59	97173.0	45.02	3.8	1200.0
2/16 11:00	96982.0	44.90	3.8	1200.0
2/16 11:01	96787.0	44.81	3.8	1200.0
2/16 11:02	97502.0	45.06	3.8	1200.0
2/16 11:03	98153.0	45.38	3.8	1200.0
2/16 11:04	97932.0	45.26	3.8	1199.8
2/16 11:05	97364.0	44.97	3.8	1200.0
2/16 11:06	96729.0	44.63	3.8	1200.0
2/16 11:07	97924.0	45.26	3.8	1200.3
2/16 11:08	98288.0	45.34	3.8	1200.2
2/16 11:09	97775.0	45.19	3.8	1200.2
2/16 11:10	97130.0	44.85	3.8	1200.0
2/16 11:11	96501.0	44.53	3.8	1200.0
2/16 11:12	96488.0	44.57	3.8	1200.0
2/16 11:13	97397.0	45.02	3.8	1200.3
2/16 11:14	96318.0	44.52	3.8	1200.3
2/16 11:15	97671.0	45.25	3.8	1200.0
2/16 11:16	97615.0	45.23	3.8	1200.0
2/16 11:17	96628.0	44.77	3.8	1199.7
2/16 11:18	97086.0	44.98	3.8	1200.2
2/16 11:19	98353.0	45.54	3.8	1200.0
2/16 11:20	97173.0	45.02	3.8	1200.3
2/16 11:21	95903.0	44.43	3.8	1199.8
2/16 11:22	96831.0	44.89	3.8	1200.0
2/16 11:23	97119.0	45.00	3.8	1200.0
2/16 11:24	95996.0	44.48	3.8	1200.0
2/16 11:25	97226.0	45.02	3.8	1200.2
2/16 11:26	96842.0	44.87	3.8	1200.0
2/16 11:27	97458.0	45.15	3.8	1200.0
2/16 11:28	96869.0	44.88	3.8	1200.2
2/16 11:29	96424.0	44.70	3.8	1200.3
2/16 11:30	95994.0	44.57	3.8	1200.0
2/16 11:31	95342.0	44.25	3.8	1199.5
2/16 11:32	97711.0	45.27	3.8	1199.8
2/16 11:33	97544.0	45.05	3.8	1200.0
2/16 11:34	96821.0	44.71	3.8	1200.0
2/16 11:35	97220.0	44.94	3.8	1200.0
2/16 11:36	96455.0	44.66	3.8	1200.0
2/16 11:37	97148.0	45.03	3.8	1199.5
2/16 11:38	96741.0	44.82	3.8	1200.0

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Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 11:39	96040.0	44.50	3.8	1200.2
2/16 11:40	96635.0	44.77	3.8	1199.7
2/16 11:41	97594.0	45.15	3.8	1200.0
2/16 11:42	96309.0	44.59	3.8	1200.0
2/16 11:43	96895.0	44.89	3.8	1200.0
2/16 11:44	95820.0	44.39	3.8	1200.3
2/16 11:45	95819.0	44.46	3.8	1200.0
2/16 11:46	96571.0	44.79	3.8	1199.8
2/16 11:47	96576.0	44.81	3.8	1199.8
2/16 11:48	97090.0	45.08	3.8	1200.0
2/16 11:49	97411.0	45.16	3.8	1200.3
2/16 11:50	97025.0	44.97	3.8	1200.3
2/16 11:51	97171.0	45.02	3.8	1200.0
2/16 11:52	96770.0	44.88	3.8	1200.3
2/16 11:53	95822.0	44.46	3.8	1200.0
2/16 11:54	96071.0	44.61	3.8	1200.0
2/16 11:55	96267.0	44.74	3.8	1200.0
2/16 11:56	97172.0	45.10	3.8	1200.0
2/16 11:57	96554.0	44.87	3.8	1200.0
2/16 11:58	96178.0	44.66	3.8	1200.0
2/16 11:59	96726.0	44.86	3.8	1199.7
2/16 12:00	96459.0	44.69	3.8	1200.2
2/16 12:01	96686.0	44.77	3.8	1200.0
2/16 12:02	96029.0	44.51	3.8	1200.3
2/16 12:03	95833.0	44.47	3.8	1200.2
2/16 12:04	96232.0	44.77	3.8	1200.2
2/16 12:05	96776.0	44.96	3.8	1200.0
2/16 12:06	95579.0	44.42	3.8	1200.0
2/16 12:07	97500.0	45.27	3.8	1199.7
2/16 12:08	96187.0	44.58	3.8	1200.0
2/16 12:09	97061.0	44.97	3.8	1200.0
2/16 12:10	96356.0	44.72	3.8	1200.2
2/16 12:11	96901.0	45.02	3.8	1200.2
2/16 12:12	96885.0	45.09	3.8	1200.0
2/16 12:13	96725.0	45.02	3.8	1200.2
2/16 12:14	95751.0	44.67	3.8	1200.0
2/16 12:15	96907.0	45.18	3.8	1200.0
2/16 12:16	97226.0	45.27	3.8	1200.0
2/16 12:17	96297.0	44.86	3.8	1200.0
2/16 12:18	96022.0	44.73	3.8	1200.0
2/16 12:19	96236.0	44.79	3.8	1200.2
2/16 12:20	96331.0	44.87	3.8	1199.8
2/16 12:21	97048.0	45.23	3.8	1200.0
2/16 12:22	95053.0	44.26	3.8	1200.0
2/16 12:23	95520.0	44.47	3.8	1200.0
2/16 12:24	96570.0	45.03	3.8	1200.0
2/16 12:25	94844.0	44.24	3.8	1200.0
2/16 12:26	96479.0	45.01	3.8	1199.8
2/16 12:27	95979.0	44.67	3.8	1200.0
Average Run 5	97640.5	45.5	3.8	1200.0

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Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 12:28	95970.0	44.64	3.8	1199.8
2/16 12:29	96983.0	45.03	3.8	1200.2
2/16 12:30	96331.0	44.73	3.8	1200.2
2/16 12:31	95686.0	44.51	3.8	1200.0
2/16 12:32	97008.0	45.15	3.8	1200.0
2/16 12:33	95778.0	44.56	3.8	1200.0
2/16 12:34	96780.0	45.02	3.8	1199.8
2/16 12:35	96165.0	44.73	3.8	1200.0
2/16 12:36	95381.0	44.32	3.8	1199.8
2/16 12:37	96296.0	44.75	3.8	1200.0
2/16 12:38	97374.0	45.27	3.8	1200.0
2/16 12:39	96964.0	45.08	3.8	1200.0
2/16 12:40	95487.0	44.44	3.8	1199.7
2/16 12:41	96787.0	45.07	3.8	1200.0
2/16 12:42	95928.0	44.68	3.8	1199.8
2/16 12:43	95953.0	44.73	3.8	1200.3
2/16 12:44	95297.0	44.43	3.8	1200.2
2/16 12:45	95093.0	44.29	3.8	1199.8
2/16 12:46	96130.0	44.76	3.8	1200.0
2/16 12:47	95741.0	44.64	3.8	1199.8
2/16 12:48	96413.0	44.89	3.8	1200.0
2/16 12:49	96575.0	44.95	3.8	1200.0
2/16 12:50	96821.0	45.03	3.8	1200.0
2/16 12:51	96893.0	45.06	3.8	1200.2
2/16 12:52	96063.0	44.81	3.8	1200.0
2/16 12:53	95840.0	44.68	3.8	1200.5
2/16 12:54	96011.0	44.81	3.8	1199.8
2/16 12:55	96273.0	44.91	3.8	1199.8
2/16 12:56	96129.0	44.84	3.8	1199.7
2/16 12:57	96233.0	44.80	3.8	1199.7
2/16 12:58	96960.0	45.13	3.8	1200.0
2/16 12:59	95991.0	44.67	3.8	1200.2
2/16 13:00	96632.0	44.95	3.8	1200.0
2/16 13:01	97137.0	45.23	3.8	1200.0
2/16 13:02	96032.0	44.78	3.8	1200.0
2/16 13:03	96222.0	44.87	3.8	1200.0
2/16 13:04	96508.0	45.02	3.8	1200.0
2/16 13:05	96579.0	45.05	3.8	1200.2
2/16 13:06	95535.0	44.60	3.8	1200.3
2/16 13:07	96238.0	44.98	3.8	1199.7
2/16 13:08	96066.0	44.82	3.8	1200.2
2/16 13:09	98907.0	45.27	3.8	1199.8
2/16 13:10	96516.0	45.10	3.8	1200.0
2/16 13:11	95367.0	44.55	3.8	1200.0
2/16 13:12	96586.0	45.15	3.8	1199.8
2/16 13:13	96116.0	44.95	3.8	1200.0
2/16 13:14	95185.0	44.51	3.8	1200.0
2/16 13:15	95540.0	44.70	3.8	1200.0
2/16 13:16	96226.0	44.95	3.8	1199.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 13:17	95970.0	44.85	3.8	1200.3
2/16 13:18	96358.0	45.06	3.8	1199.8
2/16 13:19	95642.0	44.72	3.8	1200.0
2/16 13:20	95291.0	44.54	3.8	1200.0
2/16 13:21	96469.0	45.11	3.8	1199.8
2/16 13:22	95251.0	44.54	3.8	1199.8
2/16 13:23	96074.0	45.01	3.8	1200.0
2/16 13:24	95497.0	44.68	3.8	1199.8
2/16 13:25	97096.0	45.40	3.8	1199.3
2/16 13:26	95821.0	44.72	3.8	1200.5
2/16 13:27	95761.0	44.78	3.8	1200.2
2/16 13:28	95485.0	44.67	3.8	1200.2
2/16 13:29	95018.0	44.51	3.8	1199.7
2/16 13:30	96087.0	44.90	3.8	1199.8
2/16 13:31	96134.0	44.95	3.8	1198.3
2/16 13:32	96860.0	44.66	3.8	1200.8
2/16 13:33	96720.0	44.88	3.8	1200.5
2/16 13:34	96036.0	44.62	3.8	1200.3
2/16 13:35	96227.0	44.68	3.8	1200.0
2/16 13:36	96594.0	44.78	3.8	1199.8
2/16 13:37	96475.0	44.72	3.8	1200.0
2/16 13:38	96954.0	44.99	3.8	1200.5
2/16 13:39	96679.0	44.99	3.8	1200.0
2/16 13:40	96430.0	44.88	3.8	1199.7
2/16 13:41	95843.0	44.60	3.8	1200.0
2/16 13:42	96629.0	44.92	3.8	1200.0
2/16 13:43	96476.0	44.94	3.8	1200.2
2/16 13:44	96293.0	44.75	3.8	1199.7
2/16 13:45	98521.0	45.66	3.8	1198.5
2/16 13:46	98601.0	45.30	3.8	1199.0
2/16 13:47	103769.0	46.17	3.8	1199.8
2/16 13:48	102686.0	44.38	3.8	1199.8
2/16 13:49	98778.0	44.30	3.8	1202.7
2/16 13:50	96551.0	44.41	3.8	1201.8
2/16 13:51	95215.0	44.51	3.8	1200.7
2/16 13:52	95549.0	44.81	3.8	1199.2
2/16 13:53	96413.0	44.99	3.8	1199.7
2/16 13:54	96328.0	44.97	3.8	1200.3
2/16 13:55	95680.0	44.77	3.8	1200.7
2/16 13:56	97795.0	45.49	3.8	1197.3
2/16 13:57	97303.0	44.97	3.8	1201.5
2/16 13:58	95148.0	44.39	3.8	1200.2
2/16 13:59	96211.0	44.99	3.8	1200.0
2/16 14:00	96356.0	45.06	3.8	1199.8
2/16 14:01	96006.0	44.89	3.8	1199.8
2/16 14:02	96669.0	45.12	3.8	1200.3
2/16 14:03	96406.0	45.08	3.8	1200.5
2/16 14:04	95632.0	44.72	3.8	1199.8
2/16 14:05	95160.0	44.50	3.8	1199.7

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 14:06	94571.0	44.22	3.8	1199.8
2/16 14:07	96266.0	44.99	3.8	1200.0
2/16 14:08	96122.0	44.95	3.8	1200.2
2/16 14:09	95995.0	44.89	3.8	1200.0
2/16 14:10	95939.0	44.86	3.8	1199.7
2/16 14:11	95857.0	44.80	3.8	1198.7
2/16 14:12	98811.0	45.70	3.8	1200.2
2/16 14:13	98682.0	45.44	3.8	1199.0
2/16 14:14	96568.0	44.29	3.8	1202.8
2/16 14:15	95008.0	44.45	3.8	1201.0
2/16 14:16	95559.0	44.84	3.8	1199.5
2/16 14:17	95574.0	44.75	3.8	1198.8
2/16 14:18	95930.0	44.62	3.8	1200.3
2/16 14:19	94442.0	44.13	3.8	1200.7
2/16 14:20	94877.0	44.37	3.8	1200.0
2/16 14:21	96299.0	45.06	3.8	1199.5
2/16 14:22	94985.0	44.40	3.8	1200.0
2/16 14:23	94761.0	44.33	3.8	1200.0
2/16 14:24	95048.0	44.45	3.8	1199.8
2/16 14:25	95739.0	44.77	3.8	1199.8
2/16 14:26	96730.0	45.29	3.8	1200.0
2/16 14:27	95366.0	44.60	3.8	1200.0
2/16 14:28	95606.0	44.71	3.8	1200.0
2/16 14:29	95784.0	44.79	3.8	1199.8
2/16 14:30	95543.0	44.67	3.8	1199.8
2/16 14:31	95805.0	44.82	3.8	1200.2
2/16 14:32	95516.0	44.77	3.8	1200.0
2/16 14:33	95178.0	44.59	3.8	1200.0
2/16 14:34	96343.0	45.08	3.8	1200.0
2/16 14:35	94930.0	44.39	3.8	1199.8
2/16 14:36	95770.0	44.78	3.8	1200.0
2/16 14:37	96572.0	45.16	3.8	1200.0
2/16 14:38	96172.0	44.97	3.8	1200.2
2/16 14:39	96316.0	45.07	3.8	1199.5
2/16 14:40	95584.0	44.69	3.8	1200.2
2/16 14:41	95693.0	44.82	3.8	1200.0
2/16 14:42	96638.0	45.21	3.8	1200.0
2/16 14:43	95050.0	44.55	3.8	1199.8
2/16 14:44	94167.0	44.14	3.8	1200.2
2/16 14:45	94917.0	44.49	3.8	1200.2
2/16 14:46	95630.0	44.85	3.8	1200.2
2/16 14:47	95271.0	44.67	3.8	1199.8
2/16 14:48	95274.0	44.63	3.8	1199.8
2/16 14:49	95497.0	44.71	3.8	1200.2
2/16 14:50	95665.0	44.76	3.8	1199.8
2/16 14:51	95073.0	44.51	3.8	1200.0
2/16 14:52	95243.0	44.64	3.8	1200.0
2/16 14:53	95790.0	44.90	3.8	1199.8
2/16 14:54	96252.0	45.03	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 14:55	95907.0	44.92	3.8	1200.0
2/16 14:56	94885.0	44.43	3.8	1200.0
2/16 14:57	95716.0	44.84	3.8	1200.2
2/16 14:58	95421.0	44.62	3.8	1200.2
2/16 14:59	95469.0	44.64	3.8	1199.8
2/16 15:00	95068.0	44.54	3.8	1199.8
2/16 15:01	96321.0	45.10	3.8	1199.8
2/16 15:02	95700.0	44.81	3.8	1200.0
2/16 15:03	96836.0	45.39	3.8	1200.2
2/16 15:04	95359.0	44.65	3.8	1200.0
2/16 15:05	95451.0	44.69	3.8	1200.0
2/16 15:06	95320.0	44.57	3.8	1199.8
2/16 15:07	96427.0	45.09	3.8	1200.2
2/16 15:08	95846.0	44.91	3.8	1200.2
2/16 15:09	95290.0	44.66	3.8	1199.5
2/16 15:10	94540.0	44.28	3.8	1200.2
2/16 15:11	96151.0	45.04	3.8	1199.8
2/16 15:12	96305.0	45.03	3.8	1199.7
2/16 15:13	95858.0	44.82	3.8	1199.8
2/16 15:14	96705.0	45.13	3.8	1199.8
2/16 15:15	94732.0	44.27	3.8	1200.3
2/16 15:16	96133.0	44.95	3.8	1200.0
2/16 15:17	95485.0	44.73	3.8	1200.0
2/16 15:18	95282.0	44.61	3.8	1199.8
2/16 15:19	95721.0	44.79	3.8	1199.7
2/16 15:20	95433.0	44.62	3.8	1200.2
2/16 15:21	95334.0	44.60	3.8	1200.3
2/16 15:22	96158.0	44.96	3.8	1200.0
2/16 15:23	96104.0	45.01	3.8	1200.0
2/16 15:24	95708.0	44.75	3.8	1199.8
2/16 15:25	95413.0	44.69	3.8	1200.2
2/16 15:26	95667.0	44.84	3.8	1199.8
2/16 15:27	96935.0	45.33	3.8	1199.5
2/16 15:28	96074.0	44.90	3.8	1200.2
2/16 15:29	95568.0	44.69	3.8	1199.7
2/16 15:30	94888.0	44.29	3.8	1200.0
2/16 15:31	95700.0	44.72	3.8	1199.7
2/16 15:32	95836.0	44.74	3.8	1200.0
2/16 15:33	96761.0	45.26	3.8	1200.7
2/16 15:34	95596.0	44.76	3.8	1200.2
2/16 15:35	96095.0	44.99	3.8	1200.0
2/16 15:36	96106.0	45.05	3.8	1199.8
2/16 15:37	95985.0	44.99	3.8	1199.5
2/16 15:38	96823.0	45.24	3.8	1200.0
2/16 15:39	96839.0	45.28	3.8	1199.8
2/16 15:40	96457.0	45.08	3.8	1200.2
2/16 15:41	95640.0	44.64	3.8	1200.2
2/16 15:42	95878.0	44.81	3.8	1199.8
2/16 15:43	96328.0	44.96	3.8	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 15:44	96226.0	45.00	3.8	1200.0
2/16 15:45	95168.0	44.50	3.8	1199.8
2/16 15:46	95698.0	44.72	3.8	1199.8
2/16 15:47	96827.0	45.19	3.8	1200.0
2/16 15:48	96108.0	44.84	3.8	1200.7
2/16 15:49	96604.0	45.06	3.8	1200.0
2/16 15:50	96035.0	44.80	3.8	1200.2
2/16 15:51	95122.0	44.43	3.8	1199.7
2/16 15:52	94760.0	44.21	3.8	1199.7
2/16 15:53	96370.0	44.91	3.8	1200.2
2/16 15:54	96383.0	44.93	3.8	1199.7
2/16 15:55	96635.0	45.03	3.8	1200.0
2/16 15:56	96195.0	44.88	3.8	1200.2
2/16 15:57	97052.0	45.27	3.8	1199.7
2/16 15:58	96950.0	45.16	3.8	1200.0
2/16 15:59	97370.0	45.39	3.8	1199.8
2/16 16:00	96642.0	45.00	3.8	1199.8
2/16 16:01	95857.0	44.72	3.8	1200.2
2/16 16:02	96240.0	44.85	3.8	1200.0
2/16 16:03	95520.0	44.56	3.8	1200.0
2/16 16:04	96485.0	45.01	3.8	1200.2
2/16 16:05	96604.0	45.06	3.8	1200.2
2/16 16:06	95736.0	44.66	3.8	1199.7
2/16 16:07	96913.0	45.10	3.8	1200.0
2/16 16:08	96796.0	45.05	3.8	1199.8
2/16 16:09	96967.0	45.15	3.8	1199.8
2/16 16:10	96492.0	44.91	3.8	1200.0
2/16 16:11	96048.0	44.70	3.8	1200.0
2/16 16:12	95997.0	44.74	3.8	1200.2
2/16 16:13	96389.0	44.88	3.8	1200.0
2/16 16:14	96545.0	44.92	3.8	1200.0
2/16 16:15	96022.0	44.67	3.8	1200.0
2/16 16:16	95554.0	44.47	3.8	1200.0
2/16 16:17	95421.0	44.43	3.8	1200.0
2/16 16:18	96323.0	44.85	3.8	1199.8
2/16 16:19	96302.0	44.90	3.8	1199.8
2/16 16:20	96568.0	45.05	3.8	1199.8
2/16 16:21	96460.0	44.98	3.8	1199.8
2/16 16:22	96079.0	44.72	3.8	1200.0
2/16 16:23	96826.0	45.06	3.8	1200.0
2/16 16:24	96354.0	44.84	3.8	1200.0
2/16 16:25	96223.0	44.78	3.8	1200.0
2/16 16:26	96325.0	44.83	3.8	1200.0
2/16 16:27	97060.0	45.17	3.8	1200.0
2/16 16:28	96099.0	44.72	3.8	1200.0
2/16 16:29	96590.0	44.95	3.8	1200.0
2/16 16:30	97255.0	45.26	3.8	1200.5
2/16 16:31	95105.0	44.35	3.8	1200.0
2/16 16:32	96466.0	44.96	3.8	1200.0
Average Run 6	96136.4	44.8	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 16:33	95714.0	44.65	3.8	1199.7
2/16 16:34	96057.0	44.74	3.8	1199.7
2/16 16:35	96876.0	45.07	3.8	1200.0
2/16 16:36	97107.0	45.17	3.8	1200.2
2/16 16:37	96133.0	44.72	3.8	1200.0
2/16 16:38	95461.0	44.43	3.8	1200.0
2/16 16:39	96287.0	44.81	3.8	1200.0
2/16 16:40	95612.0	44.54	3.8	1200.2
2/16 16:41	96234.0	44.80	3.8	1199.8
2/16 16:42	95695.0	44.49	3.8	1200.0
2/16 16:43	95577.0	44.38	3.8	1200.0
2/16 16:44	97412.0	45.23	3.8	1200.3
2/16 16:45	96718.0	44.88	3.8	1200.2
2/16 16:46	95523.0	44.35	3.8	1200.0
2/16 16:47	96768.0	45.04	3.8	1199.8
2/16 16:48	97430.0	45.30	3.8	1200.0
2/16 16:49	96067.0	44.71	3.8	1199.7
2/16 16:50	95020.0	44.22	3.8	1200.2
2/16 16:51	96940.0	45.10	3.8	1199.7
2/16 16:52	96485.0	44.80	3.8	1200.0
2/16 16:53	96040.0	44.59	3.8	1200.0
2/16 16:54	96669.0	44.88	3.8	1199.8
2/16 16:55	96188.0	44.66	3.8	1200.0
2/16 16:56	96744.0	44.92	3.8	1200.3
2/16 16:57	97017.0	45.13	3.8	1200.0
2/16 16:58	95845.0	44.61	3.8	1200.0
2/16 16:59	96122.0	44.73	3.8	1199.7
2/16 17:00	96275.0	44.79	3.8	1199.8
2/16 17:01	95958.0	44.64	3.8	1199.8
2/16 17:02	97447.0	45.28	3.8	1200.2
2/16 17:03	97295.0	45.18	3.8	1199.8
2/16 17:04	97512.0	45.27	3.8	1200.0
2/16 17:05	97977.0	45.49	3.8	1200.2
2/16 17:06	97013.0	45.12	3.8	1200.0
2/16 17:07	94956.0	44.19	3.8	1200.2
2/16 17:08	96443.0	44.82	3.8	1200.0
2/16 17:09	97220.0	45.14	3.8	1200.2
2/16 17:10	97698.0	45.36	3.8	1200.0
2/16 17:11	95717.0	44.44	3.8	1200.0
2/16 17:12	96761.0	44.93	3.8	1200.0
2/16 17:13	96684.0	44.89	3.8	1200.0
2/16 17:14	96810.0	44.95	3.8	1200.2
2/16 17:15	95900.0	44.60	3.8	1200.0
2/16 17:16	96524.0	44.89	3.8	1199.8
2/16 17:17	96364.0	44.77	3.8	1199.8
2/16 17:18	96801.0	44.94	3.8	1199.8
2/16 17:19	95960.0	44.55	3.8	1200.2
2/16 17:20	97576.0	45.31	3.8	1200.0
2/16 17:21	96391.0	44.75	3.8	1199.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 17:22	96237.0	44.68	3.8	1200.0
2/16 17:23	95462.0	44.32	3.8	1200.2
2/16 17:24	96855.0	44.97	3.8	1200.0
2/16 17:25	96708.0	44.90	3.8	1200.0
2/16 17:26	96716.0	44.91	3.8	1199.8
2/16 17:27	96872.0	44.98	3.8	1200.0
2/16 17:28	96793.0	44.97	3.8	1199.8
2/16 17:29	96328.0	44.73	3.8	1200.0
2/16 17:30	96489.0	44.80	3.8	1200.0
2/16 17:31	97797.0	45.41	3.8	1199.7
2/16 17:32	97060.0	45.04	3.8	1199.8
2/16 17:33	97805.0	45.41	3.8	1200.3
2/16 17:34	97205.0	45.09	3.8	1200.0
2/16 17:35	96292.0	44.71	3.8	1200.2
2/16 17:36	96843.0	44.96	3.8	1200.0
2/16 17:37	95118.0	44.16	3.8	1200.0
2/16 17:38	97011.0	45.04	3.8	1200.0
2/16 17:39	97348.0	45.20	3.8	1199.8
2/16 17:40	97413.0	45.18	3.8	1200.2
2/16 17:41	96489.0	44.80	3.8	1199.7
2/16 17:42	96552.0	44.76	3.8	1199.8
2/16 17:43	95845.0	44.50	3.8	1199.8
2/16 17:44	96791.0	44.92	3.8	1200.3
2/16 17:45	97563.0	45.33	3.8	1200.0
2/16 17:46	97395.0	45.22	3.8	1200.2
2/16 17:47	97122.0	45.07	3.8	1199.8
2/16 17:48	96830.0	44.86	3.8	1200.2
2/16 17:49	97385.0	45.15	3.8	1199.8
2/16 17:50	96922.0	44.90	3.8	1200.5
2/16 17:51	97388.0	45.15	3.8	1199.8
2/16 17:52	95683.0	44.35	3.8	1200.0
2/16 17:53	97397.0	45.19	3.8	1200.0
2/16 17:54	97664.0	45.32	3.8	1200.0
2/16 17:55	96812.0	44.93	3.8	1200.0
2/16 17:56	96562.0	44.81	3.8	1200.0
2/16 17:57	97212.0	45.09	3.8	1200.0
2/16 17:58	97968.0	45.44	3.8	1199.8
2/16 17:59	97431.0	45.17	3.8	1200.0
2/16 18:00	97257.0	45.06	3.8	1200.0
2/16 18:01	96232.0	44.61	3.8	1199.7
2/16 18:02	97639.0	45.24	3.8	1200.0
2/16 18:03	98222.0	45.47	3.8	1199.8
2/16 18:04	97509.0	45.07	3.8	1200.0
2/16 18:05	97177.0	44.92	3.8	1200.0
2/16 18:06	96622.0	44.76	3.8	1200.0
2/16 18:07	97471.0	45.16	3.8	1200.0
2/16 18:08	98146.0	45.47	3.8	1199.8
2/16 18:09	97927.0	45.37	3.8	1200.0
2/16 18:10	97669.0	45.33	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 18:11	96623.0	44.83	3.8	1200.0
2/16 18:12	97477.0	45.18	3.8	1199.7
2/16 18:13	97658.0	45.17	3.8	1200.0
2/16 18:14	97586.0	45.21	3.8	1200.2
2/16 18:15	98020.0	45.35	3.8	1200.2
2/16 18:16	98015.0	45.38	3.8	1200.0
2/16 18:17	97388.0	45.03	3.8	1199.8
2/16 18:18	97698.0	45.21	3.8	1199.8
2/16 18:19	97576.0	45.13	3.8	1199.8
2/16 18:20	98106.0	45.37	3.8	1200.0
2/16 18:21	96644.0	44.67	3.8	1200.0
2/16 18:22	97178.0	44.94	3.8	1200.0
2/16 18:23	97553.0	45.17	3.8	1200.0
2/16 18:24	97124.0	44.91	3.8	1199.8
2/16 18:25	96951.0	44.92	3.8	1199.7
2/16 18:26	98181.0	45.40	3.8	1199.8
2/16 18:27	96376.0	44.55	3.8	1200.0
2/16 18:28	97434.0	45.03	3.8	1200.0
2/16 18:29	96749.0	44.77	3.8	1199.8
2/16 18:30	97141.0	44.95	3.8	1200.0
2/16 18:31	97665.0	45.21	3.8	1200.0
2/16 18:32	97570.0	45.17	3.8	1200.0
2/16 18:33	96823.0	44.86	3.8	1199.8
2/16 18:34	97330.0	45.01	3.8	1200.0
2/16 18:35	97683.0	45.15	3.8	1200.0
2/16 18:36	97960.0	45.25	3.8	1200.0
2/16 18:37	97400.0	44.99	3.8	1200.2
2/16 18:38	97708.0	45.16	3.8	1200.2
2/16 18:39	96927.0	44.87	3.8	1199.8
2/16 18:40	96454.0	44.66	3.8	1199.8
2/16 18:41	96675.0	44.76	3.8	1200.0
2/16 18:42	98390.0	45.48	3.8	1199.7
2/16 18:43	97596.0	45.11	3.8	1200.0
2/16 18:44	98349.0	45.46	3.8	1199.8
2/16 18:45	98664.0	45.63	3.8	1200.0
2/16 18:46	98357.0	45.46	3.8	1200.0
2/16 18:47	97137.0	44.90	3.8	1200.0
2/16 18:48	97081.0	44.89	3.8	1200.0
2/16 18:49	97878.0	45.27	3.8	1200.0
2/16 18:50	97198.0	44.95	3.8	1200.3
2/16 18:51	97287.0	45.00	3.8	1200.0
2/16 18:52	97686.0	45.26	3.8	1200.5
2/16 18:53	97299.0	45.08	3.8	1199.8
2/16 18:54	97811.0	45.32	3.8	1199.8
2/16 18:55	97593.0	45.21	3.8	1200.0
2/16 18:56	96682.0	44.71	3.8	1200.0
2/16 18:57	97374.0	45.00	3.8	1200.0
2/16 18:58	98510.0	45.53	3.8	1200.2
2/16 18:59	98196.0	45.39	3.8	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/16 19:00	98175.0	45.46	3.8	1200.3
Average (all)	97305.9	45.21	3.8	1200.0
Total (all)	--	--	--	--
Minimum (all)	94167.0	44.13	3.8	1197.3
Maximum (all)	104542.0	47.02	3.9	1202.8
Average (valid values only)	97305.9	45.21	3.8	1200.0
Total (valid values only)	--	--	--	--
Count (valid values only)	781	781	781	781

CeDAR 1-Minute Data

Sunshine Gas Producers, LLC

Data for 2/17/2023 6:00 AM thru 2/17/2023 7:00 PM

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 6:00	96692.0	45.30	3.8	1199.8
2/17 6:01	97159.0	45.46	3.8	1200.0
2/17 6:02	96941.0	45.33	3.8	1199.7
2/17 6:03	97711.0	45.67	3.8	1199.8
2/17 6:04	97290.0	45.52	3.8	1200.0
2/17 6:05	96464.0	45.13	3.8	1199.7
2/17 6:06	97195.0	45.45	3.8	1199.8
2/17 6:07	97515.0	45.60	3.8	1200.3
2/17 6:08	97735.0	45.73	3.8	1199.5
2/17 6:09	97054.0	45.38	3.8	1200.2
2/17 6:10	97716.0	45.72	3.8	1200.0
2/17 6:11	96551.0	45.17	3.8	1200.2
2/17 6:12	98803.0	46.26	3.8	1199.8
2/17 6:13	97284.0	45.49	3.8	1200.0
2/17 6:14	98076.0	45.86	3.8	1200.0
2/17 6:15	98385.0	46.01	3.8	1200.2
2/17 6:16	97516.0	45.58	3.8	1200.0
2/17 6:17	97656.0	45.67	3.8	1200.0
2/17 6:18	97333.0	45.53	3.8	1200.0
2/17 6:19	96844.0	45.39	3.8	1200.0
2/17 6:20	97835.0	45.84	3.8	1200.0
2/17 6:21	97665.0	45.78	3.8	1200.0
2/17 6:22	97699.0	45.70	3.8	1200.2
2/17 6:23	97778.0	45.74	3.8	1200.0
2/17 6:24	96859.0	45.29	3.8	1199.8
2/17 6:25	96915.0	45.34	3.8	1200.0
2/17 6:26	97938.0	45.80	3.8	1200.0
2/17 6:27	97272.0	45.48	3.8	1199.7
2/17 6:28	97966.0	45.79	3.8	1200.0
2/17 6:29	97370.0	45.45	3.8	1200.2
2/17 6:30	98542.0	46.05	3.8	1200.2
2/17 6:31	99449.0	46.50	3.8	1200.0
2/17 6:32	98071.0	45.86	3.8	1199.8
2/17 6:33	97728.0	45.70	3.8	1200.0
2/17 6:34	96335.0	45.05	3.8	1200.0
2/17 6:35	96922.0	45.32	3.8	1200.0
2/17 6:36	96871.0	45.25	3.8	1200.0
2/17 6:37	97134.0	45.34	3.8	1200.2
2/17 6:38	95578.0	44.67	3.8	1200.0
2/17 6:39	96644.0	45.19	3.8	1200.0
2/17 6:40	97281.0	45.46	3.8	1199.8
2/17 6:41	96806.0	45.22	3.8	1200.0
2/17 6:42	96971.0	45.34	3.8	1200.0
2/17 6:43	96327.0	45.06	3.8	1200.0
2/17 6:44	98031.0	45.82	3.8	1199.3

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 6:45	97277.0	45.47	3.8	1200.2
2/17 6:46	98538.0	46.06	3.8	1200.0
2/17 6:47	97029.0	45.26	3.8	1199.8
2/17 6:48	97451.0	45.46	3.8	1200.2
2/17 6:49	97730.0	45.61	3.8	1200.2
2/17 6:50	97389.0	45.54	3.8	1199.8
2/17 6:51	97399.0	45.52	3.8	1200.0
2/17 6:52	97812.0	45.76	3.8	1200.0
2/17 6:53	97520.0	45.60	3.8	1200.0
2/17 6:54	97141.0	45.42	3.8	1200.0
2/17 6:55	96799.0	45.22	3.8	1199.7
2/17 6:56	98241.0	45.83	3.8	1200.0
2/17 6:57	96601.0	45.09	3.8	1200.7
2/17 6:58	96754.0	45.24	3.8	1200.0
2/17 6:59	97046.0	45.44	3.8	1200.0
2/17 7:00	97405.0	45.61	3.8	1200.0
2/17 7:01	98979.0	45.43	3.8	1200.0
2/17 7:02	96318.0	45.07	3.8	1200.2
2/17 7:03	96934.0	45.32	3.8	1200.0
2/17 7:04	97136.0	45.53	3.8	1200.2
2/17 7:05	96886.0	45.41	3.8	1199.8
2/17 7:06	97596.0	45.75	3.8	1200.0
2/17 7:07	96832.0	45.28	3.8	1200.0
2/17 7:08	96795.0	45.26	3.8	1200.3
2/17 7:09	97975.0	45.89	3.8	1200.2
2/17 7:10	96342.0	45.15	3.8	1200.2
2/17 7:11	96451.0	45.25	3.8	1200.0
2/17 7:12	96034.0	45.11	3.8	1199.7
2/17 7:13	97015.0	45.47	3.8	1199.5
2/17 7:14	96422.0	45.19	3.8	1199.7
2/17 7:15	97206.0	45.51	3.8	1200.0
2/17 7:16	97035.0	45.46	3.8	1200.0
2/17 7:17	97265.0	45.59	3.8	1200.0
2/17 7:18	96958.0	45.45	3.8	1200.0
2/17 7:19	97099.0	45.51	3.8	1200.3
2/17 7:20	98397.0	46.14	3.8	1199.2
2/17 7:21	97160.0	45.54	3.8	1200.0
2/17 7:22	96467.0	45.24	3.8	1199.5
2/17 7:23	98051.0	45.96	3.8	1200.0
2/17 7:24	98080.0	45.97	3.8	1200.0
2/17 7:25	96229.0	45.19	3.8	1200.0
2/17 7:26	96158.0	45.16	3.8	1200.0
2/17 7:27	96474.0	45.23	3.8	1200.0
2/17 7:28	96809.0	45.45	3.8	1200.3
2/17 7:29	97005.0	45.47	3.8	1200.2
2/17 7:30	97377.0	45.69	3.8	1199.8
2/17 7:31	97019.0	45.47	3.8	1200.0
2/17 7:32	97406.0	45.69	3.8	1200.0
2/17 7:33	97418.0	45.66	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 7:34	95747.0	44.86	3.8	1199.8
2/17 7:35	98504.0	46.17	3.8	1200.0
2/17 7:36	97588.0	45.72	3.8	1200.2
2/17 7:37	97206.0	45.56	3.8	1200.0
2/17 7:38	97051.0	45.49	3.8	1199.8
2/17 7:39	97380.0	45.55	3.8	1200.0
2/17 7:40	96685.0	45.29	3.8	1200.0
2/17 7:41	96487.0	45.12	3.8	1200.0
2/17 7:42	98080.0	45.89	3.8	1200.0
2/17 7:43	96867.0	45.30	3.8	1199.8
2/17 7:44	96895.0	45.31	3.8	1200.3
2/17 7:45	97013.0	45.36	3.8	1200.0
2/17 7:46	96481.0	45.14	3.8	1200.2
2/17 7:47	97636.0	45.73	3.8	1199.8
2/17 7:48	97632.0	45.68	3.8	1200.0
2/17 7:49	97809.0	45.84	3.8	1200.3
2/17 7:50	95803.0	44.90	3.8	1199.8
2/17 7:51	97178.0	45.50	3.8	1200.0
2/17 7:52	97520.0	45.60	3.8	1199.5
2/17 7:53	96634.0	45.16	3.8	1199.8
2/17 7:54	97931.0	45.68	3.8	1200.0
2/17 7:55	96701.0	45.11	3.8	1200.3
2/17 7:56	96303.0	45.11	3.8	1200.0
2/17 7:57	97095.0	45.43	3.8	1200.0
2/17 7:58	98196.0	45.92	3.8	1200.2
2/17 7:59	98136.0	45.89	3.8	1200.2
2/17 8:00	97200.0	45.47	3.8	1199.8
2/17 8:01	97286.0	45.55	3.8	1199.8
2/17 8:02	97695.0	45.68	3.8	1199.8
2/17 8:03	97515.0	45.57	3.8	1200.0
2/17 8:04	98118.0	45.79	3.8	1200.0
2/17 8:05	97250.0	45.39	3.8	1200.0
2/17 8:06	97484.0	45.53	3.8	1200.2
2/17 8:07	96941.0	45.33	3.8	1200.2
2/17 8:08	96994.0	45.46	3.8	1199.8
2/17 8:09	97881.0	45.83	3.8	1200.0
2/17 8:10	96720.0	45.28	3.8	1199.7
2/17 8:11	96970.0	45.36	3.8	1200.0
2/17 8:12	97523.0	45.60	3.8	1200.0
2/17 8:13	97821.0	45.85	3.8	1200.2
2/17 8:14	96812.0	45.40	3.8	1200.5
2/17 8:15	97738.0	45.81	3.8	1199.0
2/17 8:16	96696.0	45.56	3.8	1200.0
2/17 8:17	97517.0	45.37	3.8	1200.0
2/17 8:18	98901.0	45.73	3.8	1199.3
2/17 8:19	97834.0	45.22	3.8	1201.0
2/17 8:20	97062.0	45.25	3.8	1200.0
2/17 8:21	97144.0	45.30	3.8	1200.0
2/17 8:22	96693.0	45.08	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 8:23	98207.0	45.81	3.8	1200.0
2/17 8:24	97477.0	45.47	3.8	1200.2
2/17 8:25	97622.0	45.54	3.8	1200.2
2/17 8:26	96645.0	45.15	3.8	1200.5
2/17 8:27	97928.0	45.77	3.8	1199.7
2/17 8:28	97862.0	45.73	3.8	1200.3
2/17 8:29	96106.0	44.94	3.8	1200.0
2/17 8:30	96919.0	45.38	3.8	1200.2
2/17 8:31	96386.0	45.09	3.8	1199.8
2/17 8:32	97117.0	45.41	3.8	1199.8
2/17 8:33	97518.0	45.62	3.8	1200.2
2/17 8:34	96669.0	45.31	3.8	1200.2
2/17 8:35	96854.0	45.39	3.8	1200.2
2/17 8:36	97600.0	45.72	3.8	1200.0
2/17 8:37	96996.0	45.44	3.8	1200.2
2/17 8:38	96268.0	45.04	3.8	1200.2
2/17 8:39	96201.0	45.07	3.8	1199.5
2/17 8:40	96152.0	44.98	3.8	1200.2
2/17 8:41	97625.0	45.68	3.8	1199.2
2/17 8:42	95962.0	44.87	3.8	1200.2
2/17 8:43	97250.0	45.47	3.8	1200.2
2/17 8:44	96929.0	45.34	3.8	1200.0
2/17 8:45	97813.0	45.79	3.8	1199.8
2/17 8:46	98038.0	45.87	3.8	1200.0
2/17 8:47	97373.0	45.61	3.8	1200.2
2/17 8:48	96486.0	45.21	3.8	1200.0
2/17 8:49	96438.0	45.10	3.8	1200.0
2/17 8:50	95627.0	44.79	3.8	1199.8
2/17 8:51	96968.0	45.34	3.8	1200.0
2/17 8:52	97213.0	45.38	3.8	1200.0
2/17 8:53	97635.0	45.64	3.8	1200.0
2/17 8:54	97540.0	45.56	3.8	1199.5
2/17 8:55	98360.0	45.82	3.8	1200.2
2/17 8:56	97657.0	45.51	3.8	1200.0
2/17 8:57	96727.0	45.12	3.8	1200.2
2/17 8:58	97332.0	45.40	3.8	1200.0
2/17 8:59	97732.0	45.50	3.8	1199.3
2/17 9:00	99017.0	45.71	3.8	1199.5
2/17 9:01	98245.0	45.41	3.8	1201.0
2/17 9:02	97504.0	45.46	3.8	1201.0
2/17 9:03	96464.0	45.29	3.8	1200.0
2/17 9:04	97085.0	45.54	3.8	1199.5
2/17 9:05	98084.0	45.89	3.8	1199.5
2/17 9:06	97584.0	45.74	3.8	1200.2
2/17 9:07	96646.0	45.22	3.8	1199.8
2/17 9:08	97608.0	45.64	3.8	1200.0
2/17 9:09	96690.0	45.23	3.8	1200.0
2/17 9:10	96768.0	45.31	3.8	1199.8
2/17 9:11	97033.0	45.37	3.8	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 9:12	97412.0	45.57	3.8	1199.5
2/17 9:13	96993.0	45.25	3.8	1200.0
2/17 9:14	96936.0	45.19	3.8	1199.7
2/17 9:15	97022.0	45.21	3.8	1200.8
2/17 9:16	96118.0	44.95	3.8	1200.5
2/17 9:17	97383.0	45.30	3.8	1199.3
2/17 9:18	97310.0	45.08	3.8	1199.0
2/17 9:19	98010.0	45.27	3.8	1200.5
2/17 9:20	96924.0	45.13	3.8	1201.2
2/17 9:21	96510.0	45.21	3.8	1200.2
2/17 9:22	96947.0	45.33	3.8	1199.5
2/17 9:23	96583.0	45.18	3.8	1200.0
2/17 9:24	96777.0	45.25	3.8	1200.0
2/17 9:25	96458.0	45.02	3.8	1200.0
2/17 9:26	96997.0	45.28	3.8	1200.0
2/17 9:27	96664.0	45.17	3.8	1200.0
2/17 9:28	98716.0	46.16	3.8	1199.8
2/17 9:29	97267.0	45.43	3.8	1199.8
2/17 9:30	97017.0	45.26	3.8	1200.0
2/17 9:31	97246.0	45.37	3.8	1200.0
2/17 9:32	97940.0	45.75	3.8	1200.0
2/17 9:33	97959.0	45.65	3.8	1199.7
2/17 9:34	97546.0	45.42	3.8	1200.5
2/17 9:35	96218.0	44.92	3.8	1200.0
2/17 9:36	97972.0	45.70	3.8	1200.0
2/17 9:37	97501.0	45.48	3.8	1200.0
2/17 9:38	97283.0	45.38	3.8	1200.2
2/17 9:39	96662.0	45.12	3.8	1200.0
2/17 9:40	97006.0	45.28	3.8	1199.8
2/17 9:41	97511.0	45.60	3.8	1200.0
2/17 9:42	97331.0	45.51	3.8	1200.0
2/17 9:43	97595.0	45.56	3.8	1200.0
2/17 9:44	96751.0	45.13	3.8	1200.0
2/17 9:45	96979.0	45.22	3.8	1200.2
2/17 9:46	98041.0	45.76	3.8	1200.2
2/17 9:47	98500.0	45.93	3.8	1198.8
2/17 9:48	98019.0	45.37	3.8	1200.2
2/17 9:49	96687.0	44.92	3.8	1200.7
2/17 9:50	97443.0	45.54	3.8	1200.5
2/17 9:51	96312.0	45.03	3.8	1199.8
2/17 9:52	96476.0	45.17	3.8	1200.0
2/17 9:53	96639.0	45.25	3.8	1200.2
2/17 9:54	96724.0	45.33	3.8	1200.0
2/17 9:55	98162.0	46.01	3.8	1200.0
2/17 9:56	95986.0	44.99	3.8	1199.8
2/17 9:57	96150.0	45.02	3.8	1200.0
2/17 9:58	96657.0	45.30	3.8	1199.8
2/17 9:59	98098.0	45.04	3.8	1200.0
2/17 10:00	97091.0	45.46	3.8	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 10:01	96494.0	45.20	3.8	1200.3
2/17 10:02	96558.0	45.26	3.8	1200.7
2/17 10:03	96749.0	45.37	3.8	1199.8
2/17 10:04	96000.0	45.00	3.8	1199.8
2/17 10:05	96039.0	45.10	3.8	1199.0
2/17 10:06	98721.0	45.92	3.8	1199.0
2/17 10:07	98015.0	45.23	3.8	1200.2
2/17 10:08	98150.0	45.34	3.8	1200.3
2/17 10:09	97206.0	44.93	3.8	1199.5
2/17 10:10	98907.0	45.48	3.8	1198.8
2/17 10:11	99814.0	45.64	3.8	1200.3
2/17 10:12	98098.0	45.04	3.8	1201.0
2/17 10:13	98330.0	45.61	3.8	1201.8
2/17 10:14	97872.0	45.76	3.8	1199.2
2/17 10:15	98400.0	45.73	3.8	1199.3
2/17 10:16	98608.0	45.60	3.8	1200.3
2/17 10:17	96851.0	44.94	3.8	1200.5
2/17 10:18	96570.0	45.07	3.8	1200.8
2/17 10:19	97047.0	45.41	3.8	1200.0
2/17 10:20	96672.0	45.31	3.8	1200.0
2/17 10:21	96784.0	45.38	3.8	1200.0
2/17 10:22	96548.0	45.25	3.8	1200.3
2/17 10:23	96501.0	45.26	3.8	1200.0
2/17 10:24	97529.0	45.66	3.8	1198.8
2/17 10:25	97333.0	45.17	3.8	1201.3
2/17 10:26	96321.0	45.12	3.8	1200.3
2/17 10:27	96053.0	45.07	3.8	1200.3
2/17 10:28	96578.0	45.35	3.8	1199.5
2/17 10:29	96452.0	45.21	3.8	1199.5
2/17 10:30	97308.0	45.52	3.8	1200.0
2/17 10:31	96705.0	45.22	3.8	1200.2
2/17 10:32	97179.0	45.53	3.8	1200.0
2/17 10:33	96840.0	45.37	3.8	1200.5
2/17 10:34	95456.0	44.82	3.8	1200.2
2/17 10:35	95187.0	44.66	3.8	1199.8
2/17 10:36	95425.0	44.73	3.8	1199.7
2/17 10:37	97064.0	45.47	3.8	1199.8
2/17 10:38	96878.0	45.32	3.8	1200.2
2/17 10:39	96509.0	45.13	3.8	1200.0
2/17 10:40	95715.0	44.76	3.8	1200.3
2/17 10:41	96403.0	45.18	3.8	1200.7
2/17 10:42	95973.0	44.98	3.8	1200.2
2/17 10:43	95792.0	44.90	3.8	1199.8
2/17 10:44	96834.0	45.38	3.8	1200.0
2/17 10:45	96479.0	45.19	3.8	1199.3
2/17 10:46	96358.0	45.01	3.8	1200.3
2/17 10:47	97875.0	45.75	3.8	1200.0
2/17 10:48	96582.0	45.14	3.8	1200.5
2/17 10:49	93932.0	44.02	3.8	1200.3

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Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 10:50	96291.0	45.13	3.8	1200.3
2/17 10:51	96063.0	45.04	3.8	1199.7
2/17 10:52	95446.0	44.74	3.8	1200.0
2/17 10:53	94803.0	44.43	3.8	1199.7
2/17 10:54	96051.0	44.93	3.8	1199.8
2/17 10:55	96177.0	44.97	3.8	1200.0
2/17 10:56	95323.0	44.63	3.8	1200.0
2/17 10:57	95497.0	44.76	3.8	1200.0
2/17 10:58	95765.0	44.89	3.8	1200.0
2/17 10:59	97191.0	45.55	3.8	1200.0
2/17 11:00	95861.0	44.96	3.8	1200.0
2/17 11:01	95690.0	44.94	3.8	1200.0
2/17 11:02	95592.0	44.83	3.8	1199.8
2/17 11:03	95045.0	44.63	3.8	1200.2
2/17 11:04	95414.0	44.82	3.8	1199.8
2/17 11:05	95547.0	44.81	3.8	1199.7
2/17 11:06	95462.0	44.74	3.8	1200.0
2/17 11:07	95768.0	44.89	3.8	1199.8
2/17 11:08	95891.0	44.94	3.8	1199.8
2/17 11:09	96108.0	45.08	3.8	1200.3
2/17 11:10	96042.0	45.06	3.8	1200.0
2/17 11:11	93889.0	44.03	3.8	1200.0
2/17 11:12	95959.0	44.98	3.8	1200.0
2/17 11:13	96222.0	45.07	3.8	1200.0
2/17 11:14	94843.0	44.45	3.8	1200.0
2/17 11:15	94861.0	44.46	3.8	1200.3
2/17 11:16	95336.0	44.71	3.8	1200.0
2/17 11:17	94892.0	44.47	3.8	1199.8
2/17 11:18	95768.0	44.91	3.8	1200.0
2/17 11:19	95493.0	44.76	3.8	1199.8
2/17 11:20	96301.0	45.14	3.8	1200.2
2/17 11:21	94873.0	44.45	3.8	1199.8
2/17 11:22	94648.0	44.36	3.8	1200.3
2/17 11:23	95306.0	44.75	3.8	1200.5
2/17 11:24	94502.0	44.40	3.8	1199.8
2/17 11:25	95296.0	44.70	3.8	1200.0
2/17 11:26	95061.0	44.55	3.8	1200.2
2/17 11:27	95401.0	44.79	3.7	1199.7
2/17 11:28	95770.0	44.89	3.7	1200.0
2/17 11:29	95306.0	44.67	3.8	1199.7
2/17 11:30	95150.0	44.55	3.7	1199.8
2/17 11:31	95382.0	44.62	3.8	1200.0
2/17 11:32	95482.0	44.73	3.8	1199.7
2/17 11:33	95586.0	44.76	3.8	1200.2
2/17 11:34	95002.0	44.53	3.8	1200.2
2/17 11:35	95000.0	44.53	3.8	1200.0
2/17 11:36	94945.0	44.50	3.8	1199.8
2/17 11:37	95010.0	44.53	3.8	1200.0
2/17 11:38	94614.0	44.34	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 11:39	95386.0	44.76	3.8	1200.0
2/17 11:40	95138.0	44.61	3.8	1200.0
2/17 11:41	94089.0	44.10	3.8	1200.2
2/17 11:42	94949.0	44.53	3.8	1200.2
2/17 11:43	95071.0	44.66	3.8	1200.0
2/17 11:44	94579.0	44.41	3.7	1199.8
2/17 11:45	95717.0	44.86	3.7	1199.7
2/17 11:46	95013.0	44.46	3.8	1199.8
2/17 11:47	94804.0	44.31	3.8	1200.0
2/17 11:48	95153.0	44.51	3.8	1200.2
2/17 11:49	94658.0	44.37	3.8	1200.0
2/17 11:50	94804.0	44.40	3.8	1199.8
2/17 11:51	94172.0	44.11	3.8	1199.8
2/17 11:52	95313.0	44.59	3.8	1200.3
2/17 11:53	95395.0	44.71	3.8	1200.2
2/17 11:54	94155.0	44.11	3.7	1200.0
2/17 11:55	93488.0	43.80	3.7	1199.8
2/17 11:56	95070.0	44.51	3.7	1200.0
2/17 11:57	95798.0	44.87	3.7	1199.8
2/17 11:58	94213.0	44.14	3.7	1200.0
2/17 11:59	94998.0	44.50	3.7	1200.0
2/17 12:00	94365.0	44.18	3.7	1199.8
2/17 12:01	94536.0	44.28	3.7	1200.2
2/17 12:02	94114.0	44.11	3.8	1200.0
2/17 12:03	94928.0	44.49	3.7	1200.0
2/17 12:04	95131.0	44.59	3.7	1199.8
2/17 12:05	94508.0	44.30	3.8	1200.0
2/17 12:06	95077.0	44.56	3.8	1200.0
2/17 12:07	95634.0	44.80	3.7	1200.2
2/17 12:08	95693.0	44.87	3.8	1200.2
2/17 12:09	94090.0	44.20	3.8	1200.0
2/17 12:10	95248.0	44.75	3.8	1199.3
2/17 12:11	94860.0	44.28	3.8	1200.2
2/17 12:12	96330.0	44.87	3.8	1200.0
2/17 12:13	95779.0	44.58	3.8	1199.8
2/17 12:14	95894.0	44.61	3.8	1199.3
2/17 12:15	95792.0	44.25	3.8	1199.7
2/17 12:16	96474.0	44.59	3.8	1200.0
2/17 12:17	97548.0	45.06	3.8	1199.8
2/17 12:18	96769.0	44.73	3.8	1200.7
2/17 12:19	94557.0	43.88	3.8	1201.5
2/17 12:20	94313.0	43.98	3.7	1199.7
2/17 12:21	94772.0	44.19	3.7	1199.7
2/17 12:22	94876.0	44.26	3.7	1199.8
2/17 12:23	94465.0	44.07	3.7	1199.8
2/17 12:24	96522.0	45.03	3.7	1200.0
2/17 12:25	95698.0	44.64	3.7	1200.2
2/17 12:26	95027.0	44.33	3.8	1200.3
2/17 12:27	95852.0	44.73	3.7	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 12:28	95538.0	44.63	3.8	1200.0
2/17 12:29	95083.0	44.38	3.7	1199.8
2/17 12:30	96426.0	45.01	3.8	1200.0
2/17 12:31	95545.0	44.59	3.8	1200.5
2/17 12:32	94464.0	44.12	3.7	1200.0
2/17 12:33	95871.0	44.78	3.8	1200.3
2/17 12:34	95295.0	44.56	3.7	1200.0
2/17 12:35	94443.0	44.16	3.7	1199.7
2/17 12:36	94440.0	44.16	3.7	1199.7
2/17 12:37	94652.0	44.28	3.8	1200.0
2/17 12:38	95033.0	44.39	3.7	1199.5
2/17 12:39	96502.0	44.78	3.8	1199.8
2/17 12:40	95890.0	44.63	3.8	1201.0
2/17 12:41	95461.0	44.61	3.7	1200.3
2/17 12:42	95078.0	44.48	3.7	1199.7
2/17 12:43	95706.0	44.50	3.7	1199.0
2/17 12:44	96343.0	44.56	3.8	1200.0
2/17 12:45	96255.0	44.51	3.7	1199.8
2/17 12:46	96345.0	44.55	3.7	1200.2
2/17 12:47	95875.0	44.42	3.7	1200.0
2/17 12:48	95432.0	44.18	3.7	1200.0
2/17 12:49	96393.0	44.66	3.7	1200.2
2/17 12:50	95920.0	44.47	3.7	1200.5
2/17 12:51	95542.0	44.50	3.7	1201.0
2/17 12:52	94684.0	44.27	3.7	1200.0
2/17 12:53	94612.0	44.32	3.7	1199.8
2/17 12:54	93610.0	43.79	3.7	1200.0
2/17 12:55	94609.0	44.27	3.7	1199.7
2/17 12:56	95649.0	44.73	3.7	1200.0
2/17 12:57	94957.0	44.40	3.7	1199.8
2/17 12:58	96447.0	45.10	3.7	1200.0
2/17 12:59	95063.0	44.45	3.7	1199.8
2/17 13:00	95111.0	44.47	3.7	1200.2
2/17 13:01	95362.0	44.56	3.7	1199.7
2/17 13:02	94463.0	44.08	3.7	1200.8
2/17 13:03	94691.0	44.31	3.7	1199.7
2/17 13:04	95015.0	44.46	3.7	1199.2
2/17 13:05	96034.0	44.49	3.7	1199.0
2/17 13:06	97554.0	44.89	3.7	1198.8
2/17 13:07	99337.0	45.04	3.7	1199.3
2/17 13:08	98111.0	44.43	3.8	1201.8
2/17 13:09	96216.0	44.16	3.7	1201.8
2/17 13:10	94427.0	43.92	3.7	1200.3
2/17 13:11	95168.0	44.33	3.7	1199.3
2/17 13:12	95176.0	44.35	3.7	1200.7
2/17 13:13	94032.0	44.09	3.7	1200.0
2/17 13:14	93559.0	44.00	3.7	1200.8
2/17 13:15	94963.0	44.74	3.7	1200.0
2/17 13:16	94782.0	44.65	3.7	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 13:17	94917.0	44.70	3.7	1199.8
2/17 13:18	93768.0	44.14	3.7	1200.0
2/17 13:19	94285.0	44.32	3.7	1199.8
2/17 13:20	93473.0	44.00	3.7	1200.0
2/17 13:21	94397.0	44.47	3.7	1200.0
2/17 13:22	93159.0	43.87	3.7	1199.2
2/17 13:23	93399.0	43.98	3.7	1200.0
2/17 13:24	94270.0	44.37	3.7	1199.5
2/17 13:25	95297.0	44.59	3.7	1199.0
2/17 13:26	96795.0	45.03	3.7	1200.0
2/17 13:27	95853.0	44.58	3.7	1200.0
2/17 13:28	95268.0	44.32	3.7	1200.2
2/17 13:29	95320.0	44.34	3.7	1200.0
2/17 13:30	95328.0	44.37	3.7	1200.0
2/17 13:31	94261.0	43.87	3.7	1199.8
2/17 13:32	95577.0	44.50	3.7	1200.5
2/17 13:33	94357.0	44.25	3.7	1200.7
2/17 13:34	93146.0	43.86	3.7	1200.0
2/17 13:35	93812.0	44.24	3.7	1200.0
2/17 13:36	94273.0	44.50	3.7	1199.5
2/17 13:37	94793.0	44.66	3.7	1199.8
2/17 13:38	94140.0	44.33	3.7	1199.7
2/17 13:39	96007.0	45.05	3.7	1199.0
2/17 13:40	94726.0	44.11	3.7	1200.0
2/17 13:41	95582.0	44.48	3.7	1199.8
2/17 13:42	95140.0	44.28	3.7	1200.0
2/17 13:43	95737.0	44.61	3.8	1200.3
2/17 13:44	94640.0	44.10	3.7	1199.5
2/17 13:45	95452.0	44.46	3.8	1200.8
2/17 13:46	94215.0	44.24	3.7	1200.2
2/17 13:47	95114.0	44.60	3.7	1199.7
2/17 13:48	95064.0	44.57	3.7	1200.0
2/17 13:49	94429.0	44.36	3.7	1200.2
2/17 13:50	95051.0	44.67	3.7	1199.8
2/17 13:51	94731.0	44.50	3.7	1200.0
2/17 13:52	95078.0	44.58	3.7	1199.3
2/17 13:53	96711.0	45.07	3.7	1200.3
2/17 13:54	95826.0	44.73	3.7	1200.3
2/17 13:55	94916.0	44.40	3.7	1199.5
2/17 13:56	94272.0	44.05	3.7	1200.7
2/17 13:57	94379.0	44.28	3.7	1200.0
2/17 13:58	93755.0	43.99	3.7	1200.0
2/17 13:59	94164.0	44.21	3.7	1199.5
2/17 14:00	94440.0	44.26	3.7	1200.2
2/17 14:01	93690.0	44.03	3.7	1200.0
2/17 14:02	94740.0	44.56	3.7	1200.0
2/17 14:03	95102.0	44.75	3.7	1200.0
2/17 14:04	95384.0	44.81	3.7	1200.0
2/17 14:05	94721.0	44.50	3.7	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 14:06	94345.0	44.31	3.7	1200.0
2/17 14:07	94750.0	44.44	3.7	1200.2
2/17 14:08	94914.0	44.47	3.7	1199.0
2/17 14:09	95703.0	44.36	3.7	1199.0
2/17 14:10	95632.0	43.97	3.7	1200.8
2/17 14:11	95220.0	44.04	3.7	1199.2
2/17 14:12	97160.0	44.48	3.7	1199.5
2/17 14:13	98139.0	44.77	3.8	1200.0
2/17 14:14	97813.0	44.65	3.8	1200.3
2/17 14:15	96962.0	44.28	3.7	1200.0
2/17 14:16	96485.0	44.07	3.8	1199.7
2/17 14:17	97747.0	44.47	3.8	1199.3
2/17 14:18	97967.0	44.45	3.8	1200.3
2/17 14:19	97717.0	44.52	3.8	1200.7
2/17 14:20	97891.0	44.79	3.8	1200.2
2/17 14:21	97181.0	44.49	3.7	1200.2
2/17 14:22	97027.0	44.42	3.8	1199.5
2/17 14:23	97154.0	44.40	3.8	1200.3
2/17 14:24	96887.0	44.36	3.7	1200.0
2/17 14:25	97394.0	44.61	3.8	1200.0
2/17 14:26	96794.0	44.36	3.8	1199.8
2/17 14:27	97869.0	44.80	3.8	1200.2
2/17 14:28	97305.0	44.60	3.8	1200.0
2/17 14:29	96873.0	44.33	3.8	1199.7
2/17 14:30	97384.0	44.47	3.8	1200.0
2/17 14:31	97747.0	44.75	3.8	1200.0
2/17 14:32	97379.0	44.58	3.8	1200.0
2/17 14:33	97160.0	44.48	3.7	1199.7
2/17 14:34	97840.0	44.74	3.7	1199.8
2/17 14:35	97474.0	44.57	3.8	1199.8
2/17 14:36	96908.0	44.37	3.8	1200.0
2/17 14:37	99062.0	45.35	3.8	1200.0
2/17 14:38	97619.0	44.69	3.8	1200.0
2/17 14:39	97969.0	44.76	3.8	1199.7
2/17 14:40	98091.0	44.86	3.7	1200.0
2/17 14:41	96911.0	44.24	3.7	1199.8
2/17 14:42	96798.0	44.34	3.8	1200.5
2/17 14:43	97688.0	44.77	3.8	1199.7
2/17 14:44	96952.0	44.46	3.8	1200.0
2/17 14:45	98056.0	45.00	3.8	1199.8
2/17 14:46	97753.0	44.75	3.8	1200.0
2/17 14:47	97567.0	44.77	3.8	1199.7
2/17 14:48	97777.0	44.85	3.8	1200.0
2/17 14:49	95794.0	43.96	3.8	1200.2
2/17 14:50	96908.0	44.49	3.8	1200.0
2/17 14:51	96830.0	44.45	3.7	1200.0
2/17 14:52	96362.0	44.34	3.7	1200.3
2/17 14:53	95712.0	44.15	3.7	1200.5
2/17 14:54	95460.0	44.12	3.7	1200.2

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 14:55	96294.0	44.53	3.7	1199.8
2/17 14:56	96431.0	44.60	3.7	1199.8
2/17 14:57	96286.0	44.51	3.7	1200.2
2/17 14:58	96852.0	44.76	3.7	1200.0
2/17 14:59	95470.0	44.20	3.7	1200.3
2/17 15:00	96223.0	44.54	3.7	1199.8
2/17 15:01	95524.0	44.18	3.7	1200.0
2/17 15:02	96247.0	44.55	3.7	1200.0
2/17 15:03	97551.0	45.14	3.7	1199.5
2/17 15:04	97153.0	44.87	3.7	1200.7
2/17 15:05	95165.0	44.26	3.7	1200.8
2/17 15:06	95259.0	44.44	3.7	1199.8
2/17 15:07	95081.0	44.37	3.7	1199.8
2/17 15:08	95481.0	44.52	3.7	1199.3
2/17 15:09	95716.0	44.61	3.8	1200.0
2/17 15:10	96272.0	44.91	3.7	1200.0
2/17 15:11	95436.0	44.50	3.7	1200.7
2/17 15:12	94819.0	44.25	3.7	1199.5
2/17 15:13	96757.0	44.93	3.7	1200.0
2/17 15:14	96053.0	44.65	3.7	1200.0
2/17 15:15	96466.0	44.82	3.7	1199.8
2/17 15:16	96189.0	44.58	3.7	1199.0
2/17 15:17	96808.0	44.69	3.8	1199.8
2/17 15:18	95437.0	44.08	3.7	1200.2
2/17 15:19	95500.0	44.38	3.8	1201.7
2/17 15:20	93909.0	44.09	3.7	1199.8
2/17 15:21	94657.0	44.58	3.7	1199.8
2/17 15:22	94599.0	44.49	3.7	1199.5
2/17 15:23	95597.0	44.89	3.7	1200.2
2/17 15:24	95001.0	44.63	3.7	1200.0
2/17 15:25	94443.0	44.40	3.7	1200.0
2/17 15:26	94565.0	44.53	3.7	1200.0
2/17 15:27	94401.0	44.37	3.7	1199.5
2/17 15:28	95340.0	44.69	3.7	1200.0
2/17 15:29	96046.0	44.84	3.7	1199.5
2/17 15:30	95360.0	44.46	3.7	1200.7
2/17 15:31	94212.0	44.11	3.7	1200.3
2/17 15:32	95008.0	44.50	3.7	1200.0
2/17 15:33	95494.0	44.74	3.7	1200.0
2/17 15:34	96048.0	44.91	3.7	1200.0
2/17 15:35	95277.0	44.55	3.7	1199.5
2/17 15:36	95395.0	44.61	3.7	1200.3
2/17 15:37	95113.0	44.56	3.7	1200.2
2/17 15:38	95817.0	44.91	3.7	1199.8
2/17 15:39	94638.0	44.36	3.7	1200.0
2/17 15:40	94229.0	44.17	3.7	1200.0
2/17 15:41	94994.0	44.60	3.7	1200.0
2/17 15:42	94317.0	44.21	3.7	1199.8
2/17 15:43	95918.0	44.83	3.7	1199.5

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 15:44	96261.0	44.84	3.7	1201.0
2/17 15:45	94667.0	44.35	3.7	1200.3
2/17 15:46	93970.0	44.12	3.7	1200.2
2/17 15:47	94075.0	44.18	3.7	1199.8
2/17 15:48	95893.0	45.03	3.7	1199.8
2/17 15:49	95267.0	44.78	3.7	1199.8
2/17 15:50	95763.0	44.97	3.7	1199.8
2/17 15:51	94490.0	44.29	3.7	1200.0
2/17 15:52	93831.0	44.01	3.7	1199.8
2/17 15:53	95360.0	44.77	3.7	1200.0
2/17 15:54	94822.0	44.53	3.7	1200.0
2/17 15:55	95142.0	44.68	3.7	1200.0
2/17 15:56	95813.0	45.01	3.7	1200.0
2/17 15:57	95370.0	44.75	3.7	1200.0
2/17 15:58	95746.0	44.90	3.7	1200.2
2/17 15:59	95288.0	44.66	3.7	1199.8
2/17 16:00	92918.0	43.60	3.7	1200.0
2/17 16:01	94251.0	44.28	3.7	1200.0
2/17 16:02	94314.0	44.28	3.7	1199.7
2/17 16:03	94840.0	44.47	3.7	1199.8
2/17 16:04	95156.0	44.63	3.7	1200.0
2/17 16:05	94098.0	44.19	3.7	1200.0
2/17 16:06	93980.0	44.12	3.7	1200.0
2/17 16:07	94113.0	44.21	3.7	1199.8
2/17 16:08	94291.0	44.33	3.7	1200.0
2/17 16:09	95108.0	44.79	3.7	1199.8
2/17 16:10	94194.0	44.35	3.7	1200.0
2/17 16:11	94082.0	44.32	3.7	1200.5
2/17 16:12	94310.0	44.44	3.7	1199.3
2/17 16:13	95456.0	44.82	3.7	1199.3
2/17 16:14	95109.0	44.49	3.7	1199.8
2/17 16:15	94830.0	44.32	3.7	1199.8
2/17 16:16	94334.0	44.06	3.7	1200.5
2/17 16:17	94170.0	44.05	3.7	1200.0
2/17 16:18	94690.0	44.38	3.7	1200.0
2/17 16:19	93813.0	43.88	3.7	1199.8
2/17 16:20	95343.0	44.60	3.7	1200.0
2/17 16:21	93785.0	43.91	3.7	1200.0
2/17 16:22	94568.0	44.25	3.7	1199.7
2/17 16:23	94949.0	44.40	3.7	1200.0
2/17 16:24	94292.0	44.17	3.7	1199.8
2/17 16:25	95145.0	44.57	3.7	1200.0
2/17 16:26	94724.0	44.40	3.7	1200.0
2/17 16:27	94492.0	44.31	3.7	1200.3
2/17 16:28	93730.0	44.01	3.7	1200.2
2/17 16:29	94357.0	44.38	3.7	1199.8
2/17 16:30	95129.0	44.71	3.7	1200.0
2/17 16:31	95047.0	44.65	3.7	1199.8
2/17 16:32	95248.0	44.64	3.7	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 16:33	95196.0	44.62	3.7	1200.3
2/17 16:34	94831.0	44.55	3.7	1200.2
2/17 16:35	94628.0	44.46	3.7	1200.2
2/17 16:36	95152.0	44.70	3.7	1200.0
2/17 16:37	94789.0	44.53	3.7	1199.7
2/17 16:38	94207.0	44.26	3.7	1200.0
2/17 16:39	93423.0	43.89	3.7	1200.0
2/17 16:40	95273.0	44.76	3.7	1200.0
2/17 16:41	95140.0	44.70	3.7	1200.0
2/17 16:42	95608.0	44.92	3.7	1200.0
2/17 16:43	94721.0	44.48	3.7	1199.8
2/17 16:44	95742.0	44.89	3.7	1200.0
2/17 16:45	95414.0	44.72	3.7	1200.2
2/17 16:46	95096.0	44.57	3.7	1199.8
2/17 16:47	95138.0	44.59	3.7	1200.0
2/17 16:48	94241.0	44.22	3.7	1200.2
2/17 16:49	95207.0	44.70	3.7	1199.7
2/17 16:50	94346.0	44.31	3.7	1200.2
2/17 16:51	94885.0	44.58	3.7	1199.8
2/17 16:52	94630.0	44.46	3.7	1200.0
2/17 16:53	94450.0	44.37	3.7	1199.7
2/17 16:54	95896.0	44.98	3.7	1199.7
2/17 16:55	96525.0	45.26	3.7	1200.0
2/17 16:56	94224.0	44.25	3.7	1200.0
2/17 16:57	94984.0	44.60	3.7	1200.0
2/17 16:58	94834.0	44.55	3.8	1199.7
2/17 16:59	96757.0	45.35	3.8	1200.0
2/17 17:00	94975.0	44.55	3.8	1200.0
2/17 17:01	95502.0	44.84	3.8	1200.0
2/17 17:02	95706.0	44.91	3.8	1200.0
2/17 17:03	95945.0	44.97	3.8	1199.7
2/17 17:04	95272.0	44.65	3.8	1200.0
2/17 17:05	94506.0	44.33	3.8	1200.0
2/17 17:06	95260.0	44.70	3.8	1199.7
2/17 17:07	95213.0	44.62	3.8	1200.2
2/17 17:08	95527.0	44.77	3.8	1200.0
2/17 17:09	96060.0	45.02	3.8	1199.8
2/17 17:10	95086.0	44.57	3.8	1200.0
2/17 17:11	94580.0	44.33	3.8	1200.2
2/17 17:12	94848.0	44.38	3.8	1199.7
2/17 17:13	95190.0	44.51	3.8	1200.0
2/17 17:14	96138.0	44.96	3.8	1199.8
2/17 17:15	95583.0	44.62	3.8	1200.0
2/17 17:16	96034.0	44.83	3.8	1200.3
2/17 17:17	95234.0	44.51	3.8	1200.2
2/17 17:18	94533.0	44.20	3.8	1199.8
2/17 17:19	95008.0	44.45	3.8	1200.0
2/17 17:20	94688.0	44.35	3.8	1200.0
2/17 17:21	95156.0	44.53	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 17:22	96799.0	45.28	3.8	1199.5
2/17 17:23	95845.0	44.82	3.8	1199.8
2/17 17:24	96074.0	44.92	3.8	1200.0
2/17 17:25	95708.0	44.75	3.8	1200.2
2/17 17:26	96273.0	45.02	3.8	1199.8
2/17 17:27	95480.0	44.65	3.8	1200.0
2/17 17:28	96536.0	45.14	3.8	1200.2
2/17 17:29	95022.0	44.43	3.8	1199.8
2/17 17:30	95612.0	44.71	3.8	1200.2
2/17 17:31	96599.0	45.17	3.8	1200.0
2/17 17:32	95850.0	44.82	3.8	1200.0
2/17 17:33	95027.0	44.46	3.8	1200.3
2/17 17:34	96070.0	44.98	3.8	1199.8
2/17 17:35	95575.0	44.69	3.8	1200.0
2/17 17:36	95404.0	44.59	3.8	1199.8
2/17 17:37	94999.0	44.32	3.8	1200.2
2/17 17:38	95668.0	44.63	3.8	1200.0
2/17 17:39	96118.0	44.84	3.8	1199.8
2/17 17:40	95277.0	44.52	3.8	1200.0
2/17 17:41	96006.0	44.89	3.8	1200.0
2/17 17:42	94858.0	44.36	3.8	1200.0
2/17 17:43	94606.0	44.21	3.8	1200.0
2/17 17:44	94789.0	44.30	3.8	1199.8
2/17 17:45	95838.0	44.77	3.8	1200.0
2/17 17:46	95949.0	44.76	3.8	1200.2
2/17 17:47	95666.0	44.63	3.8	1200.0
2/17 17:48	95268.0	44.44	3.8	1200.2
2/17 17:49	95667.0	44.63	3.8	1199.8
2/17 17:50	96389.0	44.97	3.8	1200.0
2/17 17:51	95208.0	44.42	3.8	1200.0
2/17 17:52	96376.0	44.93	3.8	1200.0
2/17 17:53	94786.0	44.19	3.8	1200.2
2/17 17:54	95657.0	44.63	3.8	1200.0
2/17 17:55	95812.0	44.70	3.8	1199.8
2/17 17:56	95653.0	44.62	3.8	1200.0
2/17 17:57	97083.0	45.22	3.8	1199.8
2/17 17:58	96240.0	44.79	3.8	1200.2
2/17 17:59	96683.0	44.99	3.8	1200.0
2/17 18:00	96290.0	44.81	3.8	1200.0
2/17 18:01	96319.0	44.81	3.8	1200.2
2/17 18:02	95537.0	44.46	3.8	1200.2
2/17 18:03	96104.0	44.72	3.8	1199.8
2/17 18:04	95716.0	44.55	3.8	1200.0
2/17 18:05	96053.0	44.70	3.8	1200.2
2/17 18:06	96055.0	44.73	3.8	1199.8
2/17 18:07	95756.0	44.57	3.8	1200.0
2/17 18:08	95050.0	44.26	3.8	1200.0
2/17 18:09	96775.0	45.04	3.8	1199.5
2/17 18:10	96547.0	44.86	3.8	1199.8

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 18:11	95878.0	44.59	3.8	1199.8
2/17 18:12	95736.0	44.48	3.8	1200.0
2/17 18:13	95867.0	44.62	3.8	1200.2
2/17 18:14	96110.0	44.75	3.8	1200.0
2/17 18:15	94625.0	44.13	3.8	1200.0
2/17 18:16	96752.0	45.13	3.8	1200.0
2/17 18:17	96392.0	44.97	3.8	1200.0
2/17 18:18	95197.0	44.38	3.8	1200.0
2/17 18:19	95752.0	44.53	3.8	1199.8
2/17 18:20	96131.0	44.71	3.8	1199.8
2/17 18:21	95403.0	44.35	3.8	1200.2
2/17 18:22	95655.0	44.52	3.8	1199.8
2/17 18:23	95659.0	44.52	3.8	1200.0
2/17 18:24	94699.0	44.07	3.8	1200.0
2/17 18:25	95955.0	44.66	3.8	1200.0
2/17 18:26	96825.0	45.10	3.8	1200.2
2/17 18:27	95965.0	44.66	3.8	1200.2
2/17 18:28	94817.0	44.13	3.8	1200.0
2/17 18:29	95531.0	44.44	3.8	1200.0
2/17 18:30	97029.0	45.16	3.8	1200.0
2/17 18:31	95862.0	44.61	3.8	1200.0
2/17 18:32	95147.0	44.28	3.8	1200.2
2/17 18:33	95582.0	44.50	3.8	1200.5
2/17 18:34	95206.0	44.39	3.8	1200.2
2/17 18:35	95041.0	44.29	3.8	1199.7
2/17 18:36	95402.0	44.40	3.8	1199.8
2/17 18:37	95917.0	44.59	3.8	1200.2
2/17 18:38	96092.0	44.64	3.8	1199.8
2/17 18:39	96567.0	44.76	3.8	1200.0
2/17 18:40	95111.0	44.16	3.8	1200.0
2/17 18:41	96098.0	44.62	3.8	1200.0
2/17 18:42	96933.0	45.00	3.8	1200.2
2/17 18:43	96451.0	44.81	3.8	1200.2
2/17 18:44	95843.0	44.60	3.8	1200.2
2/17 18:45	96009.0	44.68	3.8	1200.0
2/17 18:46	95215.0	44.32	3.8	1200.2
2/17 18:47	96451.0	44.84	3.8	1199.8
2/17 18:48	95229.0	44.32	3.8	1200.0
2/17 18:49	95248.0	44.25	3.8	1199.8
2/17 18:50	96490.0	44.83	3.8	1200.0
2/17 18:51	95518.0	44.35	3.8	1199.8
2/17 18:52	96387.0	44.81	3.8	1200.3
2/17 18:53	96087.0	44.67	3.8	1199.8
2/17 18:54	94968.0	44.15	3.8	1200.2
2/17 18:55	96121.0	44.71	3.8	1200.0
2/17 18:56	95520.0	44.46	3.8	1200.0
2/17 18:57	95950.0	44.61	3.8	1200.0
2/17 18:58	95694.0	44.43	3.8	1200.0
2/17 18:59	96565.0	44.82	3.8	1200.0

Timestamp	(TG-751) Landfill Gas Flow scf/hr 1-Min	(TG-751) Heat Input mmBtu/hr 1-Min	(TG-751) Megawatts 1-Min	(TG-751) T7 Exhaust Temp °F 1-Min
2/17 19:00	96456.0	44.74	3.8	1200.3
Average (all)	96104.4	44.87	3.8	1200.0
Total (all)	--	--	--	--
Minimum (all)	92918.0	43.60	3.7	1198.8
Maximum (all)	99814.0	46.50	3.8	1201.8
Average (valid values only)	96104.4	44.87	3.8	1200.0
Total (valid values only)	--	--	--	--
Count (valid values only)	781	781	781	781

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APPENDIX C
CALCULATIONS

MONTROSE
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Appendix C.1
General Emissions Calculations

GENERAL EMISSIONS CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$MW_{dry} = 0.44 * \% CO_2 + 0.32 * \% O_2 + 0.28 * \% N_2$

$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$

B. Absolute stack pressure, iwg

$$P_s = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 85.49 * C_p * \sqrt{\frac{\Delta P * Ts}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.033422 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6}\right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.04716 * V_{ic} * \frac{T_{ref}}{528°R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack Gas Volumetric Flow Rate

A. Actual stack gas volumetric flow rate, wacfm

$Q = V_s * A_s * 60$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

C. Standard stack gas flow rate, scfm

$$Q_s = Q * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

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IV.   Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V.   Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \% O_2}$$

VI.   Percent Isokinetic

$$I = \frac{17.32 * T_s (V_{mstd})}{(1 - B_{wo}) 0 * V_s * P_s * Dn^2} * \frac{520°R}{T_{ref}}$$

VII.   Particulate Emissions

(a)   Grain loading, gr/dscf
$C = 0.01543 (M_n/V_{m\ std})$

(b)   Grain loading at 12% CO_2, gr/dscf
$C_{12\% } CO_2 = C (12/\% CO_2)$

(b)   Grain loading at 15% O_2, gr/dscf
$C15_{\%} O_2 = C * 5.9/(20.9 - O_2)$

(c)   Mass emissions, lb/hr
$M = C * Q_{sd} * (60\ min/hr) / (7000\ gr/lb)$

(d)   Particulate emission factor

$$lb/10^6\ Btu = Cx\ \frac{1\ lb}{7000\ gr} * F * \frac{20.9}{20.9 - \% O_2}$$

VII.   Metal Emissions

(a)   Concentration, mg/dscf
$C_{mg/dscf} = (M_n/V_{m\ std})$

(b)   Concentration, mg/dscm
$C_{mg/dscm} = (M_n/V_{m\ std}) \times (35.31\ ft^3/1m^3)$

(c)   Concentration at 15% O_2, mg/dscm
$C15_{\%} O_2 = C_{mg/dscm} * 5.9/(20.9 - O_2)$

(d)   Mass emissions, lb/hr
$M = C_{mg/dscf} * Q_{sd} * (60\ min/hr) / (454 \times 10^3\ mg/lb)$

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Nomenclature:

A_s	=	stack area, ft^2
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO2}$	=	particulate grain loading, gr/dscf corrected to 12% CO_2
$C_{12\%O2}$	=	particulate grain loading, gr/dscf corrected to 15% O_2
C_p	=	pitot calibration factor, dimensionless
Dn	=	nozzle diameter, inches
F	=	fuel F-Factor, dscf/MMBtu @ 0% O_2
H	=	orifice differential pressure, iwg
I	=	% isokinetics
M_n	=	mass of collected particulate, mg
M_i	=	mass emission rate of specie i, lb/hr
MW	=	molecular weight of flue gas, lb/lb-mole
M_{wi}	=	molecular weight of specie i:

SO_2: 64

NO_x: 46

CO: 28

HC: 16

HCHO: 30.03

HCL: 36.458

HF: 20.01

0	=	sample time, minutes
ΔP	=	average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	=	barometric pressure, inches Hg
P_s	=	stack absolute pressure, inches Hg
P_{sg}	=	stack static pressure, iwb
Q	=	wet stack flow rate at actual conditions, wacfm
Q_{sd}	=	dry standard stack flow rate, dscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	=	meter temperature, °R
T_{ref}	=	reference temperature, °R
T_s	=	stack temperature, °R
V_s	=	stack gas velocity, ft/sec
V_{lc}	=	volume of liquid collected in impingers, ml
V_m	=	uncorrected dry meter volume, dcf
V_{mstd}	=	dry meter volume at standard conditions, dscf
V_{wstd}	=	volume of water vapor at standard conditions, scf
Y_d	=	meter calibration coefficient

MONTROSE
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Appendix C.2
Data Summaries

Appendix C.2.1
CT-4 Data

MONTROSE
AIR QUALITY SERVICES

Gaseous Emissions Test Summary
SUNSHINE GAS CT 4

Test Number	RUN 1-CT4	RUN 2-CT4	RUN 3-CT4	RUN 4-CT4	RUN 5-CT4	RUN 6-CT4	RUN 7-CT4	
Date	2/7/2023	2/8/2023	2/8/2023	2/9/2023	2/9/2023	2/10/2023	2/10/2023	Averages
Start Time	10:53	8:11	13:06	8:06	12:41	7:51	12:16	
Stop Time	15:03	12:18	17:12	12:21	16:55	12:00	16:25	
Pre-Test Information:								
Reference Temperature, °F	68	68	68	68	68	68	68	
Diluent Emissions and Stack Flow Rate:								
O_2, % vol. dry	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
CO_2, % vol. dry	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Stack Flow Rate, dscfm	34,673	34,670	34,381	34,767	34,864	34,564	34,491	34,630
Pollutant Emissions:								
Carbon Monoxide (CO)								
ppm vol. dry	1.22	1.27	0.96	0.63	1.04	0.43	0.22	0.82
ppmc vol. dry @ 15% O2	1.48	1.53	1.18	0.77	1.25	0.52	0.26	1.00
lb/hr	0.18	0.19	0.14	0.10	0.16	0.06	0.03	0.12

EPA 10 EXAMPLE CALCULATION
TEST NUMBER: CT-4- 1-EPA 10

				Run 1
Identifier	Description	Units	Equation	Value
Using Data from Run 1:				
A	CO Pre-Test Zero Bias Response	ppm	--	-0.09
B	CO Post-Test Zero Bias Response	ppm	--	-0.05
C	CO Pre-Test Span Bias Response	ppm	--	4.59
D	CO Post-Test Span Bias Response	ppm	--	4.65
E	Avg. Pre-Test Zero Bias Response	ppm	$(A+B)/2$	-0.07
F	Avg. Post-Test Span Bias Response	ppm	$(C+D)/2$	4.62
G	CO Span Gas Value	ppm	--	4.68
H	CO Average (raw)	ppm	--	1.15
I	Drift/Bias Corrected CO:	ppm	$(H-E)/(F-E)*G$	1.22
J	Drift/Bias Corrected O_2:	%	--	16.02
K	Drift/Bias Corrected CO_2:	%	--	4.40
L	Meter Volume	acf	--	199.991
M	Barometric Pressure	" Hg	--	28.36
N	Delta H	" H_2O	--	2.0125
O	Reference Temperature	R	--	528
P	Meter Temperature	R	--	544.5
Q	Y_d	--	--	0.992
R	Meter Volume (standard)	dscf	$1/29.92 * C * (D + E/13.6) * F/G * H$	183.286
S	Liquid Collected	grams	--	219
T	Water vapor volume	scf	$0.04716 * S * F/528$	10.328
U	Moisture Content	--	$T/(T + R)$	0.053
V	Molecular weight, dry	lb/lb-mole	$0.44 * K + 0.32 * J + 0.28 * (100 - J - K)$	29.35
W	Molecular weight, wet	lb/lb-mole	$V * (1 - U) + 18 * U$	28.74
X	Static Pressure	" H_2O	--	-0.55
Y	Stack Pressure	" Hg	$M + X/13.6$	28.32
Z	Average Velocity Differential Pressure	" H_2O	square of the average of the square roots	1.0065
AA	Stack Temperature	R	--	1163.458
AB	Pitot Tube Coeficient	--	--	0.84
AC	Stack Velocity	fps	$85.49 * AB * sqrt(Z * AA / Y / W)$	86.14
AD	Stack Area	ft^2	--	16.50
AE	Stack Flow Rate	acfm	$AC * AD * 60$	85,268
AF	Stack Flow Rate	dscfm	$AE * (1 - U) * O * Y / AA / 29.92$	34,673
AG	Specific Molar Volume	SCF/lb-mole	$385.3 * O / 528$	385.3
AH	CO emission rate	lb/hr	$I * 28 * AF * 60 / AG / 10^6$	0.18
AI	CO concentration, corrected	ppm@15%O2	$I*5.9/(20.9-J)$	1.48

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only. Stack gas velocity and moisture content was reported from EPA Method 5, R1.

Montrose
Particulate Matter Test Summary

Client/Location: DTE Sunshine
Sample Location: CT4
Reference Temp (F): 68
Fuel: Landfill
Data By: DH/AD

Test No.	1-EPA 5	2-EPA 5	3-EPA 5	4-EPA 5	5-EPA 5	6-EPA 5	7-EPA 5	Average
Date	February 7, 2023	February 8, 2023	February 8, 2023	February 9, 2023	February 9, 2023	February 10, 2023	February 10, 2023	
Start Time	10:50	8:10	13:05	8:05	12:40	7:50	12:15	*
Stop Time	15:00	12:20	17:15	12:15	16:50	12:00	16:25	*
Bar Press (in Hg)	28.36	28.34	28.34	28.32	28.32	28.26	28.26	*
Test Method	EPA M5	EPA M5	EPA M5	EPA M5	EPA M5	EPA M5	EPA M5	*
Sample Time (Min)	240	240	240	240	240	240	240	*
Sample Train	42 WCS	42 WCS	42 WCS	42 WCS	42 WCS	42 WCS	42 WCS	*
Meter Cal Factor	0.992	0.992	0.992	0.992	0.992	0.992	0.992	*
Pitot Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	*
Nozzle Diam (in)	0.257	0.257	0.257	0.257	0.257	0.257	0.257	*
Stack Area (sq ft)	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50
Stack O2 (%)	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
Stack CO2 (%)	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Stack Press (iwg)	-0.55	-0.54	-0.54	-0.57	-0.57	-0.55	-0.55	-0.55
Stack Temp (F)	703.5	701.7	700.4	702.9	703.5	715.2	716.1	706.2
Vel Head (iwg)	1.0065	1.0036	0.9857	1.0025	1.0087	1.0083	1.0086	1.0034
Meter Temp (F)	84.5	76.6	91.5	84.8	91.5	74.4	86.3	84.2
Meter Press (iwg)	2.013	2.000	1.967	2.004	2.008	2.013	2.013	2.002
Meter Vol (acf)	199.991	198.273	196.276	201.295	199.297	194.565	192.868	197.509
Liquid Vol (ml)	219.0	214.0	206.1	194.2	191.3	201.8	203.6	204.3
Std Sample Vol (SCF)	183.286	184.257	177.453	184.148	180.091	181.069	175.574	180.840
Moisture Fraction	0.053	0.052	0.052	0.047	0.048	0.050	0.052	0.051
Stack Gas Mol Wt	28.74	28.77	28.77	28.80	28.79	28.79	28.78	28.78
Stack Gas Velocity (ft/sec)	86.14	85.93	85.12	85.91	86.23	86.72	86.79	86.12
Isokinetic Ratio (%)	100.9	101.4	98.5	101.1	98.6	100.0	97.1	99.6
Stack Flow Rate (wacfm)	85,268	85,063	84,263	85,048	85,359	85,851	85,914	85,252
Stack Flow Rate (dscfm)	34,673	34,670	34,381	34,767	34,864	34,564	34,491	34,630
Stack Flow Rate (scfm)	36,626	36,568	36,265	36,496	36,610	36,380	36,377	36,475
Heated Filter, mg	0.0	1.3	0.9	0.0	0.8	0.4	1.3	0.7
Probe Wash, mg	0.7	0.2	0.3	0.7	0.5	0.1	0.1	0.4
Total Weight Gain, mg	0.7	1.5	1.2	0.7	1.3	0.5	1.4	1.0
Particulate Emissions								
Grain Loading, gr/dscf	0.00006	0.00013	0.00010	0.00006	0.00011	0.00004	0.00012	0.00009
Grain Loading @ 15% O_2	0.00007	0.00015	0.00013	0.00007	0.00013	0.00005	0.00015	0.00011
Mass Emissions, lb/hr	0.018	0.037	0.031	0.017	0.033	0.013	0.036	0.026

EPA 5 EXAMPLE CALCULATION
TEST NUMBER: CT-4- 1-EPA 5

MONTROSE

Identifier	Description	Units	Equation	Run 1 Value
A	Stack O2	%	--	16.02
B	Stack CO2	%	--	4.40
C	Meter Volume	acf	--	199.991
D	Barometric Pressure	" Hg	--	28.36
E	Delta H	" H_2O	--	2.0
F	Reference Temperature	R	--	528
G	Meter Temperature	R	--	544.5
H	Y_d	--	--	0.992
I	Meter Volume (standard)	dscf	$1/29.92 * C * (D + E/13.6) * F/G * H$	183.286
J	Liquid Collected	grams	--	219.0
K	Water vapor volume	scf	$0.04716 * J * F/528$	10.328
L	Moisture Content	--	$T/(T + R)$	0.053
M	Molecular weight, dry	lb/lb-mole	$0.44 * B + 0.32 * A + 0.28 * (100 - A - B)$	29.35
N	Molecular weight, wet	lb/lb-mole	$M * (1 - L) + 18 * L$	28.74
O	Static Pressure	" H_2O	--	-0.55
P	Stack Pressure	" Hg	$D + O/13.6$	28.32
Q	Average Velocity Differential Pressure	" H_2O	square of the average of the square roots	1.0065
R	Stack Temperature	R	--	1163.458333
S	Pitot Tube Coeficient	--	--	0.84
T	Stack Velocity	fps	$85.49 * S * sqrt(Q * R/ P / N)$	86.14
U	Stack Area	ft^2	--	16.50
V	Stack Flow Rate	acfm	$T * U * 60$	85,268
W	Stack Flow Rate	dscfm	$V * (1 - L) * F * P / R / 29.92$	34,673
X	Sample Time	minutes	--	240.0
Y	Nozzle Diameter	inches	--	0.257
Z	Isokinetic Sampling Rate	%	$14,128*528/F*R*I/X/T/60/(D*13.6+O)/Y^2$	100.9
AA	Particulate Catch	mg	--	0.7
AB	Particulate Catch	lbs	$AA / 454,000$	1.54E-06
AC	Particulate Cate	grains	$AB * 7,000$	0.011
AD	Particulate Emissions	gr/dscf	AC / I	0.000059
AE	Particulate Emissions	gr/dscf @ 15% O_2	$AD * 5.9 / (20.9 - A)$	0.000071
AF	Particulate Emissions	gr/dscf @ 12% CO_2	$AD * 12 / B$	0.000161
AG	Particulate Emissions	lb/hr	$AD * 60 / 7,000 * V$	0.0175

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

TRACE METALS TEST RESULTS
DTE SUNSHINE
CT4 STACK

Test No.:	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	AVERAGES
Date:	2/7/23	2/8/23	2/8/23	2/9/23	2/9/23	2/10/23	2/10/23	
Start Time:	10:50	8:10	13:05	8:05	12:40	7:50	12:15	
Stop Time:	15:00	12:20	17:15	12:15	16:50	12:00	16:25	
Flow Rate, dscfm:	34,801	34,847	34,702	34,614	34,850	34,552	34,453	34,688
Sample Volume, dscf:	178.48	179.87	178.95	181.31	177.55	173.28	171.62	177.29
O_2, % volume dry:	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
CO_2, % volume dry:	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Moisture, % by volume:	5.03	5.07	5.13	5.04	4.90	4.94	5.09	5.03

Species								
Antimony								
mg/m3	0.00009	0.00006	< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	< 0.00007
mg/m3 @ 15% O_2	0.00011	0.00008	< 0.00008	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00008	< 0.00008
lb/hr	1.14E-05	8.22E-06	< 8.14E-06	ND< 7.73E-06	ND< 7.86E-06	ND< 7.98E-06	ND< 8.04E-06	< 8.49E-06
Arsenic								
mg/m3	< 0.00014	< 0.00016	< 0.00015	ND< 0.00014	ND< 0.00014	ND< 0.00015	ND< 0.00015	< 0.00015
mg/m3 @ 15% O_2	< 0.00017	< 0.00019	< 0.00018	ND< 0.00017	ND< 0.00017	ND< 0.00018	ND< 0.00018	< 0.00018
lb/hr	< 1.88E-05	< 2.03E-05	< 1.90E-05	ND< 1.84E-05	ND< 1.88E-05	ND< 1.91E-05	ND< 1.92E-05	< 1.91E-05
Beryllium								
mg/m3	0.00003	0.00004	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002	< 0.00002
mg/m3 @ 15% O_2	0.00004	0.00004	ND< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	< 0.00002	< 0.00002
lb/hr	3.81E-06	4.72E-06	ND< 1.80E-06	ND< 1.80E-06	ND< 1.83E-06	ND< 1.86E-06	< 1.97E-06	< 2.54E-06
Cadmium								
mg/m3	0.00017	0.00006	< 0.00003	< 0.00004	< 0.00002	ND< 0.00001	< 0.00001	< 0.00005
mg/m3 @ 15% O_2	0.00021	0.00008	< 0.00004	< 0.00004	< 0.00002	ND< 0.00002	< 0.00002	< 0.00006
lb/hr	2.24E-05	8.27E-06	< 3.78E-06	< 4.67E-06	< 2.08E-06	ND< 1.91E-06	< 1.93E-06	< 6.43E-06
Chromium								
mg/m3	0.00103	0.00136	0.00099	0.00130	0.00136	0.00097	0.00135	0.00119
mg/m3 @ 15% O_2	0.00124	0.00164	0.00121	0.00158	0.00163	0.00117	0.00164	0.00144
lb/hr	1.34E-04	1.77E-04	1.29E-04	1.69E-04	1.77E-04	1.25E-04	1.74E-04	1.55E-04
Cobalt								
mg/m3	0.00004	0.00005	0.00023	0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00006
mg/m3 @ 15% O_2	0.00005	0.00006	0.00028	0.00003	< 0.00002	< 0.00002	< 0.00002	< 0.00007
lb/hr	5.82E-06	7.01E-06	2.98E-05	3.06E-06	< 2.42E-06	< 2.19E-06	< 2.41E-06	< 7.54E-06
Lead								
mg/m3	0.00027	0.00020	0.00011	0.00014	0.00012	0.00010	0.00010	0.00015
mg/m3 @ 15% O_2	0.00033	0.00024	0.00013	0.00016	0.00015	0.00012	0.00012	0.00018
lb/hr	3.53E-05	2.62E-05	1.41E-05	1.75E-05	1.59E-05	1.33E-05	1.24E-05	1.92E-05
Manganese								
mg/m3	0.00044	0.00036	0.00023	0.00026	0.00027	0.00050	0.00062	0.00038
mg/m3 @ 15% O_2	0.00054	0.00044	0.00028	0.00032	0.00033	0.00061	0.00075	0.00047
lb/hr	5.77E-05	4.73E-05	2.97E-05	3.40E-05	3.58E-05	6.51E-05	7.93E-05	4.98E-05
Mercury								
mg/m3	< 0.00015	< 0.00011	< 0.00020	< 0.00010	< 0.00009	< 0.00010	< 0.00009	< 0.00012
mg/m3 @ 15% O_2	< 0.00018	< 0.00013	< 0.00024	< 0.00013	< 0.00010	< 0.00013	< 0.00010	< 0.00014
lb/hr	< 1.95E-05	< 1.44E-05	< 2.57E-05	< 1.33E-05	< 1.13E-05	< 1.35E-05	< 1.10E-05	< 1.55E-05
Nickel								
mg/m3	0.00071	0.00048	0.00042	0.00053	0.00041	0.00033	0.00037	0.00046
mg/m3 @ 15% O_2	0.00086	0.00058	0.00052	0.00064	0.00049	0.00040	0.00045	0.00056
lb/hr	9.28E-05	6.25E-05	5.48E-05	6.80E-05	5.29E-05	4.26E-05	4.80E-05	6.02E-05
Selenium								
mg/m3	< 0.00028	< 0.00012	< 0.00029	< 0.00097	< 0.00029	< 0.00169	< 0.00018	< 0.00055
mg/m3 @ 15% O_2	< 0.00034	< 0.00015	< 0.00035	< 0.00118	< 0.00035	< 0.00204	< 0.00022	< 0.00066
lb/hr	< 3.70E-05	< 1.60E-05	< 3.75E-05	< 1.26E-04	< 3.80E-05	< 2.18E-04	< 2.29E-05	< 7.08E-05

ND< - species not detected in sample. ND< = BDL

< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL

Data reported without ND< or < = ADL

FRONT HALFTRACE METALS LABORATORY SUMMARY
DTE SUNSHINE
CT4 STACK

Test No.:	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	AVERAGES
Date:	2/7/23	2/8/23	2/8/23	2/9/23	2/9/23	2/10/23	2/10/23	
Start Time:	10:50	8:10	13:05	8:05	12:40	7:50	12:15	
Stop Time:	15:00	12:20	17:15	12:15	16:50	12:00	16:25	
Flow Rate, dscfm:	34,801	34,847	34,702	34,614	34,850	34,552	34,453	34,688
Sample Volume, dscf:	178.48	179.87	178.95	181.31	177.55	173.28	171.62	177.29
O2, % volume dry:	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
CO2, % volume dry:	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Moisture, % by volume:	5.03	5.07	5.13	5.04	4.90	4.94	5.09	5.03
Species								
Antimony F½								
mg/dscm	0.00007	0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	< 0.00005
mg/dscm @ 15% O2	0.00008	0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	< 0.00006
lb/hr	8.84E-06	6.43E-06	ND< 6.41E-06	ND< 6.31E-06	ND< 6.49E-06	ND< 6.59E-06	ND< 6.63E-06	< 6.81E-06
Arsenic F½								
mg/dscm	ND< 0.00013	ND< 0.00013	ND< 0.00013	ND< 0.00013	ND< 0.00013	ND< 0.00014	ND< 0.00014	ND< 0.00013
mg/dscm @ 15% O2	ND< 0.00016	ND< 0.00016	ND< 0.00016	ND< 0.00016	ND< 0.00016	ND< 0.00017	ND< 0.00017	ND< 0.00016
lb/hr	ND< 1.73E-05	ND< 1.72E-05	ND< 1.72E-05	ND< 1.69E-05	ND< 1.74E-05	ND< 1.77E-05	ND< 1.78E-05	ND< 1.74E-05
Beryllium F½								
mg/dscm	0.00002	0.00003	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002
mg/dscm @ 15% O2	0.00003	0.00004	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002
lb/hr	2.99E-06	4.20E-06	ND< 1.36E-06	ND< 1.34E-06	ND< 1.38E-06	ND< 1.40E-06	ND< 1.41E-06	< 2.01E-06
Cadmium F½								
mg/dscm	0.00005	0.00003	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	0.00001	< 0.00002
mg/dscm @ 15% O2	0.00006	0.00004	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	0.00001	< 0.00002
lb/hr	5.98E-06	4.43E-06	ND< 1.33E-06	ND< 1.31E-06	ND< 1.35E-06	ND< 1.37E-06	1.39E-06	< 2.45E-06
Chromium F½								
mg/dscm	0.00090	0.00124	0.00089	0.00119	0.00125	0.00087	0.00126	0.00108
mg/dscm @ 15% O2	0.00108	0.00149	0.00109	0.00144	0.00150	0.00105	0.00153	0.00131
lb/hr	1.17E-04	1.61E-04	1.16E-04	1.54E-04	1.63E-04	1.12E-04	1.62E-04	1.41E-04
Cobalt F½								
mg/dscm	0.00003	0.00004	0.00022	0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00005
mg/dscm @ 15% O2	0.00003	0.00005	0.00027	0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00006
lb/hr	3.66E-06	5.15E-06	2.92E-05	1.96E-06	ND< 1.46E-06	ND< 1.48E-06	ND< 1.49E-06	< 6.34E-06
Lead F½								
mg/dscm	0.00013	0.00011	0.00007	0.00007	0.00008	0.00006	0.00007	0.00008
mg/dscm @ 15% O2	0.00015	0.00013	0.00008	0.00008	0.00010	0.00008	0.00009	0.00010
lb/hr	1.63E-05	1.40E-05	8.84E-06	8.98E-06	1.05E-05	8.20E-06	9.13E-06	1.09E-05
Manganese F½								
mg/dscm	0.00020	0.00019	0.00015	0.00015	0.00014	0.00030	0.00033	0.00021
mg/dscm @ 15% O2	0.00025	0.00023	0.00018	0.00018	0.00017	0.00036	0.00040	0.00025
lb/hr	2.65E-05	2.49E-05	1.90E-05	1.95E-05	1.88E-05	3.82E-05	4.27E-05	2.71E-05
Mercury F½								
mg/dscm	ND< 0.00000	ND< 0.00000	ND< 0.00000	ND< 0.00000	ND< 0.00000	ND< 0.00000	ND< 0.00001	ND< 0.00000
mg/dscm @ 15% O2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
lb/hr	ND< 6.44E-07	ND< 6.40E-07	ND< 6.41E-07	ND< 6.31E-07	ND< 6.49E-07	ND< 6.59E-07	ND< 6.63E-07	ND< 6.47E-07
Nickel F½								
mg/dscm	0.00043	0.00036	0.00027	0.00038	0.00030	0.00025	0.00030	0.00033
mg/dscm @ 15% O2	0.00052	0.00044	0.00033	0.00046	0.00036	0.00031	0.00037	0.00040
lb/hr	5.57E-05	4.74E-05	3.51E-05	4.92E-05	3.87E-05	3.29E-05	3.90E-05	4.26E-05
Selenium F½								
mg/dscm	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006
mg/dscm @ 15% O2	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00007	ND< 0.00008	ND< 0.00007
lb/hr	ND< 7.83E-06	ND< 7.78E-06	ND< 7.79E-06	ND< 7.67E-06	ND< 7.89E-06	ND< 8.01E-06	ND< 8.07E-06	ND< 7.86E-06

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

BACK HALF TRACE METALS LABORATORY SUMMARY
DTE SUNSHINE
CT4 STACK

Test No.:	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	AVERAGES
Date:	2/7/23	2/8/23	2/8/23	2/9/23	2/9/23	2/10/23	2/10/23	
Start Time:	10:50	8:10	13:05	8:05	12:40	7:50	12:15	
Stop Time:	15:00	12:20	17:15	12:15	16:50	12:00	16:25	
Flow Rate, dscfm:	34,801	34,847	34,702	34,614	34,850	34,552	34,453	34,688
Sample Volume, dscf:	178.48	179.87	178.95	181.31	177.55	173.28	171.62	177.29
O2, % volume dry:	16.02	16.01	16.07	16.04	15.98	16.01	16.05	16.03
CO2, % volume dry:	4.40	4.52	4.47	4.37	4.30	4.49	4.54	4.44
Moisture, % by volume:	5.03	5.07	5.13	5.04	4.90	4.94	5.09	5.03

Species								
Antimony B½								
mg/dscm	0.00002	0.00001	0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00001
mg/dscm @ 15% O2	0.00002	0.00002	0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002
lb/hr	2.60E-06	1.80E-06	1.73E-06	ND< 1.42E-06	ND< 1.37E-06	ND< 1.40E-06	ND< 1.41E-06	< 1.68E-06
Arsenic B½								
mg/dscm	0.00001	0.00002	0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00001
mg/dscm @ 15% O2	0.00001	0.00003	0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002
lb/hr	1.53E-06	3.07E-06	1.79E-06	ND< 1.42E-06	ND< 1.37E-06	ND< 1.40E-06	ND< 1.41E-06	< 1.71E-06
Beryllium B½								
mg/dscm	0.000006	0.000004	ND< 0.000003	ND< 0.000004	ND< 0.000003	ND< 0.000004	0.000004	< 0.000004
mg/dscm @ 15% O2	0.000008	0.000005	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	0.000005	< 0.000005
lb/hr	8.22E-07	5.25E-07	ND< 4.41E-07	ND< 4.59E-07	ND< 4.46E-07	ND< 4.53E-07	5.60E-07	< 5.29E-07
Cadmium B½								
mg/dscm	0.00013	0.00003	0.00002	0.00003	0.00001	ND< 0.00000	ND< 0.00000	< 0.00003
mg/dscm @ 15% O2	0.00015	0.00004	0.00002	0.00003	0.00001	ND< 0.00001	ND< 0.00001	< 0.00004
lb/hr	1.64E-05	3.84E-06	2.44E-06	3.36E-06	7.29E-07	ND< 5.40E-07	ND< 5.44E-07	< 3.98E-06
Chromium B½								
mg/dscm	0.00013	0.00012	0.00010	0.00011	0.00011	0.00010	0.00009	0.00011
mg/dscm @ 15% O2	0.00016	0.00014	0.00012	0.00014	0.00013	0.00013	0.00011	0.00013
lb/hr	1.70E-05	1.55E-05	1.26E-05	1.47E-05	1.45E-05	1.35E-05	1.19E-05	1.42E-05
Cobalt B½								
mg/dscm	0.00002	0.00001	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001
mg/dscm @ 15% O2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
lb/hr	2.16E-06	1.87E-06	6.18E-07	1.10E-06	9.60E-07	7.11E-07	9.23E-07	1.19E-06
Lead B½								
mg/dscm	0.00015	0.00009	0.00004	0.00007	0.00004	0.00004	0.00003	0.00006
mg/dscm @ 15% O2	0.00018	0.00011	0.00005	0.00008	0.00005	0.00005	0.00003	0.00008
lb/hr	1.90E-05	1.22E-05	5.25E-06	8.53E-06	5.40E-06	5.06E-06	3.24E-06	8.38E-06
Manganese B½								
mg/dscm	0.00024	0.00017	0.00008	0.00011	0.00013	0.00021	0.00028	0.00018
mg/dscm @ 15% O2	0.00029	0.00021	0.00010	0.00014	0.00016	0.00025	0.00035	0.00021
lb/hr	3.12E-05	2.23E-05	1.07E-05	1.45E-05	1.70E-05	2.69E-05	3.66E-05	2.27E-05
Mercury B½								
mg/dscm	< 0.00014	< 0.00011	< 0.00019	< 0.00010	< 0.00008	< 0.00010	< 0.00008	< 0.00011
mg/dscm @ 15% O2	< 0.00017	< 0.00013	< 0.00024	< 0.00012	< 0.00010	< 0.00012	< 0.00010	< 0.00014
lb/hr	< 1.88E-05	< 1.37E-05	< 2.51E-05	< 1.27E-05	< 1.07E-05	< 1.28E-05	< 1.04E-05	< 1.49E-05
Nickel B½								
mg/dscm	0.00028	0.00012	0.00015	0.00015	0.00011	0.00007	0.00007	0.00014
mg/dscm @ 15% O2	0.00034	0.00014	0.00019	0.00018	0.00013	0.00009	0.00009	0.00016
lb/hr	3.71E-05	1.51E-05	1.97E-05	1.88E-05	1.43E-05	9.62E-06	9.02E-06	1.77E-05
Selenium B½								
mg/dscm	0.00022	0.00006	0.00023	0.00091	0.00023	0.00163	0.00011	0.00049
mg/dscm @ 15% O2	0.00027	0.00008	0.00028	0.00111	0.00028	0.00196	0.00014	0.00059
lb/hr	2.91E-05	8.24E-06	2.97E-05	1.18E-04	3.01E-05	2.10E-04	1.48E-05	6.29E-05

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. <= DLL
Data reported without ND< or <= ADL

EPA 29 - TRACE METALS EXAMPLE CALCULATION
TEST NUMBER: CT-4-1-EPA 29

Example For Antimony (Sb)

Identifier	Description	Units	Equation	Value
A	Stack O2	%	--	16.02
B	Stack CO2	%	--	4.40
C	Meter Volume	acf	--	189.103
D	Barometric Pressure	" Hg	--	28.36
E	Delta H	" H_2O	--	2.0
F	Reference Temperature	R	--	528
G	Meter Temperature	R	--	540.4
H	Y_d	--	--	1.014
I	Meter Volume (standard)	dscf	$1/29.92 * C * (D + E/13.6) * F/G * H$	178.482
J	Liquid Collected	grams	--	200.4
K	Water vapor volume	scf	$0.04716 * J * F/528$	9.451
L	Moisture Content	--	$T/(T + R)$	0.050
M	Molecular weight, dry	lb/lb-mole	$0.44 * B + 0.32 * A + 0.28 * (100 - A - B)$	29.35
N	Molecular weight, wet	lb/lb-mole	$M * (1 - L) + 18 * L$	28.77
O	Static Pressure	" H_2O	--	-0.55
P	Stack Pressure	" Hg	$D + O/13.6$	28.32
Q	Average Velocity Differential Pressure	" H_2O	square of the average of the square roots	1.0087
R	Stack Temperature	R	--	1163.54
S	Pitot Tube Coeficient	--	--	0.84
T	Stack Velocity	fps	$85.49 * S * sqrt(Q * R/ P / N)$	86.18
U	Stack Area	ft^2	--	16.50
V	Stack Flow Rate	acfm	$T * U * 60$	85,314
W	Stack Flow Rate	dscfm	$V * (1 - L) * F * P / R / 29.92$	34,801
X	Sample Time	minutes	--	240.0
Y	Nozzle Diameter	inches	--	0.254
Z	Isokinetic Sampling Rate	%	$14,128*528/F*R*I/X/T/60/(D*13.6+O)/Y^2$	100.2
AA	Antimony Catch	ug	--	0.44
AB	Antimony Concentration	ug/dscf	AA / I	0.0025
AC	Antimony Concentration	mg/dscm	$AB * 35.31/10^3$	0.000088
AD	Antimony Concentration	mg/dscfm @15%O_2	$AC*5.9/(20.9-A)$	0.000106
AE	Antimony Emissions	lb/hr	$W* 60*AB / 454x10^6$	1.14E-05

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

Gaseous Emissions Test Summary
SUNSHINE GAS CT 4

Test Number	1-EPA320	2-EPA320	3-EPA320	4-EPA320	5-EPA320	6-EPA320	7-EPA320	Averages
Date	2/7/2023	2/7/2023	2/7/2023	2/8/2023	2/8/2023	2/8/2023	2/8/2023	
Start Time	10:50	12:00	13:15	9:06	10:19	11:23	13:05	
Stop Time	11:50	13:08	14:15	10:06	11:19	12:32	14:05	
Pre-Test Information:								
Reference Temperature, °F	68	68	68	68	68	68	68	
Diluent Emissions and Stack Flow Rate:								
O_2, % vol. dry	16.02	16.02	16.02	16.01	16.01	16.01	16.07	16.03
CO_2, % vol. dry	4.40	4.40	4.40	4.52	4.52	4.52	4.47	4.46
Stack Flow Rate, dscfm	34,673	34,673	34,673	34,670	34,670	34,670	34,381	34,630
Pollutant Emissions:								
Hydrochloric Acid (HCl)								
ppm vol. dry	0.54	0.49	0.50	0.45	0.51	0.56	0.60	0.52
ppmc vol. dry @ 15% O2	0.65	0.59	0.61	0.54	0.61	0.68	0.73	0.63
lb/hr	0.11	0.10	0.10	0.09	0.10	0.11	0.12	0.10
Hydrogen Fluoride (HF)								
ppm vol. dry	1.72	1.67	1.79	1.62	1.81	1.90	2.00	1.79
ppmc vol. dry @ 15% O2	2.08	2.02	2.16	1.95	2.19	2.30	2.44	2.16
lb/hr	0.19	0.18	0.19	0.17	0.20	0.21	0.21	0.19
Formaldehyde (CH_2O)								
ppm vol. dry	0.021	0.021	0.028	0.035	0.026	0.028	0.030	0.027
ppmc vol. dry @ 15% O2	0.026	0.025	0.034	0.042	0.032	0.034	0.037	0.033
lb/hr	0.003	0.003	0.005	0.006	0.004	0.005	0.005	0.004

EPA 320 EXAMPLE CALCULATION
TEST NUMBER: CT-4- 1-EPA 320

Identifier	Description	Units	Equation	Value
Using Data from Run 1:				
A	Formaldehyde (from FTIR)	ppmvw	--	0.02
B	Formaldehyde (from FTIR)	ppmvd	--	0.02
C	HCL (from FTIR)	ppmvw	--	0.51
D	HCL (from FTIR)	ppmvd	--	0.54
E	HF (from FTIR)	ppmvw	--	1.62
F	HF (from FTIR)	ppmvd	--	1.72
G	Formaldehyde	ppmvd@15%O2	$B*5.9/(20.9-J)$	0.03
H	HCL	ppmvd@15%O2	$D*5.9/(20.9-J)$	0.65
I	HF	ppmvd@15%O2	$F*5.9/(20.9-J)$	2.08
J	Drift/Bias Corrected O_2:	%	--	16.02
K	Drift/Bias Corrected CO_2:	%	--	4.40
L	Meter Volume	acf	--	199.991
M	Barometric Pressure	" Hg	--	28.36
N	Delta H	" H_2O	--	2.0125
O	Reference Temperature	R	--	528
P	Meter Temperature	R	--	544.5
Q	Y_d	--	--	0.992
R	Meter Volume (standard)	dscf	$1/29.92 * C * (D + E/13.6) * F/G * H$	183.286
S	Liquid Collected	grams	--	219
T	Water vapor volume	scf	$0.04716 * S * F/528$	10.328
U	Moisture Content	--	$T/(T + R)$	0.053
V	Molecular weight, dry	lb/lb-mole	$0.44 * K + 0.32 * J + 0.28 * (100 - J - K)$	29.35
W	Molecular weight, wet	lb/lb-mole	$V * (1 - U) + 18 * U$	28.74
X	Static Pressure	" H_2O	--	-0.55
Y	Stack Pressure	" Hg	$M + X/13.6$	28.32
Z	Average Velocity Differential Pressure	" H_2O	square of the average of the square roots	1.0065
AA	Stack Temperature	R	--	1163.458
AB	Pitot Tube Coeficient	--	--	0.84
AC	Stack Velocity	fps	$85.49 * AB * sqrt(Z * AA / Y / W)$	86.14
AD	Stack Area	ft^2	--	16.50
AE	Stack Flow Rate	acfm	$AC * AD * 60$	85,268
AF	Stack Flow Rate	dscfm	$AE * (1 - U) * O * Y / AA / 29.92$	34,673
AG	Specific Molar Volume	SCF/lb-mole	$385.3 * O / 528$	385.3
AH	Formaldehyde Emission Rate	lb/hr	$B * 30.031 * AF * 60 / AG / 10^6$	0.003
AI	HCL Emission Rate	lb/hr	$D * 36.458 * AF * 60 / AG / 10^6$	0.106
AJ	HF Emission Rate	lb/hr	$F * 20.01 * AF * 60 / AG / 10^6$	0.185

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only. Stack gas velocity and moisture content was reported from EPA Method 5, R1.

Appendix C.2.2
CT-5 Data

MONTROSE
AIR QUALITY SERVICES

Gaseous Emissions Test Summary
SUNSHINE GAS CT 5

Test Number	RUN 1-CT5	RUN 2-CT5	RUN 3-CT5	RUN 4-CT5	RUN 5-CT5	RUN 6-CT5	RUN 7-CT5	
Date	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/16/2023	2/16/2023	2/17/2023	Averages
Start Time	8:01	12:21	7:36	12:01	7:36	12:01	7:31	
Stop Time	12:10	16:30	11:46	16:11	11:45	16:10	11:40	
Pre-Test Information:								
Reference Temperature, °F	68	68	68	68	68	68	68	
Diluent Emissions and Stack Flow Rate:								
O_2, % vol. dry	16.08	16.08	16.11	16.15	16.20	16.22	16.17	16.15
CO_2, % vol. dry	4.3	4.3	4.2	4.2	4.2	4.1	4.3	4.2
Stack Flow Rate, dscfm	33,956	33,815	34,017	33,819	34,037	34,235	33,840	33,960
Pollutant Emissions:								
Carbon Monoxide (CO)								
ppm vol. dry	0.39	0.08	0.14	0.12	0.15	0.08	0.26	0.18
ppmc vol. dry @ 15% O2	0.48	0.09	0.17	0.15	0.19	0.10	0.33	0.22
lb/hr	0.06	0.01	0.02	0.02	0.02	0.01	0.04	0.03

EPA 10 EXAMPLE CALCULATION
TEST NUMBER: CT-5- 1-EPA 10

				Run 1
Identifier	Description	Units	Equation	Value
Using Data from Run 1:				
A	CO Pre-Test Zero Bias Response	ppm	--	-0.03
B	CO Post-Test Zero Bias Response	ppm	--	0.02
C	CO Pre-Test Span Bias Response	ppm	--	4.61
D	CO Post-Test Span Bias Response	ppm	--	4.68
E	Avg. Pre-Test Zero Bias Response	ppm	(A+B)/2	-0.01
F	Avg. Post-Test Span Bias Response	ppm	(C+D)/2	4.64
G	CO Span Gas Value	ppm	--	4.68
H	CO Average (raw)	ppm	--	0.38
I	Drift/Bias Corrected CO:	ppm	(H-E)/(F-E)*G	0.39
J	Drift/Bias Corrected O_2:	%	--	16.08
K	Drift/Bias Corrected CO_2:	%	--	4.29
L	Meter Volume	acf	--	189.534
M	Barometric Pressure	" Hg	--	27.98
N	Delta H	" H_2O	--	1.991667
O	Reference Temperature	R	--	528
P	Meter Temperature	R	--	528.6
Q	Y_d	--	--	0.992
R	Meter Volume (standard)	dscf	1/29.92 * C * (D + E/13.6) * F/G * H	176.538
S	Liquid Collected	grams	--	227.8
T	Water vapor volume	scf	0.04716 * S * F/528	10.743
U	Moisture Content	--	T/(T + R)	0.057
V	Molecular weight, dry	lb/lb-mole	0.44 * K + 0.32 * J + 0.28 * (100 - J - K)	29.33
W	Molecular weight, wet	lb/lb-mole	V * (1 - U) + 18 * U	28.68
X	Static Pressure	" H_2O	--	-0.58
Y	Stack Pressure	" Hg	M + X/13.6	27.94
Z	Average Velocity Differential Pressure	" H_2O	square of the average of the square roots	0.9831
AA	Stack Temperature	R	--	1161.458
AB	Pitot Tube Coeficient	--	--	0.84
AC	Stack Velocity	fps	85.49 * AB * sqrt(Z * AA / Y / W)	85.73
AD	Stack Area	ft^2	--	16.50
AE	Stack Flow Rate	acfm	AC * AD * 60	84,863
AF	Stack Flow Rate	dscfm	AE * (1 - U) * O * Y / AA / 29.92	33,956
AG	Specific Molar Volume	SCF/lb-mole	385.3 * O / 528	385.3
AH	CO emission rate	lb/hr	I * 28 * AF * 60 / AG / 10^6	0.06
AI	CO concentration, corrected	ppm@15%O2	I*5.9/(20.9-J)	0.48

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only. Stack gas velocity and moisture content was reported from EPA Method 5, R1.

Montrose
Particulate Matter Test Summary

		1-EPA 5	2-EPA 5	3-EPA 5	4-EPA 5	5-EPA 5	6-EPA 5	7-EPA 5	
Client/Location	DTE Sunshine								Reference Temp (F): 68
Sample Location	CT5								Fuel: Landfill
Test No.		1-EPA 5	2-EPA 5	3-EPA 5	4-EPA 5	5-EPA 5	6-EPA 5	7-EPA 5	Data By: DH/AD
Date		February 14, 2023	February 14, 2023	February 15, 2023	February 15, 2023	February 16, 2023	February 16, 2023	February 17, 2023	Average
Start Time		8:00	12:20	7:35	12:00	7:35	12:00	7:30	*
Stop Time		12:10	16:30	11:45	16:10	11:45	16:10	11:40	*
Bar Press (in Hg)		27.98	27.98	28.15	28.15	28.33	28.33	28.14	*
Test Method		EPA M5	EPA M5	EPA M5	EPA M5	EPA M5	EPA M5	EPA M5	*
Sample Time (Min)		240	240	240	240	240	240	240	*
Sample Train		42 WCS	42 WCS	42 WCS	42 WCS	42 WCS	42 WCS	42 WCS	*
Meter Cal Factor		0.992	0.992	0.992	0.992	0.992	0.992	0.992	*
Pitot Factor		0.84	0.84	0.84	0.84	0.84	0.84	0.84	*
Nozzle Diam (in)		0.257	0.257	0.257	0.257	0.257	0.257	0.257	*
Stack Area (sq ft)		16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.15
Stack O2 (%)		16.08	16.08	16.11	16.15	16.20	16.22	16.17	16.15
Stack CO2 (%)		4.29	4.25	4.23	4.18	4.19	4.14	4.27	4.22
Stack Press (iwg)		-0.58	-0.58	-0.48	-0.48	-0.49	-0.49	-0.49	-0.51
Stack Temp (F)		701.5	701.4	700.2	707.5	709.1	707.1	704.7	704.5
Vel Head (iwg)		0.9831	0.9715	0.9751	0.9692	0.9739	0.9686	0.9665	0.9725
Meter Temp (F)		68.6	76.1	57.9	72.7	61.7	76.0	68.3	68.8
Meter Press (iwg)		1.992	1.971	1.971	1.963	1.971	1.967	1.954	1.970
Meter Vol (acf)		189.534	192.261	190.825	191.308	189.553	190.937	191.228	190.807
Liquid Vol (ml)		227.8	219.8	225.3	218.5	214.5	173.4	213.9	213.3
Std Sample Vol (SCF)		176.538	176.563	182.502	177.880	181.113	177.555	179.211	178.766
Moisture Fraction		0.05736	0.055	0.055	0.055	0.053	0.044	0.053	0.053
Stack Gas Mol Wt		28.68	28.70	28.70	28.69	28.72	28.81	28.73	28.72
Stack Gas Velocity (ft/sec)		85.73	85.19	85.03	85.04	85.00	84.56	84.80	85.05
Isokinetic Ratio (%)		99.2	99.6	102.4	100.4	101.5	99.0	101.0	100.4
Stack Flow Rate (wacfm)		84,863	84,333	84,176	84,188	84,147	83,710	83,942	84,194
Stack Flow Rate (dscfm)		33,956	33,815	34,017	33,819	34,037	34,235	33,840	33,960
Stack Flow Rate (scfm)		36,022	35,800	35,998	35,778	35,938	35,812	35,745	35,871
Heated Filter, mg		0.6	1.1	0.8	0.6	0.0	0.5	0.7	0.6
Probe Wash, mg		0.0	0.0	0.0	0.1	0.0	1.2	0.0	0.2
Total Weight Gain, mg		0.6	1.1	0.8	0.7	0.0	1.7	0.7	0.8
Particulate Emissions									
Grain Loading, gr/dscf		0.00005	0.00010	0.00007	0.00006	0.00000	0.00015	0.00006	0.00007
Grain Loading @ 15% O_2		0.00006	0.00012	0.00008	0.00008	0.00000	0.00019	0.00008	0.00009
Mass Emissions, lb/hr		0.015	0.028	0.020	0.018	0.000	0.043	0.017	0.020

EPA 5 EXAMPLE CALCULATION
TEST NUMBER: CT-5- 1-EPA 5

MONTROSE

Identifier	Description	Units	Equation	Run 1 Value
A	Stack O2	%	--	16.08
B	Stack CO2	%	--	4.29
C	Meter Volume	acf	--	189.534
D	Barometric Pressure	" Hg	--	27.98
E	Delta H	" H_2O	--	2.0
F	Reference Temperature	R	--	528
G	Meter Temperature	R	--	528.6
H	Y_d	--	--	0.992
I	Meter Volume (standard)	dscf	$1/29.92 * C * (D + E/13.6) * F/G * H$	176.538
J	Liquid Collected	grams	--	227.8
K	Water vapor volume	scf	$0.04716 * J * F/528$	10.743
L	Moisture Content	--	$T/(T + R)$	0.057
M	Molecular weight, dry	lb/lb-mole	$0.44 * B + 0.32 * A + 0.28 * (100 - A - B)$	29.33
N	Molecular weight, wet	lb/lb-mole	$M * (1 - L) + 18 * L$	28.68
O	Static Pressure	" H_2O	--	-0.58
P	Stack Pressure	" Hg	$D + O/13.6$	27.94
Q	Average Velocity Differential Pressure	" H_2O	square of the average of the square roots	0.9831
R	Stack Temperature	R	--	1161.458333
S	Pitot Tube Coeficient	--	--	0.84
T	Stack Velocity	fps	$85.49 * S * sqrt(Q * R/ P / N)$	85.73
U	Stack Area	ft^2	--	16.50
V	Stack Flow Rate	acfm	$T * U * 60$	84,863
W	Stack Flow Rate	dscfm	$V * (1 - L) * F * P / R / 29.92$	33,956
X	Sample Time	minutes	--	240.0
Y	Nozzle Diameter	inches	--	0.257
Z	Isokinetic Sampling Rate	%	$14,128*528/F*R*I/X/T/60/(D*13.6+O)/Y^2$	99.2
AA	Particulate Catch	mg	--	0.6
AB	Particulate Catch	lbs	$AA / 454,000$	1.32E-06
AC	Particulate Cate	grains	$AB * 7,000$	0.009
AD	Particulate Emissions	gr/dscf	AC / I	0.000052
AE	Particulate Emissions	gr/dscf @ 15% O_2	$AD * 5.9 / (20.9 - A)$	0.000064
AF	Particulate Emissions	gr/dscf @ 12% CO_2	$AD * 12 / B$	0.000147
AG	Particulate Emissions	lb/hr	$AD * 60 / 7,000 * V$	0.0153

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

TOTAL TRACE METALS LABORATORY SUMMARY
DTE SUNSHINE
CT5 STACK

Test No.:	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	AVERAGES
Date:	2/14/23	2/14/23	2/15/23	2/15/23	2/16/23	2/16/23	2/17/23	
Start Time:	8:00	12:20	7:35	12:00	7:35	12:00	7:30	
Stop Time:	12:10	16:30	12:45	16:10	11:45	16:10	11:40	
Flow Rate, dscfm:	33,749	33,854	33,920	33,742	33,727	33,795	33,652	33,777
Sample Volume, dscf:	175.69	171.57	178.69	174.82	179.16	173.04	174.67	175.38
O_2, % volume dry:	16.08	16.08	16.11	16.15	16.20	16.22	16.17	16.15
CO_2, % volume dry:	4.29	4.25	4.23	4.18	4.19	4.14	4.27	4.22
Moisture, % by volume:	5.09	4.79	4.95	4.97	4.76	4.81	4.91	4.90

Species

	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	AVERAGES
Antimony								
mg/m3	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006
mg/m3 @ 15% O_2	ND< 0.00007	ND< 0.00008	ND< 0.00007	ND< 0.00008	ND< 0.00007	ND< 0.00008	ND< 0.00008	ND< 0.00008
lb/hr	ND< 7.69E-06	ND< 7.90E-06	ND< 7.68E-06	ND< 7.73E-06	ND< 7.54E-06	ND< 7.82E-06	ND< 7.71E-06	ND< 7.73E-06
Arsenic								
mg/m3	ND< 0.00015	ND< 0.00015	ND< 0.00014	ND< 0.00015	ND< 0.00014	ND< 0.00015	ND< 0.00015	ND< 0.00015
mg/m3 @ 15% O_2	ND< 0.00018	ND< 0.00018	ND< 0.00018	ND< 0.00018	ND< 0.00018	ND< 0.00019	ND< 0.00018	ND< 0.00018
lb/hr	ND< 1.84E-05	ND< 1.89E-05	ND< 1.82E-05	ND< 1.85E-05	ND< 1.80E-05	ND< 1.87E-05	ND< 1.84E-05	ND< 1.84E-05
Beryllium								
mg/m3	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002	< 0.00001
mg/m3 @ 15% O_2	ND< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	< 0.00002	< 0.00002
lb/hr	ND< 1.79E-06	ND< 1.84E-06	ND< 1.79E-06	ND< 1.80E-06	ND< 1.75E-06	ND< 1.82E-06	< 2.17E-06	< 1.85E-06
Cadmium								
mg/m3	ND< 0.00001	< 0.00003	< 0.00002	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00001	< 0.00002
mg/m_3 @ 15% O_2	ND< 0.00002	< 0.00003	< 0.00002	ND< 0.00002	ND< 0.00002	ND< 0.00002	< 0.00002	< 0.00002
lb/hr	ND< 1.84E-06	< 3.17E-06	< 2.20E-06	ND< 1.85E-06	ND< 1.80E-06	ND< 1.87E-06	< 1.85E-06	< 2.08E-06
Chromium								
mg/m3	0.00102	0.00136	0.00104	0.00101	0.00100	0.00082	0.00111	0.00105
mg/m3 @ 15% O_2	0.00125	0.00166	0.00128	0.00126	0.00125	0.00103	0.00139	0.00130
lb/hr	1.29E-04	1.72E-04	1.32E-04	1.28E-04	1.26E-04	1.03E-04	1.40E-04	1.33E-04
Cobalt								
mg/m3	ND< 0.00001	ND< 0.00001	< 0.00002	< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00002	< 0.00002
mg/m3 @ 15% O_2	ND< 0.00002	ND< 0.00002	< 0.00002	< 0.00002	ND< 0.00002	ND< 0.00002	< 0.00002	< 0.00002
lb/hr	ND< 1.84E-06	ND< 1.89E-06	< 1.96E-06	< 1.87E-06	ND< 2.00E-06	ND< 1.87E-06	< 2.10E-06	< 1.93E-06
Lead								
mg/m3	0.00008	0.00009	0.00009	0.00008	0.00009	0.00008	0.00009	0.00008
mg/m3 @ 15% O_2	0.00010	0.00011	0.00011	0.00010	0.00011	0.00010	0.00011	0.00011
lb/hr	1.07E-05	1.11E-05	1.11E-05	9.85E-06	1.10E-05	1.02E-05	1.12E-05	1.07E-05
Manganese								
mg/m3	0.00323	0.00057	0.00049	0.00023	0.00031	0.00066	0.00059	0.00087
mg/m3 @ 15% O_2	0.00395	0.00070	0.00060	0.00028	0.00039	0.00084	0.00074	0.00107
lb/hr	4.07E-04	7.27E-05	6.19E-05	2.86E-05	3.94E-05	8.38E-05	7.43E-05	1.10E-04
Mercury								
mg/m3	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
mg/m3 @ 15% O_2	< 0.00010	< 0.00011	< 0.00011	< 0.00011	< 0.00011	< 0.00012	< 0.00011	< 0.00011
lb/hr	< 1.08E-05	< 1.16E-05	< 1.10E-05	< 1.11E-05	< 1.10E-05	< 1.18E-05	< 1.11E-05	< 1.12E-05
Nickel								
mg/m3	0.00036	0.00043	0.00037	0.00039	0.00051	0.00036	0.00040	0.00040
mg/m3 @ 15% O_2	0.00044	0.00052	0.00045	0.00044	0.00064	0.00045	0.00050	0.00050
lb/hr	4.56E-05	5.39E-05	4.68E-05	4.95E-05	6.42E-05	4.54E-05	5.04E-05	5.08E-05
Selenium								
mg/m3	< 0.00175	< 0.00053	< 0.00405	< 0.00013	< 0.00022	< 0.00011	< 0.00025	< 0.00101
mg/m3 @ 15% O_2	< 0.00214	< 0.00065	< 0.00499	< 0.00016	< 0.00028	< 0.00014	< 0.00031	< 0.00124
lb/hr	< 2.20E-04	< 6.76E-05	< 5.14E-04	< 1.61E-05	< 2.79E-05	< 1.40E-05	< 3.13E-05	< 1.27E-04

ND< - species not detected in sample. ND< = BDL

< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL

Data reported without ND< or < = ADL

FRONT HALF TRACE METALS LABORATORY SUMMARY
DTE SUNSHINE
CT5 STACK

Test No.:	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	AVERAGES
Date:	2/14/23	2/14/23	2/15/23	2/15/23	2/16/23	2/16/23	2/17/23	
Start Time:	8:00	12:20	7:35	12:00	7:35	12:00	7:30	
Stop Time:	12:10	16:30	12:45	16:10	11:45	16:10	11:40	
Flow Rate, dscfm:	33,749	33,854	33,920	33,742	33,727	33,795	33,652	33,777
Sample Volume, dscf:	175.69	171.57	178.69	174.82	179.16	173.04	174.67	175.38
O_2, % volume dry:	16.08	16.08	16.11	16.15	16.20	16.22	16.17	16.15
CO_2, % volume dry:	4.29	4.25	4.23	4.18	4.19	4.14	4.27	4.22
Moisture, % by volume:	5.09	4.79	4.95	4.97	4.76	4.81	4.91	4.90
Species								
Antimony F½								
mg/dscm	ND< 0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005	ND< 0.00005
mg/dscm @ 15% O_2	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006
lb/hr	ND< 6.35E-06	ND< 6.52E-06	ND< 6.27E-06	ND< 6.38E-06	ND< 6.22E-06	ND< 6.45E-06	ND< 6.37E-06	ND< 6.36E-06
Arsenic F½								
mg/dscm	ND< 0.00013	ND< 0.00014	ND< 0.00013	ND< 0.00014	ND< 0.00013	ND< 0.00014	ND< 0.00014	ND< 0.00014
mg/dscm @ 15% O_2	ND< 0.00017	ND< 0.00017	ND< 0.00016	ND< 0.00017	ND< 0.00017	ND< 0.00017	ND< 0.00017	ND< 0.00017
lb/hr	ND< 1.70E-05	ND< 1.75E-05	ND< 1.68E-05	ND< 1.71E-05	ND< 1.67E-05	ND< 1.73E-05	ND< 1.71E-05	ND< 1.71E-05
Beryllium F½								
mg/dscm	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	0.00001	< 0.00001
mg/dscm @ 15% O_2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	0.00002	< 0.00001
lb/hr	ND< 1.35E-06	ND< 1.39E-06	ND< 1.33E-06	ND< 1.36E-06	ND< 1.32E-06	ND< 1.37E-06	1.73E-06	< 1.41E-06
Cadmium F½								
mg/dscm	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	0.00001	< 0.00001
mg/dscm @ 15% O_2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	0.00001	< 0.00001
lb/hr	ND< 1.32E-06	ND< 1.35E-06	ND< 1.30E-06	ND< 1.32E-06	ND< 1.29E-06	ND< 1.34E-06	1.33E-06	< 1.32E-06
Chromium F½								
mg/dscm	0.00092	0.00126	0.00091	0.00089	0.00089	0.00072	0.00093	0.00093
mg/dscm @ 15% O_2	0.00112	0.00154	0.00112	0.00111	0.00112	0.00091	0.00116	0.00115
lb/hr	1.16E-04	1.60E-04	1.15E-04	1.13E-04	1.13E-04	9.14E-05	1.17E-04	1.18E-04
Cobalt F½								
mg/dscm	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
mg/dscm @ 15% O_2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
lb/hr	ND< 1.43E-06	ND< 1.47E-06	ND< 1.41E-06	ND< 1.43E-06	ND< 1.40E-06	ND< 1.45E-06	ND< 1.43E-06	ND< 1.43E-06
Lead F½								
mg/dscm	0.00006	0.00006	0.00006	0.00006	0.00007	0.00007	0.00007	0.00006
mg/dscm @ 15% O_2	0.00008	0.00008	0.00007	0.00007	0.00009	0.00009	0.00009	0.00008
lb/hr	8.15E-06	8.19E-06	7.40E-06	7.12E-06	8.66E-06	8.60E-06	8.76E-06	8.12E-06
Manganese F½								
mg/dscm	0.00013	0.00047	0.00014	0.00014	0.00013	0.00053	0.00025	0.00026
mg/dscm @ 15% O_2	0.00016	0.00057	0.00017	0.00017	0.00017	0.00067	0.00031	0.00032
lb/hr	1.65E-05	5.95E-05	1.72E-05	1.78E-05	1.67E-05	6.69E-05	3.13E-05	3.23E-05
Mercury F½								
mg/dscm	ND< 0.00001	ND< 0.00001	ND< 0.00000	ND< 0.00001	ND< 0.00000	ND< 0.00001	ND< 0.00001	ND< 0.00001
mg/dscm @ 15% O_2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
lb/hr	ND< 6.35E-07	ND< 6.52E-07	ND< 6.27E-07	ND< 6.38E-07	ND< 6.22E-07	ND< 6.45E-07	ND< 6.37E-07	ND< 6.36E-07
Nickel F½								
mg/dscm	0.00028	0.00034	0.00028	0.00028	0.00038	0.00028	0.00025	0.00030
mg/dscm @ 15% O_2	0.00035	0.00042	0.00035	0.00035	0.00048	0.00035	0.00031	0.00037
lb/hr	3.58E-05	4.33E-05	3.59E-05	3.57E-05	4.83E-05	3.54E-05	3.16E-05	3.80E-05
Selenium F½								
mg/dscm	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006	ND< 0.00006
mg/dscm @ 15% O_2	ND< 0.00007	ND< 0.00008	ND< 0.00007	ND< 0.00008	ND< 0.00008	ND< 0.00008	ND< 0.00008	ND< 0.00008
lb/hr	ND< 7.72E-06	ND< 7.93E-06	ND< 7.63E-06	ND< 7.75E-06	ND< 7.56E-06	ND< 7.85E-06	ND< 7.74E-06	ND< 7.74E-06

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

BACK HALF TRACE METALS LABORATORY SUMMARY
DTE SUNSHINE
CT5 STACK

Test No.:	1-EPA 29	2-EPA 29	3-EPA 29	4-EPA 29	5-EPA 29	6-EPA 29	7-EPA 29	AVERAGES
Date:	2/14/23	2/14/23	2/15/23	2/15/23	2/16/23	2/16/23	2/17/23	
Start Time:	8:00	12:20	7:35	12:00	7:35	12:00	7:30	
Stop Time:	12:10	16:30	12:45	16:10	11:45	16:10	11:40	
Flow Rate, dscfm:	33,749	33,854	33,920	33,742	33,727	33,795	33,652	33,777
Sample Volume, dscf:	175.69	171.57	178.69	174.82	179.16	173.04	174.67	175.38
O2, % volume dry:	16.08	16.08	16.11	16.15	16.20	16.22	16.17	16.15
CO2, % volume dry:	4.29	4.25	4.23	4.18	4.19	4.14	4.27	4.22
Moisture, % by volume:	5.09	4.79	4.95	4.97	4.76	4.81	4.91	4.90
Species								
Antimony B½								
mg/dscm	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
mg/dscm @ 15% O2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
lb/hr	ND< 1.35E-06	ND< 1.38E-06	ND< 1.41E-06	ND< 1.35E-06	ND< 1.32E-06	ND< 1.37E-06	ND< 1.35E-06	ND< 1.36E-06
Arsenic B½								
mg/dscm	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
mg/dscm @ 15% O2	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001
lb/hr	ND< 1.35E-06	ND< 1.38E-06	ND< 1.41E-06	ND< 1.35E-06	ND< 1.32E-06	ND< 1.37E-06	ND< 1.35E-06	ND< 1.36E-06
Beryllium B½								
mg/dscm	ND< 0.000003	ND< 0.000004	ND< 0.000004	ND< 0.000003	ND< 0.000003	ND< 0.000004	ND< 0.000003	ND< 0.000003
mg/dscm @ 15% O2	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004	ND< 0.000004
lb/hr	ND< 4.37E-07	ND< 4.49E-07	ND< 4.57E-07	ND< 4.39E-07	ND< 4.28E-07	ND< 4.44E-07	ND< 4.38E-07	ND< 4.41E-07
Cadmium B½								
mg/dscm	ND< 0.00000	0.00001	0.00001	ND< 0.00000	ND< 0.00000	ND< 0.00000	ND< 0.00000	< 0.00001
mg/dscm @ 15% O2	ND< 0.00001	0.00002	0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	ND< 0.00001	< 0.00001
lb/hr	ND< 5.20E-07	1.82E-06	8.96E-07	ND< 5.23E-07	ND< 5.10E-07	ND< 5.29E-07	ND< 5.22E-07	< 7.60E-07
Chromium B½								
mg/dscm	0.00011	0.00010	0.00013	0.00012	0.00010	0.00010	0.00019	0.00012
mg/dscm @ 15% O2	0.00013	0.00012	0.00016	0.00015	0.00013	0.00012	0.00023	0.00015
lb/hr	1.35E-05	1.25E-05	1.67E-05	1.53E-05	1.30E-05	1.21E-05	2.36E-05	1.52E-05
Cobalt B½								
mg/dscm	ND< 0.00000	ND< 0.00000	0.00000	0.00000	0.00000	ND< 0.00000	0.00001	< 0.00000
mg/dscm @ 15% O2	ND< 0.00000	ND< 0.00000	0.00001	0.00000	0.00001	ND< 0.00000	0.00001	< 0.00000
lb/hr	ND< 4.16E-07	ND< 4.28E-07	5.52E-07	4.34E-07	6.00E-07	ND< 4.23E-07	6.70E-07	< 5.03E-07
Lead B½								
mg/dscm	0.00002	0.00002	0.00003	0.00002	0.00002	0.00001	0.00002	0.00002
mg/dscm @ 15% O2	0.00002	0.00003	0.00004	0.00003	0.00002	0.00002	0.00002	0.00003
lb/hr	2.51E-06	2.92E-06	3.69E-06	2.73E-06	2.36E-06	1.59E-06	2.49E-06	2.61E-06
Manganese B½								
mg/dscm	0.00310	0.00010	0.00035	0.00009	0.00018	0.00013	0.00034	0.00061
mg/dscm @ 15% O2	0.00379	0.00013	0.00043	0.00011	0.00023	0.00017	0.00043	0.00075
lb/hr	3.91E-04	1.33E-05	4.47E-05	1.08E-05	2.26E-05	1.70E-05	4.30E-05	7.75E-05
Mercury B½								
mg/dscm	< 0.00008	< 0.00009	< 0.00008	< 0.00008	< 0.00008	< 0.00009	< 0.00008	< 0.00008
mg/dscm @ 15% O2	< 0.00010	< 0.00011	< 0.00010	< 0.00010	< 0.00010	< 0.00011	< 0.00010	< 0.00010
lb/hr	< 1.02E-05	< 1.10E-05	< 1.04E-05	< 1.05E-05	< 1.04E-05	< 1.11E-05	< 1.04E-05	< 1.06E-05
Nickel B½								
mg/dscm	0.00008	0.00008	0.00009	0.00011	0.00013	0.00008	0.00015	0.00010
mg/dscm @ 15% O2	0.00010	0.00010	0.00011	0.00014	0.00016	0.00010	0.00019	0.00013
lb/hr	9.85E-06	1.06E-05	1.09E-05	1.37E-05	1.59E-05	1.01E-05	1.88E-05	1.29E-05
Selenium B½								
mg/dscm	0.00168	0.00047	0.00399	0.00007	0.00016	0.00005	0.00019	0.00094
mg/dscm @ 15% O2	0.00206	0.00058	0.00492	0.00008	0.00020	0.00006	0.00023	0.00116
lb/hr	2.13E-04	5.97E-05	5.07E-04	8.32E-06	2.03E-05	6.17E-06	2.36E-05	1.20E-04

ND< - species not detected in sample. ND< = BDL
< - species detected in at least one sample or one sample fraction but not in all samples or fractions. < = DLL
Data reported without ND< or < = ADL

EPA 29 - TRACE METALS EXAMPLE CALCULATION
TEST NUMBER: CT-5-1-EPA 29

Example For Chromium (Cr)

Identifier	Description	Units	Equation	Value
A	Stack O2	%	--	16.08
B	Stack CO2	%	--	4.29
C	Meter Volume	acf	--	182.643
D	Barometric Pressure	" Hg	--	27.98
E	Delta H	$" H_2O$	--	2.0
F	Reference Temperature	R	--	528
G	Meter Temperature	R	--	523.2
H	Y_d	--	--	1.014
I	Meter Volume (standard)	dscf	$1/29.92 * C * (D + E/13.6) * F/G * H$	175.689
J	Liquid Collected	grams	--	199.9
K	Water vapor volume	scf	$0.04716 * J * F/528$	9.427
L	Moisture Content	--	$T/(T + R)$	0.051
M	Molecular weight, dry	lb/lb-mole	$0.44 * B + 0.32 * A + 0.28 * (100 - A - B)$	29.33
N	Molecular weight, wet	lb/lb-mole	$M * (1 - L) + 18 * L$	28.75
O	Static Pressure	$" H_2O$	--	-0.58
P	Stack Pressure	" Hg	$D + O/13.6$	27.94
Q	Average Velocity Differential Pressure	$" H_2O$	square of the average of the square roots	0.9604
R	Stack Temperature	R	--	1161.46
S	Pitot Tube Coeficient	--	--	0.84
T	Stack Velocity	fps	$85.49 * S * sqrt(Q * R/ P / N)$	84.63
U	Stack Area	ft^2	--	16.50
V	Stack Flow Rate	acfm	$T * U * 60$	83,773
W	Stack Flow Rate	dscfm	$V * (1 - L) * F * P / R / 29.92$	33,749
X	Sample Time	minutes	--	240.0
Y	Nozzle Diameter	inches	--	0.254
Z	Isokinetic Sampling Rate	%	$14,128*528/F*R*I/X/T/60/(D*13.6+O)/Y^2$	101.7
AA	Antimony Catch	ug	--	5.09
AB	Antimony Concentration	ug/dscf	AA / I	0.0290
AC	Antimony Concentration	mg/dscm	$AB * 35.31/10^3$	0.001023
AD	Antimony Concentration	mg/dscfm @15%O_2	$AC*5.9/(20.9-A)$	0.001252
AE	Antimony Emissions	lb/hr	$W* 60*AB / 454x10^6$	1.29E-04

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

Gaseous Emissions Test Summary
SUNSHINE GAS CT 5

Test Number	1-EPA320	2-EPA320	3-EPA320	4-EPA320	5-EPA320	6-EPA320	7-EPA320	
Date	2/14/2023	2/14/2023	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/15/2023	Averages
Start Time	9:15	10:20	11:25	12:40	9:05	10:10	11:15	
Stop Time	10:15	11:20	12:34	13:40	10:05	11:10	12:30	

Pre-Test Information:

Reference Temperature, °F	68	68	68	68	68	68	68	

Diluent Emissions and Stack Flow Rate:

O_2, % vol. dry	16.08	16.08	16.08	16.08	16.11	16.11	16.11	16.09
CO_2, % vol. dry	4.29	4.29	4.29	4.25	4.23	4.23	4.23	4.26
Stack Flow Rate, dscfm	33,956	33,956	33,956	33,815	34,017	34,017	34,017	33,962

Pollutant Emissions:

Hydrochloric Acid (HCl)

ppm vol. dry	0.29	0.31	0.35	0.38	0.29	0.33	0.39	0.34
ppmc vol. dry @ 15% O2	0.35	0.38	0.43	0.47	0.35	0.41	0.49	0.41
lb/hr	0.06	0.06	0.07	0.07	0.06	0.06	0.08	0.06

Hydrogen Fluoride (HF)

ppm vol. dry	1.26	1.34	1.40	1.45	1.21	1.52	1.64	1.40
ppmc vol. dry @ 15% O2	1.54	1.64	1.72	1.77	1.49	1.87	2.02	1.72
lb/hr	0.13	0.14	0.15	0.15	0.13	0.16	0.17	0.15

Formaldehyde (CH_2O)

ppm vol. dry	0.096	0.081	0.092	0.077	0.051	0.054	0.040	0.070
ppmc vol. dry @ 15% O2	0.118	0.100	0.112	0.094	0.063	0.066	0.049	0.086
lb/hr	0.015	0.013	0.015	0.012	0.008	0.009	0.006	0.011

EPA 320 EXAMPLE CALCULATION
TEST NUMBER: CT-5- 1-EPA 320

				Run 1
Identifier	**Description**	**Units**	**Equation**	**Value**
Using Data from Run 1:				
A	Formaldehyde (from FTIR)	ppmvw	--	0.09
B	Formaldehyde (from FTIR)	ppmvd	--	0.10
C	HCL (from FTIR)	ppmvw	--	0.27
D	HCL (from FTIR)	ppmvd	--	0.29
E	HF (from FTIR)	ppmvw	--	1.19
F	HF (from FTIR)	ppmvd	--	1.26
G	Formaldehyde	ppmvd@15%O2	B*5.9/(20.9-J)	0.12
H	HCL	ppmvd@15%O2	D*5.9/(20.9-J)	0.35
I	HF	ppmvd@15%O2	F*5.9/(20.9-J)	1.54
J	Drift/Bias Corrected O_2:	%	--	16.08
K	Drift/Bias Corrected CO_2:	%	--	4.29
L	Meter Volume	acf	--	189.534
M	Barometric Pressure	" Hg	--	27.98
N	Delta H	" H_2O	--	1.991667
O	Reference Temperature	R	--	528
P	Meter Temperature	R	--	528.6
Q	Y_d	--	--	0.992
R	Meter Volume (standard)	dscf	1/29.92 * C * (D + E/13.6) * F/G * H	176.538
S	Liquid Collected	grams	--	227.8
T	Water vapor volume	scf	0.04716 * S * F/528	10.743
U	Moisture Content	--	T/(T + R)	0.057
V	Molecular weight, dry	lb/lb-mole	0.44 * K + 0.32 * J + 0.28 * (100 - J - K)	29.33
W	Molecular weight, wet	lb/lb-mole	V * (1 - U) + 18 * U	28.68
X	Static Pressure	" H_2O	--	-0.58
Y	Stack Pressure	" Hg	M + X/13.6	27.94
Z	Average Velocity Differential Pressure	" H_2O	square of the average of the square roots	0.9831
AA	Stack Temperature	R	--	1161.458
AB	Pitot Tube Coeficient	--	--	0.84
AC	Stack Velocity	fps	85.49 * AB * sqrt(Z * AA / Y / W)	85.73
AD	Stack Area	ft^2	--	16.50
AE	Stack Flow Rate	acfm	AC * AD * 60	84,863
AF	Stack Flow Rate	dscfm	AE * (1 - U) * O * Y / AA / 29.92	33,956
AG	Specific Molar Volume	SCF/lb-mole	385.3 * O / 528	385.3
AH	Formaldehyde Emission Rate	lb/hr	B * 30.031 * AF * 60 / AG / 10^6	0.015
AI	HCL Emission Rate	lb/hr	D * 36.458 * AF * 60 / AG / 10^6	0.055
AJ	HF Emission Rate	lb/hr	F * 20.01 * AF * 60 / AG / 10^6	0.133

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only. Stack gas velocity and moisture content was reported from EPA Method 5, R1.

APPENDIX D
QUALITY ASSURANCE INFORMATION

Appendix D.1
Quality Assurance Program Summary

MONTROSE
AIR QUALITY SERVICES

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (Montrose) ASTM D7036-04 certification, Montrose is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Montrose quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: Montrose has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Montrose has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Montrose's QA efforts. The manual is revised upon periodic review and as Montrose adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. Montrose training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Montrose QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of Montrose's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: Montrose maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: Montrose maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Montrose source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Montrose office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, is present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)
- Flame Resistant Clothing (if required)

The following safety measures are followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling Lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

MONTROSE
AIR QUALITY SERVICES

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO$_x$ Analyzer	Daily	NO$_2$ -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	± 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	± 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	± 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	± 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	± 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for ΔH@	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	± 1.5%

Note: Calibration requirements that meet applicable regulatory agency requirements are used.

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AIR QUALITY SERVICES

Appendix D.2
CARB and STAC Certifications

CALIFORNIA AIR RESOURCES BOARD

Gavin Newsom, Governor
Jared Blumenfeld, CalEPA Secretary
Liane M. Randolph, Chair

June 30, 2022

Mr. Matt McCune
Montrose Air Quality Services , LLC
1631 East Saint Andrew Place
Santa Ana, California 92705
mmccune@montrose-env.com

Dear Mr. McCune:

I am pleased to inform you that the California Air Resources Board (CARB) has renewed Montrose Air Quality Services , LLC as an Independent Contractor, by means of the enclosed Executive Order I-22-003. This approval will allow Montrose Air Quality Services , LLC to perform CARB Test Methods 1, 2, 3, 4, 5, 6, 8, 17, 20, and 100 (CO, CO_2, NO_x, O_2, SO_2, THC), Visible Emission Evaluation (VEE), and U.S. Environmental Protection Agency (U.S. EPA) Test Methods 201A, 202, and 205. The approval is valid through June 30, 2024, during which time additional audits of Montrose Air Quality Services , LLC's testing ability may be performed.

If you have questions or need further assistance, please contact Kathryn Gugeler at kathryn.gugeler@arb.ca.gov or Daniel Moore at Daniel.Moore@arb.ca.gov.

Sincerely,

Catherine Dunwoody
Digitally signed by Catherine Dunwoody
Date: 2022.06.30 14:05:25 -07'00'

Catherine Dunwoody, Chief, Monitoring and Laboratory Division

Enclosure

cc: (via email)

        Kathryn M. Gugeler, Monitoring and Laboratory Division

        Daniel Moore, Monitoring and Laboratory Division

MONTROSE AIR QUALITY SERVICES

STAC

STACK TESTING ACCREDITATION COUNCIL

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

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 4th day of February 2022.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 29, 2024

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

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Appendix D.3
Individual QI Certificates

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CERTIFICATE OF COMPLETION

James F Navarrete

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of **ASTM D7036-04 for the following method(s):**

Source Evaluation Society Group 1: *EPA Manual Gas Volume and Flow Measurements and Isokinetic Particulate Sampling Methods*

Certificate Number: 002-2021-1

DATE OF ISSUE: 1/4/21

DATE OF EXPIRATION: 1/4/26

Tate Strickler, VP – Quality Systems

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CERTIFICATE OF COMPLETION

James F Navarrete

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of **ASTM D7036-04** for the following method(s):

Source Evaluation Society Group 3: *EPA Gaseous Pollutants Instrumental Sampling Methods*

Certificate Number: 002-2021-13

DATE OF ISSUE: 2/11/21

DATE OF EXPIRATION: 2/10/26

Tate Strickler, VP – Quality Systems

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CERTIFICATE OF COMPLETION

James F Navarrete

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

Source Evaluation Society Group 4: *EPA Hazardous Metals Measurement Methods*

Certificate Number: 002-2021-12

DATE OF ISSUE: 1/19/21

DATE OF EXPIRATION: 1/18/26

Tate Strickler, VP – Quality Systems

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CERTIFICATE OF COMPLETION

Phil Kauppi

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

EPA Methods 318, 320, 321 & FTIR Protocol

Certificate Number: PRISM-2018-2

DATE OF ISSUE: 11/1/18

DATE OF EXPIRATION: 11/1/23

Tate Strickler, Accreditation Director

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CERTIFICATE OF COMPLETION

Phil Kauppi

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

ASTM Method D6348-12

Certificate Number: PRISM-2021-1

DATE OF ISSUE: 1/27/21

DATE OF EXPIRATION: 1/27/26

[signature]

Tate Strickler, VP – Quality Systems

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APPENDIX E
STATIONARY COMBUSTION TURBINES EMISSIONS
INFORMATION COLLECTION DOCUMENT

STATIONARY COMBUSTION TURBINES
EMISSIONS INFORMATION COLLECTION

Test Procedures, Methods and Reporting Requirements for the Section 114 Request for Stationary Combustion Turbines

This document provides an overview of the required testing, approved sampling and analysis methods, target pollutants and units of measure, and reporting requirements for stationary combustion turbines that are required to provide emission test data to the U.S. Environmental Protection Agency (EPA) under Clean Air Act (CAA) section 114 (42 U.S.C. 7414). The purpose for this testing is to gather data on air pollutant emissions from stationary combustion turbines in this source category to inform the EPA's decision-making process for regulation of these sources. All recipients must complete and submit test results no later than 6 months after receipt of this request. The document is organized as follows:

1.0	**Testing Procedures and Methods**
2.0	**How to Report Data**
3.0	**How to Submit Data**
4.0	**Contact Information for Questions on Test Plan and Reporting**

1.0   Testing Procedures and Methods

The EPA requires emissions and other test data for several pollutants, including specific hazardous air pollutants (HAP), criteria pollutants, and potential surrogate groups. If the EPA is requesting that you complete emissions testing, the cover letter of this CAA section 114 request will include a list of emissions sources selected for testing at your facility. For stationary combustion turbines as specified in Enclosure 1 of your section 114 cover letter, you must perform an emissions test for some combination of pollutants (*i.e.*, simultaneous measurements per group) and diluents according to the test protocols and test methods for air emissions presented in Section 1.1 of this document.

You may have conducted tests for some of these pollutants already. If you have conducted any of the requested groups of tests (*i.e.*, any complete set of tests required to be conducted simultaneously as described in Footnote 2 to Table 1) in the past 5 years, these test data may be submitted for this section 114 request according to the procedures in Section 2 and no additional testing for those pollutants is required, provided the test data you submit is representative of your operations and the previous testing met the testing requirements specified in this document (*e.g.*, test method, sample volume) and contains all required data elements.

Please refer to the Stationary Combustion Turbines website (https://www.epa.gov/stationary-sources-air-pollution/stationary-combustion-turbines-national-emission-standards) for additional

testing information. Please note that you do not have to submit a test plan to the EPA for approval prior to testing; however, we recommend that you prepare a test plan for your own use to assist in the planning of the test program and to verify that you address all of the testing and reporting requirements specified in this document. Please note that you also must report your process and emissions testing data using the EPA's Electronic Reporting Tool (ERT), where applicable. You are directed to the ERT website (https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert) for a more complete and interactive description of the ERT, list of methods currently supported by the ERT, and a link to download the ERT. Some of the emissions test methods listed in this document are supported in the ERT while others are not (*e.g.*, U.S. EPA Method 320).

You must follow all of the procedures as specified in the test methods, including the quality assurance and quality control measures, and document the results in the ERT and in any test report provided to the EPA. For this program, you do not need to obtain audit materials from your state or local agency or from the EPA. You may apply any third-party audit materials you have on hand and document the results, but you are not required to do so.

If Enclosure 1 of your section 114 cover letter is missing any stationary combustion turbines subject to 40 CFR part 63, subpart YYYY, or if any of the stationary combustion turbines included in Enclosure 1 are misclassified (e.g., units are not in the appropriate test group or are not subject to subpart YYYY), please contact Melanie King (see Section 4.0 of this document). If a facility has units that are required to be tested according to your section 114 cover letter but you are unable to respond to an item exactly as requested and you are unable to test another similar unit, please explain why you cannot respond and/or provide any information you believe may be related in a submission to Melanie King (see Section 4.0 of this document) within **35 days** of postmark date of your section 114 cover letter. *NOTE*: The EPA reserves all of its enforcement rights provided by CAA section 113, including the right to bring a claim in the U.S. District Court to enforce the CAA section 114 obligation to comply with all the requests described in this document.

1.1 Stack Test Methods

You must follow the stack test method procedures described in this section for each stationary combustion turbine that you are required to test.

The owner/operator of the stationary combustion turbine must certify that the unit tested was operating in a normal and representative manner during the performance test. The owner/operator must also certify that it operated the air pollution control device (APCD), if any, on the unit tested in accordance with manufacturers' specifications and requirements for proper operation during the emissions testing.

1.1.1 Sample Location

You should collect emissions samples for the identified pollutants downstream of the last relevant APCD (*i.e.*, stack or other point representing the composition of the flue gases at the exit to the atmosphere), unless otherwise indicated. You must use U.S. EPA Method 1 or 1A of Appendix A-1 to 40 CFR Part 60, as applicable, to select the locations and number of traverse

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points for sampling for the tests in this section. See https://www.epa.gov/emc/method-1-samplevelocity-traverses and https://www.epa.gov/emc/method-1a-small-ducts for copies of the methods and guidance information for sampling situations not meeting Method 1 criteria.

1.1.2   Emissions Measurement Methods

Table 1 summarizes the testing required to be performed for each type of stationary combustion turbine. When possible, testing for each of the pollutants listed in Table 1 should be conducted simultaneously for your stationary combustion turbine. However, if simultaneous testing is not possible, then you must at least conduct the tests for formaldehyde and carbon monoxide simultaneously and conduct the tests for filterable particulate matter (PM) and HAP metals testing simultaneously. It is not necessary to test the different pollutants in any particular order.

The primary reason for concurrent testing is to obtain a clear understanding about the overall HAP emissions profile from each emission process point. A second reason is to gather information that will help us evaluate the correlations of emissions of one pollutant to another pollutant, to potentially establish surrogate relationships. For example, the metal HAP tests and PM tests from the APCD or main stack are required to be done at the same time. Where a predictable relationship between metal HAP and PM exists, a surrogate relationship can be established for compliance purposes. ***Tests that are required to be concurrent under this test request that are not done in this manner may be considered invalid and may need to be repeated.***

Table 1 also presents a list of the test methods to use for completing the required tests. For copies of the U.S. EPA test methods and additional information, please refer to the EPA's Emission Measurement Center (EMC) website, https://www.epa.gov/emc.

Report all pollutant emission data as indicated in Table 1. Report the results of your emissions tests according to the directions provided in Section 2.0 of this document.

Unless otherwise specified, each pollutant emissions test should consist of at least seven test runs for the sampling duration and/or volume indicated for each specified unit.

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Table 1. Summary of Test Methods[1]

Pollutant[2]	Method	Alternative Procedure	Target Reported Units of Measure
Formaldehyde (50000)	U.S. EPA Method 320. Minimum sample time of 1 hour per run. Validate according to Section 13.0 of Method 320.[3,4]	ASTM D-6348-12e1[3,4,5]	lb/hr, ppmvd, and ppmvd @ 15% O_2
Carbon monoxide	U.S. EPA Method 10.* Minimum sample time of 1 hour per run.	CEMS[6] (if installed).	lb/hr, ppmvd, and ppmvd @ 15% O_2
Acid gases (Hydrochloric acid and Hydrogen fluoride)	U.S. EPA Method 320. Minimum sample time of 1 hour per run. Validate according to Section 13.0 of Method 320.[3,4]	ASTM D-6348-12e1[3,4,5]	lb/hr, ppmvd, and ppmvd @ 15% O_2
Metals[7] and PM (filterable)	U.S. EPA Method 29.* Collect a minimum volume of 141 dscf (4 dscm) per run. Use inductively coupled (argon) plasma with mass spectrometry (ICAP/MS) for the analytical finish with the exception of mercury analysis, which should be conducted by cold vapor atomic absorption spectroscopy (CVAAS), Analyze front and back half samples separately. Report results for front half and back half analyses for individual metals separately. Determine filterable PM emissions according to section 8.3.1.1. Maintain a filter temperature of 248°F ± 25°F.	You may opt to conduct a separate EPA Method 5* test with a filter temperature of 248°F ± 25°F in lieu of measuring PM with the Method 29 train.	lb/hr and concentration (for metals, mg/dscm and mg/dscm @ 15% O_2 and for PM, gr/dscf and gr/dscf @ 15% O_2)
Gas flow rate	U.S. EPA Method 2*, 2A, 2B, 2C*, 2D, 2F, or 2G, as appropriate, simultaneous with each pollutant test run.		acfm, scfm, and dscfm
O_2/CO_2	U.S. EPA Method 3A* or 3B, as appropriate, simultaneous with each pollutant test run.		percent volume, dry
Moisture	U.S. EPA Method 4* or Method 320, simultaneous with each pollutant test run.	ASTM D-6348-12e1[4]	percent volume

[1] lb/hr = pounds per hour; ppmvd = parts per million by volume, dry basis; % = percent; O_2 = oxygen; dscf = dry standard cubic feet; dscm = dry standard cubic meters; °F = degrees Fahrenheit; mg/dscm = milligrams per dry standard cubic meter; gr/dscf = grains per dry standard cubic foot; acfm = actual cubic feet per minute; scfm = standard cubic feet per minute; dscfm = dry standard cubic feet per minute.

[2] For each turbine, at a minimum, conduct simultaneous sampling for formaldehyde and carbon monoxide and simultaneous sampling for metals and PM

[3] Method detection limit for FTIR measurements is considered to be the Minimum Analyte Uncertainty (MAU) and should be calculated per the method. Alternatively, if the FTIR measurements are performed according to ASTM D6348 the method detection limit is considered to be the Minimum Detection Concentration #3 (MDC#3) and should be calculated per the method.

[4] For analyte spiking, you must use the analyte(s) of interest, the use of surrogate compound(s) is prohibited for the purpose of this section 114 request.

[5] The test plan preparation and implementation in the Annexes to ASTM D6348-03, Sections A1 through A8 are mandatory; (2) For ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be determined for each target analyte (A5.8) and be within 30%; (3) The percent R value for each target analyte must be reported in the test report; and (4) the analytical accuracy of the algorithm (A7.6) must be documented and reported in the test report.

[6] If you provide data from a plant Continuous Emissions Monitoring System (CEMS), your CEMS must be certified according to the appropriate performance specification in 40 CFR part 60 Appendix B, and you must perform the continuing quality assurance/control measures outlined in 40 CFR part 60 Appendix F.

[7] Metals to be tested include antimony (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), and selenium (Se).

* Methods supported by ERT.

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During testing, you should monitor, record and report process data for each test run. For process data that you record during testing, make clear the correlation between emissions measurements and process data (*e.g.*, identify Method 5, run 1 for the associated process data on the process data details tab of the ERT or be sure to enter the process data on the correct row of the Stationary Combustion Turbines Testing Supplement, as applicable; see Section 2.2 for more information on the Stationary Combustion Turbines Testing Supplement).

The process data to be documented during each test run (as applicable) include:

- Fuel type (*e.g.*, natural gas, propane, fuel oil), and heat input (British thermal units per hour (Btu/hr)).
- Actual fuel feed rate during test (based on HHV) and permitted fuel feed rate (based on HHV) (MMBtu/hr). You must explain the procedure that you used (e.g., EPA Method 19) to determine the actual fuel feed rate and provide the calculation in the notes field for this data element in the Microsoft® Excel template that is used to report results to the EPA.
- Turbine load (percent).
- Emission unit operating temperature (°F).
- Operating parameters relevant for the APCD, including, for example, oxidation catalyst inlet temperature.

You must keep the following records for 3 years:

- Documentation that each emissions test was conducted in accordance with the enclosed sampling protocol; and
- The results of each emissions test.

1.2 Ensuring Data Quality of the Source Tests Performed

While in most cases we are not specifying numerical minimum detection levels for the tests to be performed, we have specified the testing conditions and methods required, including minimum test run sample volumes or times when appropriate, which we believe will provide data of a quality sufficient for decision making.

We remind source owners and testers of the CAA section 114(a)(1) requirement to provide information requested for the development of emissions standards using methods that provide data necessary for the decisions. This information includes data of quality sufficient to support those decisions. For the most part, we can identify test methods and procedures that will satisfy those decision-making needs (*e.g.*, minimum sampling times). In other cases, we recognize that the source owner's or tester's selection of test procedures or equipment could bear significantly on the quality of the data. See Appendix A of this document for information regarding guidance for calculating and reporting values measured below method detection levels.

We believe that the CAA is clear that it is incumbent on the source owner/operator and the tester to apply methods and procedures that result in data quality necessary for our decisions, including providing for the lowest possible detection limits considering practical and reasonable limitations. For example, source owners/operators and testers should not automatically choose to

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use low or medium quality equipment for testing (*e.g.*, for cost reasons) if high quality equipment is reasonably available. We will review test reports in light of this expectation and will be particularly mindful of whether the testing procedures applied are representative of the highest reasonably expected capabilities (*e.g.*, comparing reported minimum measurement detection levels between tests and testers).

On completion of your required tests, please provide a complete test report, including appendices. A complete test report includes the following information, at a minimum:

- General identification information for facility including a mailing address; the actual facility address; the owner or operator, responsible official, or an appropriate representative (where applicable) and an email address for this person; and the appropriate Federal Registry System (FRS) number for the facility);
- A brief process description, including a flow diagram clearly showing the turbine and the sampling site;
- A complete unit description, including the unit ID, the stationary combustion turbine subcategory, the appropriate source classification code (SCC), the latitude and longitude of the emission point being tested (decimal degrees to five decimal points), and the maximum permitted process rate (where applicable);
- Emissions control measures in use during the test, including:
  - APCD description and APCD ID (if applicable)
  - A description of any pollution prevention or other HAP emission reduction approaches being implemented during the test program;
- Any process data and control device monitoring data required in this document;
- Sampling site description; description of sampling and analysis procedures and any modifications to standard procedures; quality assurance procedures;
- Description of any deviations from the test methods or other anomalies that occurred with the process or APCD operations during the test;
- Run-by-run emission data in the units of measure specified in Table 1;
- Stack or exhaust gas flow rate (as determined using U.S. EPA Method 2 or alternatives) at the time of and during the emissions test, as appropriate;
- Example calculations of all applicable stack gas parameters, emission rates and analytical results, as applicable;
- Raw field sampling data sheets and notes;
- Laboratory data and analysis reports, including instrument calibrations and raw analytical data;
- Chain-of-custody documentation;
- Explanation of laboratory data qualifiers;
- Quality assurance and quality control activities performed;
- Identification information for the company conducting the performance test, including a contact person and his/her email address; and
- Any other information required by the test method, a relevant standard, or the Administrator.

If we believe that a source owner/operator or tester has failed to meet the requirement of the CAA to provide data of sufficient quality or quantity for our decisions, we can and will request

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additional measurements that require the use of improved testing procedures. The permitted facility representative and the testing company representative must complete the Final Verification form of the ERT certifying that the report is accurate and complete.

2.0   How to Report Data

The method for reporting the results of any testing and monitoring requests depend on the type of tests and the type of methods used to complete the test requirements. This section discusses the requirements for reporting the data.

2.1   *Reporting Stack Test Data within ERT*

For testing conducted using one of the methods listed in Table 2, you must report your data using the EPA's ERT Version 6.0 or newer. ERT is a Microsoft Access® database application available at https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert. If you are not a registered owner of Microsoft Access®, you can install the runtime version of Microsoft Access® from the link on the ERT website in order to run the ERT Application. The ERT must be downloaded onto your computer prior to data entry. A series of Microsoft Excel®-based templates can be used to assist with the upload of the field sampling data. These templates are also available on the ERT website. After completing the data entry into the ERT, you will also need to attach supporting documentation to the Attachments module of the ERT. The supporting documentation should include: complete lab reports, chain of custodies, field data and sample/moisture recovery sheets, CEMS raw data, calibrations of equipment, gases and instruments, QA/QA data, audit sample results (if applicable), and field notes. If a full test report is attached in the ERT, any of the preceding supporting documentation included in the full test report does not need to also be individually attached. The ERT database file should be transmitted to EPA using one of the options described in Section 3.0 of this document.

The list of fields within the ERT with notes explaining whether the field is required or optional can be found on the Stationary Combustion Turbines website (https://www.epa.gov/stationary-sources-air-pollution/stationary-combustion-turbines-national-emission-standards).

Table 2: List of ICR Test Methods Supported by ERT

EPA Test Methods (40 CFR parts 60 and 61; EMC website, https://www.epa.gov/emc)
Methods 1 through 4 (testing locations, velocity, moisture, dilution gases)
Method 3A (O_2 and CO_2)
Method 5 (filterable PM)
Method 10 (Carbon Monoxide)
Method 29 (metals and filterable PM)

*For data entry purposes- if PM is collected by Method 29, the data entry is only performed once by selecting PM as a compound/analyte under Method 29.

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2.2   *Reporting Other Test Data Not Listed in ERT*

At present, of the methods required by this request, only the methods shown in Table 2 are supported by the ERT. For testing you conducted using a method not currently supported by the ERT (including the use of a plant CEMS), you must report the results of this test in the Stationary Combustion Turbines Testing Supplement. The Stationary Combustion Turbines Testing Supplement can be downloaded from the Stationary Combustion Turbines website (https://www.epa.gov/stationary-sources-air-pollution/stationary-combustion-turbines-national-emission-standards).

You must report the results of each test on the appropriately labeled form corresponding to the specific tests requested at your emissions source. If you conducted testing at more than one source at a facility using methods not currently supported by the ERT, follow the instructions in the Stationary Combustion Turbines Testing Supplement, found on the Stationary Combustion Turbines website. For plant CEMS data used in lieu of EPA Method 10, the test run average is calculated as the average of the one-minute averages collected over the duration of the test run.

After completing the Stationary Combustion Turbines Testing Supplement, you must also submit an electronic copy of the emission test report (PDF format preferred) for air sampling. If the complete emission test report is attached to the ERT file containing the associated flow rate measurements, a second copy does not need to be submitted. Both the completed Stationary Combustion Turbines Testing Supplement and the emission test report(s) should be included as attachments to the ERT file for simultaneous tests done using methods supported by the ERT (at a minimum, EPA Methods 1 through 3) and transmitted to the EPA as described in Section 3.0 of this document. For plant CEMS data used in lieu of EPA Method 10, the one-minute averages during each of the seven test runs must be included as an attachment in the ERT and the test run averages reported in the testing supplement.

2.3   *Guidance for Calculating and Reporting Measurements Less Than In-Stack Method Detection Levels for Emissions Data Submitted in Response to CAA Section 114 Requests*

See Appendix A to this document for guidance on calculating and reporting measurements less than detection levels for emissions data collection programs.

3.0   How to Submit Data

As explained in the previous section, where applicable, you must report your data using the ERT. If the ERT does not support a particular pollutant or method, you must report your data using the data reporting tools we provide and include the additional file as an attachment to your ERT submittal. When you are ready to submit your data to the EPA, compile electronic copies of all *nonconfidential** requested files (including files that do not contain any Confidential Business Information (CBI) as well as files that have been redacted to remove CBI) and email the files to the address shown in your section 114 cover letter.

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Please Note: The EPA's procedures for handling CBI are described in Enclosure 4 of the letter accompanying the section 114 request. If you claim that some of the information being submitted is CBI,[1] **DO NOT** use the method described above to submit your CBI. You must create a separate submission containing all files associated with this request (*i.e.*, all information claimed to be CBI and non-CBI portions combined). Clearly mark the materials submitted with the words "Confidential Business Information." Send these files under separate cover *only* to Ms. Tiffany Purifoy at one of the CBI addresses shown in your section 114 cover letter.

For the security of your data, the EPA recommends sending your confidential files to the EPA's CBI Office as described in Section 6 of Enclosure 4 of your section 114 cover letter. If you compile the materials onto a CD, DVD, or USB flash drive to mail to the CBI office, the EPA recommends sending it via *registered* U.S. Mail using *return receipt requested*, Federal Express, or other method for which someone must provide a signature upon receipt.

4.0   Contact Information for Questions on Test Plan and Reporting

For questions on how to report data using the ERT, contact:

Theresa Lowe
U.S. EPA
(919) 541-4786
lowe.theresa@epa.gov

For questions on the test methods, contact:

David Nash
U.S. EPA
(919) 541-9425
nash.david@epa.gov

        OR

Ned Shappley
U.S. EPA
(919) 541-7903
shappley.ned@epa.gov

        OR

Kevin McGinn
U.S. EPA
(919) 541-3796
mcginn.kevin@epa.gov

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[1] Under CAA section 114(c), emissions data is not entitled to confidential treatment.

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For other questions on the required testing in your section 114 cover letter or this document, including emissions sources selected for testing, contact:

Melanie King
U.S. EPA
(919) 541-2469
King.Melanie@epa.gov

Appendix A

Guidance for Calculating and Reporting Measurements Less Than
In-Stack Method Detection Levels for Emissions Data
Submitted in Response to Section 114 Requests

Please identify the status of measured values relative to detection levels in the Stationary Combustion Turbines Testing Supplement or in the ERT using the descriptions below. For each reported emissions value, insert the appropriate flag (BDL, DLL, or ADL) in the *Flag* line of the ERT or in the *Flag* column of the Stationary Combustion Turbines Testing Supplement for the row that corresponds to that run.

- **BDL** (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s);
- **DLL** (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s); or
- **ADL** (above detection level) – all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

When reporting and calculating individual test run data:

- You must use the approach specified in the test method for calculation and determination of the analytical method detection level (MDL). If the method does not specify the approach and calculation of the MDL, you must determine the MDL in accordance with the procedures specified in Section 15 of Method 301 (located in Appendix A of 40 CFR part 63).

- For analytical data reported from the laboratory as above the MDL, include the ADL flag in the *Outlet Detect Flag* column of the Stationary Combustion Turbines Testing Supplement as appropriate or in the *Comments* line in the ERT.

- For analytical data reported from the lab as BDL, "non-detect" or "below detection level":
  - Include a <u>brief</u> description of the procedures used to determine the analytical detection and in-stack detection level:
    - In the *Analytical Comments* column of the Stationary Combustion Turbines Testing Supplement; or
    - In the *Comments* line of Lab Data tab in the Run Data Details in the **ERT**.
  - Describe these procedures completely in the complete test report, including the measurements made, the standards used, and the statistical procedures applied.
  - Calculate the in-stack emissions rate for any analytical result reported as BDL using the relevant MDL, sampling volumes, and other relevant run-specific parameters (such as O_2 or flow rate). The reported value must assume that the analyte is present at the full MDL value.
  - Report the calculated emissions concentration or rate result:

- As a numerical value (*i.e.*, no brackets or < symbol) in the Stationary Combustion Turbines Testing Supplement, columns ***Outlet Mass*** and/or ***Outlet Concentration*** as appropriate; select the appropriate flag in the ***Outlet Detect Flag*** column as appropriate; or
- As a numerical value in the **ERT** with the appropriate flag in the ***Comments*** line.
  - Report as numerical values (*i.e.*, no brackets or < symbol) any analytical data measured above the MDL, including any data between the MDL and a laboratory-specific reporting or quantification level (*i.e.*, flag as ADL).

- For pollutant measurements composed of multiple components or fractions (*e.g.*, mercury and other metals sampling trains), when the result for the value for any component is measured below the MDL:
  - Calculate in-stack emissions rate or concentrations as outlined above for each component or fraction;
  - Sum the measured values and/or calculated values (using the MDL as outlined above) for all of the components or fractions; and
  - Report the sum of all components or fractions:
    - As a numerical value (i.e., no brackets or < symbol) in the Stationary Combustion Turbines Testing Supplement; columns ***Outlet Mass*** and/or ***Outlet Concentration*** as appropriate and select the appropriate flag in the ***Outlet Detect Flag*** column as appropriate; or
    - As a numerical value in the **ERT** with the appropriate flag in the ***Comments*** line.
    - If all components or fractions are BDL, the appropriate flag is BDL. If the components or fractions are a mix of BDL, DLL, and ADL, then the appropriate flag is DLL. [Note: If all components or fractions are above the MDL, the appropriate flag is ADL.]
  - In addition to reporting the sum of the components or fractions, report the individual component or fraction values for each run if the Stationary Combustion Turbines Testing Supplement or ERT format allows. If the Stationary Combustion Turbines Testing Supplement or ERT format does not allow reporting of the individual components or fractions (*i.e.*, the format allows reporting only a single sum value):
    - For the Stationary Combustion Turbines Testing Supplement, for each applicable run, report the appropriate flag in the ***Outlet Detect Flag*** column and report the values for the measured or MDL value for each component or fraction as used in the calculations (*e.g.*, 0.036, [<0.069], 1.239, [<0.945] for a four-fraction sample) in the ***Analytical Comments*** column; or
    - For the **ERT**, next to the sum reported as above, report on the ***Comments*** line the appropriate flag and the measured or MDL value for each component or fraction as used in the calculations (*e.g.*, 0.036, [<0.069], 1.239, [<0.945] for a four-fraction sample).

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- For measurements conducted using the instrumental test methods (*e.g.*, Methods 3A):
    - o Record gaseous concentration values <u>as measured</u> including negative values and flag as ADL; do not report as BDL.
    - o Calculate and report in-stack emissions rates using these measured values.
    - o Include relevant information relative to calibration gas values or other technical qualifiers for measured values in the **Comments** line in the **ERT** or ***Method Comments*** line column of the Stationary Combustion Turbines Testing Supplement.

Enclosure 1

Table 1. Known Facilities with Stationary Combustion Turbines Subject to 40 CFR part 63, subpart YYYY

Facility Name[1]	Street Address	City	State
Sunshine Gas Producers	14747 San Fernando Rd	Sylmar	CA

1. Information should be provided for the listed facilities as well as any additional facilities wholly owned by Sunshine Gas Producers that are not included on this list and have units subject to 40 CFR part 63, subpart YYYY. If there is a facility on this list not wholly owned by Sunshine Gas Producers, please indicate that in the response letter. A completed survey is not required for that facility.

Table 2. Stationary Combustion Turbines Selected for Emissions Testing

Test Group	No. of Tests to Be Performed[1]	Fuel(s) To Be Used During Testing	General Unit Description	Facility Name	Select from These Unit ID(s)[2]
A	2	Landfill Gas	Landfill gas-fired stationary combustion turbines	Sunshine Gas Producers	Turbine Engine #1 Turbine Engine #2 Turbine Engine #3 Turbine Engine #4 Turbine Engine #5

1. Tests run on units that fire only a single fuel are required to be performed on different units within the same test group. If you are required to test using two different fuels, you may elect to conduct each test on a different unit from the unit IDs provided or you may elect to conduct tests on the same unit(s) using multiple fuels.
2. If this table is missing any stationary combustion turbines subject to 40 CFR part 63, subpart YYYY, or if any of the stationary combustion turbines included in this table are misclassified (e.g., units are not in the appropriate test group or are not subject to subpart YYYY), please contact Melanie King (see section 114 cover letter).

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If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. Pete San Juan
Title: Field Project Manager
Region: West
Email: PSanjuan@montrose-env.com
Phone: (714) 279-6777

Name: Mr. Matt McCune
Title: Regional Vice President
Region: West
Email: MMccune@montrose-env.com
Phone: (714) 279-6777

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