MONTROSE AIR QUALITY SERVICES

TEST REPORT FOR 2021 EMISSIONS PERFORMANCE TESTING AT THE DESERT VIEW POWER, MECCA PLANT

Prepared For:

Desert View Power
62-300 Gene Welmas Drive
Mecca, California 92254-0758

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 282-8240

Dave Wonderly

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STAC STACK TESTING ACCREDITATION COUNCIL

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REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature: _____ Date: 5/20/2021

Name: Dave Wonderly Title: Client Project Manager

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

Signature: _____ Date: 5/20/2021

Name: Michael Chowsanitphon Title: Reporting Manager

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1.0 INTRODUCTION

Montrose Air Quality Services, LLC (MAQS) was contracted by Desert View Power, to conduct performance emissions testing at the Desert View Power Project located in Mecca, California. Testing was conducted on March 4, 5, 8, 10, 11 and 12, 2021. Testing was performed in accordance with the test plan (MAQS Document Number: W002AS-006514-PP-276) submitted to Desert View Power on January 22, 2021. The MAQS test team consisted of Rik Dupont, Takuma Terakado, Gerrard Van der Jagt, Trevor Tilmann, Shannon Scrugham, John Peterson and Patrick Whitman. Takuma Terakado, Gerrard Van der Jagt, Trevor Tilmann, and John Peterson were the on-site Qualified Individual for MAQS. Kevin Lawrence of Desert View Power, coordinated plant operations and data retrieval during the test program. The South Coast Air Quality Management District (SCAQMD) was notified of the test date but did not send a representative.

The emissions tests included measurements on Unit 1 and Unit 2 for hydrogen chloride (HCl), mercury (Hg), particulate (PM), sulfur dioxide (SO_2), oxides of nitrogen (NO_x), carbon monoxide (CO), and hydrocarbons (VOC). Exhaust flow rate and moisture measurements were performed in conjunction with the testing.

The Desert View Power Facility met all emissions limits (except for mercury emissions) required by the U.S. Environmental Protection Agency Part 71 Operating Permit No. CB-ROP 05-01 NSR 4-4-11; SE 87-01 including amendments through September, 2020: and 40 CFR 60, Appendix F.

HCL surrogate operating limits were established as required.

Tables 1-1 and 1-2 summarize the results of the emissions tests for Unit 1 and Unit 2.

TABLE 1-1
SUMMARY OF EMISSIONS RESULTS UNIT 1
DESERT VIEW POWER
MARCH, 2021

Parameter/Units	Average Emission Results	Permit Limit	Comment
Hydrochloric Acid			
ppmv	12.47		
lb/hr (as HCl)	6.68		
lb/MMBtu	0.019	0.022	Pass
HCL Surrogate Operating Limit (SO_2 ppmc)	19.3		
Total Solid Particulate			
gr/dscf	0.0005	--	
gr/dscf @ 12% CO_2	0.0005	0.006	Pass
lb/hr (PM_{10})	0.40	3.9	Pass
lb/MMBtu	0.0012	0.10	
Sulfur Dioxide			
ppm @ 3% O_2	10.06	27	Pass
lb/hr	6.35	12	Pass
NO_x			
ppm at 3% O_2	54.65	94	Pass
lb/hr	24.77	30	Pass
CO			
ppm @ 3% O_2	0.17	231	Pass
lb/hr	0.05	13	Pass
Hydrocarbons			
ppm @ 3% O_2	6.84		
lb/hr	1.09	5.9	Pass
Mercury			
µg/dscm	10.767		
lb/hr (as Hg)	0.0037		
lb/MMBtu	1.11×10^{-5}	5.7×10^{-6}	Fail

Note: HCL Operating limit is the highest hourly average of SO_2 ppmc recorded during the tests. NO_x, CO, and SO_2 compliance results are from the RATA Runs 1, 2 and 3. Hydrocarbons are total non-methane hydrocarbons reported as methane. The EPA factor of 1.086 for SCAQMD Method 25.3 was used. The biomass default factor of 9,240 was used.

TABLE 1-2
SUMMARY OF EMISSIONS RESULTS UNIT 2
DESERT VIEW POWER
MARCH, 2021

Parameter/Units	Average Emission Results	Permit Limit	Comment
Hydrochloric Acid			
ppmv	11.20		
lb/hr (as HCl)	6.79		
lb/MMBtu	0.017	0.022	Pass
HCL Surrogate Operating Limit (SO_2 ppmc)	16.4		
Total Solid Particulate			
gr/dscf	0.0004	--	
gr/dscf @ 12% CO_2	0.0004	0.006	Pass
lb/hr	0.31	3.9	Pass
lb/MMBtu	0.0009	0.10	
Sulfur Dioxide			
ppm @ 3% O_2	12.94	27	Pass
lb/hr	8.15	12	Pass
NO_x			
ppm at 3% O_2	57.88	94	Pass
lb/hr	26.20	30	Pass
CO			
ppm @ 3% O_2	0.20	231	Pass
lb/hr	0.05	13	Pass
Hydrocarbons			
ppm @ 3% O_2	7.10		
lb/hr	1.12	5.9	Pass
Mercury			
µg/dscm	19.653		
lb/hr (as Hg)	0.0065		
lb/MMBtu	2.11×10^{-5}	5.7×10^{-6}	Fail

Note: HCL Operating limit is the highest hourly average of SO_2 recorded ppmc during the tests. NO_x, CO, and SO_2 compliance results are from the RATA Runs 1, 2 and 3. Hydrocarbons are total non-methane hydrocarbons reported as methane. The EPA factor of 1.086 for SCAQMD Method 25.3 was used.
The biomass default factor or 9,240 was used.

2.0 UNIT DESCRIPTION

The Desert View Power plant consists of two 297 MMBtu/hr, circulating bed, biomass-fired boilers. The combined units are designed to produce 47 MW of net electrical output. Each unit is equipped with the following pollution control systems:

- An ammonia injection system for control of NO_x emissions;
- Cyclonic mixing of injected ammonia with flue gas to provide for a minimum amount of ammonia slip (emission);
- A limestone injection system to limit emissions of SO_2;
- A reverse air baghouse to control opacity and emissions of sulfates and particulate to very low levels;

The plant CEMS system for each unit includes measurements of NO_x, CO, O_2, O_2 wet, SO_2, CO_2, flow and opacity. It is an extractive system with a heated line extending from the probe to the CEMS unit. Table 2-1 presents the current CEMS configuration.

TABLE 2-1
CONTINUOUS EMISSION MONITOR SYSTEM
UNITS 1 AND 2
DESERT VIEW POWER

Species	Manufacturer	Unit 1, Model/Serial Number	Unit 2, Model/Serial Number	Range
NO_x	CAI	ZRE/A3F4992T	ZRE/A3F4993T	100 and 500 ppm
CO	CAI	ZRE/A3F4992T	ZRE/A3F4993T	100 and 500 ppm
O_2 Dry	CAI	ZRE/A3F4992T	ZRE/A3F4993T	25%
SO_2	CAI	ZRE/A3F4992T	ZRE/A3F4993T	50 and 500 ppm
CO_2	CAI	ZRE/A3F4992T	ZRE/A3F4993T	20%
O_2 Wet	Thermox	WDG	WDG	25%
Flow	Dietrick Standard/Rosemont	0260938	--	Msdcfh
Opacity	Monitor Labs	Lighthawk 560	Lighthawk 560	100%
NO_2 Convertor	CAI	ZDL04001	ZDL04001	

2.1 TEST CONDITIONS

The tests were conducted at or near maximum steady state unit load conditions. Limestone injection rate, fuel combustion rate, ammonia injection rate, ash handling operations, excess air level, combustion air distribution, and combustor temperature were set to maintain stable unit operation. Pertinent operating conditions were recorded by Desert View Power personnel during the tests as presented in Table 2-2.

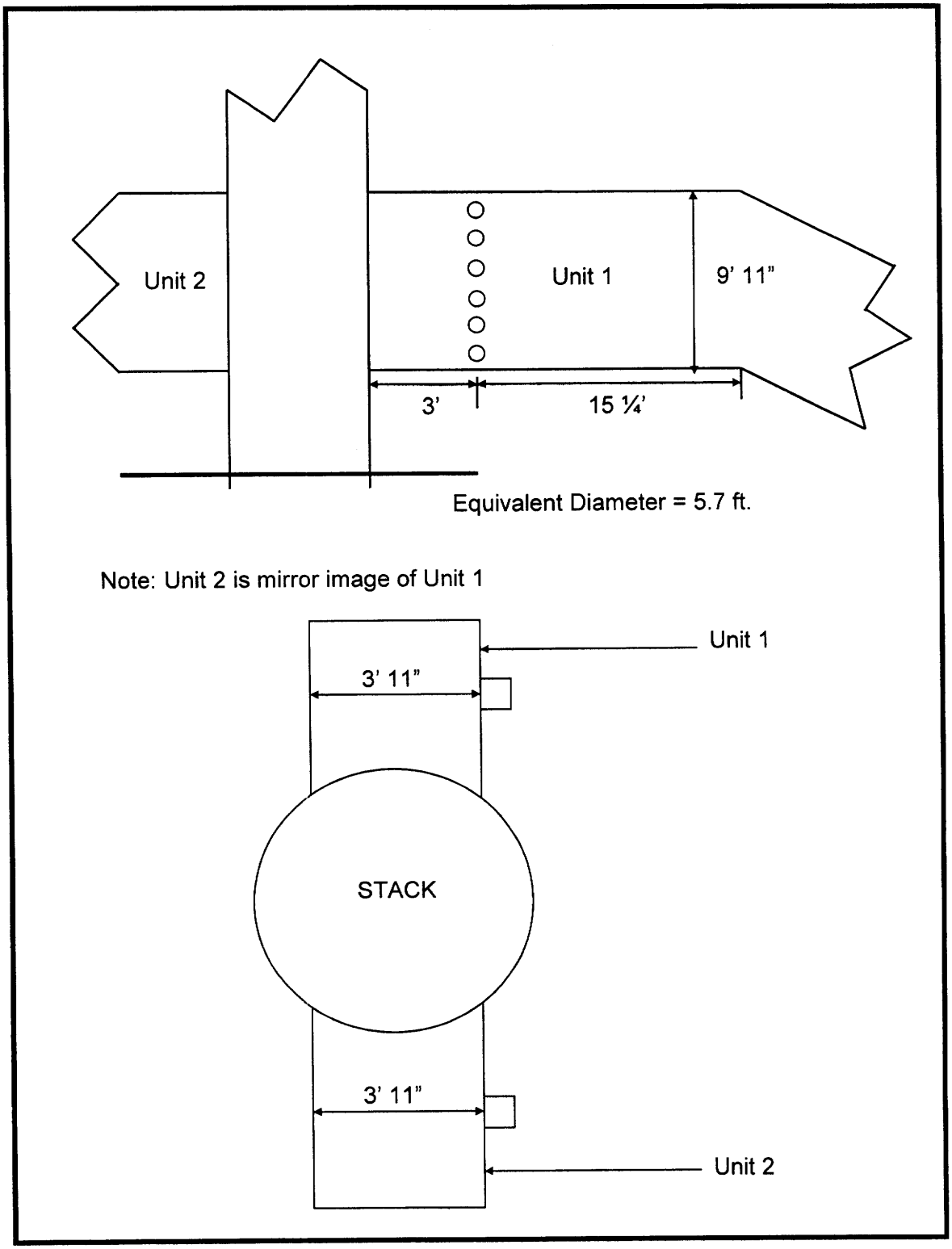
TABLE 2-2
AVERAGE DAILY UNIT DATA
DESERT VIEW POWER
MARCH, 2021

Date	Steam Prod. Klb/hr Unit 1	Steam Prod. Klb/hr Unit 2	Mega Watts Total
3/4/2021	202.5	199.8	47.9
3/5/2021	197.6	204.1	48.1
3/8/2021	191.9	201.2	47.0
3/10//2021	198.3	203.8	47.8
3/11//2021	198.5	199.2	47.3
3/12//2021	198.8	196.7	46.8

2.2 SAMPLE LOCATIONS

Samples were collected at the stack breaching ducts to the stack. Desert View Power previously conducted three dimensional flow testing and stratification testing on the baghouse exhaust ducts on each unit. This testing was performed in accordance to SCAQMD Chapter X, Section 1 and 13 and was presented in the report titled "Stack Gas Stratification and Absence of Flow Disturbance Testing at Desert View Power" (R106E622.T) submitted to SCAQMD in October of 1994. A copy of the sample location certification report can be found in the test plan in Appendix E of this report. The sample locations meet the requirements. All testing for both Unit 1 and 2 was conducted at the sample location presented in Figure 2-1.

FIGURE 2-1
SCHEMATIC OF THE DESERT VIEW POWER, SAMPLE LOCATION



3.0 TEST DESCRIPTIONS

The test procedures that were used are listed in Table 3-1. Tables 3-2 and 3-3 present the test schedule.

TABLE 3-1
TEST MATRIX PER UNIT
DESERT VIEW POWER

Parameter	No. of Tests	Limits	Measurement Principle	Reference Method	Duration per Test
NO_x	9(1)	30.0 lb/hr or 94 ppm @ 3% O_2(2)	Chemiluminescence	EPA 7E	60 Minutes
O_2/CO_2	9(1)		Non-Dispersive Infrared	EPA 3A	60 Minutes
CO	9(1)	13.0 lb/hr or 231 ppm, dry, @ to 3% O_2(2)	Non-Dispersive Infrared	EPA 10	60 Minutes
SO_2	9(1)	12.0 lb/hr or 27 ppm, dry, @ to 3% O_2(2)	Barium Thorin Titration	EPA 6	60 Minutes
PM	3	3.9 lb/hr or 0.006 gr/dscf @ 12% CO_2(2)(3), 0.10 lb/MMBtu	Gravimetric	EPA 5	120 Minutes
Hydrocarbons	2	5.9 lb/hr	GC/FID	SCAQMD 25.3	60 Minute Composite
HCL	3	0.022 lb per MMBtu	FTIR	EPA 321	120 Minutes,
Mercury	3	5.7E-06 lb per MMBtu		EPA 30B	60 Minutes
Fuel Sampling	Daily			ASTM D6323	Composite hourly samples
Fuel Btu/lb	Daily			ASTM E711	Composite hourly samples
Fuel Moisture	Daily			ASTM D3173	Composite hourly samples
Fuel Chlorine	Daily			ASTM E776	Composite hourly samples
Stack Gas Flow Rate	--		S-Type Pitot Traverse	EPA 2	--
Moisture	--		Condensation/Gravimetric	EPA 4	--

(1) Includes compliance and RATA test runs.
(2) The more stringent of the 2 limits apply
(3) All PM as measured by EPA Method 5 will be considered to be PM_{10}

TABLE 3-2
TEST SCHEDULE UNIT 1
DESERT VIEW POWER

Test Number	Date	Time	Test Parameter
1-HCL-U1	3/5/2021	7:20	HCL
2-HCL-U1	3/5/2021	9:42	HCL
3-HCL-U1	3/5/2021	12:10	HCL
1-NO_x, CO, SO_2-U1	3/10/2021	7:46	NO_x, CO, SO_2
2-NO_x, CO, SO_2-U1	3/10/2021	9:08	NO_x, CO, SO_2
3-NO_x, CO, SO_2-U1	3/10/2021	10:34	NO_x, CO, SO_2
1A&B-VOC-U1	3/10/2021	10:34	Hydrocarbon
1-HG-U1	3/11/2021	15:25	HG
2-HG-U1	3/11/2021	16:50	HG
3-HG-U1	3/11/2021	18:10	HG
1-PM-U1	3/12/2021	8:40	PM
2-PM-U1	3/12/2021	11:20	PM
3-PM-U1	3/12/2021	13:52	PM

TABLE 3-3
TEST SCHEDULE UNIT 2
DESERT VIEW POWER

Test Number	Date	Time	Test Parameter
1-HCL-U2	3/4/2021	7:25	HCL
1-PM-U2	3/4/2021	9:55	PM
2-HCL-U2	3/4/2021	12:25	HCL
2-PM-U2	3/4/2021	7:25	PM
3-HCL-U2	3/4/2021	9:55	HCL
3-PM-U2	3/4/2021	12:25	PM
1-NO_x, CO, SO_2-U2	3/8/2021	8:20	NO_x, CO, SO_2
2-NO_x, CO, SO_2-U2	3/8/2021	9:35	NO_x, CO, SO_2
1A&B-VOC-U2	3/8/2021	9:35	Hydrocarbon
3-NO_x, CO, SO_2-U2	3/8/2021	10:52	NO_x, CO, SO_2
1-HG-U2	3/11/2021	10:20	HG
2-HG-U2	3/11/2021	11:40	HG
3-HG-U2	3/11/2021	13:15	HG

3.1 NO_X, O_2, CO_2, AND CO

NO_x, O_2, CO_2 and CO were measured according to EPA reference methods using MAQS' continuous emissions monitoring system (CEM). NO_x, O_2, CO_2 and CO concentrations were determined using MAQS' mobile emission measurement laboratory. The laboratory is housed in a truck outfitted to provide a clean, quiet, environmentally controlled base for the testing operations. The laboratory has lighting, electrical distribution, air conditioning and heating to support the test instruments and provide for optimal test performance.

Concentrations of these gaseous species were measured using an extractive sampling system consisting of a stainless steel probe to minimize reactions, a heat traced Teflon sample line connected to a thermo-electrically cooled sample dryer. Following the dryer, the sample is drawn into a Teflon lined pump where it is pressurized and then filtered for delivery to the gas analysis portion of the system. Gaseous samples were collected at a single point. Three 60-minute compliance tests were performed.

NO_x concentration was determined using a California Analytical Model 600. The analyzer full scale range was 100 ppm. The analyzer is equipped with a NO_2 - NO converter for the determination of total nitrogen oxides without interference from other nitrogen containing compounds.

Oxygen concentration was determined using an AMI electro-chemical cell analyzer (model #201). The analyzer full scale range was 20%. The cell contains an electrolytic fluid that reacts with oxygen to generate an electrical signal proportional to the concentration.

CO_2 was measured using a non-dispersive infrared analyzer manufactured by Horiba (model #PIR 2000). The analyzer full scale range was 20%.

CO was measured using a non-dispersive infrared/gas filter correlation analyzer manufactured by TECO (model 48i). The analyzer full scale range was 10 ppm.

The analyzers and sampling system were subjected to a variety of calibration and quality assurance procedures including leak checks, linearity and calibration error determinations before sampling, and system bias and drift determinations as part of each test run. Data are corrected for any observed bias or drift in accordance with the reference methods.

3.2 HYDROGEN CHLORIDE MEASUREMENTS

Triplicate, 60-minute hydrogen chloride (HCl), measurements were performed using EPA Method 321. In this method HCl concentrations are measured by Fourier Transform Infrared (FTIR) Spectroscopy. Concurrent stack flow measurements using EPA Methods 1-4 were performed to calculate mass emissions of HCL. The sampling train consists of:

- A heated SS probe heated to 375°F
- A borosilicate, out-of-stack filter in a SS holder heated to 375°F
- Heated Teflon transfer line heated to 375°F
- Heated diaphragm pump heated to 375°F
- MKS 2030 FTIR analyzer, maintained at 375°F

Quality assurance samples collected in the field are:

- HCl analyte spiking pre and post each test run
- Calibration Transfer Standard (CTS) system purge pre & post each test run
- N2 (zero gas) system purge to determine system bias

3.3 PARTICULATE

EPA method 5 was used to measure the particulate emissions from both the Desert View Power, units. The sampling system consists of a nozzle, glass probe, 250°F heated filter, two impingers containing DI water, an empty impinger, and a fourth impinger containing silica gel.

The analysis for particulate is summarized in Table 3-4. Gravimetric analysis was performed on the probe/nozzle wash and filter according to EPA and SCAQMD procedures.

TABLE 3-4
EPA METHOD 5 ANALYSES

Sample Component	Analysis Procedure
Probe and Nozzle (Front 1/2)	Evaporation/gravimetric
Heated Filter (83 mm)	Dry/gravimetric

3.4 SULFUR DIOXIDE

Sulfur dioxide was measured according to EPA Method 6. Three runs were used to demonstrate compliance. A barium thorin titration of the hydrogen peroxide impinger samples yielded SO_2 concentrations. The sample system consisted of heated glass probe and filter connected by Teflon tubing to the glass sample train consisting of a series of hydrogen peroxide filled impingers. Prior to the titrimetric analysis, all SO_x samples were passed through an ion exchange resin. This removes interferences associated with ammonium (NH_4).

3.5 HYDROCARBONS

Samples for hydrocarbon analysis were collected in clean 6-liter Summa canisters and mini water impingers and analyzed according to SCAQMD 25.3. The samples were analyzed by Enthalpy Analytical, in Orange, California using TCA/FID.

3.6 MERCURY

Triplicate one-hour mercury test runs were conducted at the stack location using EPA Method 30B. Each test run included two pair of concurrent samples – two sets of sorbent tubes co-located at the tip of the sampling probe. One set consisted of a "spiked" sorbent trap paired with an "un-spiked" sorbent trap. The paired "spiked" and "un-spiked" sorbent traps were used for quality assurance purposes.

Method 30B collects vapor phase mercury on carbon sorbent traps. Testing for total mercury uses a two-stage sorbent trap, each stage analyzed separately to confirm that there was no significant "breakthrough" or sample loss. Each of the two sets of traps were placed at the tip of a probe, both tube sets and probes in a single air-cooled probe assembly to maintain a temperature of approximately 250-300°F. The temperature was maintained to ensure mercury adsorption and prevent mercury breakthrough. Samples were drawn through the paired probes using an Apex mercury control/meter box. The trap sets were arranged in parallel and connected to two parallel moisture removal systems and two separate dry gas meters contained in the control box.

Each sorbent trap set was leak-checked before and after each test run, and the sampling volume and associated parameters were recorded for each trap set.

The following quality assurance requirements were used for a test run to be considered valid:

- Results agreement for each pair of traps: ≤ 10% Relative Deviation,
- Sorbent trap section 2 breakthrough; mercury mass found in Section 2 ≤ 10% of mercury mass in Section 1,
- Field recovery test: Recovery between 85% and 115% for elemental mercury spike (based on paired samples, one of which is spiked with a known level of mercury).

3.7 VELOCITY AND MOISTURE

Stack gas velocity and moisture content were determined by EPA Methods 2 and 4 during the particulate testing. Velocity traverses were performed during each set of compliance tests (NO_x, CO, SO_2 and hydrocarbons) and RATA test runs.

3.8 FUEL ANALYSIS

Daily fuel samples were collected by Desert View Power personnel. Hourly samples were taken during each HCl test run and composited by the lab prior to analysis. Sampling was consistent with ASTM D6323 sample collection methodology. Desert View power sent the samples out to be analyzed for higher heating value for heat rate calculations, for Btu/lb for calculating the HCL emissions in lb/MMBtu using ASTM E711, for moisture content using ASTM D3173 and for chlorine content using ASTM E776. Copies of the analysis were not available at the time of production of this report.

4.0 TEST RESULTS

This section presents the results of the performance tests conducted at Desert View Power, during March of 2021. Test results are presented in the following sections:

4.1 Unit 1 Performance Test Results
4.2 Unit 2 Performance Test Results
4.3 Fuel Analysis Results

All supporting data sheets, CEM data, instrument strip charts, laboratory data, chain of custody records, and quality assurance data are included in Appendix A. Plant data are contained in Appendix B. Emissions and Load calculations are presented in Appendix C. Quality assurance information is contained in Appendix D. The test plan that was submitted is contained in Appendix E.

4.1 UNIT 1 PERFORMANCE TEST RESULTS

The results of the HCL testing are presented in Table 4-1. HCL emissions for Unit 1 were 0.019 lb/MMBtu. This is below the permit limit of 0.022 lb/MMBtu. The results of the total solid particulate testing are presented in Table 4-2. Total solid particulate emissions for Unit 1 were 0.395 lb/hr. This is below the permit limit of 3.9 lb/hr. Gaseous emissions results are presented in Tables 4-3, and 4-4. NO_x, CO, SO_2 and hydrocarbon emissions results were below established permit limits. Results from the hydrocarbon tests can be found in Appendix C.1.5.1 and C.1.5.2. The results of the Mercury testing are presented in Table 4-5. Mercury emissions for Unit 1 were 1.11E-05 lb/MMBtu. This is above the permit limit of 5.70E-06 lb/MMBtu.

TABLE 4-1
HYDROCHLORIC ACID TEST RESULTS UNIT 1
DESERT VIEW POWER
MARCH 5, 2021

Parameter/Units	1-HCl	2-HCl	3-HCl	Average	Limit
Date	3/5/2021	3/5/2021	3/5/2021		
Start Time	7:20	9:42	12:10		
Stop Time	9:20	11:42	14:10		
Reference Temperature, °F	68	68	68		
Diluent Emissions and Stack Flow Rate					
Moisture Fraction, %	13.1	12.8	14.0	13.3	
O_2, % vol. dry	9.01	9.00	8.92	8.98	
CO_2, % vol. Dry	11.61	11.66	11.72	11.66	
Stack Flow Rate (dscfm)	92,396	93,518	92,706	92,873	
Fuel F_d Factor, dscf/MMBtu @ 68°F	9,240	9,240	9,240		
Fuel F_d Factor, dscf/MMBtu @ 60°F	9,100	9,100	9,100		
HCl Emissions					
ppmvw	12.16	10.28	10.07	10.84	
ppmvd	14.00	11.75	11.66	12.47	
lb/hr (as HCl)	7.5	6.3	6.2	6.68	
lb/MMBtu	0.022	0.018	0.018	0.019	**0.022**

TABLE 4-2
PARTICULATE EMISSIONS PERFORMANCE TEST UNIT 1
DESERT VIEW POWER
MARCH 12, 2021

Parameter/Units	1-PM-U1	2-PM-U1	3-PM-U1	Average
Date	3/12/2021	3/12/2021	3/12/2021	
Time	840/1100	1120/1336	1352/1602	
O_2, %	9.12	9.31	9.03	9.15
CO_2, %	11.60	11.38	11.70	11.56
H_2O, %	12.7	13.1	14.2	13.4
Stack Temperature, °F	363.0	362.9	362.6	362.81
Gas Flow				
wacfm	162,912	161,000	162,466	162,126
dscfm	92,202	90,718	90,405	91,108
Isokinetic Ratio, %	99.8	101.3	102.9	101.3
Total Solid Particulate				
Grain Loading, gr/dscf	0.00021	0.00052	0.00079	0.00051
Grain Loading @ 12% CO_2	0.00022	0.00055	0.00081	0.00053
lb/hr	0.165	0.407	0.614	0.395
F-Factor, dscf/MMBtu	9,240	9,240	9,240	9,240
Emission Rate, lb/MMBtu	0.0005	0.0012	0.0018	0.0012

TABLE 4-3
NO_X, CO, SO_X EMISSIONS PERFORMANCE TESTS UNIT 1
DESERT VIEW POWER
MARCH 10, 2021

Parameter/Units	1-U1	2-U1	3-U1	Average
Date	3/10/2021	3/10/2021	3/10/2021	
Time	7:46	9:08	10:34	
O_2, %	9.0	9.0	8.9	9.0
CO_2, %	11.7	11.6	11.8	11.7
H_2O, %	14.12	14.71	14.73	14.52
Stack Temperature, °F	358	368	371	366
Gas Flow				
wacfm	168,989	173,350	174,864	172,401
dscfm	94,378	94,992	95,412	94,927
NO_x				
ppm	35.1	34.2	39.9	36.4
ppm @ 3% O_2	53.0	51.6	59.3	54.7
lb/hr	23.75	23.29	27.27	24.77
CO				
ppm	0.12	0.13	0.08	0.11
ppm @ 3% O_2	0.18	0.20	0.12	0.17
lb/hr	0.05	0.06	0.03	0.05
SO_x				
ppm	5.97	6.73	7.41	6.70
ppm @ 3% O_2	9.01	10.15	11.02	10.06
lb/hr	5.61	6.37	7.05	6.35

Note: Results are from RATA Runs 1, 2 and 3

TABLE 4-4
HYDROCARBON EMISSIONS PERFORMANCE TEST UNIT 1
DESERT VIEW POWER
MARCH 10, 2021

Parameter/Units	1A-VOC-U1	1B-VOC-U1	Average
Date	3/10/2021	3/10/2021	
Time	1034/1126	1034/1126	
O_2, %	8.86	8.86	8.86
CO_2, %	11.80	11.80	11.80
H_2O, %	14.7	14.7	14.7
Gas Flow			
wacfm	174,864	174,864	174,864
dscfm	95,412	95,412	95,412
EPA Correction Factor	1.086	1.086	1.086
TNMHC			
ppm	4.60	4.60	4.60
ppm @ 3% O_2	6.84	6.84	6.84
lb/hr	1.09	1.09	1.09

Note: Flow rates from RATA Run 3

TABLE 4-5
MERCURY EMISSIONS PERFORMANCE TEST UNIT 1
DESERT VIEW POWER
MARCH 11, 2021

Parameter/Units	1-Hg-A	1-Hg-B	2-Hg-A	2-Hg-B	3-Hg-A	3-Hg-B	Averages	Limits
Date	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021		
Start Time	15:25	15:25	16:50	16:50	18:10	18:10		
End Time	16:25	16:25	17:50	17:50	19:10	19:10		
Pre-Test Information								
Fuel F_d Factor, dscf/MMBtu	9,240	9,240	9,240	9,240	9,240	9,240		
Reference Temperature, °F	68	68	68	68	68	68		
Mercury								
Total µg/dscm	8.632	8.588	9.886	10.626	13.477	13.392	10.767	
µg/dscf	0.244	0.243	0.280	0.301	0.382	0.379	0.305	
lb/hr	0.0030	0.0030	0.0034	0.0036	0.0046	0.0046	0.0037	
lb/MMBtu	9.19×10^{-6}	9.15×10^{-6}	1.02×10^{-5}	1.10×10^{-5}	1.37×10^{-5}	1.36×10^{-5}	1.11×10^{-5}	**5.70×10^{-6}**

4.2 UNIT 2 PERFORMANCE TEST RESULTS

The results of the HCL testing are presented in Table 4-6. HCL emissions for Unit 2 were 0.017 lb/MMBtu. This is above the permit limit of 0.022 lb/MMBtu. The results of the total solid particulate testing are presented in Table 4-7. Total solid particulate emissions for Unit 2 were 0.054 lb/hr. This is below the permit limit of 3.9 lb/hr. Gaseous and hydrocarbon emissions results are presented in Table 4-8, and 4-9. NO_x, CO, SO_2 and hydrocarbon emissions results were also below established permit limits. The results of the Mercury testing are presented in Table 4-10. Mercury emissions for Unit 2 were 2.11E-05 lb/MMBtu. This is above the permit limit of 5.70E-06 lb/MMBtu.

TABLE 4-6
HYDROCHLORIC ACID TEST RESULTS UNIT 2
DESERT VIEW POWER
MARCH 4, 2021

Parameter/Units	1-HCl	2-HCl	3-HCl	Average	Limit
Date	3/4/2021	3/4/2021	3/4/2021		
Start Time	7:25	9:55	12:25		
Stop Time	9:25	11:55	14:25		
Reference Temperature, °F	68	68	68		
Diluent Emissions and Stack Flow Rate					
Moisture Fraction, %	13.10	13.28	12.91	13.1	
O_2, % vol. dry	8.62	8.70	8.69	8.67	
CO_2, % vol. Dry	12.09	12.01	11.97	12.02	
Stack Flow Rate (dscfm)	92,651	91,402	92,004	91,703	
Fuel F_d Factor, dscf/MMBtu @ 68°F	9,240	9,240	9,240	9,240	
Fuel F_d Factor, dscf/MMBtu @ 60°F	9,100	9,100	9,100	9,100	
HCl Emissions					
ppmvw	6.88	11.50	10.81	9.73	
ppmvd	7.92	13.26	12.41	11.20	
lb/hr (as HCl)	4.2	7.0	6.6	6.79	
lb/MMBtu	0.012	0.020	0.019	0.017	**0.022**

TABLE 4-7
PARTICULATE EMISSIONS PERFORMANCE TEST UNIT 2
DESERT VIEW POWER
MARCH 4, 2021

Parameter/Units	1-PM-U2	2-PM-U2	3-PM-U2	Average
Date	3/4/2021	3/4/2021	3/28/2018	
Time	725/935	955/1200	1225/1430	
O_2, %	8.62	8.70	8.69	8.67
CO_2, %	12.09	12.01	11.97	12.02
H_2O, %	13.1	13.3	12.9	13.1
Stack Temperature, °F	355.2	351.9	353.4	353.49
Gas Flow				
wacfm	162,543	160,033	160,687	161,088
dscfm	92,651	91,402	92,004	92,019
Isokinetic Ratio, %	98.3	101.8	101.2	100.5
Total Solid Particulate				
Grain Loading, gr/dscf	0.00000	0.00045	0.00074	0.00004
Grain Loading @ 12% CO_2	0.00000	0.00045	0.00074	0.00004
lb/hr	0.000	0.351	0.584	0.311
F-Factor, dscf/MMBtu	9,240	9,240	9,240	9,240
Emission Rate, lb/MMBtu	0.0000	0.0010	0.0017	0.0009

TABLE 4-8
NO_X, CO, SO_X EMISSIONS PERFORMANCE TESTS UNIT 2
DESERT VIEW POWER
MARCH 8, 2021

Parameter/Units	1-U2	2-U2	3-U2	Average
Date	3/8/2021	3/8/2021	3/8/2021	
Time	8:20	9:35	10:52	
O_2, %	8.9	8.8	8.8	8.8
CO_2, %	11.8	11.9	11.9	11.9
H_2O, %	14.25	14.06	13.53	13.95
Stack Temperature, °F	331	333	332	332
Gas Flow				
wacfm	163,079	162,287	160,567	161,977
dscfm	94,138	93,651	93,401	93,730
NO_x				
ppm	38.4	39.1	39.6	39.0
ppm @ 3% O_2	57.1	58.0	58.6	57.9
lb/hr	25.89	26.25	26.47	26.20
CO				
ppm	0.13	0.14	0.13	0.13
ppm @ 3% O_2	0.19	0.20	0.19	0.20
lb/hr	0.05	0.06	0.05	0.05
SO_x				
ppm	8.666	8.59	8.92	8.72
ppm @ 3% O_2	12.88	12.73	13.21	12.94
lb/hr	8.13	8.02	8.30	8.15

Note: Results are from RATA Runs 1, 2, and 3.

TABLE 4-9
HYDROCARBON EMISSIONS PERFORMANCE TEST UNIT 2
DESERT VIEW POWER
MARCH 8, 2021

Parameter/Units	1A-VOC-U2	1B-VOC-U2	Average
Date	3/8/2021	3/8/2021	
Time	935/1035	935/1035	
O_2, %	8.82	8.82	8.82
CO_2, %	11.87	11.87	11.87
H_2O, %	14.05%	14.05%	0.14
Gas Flow			
wacfm	162,284	162,284	162,284
dscfm	93,659	93,659	93,659
EPA Correction Factor	1.086	1.086	1.086
TNMHC			
ppm	4.79	2.63	3.71
ppm @ 3% O_2	7.10	3.90	5.50
lb/hr	1.12	0.61	0.87

Notes:
Flow rates from RATA Run 2
Per Method 25.3 due to the >20% discrepancy between the paired samples the higher result was used

TABLE 4-10
MERCURY EMISSIONS PERFORMANCE TEST UNIT 2
DESERT VIEW POWER
MARCH 11, 2021

Parameter/Units	1-Hg-A	1-Hg-B	2-Hg-A	2-Hg-B	3-Hg-A	3-Hg-B	Averages	Limits
Date	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021		
Start Time	10:20	10:20	11:40	11:40	13:15	13:15		
End Time	11:20	11:20	12:40	12:40	14:15	14:15		
Pre-Test Information								
Fuel F_d Factor, dscf/MMBtu	9,240	9,240	9,240	9,240	9,240	9,240		
Reference Temperature, °F	68	68	68	68	68	68		
Mercury								
Total µg/dscm	39.746	37.859	13.598	11.151	8.467	7.099	19.653	
µg/dscf	1.126	1.072	0.385	0.316	0.240	0.201	0.557	
lb/hr	0.0130	0.0124	0.0046	0.0037	0.0028	0.0023	0.0065	
lb/MMBtu	4.26×10^{-5}	4.06×10^{-5}	1.45×10^{-5}	1.19×10^{-5}	9.12×10^{-6}	7.65×10^{-6}	2.11×10^{-5}	**5.70×10^{-6}**

4.3 FUEL ANALYSIS

The fuel sample analysis results were not available at the time of production of this report.

APPENDIX A
TEST DATA

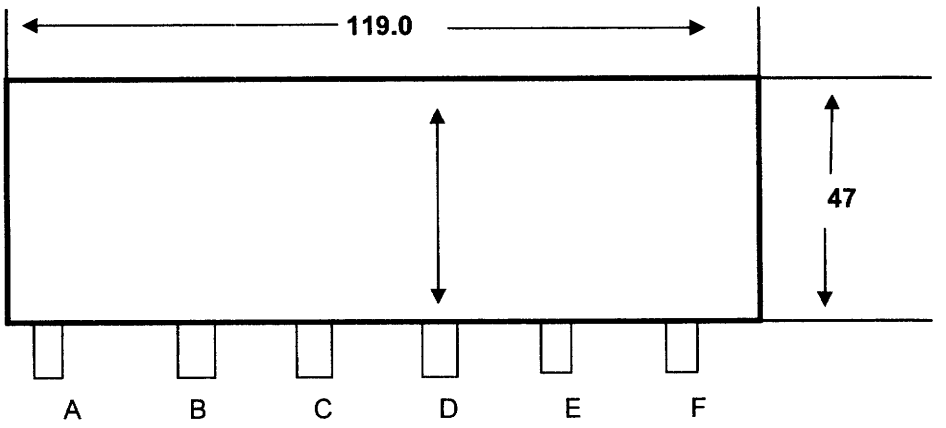
Appendix A.1
Unit 1 Data

Appendix A.1.1
Unit 1 Sample Location

Method 1

Client: Desert View Power Date: 3/10/2021

Sample Location: Unit 1-2 Prepared By: Dave Wonderly



H (in.)	**119.0**
W (in.)	**47.0**
Nipple length	**13.0**
Distance between points	**9.40**
Stack Area (ft^2)	**38.84**

Point No.	Sample Point	Inches from nozzle
1	4.7	17.7
2	14.1	27.1
3	23.5	36.5
4	32.9	45.9
5	42.3	55.3

Appendix A.1.2
Unit 1 CEM Data

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %	
3/5/2021	6:37:00	20.886	0.052	
3/5/2021	6:38:00	14.816	0.034	
3/5/2021	6:39:00	-0.016	-0.032	
3/5/2021	6:40:00	-0.019	-0.034	
3/5/2021	6:41:00	-0.019	-0.033	
3/5/2021	6:42:00	-0.005	-0.013	
3/5/2021	6:43:00	-0.001	0.002	DIR ZERO
3/5/2021	6:44:00	4.672	4.499	
3/5/2021	6:45:00	19.111	19.235	
3/5/2021	6:46:00	19.154	18.948	DIR HIGH
3/5/2021	6:47:00	13.002	11.912	
3/5/2021	6:48:00	10.838	10.392	DIR MID
3/5/2021	6:49:00	10.963	10.431	
3/5/2021	6:50:00	10.108	10.056	
3/5/2021	6:51:00	10.876	10.316	SYS SPAN
3/5/2021	6:52:00	7.211	6.394	
3/5/2021	6:53:00	0.15	0.057	
3/5/2021	6:54:00	0.141	0.037	SYS ZERO
3/5/2021	6:55:00	1.174	1.774	
3/5/2021	6:56:00	9.059	11.357	
3/5/2021	6:57:00	9.689	10.911	
3/5/2021	6:58:00	9.005	11.468	
3/5/2021	6:59:00	9.855	10.713	
3/5/2021	7:00:00	9.213	11.329	
3/5/2021	7:01:00	9.343	11.18	
3/5/2021	7:02:00	9.179	11.305	
3/5/2021	7:03:00	9.658	10.868	
3/5/2021	7:04:00	9.321	11.231	
3/5/2021	7:05:00	9.936	10.588	
3/5/2021	7:06:00	9.193	11.428	
3/5/2021	7:07:00	8.419	12.137	
3/5/2021	7:08:00	7.912	12.46	
3/5/2021	7:09:00	8.131	12.233	
3/5/2021	7:10:00	8.77	11.349	
3/5/2021	7:11:00	9.09	11.445	
3/5/2021	7:12:00	9.662	10.86	
3/5/2021	7:13:00	9.676	10.894	
3/5/2021	7:14:00	9.467	11.025	
3/5/2021	7:15:00	9.564	11.07	
3/5/2021	7:16:00	8.334	12.232	
3/5/2021	7:17:00	9.15	11.362	
3/5/2021	7:18:00	9.743	10.823	
3/5/2021	7:19:00	9.487	11.087	

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %	
3/5/2021	7:20:00	9.792	10.837	RUN 1 HCL U1
3/5/2021	7:21:00	9.093	11.511	
3/5/2021	7:22:00	8.957	11.537	
3/5/2021	7:23:00	9.261	11.383	
3/5/2021	7:24:00	8.691	11.926	
3/5/2021	7:25:00	8.519	11.993	
3/5/2021	7:26:00	8.8	11.699	
3/5/2021	7:27:00	8.58	11.936	
3/5/2021	7:28:00	8.542	12.016	
3/5/2021	7:29:00	8.675	11.813	
3/5/2021	7:30:00	9.042	11.52	
3/5/2021	7:31:00	8.764	11.848	
3/5/2021	7:32:00	8.425	12.1	
3/5/2021	7:33:00	9.114	11.434	
3/5/2021	7:34:00	8.554	12.013	
3/5/2021	7:35:00	9.373	11.198	
3/5/2021	7:36:00	9.389	11.132	
3/5/2021	7:37:00	9.02	11.61	
3/5/2021	7:38:00	8.66	11.746	
3/5/2021	7:39:00	9.4	11.168	
3/5/2021	7:40:00	9.322	11.225	
3/5/2021	7:41:00	9.807	10.808	
3/5/2021	7:42:00	10.051	10.534	
3/5/2021	7:43:00	9.141	11.499	
3/5/2021	7:44:00	9.533	11.051	
3/5/2021	7:45:00	8.55	12.041	
3/5/2021	7:46:00	8.381	12.148	
3/5/2021	7:47:00	9.146	11.402	
3/5/2021	7:48:00	8.836	11.694	
3/5/2021	7:49:00	9.33	11.271	
3/5/2021	7:50:00	8.948	11.54	
3/5/2021	7:51:00	8.654	11.87	
3/5/2021	7:52:00	9.07	11.531	
3/5/2021	7:53:00	9.114	11.177	
3/5/2021	7:54:00	9.794	10.782	
3/5/2021	7:55:00	8.534	11.961	
3/5/2021	7:56:00	8.996	11.581	
3/5/2021	7:57:00	8.712	11.81	
3/5/2021	7:58:00	8.859	11.622	
3/5/2021	7:59:00	8.593	11.932	
3/5/2021	8:00:00	9.006	11.562	
3/5/2021	8:01:00	9.356	11.064	
3/5/2021	8:02:00	9.714	10.913	
3/5/2021	8:03:00	9.813	10.761	
3/5/2021	8:04:00	8.493	12.119	

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %
3/5/2021	8:05:00	8.745	11.675
3/5/2021	8:06:00	10.259	10.344
3/5/2021	8:07:00	9.356	11.175
3/5/2021	8:08:00	9.486	11.071
3/5/2021	8:09:00	8.639	11.939
3/5/2021	8:10:00	8.491	11.956
3/5/2021	8:11:00	9.196	11.368
3/5/2021	8:12:00	8.047	12.46
3/5/2021	8:13:00	9.183	11.28
3/5/2021	8:14:00	10.139	10.351
3/5/2021	8:15:00	9.534	10.99
3/5/2021	8:16:00	9.352	11.216
3/5/2021	8:17:00	9.33	11.154
3/5/2021	8:18:00	9.054	11.628
3/5/2021	8:19:00	8.876	11.401
3/5/2021	8:20:00	8.781	11.114
3/5/2021	8:21:00	8.753	11.004
3/5/2021	8:22:00	8.731	10.901
3/5/2021	8:23:00	8.719	10.817
3/5/2021	8:24:00	8.718	10.739
3/5/2021	8:25:00	8.725	10.667
3/5/2021	8:26:00	8.738	10.604
3/5/2021	8:27:00	8.897	10.653
3/5/2021	8:28:00	9.593	11.002
3/5/2021	8:29:00	8.295	12.25
3/5/2021	8:30:00	8.064	12.491
3/5/2021	8:31:00	8.973	11.566
3/5/2021	8:32:00	8.956	11.524
3/5/2021	8:33:00	9.838	10.731
3/5/2021	8:34:00	8.886	11.702
3/5/2021	8:35:00	8.536	12.06
3/5/2021	8:36:00	8.075	12.459
3/5/2021	8:37:00	7.96	12.479
3/5/2021	8:38:00	9.019	11.528
3/5/2021	8:39:00	9.584	11.128
3/5/2021	8:40:00	9.11	11.088
3/5/2021	8:41:00	10.475	10.279
3/5/2021	8:42:00	10.781	10.759
3/5/2021	8:43:00	10.134	10.622
3/5/2021	8:44:00	9.823	11.849
3/5/2021	8:45:00	9.319	11.416
3/5/2021	8:46:00	9.256	11.365
3/5/2021	8:47:00	8.46	12.107
3/5/2021	8:48:00	9.403	11.161
3/5/2021	8:49:00	8.811	11.773

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %	
3/5/2021	8:50:00	8.592	11.98	
3/5/2021	8:51:00	9.047	11.481	
3/5/2021	8:52:00	8.991	11.587	
3/5/2021	8:53:00	9.295	11.274	
3/5/2021	8:54:00	9.012	11.64	
3/5/2021	8:55:00	9.329	11.159	
3/5/2021	8:56:00	9.765	10.855	
3/5/2021	8:57:00	9.548	11.112	
3/5/2021	8:58:00	8.421	12.147	
3/5/2021	8:59:00	9.143	11.385	
3/5/2021	9:00:00	9.535	10.998	
3/5/2021	9:01:00	9.809	11.544	
3/5/2021	9:02:00	8.76	11.668	
3/5/2021	9:03:00	9.186	11.447	
3/5/2021	9:04:00	9.322	11.268	
3/5/2021	9:05:00	9.419	11.181	
3/5/2021	9:06:00	9.868	10.813	
3/5/2021	9:07:00	9.258	11.309	
3/5/2021	9:08:00	9.42	11.226	
3/5/2021	9:09:00	9.08	11.485	
3/5/2021	9:10:00	8.919	11.655	
3/5/2021	9:11:00	9.208	11.404	
3/5/2021	9:12:00	8.609	11.934	
3/5/2021	9:13:00	9.592	10.963	
3/5/2021	9:14:00	9.477	11.193	
3/5/2021	9:15:00	9.093	11.418	
3/5/2021	9:16:00	8.755	11.87	
3/5/2021	9:17:00	8.514	12.192	
3/5/2021	9:18:00	8.628	11.847	
3/5/2021	9:19:00	9	11.654	
3/5/2021	9:20:00	8.698	11.786	
Run 1 Average		9.08	11.40	
3/5/2021	9:21:00	9.761	10.081	
3/5/2021	9:22:00	10.801	10.438	sys span
3/5/2021	9:23:00	6.409	5.805	
3/5/2021	9:24:00	0.032	0.08	sys zero
3/5/2021	9:25:00	0.006	0.008	
3/5/2021	9:26:00	0.004	-0.012	DIR ZERO
3/5/2021	9:27:00	9.231	8.848	
3/5/2021	9:28:00	10.873	10.429	DIR SPAN
3/5/2021	9:29:00	9.077	11.447	
3/5/2021	9:30:00	9.266	11.414	
3/5/2021	9:31:00	8.478	12.019	
3/5/2021	9:32:00	8.921	11.674	

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %	
3/5/2021	9:33:00	8.543	12.03	
3/5/2021	9:34:00	8.391	12.1	
3/5/2021	9:35:00	9.044	11.477	
3/5/2021	9:36:00	9.402	11.138	
3/5/2021	9:37:00	9.508	11.078	
3/5/2021	9:38:00	9.351	11.21	
3/5/2021	9:39:00	9.364	11.42	
3/5/2021	9:40:00	9.231	11.651	
3/5/2021	9:41:00	9.236	11.655	
3/5/2021	9:42:00	9.243	11.653	RUN 2 HCL
3/5/2021	9:43:00	9.252	11.646	
3/5/2021	9:44:00	9.222	11.623	
3/5/2021	9:45:00	9.426	11.051	
3/5/2021	9:46:00	9.122	11.44	
3/5/2021	9:47:00	8.905	11.626	
3/5/2021	9:48:00	9.206	11.29	
3/5/2021	9:49:00	9.489	11.055	
3/5/2021	9:50:00	9.703	10.819	
3/5/2021	9:51:00	9.051	11.53	
3/5/2021	9:52:00	8.953	11.515	
3/5/2021	9:53:00	9.512	11.004	
3/5/2021	9:54:00	8.901	11.613	
3/5/2021	9:55:00	9.21	11.3	
3/5/2021	9:56:00	9.085	11.439	
3/5/2021	9:57:00	9.343	11.115	
3/5/2021	9:58:00	9.605	10.92	
3/5/2021	9:59:00	8.493	12.08	
3/5/2021	10:00:00	8.286	12.214	
3/5/2021	10:01:00	8.341	12.134	
3/5/2021	10:02:00	8.316	12.131	
3/5/2021	10:03:00	7.601	12.819	
3/5/2021	10:04:00	9.496	10.948	
3/5/2021	10:05:00	9.651	10.859	
3/5/2021	10:06:00	9.749	10.698	
3/5/2021	10:07:00	9.7	10.877	
3/5/2021	10:08:00	8.978	11.482	
3/5/2021	10:09:00	9.146	11.343	
3/5/2021	10:10:00	9.396	11.069	
3/5/2021	10:11:00	9.052	11.509	
3/5/2021	10:12:00	8.806	11.666	
3/5/2021	10:13:00	8.809	11.698	
3/5/2021	10:14:00	8.692	11.879	
3/5/2021	10:15:00	8.876	11.582	
3/5/2021	10:16:00	8.479	11.89	
3/5/2021	10:17:00	9.16	11.36	

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %
3/5/2021	10:18:00	9.071	11.318
3/5/2021	10:19:00	9.301	11.178
3/5/2021	10:20:00	9.019	11.475
3/5/2021	10:21:00	9.42	11.053
3/5/2021	10:22:00	7.97	12.531
3/5/2021	10:23:00	6.954	13.462
3/5/2021	10:24:00	8.113	12.179
3/5/2021	10:25:00	8.946	11.51
3/5/2021	10:26:00	9.45	11.032
3/5/2021	10:27:00	9.105	11.386
3/5/2021	10:28:00	9.164	11.199
3/5/2021	10:29:00	9.95	10.538
3/5/2021	10:30:00	8.942	11.575
3/5/2021	10:31:00	8.027	12.385
3/5/2021	10:32:00	8.64	11.725
3/5/2021	10:33:00	9.147	11.315
3/5/2021	10:34:00	9.546	10.815
3/5/2021	10:35:00	9.386	11.084
3/5/2021	10:36:00	9.958	10.467
3/5/2021	10:37:00	9.424	10.978
3/5/2021	10:38:00	8.641	11.852
3/5/2021	10:39:00	8.647	11.712
3/5/2021	10:40:00	10.008	10.457
3/5/2021	10:41:00	9.172	11.306
3/5/2021	10:42:00	8.419	11.969
3/5/2021	10:43:00	9.031	11.423
3/5/2021	10:44:00	9.01	11.329
3/5/2021	10:45:00	8.325	12.044
3/5/2021	10:46:00	9.34	11.028
3/5/2021	10:47:00	9.546	10.888
3/5/2021	10:48:00	9.272	11.043
3/5/2021	10:49:00	10.162	10.272
3/5/2021	10:50:00	9.252	11.228
3/5/2021	10:51:00	8.917	11.412
3/5/2021	10:52:00	9.207	11.242
3/5/2021	10:53:00	9.384	10.952
3/5/2021	10:54:00	8.696	11.751
3/5/2021	10:55:00	9.442	10.92
3/5/2021	10:56:00	8.582	11.761
3/5/2021	10:57:00	8.413	11.928
3/5/2021	10:58:00	8.313	12.144
3/5/2021	10:59:00	8.811	11.481
3/5/2021	11:00:00	9.345	11.022
3/5/2021	11:01:00	9.189	11.23
3/5/2021	11:02:00	8.992	11.337

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %	
3/5/2021	11:03:00	9.105	11.26	
3/5/2021	11:04:00	8.511	11.908	
3/5/2021	11:05:00	7.935	12.313	
3/5/2021	11:06:00	8.329	11.959	
3/5/2021	11:07:00	8.862	11.507	
3/5/2021	11:08:00	9.171	11.171	
3/5/2021	11:09:00	9.391	10.984	
3/5/2021	11:10:00	8.996	11.395	
3/5/2021	11:11:00	8.643	11.62	
3/5/2021	11:12:00	8.796	11.587	
3/5/2021	11:13:00	8.952	11.424	
3/5/2021	11:14:00	9.006	11.34	
3/5/2021	11:15:00	8.404	11.682	
3/5/2021	11:16:00	8.174	12.148	
3/5/2021	11:17:00	8.742	11.567	
3/5/2021	11:18:00	9.684	10.655	
3/5/2021	11:19:00	9.108	11.231	
3/5/2021	11:20:00	9.174	11.132	
3/5/2021	11:21:00	9.738	10.668	
3/5/2021	11:22:00	9.536	10.794	
3/5/2021	11:23:00	9.136	11.221	
3/5/2021	11:24:00	8.327	12.023	
3/5/2021	11:25:00	8.796	11.53	
3/5/2021	11:26:00	8.591	11.714	
3/5/2021	11:27:00	8.959	11.298	
3/5/2021	11:28:00	9.778	10.624	
3/5/2021	11:29:00	8.226	12.119	
3/5/2021	11:30:00	9.226	11.049	
3/5/2021	11:31:00	9.38	10.858	
3/5/2021	11:32:00	9.83	10.539	
3/5/2021	11:33:00	8.97	11.404	
3/5/2021	11:34:00	8.998	11.293	
3/5/2021	11:35:00	8.493	11.801	
3/5/2021	11:36:00	8.105	12.19	
3/5/2021	11:37:00	8.621	11.563	
3/5/2021	11:38:00	9.033	11.326	
3/5/2021	11:39:00	8.93	11.271	
3/5/2021	11:40:00	9.103	11.235	
3/5/2021	11:41:00	9.062	11.184	
3/5/2021	11:42:00	8.613	11.703	
Run 2 Average		8.99	11.38	
3/5/2021	11:43:00	9.24	10.262	
3/5/2021	11:44:00	10.728	10.194	SYS SPAN
3/5/2021	11:45:00	4.66	4.001	

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %	
3/5/2021	11:46:00	0.026	0.075	SYS ZERO
3/5/2021	11:47:00	0	0	
3/5/2021	11:48:00	-0.002	-0.015	DIR ZERO
3/5/2021	11:49:00	8.925	8.444	
3/5/2021	11:50:00	10.767	10.178	DIR SPAN
3/5/2021	11:51:00	9.495	10.633	
3/5/2021	11:52:00	8.915	11.419	
3/5/2021	11:53:00	8.837	11.359	
3/5/2021	11:54:00	8.405	11.829	
3/5/2021	11:55:00	9.051	11.086	
3/5/2021	11:56:00	9.168	11.092	
3/5/2021	11:57:00	8.356	11.847	
3/5/2021	11:58:00	8.316	11.878	
3/5/2021	11:59:00	9.312	10.909	
3/5/2021	12:00:00	9.419	10.737	
3/5/2021	12:01:00	9.276	10.988	
3/5/2021	12:02:00	10.237	10.226	
3/5/2021	12:03:00	10.035	10.5	
3/5/2021	12:04:00	9.866	10.442	
3/5/2021	12:05:00	9.403	10.787	
3/5/2021	12:06:00	8.254	11.918	
3/5/2021	12:07:00	9.118	11.066	
3/5/2021	12:08:00	9.279	10.947	
3/5/2021	12:09:00	8.926	11.329	
3/5/2021	12:10:00	8.156	11.898	RUN 3 HCL
3/5/2021	12:11:00	9.414	10.759	
3/5/2021	12:12:00	10.006	10.223	
3/5/2021	12:13:00	9.333	10.903	
3/5/2021	12:14:00	8.483	11.641	
3/5/2021	12:15:00	8.142	12.087	
3/5/2021	12:16:00	7.895	12.23	
3/5/2021	12:17:00	9.066	11.046	
3/5/2021	12:18:00	7.828	12.225	
3/5/2021	12:19:00	9.011	11.165	
3/5/2021	12:20:00	9.187	11.045	
3/5/2021	12:21:00	9.096	11.57	
3/5/2021	12:22:00	8.556	11.363	
3/5/2021	12:23:00	9.351	10.818	
3/5/2021	12:24:00	8.037	12.154	
3/5/2021	12:25:00	8.223	11.913	
3/5/2021	12:26:00	8.436	11.432	
3/5/2021	12:27:00	9.06	11.092	
3/5/2021	12:28:00	9.149	11.04	
3/5/2021	12:29:00	9.285	10.886	

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %
3/5/2021	12:30:00	8.668	11.487
3/5/2021	12:31:00	8.907	11.337
3/5/2021	12:32:00	8.466	11.659
3/5/2021	12:33:00	8.889	11.221
3/5/2021	12:34:00	9.139	11.03
3/5/2021	12:35:00	9.027	11.208
3/5/2021	12:36:00	8.958	11.167
3/5/2021	12:37:00	8.503	11.671
3/5/2021	12:38:00	8.29	11.759
3/5/2021	12:39:00	8.667	11.539
3/5/2021	12:40:00	9.021	11.102
3/5/2021	12:41:00	9.177	10.984
3/5/2021	12:42:00	9.045	11.135
3/5/2021	12:43:00	8.273	11.852
3/5/2021	12:44:00	8.651	11.476
3/5/2021	12:45:00	9.126	10.967
3/5/2021	12:46:00	9.681	10.479
3/5/2021	12:47:00	9.311	10.827
3/5/2021	12:48:00	9.814	10.404
3/5/2021	12:49:00	9.219	10.965
3/5/2021	12:50:00	7.964	12.108
3/5/2021	12:51:00	8.185	11.913
3/5/2021	12:52:00	9.185	10.913
3/5/2021	12:53:00	9.159	10.969
3/5/2021	12:54:00	9.209	10.962
3/5/2021	12:55:00	9.153	10.895
3/5/2021	12:56:00	9.448	10.766
3/5/2021	12:57:00	9.116	10.953
3/5/2021	12:58:00	9.176	10.927
3/5/2021	12:59:00	8.172	11.993
3/5/2021	13:00:00	8.169	11.884
3/5/2021	13:01:00	8.383	11.641
3/5/2021	13:02:00	8.752	11.377
3/5/2021	13:03:00	8.511	11.543
3/5/2021	13:04:00	8.819	11.234
3/5/2021	13:05:00	9.077	11.048
3/5/2021	13:06:00	9.452	10.646
3/5/2021	13:07:00	9.317	10.778
3/5/2021	13:08:00	8.785	11.248
3/5/2021	13:09:00	8.835	11.326
3/5/2021	13:10:00	9.34	10.689
3/5/2021	13:11:00	8.609	11.503
3/5/2021	13:12:00	7.724	12.285
3/5/2021	13:13:00	8.415	11.599
3/5/2021	13:14:00	9.271	10.752

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %
3/5/2021	13:15:00	9.812	10.287
3/5/2021	13:16:00	9.001	11.135
3/5/2021	13:17:00	8.765	11.221
3/5/2021	13:18:00	8.84	11.229
3/5/2021	13:19:00	9.15	10.88
3/5/2021	13:20:00	9.058	11.073
3/5/2021	13:21:00	8.964	11.072
3/5/2021	13:22:00	8.9	11.163
3/5/2021	13:23:00	7.702	12.302
3/5/2021	13:24:00	8.086	11.889
3/5/2021	13:25:00	9.834	10.213
3/5/2021	13:26:00	9.012	11.068
3/5/2021	13:27:00	7.767	12.253
3/5/2021	13:28:00	7.477	12.428
3/5/2021	13:29:00	8.012	11.946
3/5/2021	13:30:00	9.36	10.661
3/5/2021	13:31:00	9.784	10.298
3/5/2021	13:32:00	8.554	11.505
3/5/2021	13:33:00	8.709	11.301
3/5/2021	13:34:00	8.807	11.209
3/5/2021	13:35:00	9.043	10.936
3/5/2021	13:36:00	9.359	10.663
3/5/2021	13:37:00	9.852	10.23
3/5/2021	13:38:00	9.107	10.96
3/5/2021	13:39:00	9.668	10.331
3/5/2021	13:40:00	8.664	11.399
3/5/2021	13:41:00	8.574	11.377
3/5/2021	13:42:00	9.065	10.886
3/5/2021	13:43:00	9.76	10.315
3/5/2021	13:44:00	9.751	10.309
3/5/2021	13:45:00	9.016	11.057
3/5/2021	13:46:00	8.674	11.286
3/5/2021	13:47:00	9.24	10.797
3/5/2021	13:48:00	8.881	11.146
3/5/2021	13:49:00	7.978	12.054
3/5/2021	13:50:00	7.671	12.223
3/5/2021	13:51:00	8.647	11.314
3/5/2021	13:52:00	9.197	10.871
3/5/2021	13:53:00	10.036	10.008
3/5/2021	13:54:00	8.567	11.546
3/5/2021	13:55:00	7.782	12.148
3/5/2021	13:56:00	8.85	11.155
3/5/2021	13:57:00	9.021	11.022
3/5/2021	13:58:00	8.98	10.998
3/5/2021	13:59:00	8.165	11.86

Desert View Power UNIT 1
3/5/2021

Date	Time	O2 %	CO2 %	
3/5/2021	14:00:00	9.065	10.93	
3/5/2021	14:01:00	8.384	11.638	
3/5/2021	14:02:00	7.913	11.986	
3/5/2021	14:03:00	9.077	10.954	
3/5/2021	14:04:00	8.872	11.067	
3/5/2021	14:05:00	9.521	10.544	
3/5/2021	14:06:00	9.925	10.104	
3/5/2021	14:07:00	9.319	10.749	
3/5/2021	14:08:00	8.477	11.512	
3/5/2021	14:09:00	8.042	11.938	
3/5/2021	14:10:00	7.485	12.367	
Run 3Average		8.85	11.20	
3/5/2021	14:11:00	9.459	9.796	
3/5/2021	14:12:00	10.644	9.995	sys span
3/5/2021	14:13:00	4.865	4.177	
3/5/2021	14:14:00	0.03	0.064	SYS ZERO
3/5/2021	14:15:00	0.003	-0.005	
3/5/2021	14:16:00	-0.008	-0.029	DIR ZERO
3/5/2021	14:17:00	9.08	8.481	
3/5/2021	14:18:00	10.678	9.98	
3/5/2021	14:19:00	17.436	15.811	
3/5/2021	14:20:00	18.826	18.03	
3/5/2021	14:21:00	18.847	18.459	
3/5/2021	14:22:00	18.855	15.297	
3/5/2021	14:23:00	18.856	16.758	
3/5/2021	14:24:00	18.854	9.988	
3/5/2021	14:25:00	18.852	9.989	
3/5/2021	14:26:00	18.855	16.689	
3/5/2021	14:27:00	18.855	18.938	DIR HIGH
3/5/2021	14:28:00	12.787	12.286	
3/5/2021	14:29:00	10.673	10.965	
3/5/2021	14:30:00	10.673	10.96	
3/5/2021	14:31:00	10.673	10.961	
3/5/2021	14:32:00	10.67	8.849	
3/5/2021	14:33:00	1.887	4.122	
3/5/2021	14:34:00	18.78	18.88	
3/5/2021	14:35:00	13.455	13.017	
3/5/2021	14:36:00	10.673	10.422	DIR MID
3/5/2021	14:37:00	10.232	10.61	

Date	Time	O2 %	CO2 %	NOx ppm	CO ppm	
3/10/2021	6:38	20.963	0.153	0.022	0.669	
3/10/2021	6:39	20.969	0.152	0.018	0.637	
3/10/2021	6:40	20.973	0.16	0.017	0.598	
3/10/2021	6:41	6.525	0.11	0.199	0.606	
3/10/2021	6:42	0.01	0.068	0.016	0.272	
3/10/2021	6:43	0.006	0.002	0.016	0.013	
3/10/2021	6:44	0.005	0.009	0.016	0.005	DIR ZERO
3/10/2021	6:45	7.671	5.398	4.973	0.061	
3/10/2021	6:46	19.183	18.942	86.641	5.942	
3/10/2021	6:47	19.184	18.955	87.557	9.621	
3/10/2021	6:48	19.189	18.964	87.487	9.635	
3/10/2021	6:49	19.191	18.973	87.478	9.634	DIR HIGH
3/10/2021	6:50	13.186	11.88	46.401	8.914	
3/10/2021	6:51	10.863	10.417	41.449	4.892	
3/10/2021	6:52	10.869	10.425	41.494	4.61	DIR SPAN
3/10/2021	6:53	16.162	4.547	21.67	4.232	
3/10/2021	6:54	20.991	0.114	0.107	1.136	
3/10/2021	6:55	20.979	0.115	0.018	0.646	ZERO NO MODE
3/10/2021	6:56	20.821	0.277	70.806	0.586	
3/10/2021	6:57	20.825	0.26	87.844	0.546	NO NO MODE
3/10/2021	6:58	20.955	0.136	12.157	0.577	
3/10/2021	6:59	21.003	0.102	0.106	0.608	NO2 NO MODE
3/10/2021	7:00	21.003	0.113	38.793	0.658	
3/10/2021	7:01	21.004	0.115	42.57	0.728	NO2 NOX MODE
3/10/2021	7:02	21.008	0.113	8.228	0.622	
3/10/2021	7:03	21.002	0.114	0.174	0.662	
3/10/2021	7:04	20.999	0.117	0.135	0.641	
3/10/2021	7:05	21.008	0.11	0.119	0.671	
3/10/2021	7:06	21.008	0.107	0.131	0.72	
3/10/2021	7:07	21.008	0.107	0.119	0.745	
3/10/2021	7:08	21.008	0.107	0.106	0.692	
3/10/2021	7:09	21.008	0.107	0.106	0.698	
3/10/2021	7:10	21.008	0.113	0.106	0.7	
3/10/2021	7:11	21.008	0.107	0.101	0.731	
3/10/2021	7:12	21.008	0.102	0.105	0.776	
3/10/2021	7:13	21.008	0.101	0.079	0.648	
3/10/2021	7:14	21.011	0.128	0.187	0.675	
3/10/2021	7:15	9.897	11.359	39.851	0.712	
3/10/2021	7:16	8.641	11.941	49.949	0.2	
3/10/2021	7:17	8.59	12.041	55.498	0.203	
3/10/2021	7:18	9.055	11.551	46.767	0.181	
3/10/2021	7:19	9.069	11.598	45.893	0.195	
3/10/2021	7:20	9.755	10.887	28.245	0.219	
3/10/2021	7:21	9.597	11.012	31.404	0.237	
3/10/2021	7:22	9.698	11.01	28.638	0.251	
3/10/2021	7:23	8.992	11.658	43.483	0.228	

3/10/2021	7:24	8.894	11.724	39.176	0.217	
3/10/2021	7:25	8.969	11.68	47.191	0.226	
3/10/2021	7:26	11.683	9.099	32.576	0.26	
3/10/2021	7:27	9.257	11.429	35.872	0.24	
3/10/2021	7:28	8.787	11.845	44	0.228	
3/10/2021	7:29	8.791	11.853	54.255	0.244	
3/10/2021	7:30	8.862	11.705	46.518	0.223	
3/10/2021	7:31	8.965	11.735	45.87	0.205	
3/10/2021	7:32	8.42	12.188	46.068	0.201	
3/10/2021	7:33	11.226	9.966	4.763	0.206	
3/10/2021	7:34	10.838	10.432	0.081	0.12	
3/10/2021	7:35	10.838	10.435	0.062	0.115	SYS O2/CO2
3/10/2021	7:36	9.643	8.905	6.115	0.115	
3/10/2021	7:37	0.04	0.111	41.173	0.258	
3/10/2021	7:38	0.023	0.071	41.206	0.43	SYS NOX
3/10/2021	7:39	0.021	0.063	17.123	0.846	
3/10/2021	7:40	0.017	0.058	0.11	4.253	
3/10/2021	7:41	0.017	0.054	0.076	4.606	SYS CO
3/10/2021	7:42	5.498	6.046	15.664	4.019	
3/10/2021	7:43	9.323	11.332	31.942	0.527	
3/10/2021	7:44	9.239	11.274	30.952	0.22	
3/10/2021	7:45	8.939	11.703	41.344	0.214	
3/10/2021	7:46	8.77	11.838	47.549	0.204	RUN 1
3/10/2021	7:47	8.527	12.043	47.543	0.213	
3/10/2021	7:48	9.493	11.17	36.457	0.218	
3/10/2021	7:49	8.908	11.674	41.125	0.223	
3/10/2021	7:50	9.97	10.624	20.107	0.241	
3/10/2021	7:51	9.865	10.809	24.145	0.256	
3/10/2021	7:52	9.314	11.361	34.371	0.251	
3/10/2021	7:53	9.749	10.827	26.818	0.233	
3/10/2021	7:54	9.169	11.537	38.139	0.232	
3/10/2021	7:55	8.667	11.955	43.356	0.21	
3/10/2021	7:56	8.583	12.081	48.552	0.208	
3/10/2021	7:57	8.999	11.589	41.893	0.198	
3/10/2021	7:58	9.238	11.428	38.937	0.212	
3/10/2021	7:59	9.28	11.387	31.171	0.215	
3/10/2021	8:00	8.794	11.873	40.313	0.218	
3/10/2021	8:01	8.702	11.997	45.683	0.208	
3/10/2021	8:02	8.558	12.113	52.144	0.199	
3/10/2021	8:03	8.916	11.76	43.055	0.199	
3/10/2021	8:04	8.835	11.811	35.951	0.207	
3/10/2021	8:05	9.368	11.296	27.243	0.235	
3/10/2021	8:06	9.287	11.378	30.084	0.247	
3/10/2021	8:07	10.272	10.423	19.755	0.265	
3/10/2021	8:08	10.81	9.92	15.976	0.294	
3/10/2021	8:09	8.925	11.837	41.635	0.291	
3/10/2021	8:10	8.94	11.716	39.769	0.254	
3/10/2021	8:11	10.267	10.51	28.625	0.263	
3/10/2021	8:12	8.552	12.161	48.02	0.252	

3/10/2021	8:13	8.932	11.763	42.403	0.246	
3/10/2021	8:14	9.39	11.317	33.237	0.243	
3/10/2021	8:15	9.472	11.247	27.486	0.27	
3/10/2021	8:16	8.8	11.929	37.642	0.289	
3/10/2021	8:17	8.681	12.089	43.051	0.244	
3/10/2021	8:18	8.013	12.695	55.626	0.225	
3/10/2021	8:19	7.166	13.496	68.786	0.219	
3/10/2021	8:20	8.504	12.139	39.91	0.219	
3/10/2021	8:21	8.684	12.021	30.855	0.232	
3/10/2021	8:22	9.042	11.678	26.263	0.265	
3/10/2021	8:23	9.604	11.093	22.472	0.273	
3/10/2021	8:24	9.154	11.67	31.034	0.265	
3/10/2021	8:25	9.605	11.034	23.399	0.249	
3/10/2021	8:26	9.853	10.964	27.097	0.279	
3/10/2021	8:27	8.67	12.005	31.843	0.266	
3/10/2021	8:28	8.693	12.021	38.908	0.26	
3/10/2021	8:29	9.752	11.037	28.18	0.267	
3/10/2021	8:30	8.747	11.939	40.885	0.251	
3/10/2021	8:31	8.375	12.38	40.604	0.248	
3/10/2021	8:32	8.654	12.056	38.563	0.239	
3/10/2021	8:33	8.568	12.148	39.807	0.233	
3/10/2021	8:34	8.555	12.141	40.87	0.217	
3/10/2021	8:35	8.515	12.167	41.467	0.221	
3/10/2021	8:36	9.307	11.459	30.64	0.235	
3/10/2021	8:37	8.427	12.227	37.283	0.232	
3/10/2021	8:38	9.321	11.333	22.918	0.247	
3/10/2021	8:39	9.322	11.548	32.346	0.27	
3/10/2021	8:40	9.1	11.49	26.122	0.236	
3/10/2021	8:41	10.403	10.369	14.194	0.292	
3/10/2021	8:42	8.149	12.603	45.292	0.27	
3/10/2021	8:43	9.77	10.882	23.632	0.252	
3/10/2021	8:44	10.114	10.681	24.465	0.287	
3/10/2021	8:45	9.101	11.543	27.986	0.273	
3/10/2021	8:46	9.275	11.479	26.983	0.298	
AVERAGE		**9.0951**	**11.59872**	**35.05193**	**0.244233**	
3/10/2021	8:47	8.964	10.797	23.939	0.296	
3/10/2021	8:48	10.84	10.523	0.072	0.256	
3/10/2021	8:49	10.839	10.525	0.038	0.133	
3/10/2021	8:50	10.84	10.524	0.038	0.136	SYS O2/CO2
3/10/2021	8:51	9.547	8.871	6.542	0.134	
3/10/2021	8:52	0.045	0.154	41.098	0.282	
3/10/2021	8:53	0.025	0.107	41.192	0.454	SYS NOX
3/10/2021	8:54	0.022	0.092	17.257	0.864	
3/10/2021	8:55	0.019	0.087	0.108	4.276	
3/10/2021	8:56	0.017	0.08	0.077	4.634	
3/10/2021	8:57	0.017	0.075	0.053	4.64	SYS CO
3/10/2021	8:58	3.276	4.616	9.77	4.435	
3/10/2021	8:59	9.174	11.431	31.339	0.937	

3/10/2021	9:00	1.522	2.194	10.786	0.211	
3/10/2021	9:01	0.011	0.034	0.02	0.063	
3/10/2021	9:02	0.01	0.031	0.017	0.027	DIR ZERO
3/10/2021	9:03	9.933	9.435	34.068	0.575	
3/10/2021	9:04	10.876	10.473	41.492	4.138	
3/10/2021	9:05	10.874	10.473	41.463	4.654	DIR SPAN
3/10/2021	9:06	10.121	10.725	25.327	3.677	
3/10/2021	9:07	9.475	11.211	20.351	0.426	
3/10/2021	9:08	8.92	11.721	24.109	0.298	RUN 2
3/10/2021	9:09	9.17	11.364	23.119	0.286	
3/10/2021	9:10	9.705	10.972	24.612	0.273	
3/10/2021	9:11	9.003	11.653	29.963	0.264	
3/10/2021	9:12	8.502	12.155	45.796	0.262	
3/10/2021	9:13	7.88	12.676	50.328	0.216	
3/10/2021	9:14	9.014	11.495	32.971	0.216	
3/10/2021	9:15	9.494	11.148	34.634	0.221	
3/10/2021	9:16	9.38	11.306	29.832	0.258	
3/10/2021	9:17	8.69	11.895	38.24	0.243	
3/10/2021	9:18	10.619	9.904	14.593	0.267	
3/10/2021	9:19	10.88	9.879	14.629	0.329	
3/10/2021	9:20	8.702	11.927	33.404	0.321	
3/10/2021	9:21	8.406	12.077	38.175	0.255	
3/10/2021	9:22	8.582	12.023	38.278	0.251	
3/10/2021	9:23	8.543	12.077	42.541	0.241	
3/10/2021	9:24	8.775	11.734	31.784	0.226	
3/10/2021	9:25	9.404	11.162	35.039	0.24	
3/10/2021	9:26	8.941	11.593	28.395	0.256	
3/10/2021	9:27	8.972	11.577	31.709	0.253	
3/10/2021	9:28	8.45	12.146	45.14	0.238	
3/10/2021	9:29	9.017	11.442	36.944	0.234	
3/10/2021	9:30	9.936	10.648	19.717	0.246	
3/10/2021	9:31	9.211	11.458	33.403	0.266	
3/10/2021	9:32	8.646	11.803	33.309	0.238	
3/10/2021	9:33	8.228	12.317	42.77	0.239	
3/10/2021	9:34	8.705	11.829	34.462	0.223	
3/10/2021	9:35	9.317	11.196	28.296	0.237	
3/10/2021	9:36	9.597	11.023	26.591	0.255	
3/10/2021	9:37	8.788	11.724	32.207	0.257	
3/10/2021	9:38	8.924	11.595	29.942	0.245	
3/10/2021	9:39	9.549	11.021	26.2	0.275	
3/10/2021	9:40	9.948	10.604	22.381	0.282	
3/10/2021	9:41	8.753	11.801	39.564	0.283	
3/10/2021	9:42	9.232	11.275	31.176	0.237	
3/10/2021	9:43	9.46	11.037	34.702	0.231	
3/10/2021	9:44	9.349	11.218	35.673	0.238	
3/10/2021	9:45	8.568	11.944	44.1	0.251	
3/10/2021	9:46	8.626	11.853	39.545	0.242	
3/10/2021	9:47	9.629	10.842	26.996	0.247	
3/10/2021	9:48	9.651	10.847	29.146	0.256	

3/10/2021	9:49	9.264	11.258	35.312	0.253	
3/10/2021	9:50	8.243	12.235	49.253	0.247	
3/10/2021	9:51	8.572	11.797	43.788	0.233	
3/10/2021	9:52	9.48	10.973	25.066	0.236	
3/10/2021	9:53	9.415	11.04	24.749	0.262	
3/10/2021	9:54	9.037	11.429	35.228	0.267	
3/10/2021	9:55	8.565	11.921	49.634	0.243	
3/10/2021	9:56	8.527	11.841	48.941	0.234	
3/10/2021	9:57	9.013	11.375	40.983	0.235	
3/10/2021	9:58	9.602	10.878	27.341	0.25	
3/10/2021	9:59	8.864	11.567	30.082	0.264	
3/10/2021	10:00	9.684	10.649	21.174	0.276	
3/10/2021	10:01	9.521	10.984	32.095	0.283	
3/10/2021	10:02	8.087	12.277	48.704	0.263	
3/10/2021	10:03	8.801	11.577	40.796	0.237	
3/10/2021	10:04	8.51	11.886	46.473	0.232	
3/10/2021	10:05	9.565	10.726	27.083	0.242	
3/10/2021	10:06	9.401	11.059	32.433	0.287	
3/10/2021	10:07	8.716	11.638	35.132	0.265	
3/10/2021	10:08	8.535	11.735	42.287	0.226	
AVERAGE		**9.0608**	**11.45142**	**34.11433**	**0.252217**	
3/10/2021	10:09	9.124	10.401	30.927	0.222	
3/10/2021	10:10	10.549	10.208	0.139	0.318	
3/10/2021	10:11	10.782	10.253	0.071	0.109	sys o2/co2
3/10/2021	10:12	5.583	4.905	21.619	0.113	
3/10/2021	10:13	0.023	0.05	41.081	0.335	
3/10/2021	10:14	0.017	0.028	41.129	0.411	SYS NOX
3/10/2021	10:15	0.015	0.017	17.196	0.802	
3/10/2021	10:16	0.011	0.014	0.121	4.186	
3/10/2021	10:17	7.394	6.013	20.949	4.552	SYS CO
3/10/2021	10:18	10.813	10.227	41.391	4.543	
3/10/2021	10:19	10.817	10.226	41.402	4.559	DIR SPAN
3/10/2021	10:20	2.894	1.851	12.427	3.412	
3/10/2021	10:21	-0.001	-0.029	0.042	0.122	
3/10/2021	10:22	-0.003	-0.029	0.017	-0.008	DIR ZERO
3/10/2021	10:23	6.443	8.878	31.163	0.017	
3/10/2021	10:24	9.255	11.097	34.227	0.209	
3/10/2021	10:25	8.678	11.606	43.702	0.214	
3/10/2021	10:26	8.323	11.923	49.523	0.195	
3/10/2021	10:27	8.702	11.525	43.217	0.192	
3/10/2021	10:28	9.387	10.969	37.588	0.209	
3/10/2021	10:29	9.226	11.051	40.672	0.204	
3/10/2021	10:30	9.266	10.992	33.696	0.194	
3/10/2021	10:31	9.419	10.88	36.386	0.197	
3/10/2021	10:32	8.386	11.927	50.911	0.189	
3/10/2021	10:33	7.941	12.152	56.237	0.193	
3/10/2021	10:34	9.179	11.135	39.873	0.182	RUN 3
3/10/2021	10:35	9.584	10.765	23.043	0.204	

3/10/2021	10:36	8.541	11.695	41.335	0.215
3/10/2021	10:37	9.42	10.828	29.274	0.202
3/10/2021	10:38	10.102	10.207	18.782	0.235
3/10/2021	10:39	8.809	11.519	38.106	0.237
3/10/2021	10:40	9.298	11.041	30.51	0.207
3/10/2021	10:41	7.558	12.694	58.264	0.176
3/10/2021	10:42	7.958	12.186	49.092	0.173
3/10/2021	10:43	8.339	11.908	49.59	0.191
3/10/2021	10:44	7.793	12.479	54.355	0.166
3/10/2021	10:45	8.225	11.883	44.369	0.149
3/10/2021	10:46	8.541	11.697	33.517	0.173
3/10/2021	10:47	9.016	11.17	26.552	0.187
3/10/2021	10:48	8.977	11.253	36.405	0.213
3/10/2021	10:49	9.288	11.024	28.054	0.209
3/10/2021	10:50	8.491	11.694	35.841	0.19
3/10/2021	10:51	8.526	11.667	38.686	0.179
3/10/2021	10:52	9.202	11.044	32.577	0.187
3/10/2021	10:53	9.577	10.629	31.85	0.198
3/10/2021	10:54	9.057	11.198	31.69	0.201
3/10/2021	10:55	9.469	10.755	23.67	0.232
3/10/2021	10:56	8.901	11.282	36.867	0.213
3/10/2021	10:57	9.106	11.178	40.635	0.182
3/10/2021	10:58	9.02	11.079	39.331	0.181
3/10/2021	10:59	9.223	11.049	38.412	0.204
3/10/2021	11:00	9.55	10.686	29.102	0.214
3/10/2021	11:01	9.261	11.018	36.583	0.224
3/10/2021	11:02	8.769	11.342	47.322	0.189
3/10/2021	11:03	9.145	11.029	40.762	0.164
3/10/2021	11:04	9.565	10.659	40.631	0.183
3/10/2021	11:05	9.52	10.728	38.655	0.184
3/10/2021	11:06	8.475	11.661	48.477	0.189
3/10/2021	11:07	8.291	11.83	50.765	0.174
3/10/2021	11:08	8.421	11.759	49.558	0.152
3/10/2021	11:09	8.097	12.021	50.505	0.141
3/10/2021	11:10	7.796	12.329	54.942	0.14
3/10/2021	11:11	8.146	11.964	52.749	0.134
3/10/2021	11:12	8.048	11.973	51.706	0.126
3/10/2021	11:13	8.567	11.639	49.759	0.13
3/10/2021	11:14	8.984	11.135	27.76	0.135
3/10/2021	11:15	9.047	11.05	35.477	0.161
3/10/2021	11:16	9.697	10.546	25.309	0.177
3/10/2021	11:17	7.941	12.137	42.98	0.159
3/10/2021	11:18	7.709	12.254	46.625	0.131
3/10/2021	11:19	8.276	11.731	43.863	0.124
3/10/2021	11:20	9.155	10.952	34.194	0.125
3/10/2021	11:21	9.104	10.964	33.145	0.135
3/10/2021	11:22	10.141	10.037	19.728	0.152
3/10/2021	11:23	9.041	11.124	33.77	0.178
3/10/2021	11:24	8.56	11.493	48.06	0.139

3/10/2021	11:25	9.108	10.983	39.147	0.136	
3/10/2021	11:26	9.066	11.033	40.47	0.15	
3/10/2021	11:27	8.626	11.52	51.027	0.145	
3/10/2021	11:28	8.326	11.805	51	0.129	
3/10/2021	11:29	8.537	11.56	47.937	0.13	
3/10/2021	11:30	8.06	11.996	54.037	0.116	
3/10/2021	11:31	8.686	11.423	46.81	0.112	
3/10/2021	11:32	9.289	10.815	39.516	0.128	
3/10/2021	11:33	9.813	10.306	31.896	0.133	
3/10/2021	11:34	9.399	10.741	32.104	0.151	
AVERAGE		**8.837283**	**11.33612**	**39.61963**	**0.1699**	
3/10/2021	11:35	10.031	9.424	7.377	0.256	
3/10/2021	11:36	10.718	10.039	0.078	0.081	SYS O2/CO2
3/10/2021	11:37	5.421	4.645	22.089	0.052	
3/10/2021	11:38	0.014	0.038	40.875	0.273	SYS NOX
3/10/2021	11:39	0.008	0.023	16.576	0.747	
3/10/2021	11:40	0.004	0.022	0.108	4.091	
3/10/2021	11:41	0.003	0.017	0.073	4.424	SYS CO
3/10/2021	11:42	8.612	7.531	26.196	4.422	
3/10/2021	11:43	10.751	10.038	41.242	4.429	
3/10/2021	11:44	10.751	10.038	41.236	4.432	DIR SPAN
3/10/2021	11:45	2.112	1.937	14.378	3.461	
3/10/2021	11:46	-0.009	-0.024	0.034	0.111	
3/10/2021	11:47	-0.011	-0.028	0.038	-0.063	DIR ZERO
3/10/2021	11:48	6.864	8.765	29.765	-0.018	
3/10/2021	11:49	8.384	11.741	48.634	0.121	
3/10/2021	11:50	8.337	11.759	50.902	0.124	
3/10/2021	11:51	9.028	11.005	40.619	0.125	
3/10/2021	11:52	9.839	10.389	37.691	0.141	
3/10/2021	11:53	9.355	10.806	33.16	0.143	
3/10/2021	11:54	8.645	11.5	44.638	0.146	RUN 4
3/10/2021	11:55	9.066	11.109	39.708	0.154	
3/10/2021	11:56	8.039	12.089	55.507	0.145	
3/10/2021	11:57	7.535	12.548	60.148	0.129	
3/10/2021	11:58	7.944	12.205	51.846	0.147	
3/10/2021	11:59	8.079	11.949	40.877	0.133	
3/10/2021	12:00	9.525	10.674	27.531	0.147	
3/10/2021	12:01	9.025	11.195	29.123	0.161	
3/10/2021	12:02	8.504	11.682	41.99	0.152	
3/10/2021	12:03	7.939	12.246	47.795	0.144	
3/10/2021	12:04	8.793	11.376	39.509	0.138	
3/10/2021	12:05	8.822	11.419	40.647	0.152	
3/10/2021	12:06	8.807	11.395	42.175	0.152	
3/10/2021	12:07	8.167	12.017	48.625	0.142	
3/10/2021	12:08	8.218	11.909	50.823	0.127	
3/10/2021	12:09	9.432	10.854	39.562	0.138	
3/10/2021	12:10	8.909	11.273	47.949	0.148	
3/10/2021	12:11	9.027	11.252	44.476	0.137	

3/10/2021	12:12	8.725	11.515	45.216	0.145	
3/10/2021	12:13	8.695	11.572	50.476	0.141	
3/10/2021	12:14	8.708	11.53	48.464	0.138	
3/10/2021	12:15	9.128	11.126	43.18	0.139	
3/10/2021	12:16	9.054	11.196	43.914	0.141	
3/10/2021	12:17	8.852	11.423	42.062	0.139	
3/10/2021	12:18	8.992	11.311	39.583	0.148	
3/10/2021	12:19	8.642	11.675	47.89	0.151	
3/10/2021	12:20	9.018	11.227	41.243	0.143	
3/10/2021	12:21	9.269	11.043	40.285	0.142	
3/10/2021	12:22	9.476	10.835	39.276	0.15	
3/10/2021	12:23	9.764	10.667	32.436	0.166	
3/10/2021	12:24	9.173	11.178	33.179	0.165	
AVERAGE		**8.777567**	**11.44967**	**43.18317**	**0.145133**	
3/10/2021	12:25	9.798	9.867	8.382	0.261	
3/10/2021	12:26	10.768	10.281	0.075	0.095	
3/10/2021	12:27	10.769	10.282	0.054	0.063	SYS O2/CO2
3/10/2021	12:28	8.377	7.574	10.896	0.065	
3/10/2021	12:29	0.022	0.149	40.714	0.237	
3/10/2021	12:30	0.011	0.122	40.771	0.371	SYS NOX
3/10/2021	12:31	0.008	0.113	16.656	0.8	
3/10/2021	12:32	0.005	0.113	0.112	4.174	
3/10/2021	12:33	0.005	0.112	0.067	4.516	SYS CO
3/10/2021	12:34	9.33	7.277	26.032	4.5	
3/10/2021	12:35	10.799	10.314	41.094	4.52	
3/10/2021	12:36	10.806	10.316	41.29	4.51	DIR SPAN
3/10/2021	12:37	3.576	3.099	11.873	2.794	
3/10/2021	12:38	-0.007	0.073	0.034	0.047	
3/10/2021	12:39	-0.007	0.071	0.021	-0.001	DIR ZERO
3/10/2021	12:40	0.042	1.528	0.161	0.001	
3/10/2021	12:41	9.369	10.335	36.098	0.102	
3/10/2021	12:42	8.863	10.343	43.519	0.217	
3/10/2021	12:43	9.14	10.34	37.899	0.227	
3/10/2021	12:44	8.585	10.342	49.054	0.223	
3/10/2021	12:45	9.958	10.34	37.752	0.218	
3/10/2021	12:46	9.626	10.307	33.885	0.241	
3/10/2021	12:47	10.128	10.669	31.404	0.336	
3/10/2021	12:48	8.817	11.612	48.887	0.319	
3/10/2021	12:49	8.801	11.566	45.676	0.343	
3/10/2021	12:50	8.959	13.271	46.002	0.324	
3/10/2021	12:51	8.543	9.799	54.281	0.283	
3/10/2021	12:52	9.036	-0.032	47.579	0.236	
3/10/2021	12:53	9.005	16.526	46.74	0.225	
3/10/2021	12:54	9.044	18.947	48.809	0.233	
3/10/2021	12:55	9.276	4.119	42.385	0.23	
3/10/2021	12:56	9.309	-0.122	45.22	0.237	
3/10/2021	12:57	8.869	-0.007	53.621	0.218	DIR CO2 ZERO
3/10/2021	12:58	8.696	17.725	52.024	0.218	

3/10/2021	12:59	8.669	18.952	54.871	0.221	DIR CO2 HIGH
3/10/2021	13:00	9.216	13.594	40.586	0.228	
3/10/2021	13:01	8.869	10.413	50.731	0.227	DIR MID
3/10/2021	13:02	8.721	9.991	37.812	0.226	
3/10/2021	13:03	10.729	10.397	0.133	0.32	
3/10/2021	13:04	10.789	10.413	0.071	0.119	
3/10/2021	13:05	10.787	10.416	0.049	0.121	SYS CO2 SPAN
3/10/2021	13:06	10.637	10.309	4.347	0.123	
3/10/2021	13:07	3.443	4.805	22.927	0.203	
3/10/2021	13:08	0.949	1.184	25.517	0.295	
3/10/2021	13:09	0.033	0.05	40.919	0.42	
3/10/2021	13:10	0.032	0.042	40.997	0.451	SYS CO2 ZERO
3/10/2021	13:11	4.246	5.297	40.965	0.419	
3/10/2021	13:12	9.006	11.5	45.137	0.252	
3/10/2021	13:13	9.327	11.129	33.837	0.254	
3/10/2021	13:14	10.179	10.343	32.499	0.269	RUN 5
3/10/2021	13:15	9.337	11.244	39.252	0.273	
3/10/2021	13:16	8.279	12.269	58.68	0.255	
3/10/2021	13:17	8.096	12.437	63.342	0.243	
3/10/2021	13:18	8.689	11.828	54.142	0.234	
3/10/2021	13:19	8.557	12.002	56.172	0.23	
3/10/2021	13:20	8.829	11.674	50.382	0.219	
3/10/2021	13:21	10.089	10.549	40.313	0.245	
3/10/2021	13:22	8.827	11.779	44.897	0.245	
3/10/2021	13:23	8.78	11.774	46.998	0.234	
3/10/2021	13:24	9.313	11.198	39.034	0.231	
3/10/2021	13:25	8.423	12.192	57.646	0.233	
3/10/2021	13:26	9.118	11.37	44.763	0.22	
3/10/2021	13:27	9.615	10.955	37.876	0.231	
3/10/2021	13:28	9.575	11.077	40.089	0.248	
3/10/2021	13:29	8.561	12.02	53.556	0.25	
3/10/2021	13:30	7.708	12.784	69.6	0.226	
3/10/2021	13:31	8.236	12.329	57.032	0.223	
3/10/2021	13:32	8.936	11.587	42.712	0.227	
3/10/2021	13:33	9.237	11.397	40.006	0.243	
3/10/2021	13:34	9.322	11.184	35.266	0.262	
3/10/2021	13:35	9.877	10.716	40.864	0.27	
3/10/2021	13:36	9.409	11.208	43.168	0.258	
3/10/2021	13:37	9.536	11.052	40.336	0.264	
3/10/2021	13:38	9.444	11.236	41.281	0.285	
3/10/2021	13:39	8.536	12.043	50.089	0.271	
3/10/2021	13:40	8.49	12.092	51.959	0.265	
3/10/2021	13:41	9.712	10.832	45.346	0.259	
3/10/2021	13:42	9.318	11.305	46.247	0.275	
3/10/2021	13:43	8.971	11.646	46.217	0.284	
3/10/2021	13:44	9.273	11.338	43.66	0.278	
AVERAGE		**9.0031**	**11.57057**	**47.36417**	**0.249367**	
3/10/2021	13:45	9.681	10.926	38.082	0.284	

3/10/2021	13:46	9.278	10.344	29.356	0.292	
3/10/2021	13:47	10.801	10.469	0.116	0.178	
3/10/2021	13:48	10.803	10.482	0.071	0.15	SYS O2/CO2
3/10/2021	13:49	10.803	10.485	0.049	0.149	
3/10/2021	13:50	3.124	2.63	30.312	0.199	
3/10/2021	13:51	0.037	0.056	41.155	0.434	SYS NOX
3/10/2021	13:52	0.028	0.045	18.117	0.839	
3/10/2021	13:53	0.024	0.035	0.104	4.284	
3/10/2021	13:54	0.022	0.03	0.071	4.691	SYS CO
3/10/2021	13:55	0.022	0	0.046	4.207	
3/10/2021	13:56	0.002	-0.012	0.021	0.776	
3/10/2021	13:57	-0.001	-0.016	0.016	0.132	
3/10/2021	13:58	-0.001	-0.016	0.016	0.046	DIR ZERO
3/10/2021	13:59	6.873	6.596	23.615	0.096	
3/10/2021	14:00	10.836	10.492	41.307	3.055	
3/10/2021	14:01	10.837	10.499	41.143	4.687	DIR SPAN
3/10/2021	14:02	9.777	10.995	43.238	4.121	
3/10/2021	14:03	8.56	12.166	58.446	0.549	
3/10/2021	14:04	8.892	11.708	50.608	0.231	RUN 6
3/10/2021	14:05	9.351	11.4	46.616	0.238	
3/10/2021	14:06	8.399	12.271	57.996	0.231	
3/10/2021	14:07	8.985	11.656	49.827	0.247	
3/10/2021	14:08	8.606	12.059	49.22	0.233	
3/10/2021	14:09	8.588	12.133	52.999	0.221	
3/10/2021	14:10	7.855	12.706	55.32	0.225	
3/10/2021	14:11	9.504	11.147	29.973	0.24	
3/10/2021	14:12	9.389	11.345	30.251	0.284	
3/10/2021	14:13	9.334	11.396	23.16	0.307	
3/10/2021	14:14	9.309	11.31	20.794	0.306	
3/10/2021	14:15	9.49	11.254	18.467	0.321	
3/10/2021	14:16	9.469	11.307	28.479	0.313	
3/10/2021	14:17	9.326	11.232	27.073	0.275	
3/10/2021	14:18	9.737	10.956	23.286	0.285	
3/10/2021	14:19	9.864	10.903	26.015	0.307	
3/10/2021	14:20	9.029	11.683	36.061	0.286	
3/10/2021	14:21	9.386	11.319	35.086	0.266	
3/10/2021	14:22	9.11	11.524	34.563	0.269	
3/10/2021	14:23	9.09	11.613	45.452	0.289	
3/10/2021	14:24	9.062	11.786	46.879	0.269	
3/10/2021	14:25	9.018	11.558	33.498	0.298	
3/10/2021	14:26	9.082	11.629	32.728	0.308	
3/10/2021	14:27	9.208	11.441	27.236	0.341	
3/10/2021	14:28	9.463	11.28	32.782	0.346	
3/10/2021	14:29	8.854	11.761	32.951	0.301	
3/10/2021	14:30	8.859	11.786	41.612	0.294	
3/10/2021	14:31	8.968	11.698	34.152	0.288	
3/10/2021	14:32	8.467	12.144	42.217	0.293	
3/10/2021	14:33	9.417	11.279	33.79	0.294	
3/10/2021	14:34	8.419	12.252	50.058	0.28	

AVERAGE		**9.087933**	**11.59427**	**36.61803**	**0.281833**	
3/10/2021	14:35	8.436	12.154	48.284	0.261	
3/10/2021	14:36	9.753	10.092	10.538	0.361	
3/10/2021	14:37	10.808	10.486	0.069	0.224	
3/10/2021	14:38	10.809	10.491	0.043	0.163	SYS O2/CO2
3/10/2021	14:39	5.558	4.986	21.693	0.182	
3/10/2021	14:40	0.028	0.048	41.065	0.416	SYS NOX
3/10/2021	14:41	0.023	0.025	19.566	0.785	
3/10/2021	14:42	0.021	0.02	0.128	4.222	
3/10/2021	14:43	0.015	0.012	0.077	4.723	SYS CO
3/10/2021	14:44	10.214	7.402	27.6	4.716	
3/10/2021	14:45	10.867	10.499	41.414	4.72	DIR SPAN
3/10/2021	14:46	7.973	7.304	29.817	4.615	
3/10/2021	14:47	0.004	-0.027	0.034	1.245	
3/10/2021	14:48	0	-0.033	0.015	0.065	DIR ZERO
3/10/2021	14:49	5.514	5.774	15.277	0.083	
3/10/2021	14:50	9.941	10.757	33.961	0.291	
3/10/2021	14:51	9.718	10.98	38.837	0.312	
3/10/2021	14:52	8.179	12.545	65.943	0.286	
3/10/2021	14:53	8.494	12.07	54.827	0.278	
3/10/2021	14:54	8.834	11.771	50.647	0.285	
3/10/2021	14:55	8.669	12.07	52.887	0.288	
3/10/2021	14:56	8.86	11.697	47.274	0.276	RUN 7
3/10/2021	14:57	9.448	11.303	40.954	0.289	
3/10/2021	14:58	8.837	11.765	46.717	0.273	
3/10/2021	14:59	9.059	11.569	44.81	0.284	
3/10/2021	15:00	7.889	12.813	62.663	0.275	
3/10/2021	15:01	7.977	12.667	61.073	0.269	
3/10/2021	15:02	9.253	11.315	40.884	0.256	
3/10/2021	15:03	9.413	11.303	39.564	0.269	
3/10/2021	15:04	9.574	11.078	35.819	0.288	
3/10/2021	15:05	9.31	11.326	37.92	0.294	
3/10/2021	15:06	9.172	11.528	41.69	0.289	
3/10/2021	15:07	9.023	11.638	43.675	0.289	
3/10/2021	15:08	8.76	11.903	49.554	0.275	
3/10/2021	15:09	8.823	11.829	46.36	0.264	
3/10/2021	15:10	9.113	11.542	47.276	0.265	
3/10/2021	15:11	8.959	11.734	48.123	0.276	
3/10/2021	15:12	9.095	11.579	46.949	0.274	
3/10/2021	15:13	8.428	12.276	56.733	0.269	
3/10/2021	15:14	8.301	12.329	57.21	0.271	
3/10/2021	15:15	9.506	11.199	43.077	0.283	
3/10/2021	15:16	8.688	11.998	54.593	0.278	
3/10/2021	15:17	8.288	12.398	57.959	0.271	
3/10/2021	15:18	8.209	12.352	58.972	0.252	
3/10/2021	15:19	9.712	11.032	36.658	0.258	
3/10/2021	15:20	9.077	11.578	37.829	0.283	
3/10/2021	15:21	8.624	12.048	51.473	0.291	

3/10/2021	15:22	9.586	11.066	41.568	0.284	
3/10/2021	15:23	9.545	11.146	44.151	0.288	
3/10/2021	15:24	9.736	11.007	43.102	0.286	
3/10/2021	15:25	9.253	11.395	38.58	0.283	
3/10/2021	15:26	9.394	11.231	39.788	0.298	
AVERAGE		**9.001733**	**11.6649**	**46.52413**	**0.277467**	
3/10/2021	15:27	9.457	10.333	25.96	0.348	
3/10/2021	15:28	10.816	10.532	0.082	0.302	
3/10/2021	15:29	10.82	10.535	0.075	0.169	sys o2/co2
3/10/2021	15:30	5.853	5.273	20.49	0.182	
3/10/2021	15:31	0.043	0.061	40.994	0.42	SYS NOX
3/10/2021	15:32	0.04	0.037	40.827	0.496	
3/10/2021	15:33	0.032	0.031	0.773	2.268	
3/10/2021	15:34	0.441	0.023	0.082	4.718	
3/10/2021	15:35	10.825	10.118	35.555	4.739	SYS CO @ 1534
3/10/2021	15:36	10.861	10.534	41.283	4.752	
3/10/2021	15:37	10.856	10.535	41.276	4.737	DIR SPAN
3/10/2021	15:38	6.909	6.256	27.747	4.693	
3/10/2021	15:39	0.005	-0.016	0.036	1.562	
3/10/2021	15:40	0.005	-0.02	0.015	0.134	
3/10/2021	15:41	0.004	-0.023	0.016	0.003	DIR ZERO
3/10/2021	15:42	5.927	8.284	34.706	1.199	
3/10/2021	15:43	9.619	11.043	47.199	7.934	
3/10/2021	15:44	9.554	11.066	44.981	9.569	
3/10/2021	15:45	9.273	11.553	52.606	3.479	
3/10/2021	15:46	8.189	12.455	61.534	0.211	
3/10/2021	15:47	8.922	11.743	48.473	0.204	
3/10/2021	15:48	9.009	11.641	45.017	0.193	RUN 8
3/10/2021	15:49	9.098	11.631	50.008	0.192	
3/10/2021	15:50	8.328	12.362	62.008	0.182	
3/10/2021	15:51	8.067	12.563	67.799	0.186	
3/10/2021	15:52	9.411	11.216	47.398	0.182	
3/10/2021	15:53	8.974	11.721	49.388	0.19	
3/10/2021	15:54	9.169	11.444	43.857	0.195	
3/10/2021	15:55	9.864	10.892	41.846	0.206	
3/10/2021	15:56	9.307	11.374	44.864	0.215	
3/10/2021	15:57	9.273	11.42	50.061	0.197	
3/10/2021	15:58	8.757	11.989	59.92	0.212	
3/10/2021	15:59	8.898	11.698	54.725	0.194	
3/10/2021	16:00	9.521	11.198	48.366	0.199	
3/10/2021	16:01	9.428	11.269	51.495	0.205	
3/10/2021	16:02	9.527	11.127	54.852	0.213	
3/10/2021	16:03	8.767	11.93	63.807	0.209	
3/10/2021	16:04	8.975	11.693	58.621	0.212	
3/10/2021	16:05	9.143	11.485	48.969	0.217	
3/10/2021	16:06	8.751	11.992	57.779	0.217	
3/10/2021	16:07	8.719	11.916	60.786	0.209	
3/10/2021	16:08	10.13	10.524	44.632	0.21	

3/10/2021	16:09	9.802	10.903	44.393	0.222	
3/10/2021	16:10	9.674	11.05	47.819	0.219	
3/10/2021	16:11	9.031	11.681	49.938	0.218	
3/10/2021	16:12	8.779	11.883	57.483	0.199	
3/10/2021	16:13	9.53	11.105	43.577	0.198	
3/10/2021	16:14	9.305	11.355	48.265	0.212	
3/10/2021	16:15	8.624	12.062	58.649	0.211	
3/10/2021	16:16	9.619	11.006	41.3	0.205	
3/10/2021	16:17	9.681	10.98	44.505	0.207	
3/10/2021	16:18	8.718	12.001	61.015	0.205	
AVERAGE		**9.162333**	**11.51567**	**51.9375**	**0.2046**	
3/10/2021	16:19	9.471	10.311	20.94	0.28	
3/10/2021	16:20	10.809	10.535	0.087	0.173	
3/10/2021	16:21	10.812	10.538	0.057	0.101	sys o2/co2
3/10/2021	16:22	7.53	6.922	14.214	0.097	
3/10/2021	16:23	0.044	0.069	40.962	0.288	
3/10/2021	16:24	0.041	0.038	41.041	0.408	SYS NOX
3/10/2021	16:25	0.039	0.032	16.663	0.842	
3/10/2021	16:26	0.038	0.031	0.119	4.227	
3/10/2021	16:27	8.342	7.713	25.443	4.563	SYS CO
3/10/2021	16:28	10.847	10.536	41.325	4.56	
3/10/2021	16:29	10.844	10.537	41.312	4.574	DIR SPAN
3/10/2021	16:30	1.86	1.628	14.343	3.302	
3/10/2021	16:31	0.005	-0.011	0.029	0.11	
3/10/2021	16:32	0.005	-0.012	0.016	-0.003	DIR ZERO
3/10/2021	16:33	6.107	7.411	28.789	0.023	
3/10/2021	16:34	9.426	11.258	45.585	0.196	
3/10/2021	16:35	8.17	12.5	53.027	0.203	
3/10/2021	16:36	7.64	13.061	62.911	0.2	RUN 9
3/10/2021	16:37	7.662	12.899	62.638	0.182	
3/10/2021	16:38	8.108	12.647	61.723	0.184	
3/10/2021	16:39	7.576	13.063	66.235	0.18	
3/10/2021	16:40	7.742	12.865	56.753	0.181	
3/10/2021	16:41	8.636	12.032	45.537	0.186	
3/10/2021	16:42	8.774	11.89	40.746	0.195	
3/10/2021	16:43	9.364	11.289	36.619	0.196	
3/10/2021	16:44	8.693	11.944	47.122	0.187	
3/10/2021	16:45	9.543	11.156	32.194	0.186	
3/10/2021	16:46	9.162	11.592	45.037	0.198	
3/10/2021	16:47	8.749	11.872	44.31	0.186	
3/10/2021	16:48	9.099	11.651	50.588	0.195	
3/10/2021	16:49	8.948	11.702	49.173	0.176	
3/10/2021	16:50	9.595	11.06	36.34	0.186	
3/10/2021	16:51	9.763	11.03	39.551	0.211	
3/10/2021	16:52	8.992	11.761	48.925	0.198	
3/10/2021	16:53	9	11.65	46.421	0.188	
3/10/2021	16:54	9.897	10.874	41.21	0.195	
3/10/2021	16:55	9.758	10.841	38.837	0.201	

3/10/2021	16:56	9.459	11.407	46.122	0.212	
3/10/2021	16:57	8.418	12.332	59.971	0.195	
3/10/2021	16:58	8.099	12.601	67.323	0.178	
3/10/2021	16:59	8.745	11.947	53.758	0.175	
3/10/2021	17:00	8.907	11.869	52.444	0.173	
3/10/2021	17:01	8.68	11.974	55.946	0.172	
3/10/2021	17:02	8.763	11.981	55.961	0.177	
3/10/2021	17:03	9.515	11.155	42.804	0.166	
3/10/2021	17:04	9.377	11.374	48.697	0.182	
3/10/2021	17:05	9	11.821	55.506	0.177	
3/10/2021	17:06	9.228	11.454	47.182	0.18	
AVERAGE		**8.9084**	**11.7911**	**49.1891**	**0.1866**	
3/10/2021	17:07	9.485	10.368	17.312	0.28	
3/10/2021	17:08	10.811	10.563	0.076	0.149	
3/10/2021	17:09	10.819	10.558	0.043	0.099	SYS O2/CO2
3/10/2021	17:10	8.788	8.066	9.715	0.105	
3/10/2021	17:11	0.036	0.105	40.956	0.273	
3/10/2021	17:12	0.033	0.071	41.034	0.412	SYS NOX
3/10/2021	17:13	0.03	0.065	16.189	0.881	
3/10/2021	17:14	0.028	0.061	0.125	4.258	
3/10/2021	17:15	3.123	2.478	6.704	4.579	SYS CO
3/10/2021	17:16	10.864	10.552	41.219	4.576	
3/10/2021	17:17	10.871	10.554	41.252	4.587	
3/10/2021	17:18	10.872	10.563	41.254	4.578	DIR SPAN
3/10/2021	17:19	9.232	11.577	48.565	3.481	
3/10/2021	17:20	8.972	11.759	54.074	0.271	
3/10/2021	17:21	9.399	11.27	45.332	0.174	
3/10/2021	17:22	9.473	11.243	45.356	0.187	
3/10/2021	17:23	9.258	11.453	44.896	0.186	
3/10/2021	17:24	10.11	10.642	35.109	0.199	
3/10/2021	17:25	9.065	11.752	52.968	0.196	
3/10/2021	17:26	9.012	11.674	54.673	0.186	
3/10/2021	17:27	9.273	11.483	60.722	0.186	
3/10/2021	17:28	9.237	11.467	59.066	0.195	
3/10/2021	17:29	9.103	11.68	63.548	0.195	
3/10/2021	17:30	4.393	6.206	35.553	0.194	
3/10/2021	17:31	0.007	0.024	0.035	0.05	
3/10/2021	17:32	0.005	0.016	0.017	0.005	DIR ZERO
3/10/2021	17:33	7.244	8.268	30.445	0.033	
3/10/2021	17:34	9.025	11.664	55.384	0.188	RUN 10
3/10/2021	17:35	9.05	11.626	58.174	0.192	
3/10/2021	17:36	9.907	10.855	45.283	0.197	
3/10/2021	17:37	10.373	10.384	36.559	0.197	
3/10/2021	17:38	9.812	10.893	41.125	0.217	
3/10/2021	17:39	9.279	11.483	54.402	0.2	
3/10/2021	17:40	9.736	10.977	45.075	0.198	
3/10/2021	17:41	9.157	11.646	59.636	0.194	
3/10/2021	17:42	8.959	11.756	57.012	0.185	

3/10/2021	17:43	9.273	11.439	54.364	0.188	
3/10/2021	17:44	8.347	12.415	68.019	0.189	
3/10/2021	17:45	8.709	11.924	58.424	0.196	
3/10/2021	17:46	9.191	11.603	55.606	0.198	
3/10/2021	17:47	9.211	11.437	49.573	0.182	
3/10/2021	17:48	9.816	10.86	47.335	0.185	
3/10/2021	17:49	9.419	11.409	50.031	0.189	
3/10/2021	17:50	9.421	11.288	50.076	0.184	
3/10/2021	17:51	9.734	11.141	51.871	0.192	
3/10/2021	17:52	8.44	12.267	60.235	0.177	
3/10/2021	17:53	8.639	12.105	60.052	0.167	
3/10/2021	17:54	9.122	11.599	54.449	0.163	
3/10/2021	17:55	9.233	11.498	50.43	0.172	
3/10/2021	17:56	9.891	10.879	47.575	0.178	
3/10/2021	17:57	8.964	11.793	56.807	0.175	
3/10/2021	17:58	8.981	11.785	58.386	0.17	
3/10/2021	17:59	9.6	11.109	48.249	0.18	
3/10/2021	18:00	9.996	10.804	41.552	0.188	
3/10/2021	18:01	8.75	12.074	58.201	0.194	
3/10/2021	18:02	9.04	11.675	55.451	0.186	
3/10/2021	18:03	9.442	11.361	48.269	0.197	
3/10/2021	18:04	9.864	10.872	48.437	0.192	
AVERAGE		**9.311867**	**11.4319**	**52.35527**	**0.1874**	
3/10/2021	18:05	9.861	10.194	14.707	0.288	
3/10/2021	18:06	10.829	10.598	0.088	0.149	
3/10/2021	18:07	10.831	10.604	0.066	0.105	SYS O2/CO2
3/10/2021	18:08	8.056	7.397	12.504	0.112	
3/10/2021	18:09	0.054	0.119	40.932	0.3	
3/10/2021	18:10	0.045	0.087	40.982	0.418	SYS NOX
3/10/2021	18:11	0.045	0.079	22.86	0.591	
3/10/2021	18:12	0.041	0.071	0.154	3.879	
3/10/2021	18:13	0.041	0.067	0.084	4.593	
3/10/2021	18:14	2.166	1.16	2.551	4.593	SYS CO
3/10/2021	18:15	10.861	10.595	41.16	4.592	
3/10/2021	18:16	10.866	10.602	41.307	4.605	
3/10/2021	18:17	10.869	10.609	41.309	4.606	DIR SPAN
3/10/2021	18:18	4.811	4.764	23.457	4.259	
3/10/2021	18:19	0.008	0.031	0.052	0.56	
3/10/2021	18:20	0.005	0.03	0.017	0.013	DIR ZERO
3/10/2021	18:21	16.123	9.871	37.459	0.512	
3/10/2021	18:22	19.191	19.305	85.78	7.937	
3/10/2021	18:23	19.191	19.315	82.924	9.638	
3/10/2021	18:24	19.191	19.315	86.792	9.657	
3/10/2021	18:25	19.191	19.312	87.195	9.649	
3/10/2021	18:26	19.188	18.947	87.173	9.658	
3/10/2021	18:27	19.19	18.957	87.171	9.659	
3/10/2021	18:28	19.191	18.968	87.167	9.664	DIR HIGH
3/10/2021	18:29	20.06	6.117	31.588	8.335	

3/10/2021	18:30	20.988	-0.637	0.092	1.008

Desert View Power UNIT 1
3/11/2021

Date	Time	O2 %	CO2 %	
3/11/2021	15:11:00	2.967	4.946	
3/11/2021	15:12:00	-0.018	-0.012	
3/11/2021	15:13:00	-0.018	-0.016	
3/11/2021	15:14:00	-0.018	-0.018	DIR ZERO
3/11/2021	15:15:00	16.157	15.233	
3/11/2021	15:16:00	19.144	18.973	
3/11/2021	15:17:00	19.158	18.97	DIR HIGH
3/11/2021	15:18:00	12.29	11.833	
3/11/2021	15:19:00	10.84	10.416	DIR HIGH;DIR MID
3/11/2021	15:20:00	9.914	10.14	
3/11/2021	15:21:00	10.814	10.416	SYS SPAN
3/11/2021	15:22:00	4.859	4.421	
3/11/2021	15:23:00	0.008	0.061	SYS ZERO
3/11/2021	15:24:00	5.479	6.865	
3/11/2021	15:25:00	9.664	10.911	RUN 1 HG
3/11/2021	15:26:00	9.662	10.904	
3/11/2021	15:27:00	9.148	11.491	
3/11/2021	15:28:00	8.91	11.702	
3/11/2021	15:29:00	8.749	11.833	
3/11/2021	15:30:00	9.399	11.239	
3/11/2021	15:31:00	9.054	11.516	
3/11/2021	15:32:00	9.82	10.59	
3/11/2021	15:33:00	9.89	10.742	
3/11/2021	15:34:00	9.787	10.829	
3/11/2021	15:35:00	9.888	10.717	
3/11/2021	15:36:00	9.875	10.765	
3/11/2021	15:37:00	9.667	10.956	
3/11/2021	15:38:00	9.633	10.925	
3/11/2021	15:39:00	9.91	10.742	
3/11/2021	15:40:00	10.007	10.587	
3/11/2021	15:41:00	9.052	11.619	
3/11/2021	15:42:00	9.773	10.809	
3/11/2021	15:43:00	10.173	10.427	
3/11/2021	15:44:00	9.767	10.883	
3/11/2021	15:45:00	9.403	11.182	
3/11/2021	15:46:00	10.013	10.606	
3/11/2021	15:47:00	9.765	10.78	
3/11/2021	15:48:00	9.607	11.033	
3/11/2021	15:49:00	9.816	10.775	
3/11/2021	15:50:00	10.066	10.525	
3/11/2021	15:51:00	10.012	10.575	
3/11/2021	15:52:00	9.746	10.878	
3/11/2021	15:53:00	9.189	11.44	

Desert View Power UNIT 1
3/11/2021

Date	Time	O2 %	CO2 %	
3/11/2021	15:54:00	9.422	11.147	
3/11/2021	15:55:00	9.2	11.367	
3/11/2021	15:56:00	9.864	10.728	
3/11/2021	15:57:00	9.791	10.869	
3/11/2021	15:58:00	9.055	11.538	
3/11/2021	15:59:00	9.783	10.796	
3/11/2021	16:00:00	9.422	11.167	
3/11/2021	16:01:00	9.917	10.704	
3/11/2021	16:02:00	9.529	11.076	
3/11/2021	16:03:00	9.394	11.201	
3/11/2021	16:04:00	9.642	10.952	
3/11/2021	16:05:00	10.061	10.523	
3/11/2021	16:06:00	10.134	10.53	
3/11/2021	16:07:00	9.716	10.919	
3/11/2021	16:08:00	9.509	11.039	
3/11/2021	16:09:00	9.596	11.026	
3/11/2021	16:10:00	9.866	10.737	
3/11/2021	16:11:00	9.756	10.831	
3/11/2021	16:12:00	9.899	10.734	
3/11/2021	16:13:00	9.905	10.724	
3/11/2021	16:14:00	9.268	11.351	
3/11/2021	16:15:00	9.261	11.231	
3/11/2021	16:16:00	9.549	11.071	
3/11/2021	16:17:00	9.339	11.297	
3/11/2021	16:18:00	8.571	12	
3/11/2021	16:19:00	9.397	11.231	
3/11/2021	16:20:00	9.307	11.291	
3/11/2021	16:21:00	9.935	10.698	
3/11/2021	16:22:00	9.973	10.63	
3/11/2021	16:23:00	9.776	10.85	
3/11/2021	16:24:00	10.143	10.462	
3/11/2021	16:25:00	9.355	11.34	
Run 1 Average		9.62	10.99	
3/11/2021	16:26:00	8.64	11.95	
3/11/2021	16:27:00	9.344	11.24	
3/11/2021	16:28:00	9.083	11.535	
3/11/2021	16:29:00	9.052	11.529	
3/11/2021	16:30:00	10.046	9.918	
3/11/2021	16:31:00	10.808	10.419	SYS SPAN
3/11/2021	16:32:00	5.021	4.597	
3/11/2021	16:33:00	0.006	0.069	
3/11/2021	16:34:00	-0.002	0.051	SYS ZERO
3/11/2021	16:35:00	-0.023	0.017	
3/11/2021	16:36:00	-0.019	-0.008	DIR ZERO

Desert View Power UNIT 1
3/11/2021

Date	Time	O2 %	CO2 %	
3/11/2021	16:37:00	9.335	8.693	
3/11/2021	16:38:00	10.84	10.418	
3/11/2021	16:39:00	10.839	10.417	DIR SPAN
3/11/2021	16:40:00	9.695	10.881	
3/11/2021	16:41:00	10.027	10.6	
3/11/2021	16:42:00	10.03	10.53	
3/11/2021	16:43:00	9.745	10.927	
3/11/2021	16:44:00	9.332	11.235	
3/11/2021	16:45:00	9.198	11.353	
3/11/2021	16:46:00	9.553	11.057	
3/11/2021	16:47:00	9.266	11.342	
3/11/2021	16:48:00	8.638	11.973	
3/11/2021	16:49:00	8.764	11.762	
3/11/2021	16:50:00	9.339	11.169	RUN 2 HG
3/11/2021	16:51:00	10.21	10.392	
3/11/2021	16:52:00	9.433	11.145	
3/11/2021	16:53:00	9.931	10.634	
3/11/2021	16:54:00	9.628	11.001	
3/11/2021	16:55:00	10.513	10.041	
3/11/2021	16:56:00	9.812	10.786	
3/11/2021	16:57:00	9.938	10.679	
3/11/2021	16:58:00	8.906	11.699	
3/11/2021	16:59:00	8.696	11.83	
3/11/2021	17:00:00	9.48	11.117	
3/11/2021	17:01:00	9.353	11.22	
3/11/2021	17:02:00	9.253	11.307	
3/11/2021	17:03:00	9.236	11.356	
3/11/2021	17:04:00	8.81	11.728	
3/11/2021	17:05:00	8.789	11.779	
3/11/2021	17:06:00	9.054	11.526	
3/11/2021	17:07:00	9.522	11.012	
3/11/2021	17:08:00	9.235	11.366	
3/11/2021	17:09:00	8.52	12.004	
3/11/2021	17:10:00	9.565	10.999	
3/11/2021	17:11:00	10.122	10.43	
3/11/2021	17:12:00	9.557	11.006	
3/11/2021	17:13:00	9.885	10.722	
3/11/2021	17:14:00	9.425	11.157	
3/11/2021	17:15:00	8.671	11.864	
3/11/2021	17:16:00	9.27	11.273	
3/11/2021	17:17:00	9.26	11.361	
3/11/2021	17:18:00	8.994	11.569	
3/11/2021	17:19:00	9.26	11.265	
3/11/2021	17:20:00	10.026	10.54	

Desert View Power UNIT 1
3/11/2021

Date	Time	O2 %	CO2 %	
3/11/2021	17:21:00	9.819	10.76	
3/11/2021	17:22:00	9.406	11.231	
3/11/2021	17:23:00	8.673	11.901	
3/11/2021	17:24:00	8.903	11.639	
3/11/2021	17:25:00	8.627	11.925	
3/11/2021	17:26:00	8.469	12.117	
3/11/2021	17:27:00	8.621	11.897	
3/11/2021	17:28:00	9.13	11.418	
3/11/2021	17:29:00	9.364	11.241	
3/11/2021	17:30:00	8.451	12.103	
3/11/2021	17:31:00	8.854	11.69	
3/11/2021	17:32:00	8.96	11.603	
3/11/2021	17:33:00	9.326	11.222	
3/11/2021	17:34:00	9.303	11.301	
3/11/2021	17:35:00	8.49	12.059	
3/11/2021	17:36:00	9.256	11.346	
3/11/2021	17:37:00	9.451	11.077	
3/11/2021	17:38:00	9.559	11.034	
3/11/2021	17:39:00	10.025	10.509	
3/11/2021	17:40:00	9.429	11.013	
3/11/2021	17:41:00	8.84	11.727	
3/11/2021	17:42:00	8.216	12.335	
3/11/2021	17:43:00	8.473	12.048	
3/11/2021	17:44:00	8.839	11.664	
3/11/2021	17:45:00	9.488	11.108	
3/11/2021	17:46:00	9.152	11.392	
3/11/2021	17:47:00	9.229	11.319	
3/11/2021	17:48:00	9.915	10.697	
3/11/2021	17:49:00	8.581	11.982	
3/11/2021	17:50:00	9.265	11.275	
Run 2 Average		9.24	11.32	
3/11/2021	17:51:00	8.344	12.264	
3/11/2021	17:52:00	7.788	12.743	
3/11/2021	17:53:00	8.296	12.232	
3/11/2021	17:54:00	9.418	11.107	
3/11/2021	17:55:00	10.244	9.833	
3/11/2021	17:56:00	10.81	10.426	SYS O2
3/11/2021	17:57:00	5.188	4.831	
3/11/2021	17:58:00	0.004	0.066	SYS ZERO
3/11/2021	17:59:00	0.028	0.002	
3/11/2021	18:00:00	-0.017	-0.018	
3/11/2021	18:01:00	-0.018	-0.018	DIR ZERO
3/11/2021	18:02:00	8.536	8.011	
3/11/2021	18:03:00	10.838	10.415	DIR SPAN

Desert View Power UNIT 1
3/11/2021

Date	Time	O2 %	CO2 %	
3/11/2021	18:04:00	9.636	10.9	
3/11/2021	18:05:00	9.108	11.471	
3/11/2021	18:06:00	8.949	11.616	
3/11/2021	18:07:00	9.181	11.437	
3/11/2021	18:08:00	9.385	11.231	
3/11/2021	18:09:00	9.371	11.205	
3/11/2021	18:10:00	8.889	11.638	
3/11/2021	18:11:00	9.112	11.46	RUN 3 HG
3/11/2021	18:12:00	9.185	11.432	
3/11/2021	18:13:00	8.864	11.781	
3/11/2021	18:14:00	8.354	12.149	
3/11/2021	18:15:00	8.957	11.606	
3/11/2021	18:16:00	9.433	11.197	
3/11/2021	18:17:00	8.669	11.946	
3/11/2021	18:18:00	8.504	12.088	
3/11/2021	18:19:00	8.515	11.983	
3/11/2021	18:20:00	9.819	10.805	
3/11/2021	18:21:00	9.734	10.876	
3/11/2021	18:22:00	9.604	10.993	
3/11/2021	18:23:00	8.938	11.674	
3/11/2021	18:24:00	9.542	11.049	
3/11/2021	18:25:00	8.841	11.753	
3/11/2021	18:26:00	8.79	11.803	
3/11/2021	18:27:00	8.981	11.551	
3/11/2021	18:28:00	8.65	12.013	
3/11/2021	18:29:00	9.518	10.987	
3/11/2021	18:30:00	9.885	10.806	
3/11/2021	18:31:00	9.17	11.376	
3/11/2021	18:32:00	8.629	12	
3/11/2021	18:33:00	9.055	11.483	
3/11/2021	18:34:00	9.805	10.881	
3/11/2021	18:35:00	8.779	11.797	
3/11/2021	18:36:00	8.809	11.733	
3/11/2021	18:37:00	9.139	11.516	
3/11/2021	18:38:00	8.782	11.756	
3/11/2021	18:39:00	9.116	11.478	
3/11/2021	18:40:00	9.533	11.063	
3/11/2021	18:41:00	9.598	10.956	
3/11/2021	18:42:00	9.876	10.808	
3/11/2021	18:43:00	8.862	11.702	
3/11/2021	18:44:00	9.169	11.484	
3/11/2021	18:45:00	8.668	11.953	
3/11/2021	18:46:00	8.749	11.722	
3/11/2021	18:47:00	10.078	10.572	
3/11/2021	18:48:00	9.165	11.452	

Desert View Power UNIT 1
3/11/2021

Date	Time	O2 %	CO2 %	
3/11/2021	18:49:00	9.168	11.487	
3/11/2021	18:50:00	8.077	12.493	
3/11/2021	18:51:00	8.235	12.357	
3/11/2021	18:52:00	8.431	12.13	
3/11/2021	18:53:00	9.192	11.4	
3/11/2021	18:54:00	8.819	11.754	
3/11/2021	18:55:00	8.951	11.621	
3/11/2021	18:56:00	9.01	11.592	
3/11/2021	18:57:00	9.325	11.214	
3/11/2021	18:58:00	9.376	11.301	
3/11/2021	18:59:00	9.019	11.523	
3/11/2021	19:00:00	9.464	11.188	
3/11/2021	19:01:00	8.616	11.965	
3/11/2021	19:02:00	8.954	11.705	
3/11/2021	19:03:00	8.911	11.571	
3/11/2021	19:04:00	9.025	11.568	
3/11/2021	19:05:00	9.008	11.63	
3/11/2021	19:06:00	8.671	11.914	
3/11/2021	19:07:00	8.427	12.093	
3/11/2021	19:08:00	9.138	11.492	
3/11/2021	19:09:00	9.24	11.316	
3/11/2021	19:10:00	8.798	11.707	
Run 3 Average		9.05	11.55	
3/11/2021	19:11:00	8.892	10.655	
3/11/2021	19:12:00	10.814	10.416	SYS O2
3/11/2021	19:13:00	9.508	8.814	
3/11/2021	19:14:00	0.025	0.094	
3/11/2021	19:15:00	0.004	0.052	SYS ZERO
3/11/2021	19:16:00	-0.034	-0.003	
3/11/2021	19:17:00	-0.018	-0.013	DIR ZERO
3/11/2021	19:18:00	9.369	8.786	
3/11/2021	19:19:00	10.85	10.417	DIR SPAN
3/11/2021	19:20:00	17.627	15.639	
3/11/2021	19:21:00	19.153	18.619	
3/11/2021	19:22:00	19.163	19.086	
3/11/2021	19:23:00	19.167	19.002	DIR HIGH
3/11/2021	19:24:00	20.299	5.235	

Date	Time	O2-1 %	CO2-1 %	O2-2 %	CO2-2 %
3/12/2021	7:22	20.96	0.09		
3/12/2021	7:23	2.73	0.03		
3/12/2021	7:24	0.00	0.01	DIR ZERO	
3/12/2021	7:25	15.56	14.93		
3/12/2021	7:26	19.18	18.97	DIR HIGH	
3/12/2021	7:27	12.26	11.54		
3/12/2021	7:28	10.86	10.43	DIR SPAN	
3/12/2021	7:29	18.42	2.43		
3/12/2021	7:30	20.95	0.10		
3/12/2021	7:31	20.96	0.08		
3/12/2021	7:32	20.96	0.08		
3/12/2021	7:33	20.96	0.08		
3/12/2021	7:34	20.97	0.08		
3/12/2021	7:35	20.96	0.08		
3/12/2021	7:36	13.53	7.58		
3/12/2021	7:37	9.16	11.46		
3/12/2021	7:38	9.58	11.00		
3/12/2021	7:39	9.33	11.33		
3/12/2021	7:40	9.37	11.24		
3/12/2021	7:41	8.44	12.14		
3/12/2021	7:42	9.00	11.60		
3/12/2021	7:43	9.71	10.95		
3/12/2021	7:44	9.86	10.70		
3/12/2021	7:45	10.18	10.48		
3/12/2021	7:46	9.37	11.26		
3/12/2021	7:47	9.58	11.02		
3/12/2021	7:48	9.20	11.50		
3/12/2021	7:49	8.66	11.96		
3/12/2021	7:50	9.29	11.28		
3/12/2021	7:51	9.29	11.32		
3/12/2021	7:52	8.80	11.81		
3/12/2021	7:53	8.48	12.14		
3/12/2021	7:54	9.25	11.34		
3/12/2021	7:55	9.20	11.44		
3/12/2021	7:56	9.27	11.35		
3/12/2021	7:57	8.42	12.14		
3/12/2021	7:58	9.43	11.19		
3/12/2021	7:59	9.21	11.44		
3/12/2021	8:00	9.71	10.93		
3/12/2021	8:01	9.34	11.26		
3/12/2021	8:02	9.04	11.60		
3/12/2021	8:03	8.93	11.69		
3/12/2021	8:04	9.63	10.99		
3/12/2021	8:05	7.23	13.38		

3/12/2021	8:06	7.96	12.58	
3/12/2021	8:07	9.84	10.77	
3/12/2021	8:08	8.49	12.17	
3/12/2021	8:09	8.27	12.23	
3/12/2021	8:10	9.16	11.47	
3/12/2021	8:11	9.48	11.14	
3/12/2021	8:12	9.91	10.67	
3/12/2021	8:13	9.74	10.89	
3/12/2021	8:14	9.31	11.32	
3/12/2021	8:15	9.09	11.51	
3/12/2021	8:16	9.42	11.19	
3/12/2021	8:17	9.10	11.50	
3/12/2021	8:18	9.06	11.50	
3/12/2021	8:19	9.54	11.06	
3/12/2021	8:20	9.18	11.39	
3/12/2021	8:21	8.48	12.18	
3/12/2021	8:22	9.47	11.06	
3/12/2021	8:23	8.81	11.81	
3/12/2021	8:24	8.87	11.74	
3/12/2021	8:25	8.88	11.72	
3/12/2021	8:26	9.32	11.27	
3/12/2021	8:27	9.39	11.21	
3/12/2021	8:28	9.81	10.83	
3/12/2021	8:29	9.30	11.32	
3/12/2021	8:30	9.00	11.63	
3/12/2021	8:31	8.71	11.88	
3/12/2021	8:32	9.63	10.92	
3/12/2021	8:33	9.15	11.46	
3/12/2021	8:34	9.40	11.22	
3/12/2021	8:35	9.25	11.35	
3/12/2021	8:36	9.03	11.57	
3/12/2021	8:37	9.44	11.16	
3/12/2021	8:38	9.62	11.01	
3/12/2021	8:39	9.57	11.01	
3/12/2021	8:40	9.25	11.37	RUN 1 PM
3/12/2021	8:41	9.84	10.77	
3/12/2021	8:42	9.30	11.29	
3/12/2021	8:43	8.77	11.85	
3/12/2021	8:44	8.71	11.80	
3/12/2021	8:45	9.26	11.37	
3/12/2021	8:46	9.73	10.83	
3/12/2021	8:47	9.88	10.73	
3/12/2021	8:48	9.53	11.09	
3/12/2021	8:49	9.77	10.82	
3/12/2021	8:50	9.55	11.02	
3/12/2021	8:51	9.02	11.61	
3/12/2021	8:52	9.03	11.53	

3/12/2021	8:53	9.73	10.82
3/12/2021	8:54	9.27	11.41
3/12/2021	8:55	8.47	12.05
3/12/2021	8:56	8.75	11.83
3/12/2021	8:57	9.64	11.03
3/12/2021	8:58	8.74	11.85
3/12/2021	8:59	8.43	12.13
3/12/2021	9:00	8.97	11.59
3/12/2021	9:01	8.88	11.73
3/12/2021	9:02	8.91	11.71
3/12/2021	9:03	9.29	11.31
3/12/2021	9:04	8.74	11.81
3/12/2021	9:05	9.35	11.24
3/12/2021	9:06	9.41	11.21
3/12/2021	9:07	8.54	12.13
3/12/2021	9:08	9.03	11.50
3/12/2021	9:09	9.09	11.55
3/12/2021	9:10	8.64	11.98
3/12/2021	9:11	8.18	12.48
3/12/2021	9:12	8.20	12.36
3/12/2021	9:13	8.18	12.42
3/12/2021	9:14	8.65	11.93
3/12/2021	9:15	8.77	11.90
3/12/2021	9:16	8.33	12.29
3/12/2021	9:17	9.33	11.30
3/12/2021	9:18	9.33	11.25
3/12/2021	9:19	9.98	10.75
3/12/2021	9:20	8.82	11.81
3/12/2021	9:21	9.89	10.79
3/12/2021	9:22	9.21	11.48
3/12/2021	9:23	8.85	11.81
3/12/2021	9:24	9.43	11.18
3/12/2021	9:25	9.43	11.27
3/12/2021	9:26	10.26	10.42
3/12/2021	9:27	9.70	10.99
3/12/2021	9:28	9.18	11.56
3/12/2021	9:29	8.23	12.42
3/12/2021	9:30	8.66	11.99
3/12/2021	9:31	9.02	11.65
3/12/2021	9:32	9.17	11.51
3/12/2021	9:33	8.19	12.52
3/12/2021	9:34	7.71	12.90
3/12/2021	9:35	8.68	11.98
3/12/2021	9:36	9.16	11.50
3/12/2021	9:37	8.97	11.76
3/12/2021	9:38	9.32	11.30
3/12/2021	9:39	9.40	11.38

3/12/2021	9:40	9.03	11.66
3/12/2021	9:41	8.51	12.19
3/12/2021	9:42	9.43	11.27
3/12/2021	9:43	8.87	11.77
3/12/2021	9:44	9.69	11.10
3/12/2021	9:45	9.20	11.52
3/12/2021	9:46	9.10	11.63
3/12/2021	9:47	9.20	11.54
3/12/2021	9:48	8.92	11.75
3/12/2021	9:49	8.91	11.85
3/12/2021	9:50	8.84	11.87
3/12/2021	9:51	9.08	11.61
3/12/2021	9:52	8.39	12.35
3/12/2021	9:53	8.28	12.42
3/12/2021	9:54	9.37	11.34
3/12/2021	9:55	9.20	11.46
3/12/2021	9:56	9.91	10.87
3/12/2021	9:57	9.14	11.55
3/12/2021	9:58	9.71	10.95
3/12/2021	9:59	9.18	11.64
3/12/2021	10:00	8.92	11.80
3/12/2021	10:01	9.28	11.41
3/12/2021	10:02	8.46	12.28
3/12/2021	10:03	8.71	11.91
3/12/2021	10:04	9.11	11.71
3/12/2021	10:05	8.48	12.23
3/12/2021	10:06	8.67	11.98
3/12/2021	10:07	9.79	10.91
3/12/2021	10:08	9.48	11.27
3/12/2021	10:09	9.51	11.19
3/12/2021	10:10	9.84	10.87
3/12/2021	10:11	9.43	11.32
3/12/2021	10:12	8.66	12.05
3/12/2021	10:13	9.82	10.82
3/12/2021	10:14	9.71	11.13
3/12/2021	10:15	9.54	11.13
3/12/2021	10:16	10.82	9.93
3/12/2021	10:17	10.16	10.53
3/12/2021	10:18	9.36	11.48
3/12/2021	10:19	8.44	12.19
3/12/2021	10:20	9.11	11.60
3/12/2021	10:21	8.87	11.87
3/12/2021	10:22	9.06	11.66
3/12/2021	10:23	8.91	11.79
3/12/2021	10:24	8.80	11.93
3/12/2021	10:25	8.33	12.36
3/12/2021	10:26	8.72	11.92

3/12/2021	10:27	9.39	11.37	
3/12/2021	10:28	9.18	11.49	
3/12/2021	10:29	8.64	12.05	
3/12/2021	10:30	9.09	11.57	
3/12/2021	10:31	8.74	11.98	
3/12/2021	10:32	9.31	11.39	
3/12/2021	10:33	9.37	11.36	
3/12/2021	10:34	10.01	10.65	
3/12/2021	10:35	10.05	10.70	
3/12/2021	10:36	9.65	11.10	
3/12/2021	10:37	8.88	11.82	
3/12/2021	10:38	8.64	12.05	
3/12/2021	10:39	8.88	11.81	
3/12/2021	10:40	9.65	11.07	
3/12/2021	10:41	9.56	11.11	
3/12/2021	10:42	9.59	11.09	
3/12/2021	10:43	9.43	11.28	
3/12/2021	10:44	9.32	11.37	
3/12/2021	10:45	9.89	10.79	
3/12/2021	10:46	9.86	10.90	
3/12/2021	10:47	9.08	11.63	
3/12/2021	10:48	9.26	11.43	
3/12/2021	10:49	9.08	11.62	
3/12/2021	10:50	9.50	11.14	
3/12/2021	10:51	10.24	10.48	
3/12/2021	10:52	9.49	11.25	
3/12/2021	10:53	8.75	11.95	
3/12/2021	10:54	9.37	11.29	
3/12/2021	10:55	10.05	10.61	
3/12/2021	10:56	9.82	10.90	
3/12/2021	10:57	8.23	12.43	
3/12/2021	10:58	8.69	11.95	
3/12/2021	10:59	9.01	11.71	
3/12/2021	11:00	9.19	11.42	
AVERAGE		9.15	11.52	
3/12/2021	11:01	10.12	10.58	
3/12/2021	11:02	10.21	10.06	
3/12/2021	11:03	10.82	10.50	SYS O2
3/12/2021	11:04	10.06	9.56	
3/12/2021	11:05	0.04	0.17	
3/12/2021	11:06	0.00	0.12	SYS ZERO
3/12/2021	11:07	-0.03	0.06	
3/12/2021	11:08	-0.01	0.05	DIR ZERO
3/12/2021	11:09	7.85	7.43	
3/12/2021	11:10	10.85	10.49	DIR SPAN
3/12/2021	11:11	10.08	10.69	

3/12/2021	11:12	9.69	10.95	
3/12/2021	11:13	9.71	10.93	
3/12/2021	11:14	9.20	11.59	
3/12/2021	11:15	8.63	11.99	
3/12/2021	11:16	9.86	10.78	
3/12/2021	11:17	9.65	11.00	
3/12/2021	11:18	9.27	11.39	
3/12/2021	11:19	9.49	11.19	
3/12/2021	11:20	9.50	11.12	RUN 2 PM
3/12/2021	11:21	9.41	11.26	
3/12/2021	11:22	9.06	11.66	
3/12/2021	11:23	8.41	12.24	
3/12/2021	11:24	8.97	11.60	
3/12/2021	11:25	10.21	10.45	
3/12/2021	11:26	9.98	10.70	
3/12/2021	11:27	9.09	11.56	
3/12/2021	11:28	9.57	11.13	
3/12/2021	11:29	9.00	11.65	
3/12/2021	11:30	9.13	11.46	
3/12/2021	11:31	9.71	10.94	
3/12/2021	11:32	9.19	11.50	
3/12/2021	11:33	8.85	11.74	
3/12/2021	11:34	9.10	11.60	
3/12/2021	11:35	8.71	11.92	
3/12/2021	11:36	9.15	11.47	
3/12/2021	11:37	9.22	11.45	
3/12/2021	11:38	8.86	11.78	
3/12/2021	11:39	9.49	11.16	
3/12/2021	11:40	8.99	11.67	
3/12/2021	11:41	9.31	11.26	
3/12/2021	11:42	9.83	10.79	
3/12/2021	11:43	8.97	11.73	
3/12/2021	11:44	9.09	11.59	
3/12/2021	11:45	9.06	11.55	
3/12/2021	11:46	9.65	10.97	
3/12/2021	11:47	8.75	11.94	
3/12/2021	11:48	9.58	11.00	
3/12/2021	11:49	9.70	10.96	
3/12/2021	11:50	9.86	10.82	
3/12/2021	11:51	9.30	11.34	
3/12/2021	11:52	9.78	10.82	
3/12/2021	11:53	9.93	10.78	
3/12/2021	11:54	9.39	11.23	
3/12/2021	11:55	8.88	11.76	
3/12/2021	11:56	9.43	11.20	
3/12/2021	11:57	9.43	11.18	
3/12/2021	11:58	9.56	11.12	

3/12/2021	11:59	8.71	11.89
3/12/2021	12:00	9.16	11.48
3/12/2021	12:01	9.44	11.18
3/12/2021	12:02	9.38	11.24
3/12/2021	12:03	9.36	11.24
3/12/2021	12:04	8.83	11.83
3/12/2021	12:05	8.24	12.39
3/12/2021	12:06	9.70	10.81
3/12/2021	12:07	9.27	11.44
3/12/2021	12:08	9.02	11.59
3/12/2021	12:09	9.88	10.67
3/12/2021	12:10	9.75	10.98
3/12/2021	12:11	8.30	12.32
3/12/2021	12:12	8.99	11.58
3/12/2021	12:13	9.76	10.82
3/12/2021	12:14	9.84	10.83
3/12/2021	12:15	9.69	10.94
3/12/2021	12:16	8.70	11.95
3/12/2021	12:17	8.97	11.68
3/12/2021	12:18	8.97	11.56
3/12/2021	12:19	9.84	10.78
3/12/2021	12:20	10.02	10.60
3/12/2021	12:21	9.52	11.17
3/12/2021	12:22	9.07	11.52
3/12/2021	12:23	8.92	11.68
3/12/2021	12:24	8.93	11.67
3/12/2021	12:25	8.90	11.72
3/12/2021	12:26	9.68	10.95
3/12/2021	12:27	9.36	11.23
3/12/2021	12:28	9.30	11.34
3/12/2021	12:29	9.35	11.26
3/12/2021	12:30	9.81	10.78
3/12/2021	12:31	10.29	10.30
3/12/2021	12:32	10.12	10.56
3/12/2021	12:33	9.24	11.39
3/12/2021	12:34	9.95	10.63
3/12/2021	12:35	9.85	10.75
3/12/2021	12:36	9.06	11.61
3/12/2021	12:37	9.14	11.50
3/12/2021	12:38	9.03	11.57
3/12/2021	12:39	9.34	11.24
3/12/2021	12:40	9.02	11.61
3/12/2021	12:41	9.12	11.53
3/12/2021	12:42	8.84	11.74
3/12/2021	12:43	9.75	10.84
3/12/2021	12:44	9.64	10.94
3/12/2021	12:45	10.01	10.65

3/12/2021	12:46	9.37	11.26	
3/12/2021	12:47	9.41	11.22	
3/12/2021	12:48	9.65	10.96	
3/12/2021	12:49	9.66	11.00	
3/12/2021	12:50	9.54	11.12	
3/12/2021	12:51	9.50	11.10	
3/12/2021	12:52	10.14	10.50	
3/12/2021	12:53	9.74	10.90	
3/12/2021	12:54	9.49	11.11	
3/12/2021	12:55			COMPUTER CRASHED, HAD TO REBOOT
3/12/2021	12:56			
3/12/2021	12:57			
3/12/2021	12:58			
3/12/2021	12:59			
3/12/2021	13:00			
3/12/2021	13:01			
3/12/2021	13:02			
3/12/2021	13:03			
3/12/2021	13:04			
3/12/2021	13:05			
3/12/2021	13:06			
3/12/2021	13:07			
3/12/2021	13:08			
3/12/2021	13:09			
3/12/2021	13:10			
3/12/2021	13:11			
3/12/2021	13:12			
3/12/2021	13:13			
3/12/2021	13:14			
3/12/2021	13:15			
3/12/2021	13:16			
3/12/2021	13:17			
3/12/2021	13:18			
3/12/2021	13:19			
3/12/2021	13:20			
3/12/2021	13:21			
3/12/2021	13:22	9.58	11.08	
3/12/2021	13:23	9.21	11.43	
3/12/2021	13:24	9.61	11.08	
3/12/2021	13:25	9.35	11.32	
3/12/2021	13:26	9.35	11.33	
3/12/2021	13:27	8.71	11.98	
3/12/2021	13:28	8.52	12.12	
3/12/2021	13:29	8.63	12.03	
3/12/2021	13:30	8.81	11.80	
3/12/2021	13:31	9.82	10.84	
3/12/2021	13:32	9.11	11.55	

3/12/2021	13:33	9.21	11.41	
3/12/2021	13:34	9.73	10.92	
3/12/2021	13:35	9.82	10.80	
AVERAGE		9.34	11.29	
3/12/2021	13:36	9.98	10.73	
3/12/2021	13:37	10.04	9.91	
3/12/2021	13:38	10.80	10.46	
3/12/2021	13:39	10.81	10.47	SYS SPAN
3/12/2021	13:40	10.80	10.47	
3/12/2021	13:41	5.45	5.13	SYS ZERO
3/12/2021	13:42	-0.05	0.09	
3/12/2021	13:43	-0.01	0.05	
3/12/2021	13:44	-0.02	0.05	DIR ZERO
3/12/2021	13:45	8.41	7.99	
3/12/2021	13:46	10.83	10.46	
3/12/2021	13:47	10.83	10.46	DIR SPAN
3/12/2021	13:48	9.91	10.86	
3/12/2021	13:49	0.37	0.32	
3/12/2021	13:50	0.00	0.12	SYS ZERO
3/12/2021	13:51	3.71	4.98	
3/12/2021	13:52	9.16	11.37	RUN 3
3/12/2021	13:53	9.17	11.46	
3/12/2021	13:54	9.20	11.45	
3/12/2021	13:55	8.98	11.66	
3/12/2021	13:56	9.34	11.27	
3/12/2021	13:57	9.76	10.87	
3/12/2021	13:58	9.35	11.30	
3/12/2021	13:59	8.91	11.71	
3/12/2021	14:00	9.46	11.16	
3/12/2021	14:01	9.92	10.70	
3/12/2021	14:02	9.30	11.36	
3/12/2021	14:03	8.96	11.72	
3/12/2021	14:04	8.88	11.78	
3/12/2021	14:05	8.74	11.85	
3/12/2021	14:06	8.82	11.80	
3/12/2021	14:07	9.22	11.40	
3/12/2021	14:08	9.34	11.29	
3/12/2021	14:09	8.65	12.00	
3/12/2021	14:10	8.62	11.99	
3/12/2021	14:11	9.73	10.84	
3/12/2021	14:12	9.43	11.25	
3/12/2021	14:13	9.42	11.23	
3/12/2021	14:14	8.63	12.01	
3/12/2021	14:15	8.48	12.12	
3/12/2021	14:16	8.75	11.84	
3/12/2021	14:17	8.95	11.64	

3/12/2021	14:18	9.21	11.49
3/12/2021	14:19	9.14	11.44
3/12/2021	14:20	9.11	11.51
3/12/2021	14:21	9.53	11.07
3/12/2021	14:22	9.21	11.46
3/12/2021	14:23	9.15	11.43
3/12/2021	14:24	9.17	11.46
3/12/2021	14:25	9.29	11.36
3/12/2021	14:26	9.43	11.20
3/12/2021	14:27	9.01	11.61
3/12/2021	14:28	9.55	11.04
3/12/2021	14:29	9.50	11.16
3/12/2021	14:30	9.77	10.86
3/12/2021	14:31	8.95	11.66
3/12/2021	14:32	9.12	11.49
3/12/2021	14:33	9.17	11.45
3/12/2021	14:34	9.22	11.43
3/12/2021	14:35	9.77	10.81
3/12/2021	14:36	9.62	11.01
3/12/2021	14:37	9.12	11.52
3/12/2021	14:38	9.29	11.33
3/12/2021	14:39	9.20	11.35
3/12/2021	14:40	9.66	11.01
3/12/2021	14:41	9.74	10.90
3/12/2021	14:42	8.50	12.14
3/12/2021	14:43	8.06	12.53
3/12/2021	14:44	8.84	11.75
3/12/2021	14:45	9.12	11.49
3/12/2021	14:46	8.86	11.74
3/12/2021	14:47	9.26	11.32
3/12/2021	14:48	9.29	11.38
3/12/2021	14:49	8.72	11.89
3/12/2021	14:50	9.29	11.32
3/12/2021	14:51	9.46	11.14
3/12/2021	14:52	10.36	10.27
3/12/2021	14:53	9.70	10.99
3/12/2021	14:54	9.67	10.98
3/12/2021	14:55	9.93	10.72
3/12/2021	14:56	10.16	10.49
3/12/2021	14:57	10.27	10.43
3/12/2021	14:58	9.78	10.90
3/12/2021	14:59	9.76	10.91
3/12/2021	15:00	10.02	10.64
3/12/2021	15:01	10.17	10.57
3/12/2021	15:02	9.65	11.00
3/12/2021	15:03	9.29	11.41
3/12/2021	15:04	9.09	11.56

3/12/2021	15:05	8.89	11.73	
3/12/2021	15:06	9.29	11.37	
3/12/2021	15:07	8.83	11.87	
3/12/2021	15:08	8.61	12.00	
3/12/2021	15:09	8.91	11.78	
3/12/2021	15:10	8.44	12.16	
3/12/2021	15:11	9.17	11.44	
3/12/2021	15:12	9.24	11.42	
3/12/2021	15:13	9.22	11.46	
3/12/2021	15:14	9.06	11.59	
3/12/2021	15:15	8.69	11.97	
3/12/2021	15:16	8.50	12.15	
3/12/2021	15:17	8.19	12.44	
3/12/2021	15:18	8.69	11.92	
3/12/2021	15:19	8.76	11.91	
3/12/2021	15:20	8.28	12.36	
3/12/2021	15:21	7.79	12.87	
3/12/2021	15:22	7.79	12.84	
3/12/2021	15:23	7.91	12.69	
3/12/2021	15:24	8.74	11.85	
3/12/2021	15:25	8.84	11.81	
3/12/2021	15:26	8.33	12.31	
3/12/2021	15:27	8.23	12.41	
3/12/2021	15:28	8.25	12.35	
3/12/2021	15:29	8.61	12.04	
3/12/2021	15:30	7.99	12.57	
3/12/2021	15:31	8.80	11.82	
3/12/2021	15:32	9.22	11.41	
3/12/2021	15:33	9.22	11.45	
3/12/2021	15:34	8.26	12.39	
3/12/2021	15:35	8.51	12.11	
3/12/2021	15:36	8.69	11.92	
3/12/2021	15:37	8.75	11.90	
3/12/2021	15:38	8.85	11.76	
3/12/2021	15:39	9.48	11.16	
3/12/2021	15:40	9.25	11.37	
3/12/2021	15:41	11.49	8.95	CEMS PORT CHANGE
3/12/2021	15:42	14.78	6.46	
3/12/2021	15:43	8.61	12.00	
3/12/2021	15:44	8.48	12.16	
3/12/2021	15:45	8.53	12.05	
3/12/2021	15:46	8.92	11.76	
3/12/2021	15:47	8.60	12.00	
3/12/2021	15:48	8.52	12.10	
3/12/2021	15:49	9.41	11.20	
3/12/2021	15:50	8.88	11.73	
3/12/2021	15:51	9.51	11.11	

3/12/2021	15:52	9.07	11.60	
3/12/2021	15:53	9.15	11.45	
3/12/2021	15:54	8.76	11.86	
3/12/2021	15:55	8.69	11.90	
3/12/2021	15:56	8.64	11.98	
3/12/2021	15:57	9.08	11.52	
3/12/2021	15:58	9.24	11.37	
3/12/2021	15:59	8.80	11.83	
3/12/2021	16:00	9.15	11.41	
3/12/2021	16:01	8.89	11.76	
3/12/2021	16:02	8.72	11.88	
AVERAGE		9.06	11.57	
3/12/2021	16:03	8.84	10.78	
3/12/2021	16:04	10.80	10.44	
3/12/2021	16:05	10.80	10.45	
3/12/2021	16:06	10.80	10.46	SYS SPAN
3/12/2021	16:07	5.34	4.98	
3/12/2021	16:08	0.00	0.13	SYS ZERO
3/12/2021	16:09	-0.02	0.08	
3/12/2021	16:10	-0.03	0.04	DIR ZERO
3/12/2021	16:11	7.55	6.97	
3/12/2021	16:12	10.83	10.43	
3/12/2021	16:13	17.58	16.32	DIR MID @ 1612
3/12/2021	16:14	19.13	19.00	
3/12/2021	16:15	19.14	19.00	DIR HIGH

Appendix A.1.3
Unit 1 Instrument Strip Charts

SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 1

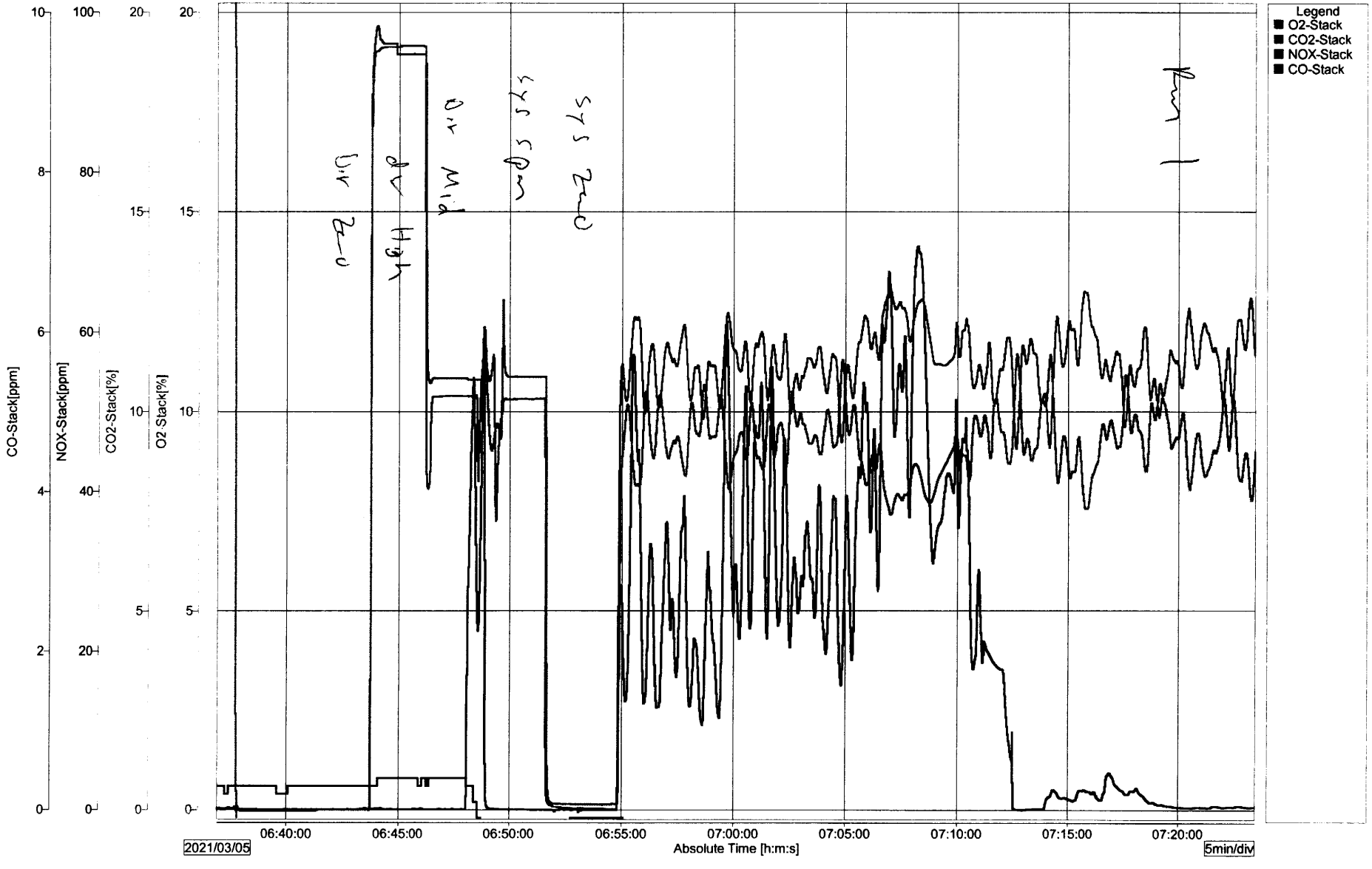
DATE: 3/5/2021
BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0.00		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

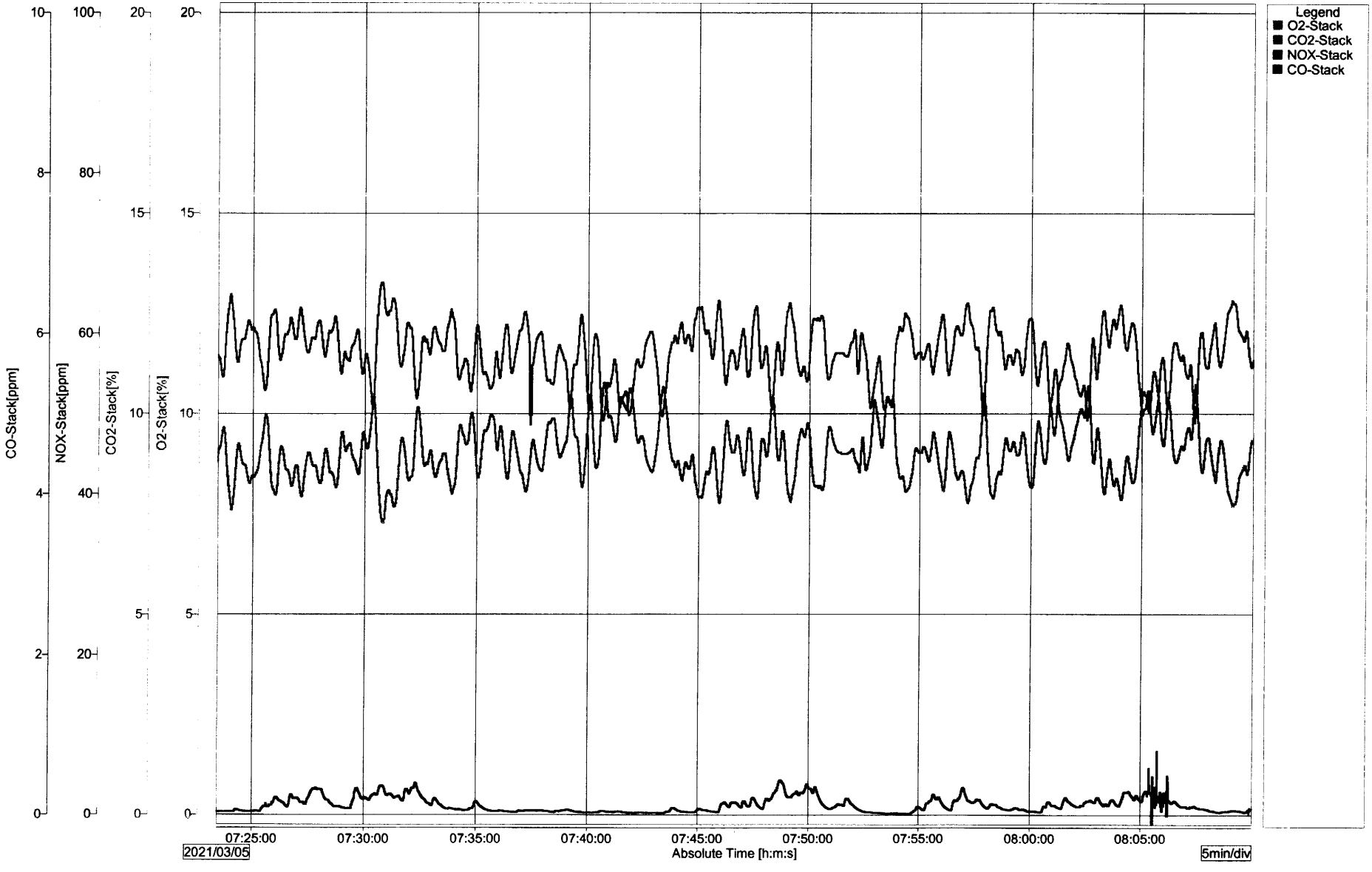
Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000



File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000

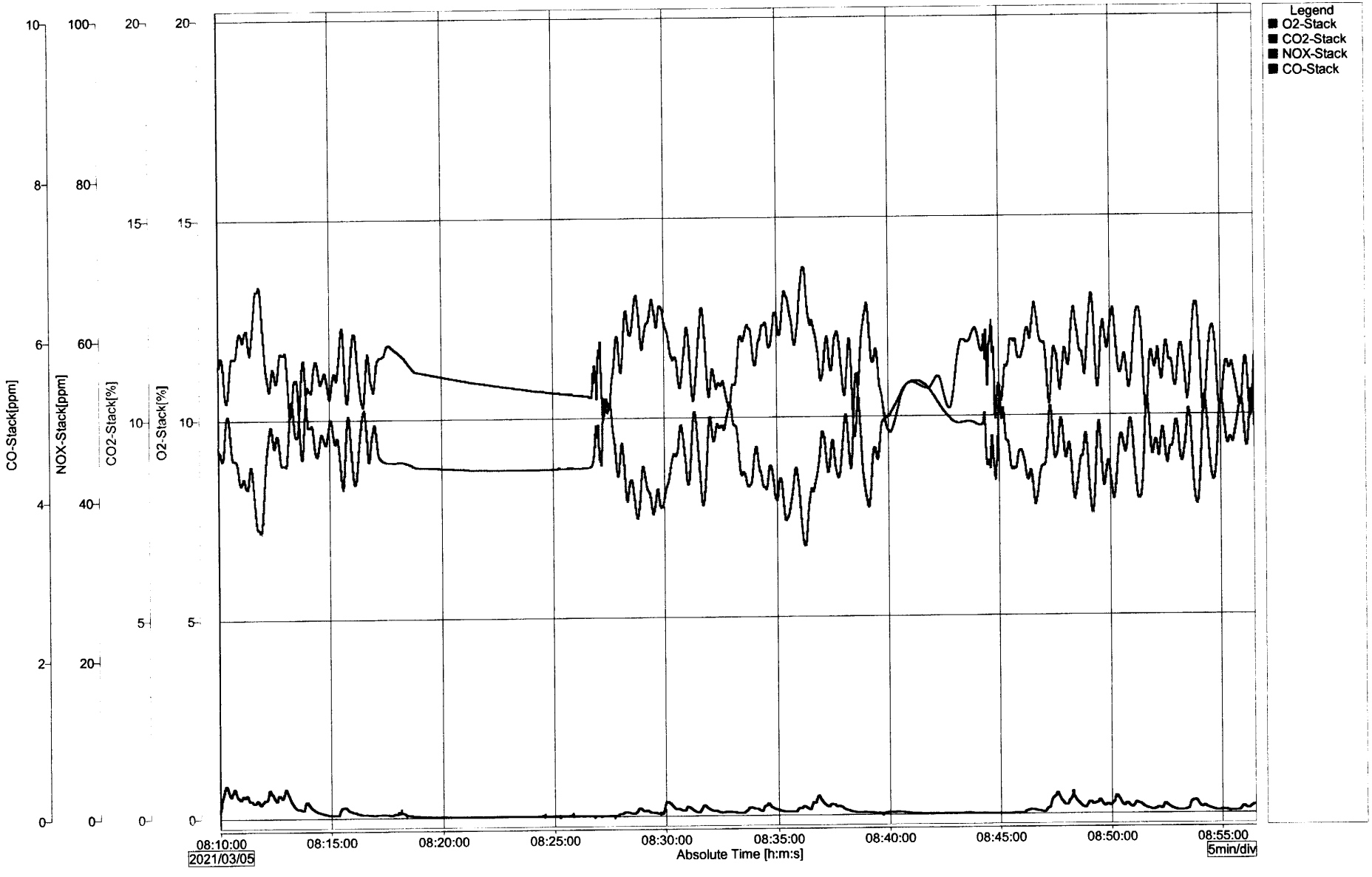


W002AS-006514-RT-2247

File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000

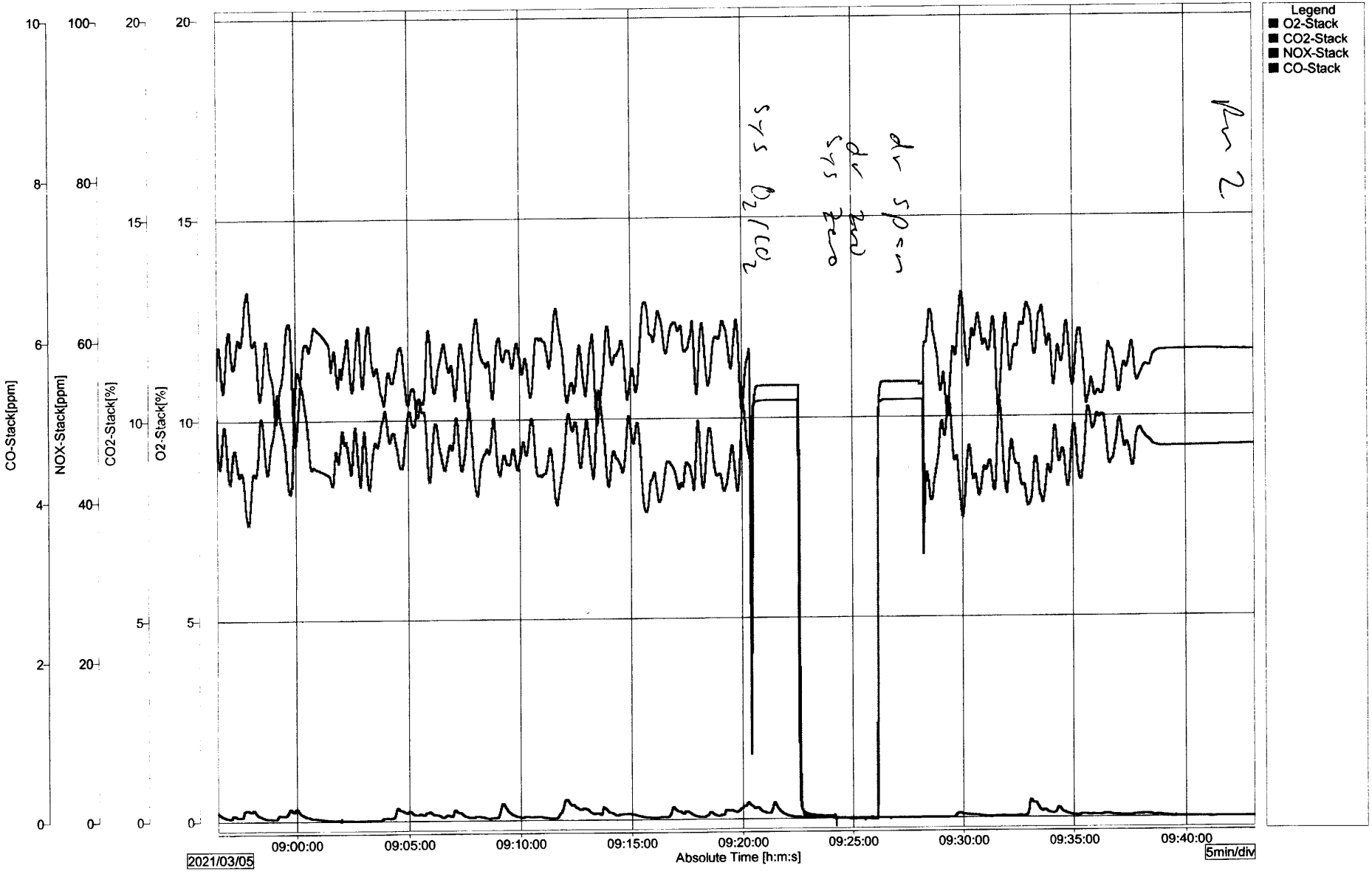


W002AS-006514-RT-2247

File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

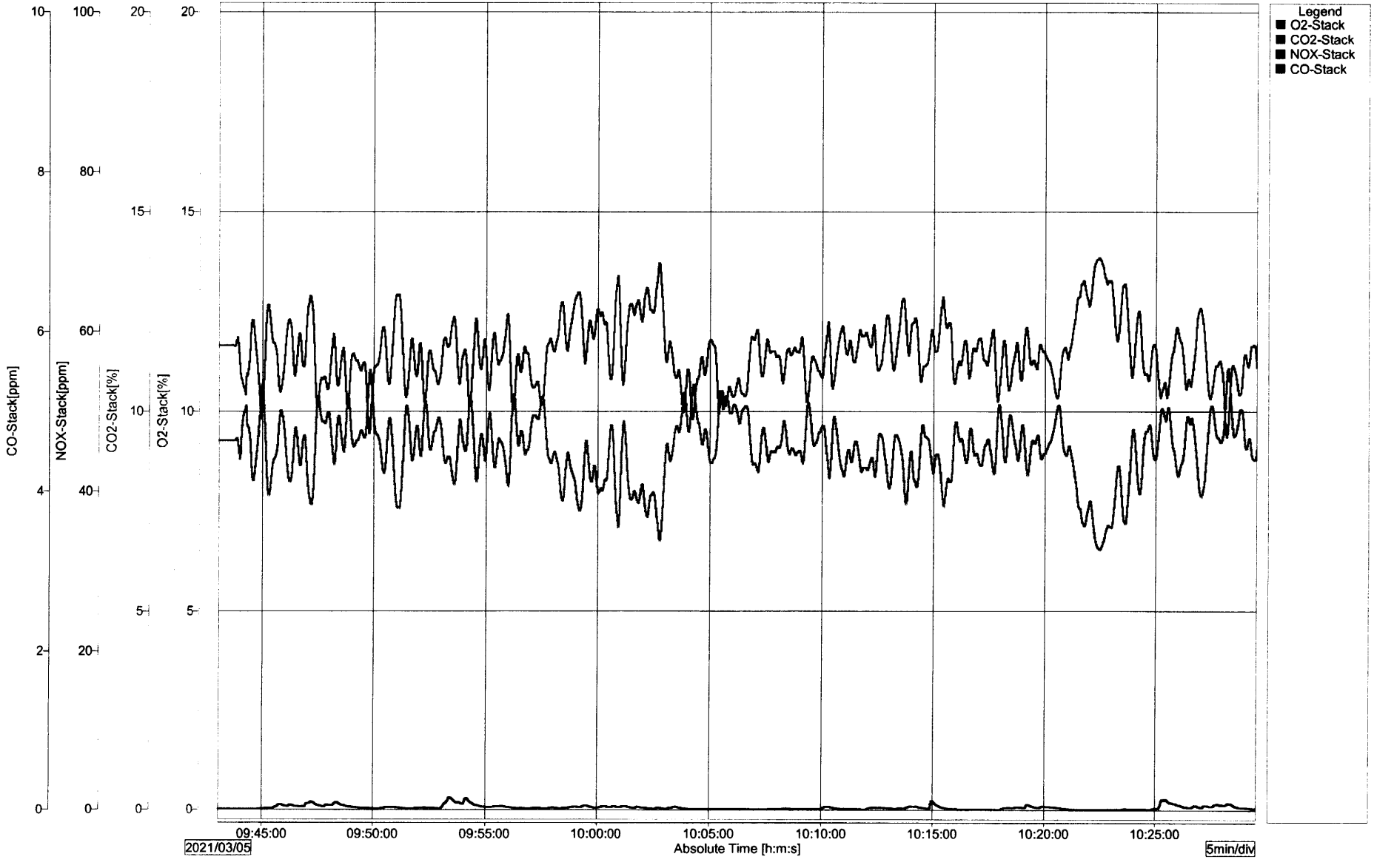
Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000



File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000

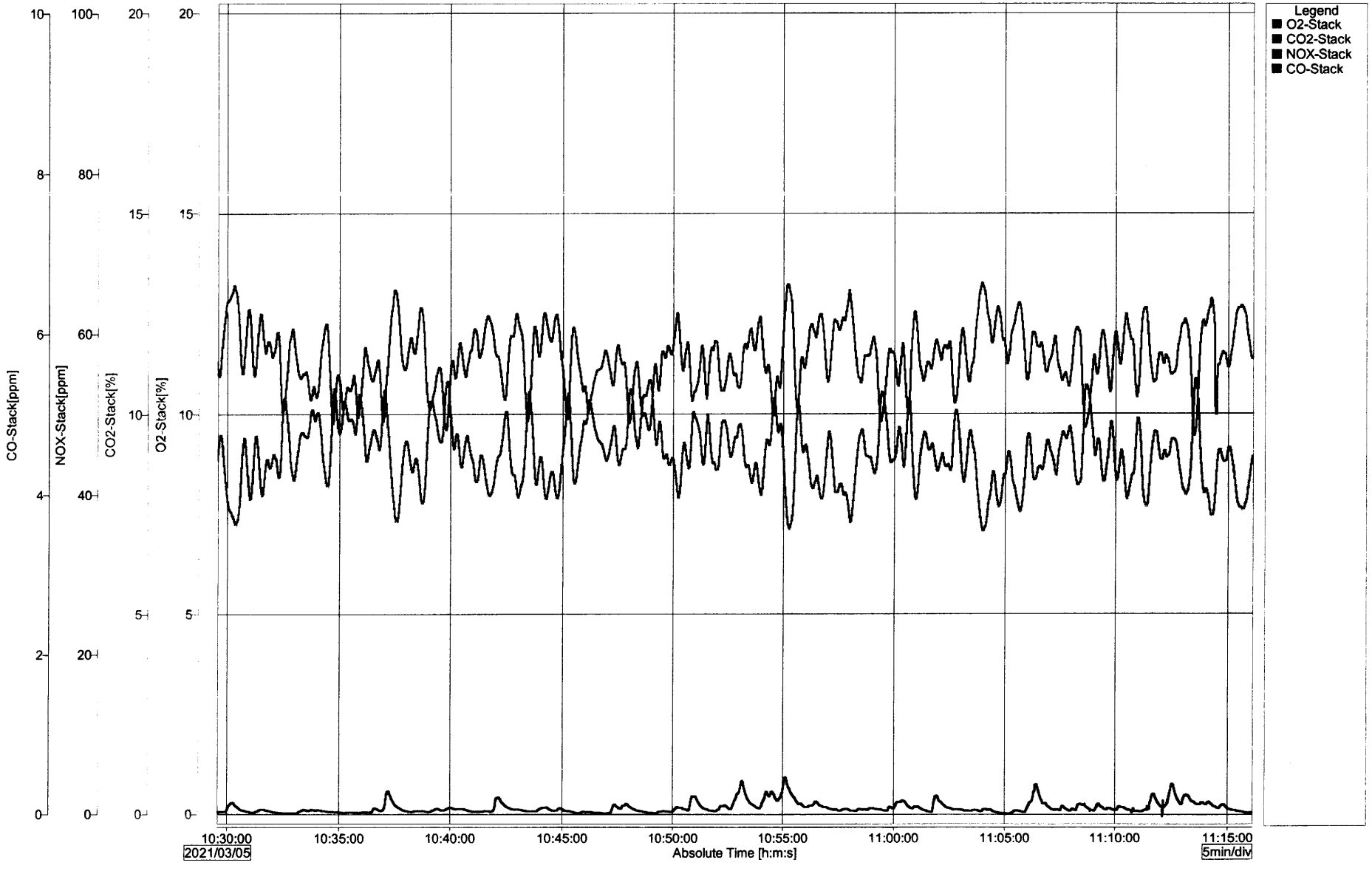


W002AS-006514-RT-2247
87 of 613

File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

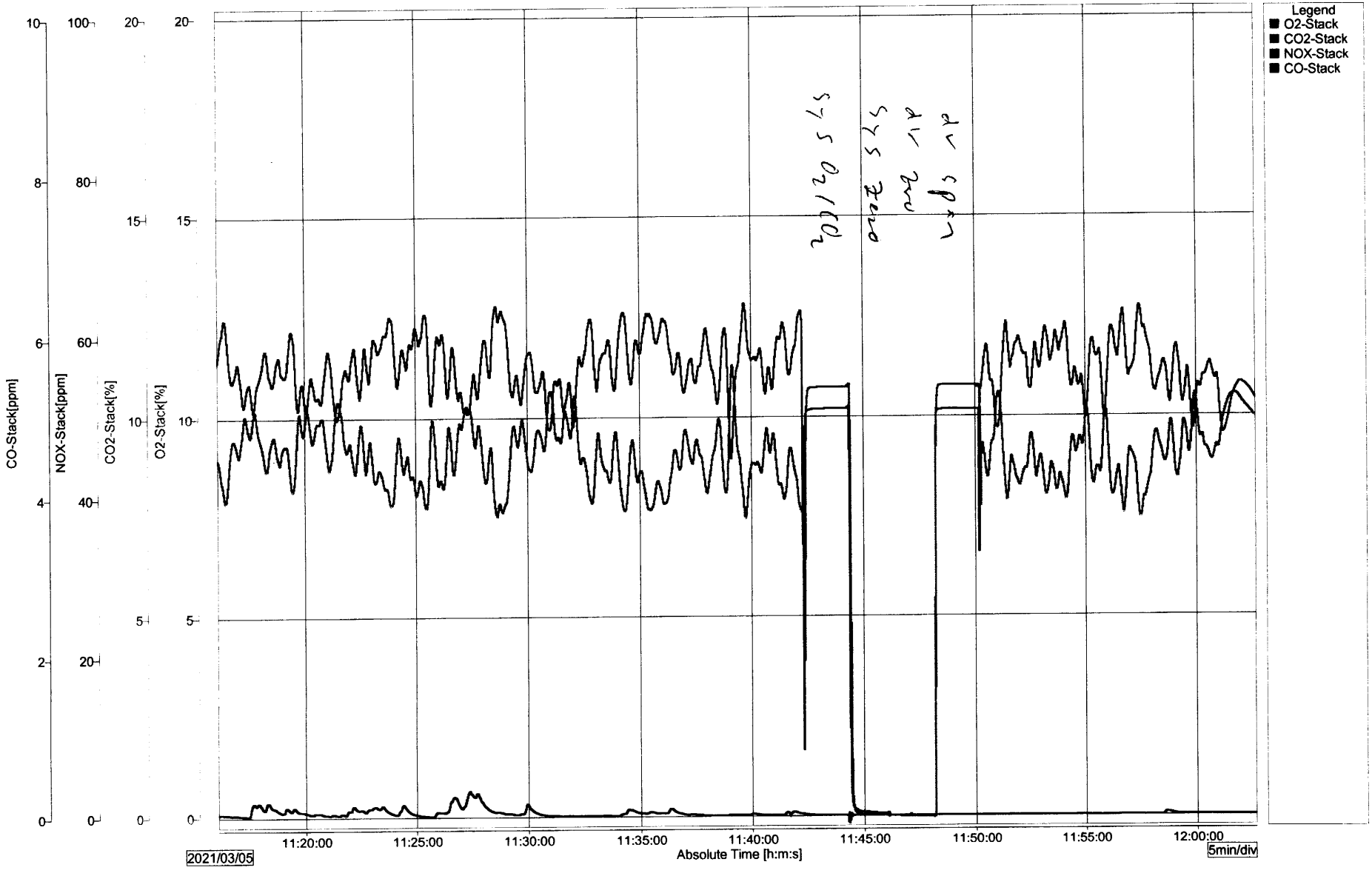
Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000



W002AS-006514-RT-2247

File Name	: 000352_TV 6_210305_063654.DSD	Start Time	: 2021/03/05 06:36:54.000
Device Type	: DX2000	Stop Time	: 2021/03/05 14:49:24.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000		

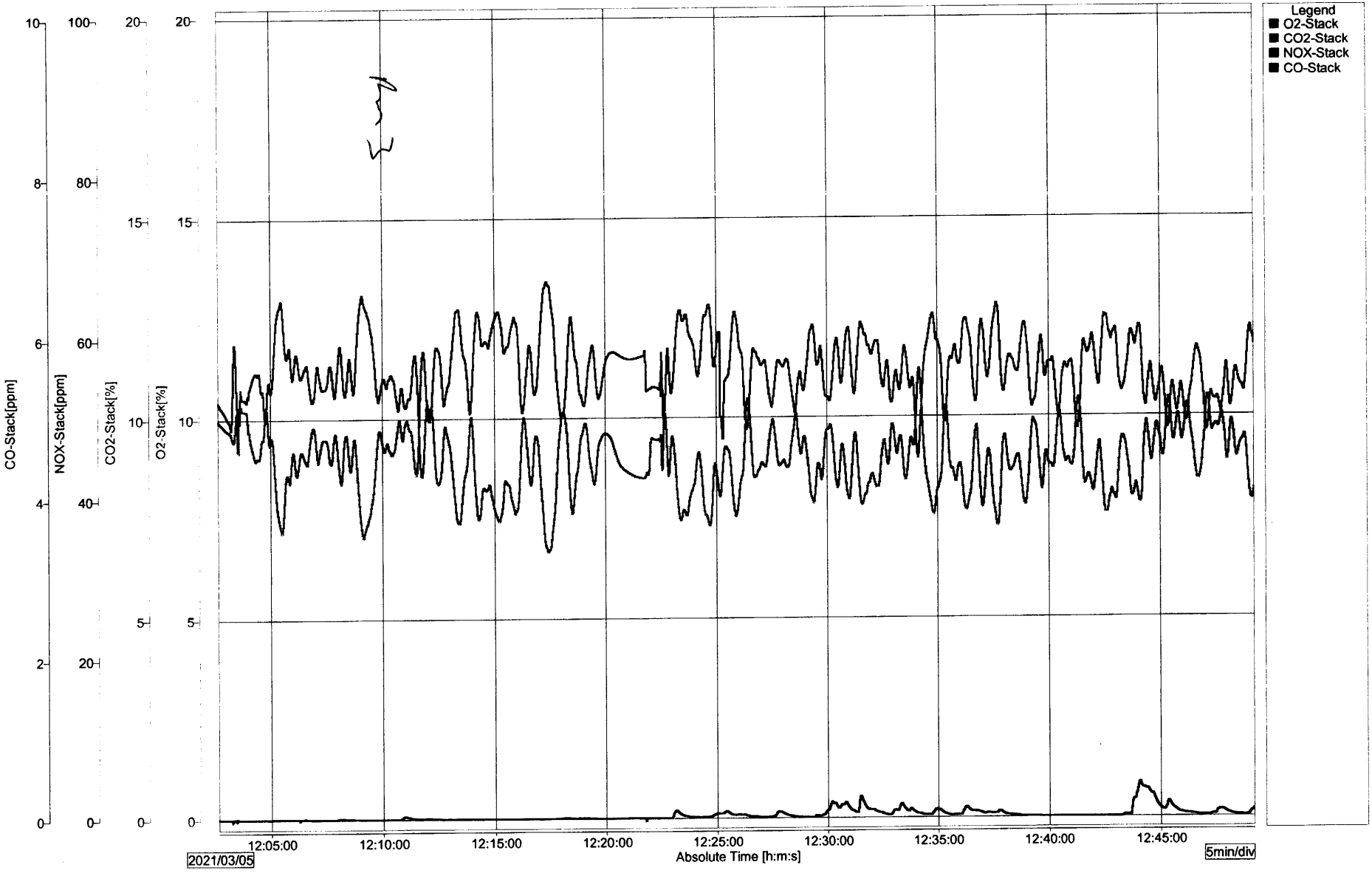


W002AS-006514-RT-2247

File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000

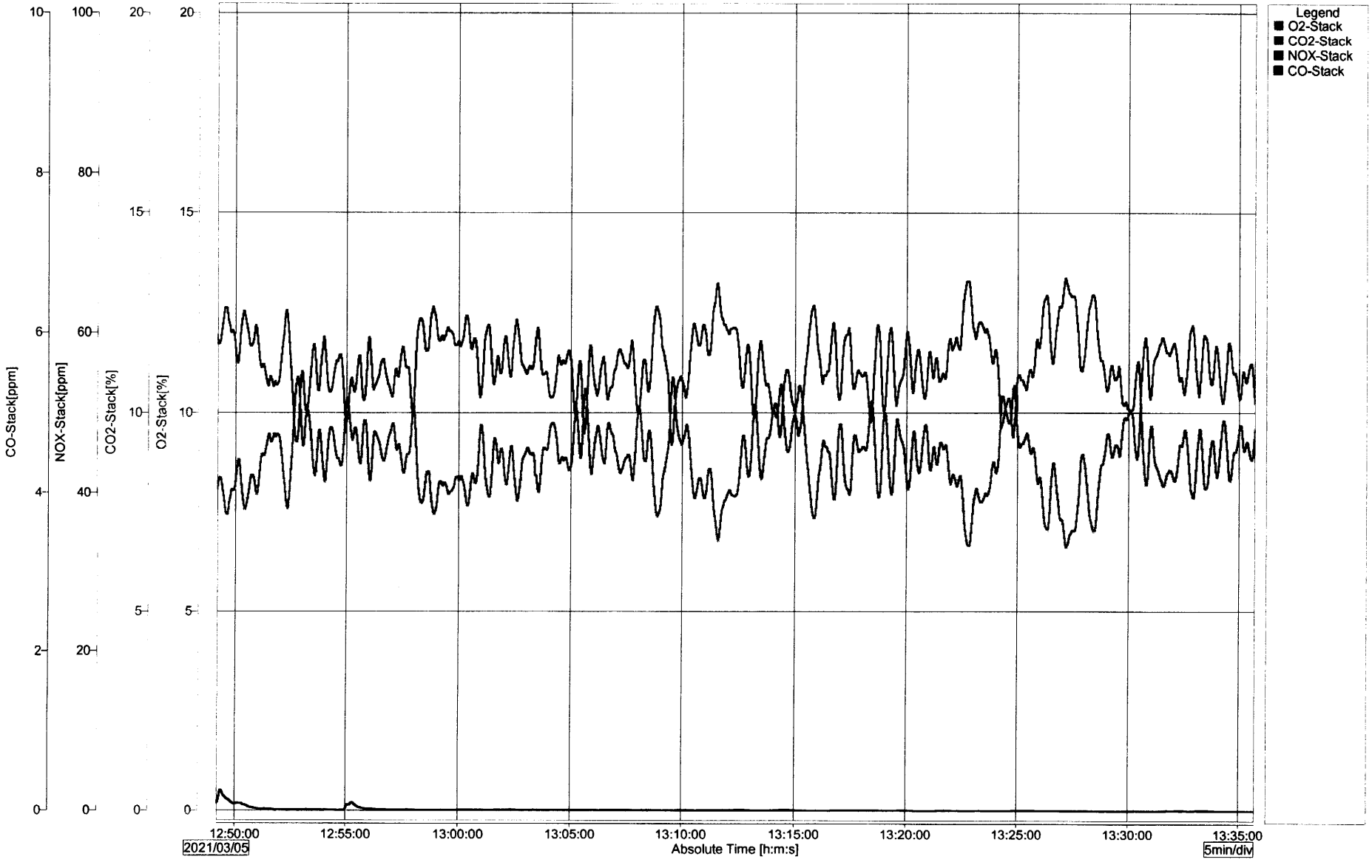


W002AS-006514-RT-2247

File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000

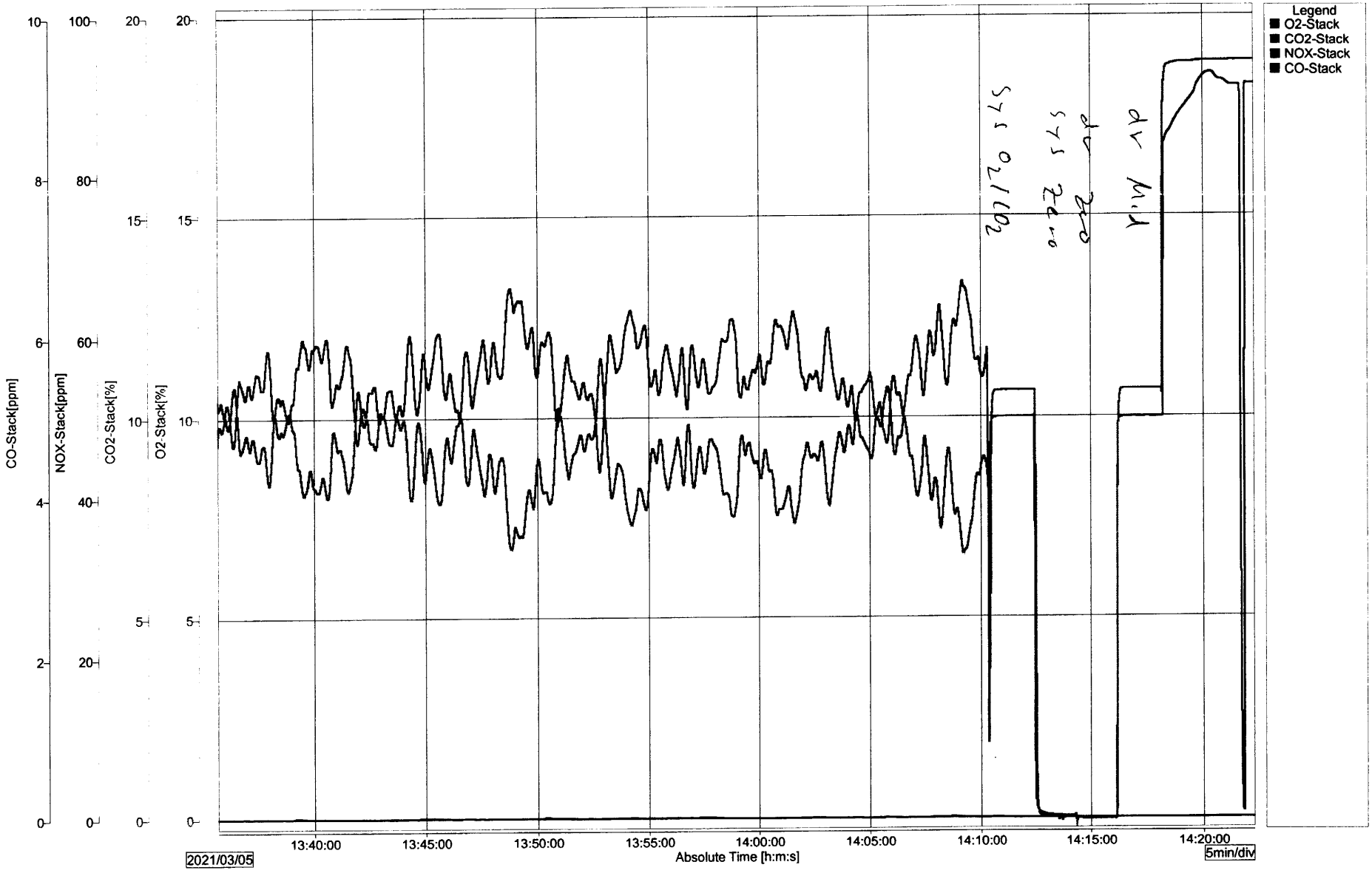


W002AS-006514-RT-2247

File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000

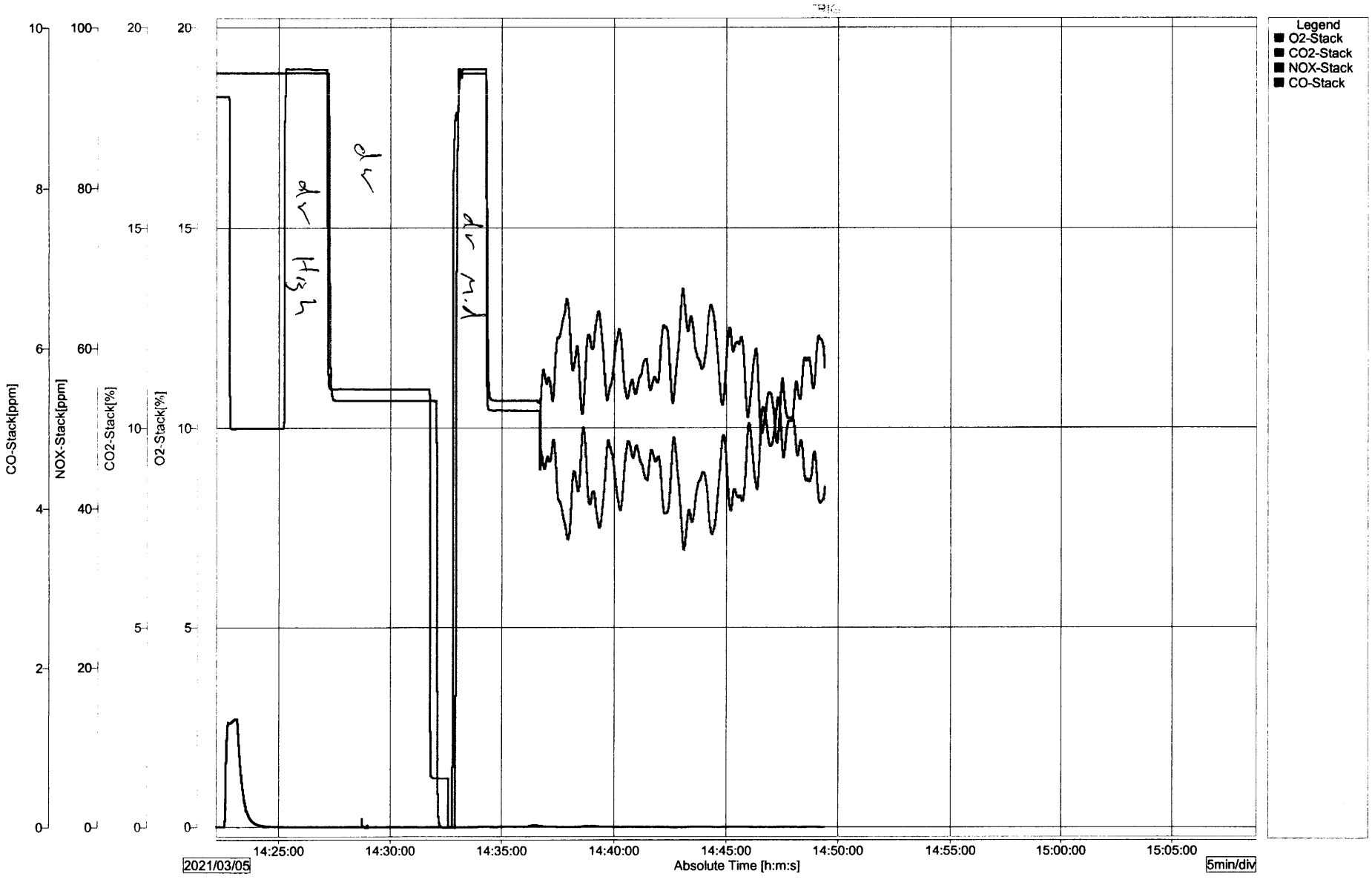


W002AS-006514-RT-2247

File Name : 000352_TV 6_210305_063654.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/05 06:36:54.000
Stop Time : 2021/03/05 14:49:24.000

Print Groups : GROUP 1
Print Range : 2021/03/05 06:36:54.000 - 2021/03/05 14:49:24.000



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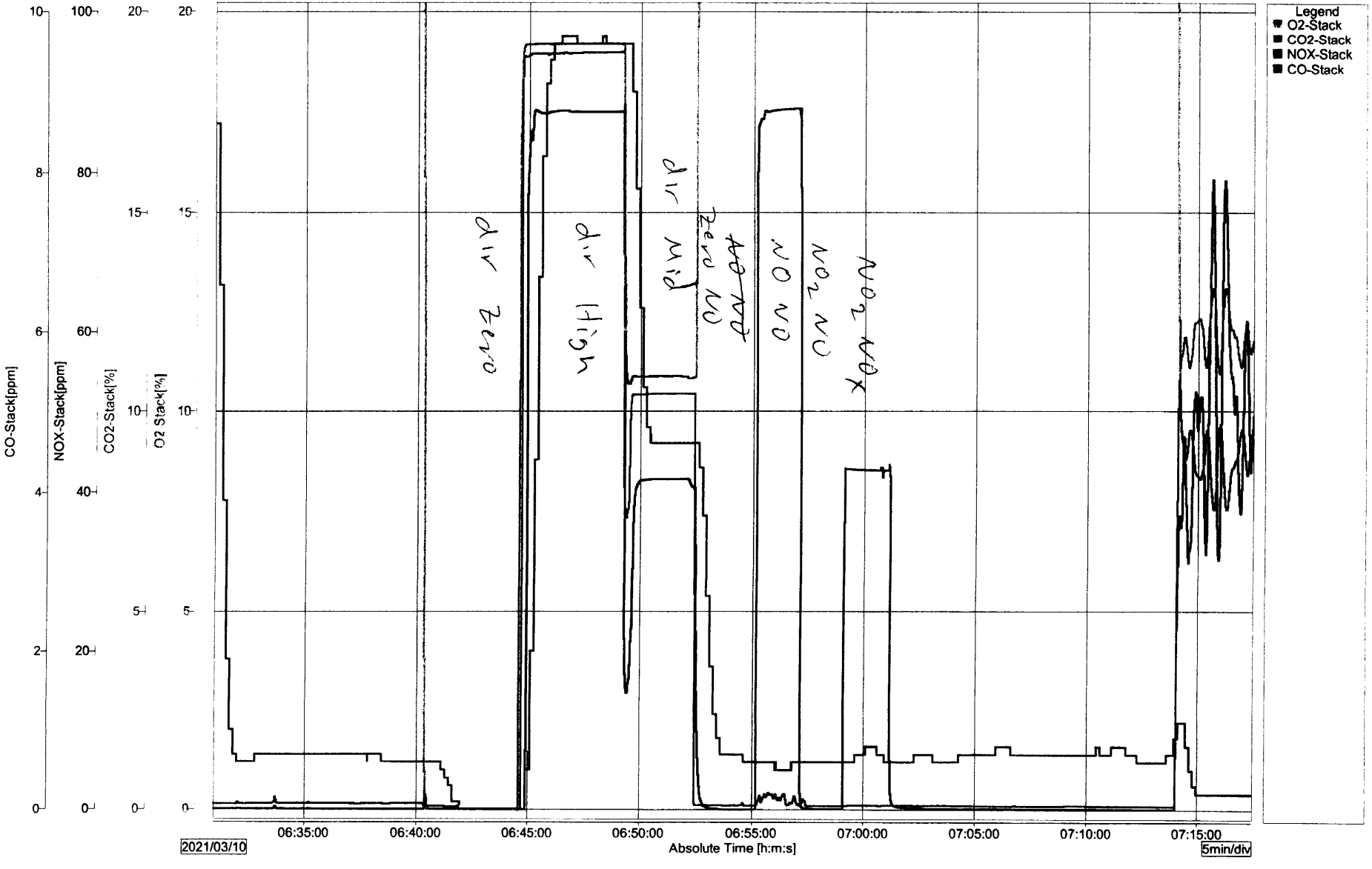
Montrose AQS
SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 1

DATE: 3/10/2021
BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94
NO_x	DT0029993	41.3	CC244416	87
CO	DT0024950	4.6	ALM046645	9.64

File Name	: 000357_TV 6_210310_063056.DSD		
Device Type	: DX2000	Start Time	: 2021/03/10 06:30:56.000
Serial No.	: S5U604838	Stop Time	: 2021/03/10 18:30:06.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000		

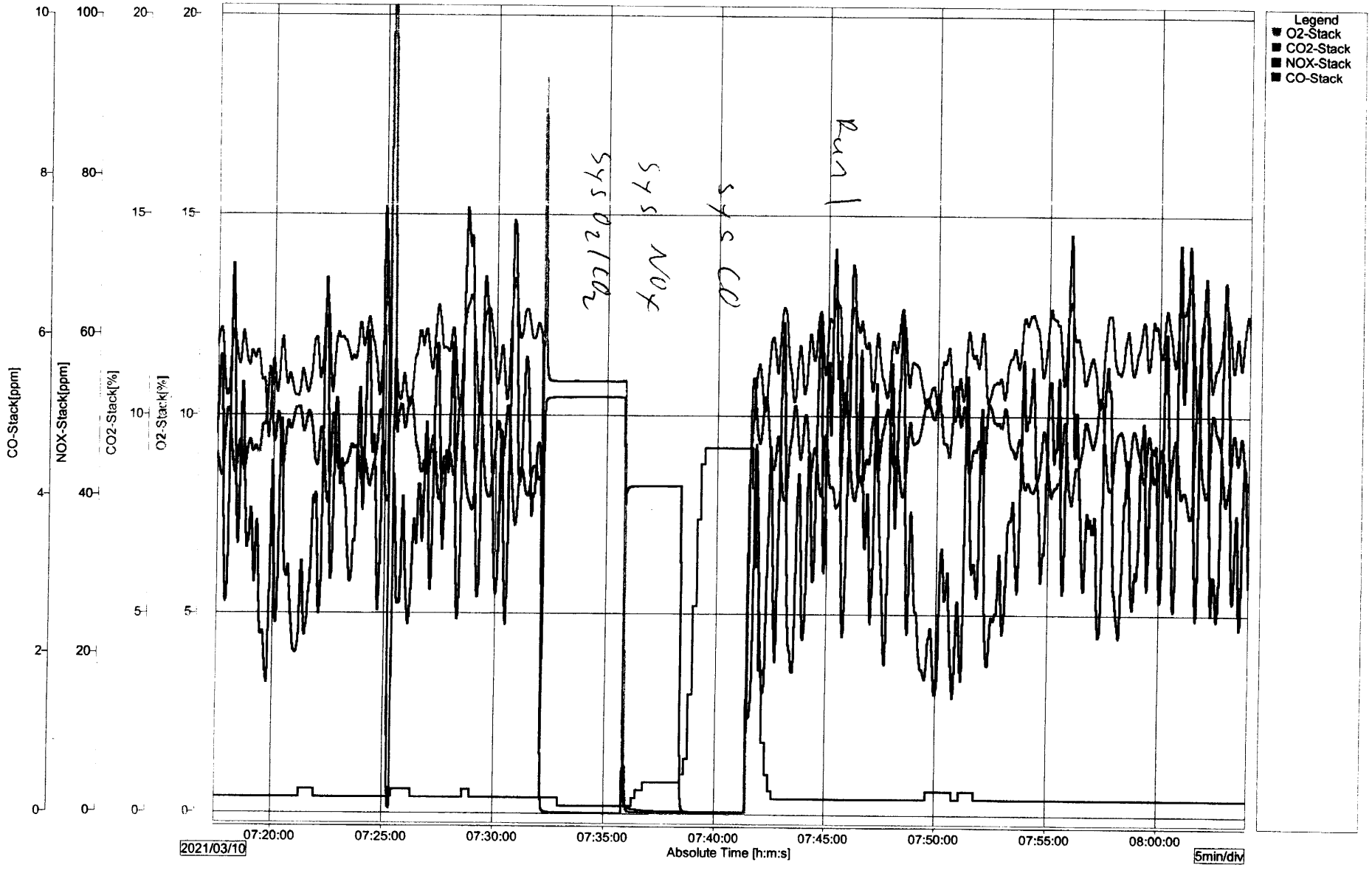


W002AS-006514-RT-2247

File Name : 000357_TV 6_210310_063056.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/10 06:30:56.000
Stop Time : 2021/03/10 18:30:06.000

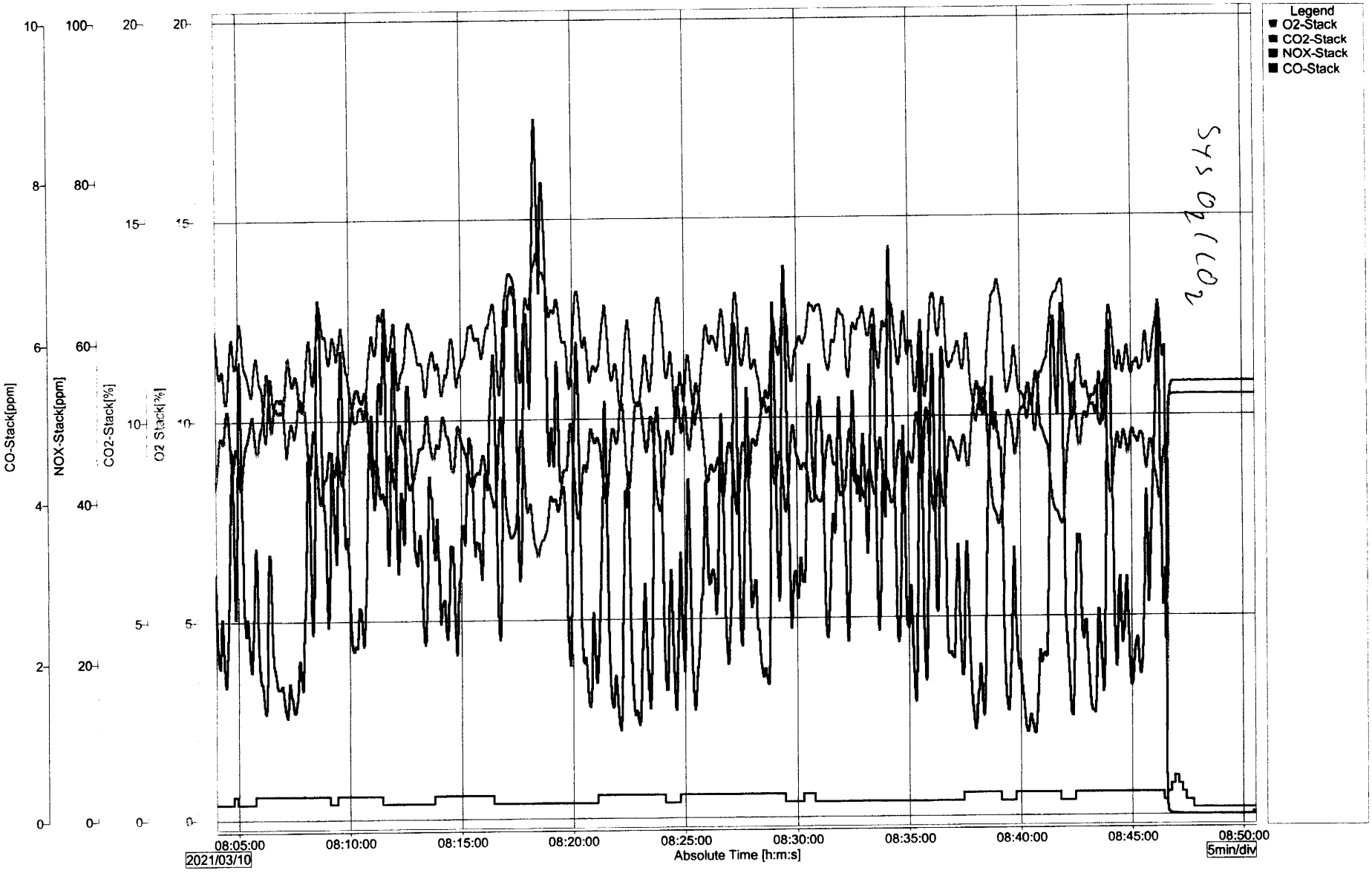
Print Groups : GROUP 1
Print Range : 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000



File Name : 000357_TV 6_210310_063056.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/10 06:30:56.000
Stop Time : 2021/03/10 18:30:06.000

Print Groups : GROUP 1
Print Range : 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000



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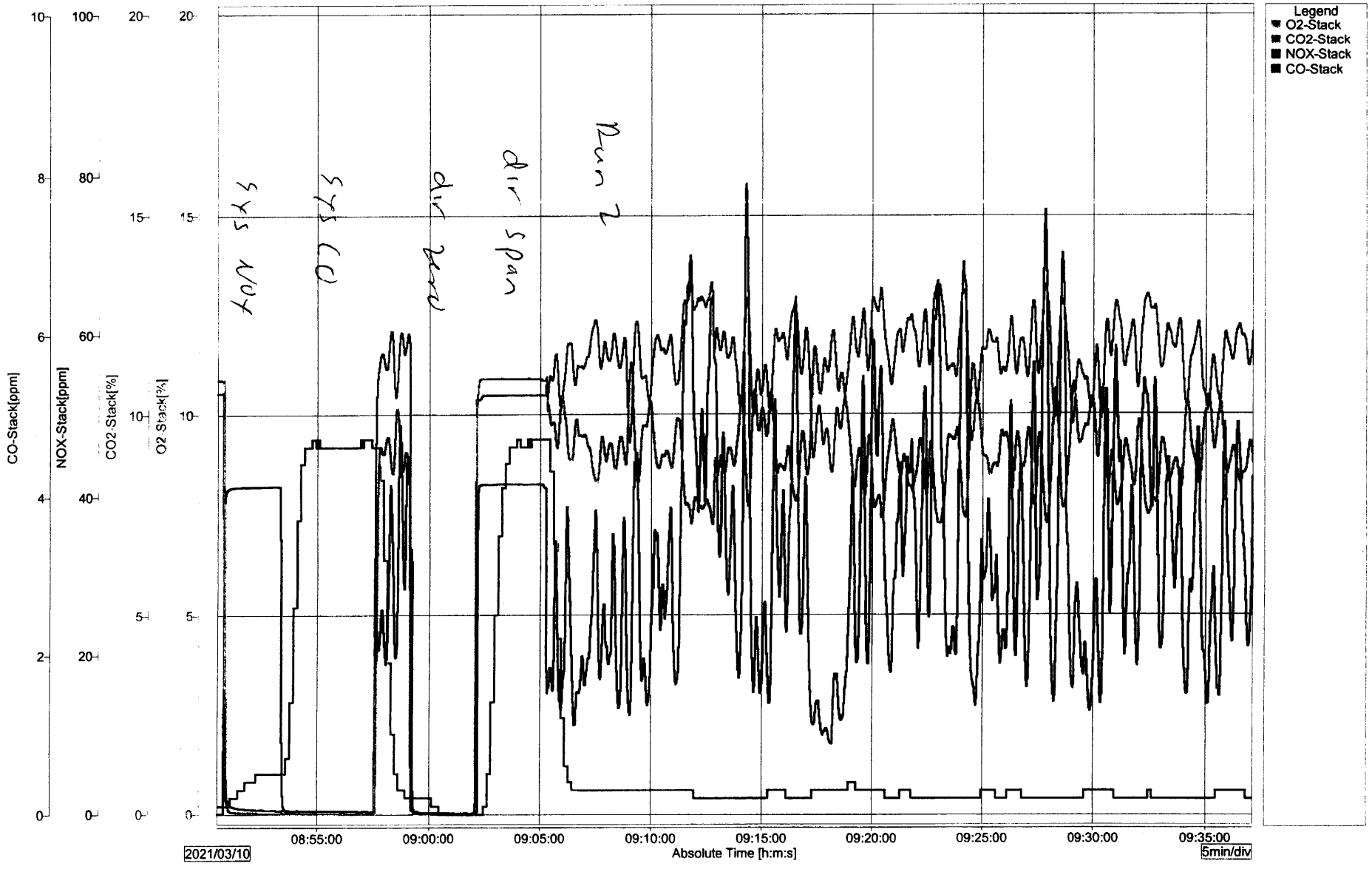
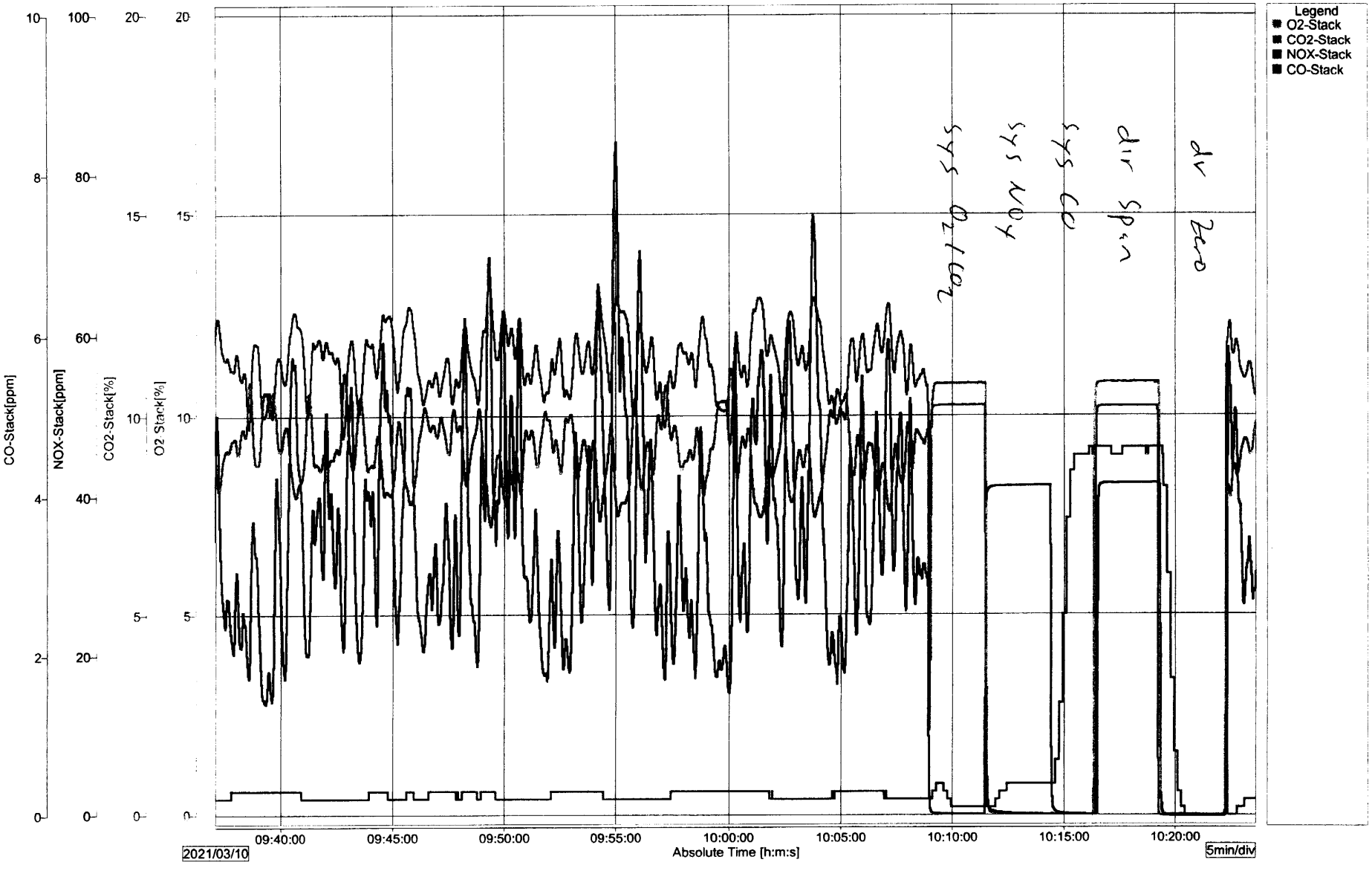
File Name	: 000357_TV 6_210310_063056.DSD		
Device Type	: DX2000	Start Time	: 2021/03/10 06:30:56.000
Serial No.	: S5U604838	Stop Time	: 2021/03/10 18:30:06.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000		



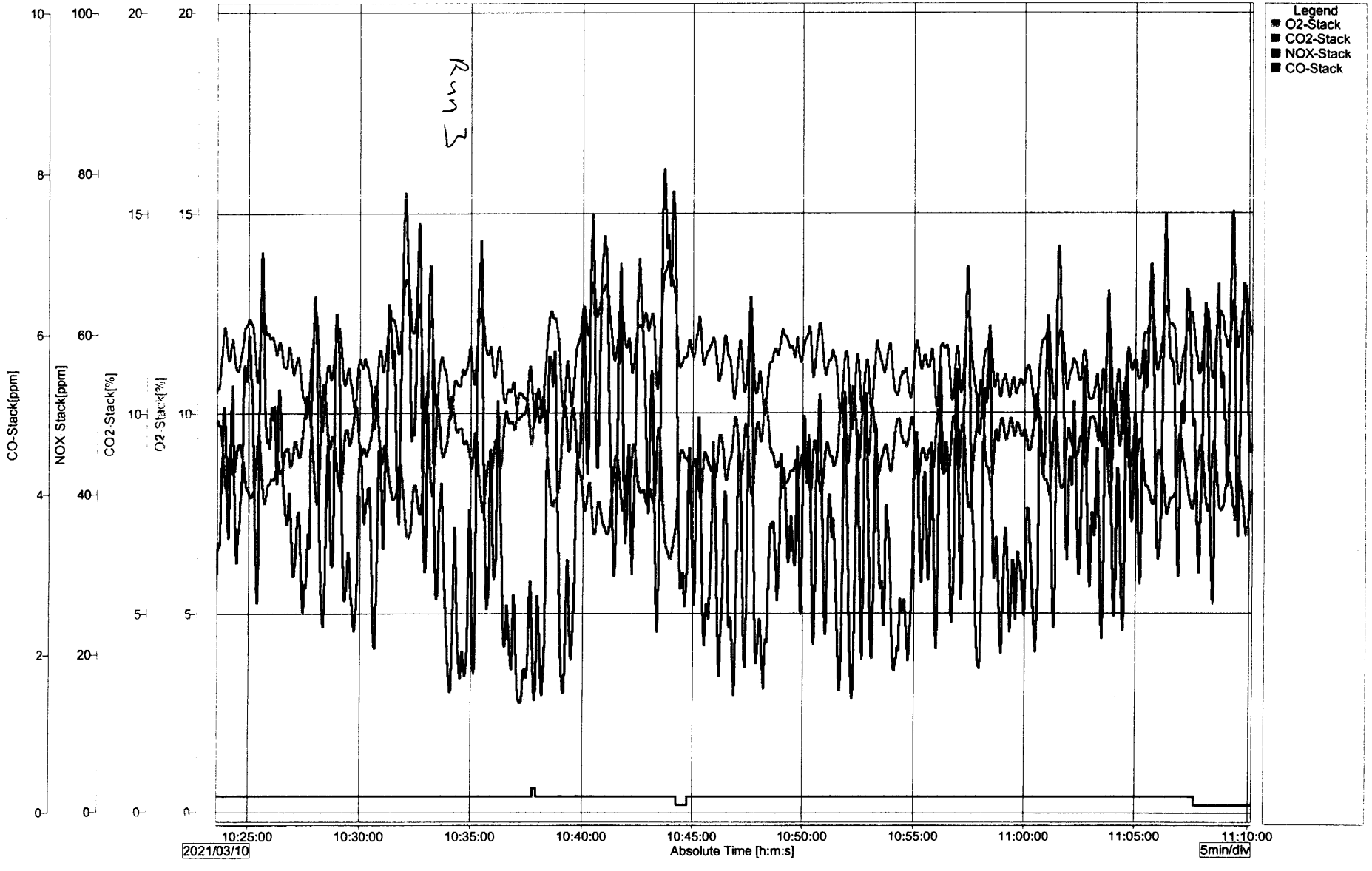
File Name : 000357_TV 6_210310_063056.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/10 06:30:56.000
Stop Time : 2021/03/10 18:30:06.000

Print Groups : GROUP 1
Print Range : 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000



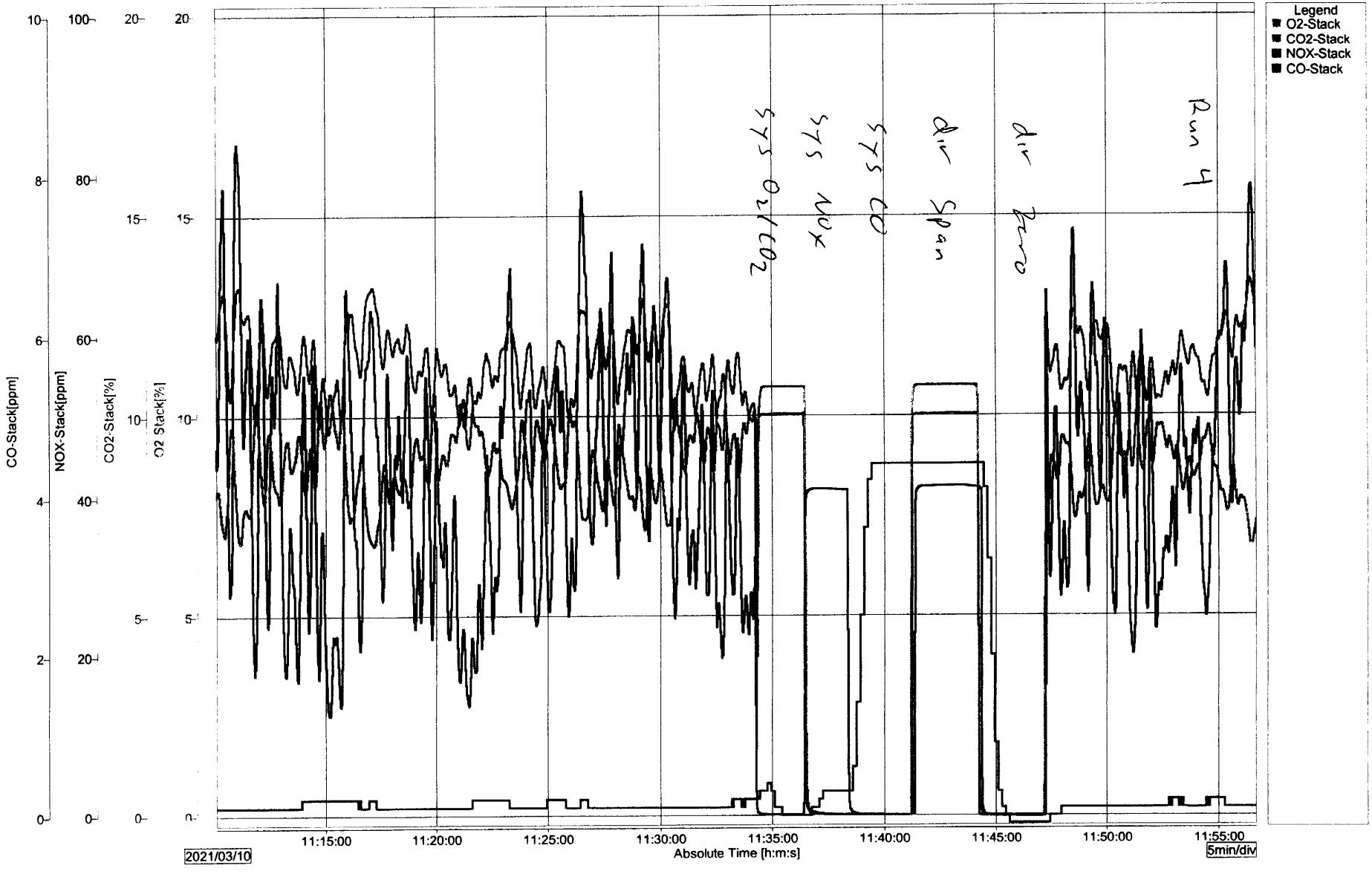
File Name	: 000357_TV 6_210310_063056.DSD		
Device Type	: DX2000	Start Time	: 2021/03/10 06:30:56.000
Serial No.	: S5U604838	Stop Time	: 2021/03/10 18:30:06.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000		



File Name : 000357_TV 6_210310_063056.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/10 06:30:56.000
Stop Time : 2021/03/10 18:30:06.000

Print Groups : GROUP 1
Print Range : 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000



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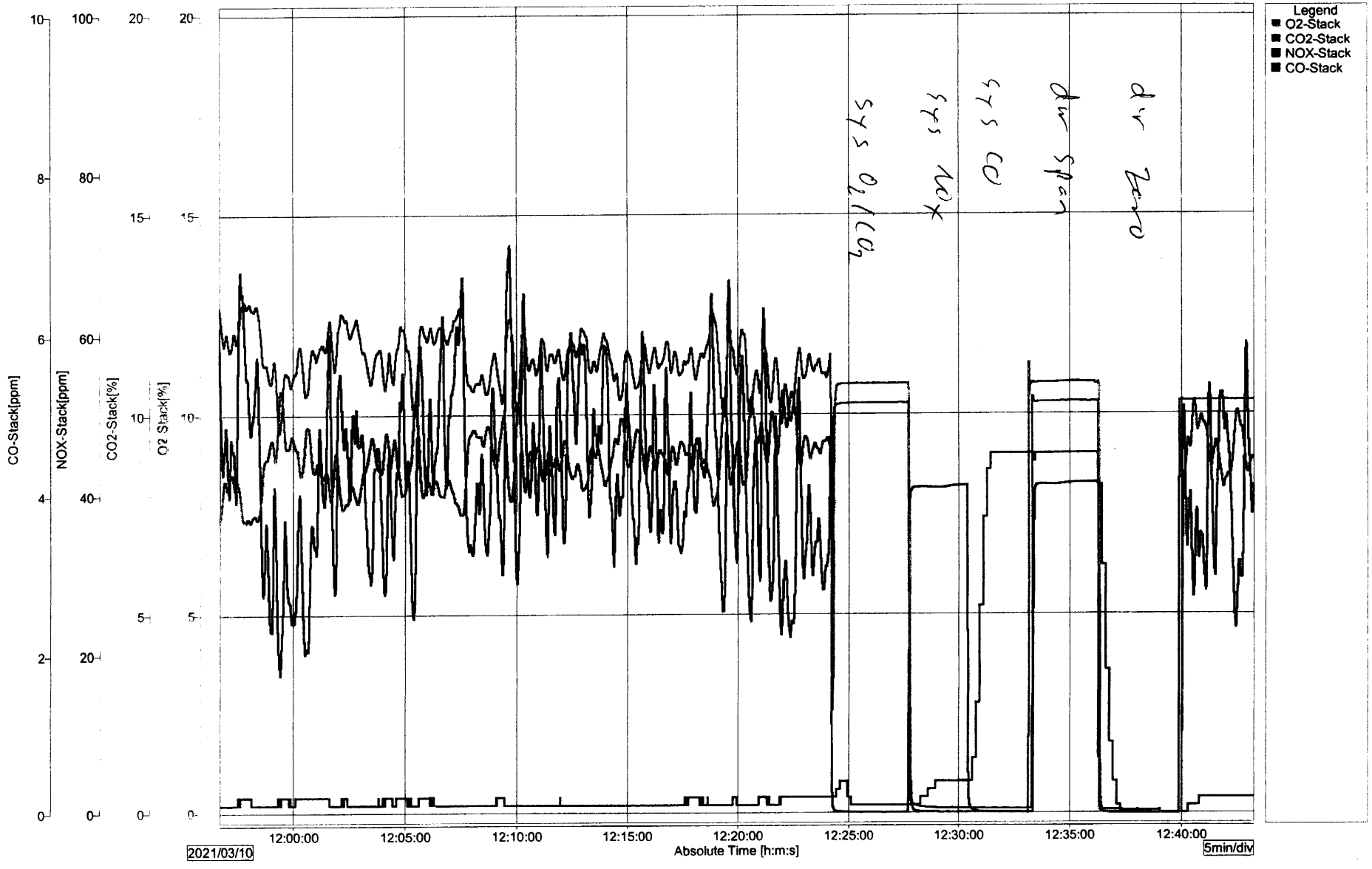
File Name : 000357_TV 6_210310_063056.DSD
Device Type : DX2000
Serial No. : S5U604838

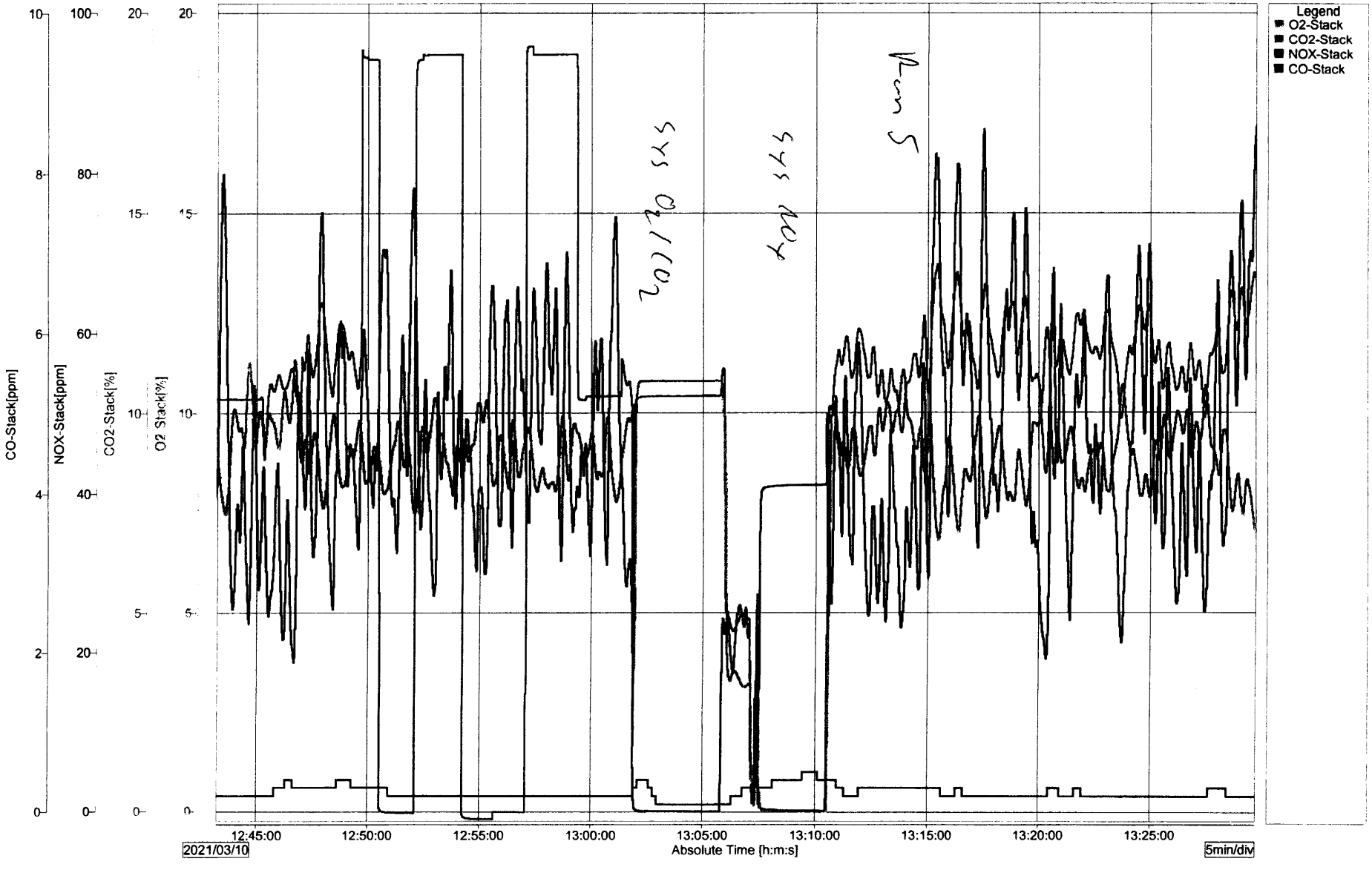
Start Time : 2021/03/10 06:30:56.000
Stop Time : 2021/03/10 18:30:06.000

Print Groups : GROUP 1
Print Range : 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000

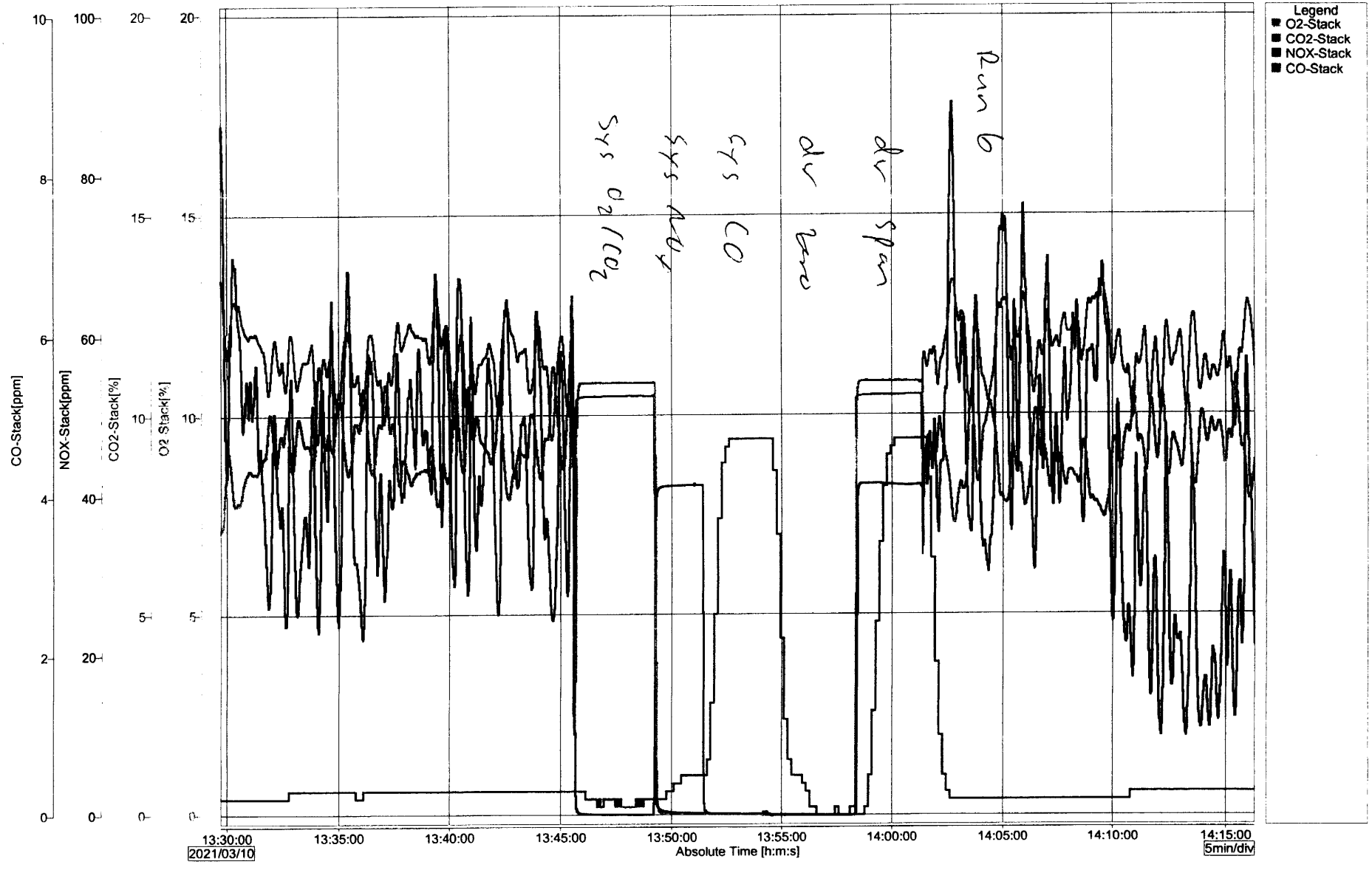


W002AS-006514-RT-2247

File Name	: 000357_TV 6_210310_063056.DSD		
Device Type	: DX2000	Start Time	: 2021/03/10 06:30:56.000
Serial No.	: S5U604838	Stop Time	: 2021/03/10 18:30:06.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000		



File Name	: 000357_TV 6_210310_063056.DSD	Start Time	: 2021/03/10 06:30:56.000
Device Type	: DX2000	Stop Time	: 2021/03/10 18:30:06.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000		



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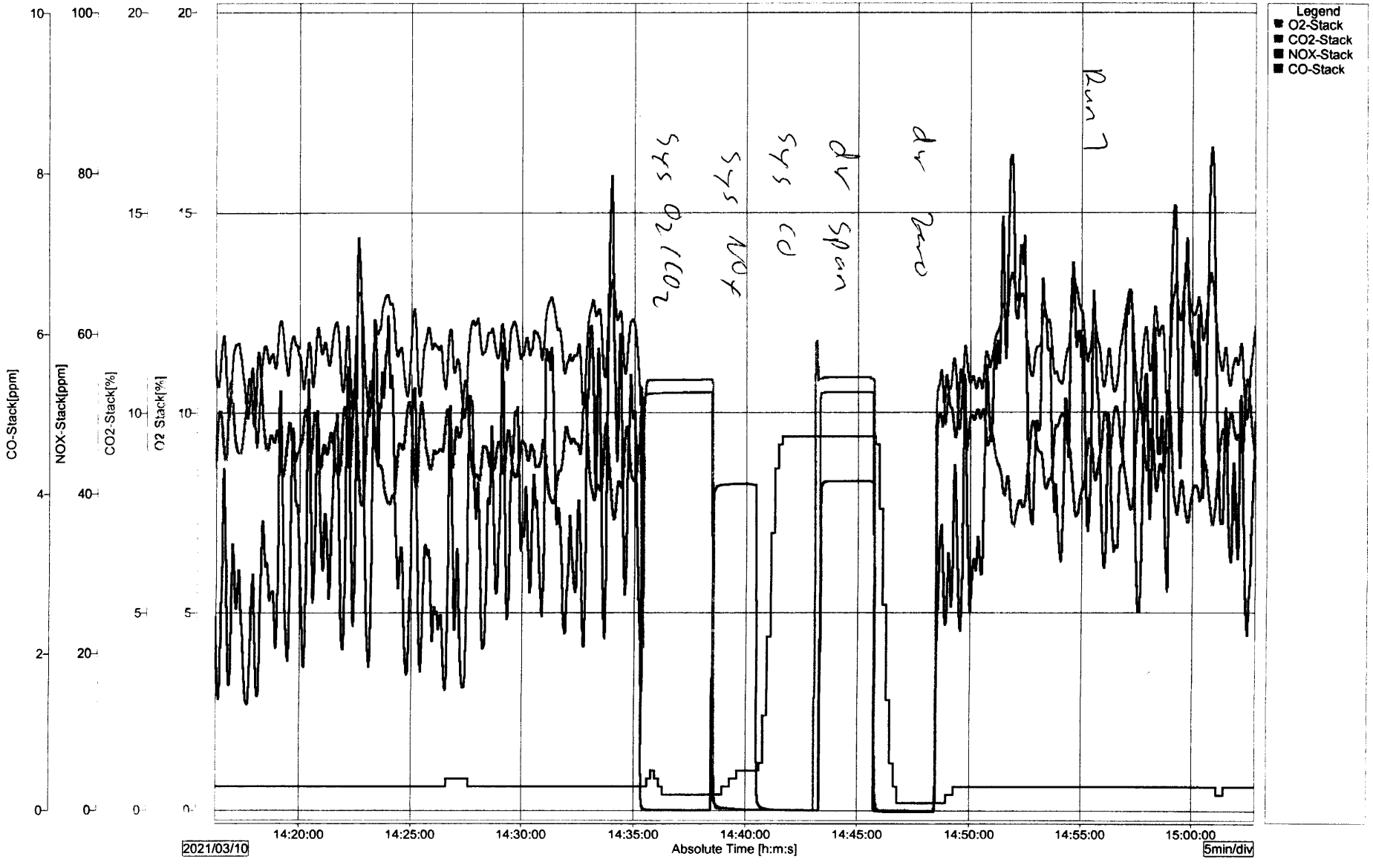
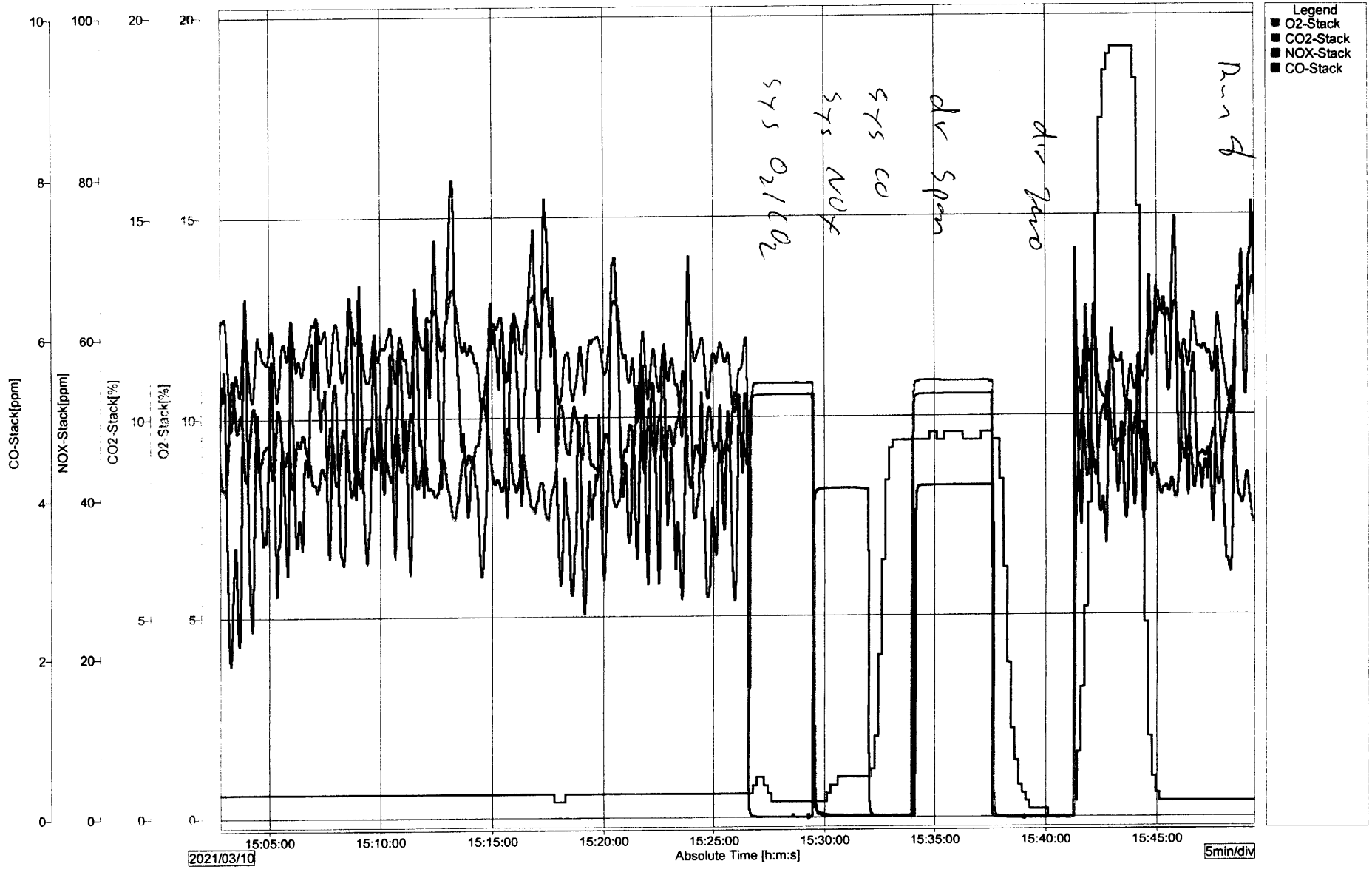
File Name : 000357_TV 6_210310_063056.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/10 06:30:56.000
Stop Time : 2021/03/10 18:30:06.000

Print Groups : GROUP 1
Print Range : 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000



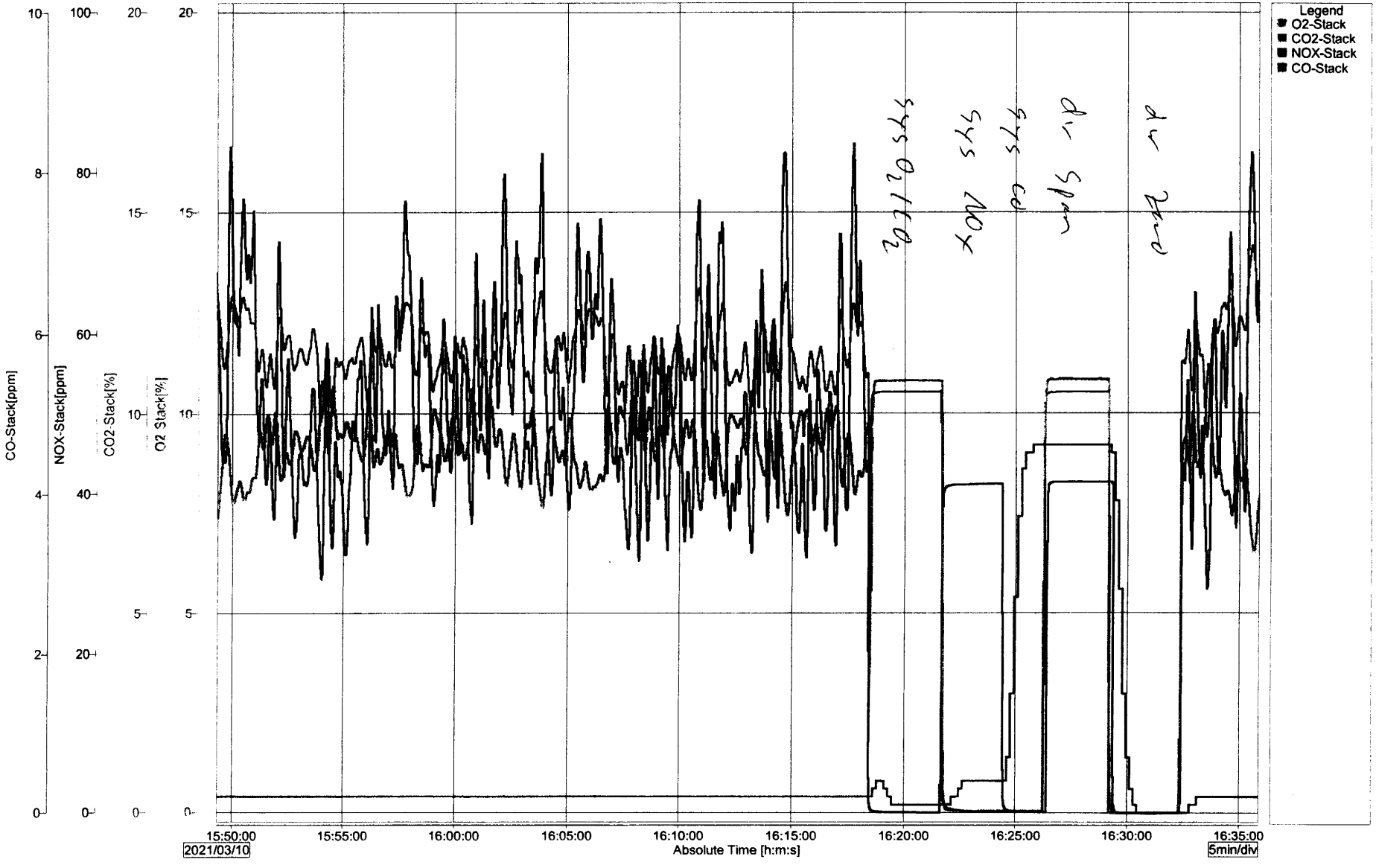
File Name	: 000357_TV 6_210310_063056.DSD	Start Time	: 2021/03/10 06:30:56.000
Device Type	: DX2000	Stop Time	: 2021/03/10 18:30:06.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000		



File Name : 000357_TV 6_210310_063056.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/10 06:30:56.000
Stop Time : 2021/03/10 18:30:06.000

Print Groups : GROUP 1
Print Range : 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000



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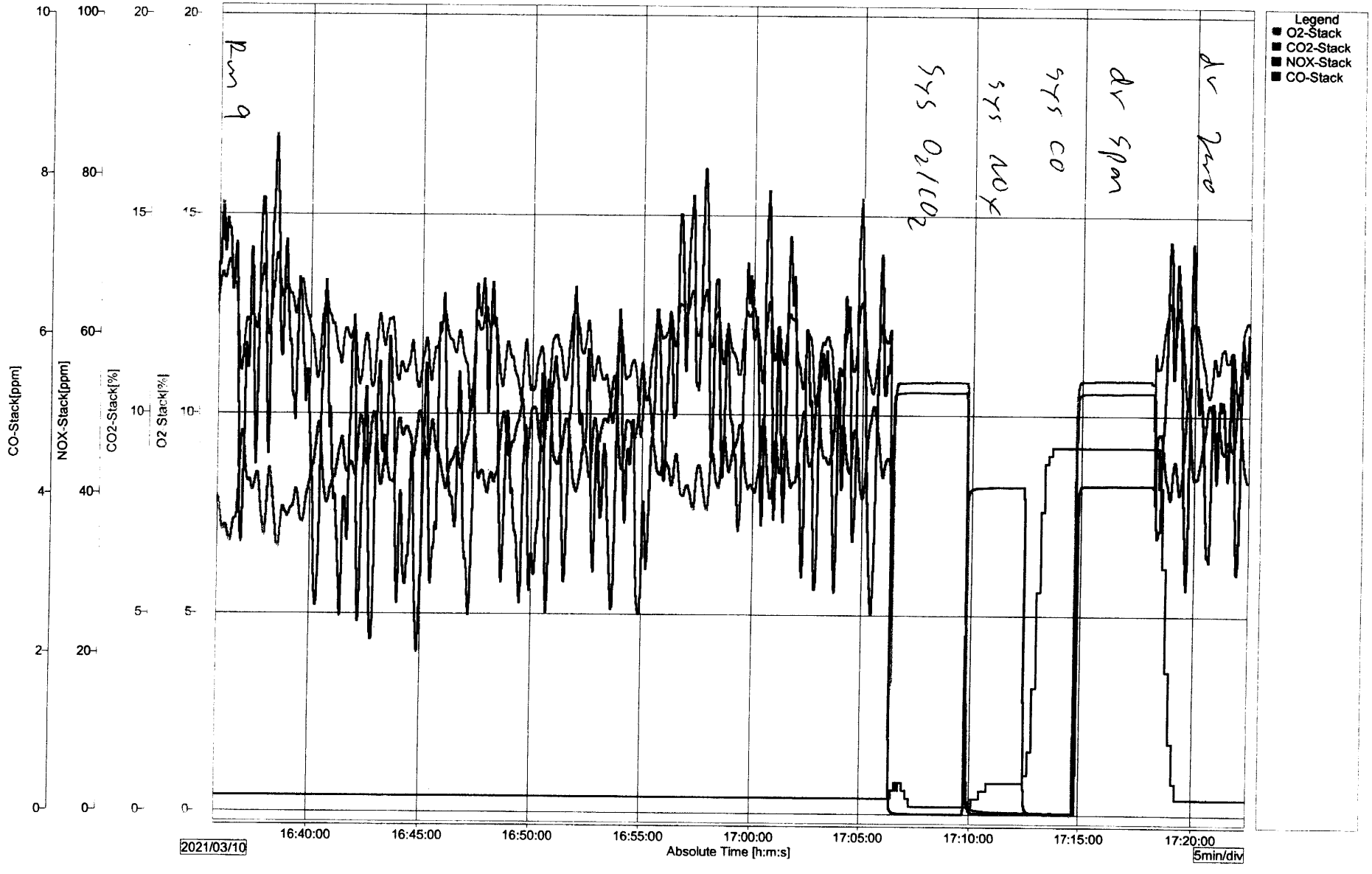
File Name : 000357_TV 6_210310_063056.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/10 06:30:56.000
Stop Time : 2021/03/10 18:30:06.000

Print Groups : GROUP 1
Print Range : 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000



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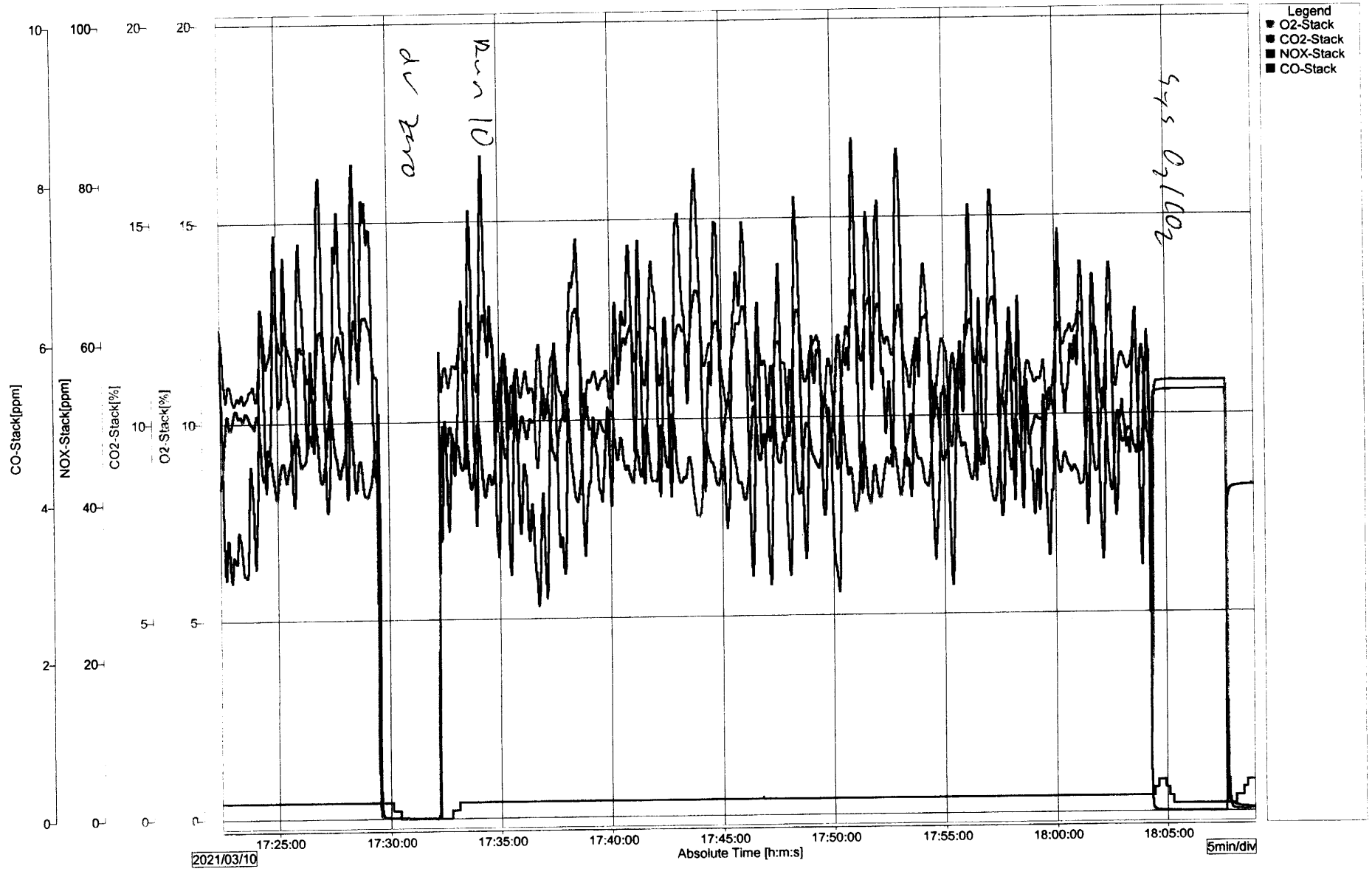
File Name	: 000357_TV 6_210310_063056.DSD	Start Time	: 2021/03/10 06:30:56.000
Device Type	: DX2000	Stop Time	: 2021/03/10 18:30:06.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000		



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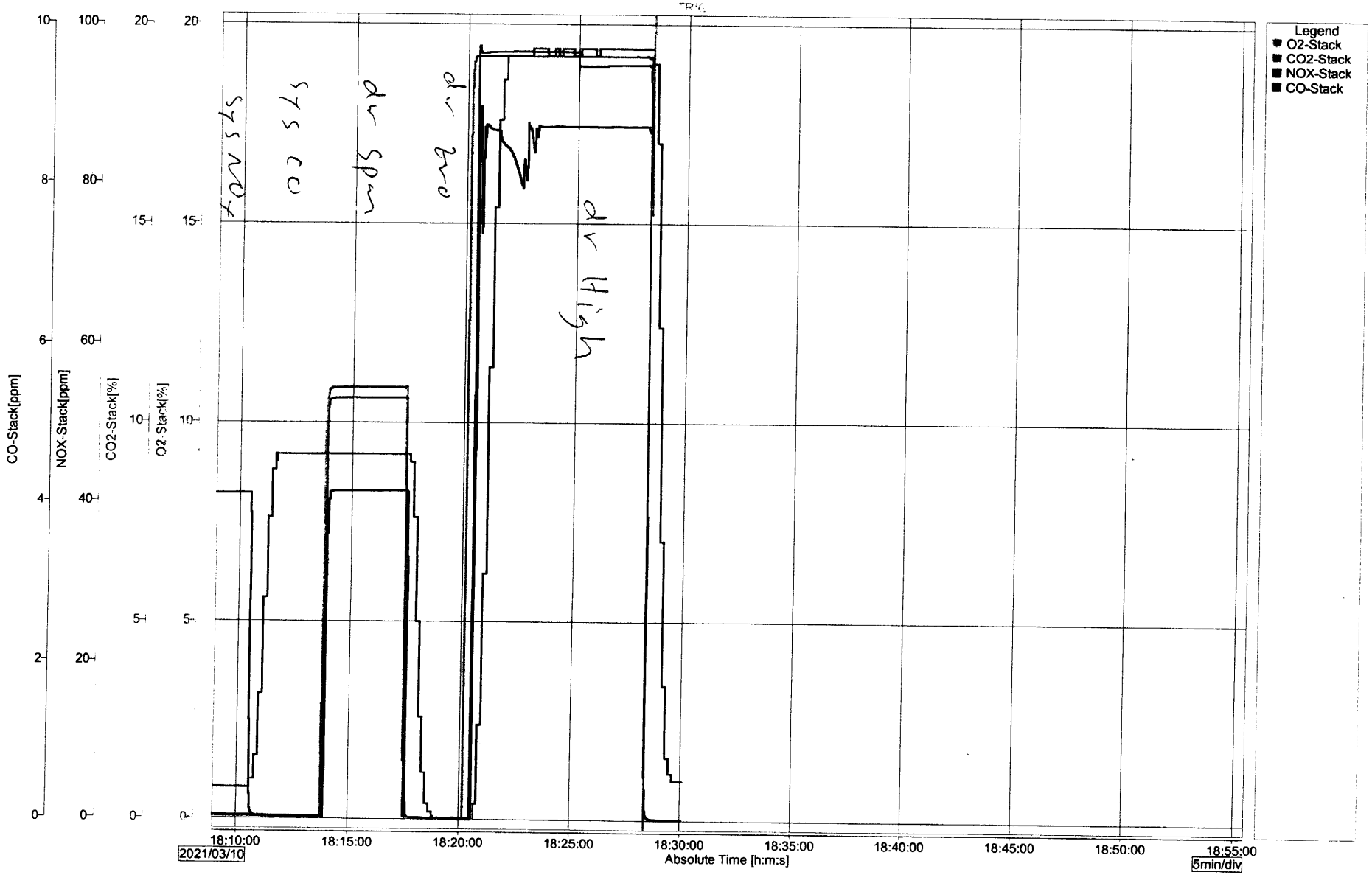
File Name : 000357_TV 6_210310_063056.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/10 06:30:56.000
Stop Time : 2021/03/10 18:30:06.000

Print Groups : GROUP 1
Print Range : 2021/03/10 06:30:56.000 - 2021/03/10 18:30:06.000



SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 1

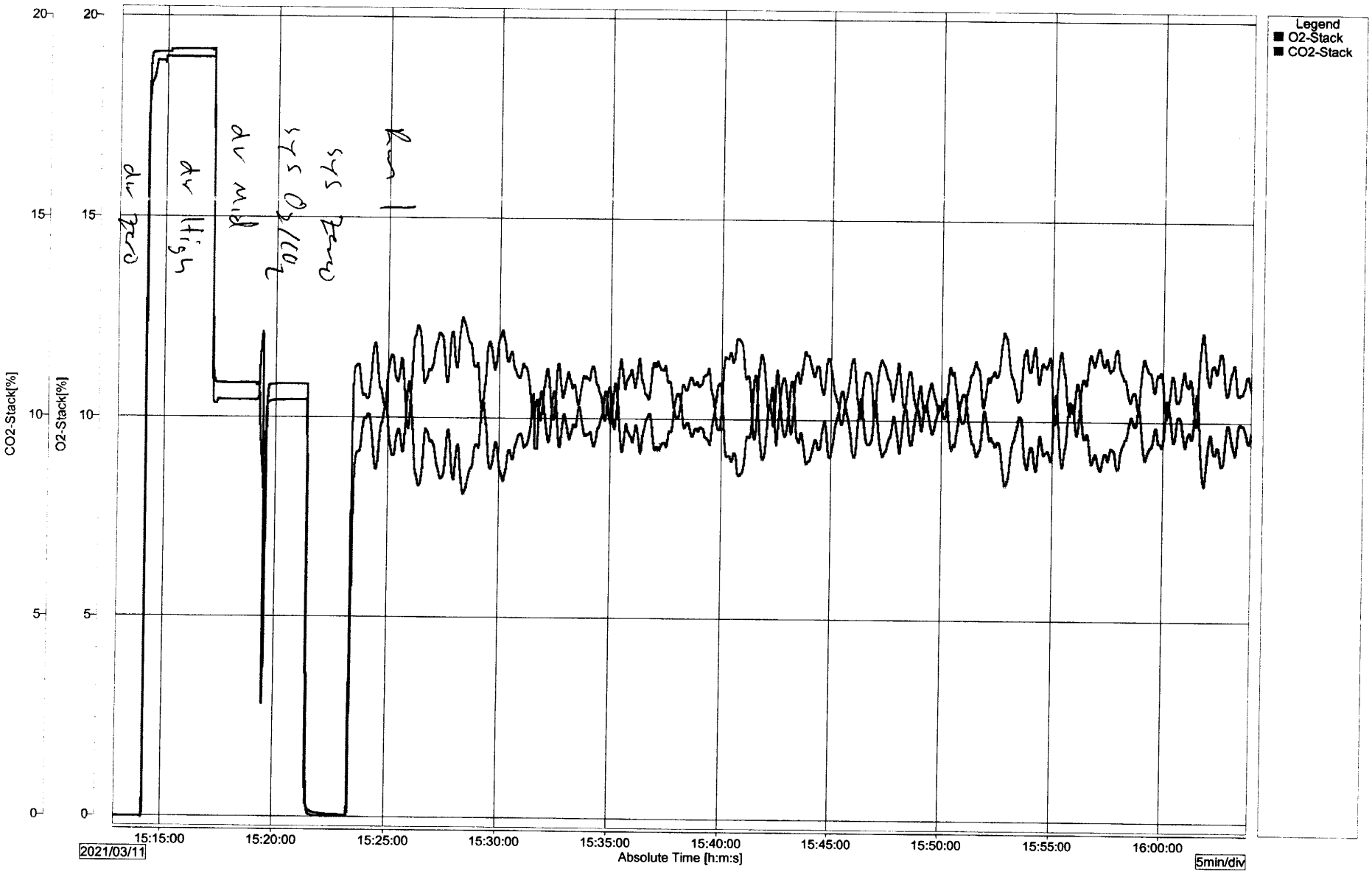
DATE: 3/11/2021
BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0.00		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

File Name : 000360_TV 6_210311_151254.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/11 15:12:54.000
Stop Time : 2021/03/11 19:30:28.000

Print Groups : GROUP 1
Print Range : 2021/03/11 15:12:54.000 - 2021/03/11 19:30:28.000



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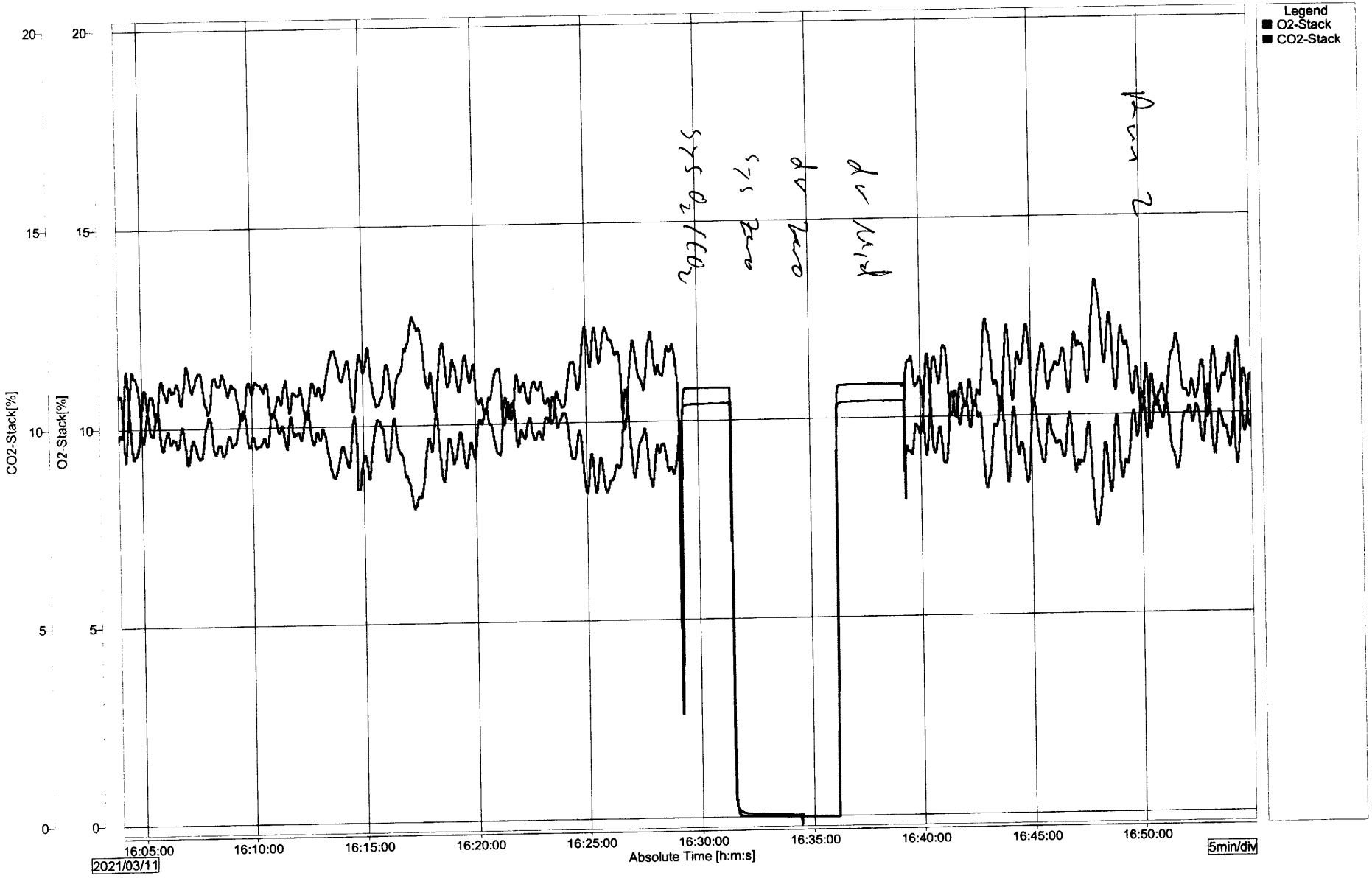
File Name	: 000360_TV 6_210311_151254.DSD	Start Time	: 2021/03/11 15:12:54.000
Device Type	: DX2000	Stop Time	: 2021/03/11 19:30:28.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/11 15:12:54.000 - 2021/03/11 19:30:28.000		



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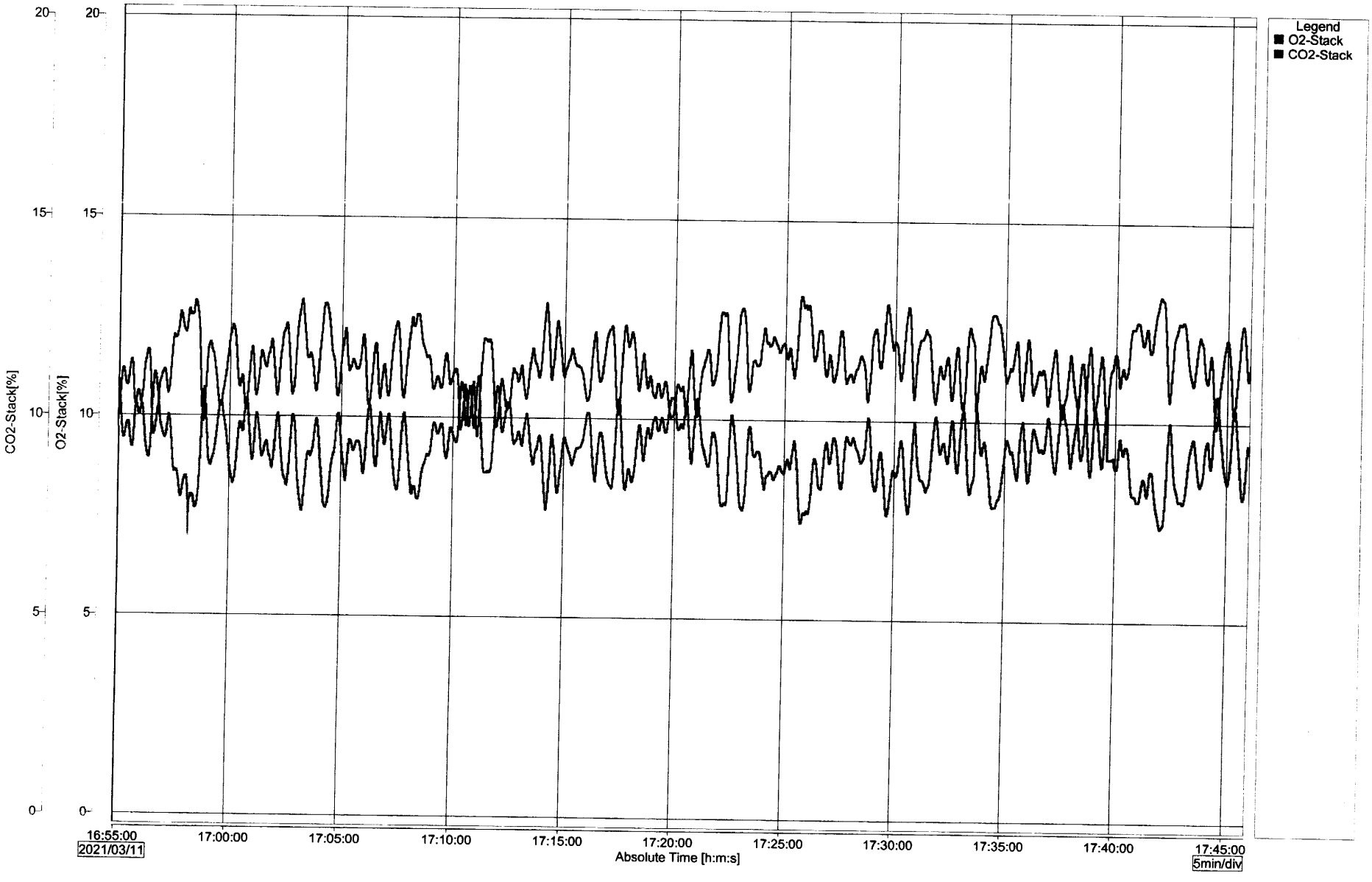
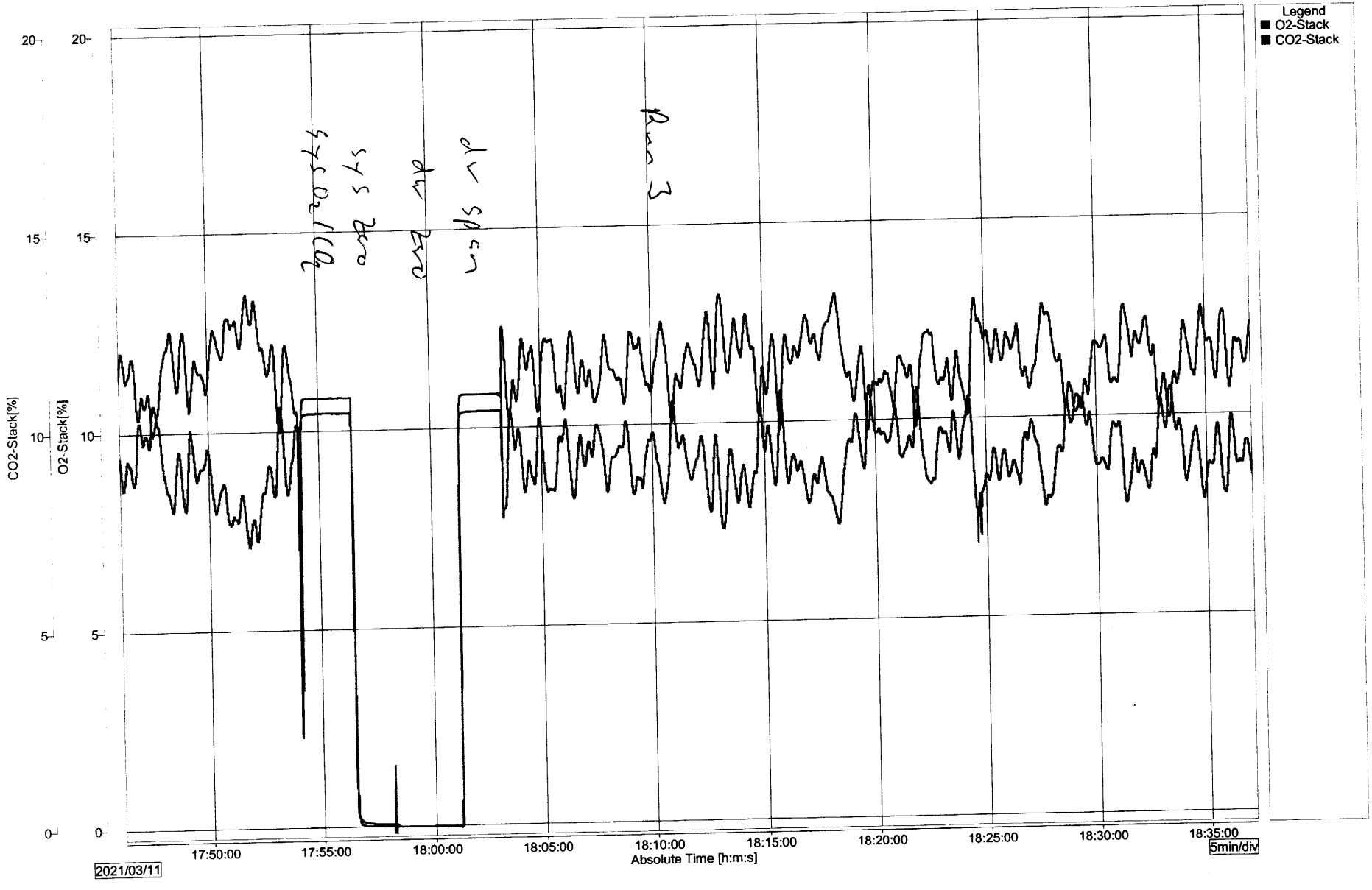
File Name : 000360_TV 6_210311_151254.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/11 15:12:54.000
Stop Time : 2021/03/11 19:30:28.000

Print Groups : GROUP 1
Print Range : 2021/03/11 15:12:54.000 - 2021/03/11 19:30:28.000



File Name	: 000360_TV 6_210311_151254.DSD	Start Time	: 2021/03/11 15:12:54.000
Device Type	: DX2000	Stop Time	: 2021/03/11 19:30:28.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/11 15:12:54.000 - 2021/03/11 19:30:28.000		



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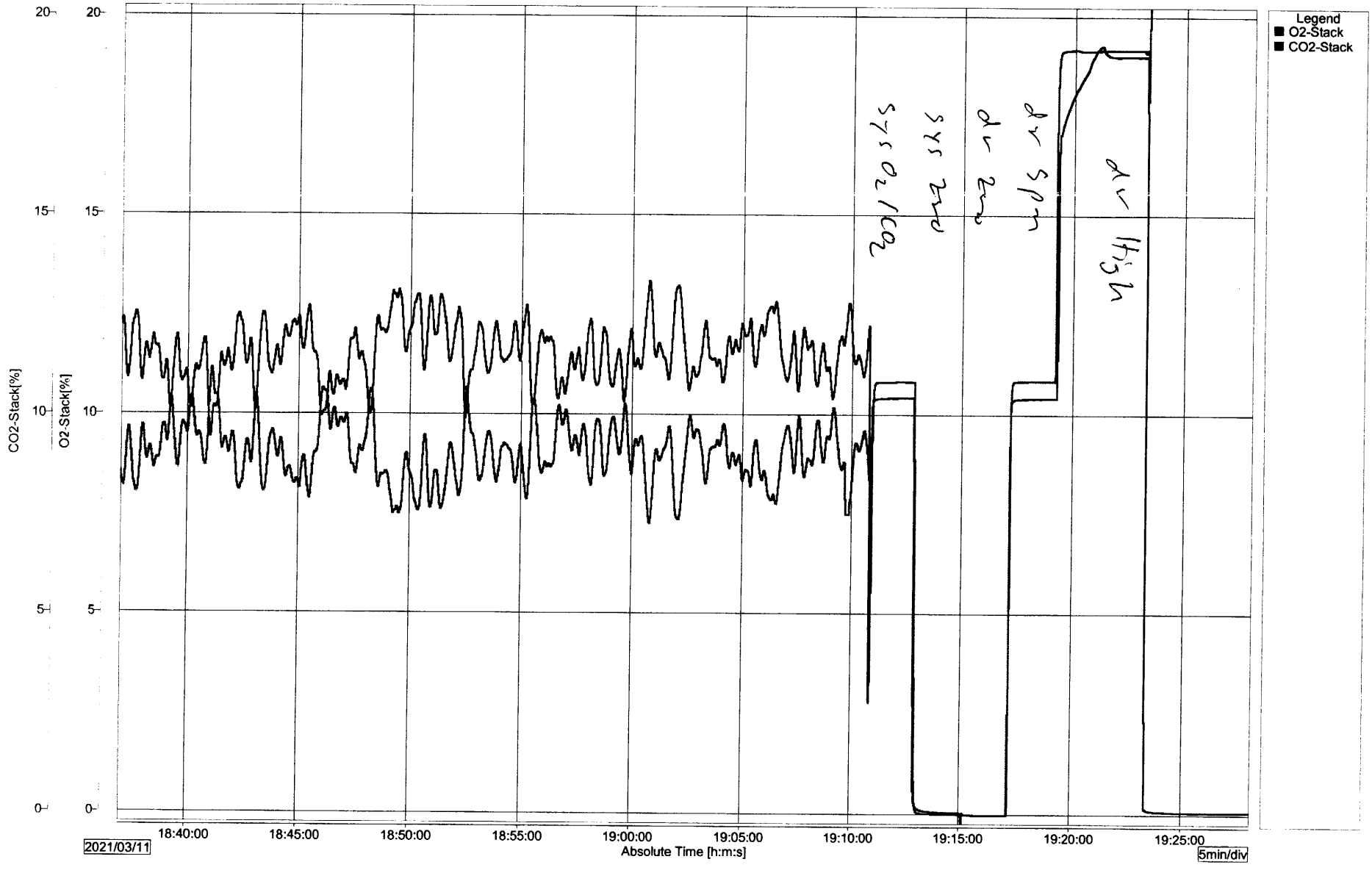
File Name : 000360_TV 6_210311_151254.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/11 15:12:54.000
Stop Time : 2021/03/11 19:30:28.000

Print Groups : GROUP 1
Print Range : 2021/03/11 15:12:54.000 - 2021/03/11 19:30:28.000



W002AS-006514-RT-2247

SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 1

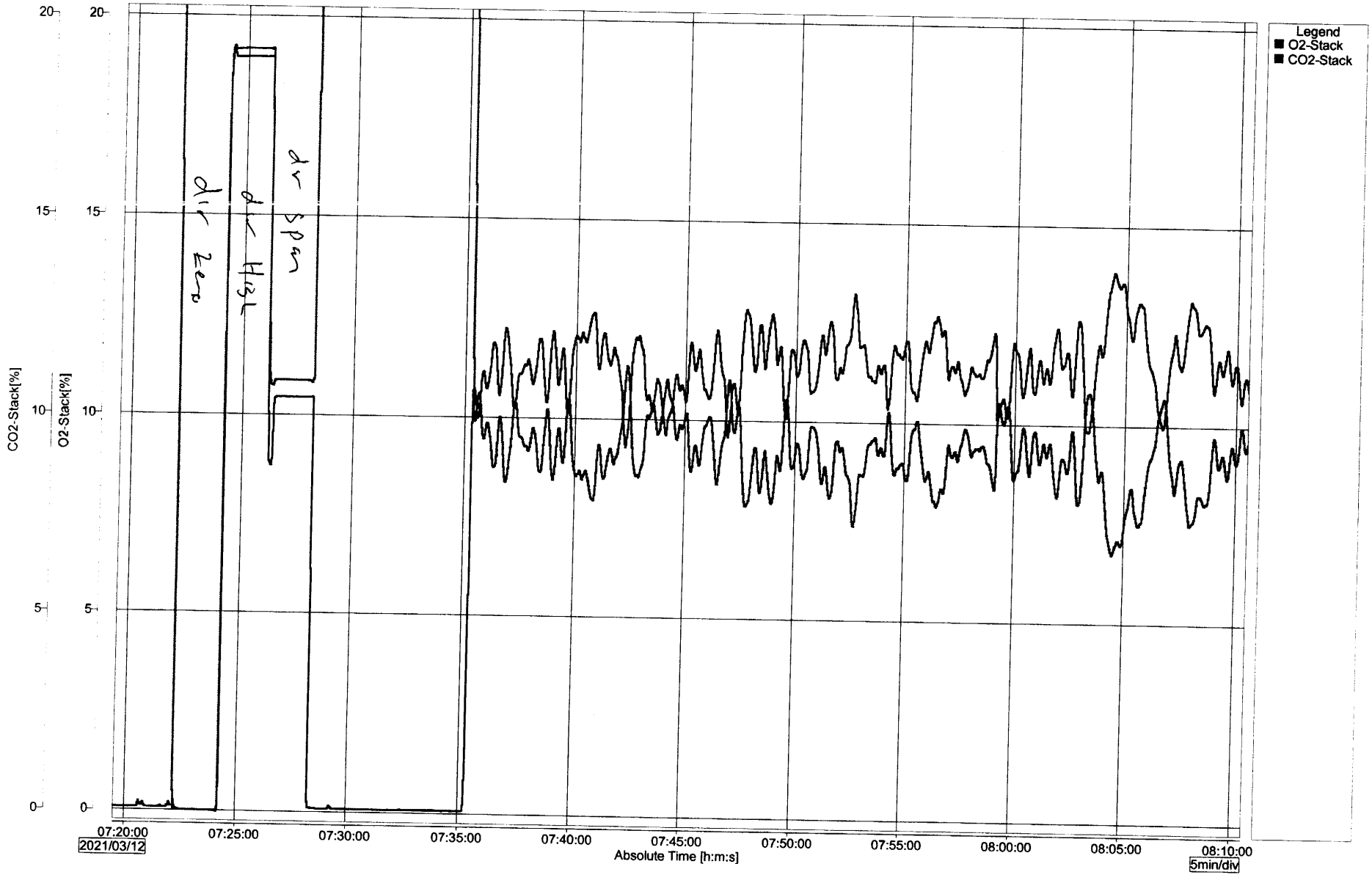
DATE: 3/12/2021
BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0.00		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

File Name : 000361_TV 6_210312_071930.DSD
Device Type : DX2000
Serial No. : S5U604838

Print Groups : GROUP 1
Print Range : 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000

Start Time : 2021/03/12 07:19:30.000
Stop Time : 2021/03/12 16:17:36.000



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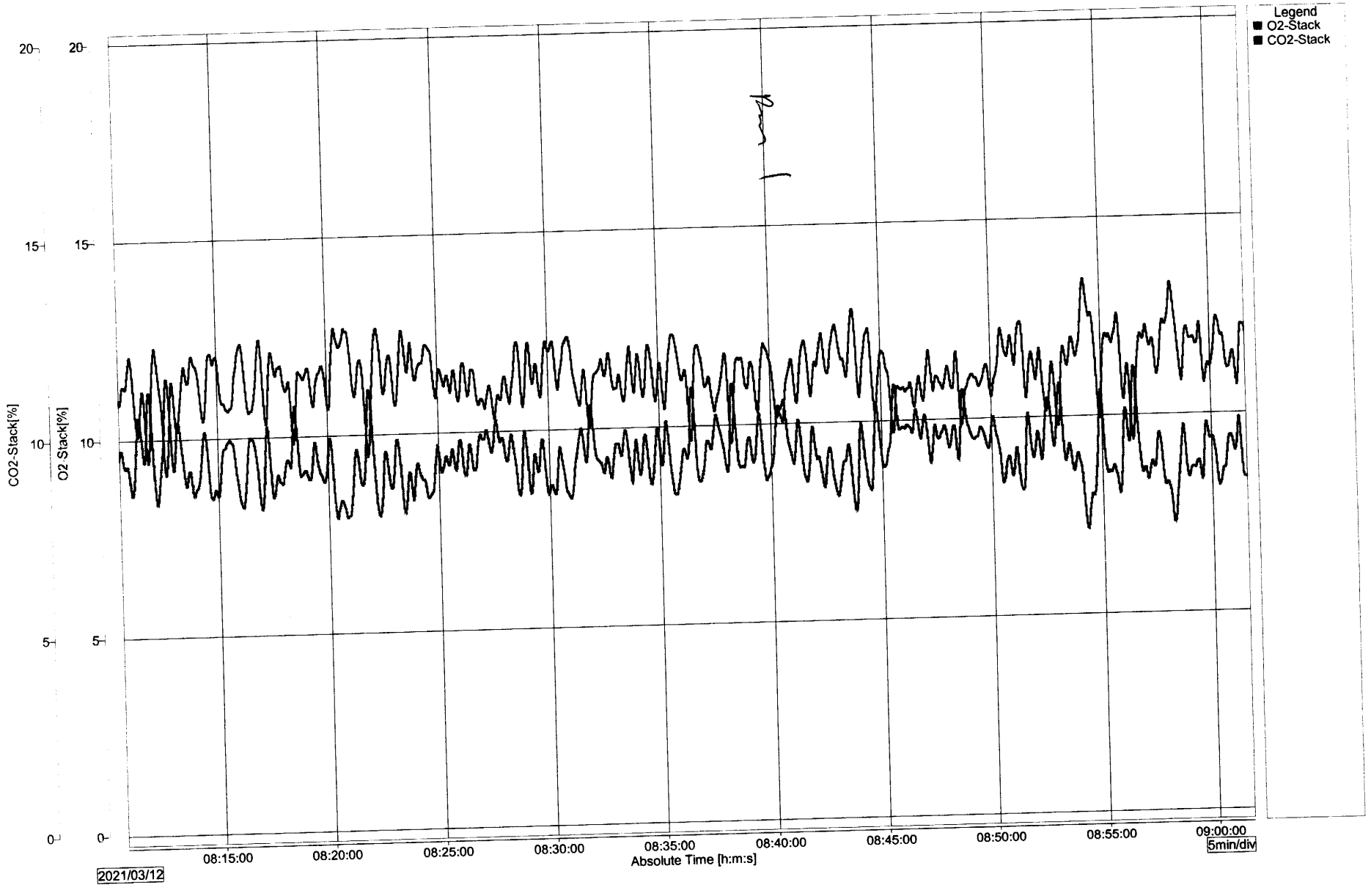
File Name	: 000361_TV 6_210312_071930.DSD	Start Time	: 2021/03/12 07:19:30.000
Device Type	: DX2000	Stop Time	: 2021/03/12 16:17:36.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000		



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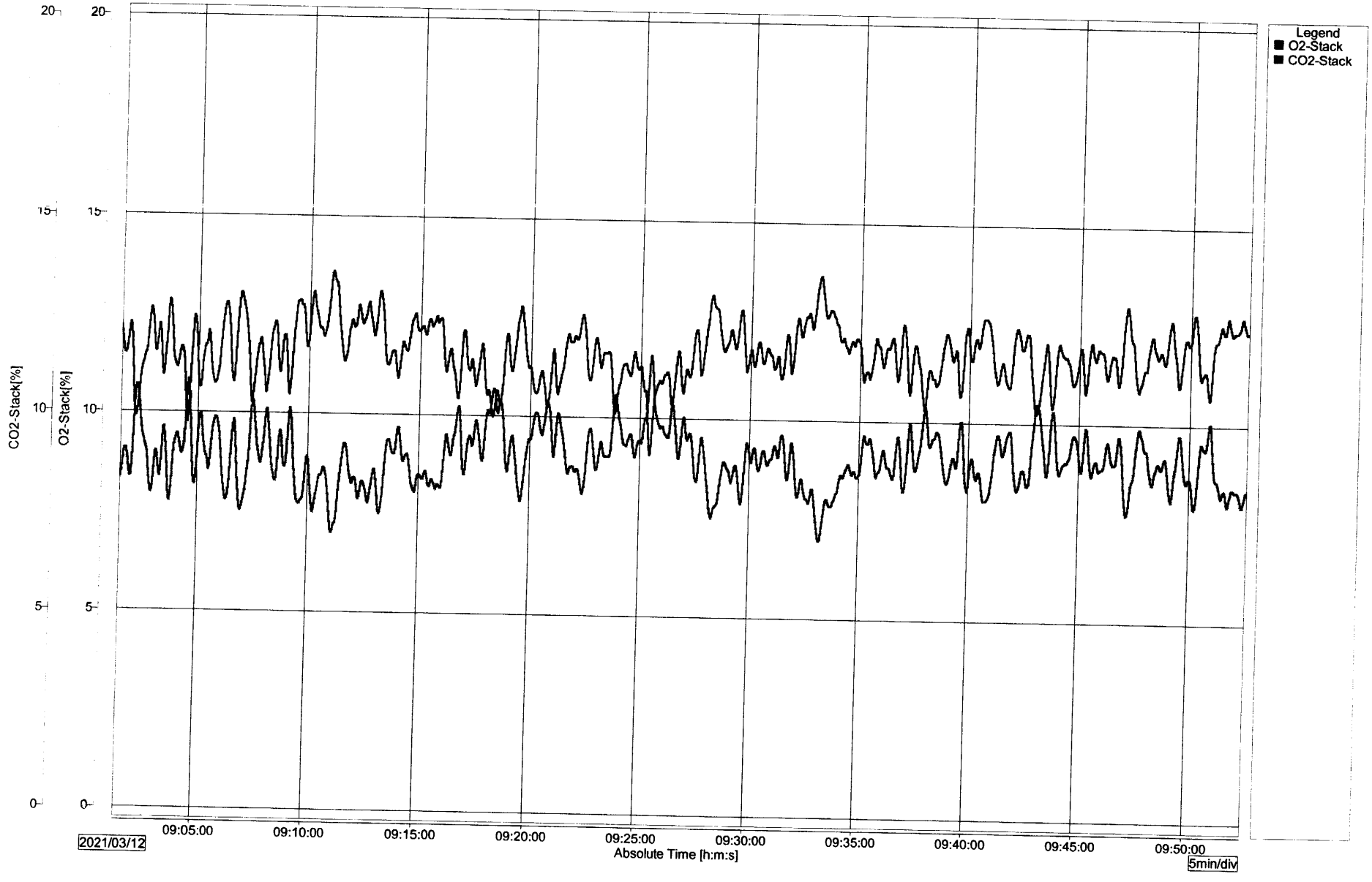
File Name : 000361_TV 6_210312_071930.DSD
Device Type : DX2000
Serial No. : S5U604838

Print Groups : GROUP 1
Print Range : 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000

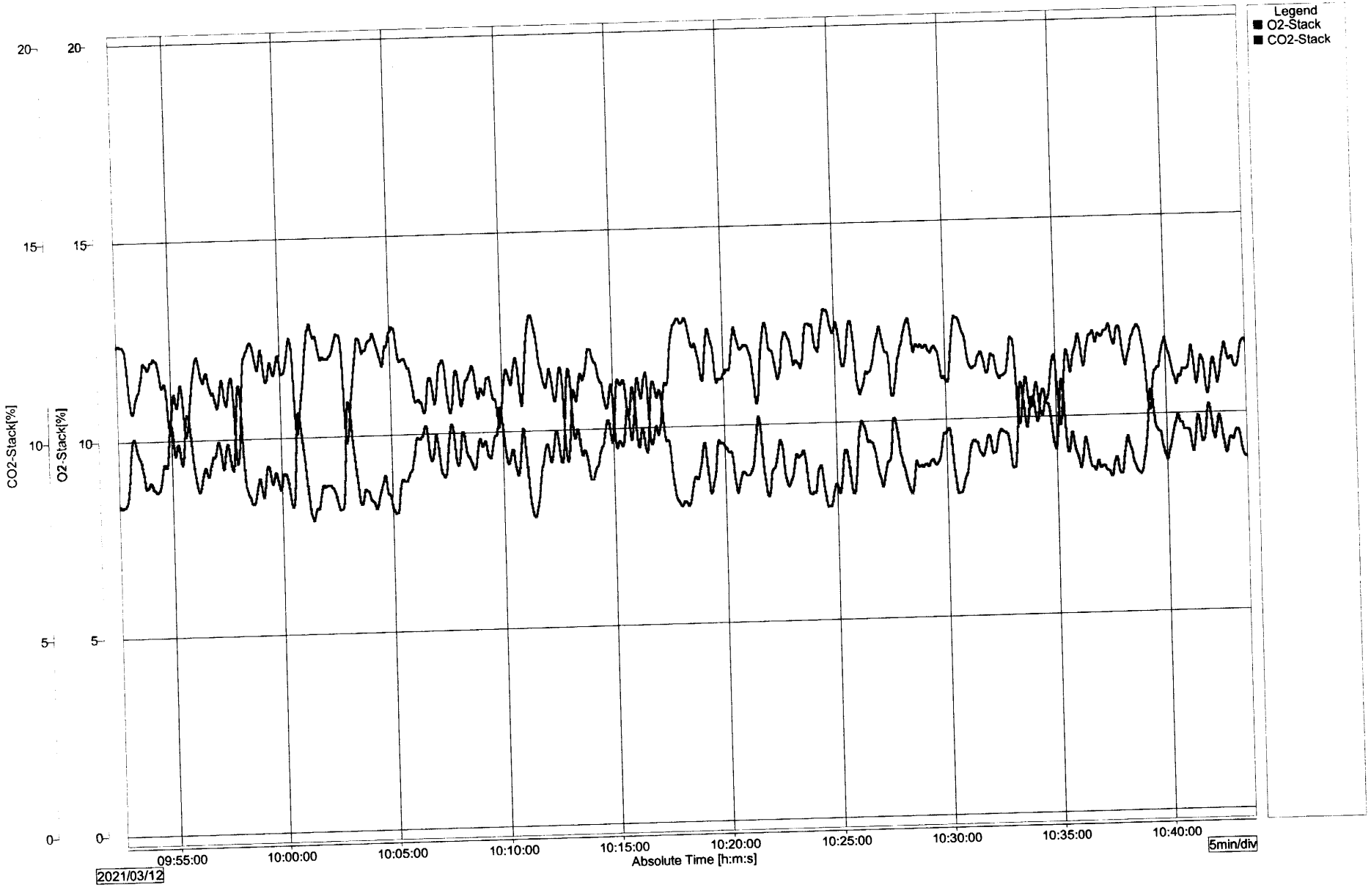
Start Time : 2021/03/12 07:19:30.000
Stop Time : 2021/03/12 16:17:36.000



File Name : 000361_TV 6_210312_071930.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/12 07:19:30.000
Stop Time : 2021/03/12 16:17:36.000

Print Groups : GROUP 1
Print Range : 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000

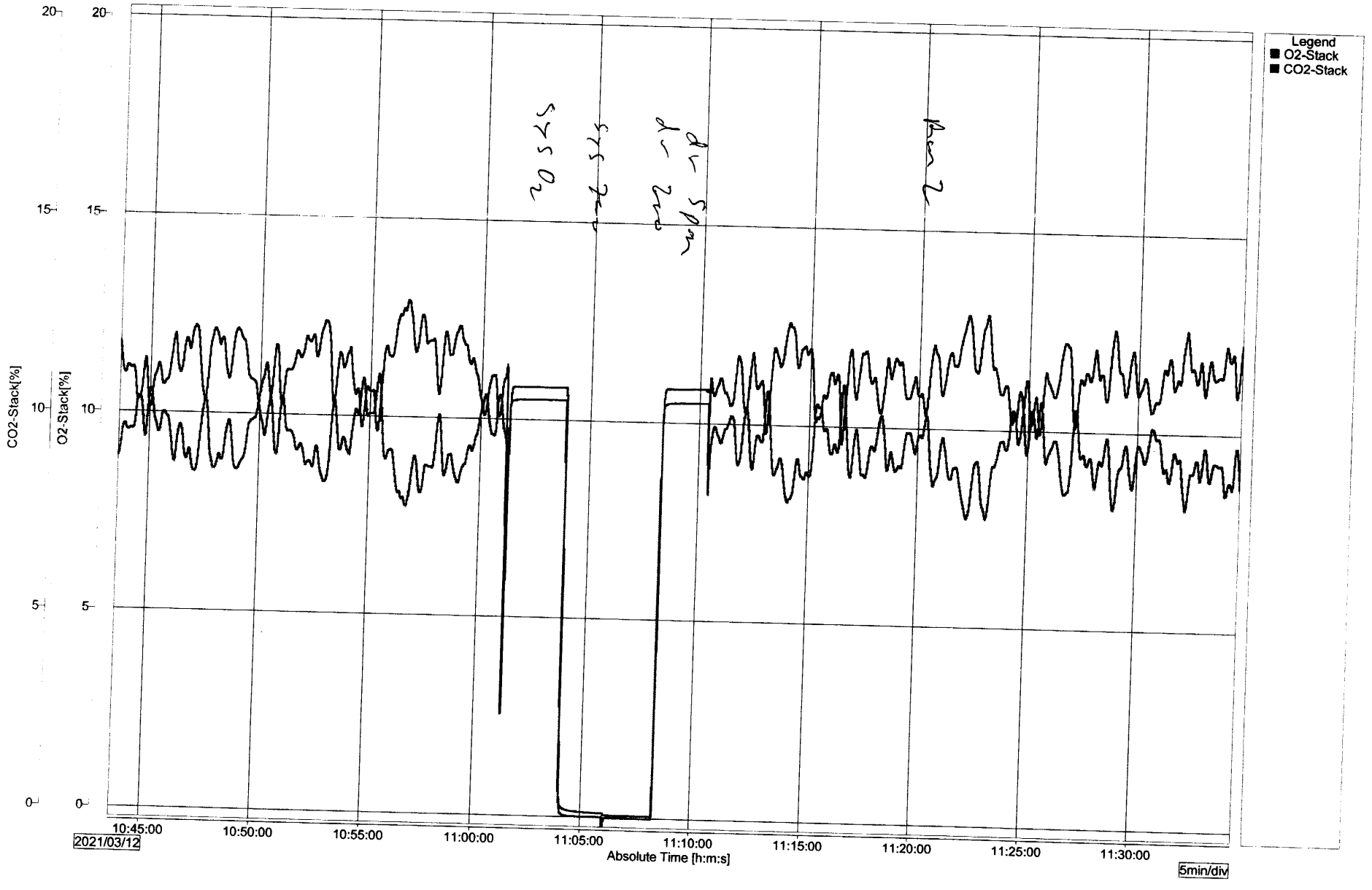


W002AS-006514-RT-2247

File Name : 000361_TV 6_210312_071930.DSD
Device Type : DX2000
Serial No. : S5U604838

Print Groups : GROUP 1
Print Range : 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000

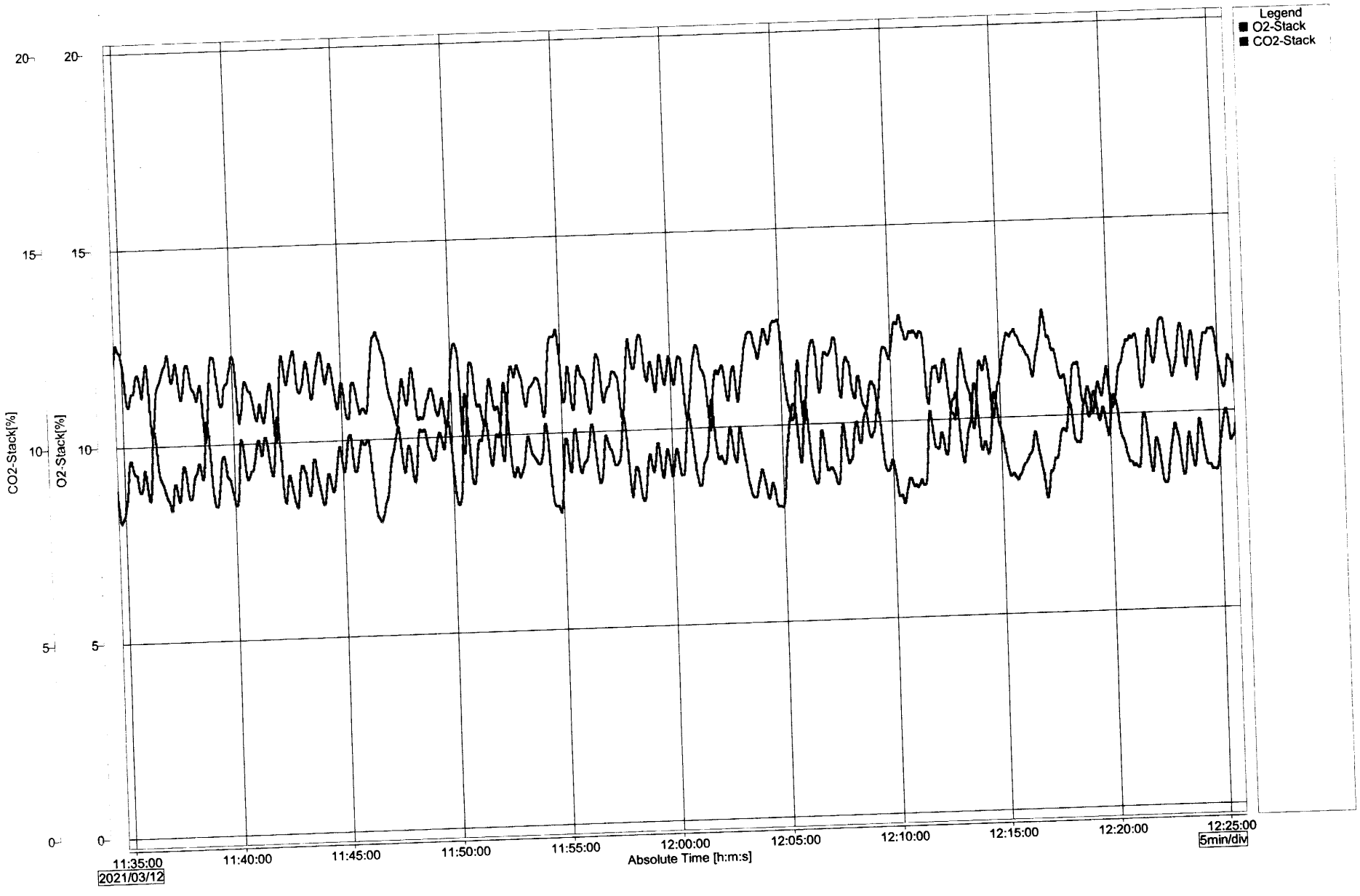
Start Time : 2021/03/12 07:19:30.000
Stop Time : 2021/03/12 16:17:36.000



File Name : 000361_TV 6_210312_071930.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/12 07:19:30.000
Stop Time : 2021/03/12 16:17:36.000

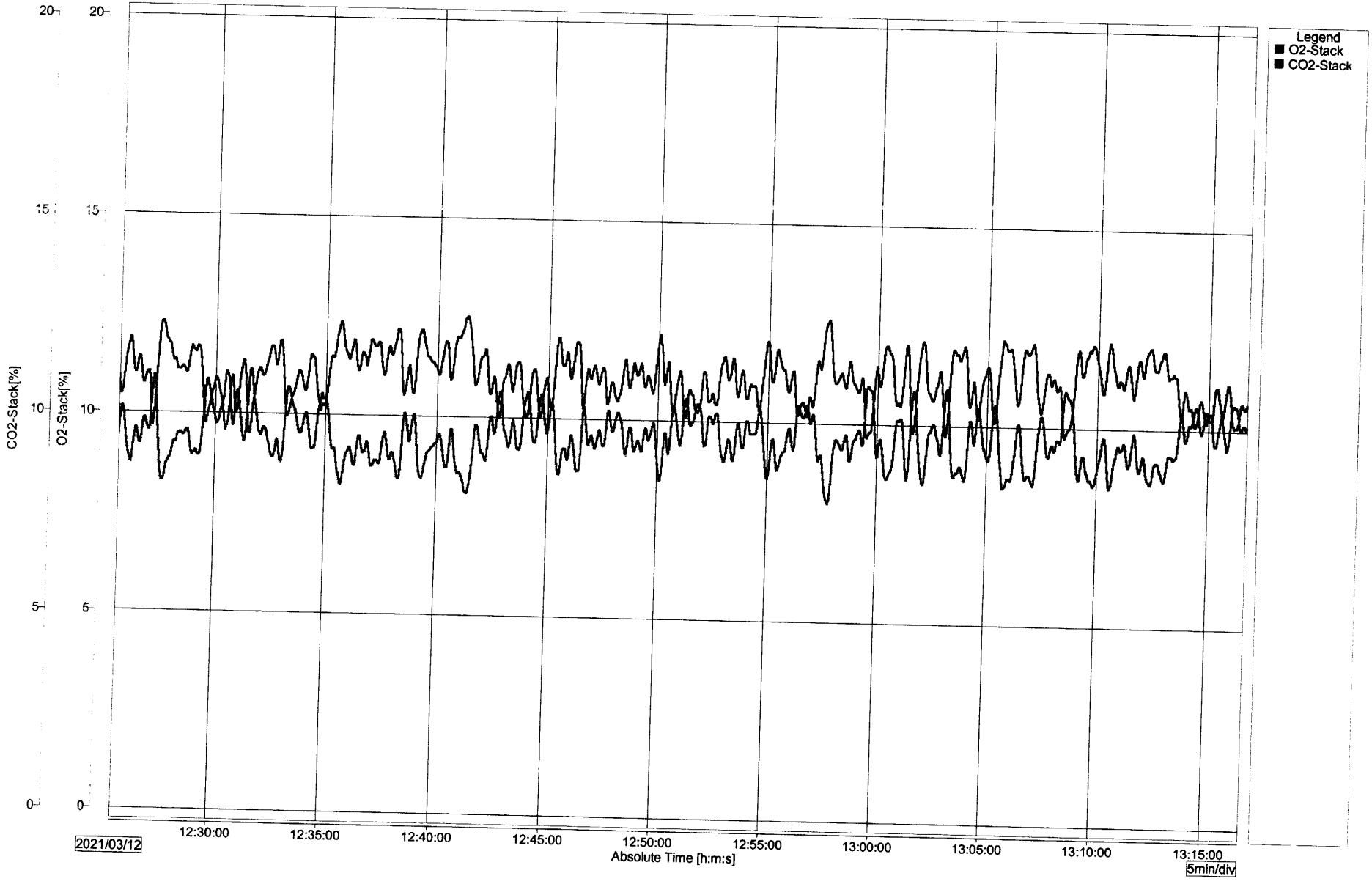
Print Groups : GROUP 1
Print Range : 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000



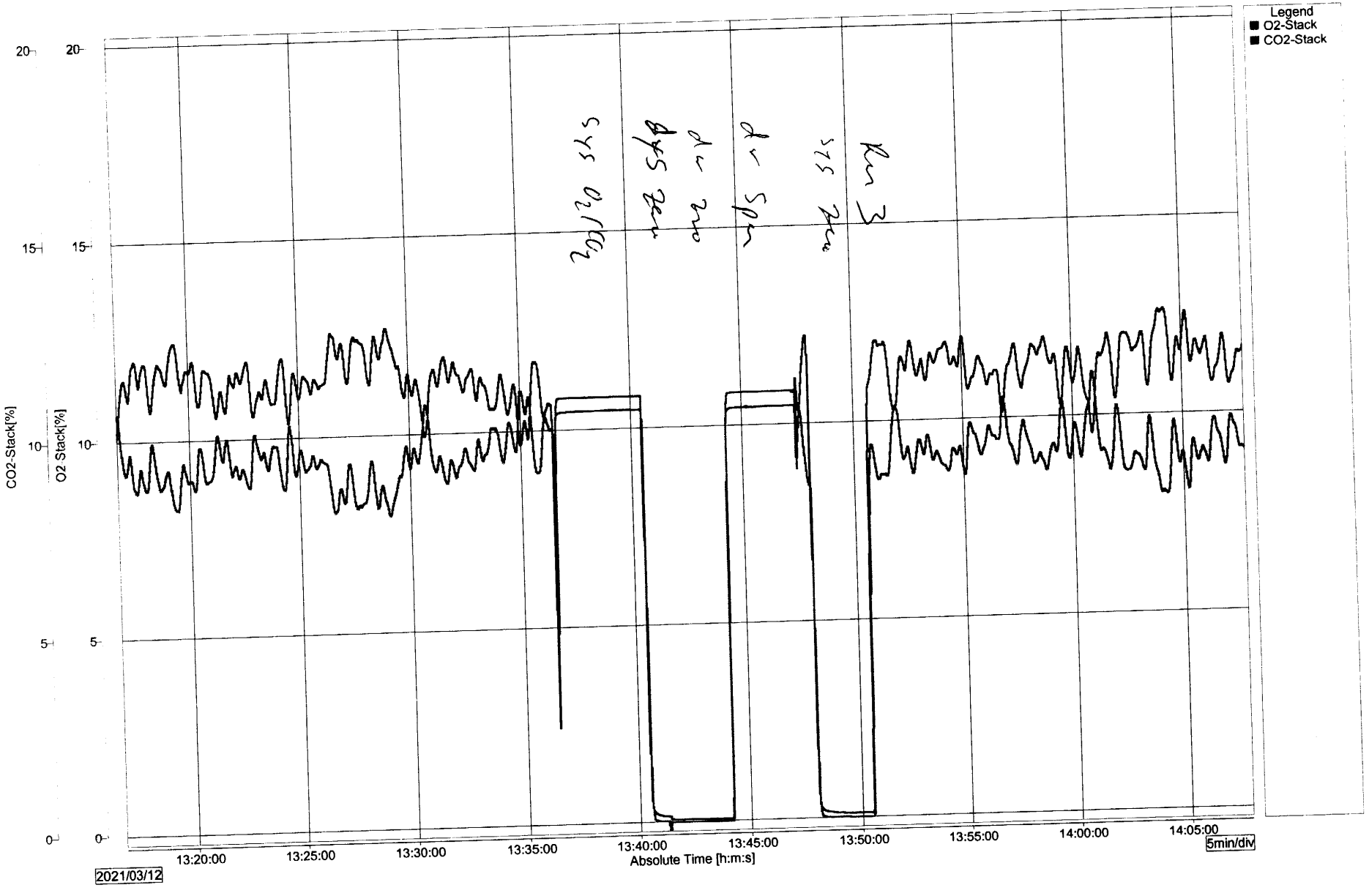
File Name : 000361_TV 6_210312_071930.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/12 07:19:30.000
Stop Time : 2021/03/12 16:17:36.000

Print Groups : GROUP 1
Print Range : 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000



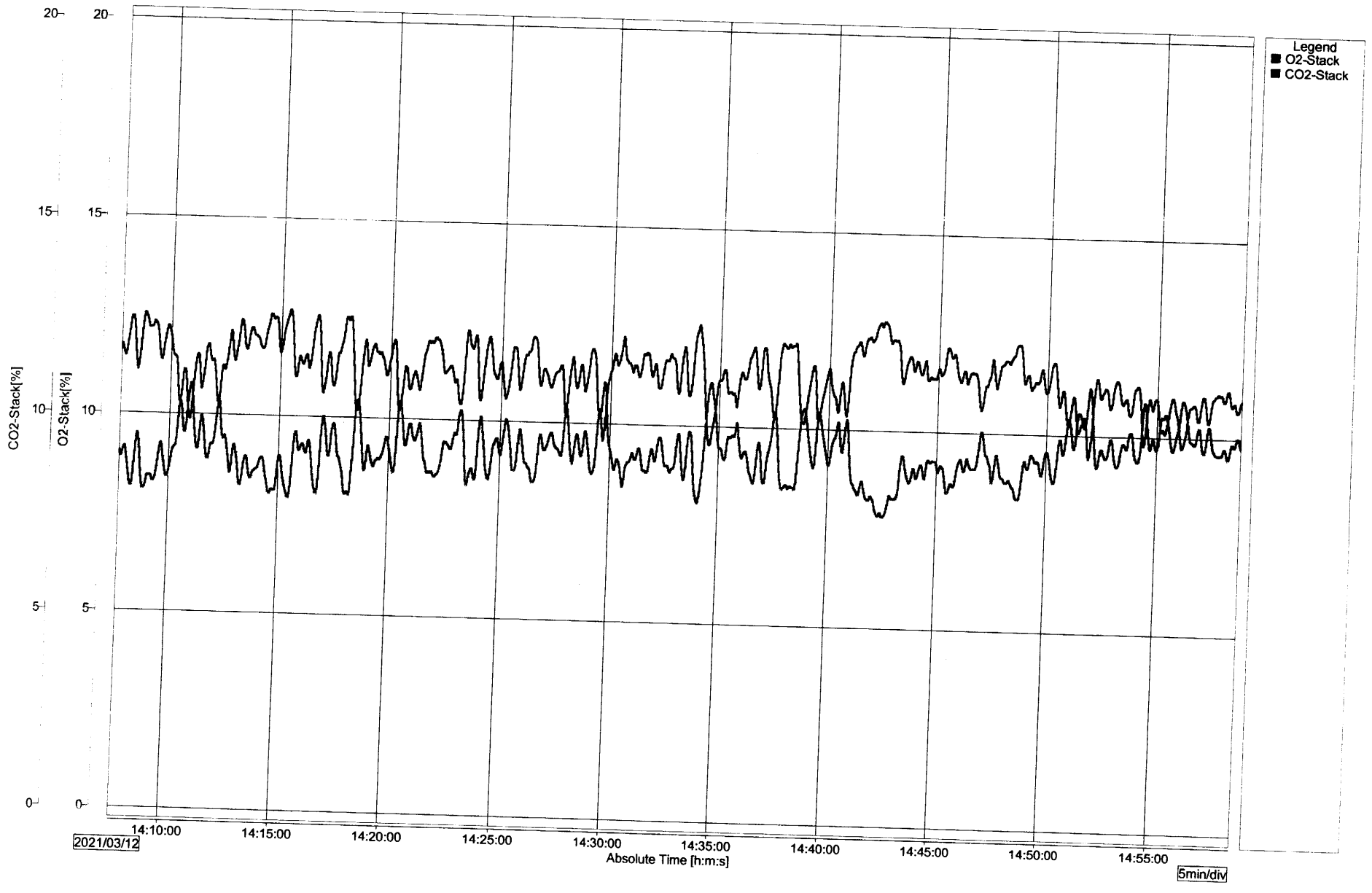
File Name	: 000361_TV 6_210312_071930.DSD	Start Time	: 2021/03/12 07:19:30.000
Device Type	: DX2000	Stop Time	: 2021/03/12 16:17:36.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000		



File Name : 000361_TV 6_210312_071930.DSD
Device Type : DX2000
Serial No. : S5U604838

Print Groups : GROUP 1
Print Range : 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000

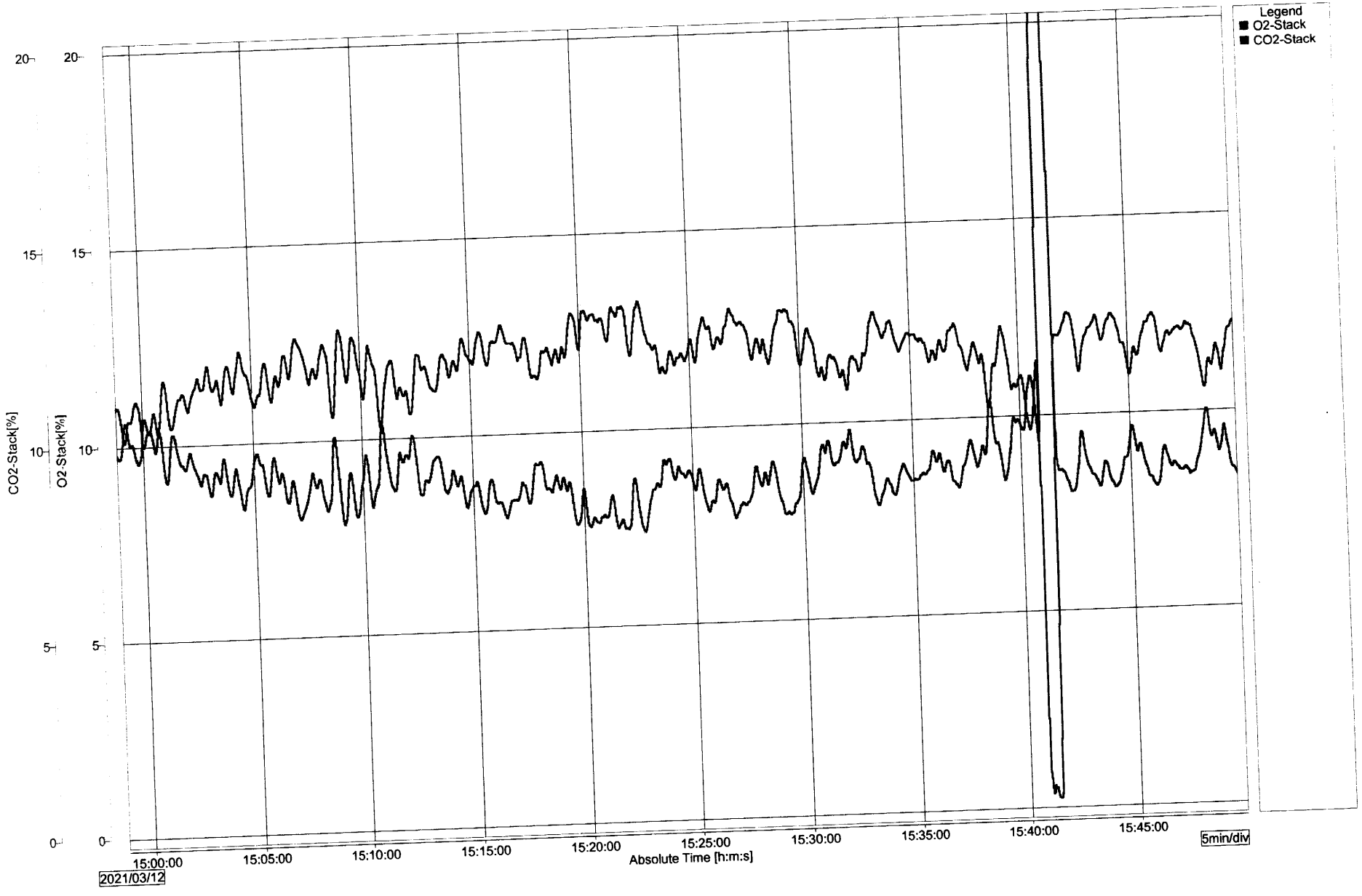
Start Time : 2021/03/12 07:19:30.000
Stop Time : 2021/03/12 16:17:36.000



File Name : 000361_TV 6_210312_071930.DSD
Device Type : DX2000
Serial No. : S5U604838

Print Groups : GROUP 1
Print Range : 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000

Start Time : 2021/03/12 07:19:30.000
Stop Time : 2021/03/12 16:17:36.000

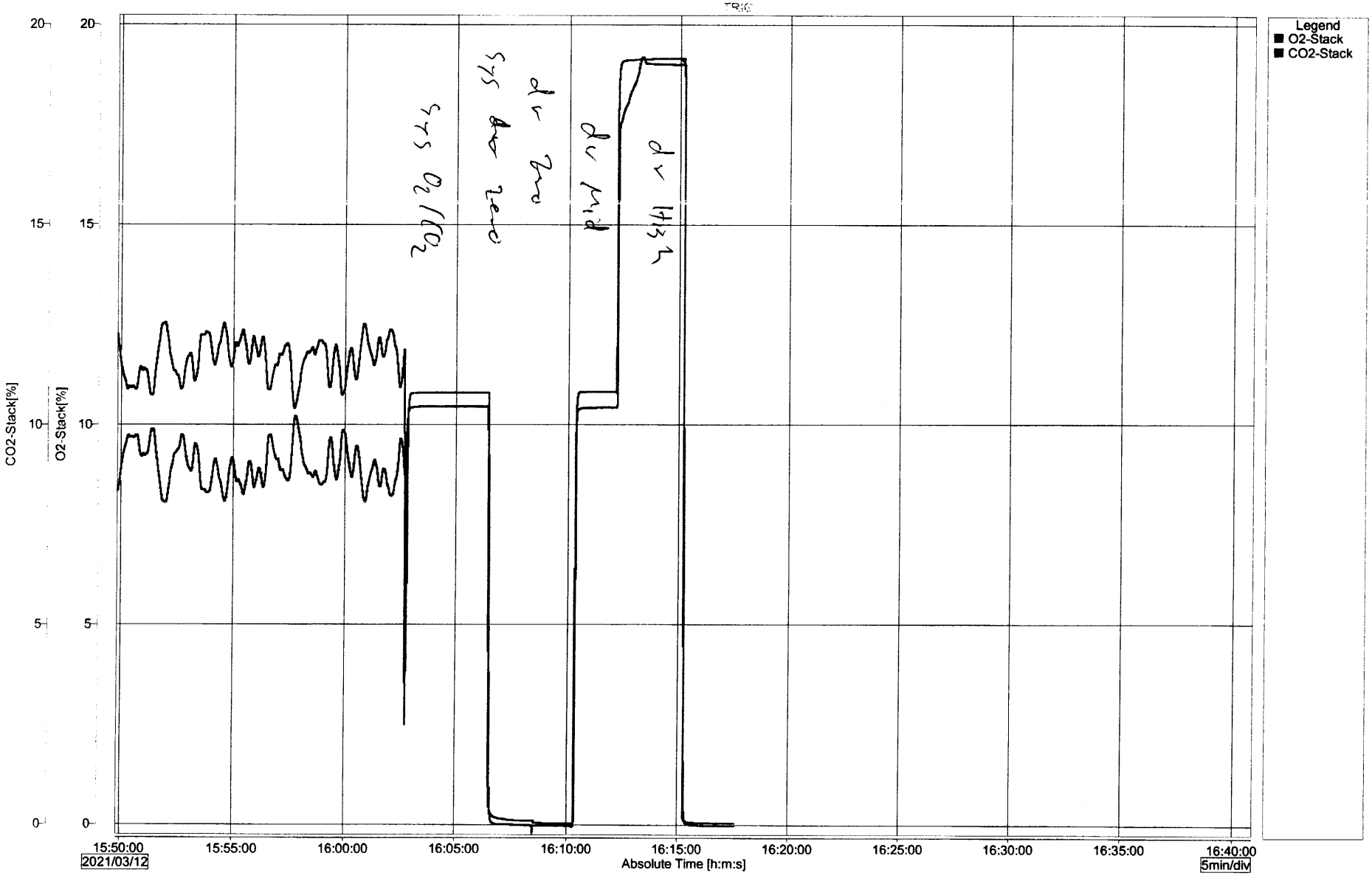


W002AS-006514-RT-2247

File Name : 000361_TV 6_210312_071930.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/12 07:19:30.000
Stop Time : 2021/03/12 16:17:36.000

Print Groups : GROUP 1
Print Range : 2021/03/12 07:19:30.000 - 2021/03/12 16:17:36.000



Appendix A.1.4
Unit 1 Hydrogen Chloride Data

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desert View | LOCATION/UNIT: U-1 Stack Breaching
PERFORMED BY: PW | TEST DATE: 3-5-21
BAR. PRESSURE: 30.28 | TC READOUT ID: 30-WCS
DP INDICATOR ID: 30-WCS | TC ID: #013
DP INDICATOR TYPE: 0-10" | PITOT TUBE ID: #013 | Cp: .84
ZERO: ✓ | LEVEL: ✓ | LEAK CHECK PRE-: ✓ | POST-: ✓

Run #: 1-HG	Ps: +.93	Run #:	Ps:	Run #:	Ps:
Start: 0720	Stop: 0920	Start:	Stop:	Start:	Stop:

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5	1.3	358	5	.87	353	5	1.3	352
4	.98	359	4	.83	352	4	1.1	353
3	.94	354	3	.80	354	3	1.0	354
2	1.0	355	2	.91	355	2	1.1	355
1	.99	352	1	.93	356	1	1.0	352
5	1.4	356	5	1.4	357	5	1.4	353
4	1.0	358	4	1.1	358	4	1.3	354
3	.92	357	3	.84	357	3	1.3	356
2	.68	352	2	.82	355	2	1.0	357
1	.66	351	1	.87	354	1	1.0	355
Heated Line Temp. °F		313	Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C		22.7	Chiller Temp. °C			Chiller Temp. °C		

MOISTURE DATA FOR TEST RUNS 1-HG THROUGH 1-HG

METER ID: 30-WCS | METER Yd: 0.983 | BALANCE CHECK WEIGHT: 500.0 / 500.0

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
0720	103.200	1.5	60	60	42	5"	#1	H_2O	898.9	742.1	
0820	143.470	1.5	64	62	46	5"	#2	H_2O	722.5	651.6	
0850	163.885	1.5	66	63	49	5"	#3	Empty	666.1	660.2	
0920	184.177						#4	Silica Gel	964.0	936.0	
							Total				

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.000 CFM @ 15 in. Hg

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desert View | LOCATION/UNIT: U-1 Stack Breaching
PERFORMED BY: PW | TEST DATE: 3-5-21
BAR. PRESSURE: 30.28 | TC READOUT ID: 10-WCS
DP INDICATOR ID: 10-WCS | TC ID: #013
DP INDICATOR TYPE: 0-10" | PITOT TUBE ID: #013 ✓ | Cp: .84
ZERO: ✓ LEVEL: ✓ | LEAK CHECK PRE- ✓ POST- ✓

Run #: 1-HCL Ps: 8.53 Start: 0942 Stop: 1142			Run #: ____ Ps: ____ Start: ____ Stop: ____			Run #: ____ Ps: ____ Start: ____ Stop: ____		
Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5	1.4	356	5	1.3	354	5	1.3	352
4	1.2	357	4	1.2	355	4	1.0	353
3	1.3	358	3	.86	355	3	.98	354
2	1.1	356	2	.84	356	2	.72	355
1	1.0	355	1	.80	356	1	.69	356
5	1.2	354	5	.91	359	5	1.4	354
4	1.1	356	4	.84	356	4	.98	355
3	1.0	357	3	.82	358	3	.92	356
2	1.0	358	2	.86	359	2	.99	355
1	1.1	359	1	.91	354	1	.97	356
Heated Line Temp. °F	313		Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C	00		Chiller Temp. °C			Chiller Temp. °C		

MOISTURE DATA FOR TEST RUNS 1-HCL THROUGH 2-HCL

METER ID: 1PM METER Yd: 1.011 BALANCE CHECK WEIGHT: 500.01 500.0

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
0942	490.000	1.5	74	76	48	6"	#1	H_2O	991.6	812.9	
1042	531.83	1.5	77	80	53	6"	#2	H_2O	907.5	734.2	
1112	552.730	1.5	81	84	53	6"	#3	Empty	588.2	586.7	
1142	573.448						#4	Silica Gel	1035.9	1034.5	
							Total				

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Reservation | LOCATION/UNIT: U-1 Stack Breaching
PERFORMED BY: PW | TEST DATE: 3-5-21
BAR. PRESSURE: 30.28 | TC READOUT ID: 30-UCS
DP INDICATOR ID: 30-UCS | TC ID: #013
DP INDICATOR TYPE: 210" | PITOT TUBE ID: #013 ✓ | Cp: .84
ZERO: ✓ LEVEL: ✓ | LEAK CHECK PRE- ✓ POST- ✓

Run #: 3-HCl	Ps: +.53	Start: 1210	Stop: 1410

Sample Point	Velocity Head inches H_2O	Temp, °F
5	1.3	356
4	.96	357
3	.90	356
2	.95	357
1	.95	356
5	1.4	357
4	.98	358
3	.95	357
2	.77	358
1	.70	358
Heated Line Temp. °F		311
Chiller Temp. °C		00.6

Run #:	Ps:
Start:	Stop:

Sample Point	Velocity Head inches H_2O	Temp, °F
5	.94	356
4	.85	357
3	.83	355
2	.90	354
1	.89	352
5	1.3	353
4	1.3	354
3	1.0	355
2	.86	356
1	.77	357
Heated Line Temp. °F		
Chiller Temp. °C		

Run #:	Ps:
Start:	Stop:

Sample Point	Velocity Head inches H_2O	Temp, °F
5	1.3	354
4	1.1	355
3	1.0	356
2	.98	357
1	1.0	354
5	1.4	356
4	1.4	355
3	1.2	357
2	1.0	354
1	.98	352
Heated Line Temp. °F.		
Chiller Temp. °C		

MOISTURE DATA FOR TEST RUNS 3-HCl THROUGH 3-HCl

METER ID: 1PIM | METER Yd: 1.011 | BALANCE CHECK WEIGHT: 500.0 / 500.0

Dry Gas Meter						
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum
1210	575.000	1.5	86	88	49	6"
1310	616.720	1.5	90	92	56	6"
1340	637.580	1.5	94	96	59	6"
1410	658.337					

Impinger Data				
No.	Material	End Wt.	Start Wt.	Diff.
#1	H_2O	927.6	755.0	
#2	H_2O	724.4	647.6	
#3	Empty	668.9	666.1	
#4	Silica Gel	973.2	950.3	
Total				

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

Appendix A.1.5
Unit 1 Particulate Data

MONTROSE

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WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Desert View
LOCATION: U1 Stack Breaching
DATE: 3/12/21
RUN NO: 1-PM-U1
OPERATOR: SS
METER BOX NO: 30-UCS
METER ΔH@: 1.808
METER Yd: 0.983
STACK AREA, FT²: 38.84
TRAVERSE POINTS, MIN/POINT: 4/30
ΔH= _____ X ΔP:
Probe Condition, pre/post test: √/√
Silica Gel Expended, Y/N: N
Filter Condition after Test: OK
Check Weight: 500.0/800.0

AMBIENT TEMPERATURE: 55°
BAROMETRIC PRESSURE: 30.22
ASSUMED MOISTURE: 13%
PITOT TUBE COEFF, Cp: .821
PROBE ID NO/MATERIAL: #089 / Glass
PROBE LENGTH: 6'
NOZZLE ID NO/ MATERIAL: #196 / S.S.
NOZZLE DIAMETER: 0.239
FILTER NO/TYPE: 83-4179
PRE-TEST LEAK RATE: :≤0.005 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: :≤0.005 CFM@ 15 in. Hg.
PITOT LEAK CHECK - PRE: √ POST: √
CHAIN OF CUSTODY: SAMPLE CUSTODIAN PW
SAMPLER SS
SAMPLE CUSTODIAN RD

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	DI H_2O	971.0	725.3	245.7
2	DI H_2O	702.5	694.5	8.0
3	Empty	644.1	643.5	0.6
4	S.G.	936.1	916.4	19.7
Total:				274.0

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
5	0840	813.500	1.1	1.9	364	258	251	49	63	63	6		-.49
4	0844	815.400	0.98	1.7	363	257	250	49	64	63	6		
3	0848	818.815	0.87	1.5	364	255	251	49	64	63	6		
2	0852	821.750	0.99	1.7	364	256	253	50	65	64	6		
1	0856	825.000	1.00	1.7	365	255	253	50	65	64	6		
P.C.	0900	827.820											
5	0904	827.820	1.2	2.1	363	251	255	65	64	63	6		
4	0908	831.000	0.96	1.6	363	256	255	65	64	63	6		
3	0912	833.950	0.99	1.7	364	249	251	58	65	66	6		
2	0916	836.670	0.66	1.1	364	251	256	58	66	66	6		
1	0920	839.235	0.62	1.1	362	252	250	58	67	67	6		
P.C.	0924	841.670											
5	0928	841.670	0.96	1.6	361	250	250	49	68	67	6		
4	0932	844.530	0.91	1.6	362	256	249	49	67	68	6		
3	0936	847.300	0.85	1.5	362	251	251	49	67	68	6		
2	0940	850.350	1.0	1.7	362	251	250	49	69	69	6		
1	0944	853.290	1.1	1.9	362	251	251	51	69	69	6		
P.C.	0948	856.270											
Average:			1.0016	1.757	362.7				65.5				

Comments: Factor @ 1.79

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: 61 - STACK BREACH
DATE: 3/12/21
RUN NO: 1-PM-U
OPERATOR: SS
METER BOX NO: See Pg 1
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= _____ 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: See Pg 1
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:		

See Pg 1

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
5	0952	856.270	0.85	1.5	362	255	255	56	71	70	6		+.49
4	0956	859.120	0.83	1.5	361	256	254	56	71	72	6		
3	1000	862.100	0.92	1.6	363	256	253	55	72	72	6		
2	1004	864.800	0.97	1.7	364	257	251	56	72	73	6		
1	1008	867.635	0.99	1.7	363	255	250	57	73	73	6		
P.C.	1012	870.490											
5	1016	870.490	1.1	1.9	363	251	254	57	73	73	6		
4	1020	873.725	1.3	2.3	364	257	255	57	73	73	6		
3	1024	876.910	1.2	2.1	364	257	256	58	74	74	6		
2	1028	880.110	1.2	2.1	364	258	256	58	75	74	6		
1	1032	883.320	1.0	1.8	363	256	256	58	75	74	6		
P.C.	1036	886.535											
5	1040	886.535	1.0	1.8	363	251	255	58	75	73	6		
4	1044	889.900	1.3	2.3	363	250	256	58	75	73	6		
3	1048	893.100	1.2	2.1	362	249	256	59	75	74	6		
2	1052	896.120	1.2	2.1	363	249	256	59	76	74	6		
1	1056	899.380	1.0	1.8	362	251	256	59	76	74	6		
END	1100	902.625											
Average:													

Comments: CHANGED FACTOR 1.75
SS 3/12/21

Date of last revision 2/14/2017

DS834048
Master Document Storage\Forms\Datasheets\Field Datasheets

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MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Desert View
LOCATION: UNIT 1
DATE: 3/12/21
RUN NO: 2-Dm-U1
OPERATOR: SS
METER BOX NO: 30WCS
METER ΔH@: 1.808
METER Yd: 0.9933
STACK AREA, FT²: 38.84
TRAVERSE POINTS, MIN/POINT: 120/30
ΔH= 1.78 X ΔP:
Probe Condition, pre/post test: Good
Silica Gel Expended, Y/N: NO
Filter Condition after Test: OK
Check Weight: 500/500

AMBIENT TEMPERATURE: 68
BAROMETRIC PRESSURE: 30.22
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: # 89 / glass
PROBE LENGTH: 6'
NOZZLE ID NO/ MATERIAL: 196/SS
NOZZLE DIAMETER: 0.239
FILTER NO/TYPE: 83-4181
PRE-TEST LEAK RATE: : 0.003 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: : 0.003 CFM@ 18 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN RD
SAMPLER SS
SAMPLE CUSTODIAN RD

Imp. #	Contents	Post-Test	Post-Test - Pre-Test = Difference	
1	DI H2O	948.8	752.6	194.2
2	DI H2O	898.6	635.0	63.6
3	mT	663.5	662.4	1.1
4	Silica	946.4	~~946.8~~ 3-11-20 MD	
			924.0	22.4
Total:			287.3	

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
5	1120	902.950	1.1	2.0	363	251	249	56	75	76	5		-.49
4	1124	906.180	1.2	2.1	362	251	249	56	76	76	5		
3	1128	909.370	1.2	2.1	363	253	253	56	77	77	5		
2	1132	912.500	1.1	2.0	363	255	253	55	78	79	5		
1	1136	915.700	1.0	1.8	362	255	255	55	80	80	5		
STOP	1140	918.870											
5	1144	918.870	1.2	2.1	363	255	258	56	80	80	5		
4	1148	922.200	1.1	2.0	364	256	259	56	80	80	5		
3	1152	925.440	1.2	2.1	364	255	259	56	81	80	5		
2	1156	928.700	1.4	2.5	363	256	258	57	82	81	5		
1	1200	931.885	1.1	2.0	363	256	255	57	82	81	5		
STOP	1204	934.885	~~1.1~~										
5	1208	934.805	0.91	1.6	362	255	254	59	82	82	5		
4	1212	938.125	0.89	1.6	363	256	253	56	82	81	5		
3	1216	940.900	0.85	1.5	364	257	253	56	82	81	5		
2	1220	943.710	0.80	1.4	364	258	252	56	83	83	5		
1	1224	946.460	0.80	1.4	363	257	252	57	83	83	5		
STOP	1228	949.245											
Average:		90.520	0.9755	1.750	362.9				78.4				

Comments: SS 3/12/21

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MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 1 - STACK BREACHING
DATE: 3/12/21
RUN NO: 2-PM-U1
OPERATOR: SJ
METER BOX NO:
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= ____ 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: SEE Page 1
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
5	1238	949.245	0.85	1.5	362	256	255	58	80	80	5		-0.49
4	1242	952.050	0.83	1.5	363	258	254	58	80	79	5		
3	1246	955.000	0.92	1.6	362	258	251	58	80	78	5		
2	1248	957.830	0.96	1.7	364	257	252	59	79	78	5		
1	1246	961.955	0.99	1.8	362	256	253	59	79	78	5		
STOP	1250	963.790											
5	1252	963.790	1.2	2.1	362	255	255	57	79	78	5		
4	1256	964.230	0.95	1.7	363	254	257	55	78	78	5		
3	1300	970.800	0.93	1.7	364	252	257	55	78	77	5		
2	1304	973.115	0.62	1.1	364	253	257	54	78	77	5		
1	1308	975.680	0.60	1.1	364	252	258	55	77	76	5		
STOP	1312	978.500											
5	1316	978.500	0.96	1.7	363	250	259	57	77	76	5		
4	1320	981.440	0.91	1.6	362	249	259	56	77	76	5		
3	1324	984.370	0.85	1.5	362	248	260	56	76	76	5		
2	1328	987.320	1.0	1.8	362	249	260	56	76	76	5		
1	1332	990.370	1.1	2.0	362	251	259	55	76	75	5		
END	1336	993.510											
Average:													

Comments:

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MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

W002AS-006514-RT-2247

CLIENT: DESERT VIEW
LOCATION: UNIT 1 - STACK BREACH
DATE: 3/12/21
RUN NO: 3-PM-01
OPERATOR: SS
METER BOX NO: 30 WCS
METER ΔH@: 1.808
METER Yd: 0.983
STACK AREA, FT²: 38.84
TRAVERSE POINTS, MIN/POINT: 120/30
ΔH= 1.72 X ΔP:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: NO
Filter Condition after Test: OK
Check Weight: 500/500

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 30.22
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: #89
PROBE LENGTH: 6
NOZZLE ID NO/ MATERIAL: #196 / SS
NOZZLE DIAMETER: 0.239
FILTER NO/TYPE: 63-4180
PRE-TEST LEAK RATE: : 0.003 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: 0.003 CFM@ 15 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN RD
SAMPLER SS
SAMPLE CUSTODIAN RD

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	DI H_2O	954.8	734.8	220.0
2	DI H_2O	783.9	711.5	72.1
3	MT	644.2	644.1	0.1
4	SG	927.9	904.8	23.1
Total:				315.3

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
5	1352	993.800	1.0	1.8	363	255	255	60	74	73	5		-.49
4	1356	996.870	1.2	2.1	362	251	255	60	74	73	5		
3	1400	1000.000	1.3	2.3	362	250	250	59	74	73	5		
2	1404	1003.210	1.1	2.0	363	250	251	58	75	74	5		
1	1408	1006.560	1.0	1.8	364	251	250	58	74	72	5		
STOP	1412	1009.810											
5	1414	1009.810	1.2	2.1	364	251	255	57	74	73	5		
4	1418	1013.500	1.1	2.0	364	250	255	57	74	73	5		
3	1422	1016.760	1.3	2.3	363	249	257	57	73	72	5		
2	1426	1020.000	1.4	2.5	363	252	257	58	72	72	5		
1	1430	1023.450	1.0	1.8	363	252	257	58	72	72	5		
STOP	1434	1026.625											
5	1436	1026.625	1.1	2.0	362	251	255	58	74	74	5		
4	1440	1029.000	0.93	1.7	362	252	255	58	75	75	5		
3	1444	1033.000	0.89	1.6	362	252	249	58	76	75	5		
2	1448	1036.075	0.84	1.5	363	250	252	59	76	75	5		
1	1452	1038.890	0.80	1.4	364	251	252	59	77	77	5		
STOP	1456	1042.120											
Average:		70.760	1.757	362.8					73.4				

Comments:

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MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 1 - STACK BREACHING
DATE: 3/12/21
RUN NO: 3-PM-U1
OPERATOR: SS
METER BOX NO:
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= _____ 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
5	1458	1042.120	0.86	1.5	362	251	251	58	76	75	5		4.49
4	1502	1044.800	0.83	1.5	362	250	251	58	76	74	5		
3	1506	1047.700	0.92	1.6	363	249	250	58	75	74	5		
2	1510	1050.370	0.97	1.7	364	249	255	59	75	74	5		
1	1514	1053.360	0.98	1.7	364	249	255	59	74	73	5		
STOP	1518	1056.355											
5	1520	1086.355	1.2	2.1	363	249	255	59	73	73	5		
4	1524	1059.200	1.0	1.8	363	251	255	59	73	72	5		
3	1528	1063.000	0.98	1.7	362	251	256	59	73	72	5		
2	1532	1065.710	0.62	1.1	362	250	256	59	73	71	5		
1	1536	1068.000	0.65	1.2	361	250	256	60	73	71	5		
STOP	1540	1070.395											
5	1542	1070.395	0.96	1.7	362	249	250	59	73	71	5		
4	1546	1073.250	0.92	1.6	362	251	251	59	73	71	5		
3	1550	1075.600	0.90	1.6	360	251	251	58	73	4	5		
2	1554	1078.910	1.0	1.8	361	250	249	58	72	70	5		
1	1558	1081.775	1.0	1.8	362	250	250	58	72	70	5		
END	1602	1084.560											
Average:													

Comments:

Date of last revision 2/14/2017

Appendix A.1.6
Unit 1 SO_2 Data and Velocity Data

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desertview | LOCATION/UNIT: U1 Stack Breaching
PERFORMED BY: PW/S.S. | TEST DATE: 3-10-21
BAR. PRESSURE: 30.11 | TC READOUT ID: 30-WCS
DP INDICATOR ID: 30-WCS | TC ID: #013
DP INDICATOR TYPE: 0-10" | PITOT TUBE ID: #013 | Cp: .84
ZERO: ✓ | LEVEL: ✓ | LEAK CHECK PRE- ✓ | POST- ✓

Run #: 1-SOX	Ps: ±.48	Run #:	Ps:	Run #:	Ps:
Start: 0746	Stop: 0846	Start:	Stop:	Start:	Stop:

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5	1.1	357	5	.90	357	5	1.1	357
4	.98	358	4	.90	356	4	1.2	358
3	.94	360	3	.91	356	3	1.3	359
2	1.0	360	2	.91	357	2	1.2	358
1	.95	358	1	.98	355	1	1.0	358
5	1.4	357	5	1.0	359	5	1.4	357
4	1.2	358	4	1.1	358	4	1.4	358
3	.85	359	3	1.3	359	3	1.3	356
2	.82	360	2	1.0	360	2	1.2	358
1	.80	360	1	1.0	358	1	1.1	357
Heated Line Temp. °F	312		Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C	00.6		Chiller Temp. °C			Chiller Temp. °C		

MOISTURE DATA FOR TEST RUNS 1-SOX THROUGH 1-SOX

METER ID: 1 PM | METER Yd: 1.011 | BALANCE CHECK WEIGHT: 499.9 / 500.0

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T imp	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
0746	660.100	1.5	60	61	54	5"	#1	H_2O_2	910.8	731.4	
0806	673.132	1.5	61	62	55	5"	#2	H_2O_2	711.1	710.5	
0826	686.150	1.5	62	64	55	5"	#3	Empty	638.4	638.4	
0846	698.957						#4	Silica Gel	866.9	857.1	
							Total	LK		50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desertview | LOCATION/UNIT: U1 Stack Breeching
PERFORMED BY: PW/S.S. | TEST DATE: 3-10-21
BAR. PRESSURE: 30.11 | TC READOUT ID: 30-UCS
DP INDICATOR ID: 30-UCS | TC ID: #013
DP INDICATOR TYPE: 0-10" | PITOT TUBE ID: #013 | Cp: .84
ZERO: ✓ LEVEL: ✓ | LEAK CHECK PRE- ✓ POST- ✓

Run #: 2-Sox	Ps: +.48	Run #:	Ps:	Run #:	Ps:
Start: 0908	Stop: 1008	Start:	Stop:	Start:	Stop:

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5	1.2	362	5	.94	365	5	1.5	368
4	1.0	364	4	.98	369	4	1.2	364
3	.98	365	3	.92	368	3	1.3	368
2	1.0	366	2	.93	364	2	1.3	369
1	.96	368	1	1.0	368	1	1.0	370
5	1.4	368	5	1.0	368	5	1.4	368
4	1.2	369	4	1.1	368	4	1.3	369
3	.92	370	3	1.3	369	3	1.3	368
2	.96	368	2	1.1	370	2	1.2	369
1	.83	369	1	1.2	369	1	1.2	368
Heated Line Temp. °F		317	Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C		00.6	Chiller Temp. °C			Chiller Temp. °C		

MOISTURE DATA FOR TEST RUNS 2Sox THROUGH 2Sox

METER ID: 1 PM | METER Yd: 1.011 | BALANCE CHECK WEIGHT: 499.9 / 500.0

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
0908	702.100	1.5	70	71	54	5"	#1	H_2O_2	845.9	655.2	
0918	714.365	1.5	74	76	54	5"	#2	H_2O_2	730.0	728.6	
0948	728.640	1.5	75	78	56	5"	#3	Empty	592.9	591.9	
1008	743.014						#4	Silica Gel	896.3	881.1	
							Total	LR		50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desert View Power | LOCATION/UNIT: Unit - 1
PERFORMED BY: Patrick Whitman | TEST DATE: 3/10/2021
BAR. PRESSURE: 30.11 | TC READOUT ID: 30-WCS
DP INDICATOR ID: 30-WCS | TC ID: #013
DP INDICATOR TYPE: 0-10" Manometer | PITOT TUBE ID: #013 | Cp: 0.84
ZERO: ✓ LEVEL: ✓ | LEAK CHECK PRE- ✓ POST- ✓

Run #: 3-Sox Ps: 1.48 Start: 1034 Stop: 1134								
Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5, 55.3"	1.3	371	5	.96	371	5	1.5	372
4, 45.9"	.99	372	4	.99	372	4	1.2	371
3, 36.5"	.98	373	3	.93	372	3	1.3	372
2, 27.1"	1.1	372	2	.92	371	2	1.2	371
1, 17.7	.97	371	1	1.1	372	1	1.1	370
5	1.4	370	5	1.1	371	5	1.4	369
4	1.3	371	4	1.2	372	4	1.3	370
3	.94	372	3	1.3	371	3	1.2	371
2	.97	371	2	1.1	371	2	1.2	371
1	.82	372	1	1.2	372	1	1.1	370
	Probe Temp. °F	Filter Temp. °C		Heated Line Temp. °F	Chiller Temp. °C			
1	254	256		312	00.8			
2	256	254						
3	257	252						

MOISTURE DATA FOR TEST RUNS 2-Sox THROUGH 3-Sox

METER ID: 1PM ~~WCS~~ METER Yd: 1.011 BALANCE CHECK WEIGHT: 500.0/500

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T imp	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
1034	745.000	1.5	73	76	49	5"	#1	H_2O_2	927.7	737.1	
1054	758.900	1.5	74	77	54	5"	#2	H_2O_2	712.6	711.1	
1114	772.795	1.5	78	78	57	5"	#3	Empty	639.9	639.6	
1134	786.418						#4	Silica Gel	877.0	866.9	
							Total	Line rinse		50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

Appendix A.1.7
Unit 1 Hydrocarbon Data

SCAQMD METHOD 25.3
EVACUATED CANISTER SAMPLING DATA

Client/Facility: Desert View Date: 3-10-21

Unit/Location: U1 Stack Breaching Performed By: PLV

Probe Material S.S. Probe Length 3'

Connecting Tubing Material Teflon Connecting Tubing Length 1'

Barometric Pressure 32.11 Ambient Temperature 68°F

Test No.		1-VOC-A		1-VOC-B			
Vial ID		10A		10B			
Canister ID		10A		10B			
		Time	Vacuum	Time	Vacuum	Time	Vacuum
Pre-Test Leak Check	Start	1000	30"	1000	30"		
Pre-Test Leak Check	Stop	1010	30"	1010	30"		
Sample Collection	Start	1034	30"	1034	30"		
		1044	26	1044	26		
		1054	22	1054	23		
		1104	18	1104	18		
		1114	14	1114	14		
		1124	11	1124	11		
Sample Collection	Stop	1126	10	1126	10		
Post -Test Leak Check	Start	1130	10	1130	10		
Post-Test Leak Check	Stop	1140	10	1140	10		
Line Rinse Volume							

Comments: _____

Appendix A.1.8
Unit 1 Mercury Data

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 1 - STACK BREACHING
DATE: 3/11/21
RUN NO: 1-Hg-U1
OPERATOR: SS
METER BOX NO: 20WCS
METER ΔH@: N/A
METER Yd: A = 0.99887 B = 0.99926
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/SP
TARGET SAMPLING RATE:
Probe Condition, pre/post test: GOOD
Silica Gel Expended, Y/N: NO
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6'
TRAP NO/DESC: A OLC 160589
TRAP NO/DESC: B OLC 137222
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.000 @15
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.000 @15
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER SS
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l A	Meter Volume, l B	ΔH in. H_2O A	ΔH in. H_2O B	Meter Temp A, °F In	Meter Temp A, °F Out	Meter Temp B, °F In	Meter Temp B, °F Out	Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F A	Impinger Out Temp, °F B	Rotameter Setting A	Rotameter Setting B	Vacuum In. Hg A	Vacuum In. Hg B
SP	1525	5080.875	3232.792			~~60~~	64		64	356	300	DRY	DRY	0.7	0.7	2	2
	1530	5084.231	3236.143				64		64	356	300			0.7	0.7	2	2
	1535	5087.589	3239.490				64		64	356	300			0.7	0.7	2	2
	1540	5090.924	3242.846				65		65	356	300			0.7	0.7	2	2
	1545	5094.310	3246.190				65		65	357	302			0.7	0.7	2	2
	1550	5097.656	3249.549				65		65	357	302			0.7	0.7	2	2
	1555	5101.013	3252.900				66		66	357	302			0.7	0.7	2	2
	1600	5104.369	3256.351				66		66	357	302			0.7	0.7	2	2
	1605	5107.725	3259.602				66		66	356	302			0.7	0.7	2	2
	1610	5111.081	3262.953				66		66	356	302			0.7	0.7	2	2
	1615	5114.438	3266.301				66		66	356	302			0.7	0.7	2	2
	1620	5117.799	3269.656				66		66	356	302			0.7	0.7	2	2
	1625	5121.100	3273.007														
Average:																	

Comments: ~~SP~~ 3/11/21

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 1 - STACK BREACHING
DATE: 3/16/21
RUN NO: 1-Hg-U1
OPERATOR: SS
METER BOX NO: 21 WCS
METER ΔH@: N/A
METER Yd: A - 0.99888 B = 0.9901
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/SP
TARGET SAMPLING RATE:
Probe Condition, pre/post test: Good
Silica Gel Expended, Y/N: NO
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6' OLC149182
TRAP NO/DESC: C ~~OLC160752~~
TRAP NO/DESC: D OLS44313
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 cfs POST TEST: 0.000 cfs
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 cfs POST TEST: 0.000 cfs
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER: SS
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l C	Meter Volume, l D	ΔH in. H_2O C	ΔH in. H_2O D	Meter Temp A, °F In	Meter Temp A, °F Out	Meter Temp B, °F In	Meter Temp B, °F Out	Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F C	Impinger Out Temp, °F D	Rotameter Setting C	Rotameter Setting D	Vacuum In. Hg C	Vacuum In. Hg D
SP																	
	1525	9479.169	3181.747				61		61	356	300	DRY	DRY	0.7	0.7	2	2
	1530	9482.459	3185.096				61		61	356	300			0.7	0.7	2	2
	1535	9485.800	3188.512				61		61	356	300			0.7	0.7	2	2
	1540	9489.159	3191.708				61		61	356	300			0.7	0.7	2	2
	1545	9492.509	3195.165				60		60	357	302			0.7	0.7	2	2
	1550	9495.859	3198.520				60		60	357	302			0.7	0.7	2	2
	1555	9499.209	3201.877				60		60	357	302			0.7	0.7	2	2
	1600	9502.558	3205.233				60		60	357	302			0.7	0.7	2	2
	1605	9506.900	3208.591				59		59	356	302			0.7	0.7	2	2
	1610	9509.121	3211.946				59		59	356	302			0.7	0.7	2	2
	1615	9512.609	3215.300				59		59	356	302			0.7	0.7	2	2
	1620	9515.955	3218.658				59		59	356	302			0.7	0.7	2	2
	1625	9519.300	3222.013														
Average:																	

Comments:

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 1 - STACK BROACHING
DATE: 3/14/21
RUN NO: 2-Hg-U1
OPERATOR: SS
METER BOX NO: 20WCS
METER ΔH@: N/A
METER Yd: A = 0.99887 B = 0.9926
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/SP 11
TARGET SAMPLING RATE:
Probe Condition, pre/post test: GOOD
Silica Gel Expended, Y/N: NO
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6'
TRAP NO/DESC: A OLC1606413
TRAP NO/DESC: B OLC160707
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0-000 @5
TRAIN "B" LEAK CHECK:
PRE-TEST: 0-000 @15 POST TEST: 0-000 @5
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER SS
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l		ΔH in. H_2O		Meter Temp A, °F		Meter Temp B, °F		Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F		Rotameter Setting		Vacuum In. Hg	
						In	Out	In	Out								
		A	B	A	B							A	B	A	B	A	B
	1650	5122.357	3274.611				58		59	359	300	DRY	DRY	0.7	0.7	2	2
	1655	5125.702	3277.958				58		59	359	300			0.7	0.7	2	2
	1700	5129.037	3281.303				58		59	359	300			0.7	0.7	2	2
	1705	5132.401	3284.650				58		59	359	300			0.7	0.7	2	2
	1710	5135.725	3287.999				58		59	359	300			0.7	0.7	2	2
	1715	5139.081	3291.324				58		59	359	300			0.7	0.7	2	2
	1720	5142.426	3294.615				59		60	359	300			0.7	0.7	2	2
	1725	5145.789	3298.037				59		60	359	300			0.7	0.7	2	2
	1730	5149.110	3301.386				59		60	359	300			0.7	0.7	2	2
	1735	5152.258	3304.721				59		60	359	300			0.7	0.7	2	2
	1740	5155.883	3308.424				59		60	359	300			0.7	0.7	2	2
	1745	5159.147	3311.424				59		60	359	300			0.7	0.7	2	2
	1750	5162.492	3314.777														
Average:																	

Comments:

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 1 - STACK BREACHING
DATE: 3/11/21
RUN NO: 2-Hg-U1
OPERATOR: SS
METER BOX NO: 21 WCS
METER ΔH@: N/A
METER Yd: A= 0.99888 B= 0.9901
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/2P
TARGET SAMPLING RATE:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: No
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 68
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: # 135
PROBE LENGTH: 6'
TRAP NO/DESC: C GLC160571
TRAP NO/DESC: D OL544358
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 cfs POST TEST: 0.000 cfs
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 cfs POST TEST: 0.000 cfs
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER: SS
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l		ΔH in. H_2O		Meter Temp A, °F In	Meter Temp A, °F Out	Meter Temp B, °F In	Meter Temp B, °F Out	Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F		Rotameter Setting		Vacuum In. Hg	
		C	D	C	D							C	D	C	D	C	D
	1650	9520.726	3223.099				57		60	399	300	DRY	DRY	0.7	0.7	2	2
	1655	9524.073	3226.440				59		60	399	300			0.7	0.7	2	2
	1700	9527.410	3229.747				59		60	359	300			0.7	0.7	2	2
	1705	9530.760	3233.033				59		60	359	300			0.7	0.7	2	2
	1710	9534.114	3236.475				59		60	359	300			0.7	0.7	2	2
	1715	9537.449	3239.800				59		60	359	300			0.7	0.7	2	2
	1720	9540.792	3243.165				58		59	359	300			0.7	0.7	2	2
	1725	9546.000	3246.509				58		59	359	300			0.7	0.7	2	2
	1730	9547.881	3249.814				58		59	359	300			0.7	0.7	2	2
	1735	9550.826	3253.200				58		59	359	300			0.7	0.7	2	2
	1740	9554.170	3256.443				58		57	359	300			0.7	0.7	2	2
	1745	9557.515	3259.888				58		59	359	300			0.7	0.7	2	2
	1750	9560.859	3263.231														
Average:																	

Comments:

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 1 - STACK BREACHING
DATE: 3/1/21
RUN NO: 3-Hg-U1
OPERATOR: SG
METER BOX NO: 21WC5
METER ΔH@: N/A
METER Yd: A - 0.99887 B - 0.99926
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/5P
TARGET SAMPLING RATE:
Probe Condition, pre/post test: GOOD
Silica Gel Expended, Y/N: NO
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 68
BAROMETRIC PRESSURE: 32.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6'
TRAP NO/DESC: A QLC136861
TRAP NO/DESC: B QLC160585
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @ 15 POST TEST: 0.000 @ 15
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 @ 15 POST TEST: 0.000 @ 15
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER SG
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l		ΔH in. H_2O		Meter Temp A, °F		Meter Temp B, °F		Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F		Rotameter Setting		Vacuum In. Hg	
						In	Out	In	Out								
		A	B	A	B							A	B	A	B	A	B
	1810	5163.246	3317.735				59		60	362	301	DRY	DRY	0.7	0.7	2	2
	1815	5166.602	3321.680				59		60	362	301			0.7	0.7	2	2
	1820	5169.961	3324.420				59		60	362	301			0.7	0.7	2	2
	1825	5173.716	3327.566				59		60	362	301			0.7	0.7	2	2
	1830	5176.675	3331.959				59		60	362	301			0.7	0.7	2	2
	1835	5180.030	3334.110				59		60	362	301			0.7	0.7	2	2
	1840	5183.387	3337.800				58		59	362	301			0.7	0.7	2	2
	1845	5186.740	3341.400				58		59	362	301			0.7	0.7	2	2
	1850	5190.100	3344.423				58		59	362	301			0.7	0.7	2	2
	1855	5193.488	3347.827				58		59	362	301			0.7	0.7	2	2
	1900	5196.870	3351.170				58		59	362	301			0.7	0.7	2	2
	1905	5200.472	3354.514				58		59	362	301			0.7	0.7	2	2
	1910	5203.829	3357.857														
Average:																	

Comments:

MONTROSE

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 1 - STACK BREACHING
DATE: 3/11/21
RUN NO: 3-Hg-01
OPERATOR: SS
METER BOX NO: 21WCS
METER ΔH@: N/A
METER Yd: A 0.998888 B= 0.9901
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/SP
TARGET SAMPLING RATE:
Probe Condition, pre/post test: Good
Silica Gel Expended, Y/N: NO
P, static in. H₂O: N/A

AMBIENT TEMPERATURE: 68
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6'
TRAP NO/DESC: C OLC160653
TRAP NO/DESC: D OL54362
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.00045
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.000 @15
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER SS
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l		ΔH in. H₂O		Meter Temp A, °F		Meter Temp B, °F		Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F		Rotameter Setting		Vacuum In. Hg	
						In	Out	In	Out								
		C	D	C	D							C	D	C	D	C	D
	1810	9561.274	3263.873				57		58	362	301	DRY	DRY	0.7	0.7	2	2
	1815	9564.617	3267.200				57		58	362	301			0.7	0.7	2	2
	1820	9567.958	3270.580				57		58	362	301			0.7	0.7	2	2
	1825	9571.300	3273.941				57		58	362	301			0.7	0.7	2	2
	1830	9574.544	3277.291				57		58	362	301			0.7	0.7	2	2
	1835	9577.990	3280.650				57		58	362	301			0.7	0.7	2	2
	1840	9581.330	3284.009				57		58	362	301			0.7	0.7	2	2
	1845	9584.670	3287.360				57		58	362	301			0.7	0.7	2	2
	1850	9588.014	3290.720				57		58	362	301			0.7	0.7	2	2
	1855	9591.357	3294.430				57		58	362	301			0.7	0.7	2	2
	1900	9594.699	3297.450				57		58	362	301			0.7	0.7	2	2
	1905	9598.042	3300.800				57		58	362	301			0.7	0.7	2	2
	1910	9601.384	3304.150				57		58	362	301			0.7	0.7	2	2
Average:																	

Comments:

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desert View Power | LOCATION/UNIT: Unit - 1
PERFORMED BY: Patrick Whitman | TEST DATE: 3/11/2021
BAR. PRESSURE: 30.14 | TC READOUT ID: # 23WCS
DP INDICATOR ID: 23-WCS | TC ID: #13
DP INDICATOR TYPE: 0-10" Manometer | PITOT TUBE ID: #13 | Cp: 0.84
ZERO: ✓ | LEVEL: ✓ | LEAK CHECK PRE- ✓ | POST- ✓

Run #: 1.01 **Ps:** +.49
Start: 1525 **Stop:** 1625

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5, 55.3"	1.0	365	5	1.1	367	5	1.2	363
4, 45.9"	1.2	366	4	0.93	367	4	0.95	363
3, 36.5"	1.3	366	3	0.88	368	3	0.92	363
2, 27.1"	1.3	366	2	0.85	368	2	0.62	364
1, 17.7	1.0	366	1	0.80	367	1	0.60	364
5	1.1	366	5	0.85	364	5	0.96	365
4	1.1	366	4	0.83	364	4	0.91	366
3	1.2	366	3	0.92	364	3	0.85	366
2	1.4	361	2	0.97	365	2	1.0	366
1	1.1	361	1	0.99	365	1	1.1	366

	Probe Temp. °F	Filter Temp. °C		Heated Line Temp. °F	Chiller Temp. °C			
1								
2								
3								

MOISTURE DATA FOR TEST RUNS 1-01 **THROUGH** _____

METER ID: 23WCS METER Yd: 1.000 BALANCE CHECK WEIGHT: 500.0/500

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
1525	953.800	2.0	62	63	49	5	#1	H_2O_2	780.7	686.6	
1540	965.121	2.0	62	63	49	5	#2	H_2O_2	769.2	758.4	
1555	976.332	2.0	62	63	51	5	#3	Empty	688.4	598.6	
1610	987.562	2.0	62	62	51	5	#4	Silica Gel	930.3	910.0	
1625	999.872						Total	Line rinse		50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.000 CFM @ 15 in. Hg

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desert View Power | LOCATION/UNIT: Unit - 1
PERFORMED BY: Patrick Whitman | TEST DATE: 3/11/2021
BAR. PRESSURE: 30.14 | TC READOUT ID: 23WCS
DP INDICATOR ID: 23WCS | TC ID: #13
DP INDICATOR TYPE: 0-10" Manometer | PITOT TUBE ID: #13 | Cp: 0.84
ZERO: ✓ | LEVEL: ✓ | LEAK CHECK PRE- ✓ | POST- ✓

Run #: 2 | Ps: +.49
Start: 1650 | Stop: 1750

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5, 55.3"	1.0	361	5	1.0	359	5	1.2	359
4, 45.9"	1.2	360	4	0.94	360	4	0.95	358
3, 36.5"	1.2	360	3	0.89	361	3	0.93	357
2, 27.1"	1.0	359	2	0.86	363	2	0.63	357
1, 17.7	1.0	359	1	0.82	363	1	0.60	358
5	1.1	359	5	0.84	361	5	0.96	360
4	1.1	358	4	0.83	361	4	0.91	360
3	1.2	359	3	0.94	361	3	0.85	360
2	1.3	360	2	0.99	360	2	1.00	359
1	1.2	361	1	1.01	360	1	1.10	359
	Probe Temp. °F	Filter Temp. °C		Heated Line Temp. °F	Chiller Temp. °C			
1								
2								
3								

MOISTURE DATA FOR TEST RUNS 2 THROUGH ____

METER ID: 23 WCS | METER Yd: 1.000 | BALANCE CHECK WEIGHT: 500.0/500

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
1650	001.00	2.0	58	58	49	5	#1	H_2O_2	859.6	764.6	
1705	12.065	2.0	59	59	49	5	#2	H_2O_2	759.6	747.9	
1720	23.122	2.0	57	58	52	5	#3	Empty	650.3	642.3	
1735	34.146	2.0	58	57	52	5	#4	Silica Gel	989.8	939.8	
1750	45.122						Total	Line rinse		50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.000 CFM @ 15 in. Hg

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desert View Power | LOCATION/UNIT: Unit - 1
PERFORMED BY: Patrick Whitman | TEST DATE: 3/11/2021
BAR. PRESSURE: 30.14 | TC READOUT ID: 23WCS
DP INDICATOR ID: 23-WCS | TC ID: #13
DP INDICATOR TYPE: 0-10" Manometer | PITOT TUBE ID: #13 | Cp: 0.84
ZERO: ✓ | LEVEL: ✓ | LEAK CHECK PRE- ✓ | POST- ✓

Run #: 3 **Ps:** +0.49
Start: 1810 **Stop:** 1910

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5, 55.3"	1.1	361	5	1.1	360	5	1.2	362
4, 45.9"	1.3	360	4	0.92	361	4	0.95	363
3, 36.5"	1.2	360	3	0.88	360	3	0.93	364
2, 27.1"	1.2	363	2	0.84	361	2	0.62	363
1, 17.7	1.0	363	1	0.79	360	1	0.60	362
5	1.2	363	5	0.84	359	5	0.96	360
4	1.2	363	4	0.82	363	4	0.91	361
3	1.3	364	3	0.92	362	3	0.85	362
2	1.4	364	2	0.98	362	2	1.0	363
1	1.1	363	1	0.98	362	1	1.1	364

	Probe Temp. °F	Filter Temp. °C	Heated Line Temp. °F	Chiller Temp. °C
1				
2				
3				

MOISTURE DATA FOR TEST RUNS 3 THROUGH ____

METER ID: 23 WCS METER Yd: 1.000 BALANCE CHECK WEIGHT: 500.0/500

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
1810	45,800	2.0	56	57	49	5	#1	H_2O_2	856.7	758.7	
1825	56,817	2.0	56	57	49	5	#2	H_2O_2	765.1	752.4	
1840	67.944	2.0	56	57	50	5	#3	Empty	641.8	637.8	
1855	78.798	2.0	57	57	51	5	#4	Silica Gel	1000.8	969.8	
1910	89.872						Total	Line rinse		50	

Pre-Test Leak Check: 0.001 CFM @ 15 in. Hg., Post-Test Leak Check: 0.003 CFM @ 15 in. Hg

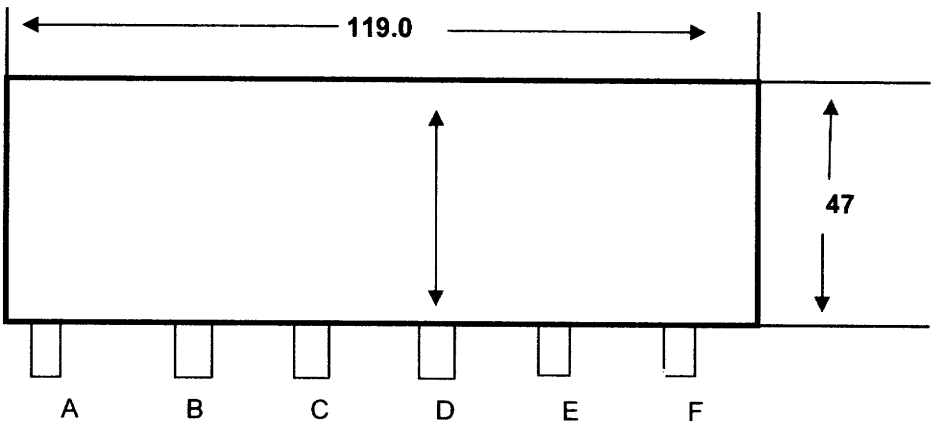
Appendix A.2
Unit 2 Data

Appendix A.2.1
Unit 2 Sample Location

Method 1

Client: Desert View Power Date: 3/10/2021

Sample Location: Unit 1-2 Prepared By: Dave Wonderly



H (in.)	**119.0**
W (in.)	**47.0**
Nipple length	**13.0**
Distance between points	**9.40**
Stack Area (ft^2)	**38.84**

Point No.	Sample Point Inches from nozzle	
1	4.7	17.7
2	14.1	27.1
3	23.5	36.5
4	32.9	45.9
5	42.3	55.3

Appendix A.2.2
Unit 2 CEM Data

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %	
3/4/2021	6:32:00	20.946	-0.227	
3/4/2021	6:33:00	20.943	-0.225	
3/4/2021	6:34:00	20.944	-0.227	
3/4/2021	6:35:00	20.945	-0.227	
3/4/2021	6:36:00	20.944	-0.225	
3/4/2021	6:37:00	20.945	-0.225	
3/4/2021	6:38:00	20.945	-0.22	
3/4/2021	6:39:00	20.945	-0.221	
3/4/2021	6:40:00	15.369	-0.24	
3/4/2021	6:41:00	-0.005	-0.307	
3/4/2021	6:42:00	-0.01	-0.272	
3/4/2021	6:43:00	-0.012	0	
3/4/2021	6:44:00	-0.013	0	dir zero
3/4/2021	6:45:00	2.673	2.467	
3/4/2021	6:46:00	19.141	19.177	
3/4/2021	6:47:00	19.15	19.257	dir high
3/4/2021	6:48:00	15.237	14.205	
3/4/2021	6:49:00	10.826	10.549	
3/4/2021	6:50:00	10.826	10.554	
3/4/2021	6:51:00	10.826	10.557	
3/4/2021	6:52:00	10.826	10.558	DIR MID
3/4/2021	6:53:00	10.404	10.981	
3/4/2021	6:54:00	8.976	11.679	
3/4/2021	6:55:00	9.041	11.666	
3/4/2021	6:56:00	8.936	11.866	
3/4/2021	6:57:00	7.247	13.45	
3/4/2021	6:58:00	10.285	10.29	
3/4/2021	6:59:00	10.814	10.564	
3/4/2021	7:00:00	10.815	10.567	
3/4/2021	7:01:00	10.814	10.568	
3/4/2021	7:02:00	10.816	10.569	
3/4/2021	7:03:00	10.819	10.573	
3/4/2021	7:04:00	10.818	10.575	SYS SPAN
3/4/2021	7:05:00	4.759	4.159	
3/4/2021	7:06:00	0.02	0.089	
3/4/2021	7:07:00	0.016	0.073	
3/4/2021	7:08:00	0.015	0.065	SYS ZERO
3/4/2021	7:09:00	3.682	5.991	
3/4/2021	7:10:00	9.071	11.558	
3/4/2021	7:11:00	8.945	11.863	
3/4/2021	7:12:00	7.947	12.689	
3/4/2021	7:13:00	8.832	11.888	
3/4/2021	7:14:00	8.673	12.046	

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %	
3/4/2021	7:15:00	8.924	11.891	
3/4/2021	7:16:00	8.127	12.573	
3/4/2021	7:17:00	8.577	12.187	
3/4/2021	7:18:00	8.212	12.503	
3/4/2021	7:19:00	8.425	12.284	
3/4/2021	7:20:00	8.263	12.569	
3/4/2021	7:21:00	8.475	12.223	
3/4/2021	7:22:00	8.64	12.102	
3/4/2021	7:23:00	8.458	12.25	
3/4/2021	7:24:00	8.554	12.192	
3/4/2021	7:25:00	9.337	11.316	RUN 1 HCL U2
3/4/2021	7:26:00	9.396	11.365	
3/4/2021	7:27:00	8.963	11.805	
3/4/2021	7:28:00	8.809	12.022	
3/4/2021	7:29:00	7.945	12.769	
3/4/2021	7:30:00	8.623	12.055	
3/4/2021	7:31:00	9.139	11.672	
3/4/2021	7:32:00	8.705	12.008	
3/4/2021	7:33:00	8.619	12.143	
3/4/2021	7:34:00	8.533	12.203	
3/4/2021	7:35:00	8.713	11.98	
3/4/2021	7:36:00	8.758	12.021	
3/4/2021	7:37:00	8.975	11.766	
3/4/2021	7:38:00	8.485	12.302	
3/4/2021	7:39:00	9.021	11.641	
3/4/2021	7:40:00	8.531	12.275	
3/4/2021	7:41:00	8.502	12.231	
3/4/2021	7:42:00	8.277	12.527	
3/4/2021	7:43:00	8.571	12.084	
3/4/2021	7:44:00	8.683	12.037	
3/4/2021	7:45:00	9.356	11.314	
3/4/2021	7:46:00	8.947	11.862	
3/4/2021	7:47:00	8.743	12.025	
3/4/2021	7:48:00	7.987	12.686	
3/4/2021	7:49:00	8.752	11.978	
3/4/2021	7:50:00	8.785	11.951	
3/4/2021	7:51:00	8.005	12.696	
3/4/2021	7:52:00	8.713	12.014	
3/4/2021	7:53:00	9.243	11.5	
3/4/2021	7:54:00	9.528	11.206	
3/4/2021	7:55:00	8.597	12.082	
3/4/2021	7:56:00	8.659	12.068	
3/4/2021	7:57:00	8.342	12.34	
3/4/2021	7:58:00	8.475	12.12	
3/4/2021	7:59:00	8.83	12.039	

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %
3/4/2021	8:00:00	8.781	11.938
3/4/2021	8:01:00	7.789	12.94
3/4/2021	8:02:00	8.573	12.059
3/4/2021	8:03:00	8.33	12.395
3/4/2021	8:04:00	8.671	11.983
3/4/2021	8:05:00	8.843	11.887
3/4/2021	8:06:00	7.831	12.825
3/4/2021	8:07:00	9.413	11.228
3/4/2021	8:08:00	8.869	11.813
3/4/2021	8:09:00	8.926	11.75
3/4/2021	8:10:00	8.768	11.947
3/4/2021	8:11:00	8.538	12.164
3/4/2021	8:12:00	8.574	12.052
3/4/2021	8:13:00	8.959	11.749
3/4/2021	8:14:00	8.821	11.857
3/4/2021	8:15:00	8.6	12.039
3/4/2021	8:16:00	8.767	11.903
3/4/2021	8:17:00	8.657	12.005
3/4/2021	8:18:00	8.763	11.966
3/4/2021	8:19:00	8.149	12.5
3/4/2021	8:20:00	8.5	12.104
3/4/2021	8:21:00	8.375	12.271
3/4/2021	8:22:00	9.027	11.658
3/4/2021	8:23:00	9.565	11.111
3/4/2021	8:24:00	9.331	11.31
3/4/2021	8:25:00	8.504	12.146
3/4/2021	8:26:00	9.09	11.552
3/4/2021	8:27:00	9.205	11.464
3/4/2021	8:28:00	8.028	12.613
3/4/2021	8:29:00	8.106	12.491
3/4/2021	8:30:00	8.992	11.628
3/4/2021	8:31:00	8.217	12.437
3/4/2021	8:32:00	8.194	12.458
3/4/2021	8:33:00	7.662	12.925
3/4/2021	8:34:00	9.358	11.243
3/4/2021	8:35:00	9.132	11.536
3/4/2021	8:36:00	8.742	11.815
3/4/2021	8:37:00	8.923	11.74
3/4/2021	8:38:00	8.936	11.736
3/4/2021	8:39:00	7.816	12.806
3/4/2021	8:40:00	7.839	12.763
3/4/2021	8:41:00	8.53	12.042
3/4/2021	8:42:00	9.34	11.288
3/4/2021	8:43:00	9.112	11.582
3/4/2021	8:44:00	8.684	11.931

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %
3/4/2021	8:45:00	8.571	12.094
3/4/2021	8:46:00	8.089	12.53
3/4/2021	8:47:00	8.327	12.259
3/4/2021	8:48:00	8.518	12.118
3/4/2021	8:49:00	8.085	12.475
3/4/2021	8:50:00	8.755	11.883
3/4/2021	8:51:00	8.95	11.647
3/4/2021	8:52:00	8.862	11.752
3/4/2021	8:53:00	9.235	11.368
3/4/2021	8:54:00	9.092	11 498
3/4/2021	8:55:00	8.338	12.373
3/4/2021	8:56:00	7.654	12.857
3/4/2021	8:57:00	7.543	13.067
3/4/2021	8:58:00	7.739	12.767
3/4/2021	8:59:00	8.329	12.287
3/4/2021	9:00:00	8.363	12.26
3/4/2021	9:01:00	8.329	12.22
3/4/2021	9:02:00	8.287	12.321
3/4/2021	9:03:00	8.308	12.26
3/4/2021	9:04:00	7.592	12.995
3/4/2021	9:05:00	8.234	12.269
3/4/2021	9:06:00	8.929	11.652
3/4/2021	9:07:00	9.498	11.106
3/4/2021	9:08:00	9.17	11.479
3/4/2021	9:09:00	8.569	12.026
3/4/2021	9:10:00	8.626	11.985
3/4/2021	9:11:00	9.062	11.453
3/4/2021	9:12:00	9.255	11.364
3/4/2021	9:13:00	8.64	11.937
3/4/2021	9:14:00	9.09	11.471
3/4/2021	9:15:00	9.559	11.04
3/4/2021	9:16:00	9.091	11.523
3/4/2021	9:17:00	9.238	11.29
3/4/2021	9:18:00	9.645	10.931
3/4/2021	9:19:00	7.664	12.996
3/4/2021	9:20:00	6.915	13.591
3/4/2021	9:21:00	8.02	12.464
3/4/2021	9:22:00	8.673	11.86
3/4/2021	9:23:00	8.248	12.283
3/4/2021	9:24:00	8.745	11.809
3/4/2021	9:25:00	9.435	11.092
Run 1 Average		8.64	12.01
3/4/2021	9:26:00	8.777	11.828
3/4/2021	9:27:00	9.019	11.459

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %	
3/4/2021	9:28:00	9.335	11.266	
3/4/2021	9:29:00	9	11.5	
3/4/2021	9:30:00	8.715	11.874	
3/4/2021	9:31:00	8.62	11.952	
3/4/2021	9:32:00	9.563	10.265	
3/4/2021	9:33:00	10.758	10.429	
3/4/2021	9:34:00	10.762	10.434	
3/4/2021	9:35:00	10.762	10.438	SYS O2
3/4/2021	9:36:00	3.782	3.325	
3/4/2021	9:37:00	-0.001	0.089	SYS ZERO
3/4/2021	9:38:00	-0.006	0.059	
3/4/2021	9:39:00	-0.019	0.02	DIR ZERO
3/4/2021	9:40:00	8.717	8.475	
3/4/2021	9:41:00	10.792	10.423	DIR SPAN
3/4/2021	9:42:00	10.24	10.574	
3/4/2021	9:43:00	9.222	11.323	
3/4/2021	9:44:00	9.539	10.97	
3/4/2021	9:45:00	8.878	11.738	
3/4/2021	9:46:00	8.477	12.001	
3/4/2021	9:47:00	8.998	11.497	
3/4/2021	9:48:00	8.815	11.722	
3/4/2021	9:49:00	8.729	11.694	
3/4/2021	9:50:00	9.265	11.34	
3/4/2021	9:51:00	9.103	11.4	
3/4/2021	9:52:00	8.367	12.165	
3/4/2021	9:53:00	8.029	12.558	
3/4/2021	9:54:00	8.142	12.35	
3/4/2021	9:55:00	8.367	12.142	RUN 2 HCL
3/4/2021	9:56:00	8.228	12.236	
3/4/2021	9:57:00	8.292	12.248	
3/4/2021	9:58:00	8.35	12.147	
3/4/2021	9:59:00	7.673	12.817	
3/4/2021	10:00:00	8.978	11.523	
3/4/2021	10:01:00	9.406	11.044	
3/4/2021	10:02:00	8.995	11.538	
3/4/2021	10:03:00	9.145	11.433	
3/4/2021	10:04:00	8.759	11.777	
3/4/2021	10:05:00	8.179	12.359	
3/4/2021	10:06:00	8.595	11.885	
3/4/2021	10:07:00	8.848	11.613	
3/4/2021	10:08:00	9.015	11.57	
3/4/2021	10:09:00	8.43	12.029	
3/4/2021	10:10:00	9.024	11.522	
3/4/2021	10:11:00	8.298	12.204	

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %
3/4/2021	10:12:00	8.233	12.311
3/4/2021	10:13:00	8.667	11.772
3/4/2021	10:14:00	9.025	11.496
3/4/2021	10:15:00	9.68	10.785
3/4/2021	10:16:00	8.826	11.846
3/4/2021	10:17:00	8.286	12.204
3/4/2021	10:18:00	8.895	11.583
3/4/2021	10:19:00	9.371	11.215
3/4/2021	10:20:00	8.879	11.603
3/4/2021	10:21:00	9.222	11.363
3/4/2021	10:22:00	9.05	11.489
3/4/2021	10:23:00	8.391	12.178
3/4/2021	10:24:00	7.728	12.787
3/4/2021	10:25:00	7.445	13.005
3/4/2021	10:26:00	8.192	12.174
3/4/2021	10:27:00	8.615	11.96
3/4/2021	10:28:00	9.175	11.312
3/4/2021	10:29:00	8.879	11.57
3/4/2021	10:30:00	8.102	12.441
3/4/2021	10:31:00	7.895	12.562
3/4/2021	10:32:00	8.425	12.018
3/4/2021	10:33:00	9.167	11.339
3/4/2021	10:34:00	9.279	11.266
3/4/2021	10:35:00	8.981	11.567
3/4/2021	10:36:00	8.833	11.619
3/4/2021	10:37:00	8.096	12.449
3/4/2021	10:38:00	7.456	13.008
3/4/2021	10:39:00	8.556	11.851
3/4/2021	10:40:00	9.397	11.055
3/4/2021	10:41:00	10.278	10.291
3/4/2021	10:42:00	9.436	11.13
3/4/2021	10:43:00	9.069	11.496
3/4/2021	10:44:00	6.973	13.401
3/4/2021	10:45:00	8.29	12.126
3/4/2021	10:46:00	8.481	11.976
3/4/2021	10:47:00	8.755	11.731
3/4/2021	10:48:00	9.32	11.158
3/4/2021	10:49:00	8.865	11.626
3/4/2021	10:50:00	8.703	11.793
3/4/2021	10:51:00	8.381	12.05
3/4/2021	10:52:00	8.82	11.605
3/4/2021	10:53:00	8.98	11.486
3/4/2021	10:54:00	9.131	11.324
3/4/2021	10:55:00	8.549	11.975
3/4/2021	10:56:00	8.499	11.938

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %
3/4/2021	10:57:00	8.891	11.555
3/4/2021	10:58:00	8.286	12.182
3/4/2021	10:59:00	8.026	12.401
3/4/2021	11:00:00	7.575	12.834
3/4/2021	11:01:00	8.887	11.451
3/4/2021	11:02:00	9.171	11.207
3/4/2021	11:03:00	9.595	10.882
3/4/2021	11:04:00	9.179	11.255
3/4/2021	11:05:00	8.951	11.498
3/4/2021	11:06:00	8.921	11.51
3/4/2021	11:07:00	7.758	12.694
3/4/2021	11:08:00	8.234	12.059
3/4/2021	11:09:00	8.894	11.51
3/4/2021	11:10:00	9.014	11.397
3/4/2021	11:11:00	9.843	10.592
3/4/2021	11:12:00	9.159	11.271
3/4/2021	11:13:00	8.337	12.064
3/4/2021	11:14:00	8.441	11.91
3/4/2021	11:15:00	8.424	11.984
3/4/2021	11:16:00	8.372	12.058
3/4/2021	11:17:00	9.013	11.283
3/4/2021	11:18:00	9.158	11.244
3/4/2021	11:19:00	9.282	11.146
3/4/2021	11:20:00	9.223	11.195
3/4/2021	11:21:00	7.804	12.645
3/4/2021	11:22:00	7.329	13.019
3/4/2021	11:23:00	8.551	11.676
3/4/2021	11:24:00	7.786	12.633
3/4/2021	11:25:00	8.262	12.069
3/4/2021	11:26:00	9.143	11.179
3/4/2021	11:27:00	8.678	11.763
3/4/2021	11:28:00	8.5	11.864
3/4/2021	11:29:00	8.34	11.977
3/4/2021	11:30:00	8.913	11.486
3/4/2021	11:31:00	8.714	11.679
3/4/2021	11:32:00	8.828	11.535
3/4/2021	11:33:00	8.987	11.377
3/4/2021	11:34:00	8.489	11.955
3/4/2021	11:35:00	8.034	12.286
3/4/2021	11:36:00	8.213	12.075
3/4/2021	11:37:00	8.766	11.609
3/4/2021	11:38:00	8.743	11.613
3/4/2021	11:39:00	8.924	11.474
3/4/2021	11:40:00	8.694	11.657
3/4/2021	11:41:00	8.669	11.713

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %	
3/4/2021	11:42:00	8.658	11.653	
3/4/2021	11:43:00	8.467	11.916	
3/4/2021	11:44:00	7.936	12.397	
3/4/2021	11:45:00	8.097	12.206	
3/4/2021	11:46:00	8.245	12.109	
3/4/2021	11:47:00	8.598	11.632	
3/4/2021	11:48:00	9.041	11.348	
3/4/2021	11:49:00	9.519	10.819	
3/4/2021	11:50:00	8.884	11.487	
3/4/2021	11:51:00	8.414	11.931	
3/4/2021	11:52:00	9.072	11.226	
3/4/2021	11:53:00	9.263	11.106	
3/4/2021	11:54:00	9.479	10.913	
3/4/2021	11:55:00	8.622	11.65	
Run 2 Average		8.67	11.76	
3/4/2021	11:56:00	9.487	10.915	
3/4/2021	11:57:00	9.262	11.036	
3/4/2021	11:58:00	9.343	10.988	
3/4/2021	11:59:00	8.418	11.937	
3/4/2021	12:00:00	8.314	12.028	
3/4/2021	12:01:00	9.654	10.04	
3/4/2021	12:02:00	10.72	10.269	SYS O2
3/4/2021	12:03:00	5.085	4.531	
3/4/2021	12:04:00	-0.007	0.087	SYS ZERO
3/4/2021	12:05:00	-0.013	0.021	
3/4/2021	12:06:00	-0.025	0.011	DIR ZERO
3/4/2021	12:07:00	9.111	8.76	
3/4/2021	12:08:00	10.743	10.254	DIR SPAN
3/4/2021	12:09:00	9.357	11.088	
3/4/2021	12:10:00	9.261	11.043	
3/4/2021	12:11:00	9.119	11.198	
3/4/2021	12:12:00	8.989	11.318	
3/4/2021	12:13:00	9.147	11.171	
3/4/2021	12:14:00	8.606	11.786	
3/4/2021	12:15:00	7.505	12.684	
3/4/2021	12:16:00	8.004	11.554	
3/4/2021	12:17:00	8.177	11.968	
3/4/2021	12:18:00	8.037	12.222	
3/4/2021	12:19:00	9.048	11.229	
3/4/2021	12:20:00	8.913	11.37	
3/4/2021	12:21:00	8.56	11.77	
3/4/2021	12:22:00	8.582	11.72	
3/4/2021	12:23:00	8.607	11.662	
3/4/2021	12:24:00	9.23	11.104	

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %	
3/4/2021	12:25:00	8.715	11.581	RUN 3 HCL
3/4/2021	12:26:00	9.104	11.177	
3/4/2021	12:27:00	8.88	11.437	
3/4/2021	12:28:00	8.803	11.506	
3/4/2021	12:29:00	8.617	11.644	
3/4/2021	12:30:00	8.565	11.73	
3/4/2021	12:31:00	9.421	10.832	
3/4/2021	12:32:00	9.312	11.034	
3/4/2021	12:33:00	8.748	11.593	
3/4/2021	12:34:00	8.54	11.707	
3/4/2021	12:35:00	8.154	12.093	
3/4/2021	12:36:00	8.373	11.942	
3/4/2021	12:37:00	9.069	11.214	
3/4/2021	12:38:00	8.868	11.473	
3/4/2021	12:39:00	8.987	11.326	
3/4/2021	12:40:00	8.778	11.533	
3/4/2021	12:41:00	8.038	12.227	
3/4/2021	12:42:00	8.09	12.217	
3/4/2021	12:43:00	8.206	12.054	
3/4/2021	12:44:00	9.087	11.167	
3/4/2021	12:45:00	8.758	11.594	
3/4/2021	12:46:00	8.346	11.984	
3/4/2021	12:47:00	8.007	12.242	
3/4/2021	12:48:00	8.431	11.852	
3/4/2021	12:49:00	9.211	11.053	
3/4/2021	12:50:00	9.021	11.384	
3/4/2021	12:51:00	8.955	11.28	
3/4/2021	12:52:00	9.225	11.125	
3/4/2021	12:53:00	8.12	12.199	
3/4/2021	12:54:00	8.357	11.869	
3/4/2021	12:55:00	8.796	11.521	
3/4/2021	12:56:00	8.739	11.545	
3/4/2021	12:57:00	8.007	12.305	
3/4/2021	12:58:00	8.659	11.556	
3/4/2021	12:59:00	7.683	12.602	
3/4/2021	13:00:00	8.786	11.391	
3/4/2021	13:01:00	9.145	11.18	
3/4/2021	13:02:00	8.705	11.573	
3/4/2021	13:03:00	9.141	11.116	
3/4/2021	13:04:00	9.419	10.929	
3/4/2021	13:05:00	8.409	11.858	
3/4/2021	13:06:00	7.425	12.776	
3/4/2021	13:07:00	9.338	10.958	
3/4/2021	13:08:00	8.44	11.896	
3/4/2021	13:09:00	7.954	12.298	

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %
3/4/2021	13:10:00	8.001	12.222
3/4/2021	13:11:00	8.37	11.902
3/4/2021	13:12:00	8.061	12.207
3/4/2021	13:13:00	8.322	11.909
3/4/2021	13:14:00	8.424	11.867
3/4/2021	13:15:00	8.862	11.31
3/4/2021	13:16:00	9.629	10.711
3/4/2021	13:17:00	8.994	11.29
3/4/2021	13:18:00	8.885	11.472
3/4/2021	13:19:00	8.637	11.629
3/4/2021	13:20:00	9.067	11.239
3/4/2021	13:21:00	8.066	12.223
3/4/2021	13:22:00	8.448	11.8
3/4/2021	13:23:00	9.864	10.42
3/4/2021	13:24:00	8.911	11.408
3/4/2021	13:25:00	7.668	12.526
3/4/2021	13:26:00	9.046	11.246
3/4/2021	13:27:00	8.611	11.644
3/4/2021	13:28:00	8.054	12.273
3/4/2021	13:29:00	8.493	11.716
3/4/2021	13:30:00	8.426	11.8
3/4/2021	13:31:00	8.368	11.894
3/4/2021	13:32:00	8.358	11.874
3/4/2021	13:33:00	9.126	11.113
3/4/2021	13:34:00	9.393	10.949
3/4/2021	13:35:00	9.076	11.208
3/4/2021	13:36:00	8.931	11.398
3/4/2021	13:37:00	8.598	11.666
3/4/2021	13:38:00	8.761	11.482
3/4/2021	13:39:00	8.812	11.517
3/4/2021	13:40:00	8.727	11.482
3/4/2021	13:41:00	8.716	11.633
3/4/2021	13:42:00	8.232	11.991
3/4/2021	13:43:00	8.659	11.625
3/4/2021	13:44:00	8.621	11.585
3/4/2021	13:45:00	8.391	11.87
3/4/2021	13:46:00	8.879	11.347
3/4/2021	13:47:00	8.494	11.847
3/4/2021	13:48:00	8.857	11.409
3/4/2021	13:49:00	8.491	11.737
3/4/2021	13:50:00	9.381	10.943
3/4/2021	13:51:00	8.694	11.586
3/4/2021	13:52:00	8.517	11.719
3/4/2021	13:53:00	9.435	10.891
3/4/2021	13:54:00	9.12	11.144

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %	
3/4/2021	13:55:00	8.136	12.078	
3/4/2021	13:56:00	8.108	12.215	
3/4/2021	13:57:00	8.658	11.545	
3/4/2021	13:58:00	8.109	12.134	
3/4/2021	13:59:00	8.371	11.845	
3/4/2021	14:00:00	8.314	12.046	
3/4/2021	14:01:00	8.808	11.448	
3/4/2021	14:02:00	8.481	11.734	
3/4/2021	14:03:00	8.615	11.745	
3/4/2021	14:04:00	7.965	12.295	
3/4/2021	14:05:00	8.858	11.389	
3/4/2021	14:06:00	8.822	11.472	
3/4/2021	14:07:00	9.338	11.01	
3/4/2021	14:08:00	9.108	11.183	
3/4/2021	14:09:00	8.92	11.384	
3/4/2021	14:10:00	8.943	11.332	
3/4/2021	14:11:00	9.12	11.178	
3/4/2021	14:12:00	8.652	11.631	
3/4/2021	14:13:00	8.038	12.235	
3/4/2021	14:14:00	8.171	12.063	
3/4/2021	14:15:00	8.652	11.593	
3/4/2021	14:16:00	8.031	12.262	
3/4/2021	14:17:00	8.538	11.718	
3/4/2021	14:18:00	8.506	11.717	
3/4/2021	14:19:00	8.58	11.685	
3/4/2021	14:20:00	8.734	11.585	
3/4/2021	14:21:00	8.618	11.633	
3/4/2021	14:22:00	8.707	11.609	
3/4/2021	14:23:00	9.168	11.08	
3/4/2021	14:24:00	9.009	11.324	
3/4/2021	14:25:00	8.613	11.713	
Run 3 Average		8.66	11.62	
3/4/2021	14:26:00	8.249	11.981	
3/4/2021	14:27:00	8.315	11.952	
3/4/2021	14:28:00	8.323	11.903	
3/4/2021	14:29:00	7.974	12.353	
3/4/2021	14:30:00	8.022	12.234	
3/4/2021	14:31:00	8.499	10.869	
3/4/2021	14:32:00	10.696	10.271	
3/4/2021	14:33:00	10.702	10.278	SYS SPAN
3/4/2021	14:34:00	6.016	5.463	
3/4/2021	14:35:00	-0.007	0.145	SYS ZERO
3/4/2021	14:36:00	-0.033	0.074	
3/4/2021	14:37:00	-0.025	0.063	DIR ZERO

Desert View Power UNIT 2
3/4/2021

Date	Time	O2 %	CO2 %	
3/4/2021	14:38:00	7.277	7.055	
3/4/2021	14:39:00	10.725	10.289	DIR SPAN
3/4/2021	14:40:00	10.308	10.688	
3/4/2021	14:41:00	11.796	13.33	
3/4/2021	14:42:00	18.944	18.199	
3/4/2021	14:43:00	18.966	18.756	
3/4/2021	14:44:00	18.968	18.744	DIR HIGH
3/4/2021	14:45:00	12.428	13.592	
3/4/2021	14:46:00	8.434	11.941	
3/4/2021	14:47:00	8.483	11.812	
3/4/2021	14:48:00	8.317	11.973	
3/4/2021	14:49:00	8.377	11.913	
3/4/2021	14:50:00	8.181	12.145	
3/4/2021	14:51:00	8.744	11.564	
3/4/2021	14:52:00	8.903	11.431	
3/4/2021	14:53:00	9.103	11.248	
3/4/2021	14:54:00	9.04	11.343	

Date	Time	O2 %	CO2 %	NOx ppm	CO ppm	
3/8/2021	7:00	20.961	-0.698	0.016	0.524	
3/8/2021	7:01	20.959	-0.701	0.029	0.523	
3/8/2021	7:02	20.95	-0.693	0.056	0.519	
3/8/2021	7:03	20.958	-0.699	0.023	0.519	
3/8/2021	7:04	20.23	-0.697	0.023	0.52	
3/8/2021	7:05	0.037	-0.777	0.014	0.45	
3/8/2021	7:06	-0.001	-0.311	0.014	0.026	
3/8/2021	7:07	-0.002	-0.001	0.014	-0.001	dir zero
3/8/2021	7:08	7.823	6.413	17.686	0.057	
3/8/2021	7:09	19.154	19.588	86.984	5.659	
3/8/2021	7:10	19.155	18.945	87.562	9.583	
3/8/2021	7:11	19.155	18.943	74.065	9.614	
3/8/2021	7:12	19.155	18.951	87.495	9.617	
3/8/2021	7:13	19.156	18.946	87.537	9.609	
3/8/2021	7:14	19.158	18.924	87.547	9.627	DIR HIGH
3/8/2021	7:15	12.591	10.975	53.644	8.532	
3/8/2021	7:16	10.861	10.406	41.41	4.739	
3/8/2021	7:17	10.857	10.41	41.555	4.604	DIR MID
3/8/2021	7:18	18.175	2.527	9.734	3.629	
3/8/2021	7:19	20.958	0.107	0.044	0.617	
3/8/2021	7:20	20.956	0.106	0.038	0.517	
3/8/2021	7:21	20.946	0.12	0.065	0.515	
3/8/2021	7:22	20.936	0.11	0.039	0.513	
3/8/2021	7:23	20.947	0.115	0.025	0.518	
3/8/2021	7:24	20.946	0.122	0.019	0.512	
3/8/2021	7:25	20.948	0.125	0.019	0.513	
3/8/2021	7:26	20.949	0.127	0.016	0.518	
3/8/2021	7:27	20.923	0.147	0.083	0.515	
3/8/2021	7:28	20.924	0.145	0.073	0.517	
3/8/2021	7:29	20.946	0.133	0.027	0.522	
3/8/2021	7:30	20.945	0.139	0.015	0.525	
3/8/2021	7:31	20.949	0.134	0.015	0.512	ZERO NOx MODE
3/8/2021	7:32	20.945	0.134	0.019	0.518	
3/8/2021	7:33	20.949	0.127	0.012	0.518	ZERO NO MODE
3/8/2021	7:34	20.948	0.126	75.964	0.521	
3/8/2021	7:35	20.943	0.132	87.779	0.523	NO NO MODE
3/8/2021	7:36	20.944	0.135	87.63	0.517	
3/8/2021	7:37	20.946	0.132	87.501	0.512	NO NOx MODE
3/8/2021	7:38	20.938	0.139	47.275	0.514	
3/8/2021	7:39	20.942	0.136	42.549	0.527	NO2 NOx MODE
3/8/2021	7:40	20.94	0.137	4.837	0.514	
3/8/2021	7:41	20.929	0.15	0.075	0.512	NO2 NO MODE
3/8/2021	7:42	20.94	0.142	13.311	0.514	
3/8/2021	7:43	13.405	8.152	20.234	0.407	
3/8/2021	7:44	10.836	10.397	0.317	0.143	
3/8/2021	7:45	10.827	10.414	0.254	0.098	SYS O2/CO2

3/8/2021	7:46	10.826	10.417	0.212	0.097	
3/8/2021	7:47	6.539	6.229	21.135	0.108	
3/8/2021	7:48	0.021	0.126	41.19	0.321	
3/8/2021	7:49	0.014	0.107	41.216	0.414	SYS NOX
3/8/2021	7:50	2.919	3.27	18.995	0.852	
3/8/2021	7:51	2.977	3.875	12.212	2.691	
3/8/2021	7:52	0.185	0.199	0.42	3.502	
3/8/2021	7:53	0.004	0.099	0.136	4.567	
3/8/2021	7:54	0.004	0.094	0.131	4.577	SYS CO
3/8/2021	7:55	6.215	8.869	30.9	3.44	
3/8/2021	7:56	8.36	12.239	40.807	0.328	
3/8/2021	7:57	8.349	12.162	41.916	0.216	
3/8/2021	7:58	8.443	12.09	40.666	0.213	
3/8/2021	7:59	8.5	12.11	38.281	0.214	
3/8/2021	8:00	8.32	12.209	40.364	0.214	
3/8/2021	8:01	8.492	12.077	37.734	0.218	
3/8/2021	8:02	9.083	11.396	33.141	0.218	
3/8/2021	8:03	9.996	10.612	29.293	0.222	
3/8/2021	8:04	9.852	10.82	30.822	0.227	
3/8/2021	8:05	9.106	11.415	33.496	0.223	
3/8/2021	8:06	8.983	11.642	35.153	0.226	
3/8/2021	8:07	8.485	12.054	37.843	0.22	
3/8/2021	8:08	8.866	11.518	40.09	0.222	
3/8/2021	8:09	8.33	12.191	39.61	0.219	
3/8/2021	8:10	8.705	11.864	37.052	0.224	
3/8/2021	8:11	8.828	11.724	37.613	0.226	
3/8/2021	8:12	8.682	11.897	39.693	0.221	
3/8/2021	8:13	8.125	12.362	39.564	0.219	
3/8/2021	8:14	8.627	11.888	38.13	0.217	
3/8/2021	8:15	8.897	11.587	37.942	0.217	
3/8/2021	8:16	9.316	11.296	35.466	0.223	
3/8/2021	8:17	8.371	12.175	37.375	0.219	
3/8/2021	8:18	8.614	11.925	37.058	0.217	
3/8/2021	8:19	8.641	11.899	36.797	0.221	
3/8/2021	8:20	8.547	12.001	38.6	0.218	RUN 1
3/8/2021	8:21	8.336	12.161	40.661	0.218	
3/8/2021	8:22	8.706	11.828	37.811	0.213	
3/8/2021	8:23	8.629	11.836	39.189	0.214	
3/8/2021	8:24	9.886	10.735	34.236	0.219	
3/8/2021	8:25	9.48	11.1	33.388	0.227	
3/8/2021	8:26	9.194	11.368	34.938	0.226	
3/8/2021	8:27	8.973	11.573	34.961	0.223	
3/8/2021	8:28	7.789	12.699	40.622	0.222	
3/8/2021	8:29	8.812	11.684	38.382	0.214	
3/8/2021	8:30	9.29	11.229	36.864	0.219	
3/8/2021	8:31	9.771	10.845	35.497	0.224	
3/8/2021	8:32	8.832	11.702	37.6	0.222	
3/8/2021	8:33	9.205	11.332	37.105	0.226	
3/8/2021	8:34	9.343	11.216	35.028	0.23	

3/8/2021	8:35	9.453	11.12	35.995	0.232
3/8/2021	8:36	8.862	11.647	36.882	0.23
3/8/2021	8:37	9.125	11.43	36.57	0.228
3/8/2021	8:38	8.637	11.873	39.395	0.223
3/8/2021	8:39	9.065	11.499	40.75	0.215
3/8/2021	8:40	9.263	11.267	38.015	0.22
3/8/2021	8:41	8.922	11.667	37.549	0.222
3/8/2021	8:42	8.437	12.064	39.145	0.221
3/8/2021	8:43	8.639	11.837	39.326	0.224
3/8/2021	8:44	8.9	11.595	38.579	0.224
3/8/2021	8:45	8.918	11.639	40.728	0.21
3/8/2021	8:46	8.279	12.185	41.883	0.208
3/8/2021	8:47	8.939	11.59	36.877	0.213
3/8/2021	8:48	8.663	11.826	39.2	0.211
3/8/2021	8:49	8.247	12.333	41.055	0.211
3/8/2021	8:50	8.864	11.592	39.01	0.219
3/8/2021	8:51	8.76	11.732	40.432	0.217
3/8/2021	8:52	8.833	11.647	40.452	0.206
3/8/2021	8:53	8.628	11.933	42.889	0.217
3/8/2021	8:54	8.692	11.801	39.059	0.214
3/8/2021	8:55	8.304	12.181	39.394	0.211
3/8/2021	8:56	8.574	11.97	39.36	0.21
3/8/2021	8:57	8.926	11.526	36.69	0.208
3/8/2021	8:58	8.664	11.814	35.976	0.207
3/8/2021	8:59	9.077	11.502	38.019	0.216
3/8/2021	9:00	8.405	12.086	37.547	0.211
3/8/2021	9:01	8.585	11.943	38.621	0.21
3/8/2021	9:02	9.298	11.23	37.426	0.213
3/8/2021	9:03	9.532	10.993	35.056	0.211
3/8/2021	9:04	9.06	11.458	37.001	0.215
3/8/2021	9:05	8.494	12.111	40.697	0.212
3/8/2021	9:06	8.472	11.938	38.289	0.208
3/8/2021	9:07	9.278	11.247	37.943	0.203
3/8/2021	9:08	8.809	11.768	40.505	0.208
3/8/2021	9:09	8.562	11.898	40.332	0.207
3/8/2021	9:10	9.182	11.273	35.994	0.204
3/8/2021	9:11	9.122	11.383	37.198	0.215
3/8/2021	9:12	8.742	11.72	38.207	0.22
3/8/2021	9:13	9.387	11.099	36.392	0.217
3/8/2021	9:14	9.418	11.076	35.746	0.223
3/8/2021	9:15	9.339	11.15	37.701	0.227
3/8/2021	9:16	8.392	12.131	41.343	0.215
3/8/2021	9:17	8.596	11.86	39.515	0.217
3/8/2021	9:18	8.547	11.942	42.168	0.208
3/8/2021	9:19	8.828	11.641	41.691	0.206
3/8/2021	9:20	9.241	11.275	36.928	0.206
Average		**8.89**	**11.63**	**38.26**	**0.22**
3/8/2021	9:21	10.019	9.887	3.861	0.305

3/8/2021	9:22	10.796	10.367	0.064	0.089	SYS O2/CO2
3/8/2021	9:23	4.176	3.677	27.15	0.111	
3/8/2021	9:24	0.012	0.133	41.096	0.336	SYS NOX
3/8/2021	9:25	0.032	0.154	20.002	0.634	
3/8/2021	9:26	0.004	0.111	0.092	3.976	
3/8/2021	9:27	1.937	1.736	1.706	4.524	SYS CO
3/8/2021	9:28	10.811	10.374	41.274	4.506	
3/8/2021	9:29	10.816	10.376	41.325	4.524	DIR SPAN
3/8/2021	9:30	3.178	2.57	12.705	3.619	
3/8/2021	9:31	-0.013	0.07	0.022	0.345	
3/8/2021	9:32	-0.013	0	0.013	-0.023	DIR ZERO
3/8/2021	9:33	6.039	15.355	27.013	0.009	
3/8/2021	9:34	8.448	16.819	40.678	0.193	
3/8/2021	9:35	8.905	11.599	37.979	0.204	RUN 2
3/8/2021	9:36	9.234	11.298	37.623	0.212	
3/8/2021	9:37	9.003	11.486	36.7	0.232	
3/8/2021	9:38	9.665	10.856	33.809	0.223	
3/8/2021	9:39	9.387	11.201	33.835	0.221	
3/8/2021	9:40	8.386	12.134	38.95	0.222	
3/8/2021	9:41	8.523	12.024	38.42	0.22	
3/8/2021	9:42	8.465	12.058	39.321	0.22	
3/8/2021	9:43	8.616	11.856	38.926	0.217	
3/8/2021	9:44	8.959	11.593	38.751	0.206	
3/8/2021	9:45	8.542	11.96	41.199	0.208	
3/8/2021	9:46	8.817	11.71	36.912	0.209	
3/8/2021	9:47	9.36	11.195	37.365	0.204	
3/8/2021	9:48	8.515	12.053	40.791	0.206	
3/8/2021	9:49	8.635	11.895	40.893	0.201	
3/8/2021	9:50	8.666	11.839	39.554	0.196	
3/8/2021	9:51	8.346	12.242	42.048	0.202	
3/8/2021	9:52	8.624	11.815	41.77	0.201	
3/8/2021	9:53	9.527	11.069	36.354	0.206	
3/8/2021	9:54	8.764	11.765	36.984	0.211	
3/8/2021	9:55	8.887	11.636	38.938	0.21	
3/8/2021	9:56	9.591	11.001	37.691	0.206	
3/8/2021	9:57	8.971	11.611	38.5	0.199	
3/8/2021	9:58	9.457	11.13	38.052	0.203	
3/8/2021	9:59	8.348	12.202	39.772	0.208	
3/8/2021	10:00	7.509	13.024	45.52	0.204	
3/8/2021	10:01	8.398	12.092	42.632	0.203	
3/8/2021	10:02	8.568	11.915	41.304	0.195	
3/8/2021	10:03	9.165	11.311	38.044	0.199	
3/8/2021	10:04	9.739	10.841	34.289	0.213	
3/8/2021	10:05	8.717	11.793	33.805	0.243	
3/8/2021	10:06	9.147	11.406	34.385	0.207	
3/8/2021	10:07	8.487	11.991	39.454	0.254	
3/8/2021	10:08	8.349	12.172	39.95	0.192	
3/8/2021	10:09	9.597	10.914	36.993	0.197	
3/8/2021	10:10	9.006	11.544	36.884	0.236	

3/8/2021	10:11	9.173	11.334	39.897	0.208	
3/8/2021	10:12	8.268	12.229	39.851	0.237	
3/8/2021	10:13	8.358	12.136	38.055	0.247	
3/8/2021	10:14	8.601	11.822	39.738	0.192	
3/8/2021	10:15	8.972	11.52	39.562	0.189	
3/8/2021	10:16	9.661	10.83	36.636	0.191	
3/8/2021	10:17	8.576	11.933	39.843	0.367	
3/8/2021	10:18	8.674	11.723	40.376	0.399	
3/8/2021	10:19	9.191	11.325	38.745	0.382	
3/8/2021	10:20	8.446	12.052	39.504	0.341	
3/8/2021	10:21	8.782	11.624	40.594	0.199	
3/8/2021	10:22	8.687	11.849	40.359	0.191	
3/8/2021	10:23	8.628	11.789	41.028	0.189	
3/8/2021	10:24	9.151	11.334	38.428	0.19	
3/8/2021	10:25	8.401	12.041	42.522	0.188	
3/8/2021	10:26	9.853	10.612	37.839	0.184	
3/8/2021	10:27	9.413	11.135	36.717	0.196	
3/8/2021	10:28	8.235	12.223	38.032	0.2	
3/8/2021	10:29	8.423	12.099	41.639	0.201	
3/8/2021	10:30	8.014	12.418	41.005	0.196	
3/8/2021	10:31	8.642	11.85	42.238	0.189	
3/8/2021	10:32	8.761	11.742	38.755	0.188	
3/8/2021	10:33	9.107	11.383	40.442	0.186	
3/8/2021	10:34	9.185	11.333	35.291	0.192	
3/8/2021	10:35	8.844	11.668	39.425	0.192	
Average		**8.8336**	**11.677267**	**38.882317**	**0.217**	
3/8/2021	10:36	10.378	10.509	9.442	0.173	
3/8/2021	10:37	10.796	10.427	0.098	0.083	
3/8/2021	10:38	10.801	10.435	0.07	0.078	SYS O2
3/8/2021	10:39	5.802	5.297	20.704	0.091	
3/8/2021	10:40	0.01	0.133	40.961	0.308	SYS NOX
3/8/2021	10:41	0.192	0.347	22.07	0.548	
3/8/2021	10:42	0	0.115	0.096	3.814	
3/8/2021	10:43	0.112	0.115	0.073	4.519	SYS CO
3/8/2021	10:44	10.776	10.344	38.333	4.529	
3/8/2021	10:45	10.823	10.483	41.156	4.543	DIR MID
3/8/2021	10:46	2.878	2.334	10.792	3.37	
3/8/2021	10:47	-0.014	0.072	0.016	0.11	DIR ZERO
3/8/2021	10:48	2.622	3.772	10.833	-0.022	
3/8/2021	10:49	9.17	11.414	39.028	0.094	
3/8/2021	10:50	8.861	11.816	39.677	0.208	
3/8/2021	10:51	8.817	11.747	41.404	0.21	
3/8/2021	10:52	9.63	11.086	38.11	0.215	RUN 3
3/8/2021	10:53	8.654	12.002	37.925	0.211	
3/8/2021	10:54	7.823	12.795	41.616	0.207	
3/8/2021	10:55	8.195	12.408	40.895	0.192	
3/8/2021	10:56	9.163	11.537	40.826	0.197	
3/8/2021	10:57	8.727	11.81	40.117	0.195	

3/8/2021	10:58	9.654	10.941	36.832	0.197
3/8/2021	10:59	9.442	11.342	37.377	0.21
3/8/2021	11:00	8.998	11.596	35.917	0.218
3/8/2021	11:01	9.117	11.524	35.855	0.221
3/8/2021	11:02	9.596	11.052	37.294	0.218
3/8/2021	11:03	9.251	11.335	37.769	0.216
3/8/2021	11:04	9.456	11.259	37.876	0.213
3/8/2021	11:05	8.396	12.288	40.123	0.211
3/8/2021	11:06	8.439	12.091	40.924	0.207
3/8/2021	11:07	9.279	11.32	38.048	0.202
3/8/2021	11:08	9.146	11.488	39.359	0.209
3/8/2021	11:09	9.47	11.181	36.284	0.215
3/8/2021	11:10	8.41	12.213	40.534	0.216
3/8/2021	11:11	9.041	11.613	39.84	0.219
3/8/2021	11:12	8.388	12.236	41.762	0.215
3/8/2021	11:13	8.838	11.751	40.936	0.212
3/8/2021	11:14	9.125	11.558	37.804	0.213
3/8/2021	11:15	8.881	11.751	37.218	0.214
3/8/2021	11:16	8.762	11.826	39.95	0.205
3/8/2021	11:17	8.276	12.384	42.982	0.207
3/8/2021	11:18	7.99	12.543	45.747	0.197
3/8/2021	11:19	8.999	11.521	42.516	0.198
3/8/2021	11:20	9.542	11.188	37.364	0.204
3/8/2021	11:21	8.211	12.381	41.193	0.201
3/8/2021	11:22	8.999	11.555	39.509	0.195
3/8/2021	11:23	8.976	11.674	39.185	0.187
3/8/2021	11:24	8.132	12.469	42.008	0.182
3/8/2021	11:25	7.859	12.725	44.267	0.188
3/8/2021	11:26	8.25	12.233	41.361	0.186
3/8/2021	11:27	8.474	12.145	42.369	0.2
3/8/2021	11:28	7.814	12.746	42.314	0.199
3/8/2021	11:29	8.193	12.332	42.641	0.193
3/8/2021	11:30	8.75	11.788	40.639	0.189
3/8/2021	11:31	9.482	11.066	35.371	0.194
3/8/2021	11:32	9.516	11.08	33.455	0.195
3/8/2021	11:33	9.491	11.122	34.82	0.2
3/8/2021	11:34	8.903	11.701	35.386	0.206
3/8/2021	11:35	8.375	12.218	39.804	0.208
3/8/2021	11:36	7.788	12.775	41.616	0.2
3/8/2021	11:37	7.826	12.729	45.679	0.198
3/8/2021	11:38	7.982	12.56	43.48	0.189
3/8/2021	11:39	8.88	11.625	37.895	0.182
3/8/2021	11:40	9.563	11.1	35.35	0.197
3/8/2021	11:41	9.531	11.118	32.841	0.213
3/8/2021	11:42	9.56	11.043	35.048	0.214
3/8/2021	11:43	9.486	11.136	34.756	0.217
3/8/2021	11:44	8.641	11.95	37.264	0.216
3/8/2021	11:45	8.265	12.324	41.267	0.206
3/8/2021	11:46	8.408	12.179	42.322	0.196

3/8/2021	11:47	9.015	11.507	40.096	0.193	
3/8/2021	11:48	9.582	10.966	36.423	0.195	
3/8/2021	11:49	9.81	10.779	34.523	0.208	
3/8/2021	11:50	9.456	11.2	38.301	0.218	
3/8/2021	11:51	8.891	11.657	38.155	0.214	
3/8/2021	11:52	9.151	11.404	37.038	0.222	
Average		**8.838633**	**11.764**	**39.134433**	**0.204**	
3/8/2021	11:53	9.971	10.883	13.525	0.198	
3/8/2021	11:54	10.802	10.442	0.101	0.084	
3/8/2021	11:55	10.802	10.445	0.061	0.079	sys o2/co2
3/8/2021	11:56	3.571	3.131	29.162	0.117	
3/8/2021	11:57	0.013	0.089	40.752	0.348	SYS NOX
3/8/2021	11:58	0.196	0.32	20.282	0.599	
3/8/2021	11:59	0.004	0.065	0.084	3.928	
3/8/2021	12:00	6.035	4.782	14.197	4.517	SYS CO
3/8/2021	12:01	10.821	10.434	41.035	4.53	
3/8/2021	12:02	10.823	10.434	41.036	4.538	
3/8/2021	12:03	10.828	10.432	41.208	4.536	DIR SPAN
3/8/2021	12:04	3.685	2.774	11.882	3.494	
3/8/2021	12:05	-0.008	0.015	0.014	0.141	
3/8/2021	12:06	-0.008	0.008	0.016	-0.018	DIR ZERO
3/8/2021	12:07	5.147	7.523	24.039	0.001	
3/8/2021	12:08	7.996	12.59	45.933	0.19	
3/8/2021	12:09	7.754	12.668	46.899	0.221	
3/8/2021	12:10	9.059	11.368	40.089	0.254	
3/8/2021	12:11	9.504	11.115	39.386	0.218	
3/8/2021	12:12	8.826	11.782	42.264	0.227	
3/8/2021	12:13	8.292	12.22	43.882	0.223	
3/8/2021	12:14	7.661	12.819	47.544	0.21	
3/8/2021	12:15	8.74	11.705	40.321	0.214	RUN 4
3/8/2021	12:16	8.875	11.736	41.18	0.212	
3/8/2021	12:17	8.957	11.575	38.315	0.221	
3/8/2021	12:18	9.456	11.123	40.217	0.225	
3/8/2021	12:19	8.384	12.193	44.4	0.218	
3/8/2021	12:20	8.69	11.846	44.195	0.216	
3/8/2021	12:21	8.682	11.939	43.916	0.222	
3/8/2021	12:22	8.164	12.316	44.837	0.219	
3/8/2021	12:23	8.909	11.715	41.472	0.22	
3/8/2021	12:24	9.11	11.273	37.263	0.218	
3/8/2021	12:25	9.24	11.424	35.221	0.221	
3/8/2021	12:26	8.726	11.834	36.504	0.231	
3/8/2021	12:27	8.626	12.011	38.217	0.227	
3/8/2021	12:28	8.177	12.344	40.934	0.219	
3/8/2021	12:29	8.072	12.485	42.519	0.218	
3/8/2021	12:30	8.339	12.21	41.49	0.215	
3/8/2021	12:31	8.871	11.63	37.706	0.222	
3/8/2021	12:32	9.261	11.373	36.345	0.22	
3/8/2021	12:33	9.084	11.439	34.43	0.229	

3/8/2021	12:34	9.37	11.332	37.441	0.234	
3/8/2021	12:35	8.966	11.642	37.671	0.237	
3/8/2021	12:36	8.863	11.63	39.033	0.234	
3/8/2021	12:37	8.483	12.214	40.881	0.23	
3/8/2021	12:38	8.45	12.048	41.023	0.23	
3/8/2021	12:39	8.512	12.065	43.012	0.225	
3/8/2021	12:40	9.122	11.512	38.886	0.224	
3/8/2021	12:41	9.164	11.342	36.919	0.223	
3/8/2021	12:42	9.072	11.526	39.08	0.23	
3/8/2021	12:43	8.7	11.885	39.635	0.219	
3/8/2021	12:44	8.428	12.236	40.03	0.22	
3/8/2021	12:45	8.793	11.802	38.058	0.218	
Average		**8.784867**	**11.79**	**39.694333**	**0.223233**	

3/8/2021	12:46	10.224	10.748	9.329	0.191	
3/8/2021	12:47	10.783	10.504	0.07	0.084	SYS O2/CO2
3/8/2021	12:48	3.754	3.33	28.445	0.117	
3/8/2021	12:49	0.015	0.148	40.846	0.355	
3/8/2021	12:50	0.01	0.137	40.961	0.396	SYS NOX
3/8/2021	12:51	0.076	0.218	23.166	0.541	
3/8/2021	12:52	0.004	0.124	0.113	3.792	
3/8/2021	12:53	0.374	0.308	0.073	4.537	SYS CO
3/8/2021	12:54	10.804	10.49	38.811	4.548	
3/8/2021	12:55	10.819	10.49	41.182	4.56	DIR SPAN
3/8/2021	12:56	3.455	2.981	13.321	3.496	
3/8/2021	12:57	-0.008	0.071	0.017	0.144	
3/8/2021	12:58	-0.007	0.07	0.012	-0.015	DIR ZERO
3/8/2021	12:59	4.985	8.294	31.704	0.015	
3/8/2021	13:00	8.227	12.273	43.485	0.205	RUN 5
3/8/2021	13:01	9.318	11.233	43.367	0.22	
3/8/2021	13:02	9.714	10.927	37.143	0.234	
3/8/2021	13:03	8.784	11.847	39.677	0.236	
3/8/2021	13:04	8.567	12.017	39.908	0.231	
3/8/2021	13:05	8.479	12.053	40.109	0.231	
3/8/2021	13:06	9.259	11.344	39.175	0.228	
3/8/2021	13:07	8.992	11.625	39.887	0.232	
3/8/2021	13:08	9.301	11.231	36.621	0.238	
3/8/2021	13:09	9.495	11.147	35.191	0.24	
3/8/2021	13:10	9.529	11.042	34.816	0.248	
3/8/2021	13:11	8.596	12.014	40.812	0.24	
3/8/2021	13:12	8.532	12.13	42.387	0.234	
3/8/2021	13:13	8.618	11.975	39.178	0.23	
3/8/2021	13:14	8.481	12.108	41.851	0.229	
3/8/2021	13:15	8.588	12.005	42.633	0.231	
3/8/2021	13:16	8.899	11.688	40.132	0.229	
3/8/2021	13:17	8.874	11.75	41.2	0.222	
3/8/2021	13:18	8.403	12.165	41.814	0.223	
3/8/2021	13:19	9.18	11.427	40.357	0.227	
3/8/2021	13:20	9.327	11.269	38.951	0.235	

3/8/2021	13:21	9.517	11.087	39.253	0.23	
3/8/2021	13:22	9.32	11.337	38.998	0.224	
3/8/2021	13:23	8.299	12.25	42.98	0.225	
3/8/2021	13:24	9.048	11.575	39.293	0.224	
3/8/2021	13:25	8.479	12.102	42.95	0.23	
3/8/2021	13:26	8.395	12.259	43.351	0.227	
3/8/2021	13:27	8.032	12.508	44.072	0.225	
3/8/2021	13:28	8.407	12.089	41.527	0.222	
3/8/2021	13:29	9.239	11.318	36.191	0.221	
3/8/2021	13:30	9.391	11.288	34.339	0.218	
Average		**8.9021**	**11.693667**	**39.938767**	**0.229467**	
3/8/2021	13:31	9.99	10.933	10.246	0.196	
3/8/2021	13:32	10.768	10.505	0.074	0.094	
3/8/2021	13:33	10.769	10.505	0.067	0.084	SYS O2
3/8/2021	13:34	6.837	6.214	17.694	0.096	
3/8/2021	13:35	0.018	0.171	40.686	0.298	
3/8/2021	13:36	0.01	0.148	40.928	0.387	SYS NOX
3/8/2021	13:37	0.1	0.282	31.699	0.417	
3/8/2021	13:38	4.83	4.158	11.576	3.048	
3/8/2021	13:39	10.812	10.488	40.964	4.54	SYS CO
3/8/2021	13:40	10.814	10.492	41.177	4.544	
3/8/2021	13:41	10.813	10.495	41.22	4.548	DIR SPAN.
3/8/2021	13:42	2.882	2.442	10.616	3.268	
3/8/2021	13:43	-0.008	0.083	0.024	0.099	
3/8/2021	13:44	-0.008	0.074	0.012	-0.013	DIR ZERO
3/8/2021	13:45	2.804	3.631	10.823	-0.014	
3/8/2021	13:46	8.614	11.904	37.924	0.125	
3/8/2021	13:47	8.255	12.361	40.918	0.217	
3/8/2021	13:48	8.484	12.054	41.631	0.21	RUN 6
3/8/2021	13:49	8.765	11.824	39.118	0.213	
3/8/2021	13:50	8.347	12.178	41.547	0.224	
3/8/2021	13:51	8.615	12.008	41.032	0.223	
3/8/2021	13:52	8.002	12.548	45.152	0.221	
3/8/2021	13:53	8.976	11.511	36.442	0.221	
3/8/2021	13:54	9.136	11.485	38.487	0.225	
3/8/2021	13:55	9.502	11.05	36.051	0.232	
3/8/2021	13:56	9.732	10.921	35.912	0.242	
3/8/2021	13:57	9.637	10.986	34.049	0.241	
3/8/2021	13:58	9.123	11.536	36.859	0.245	
3/8/2021	13:59	8.867	11.704	40.885	0.239	
3/8/2021	14:00	8.382	12.146	39.833	0.233	
3/8/2021	14:01	9.052	11.554	38.197	0.228	
3/8/2021	14:02	8.477	12.124	41.181	0.217	
3/8/2021	14:03	8.175	12.394	41.46	0.227	
3/8/2021	14:04	8.127	12.396	43.869	0.228	
3/8/2021	14:05	8.298	12.231	46.449	0.23	
3/8/2021	14:06	9.181	11.387	40.16	0.221	
3/8/2021	14:07	9.649	10.956	36.919	0.224	

3/8/2021	14:08	8.571	11.993	38.889	0.223	
3/8/2021	14:09	9.225	11.367	37.058	0.229	
3/8/2021	14:10	8.412	12.213	40.6	0.23	
3/8/2021	14:11	8.797	11.77	37.391	0.233	
3/8/2021	14:12	8.65	11.921	40.756	0.219	
3/8/2021	14:13	8.25	12.246	38.53	0.211	
3/8/2021	14:14	8.519	12.072	38.901	0.221	
3/8/2021	14:15	8.715	11.844	42.547	0.213	
3/8/2021	14:16	8.755	11.809	40.692	0.208	
3/8/2021	14:17	9.515	11.107	36.658	0.207	
3/8/2021	14:18	8.583	11.978	40.305	0.211	
Average		**8.801167**	**11.7753**	**39.530967**	**0.224633**	
3/8/2021	14:19	10.242	10.742	7.912	0.191	
3/8/2021	14:20	10.78	10.475	0.076	0.088	SYS O2/CO2
3/8/2021	14:21	2.727	2.297	32.562	0.141	
3/8/2021	14:22	0.012	0.126	40.992	0.367	SYS NOX
3/8/2021	14:23	9.504	8.611	36.911	1.302	
3/8/2021	14:24	10.799	10.46	41.031	4.441	
3/8/2021	14:25	10.801	10.455	41.087	4.55	SYS CO
3/8/2021	14:26	10.802	10.452	41.248	4.556	
3/8/2021	14:27	10.81	10.453	41.249	4.555	DIR SPAN
3/8/2021	14:28	6.077	5.415	22.614	4.226	
3/8/2021	14:29	-0.006	0.046	0.038	0.585	
3/8/2021	14:30	-0.008	0.043	0.022	-0.01	DIR ZERO
3/8/2021	14:31	5.701	9.353	30.96	0.019	
3/8/2021	14:32	8.55	12.023	40.841	0.197	RUN 7
3/8/2021	14:33	8.283	12.225	42.207	0.221	
3/8/2021	14:34	9.005	11.515	39.126	0.225	
3/8/2021	14:35	9.081	11.491	39.04	0.227	
3/8/2021	14:36	8.549	12.031	41.062	0.237	
3/8/2021	14:37	8.121	12.411	42.325	0.238	
3/8/2021	14:38	8.677	11.843	39.133	0.233	
3/8/2021	14:39	8.314	12.282	44.625	0.241	
3/8/2021	14:40	8.772	11.757	42.131	0.227	
3/8/2021	14:41	9.062	11.49	36.87	0.233	
3/8/2021	14:42	8.918	11.68	35.735	0.24	
3/8/2021	14:43	8.071	12.486	42.203	0.244	
3/8/2021	14:44	8.483	12.046	41.182	0.238	
3/8/2021	14:45	8.764	11.796	39.478	0.233	
3/8/2021	14:46	9.68	10.879	35.792	0.234	
3/8/2021	14:47	8.567	12.044	39.239	0.239	
3/8/2021	14:48	8.259	12.227	42.962	0.236	
3/8/2021	14:49	8.176	12.455	46.166	0.229	
3/8/2021	14:50	8.078	12.459	42.011	0.226	
3/8/2021	14:51	8.527	12.012	35.712	0.233	
3/8/2021	14:52	8.94	11.622	32.831	0.226	
3/8/2021	14:53	8.685	11.889	35.388	0.236	
3/8/2021	14:54	8.758	11.78	37.381	0.247	

3/8/2021	14:55	8.671	11.945	39.642	0.244	
3/8/2021	14:56	9.036	11.502	39.559	0.237	
3/8/2021	14:57	9.373	11.152	36.12	0.234	
3/8/2021	14:58	9.083	11.513	36.385	0.238	
3/8/2021	14:59	9.263	11.287	37.235	0.247	
3/8/2021	15:00	8.762	11.885	37.213	0.24	
3/8/2021	15:01	8.166	12.386	40.415	0.237	
3/8/2021	15:02	8.531	12.007	39.954	0.232	
Average		**8.6885**	**11.8699**	**39.304067**	**0.235067**	
3/8/2021	15:03	10.061	10.869	9.406	0.205	
3/8/2021	15:04	10.784	10.452	0.083	0.098	SYS O2/CO2
3/8/2021	15:05	3.261	2.817	30.567	0.13	
3/8/2021	15:06	0.013	0.103	40.893	0.366	SYS NOX
3/8/2021	15:07	0.116	0.203	9.752	1.246	
3/8/2021	15:08	1.93	0.843	0.082	4.423	
3/8/2021	15:09	10.817	10.426	39.935	4.549	SYS CO
3/8/2021	15:10	10.819	10.434	41.183	4.57	
3/8/2021	15:11	10.819	10.434	41.02	4.565	DIR SPAN
3/8/2021	15:12	2.691	2.162	10.041	3.2	
3/8/2021	15:13	-0.007	0.021	0.019	0.09	
3/8/2021	15:14	-0.007	0.023	0.012	-0.009	DIR ZERO
3/8/2021	15:15	5.599	9.66	29.082	0.011	
3/8/2021	15:16	8.643	11.853	40.569	0.179	
3/8/2021	15:17	9.018	11.504	36.138	0.222	
3/8/2021	15:18	9.56	11.038	37.032	0.228	RUN 8
3/8/2021	15:19	9.197	11.463	37.018	0.246	
3/8/2021	15:20	8.896	11.672	36.07	0.233	
3/8/2021	15:21	8.821	11.758	39.473	0.229	
3/8/2021	15:22	8.256	12.283	40.906	0.235	
3/8/2021	15:23	8.517	12.101	42.731	0.23	
3/8/2021	15:24	9.144	11.43	37.789	0.229	
3/8/2021	15:25	8.825	11.81	41.305	0.226	
3/8/2021	15:26	8.814	11.735	38.353	0.235	
3/8/2021	15:27	8.465	12.113	39.655	0.229	
3/8/2021	15:28	8.739	11.851	40.374	0.229	
3/8/2021	15:29	8.774	11.783	39.847	0.222	
3/8/2021	15:30	8.615	12.011	41.384	0.222	
3/8/2021	15:31	8.356	12.269	41.214	0.227	
3/8/2021	15:32	8.283	12.3	40.986	0.216	
3/8/2021	15:33	8.21	12.39	46.074	0.215	
3/8/2021	15:34	8.373	12.206	42.935	0.21	
3/8/2021	15:35	8.546	12.028	40.098	0.209	
3/8/2021	15:36	9.472	11.156	35.018	0.225	
3/8/2021	15:37	9.322	11.159	34.917	0.241	
3/8/2021	15:38	8.896	11.721	36.724	0.242	
3/8/2021	15:39	8.613	11.969	37.917	0.229	
3/8/2021	15:40	8.663	11.979	36.928	0.226	
3/8/2021	15:41	7.827	12.737	46.143	0.232	

3/8/2021	15:42	7.863	12.745	47.656	0.224	
3/8/2021	15:43	8.465	12.133	43.563	0.209	
3/8/2021	15:44	8.545	12.025	41.766	0.21	
3/8/2021	15:45	8.515	12.049	39.509	0.21	
3/8/2021	15:46	8.505	12.108	39.841	0.218	
3/8/2021	15:47	8.387	12.204	38.153	0.217	
3/8/2021	15:48	8.028	12.589	43.095	0.227	
Average		**8.597733**	**11.992567**	**40.248067**	**0.225067**	
3/8/2021	15:49	9.859	11.051	12.406	0.207	
3/8/2021	15:50	10.784	10.492	0.083	0.103	
3/8/2021	15:51	10.788	10.492	0.067	0.097	SYS O2/CO2
3/8/2021	15:52	3.75	3.287	28.831	0.135	
3/8/2021	15:53	0.012	0.132	41.024	0.368	SYS NOX
3/8/2021	15:54	0.076	0.223	10.924	1.19	
3/8/2021	15:55	0.004	0.112	0.071	4.413	
3/8/2021	15:56	0.377	0.202	0.048	4.563	SYS CO
3/8/2021	15:57	10.777	10.469	33.897	4.567	
3/8/2021	15:58	10.805	10.481	41.287	4.577	
3/8/2021	15:59	10.805	10.482	41.132	4.586	DIR SPAN
3/8/2021	16:00	3.063	2.516	11.063	3.32	
3/8/2021	16:01	-0.007	0.055	0.024	0.118	
3/8/2021	16:02	-0.009	0.054	0.013	0.002	DIR ZERO
3/8/2021	16:03	4.982	6.852	21.962	0.018	
3/8/2021	16:04	8.078	12.548	40.667	0.217	RUN 9
3/8/2021	16:05	7.697	12.783	43.413	0.232	
3/8/2021	16:06	8.8	11.801	42.337	0.233	
3/8/2021	16:07	8.663	11.885	41.805	0.244	
3/8/2021	16:08	8.561	12.004	39.961	0.251	
3/8/2021	16:09	9.148	11.431	36.161	0.246	
3/8/2021	16:10	9.548	11.092	34.574	0.256	
3/8/2021	16:11	8.492	12.116	40.168	0.258	
3/8/2021	16:12	8.551	11.974	38.937	0.251	
3/8/2021	16:13	8.698	11.843	37.765	0.255	
3/8/2021	16:14	9.139	11.336	37.836	0.251	
3/8/2021	16:15	9.601	11.059	35.998	0.253	
3/8/2021	16:16	8.597	11.868	38.758	0.255	
3/8/2021	16:17	8.527	11.959	40.1	0.237	
3/8/2021	16:18	9.144	11.437	38.01	0.242	
3/8/2021	16:19	9.091	11.564	39.602	0.252	
3/8/2021	16:20	7.691	12.816	46.502	0.245	
3/8/2021	16:21	7.774	12.741	46.836	0.239	
3/8/2021	16:22	8.302	12.295	43.719	0.247	
3/8/2021	16:23	8.376	12.119	41.858	0.235	
3/8/2021	16:24	8.361	12.283	39.438	0.24	
3/8/2021	16:25	8.646	11.83	36.67	0.246	
3/8/2021	16:26	8.819	11.804	34.951	0.252	
3/8/2021	16:27	8.733	11.833	37.619	0.24	
3/8/2021	16:28	8.821	11.754	39.281	0.243	

3/8/2021	16:29	9.083	11.519	36.905	0.24	
3/8/2021	16:30	8.63	12.052	38.197	0.241	
3/8/2021	16:31	8.305	12.35	43.926	0.238	
3/8/2021	16:32	9.605	10.881	38.879	0.238	
3/8/2021	16:33	8.644	12.029	39.978	0.241	
3/8/2021	16:34	8.282	12.323	41.604	0.239	
Average		**8.677633**	**11.8927**	**39.726267**	**0.244667**	
3/8/2021	16:35	9.56	10.33	9.365	0.328	
3/8/2021	16:36	10.791	10.485	0.052	0.136	
3/8/2021	16:37	10.794	10.486	0.04	0.096	SYS O2/CO2
3/8/2021	16:38	2.681	2.197	33.143	0.149	
3/8/2021	16:39	0.012	0.101	41.085	0.392	SYS NOX
3/8/2021	16:40	0.175	0.091	8.58	1.367	
3/8/2021	16:41	0.005	0.084	0.057	4.469	
3/8/2021	16:42	0.004	0.078	0.042	4.566	SYS CO
3/8/2021	16:43	9.355	8.862	29.533	4.566	
3/8/2021	16:44	10.829	10.474	41.342	4.596	DIR SPAN
3/8/2021	16:45	3.815	3.34	15.125	3.702	
3/8/2021	16:46	-0.007	0.028	0.02	0.219	
3/8/2021	16:47	-0.007	0.023	0.002	0.002	DIR ZERO
3/8/2021	16:48	-0.05	0.021	0.054	0.004	
3/8/2021	16:49	15.259	14.624	56.598	0.449	
3/8/2021	16:50	19.114	19.046	86.93	7.054	
3/8/2021	16:51	19.114	19.051	87.03	9.609	DIR HIGH
3/8/2021	16:52	10.634	9.766	50.594	9.081	
3/8/2021	16:53	-0.006	0.044	0.129	1.626	
3/8/2021	16:54	-0.016	0.039	0.074	0.422	

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	7:48:00	0.032	19.144	
3/11/2021	7:49:00	18.036	2.193	
3/11/2021	7:50:00	20.92	0.077	
3/11/2021	7:51:00	20.916	0.081	
3/11/2021	7:52:00	20.929	0.072	
3/11/2021	7:53:00	17.323	0.066	
3/11/2021	7:54:00	0.013	0.002	
3/11/2021	7:55:00	0.002	0	DIR ZERO O
3/11/2021	7:56:00	12.968	-0.002	
3/11/2021	7:57:00	19.141	9.303	
3/11/2021	7:58:00	19.146	18.95	DIR HIGH
3/11/2021	7:59:00	14.229	19.029	
3/11/2021	8:00:00	10.846	13.933	
3/11/2021	8:01:00	10.842	10.42	MID O2/CO2
3/11/2021	8:02:00	14.45	6.623	
3/11/2021	8:03:00	20.873	0.113	
3/11/2021	8:04:00	20.735	0.117	
3/11/2021	8:05:00	20.628	0.117	
3/11/2021	8:06:00	20.56	0.124	
3/11/2021	8:07:00	20.492	0.136	
3/11/2021	8:08:00	20.421	0.144	
3/11/2021	8:09:00	20.353	0.152	
3/11/2021	8:10:00	20.284	0.164	
3/11/2021	8:11:00	20.228	0.186	
3/11/2021	8:12:00	20.168	0.197	
3/11/2021	8:13:00	20.108	0.206	
3/11/2021	8:14:00	20.055	0.219	
3/11/2021	8:15:00	20.006	0.23	
3/11/2021	8:16:00	19.958	0.238	
3/11/2021	8:17:00	19.91	0.248	
3/11/2021	8:18:00	19.858	0.259	
3/11/2021	8:19:00	19.809	0.271	
3/11/2021	8:20:00	19.766	0.284	
3/11/2021	8:21:00	19.725	0.298	
3/11/2021	8:22:00	19.686	0.312	
3/11/2021	8:23:00	19.652	0.324	
3/11/2021	8:24:00	19.616	0.332	
3/11/2021	8:25:00	19.781	0.429	
3/11/2021	8:26:00	9.214	10.899	
3/11/2021	8:27:00	11.317	9.947	
3/11/2021	8:28:00	10.865	10.385	
3/11/2021	8:29:00	10.862	10.395	
3/11/2021	8:30:00	10.858	10.399	

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	8:31:00	10.865	10.394	SYS O2/CO2
3/11/2021	8:32:00	9.196	9.039	
3/11/2021	8:33:00	0.165	0.14	
3/11/2021	8:34:00	0.144	0.081	
3/11/2021	8:35:00	0.13	0.065	
3/11/2021	8:36:00	0.113	0.056	SYS ZERO
3/11/2021	8:37:00	4.418	5.182	
3/11/2021	8:38:00	9.712	10.825	
3/11/2021	8:39:00	9.333	11.201	
3/11/2021	8:40:00	9.372	11.192	
3/11/2021	8:41:00	9.182	11.365	
3/11/2021	8:42:00	9.011	11.57	
3/11/2021	8:43:00	8.625	11.947	
3/11/2021	8:44:00	9.188	11.416	
3/11/2021	8:45:00	9.407	11.197	
3/11/2021	8:46:00	9.499	11.123	
3/11/2021	8:47:00	9.767	10.856	
3/11/2021	8:48:00	9.587	11.011	
3/11/2021	8:49:00	8.775	11.843	
3/11/2021	8:50:00	9.468	11.161	
3/11/2021	8:51:00	9.882	10.744	
3/11/2021	8:52:00	9.69	10.959	
3/11/2021	8:53:00	9.238	11.389	
3/11/2021	8:54:00	10.105	10.571	
3/11/2021	8:55:00	9.561	11.08	
3/11/2021	8:56:00	9.314	11.325	
3/11/2021	8:57:00	8.951	11.674	
3/11/2021	8:58:00	9.288	11.33	
3/11/2021	8:59:00	8.716	11.915	
3/11/2021	9:00:00	9.142	11.511	
3/11/2021	9:01:00	9.211	11.416	
3/11/2021	9:02:00	9.152	11.504	
3/11/2021	9:03:00	9.259	11.402	
3/11/2021	9:04:00	9.775	10.884	
3/11/2021	9:05:00	9.904	10.752	
3/11/2021	9:06:00	9.609	11.053	
3/11/2021	9:07:00	9.003	11.643	
3/11/2021	9:08:00	9.547	11.11	
3/11/2021	9:09:00	9.465	11.204	
3/11/2021	9:10:00	9.426	11.24	
3/11/2021	9:11:00	9.105	11.545	
3/11/2021	9:12:00	8.967	11.694	
3/11/2021	9:13:00	9.294	11.369	
3/11/2021	9:14:00	9.522	11.133	

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	9:15:00	9.789	10.881	
3/11/2021	9:16:00	9.318	11.342	
3/11/2021	9:17:00	9.446	11.216	
3/11/2021	9:18:00	9.42	11.243	
3/11/2021	9:19:00	9.41	11.264	
3/11/2021	9:20:00	9.147	11.528	
3/11/2021	9:21:00	9.774	10.884	
3/11/2021	9:22:00	9.769	10.917	
3/11/2021	9:23:00	9.618	11.049	
3/11/2021	9:24:00	9.524	11.146	
3/11/2021	9:25:00	9.653	11.021	
3/11/2021	9:26:00	9.487	11.2	
3/11/2021	9:27:00	9.377	11.262	
3/11/2021	9:28:00	9.373	11.293	
3/11/2021	9:29:00	9.489	11.185	
3/11/2021	9:30:00	9.309	11.366	
3/11/2021	9:31:00	9.518	11.139	
3/11/2021	9:32:00	8.786	11.873	
3/11/2021	9:33:00	8.902	11.765	
3/11/2021	9:34:00	9.002	11.712	
3/11/2021	9:35:00	9.582	10.98	
3/11/2021	9:36:00	9.309	11.393	
3/11/2021	9:37:00	8.934	11.739	
3/11/2021	9:38:00	9.036	11.608	
3/11/2021	9:39:00	9.029	11.625	
3/11/2021	9:40:00	9.66	11.007	
3/11/2021	9:41:00	10.092	10.575	
3/11/2021	9:42:00	9.576	11.093	
3/11/2021	9:43:00	9.771	10.886	
3/11/2021	9:44:00	9.61	11.065	
3/11/2021	9:45:00	10.376	10.286	
3/11/2021	9:46:00	10.499	10.177	
3/11/2021	9:47:00	10.27	9.872	
3/11/2021	9:48:00	10.843	10.435	
3/11/2021	9:49:00	10.847	10.44	SYS O2/CO2
3/11/2021	9:50:00	6.544	6.609	
3/11/2021	9:51:00	0.11	0.137	
3/11/2021	9:52:00	0.094	0.102	SYS ZERO U
3/11/2021	9:53:00	9.901	8.257	
3/11/2021	9:54:00	10.837	10.476	
3/11/2021	9:55:00	10.837	10.479	DIR SPAN U2
3/11/2021	9:56:00	10.693	10.484	
3/11/2021	9:57:00	0.081	0.614	
3/11/2021	9:58:00	-0.001	-0.003	DIR ZERO

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	9:59:00	12.051	8.712	
3/11/2021	10:00:00	19.053	18.335	
3/11/2021	10:01:00	18.907	0.043	
3/11/2021	10:02:00	19.902	0.194	
3/11/2021	10:03:00	20.88	0.104	
3/11/2021	10:04:00	20.81	0.127	
3/11/2021	10:05:00	19.965	0.218	
3/11/2021	10:06:00	20.828	0.147	
3/11/2021	10:07:00	20.82	0.108	
3/11/2021	10:08:00	20.862	0.089	
3/11/2021	10:09:00	20.882	0.088	
3/11/2021	10:10:00	14.33	6.342	
3/11/2021	10:11:00	9.375	11.188	
3/11/2021	10:12:00	9.342	11.232	
3/11/2021	10:13:00	10.155	10.439	
3/11/2021	10:14:00	9.904	10.693	
3/11/2021	10:15:00	10.084	10.523	
3/11/2021	10:16:00	10.339	10.276	
3/11/2021	10:17:00	10.7	9.921	
3/11/2021	10:18:00	10.457	10.172	
3/11/2021	10:19:00	10.583	10.039	
3/11/2021	10:20:00	9.873	10.739	RUN 1 Hg U2
3/11/2021	10:21:00	9.757	10.854	
3/11/2021	10:22:00	9.472	11.135	
3/11/2021	10:23:00	10.23	10.392	
3/11/2021	10:24:00	10.538	10.094	
3/11/2021	10:25:00	10.063	10.564	
3/11/2021	10:26:00	9.068	11.542	
3/11/2021	10:27:00	8.829	11.776	
3/11/2021	10:28:00	8.883	11.713	
3/11/2021	10:29:00	9.828	10.792	
3/11/2021	10:30:00	10.101	10.517	
3/11/2021	10:31:00	9.692	10.925	
3/11/2021	10:32:00	9.728	10.889	
3/11/2021	10:33:00	9.837	10.78	
3/11/2021	10:34:00	10.054	10.607	
3/11/2021	10:35:00	9.359	11.506	
3/11/2021	10:36:00	9.252	11.316	
3/11/2021	10:37:00	8.76	11.845	
3/11/2021	10:38:00	9.118	11.478	
3/11/2021	10:39:00	9.582	11.036	
3/11/2021	10:40:00	9.557	11.056	
3/11/2021	10:41:00	9.562	11.049	
3/11/2021	10:42:00	10.026	10.593	
3/11/2021	10:43:00	9.263	11.346	

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	10:44:00	9.601	11.013	
3/11/2021	10:45:00	9.626	10.994	
3/11/2021	10:46:00	10.137	10.485	
3/11/2021	10:47:00	9.579	11.034	
3/11/2021	10:48:00	9.733	10.88	
3/11/2021	10:49:00	9.612	10.995	
3/11/2021	10:50:00	10.333	10.283	
3/11/2021	10:51:00	10.051	10.567	
3/11/2021	10:52:00	9.611	11.001	
3/11/2021	10:53:00	9.403	11.205	
3/11/2021	10:54:00	10.224	10.388	
3/11/2021	10:55:00	10.245	10.378	
3/11/2021	10:56:00	9.924	10.695	
3/11/2021	10:57:00	9.732	10.837	
3/11/2021	10:58:00	9.399	11.163	
3/11/2021	10:59:00	9.598	11.012	
3/11/2021	11:00:00	9.878	10.741	
3/11/2021	11:01:00	9.992	10.624	
3/11/2021	11:02:00	10.294	10.34	
3/11/2021	11:03:00	9.504	11.116	
3/11/2021	11:04:00	9.837	10.789	
3/11/2021	11:05:00	10.064	10.62	
3/11/2021	11:06:00	10.432	9.876	
3/11/2021	11:07:00	10.626	10.014	
3/11/2021	11:08:00	9.874	10.794	
3/11/2021	11:09:00	9.244	11.407	
3/11/2021	11:10:00	9.263	11.386	
3/11/2021	11:11:00	9.066	11.605	
3/11/2021	11:12:00	9.849	10.868	
3/11/2021	11:13:00	9.877	10.85	
3/11/2021	11:14:00	10.16	10.592	
3/11/2021	11:15:00	9.938	10.787	
3/11/2021	11:16:00	9.483	11.277	
3/11/2021	11:17:00	9.367	11.386	
3/11/2021	11:18:00	10.124	10.6	
3/11/2021	11:19:00	9.86	10.835	
3/11/2021	11:20:00	10.113	10.57	
Run 1 Average		9.74	10.90	
3/11/2021	11:21:00	10.15	10.535	
3/11/2021	11:22:00	10.883	9.862	
3/11/2021	11:23:00	10.848	10.362	
3/11/2021	11:24:00	10.851	10.363	SYS SPAN U
3/11/2021	11:25:00	9.487	9.199	
3/11/2021	11:26:00	0.127	0.115	

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	11:27:00	-0.003	0.014	SYS ZERO U
3/11/2021	11:28:00	-0.006	-0.03	
3/11/2021	11:29:00	-0.006	-0.03	DIR ZERO U:
3/11/2021	11:30:00	8.343	7.23	
3/11/2021	11:31:00	10.837	10.38	DIR SPAN U:
3/11/2021	11:32:00	10.175	10.396	
3/11/2021	11:33:00	10.31	10.298	
3/11/2021	11:34:00	10.114	10.491	
3/11/2021	11:35:00	9.9	10.693	
3/11/2021	11:36:00	9.085	11.497	
3/11/2021	11:37:00	9.406	11.182	
3/11/2021	11:38:00	9.352	11.238	
3/11/2021	11:39:00	9.323	11.276	
3/11/2021	11:40:00	9.531	11.072	RUN 2 HG U:
3/11/2021	11:41:00	9.762	10.833	
3/11/2021	11:42:00	9.286	11.3	
3/11/2021	11:43:00	9.304	11.301	
3/11/2021	11:44:00	10.38	10.232	
3/11/2021	11:45:00	9.566	11.017	
3/11/2021	11:46:00	9.247	11.339	
3/11/2021	11:47:00	9.07	11.503	
3/11/2021	11:48:00	8.97	11.61	
3/11/2021	11:49:00	9.866	10.711	
3/11/2021	11:50:00	10.139	10.44	
3/11/2021	11:51:00	9.63	10.942	
3/11/2021	11:52:00	9.969	10.594	
3/11/2021	11:53:00	9.797	10.77	
3/11/2021	11:54:00	10.431	10.14	
3/11/2021	11:55:00	10.168	10.398	
3/11/2021	11:56:00	9.856	10.696	
3/11/2021	11:57:00	9.217	11.326	
3/11/2021	11:58:00	9.427	11.114	
3/11/2021	11:59:00	9.369	11.167	
3/11/2021	12:00:00	9.441	11.105	
3/11/2021	12:01:00	9.598	10.949	
3/11/2021	12:02:00	10.197	10.356	
3/11/2021	12:03:00	9.961	10.596	
3/11/2021	12:04:00	10.499	10.061	
3/11/2021	12:05:00	10.451	10.106	
3/11/2021	12:06:00	10.469	10.073	
3/11/2021	12:07:00	9.076	11.439	
3/11/2021	12:08:00	9.607	10.842	
3/11/2021	12:09:00	10	10.657	
3/11/2021	12:10:00	9.59	10.936	

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	12:11:00	9.647	10.857	
3/11/2021	12:12:00	9.571	10.941	
3/11/2021	12:13:00	9.725	10.787	
3/11/2021	12:14:00	10.08	10.445	
3/11/2021	12:15:00	9.593	10.915	
3/11/2021	12:16:00	9.674	10.843	
3/11/2021	12:17:00	9.48	11.029	
3/11/2021	12:18:00	9.859	10.654	
3/11/2021	12:19:00	9.495	11.008	
3/11/2021	12:20:00	9.446	11.056	
3/11/2021	12:21:00	9.59	10.916	
3/11/2021	12:22:00	9.651	10.853	
3/11/2021	12:23:00	10.052	10.366	
3/11/2021	12:24:00	9.797	10.652	
3/11/2021	12:25:00	9.674	10.831	
3/11/2021	12:26:00	9.793	10.713	
3/11/2021	12:27:00	9.292	11.209	
3/11/2021	12:28:00	9.645	10.85	
3/11/2021	12:29:00	8.98	11.503	
3/11/2021	12:30:00	9.476	11.02	
3/11/2021	12:31:00	9.132	11.357	
3/11/2021	12:32:00	9.389	11.098	
3/11/2021	12:33:00	10.225	10.278	
3/11/2021	12:34:00	9.968	10.531	
3/11/2021	12:35:00	10.001	10.493	
3/11/2021	12:36:00	10.096	10.404	
3/11/2021	12:37:00	9.614	11.001	
3/11/2021	12:38:00	8.776	11.521	
3/11/2021	12:39:00	8.786	11.465	
3/11/2021	12:40:00	8.817	11.463	
Run 2 Average		9.66	10.86	
3/11/2021	12:41:00	8.844	11.433	
3/11/2021	12:42:00	8.844	11.327	
3/11/2021	12:43:00	8.848	11.216	
3/11/2021	12:44:00	8.87	11.135	
3/11/2021	12:45:00	9.259	10.916	
3/11/2021	12:46:00	10.188	10.198	
3/11/2021	12:47:00	10.308	10.125	
3/11/2021	12:48:00	10.681	10.229	
3/11/2021	12:49:00	10.786	10.336	
3/11/2021	12:50:00	10.788	10.341	
3/11/2021	12:51:00	10.795	10.333	SYS SPAN U
3/11/2021	12:52:00	10.817	10.314	
3/11/2021	12:53:00	6.196	6.056	

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	12:54:00	0.107	0.062	
3/11/2021	12:55:00	0.124	0.035	
3/11/2021	12:56:00	0.065	0.022	SYS ZERO U
3/11/2021	12:57:00	-0.071	-0.009	
3/11/2021	12:58:00	-0.012	-0.04	
3/11/2021	12:59:00	-0.013	-0.041	
3/11/2021	13:00:00	-0.015	-0.039	
3/11/2021	13:01:00	-0.017	-0.038	
3/11/2021	13:02:00	-0.013	-0.032	
3/11/2021	13:03:00	-0.017	-0.03	
3/11/2021	13:04:00	-0.018	-0.03	
3/11/2021	13:05:00	-0.018	-0.03	
3/11/2021	13:06:00	-0.018	-0.03	
3/11/2021	13:07:00	-0.017	-0.03	DIR ZERO U:
3/11/2021	13:08:00	9.17	2.186	
3/11/2021	13:09:00	10.801	10.344	
3/11/2021	13:10:00	10.802	10.355	DIR SPAN U:
3/11/2021	13:11:00	10.2	10.251	
3/11/2021	13:12:00	10.262	10.235	
3/11/2021	13:13:00	10.428	10.078	
3/11/2021	13:14:00	9.608	10.889	
3/11/2021	13:15:00	9.72	10.769	RUN 3 HG
3/11/2021	13:16:00	9.843	10.65	
3/11/2021	13:17:00	9.576	10.754	
3/11/2021	13:18:00	9.682	10.956	
3/11/2021	13:19:00	9.392	11.268	
3/11/2021	13:20:00	9.79	10.545	
3/11/2021	13:21:00	9.775	10.742	
3/11/2021	13:22:00	9.239	11.239	
3/11/2021	13:23:00	9.842	10.66	
3/11/2021	13:24:00	10.312	10.19	
3/11/2021	13:25:00	9.202	11.279	
3/11/2021	13:26:00	8.589	11.898	
3/11/2021	13:27:00	9.217	11.283	
3/11/2021	13:28:00	10.131	10.383	
3/11/2021	13:29:00	10.332	10.191	
3/11/2021	13:30:00	9.756	10.753	
3/11/2021	13:31:00	10.291	10.235	
3/11/2021	13:32:00	10.284	10.233	
3/11/2021	13:33:00	9.874	10.634	
3/11/2021	13:34:00	9.178	11.318	
3/11/2021	13:35:00	8.911	11.579	
3/11/2021	13:36:00	8.943	11.547	
3/11/2021	13:37:00	9.86	10.647	

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	13:38:00	9.642	10.9	
3/11/2021	13:39:00	9.171	11.368	
3/11/2021	13:40:00	9.078	11.749	
3/11/2021	13:41:00	9.126	10.974	
3/11/2021	13:42:00	10.106	10.388	
3/11/2021	13:43:00	10.475	10.036	
3/11/2021	13:44:00	9.797	10.706	
3/11/2021	13:45:00	9.832	10.659	
3/11/2021	13:46:00	9.395	11.095	
3/11/2021	13:47:00	9.399	11.094	
3/11/2021	13:48:00	9.493	11.006	
3/11/2021	13:49:00	9.47	11.023	
3/11/2021	13:50:00	9.194	11.301	
3/11/2021	13:51:00	9.649	10.852	
3/11/2021	13:52:00	9.61	10.886	
3/11/2021	13:53:00	10.224	10.285	
3/11/2021	13:54:00	10.119	10.394	
3/11/2021	13:55:00	9.793	10.712	
3/11/2021	13:56:00	10.159	10.348	
3/11/2021	13:57:00	10.358	10.144	
3/11/2021	13:58:00	10.368	10.139	
3/11/2021	13:59:00	11.15	9.58	
3/11/2021	14:00:00	10.49	10.57	
3/11/2021	14:01:00			CONDITIONI
3/11/2021	14:02:00			
3/11/2021	14:03:00			
3/11/2021	14:04:00			
3/11/2021	14:05:00			
3/11/2021	14:06:00			
3/11/2021	14:07:00			
3/11/2021	14:08:00			
3/11/2021	14:09:00			
3/11/2021	14:10:00			
3/11/2021	14:11:00			
3/11/2021	14:12:00			
3/11/2021	14:13:00	9.455	11.032	
3/11/2021	14:14:00	10.127	10.376	
3/11/2021	14:15:00	10.45	10.062	
Run 3 Average		9.75	10.76	
3/11/2021	14:16:00	9.709	10.127	
3/11/2021	14:17:00	10.796	10.337	
3/11/2021	14:18:00	10.811	10.331	
3/11/2021	14:19:00	10.816	10.326	
3/11/2021	14:20:00	10.824	10.317	

Desert View Power UNIT 2
3/11/2021

Date	Time	O2-U2 %	CO2-U2 %	
3/11/2021	14:21:00	10.83	10.311	
3/11/2021	14:22:00	10.833	10.311	SPAN O2
3/11/2021	14:23:00	4.065	3.91	
3/11/2021	14:24:00	0.098	0.059	
3/11/2021	14:25:00	0.057	0.038	
3/11/2021	14:26:00	0.063	0.04	SYS ZERO
3/11/2021	14:27:00	-0.177	-0.004	
3/11/2021	14:28:00	-0.018	-0.017	DIR ZERO
3/11/2021	14:29:00	13.526	-0.013	
3/11/2021	14:30:00	19.09	9.703	
3/11/2021	14:31:00	19.095	18.854	
3/11/2021	14:32:00	19.09	18.857	
3/11/2021	14:33:00	19.091	18.858	DIR HIGH U2
3/11/2021	14:34:00	13.972	12.039	
3/11/2021	14:35:00	10.808	10.365	
3/11/2021	14:36:00	10.806	10.364	DIR SPAN
3/11/2021	14:37:00	10.802	10.368	
3/11/2021	14:38:00	10.802	10.366	
3/11/2021	14:39:00	10.805	10.362	
3/11/2021	14:40:00	10.807	10.36	
3/11/2021	14:41:00	10.803	10.36	DIR MID U2
3/11/2021	14:42:00	10.803	10.357	
3/11/2021	14:43:00	10.807	10.357	
3/11/2021	14:44:00	10.808	10.355	
3/11/2021	14:45:00	10.808	10.356	

Appendix A.2.3
Unit 2 Instrument Strip Charts

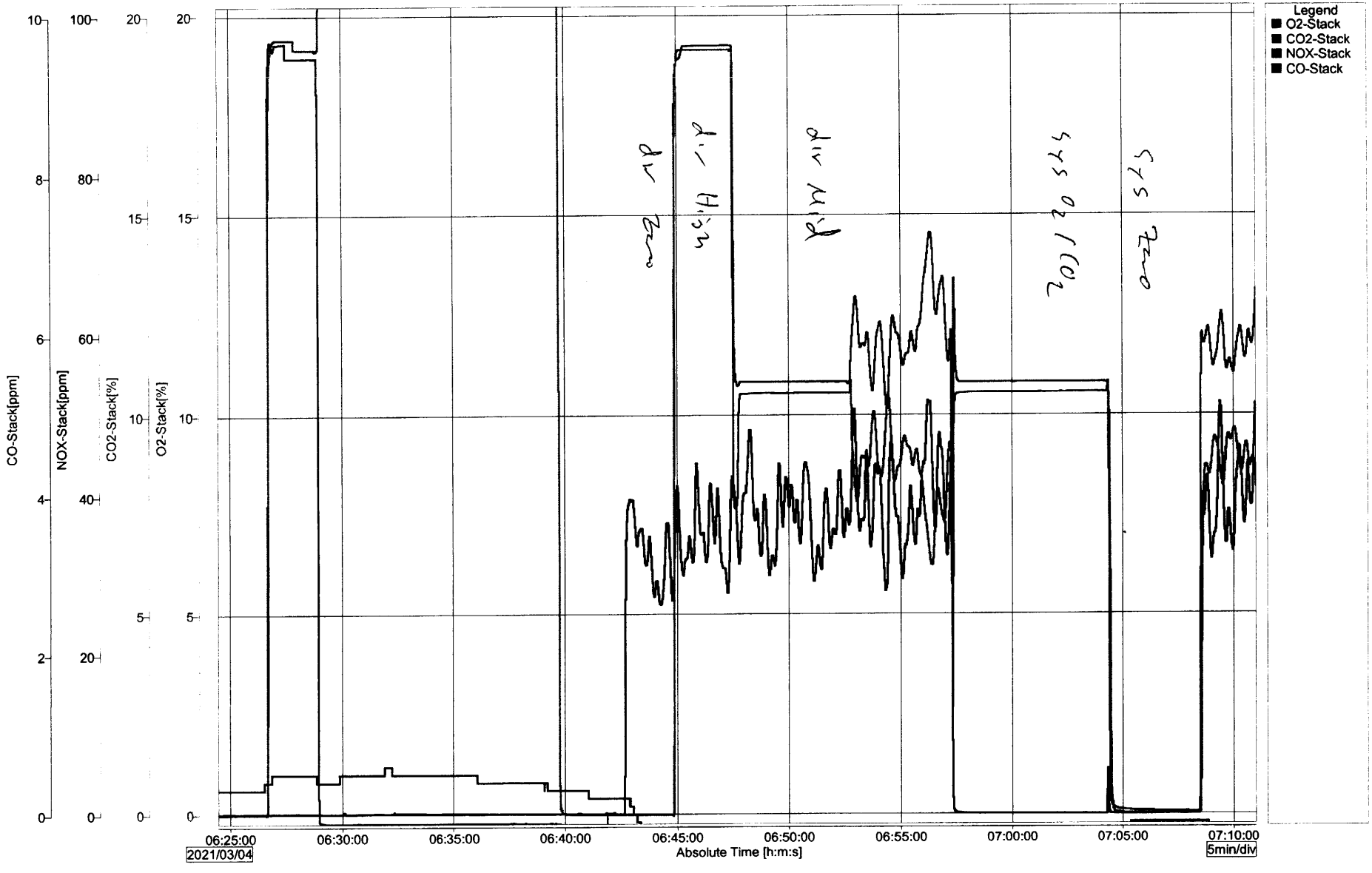
SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 2

DATE: 3/4/2021
BY: DW

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0.00		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

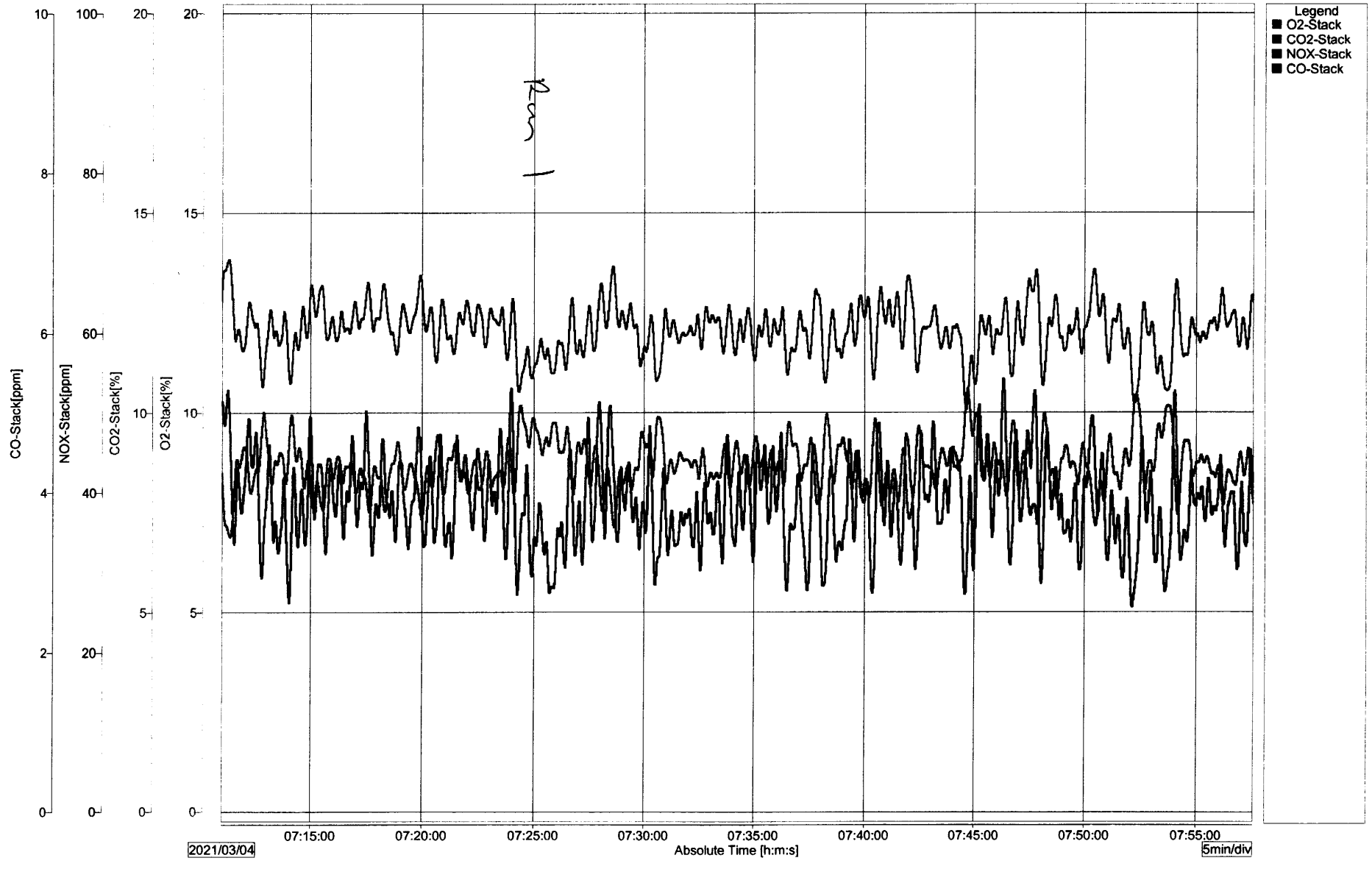
File Name	: 000351_TV 6_210304_062428.DSD	Start Time	: 2021/03/04 06:24:28.000
Device Type	: DX2000	Stop Time	: 2021/03/04 18:18:54.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000		



File Name : 000351_TV 6_210304_062428.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/04 06:24:28.000
Stop Time : 2021/03/04 18:18:54.000

Print Groups : GROUP 1
Print Range : 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000

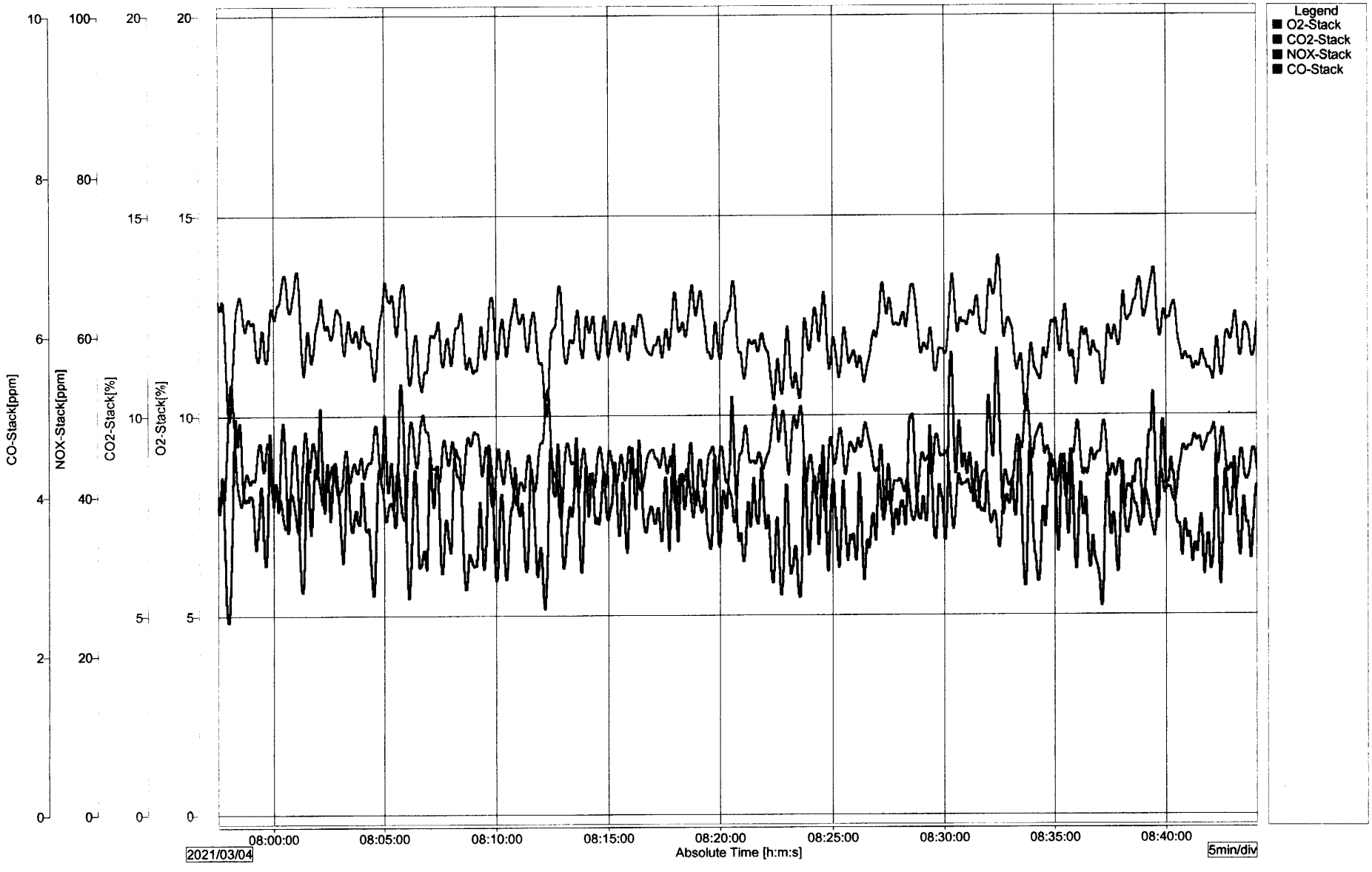


W002AS-006514-RT-2247

File Name : 000351_TV 6_210304_062428.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/04 06:24:28.000
Stop Time : 2021/03/04 18:18:54.000

Print Groups : GROUP 1
Print Range : 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000

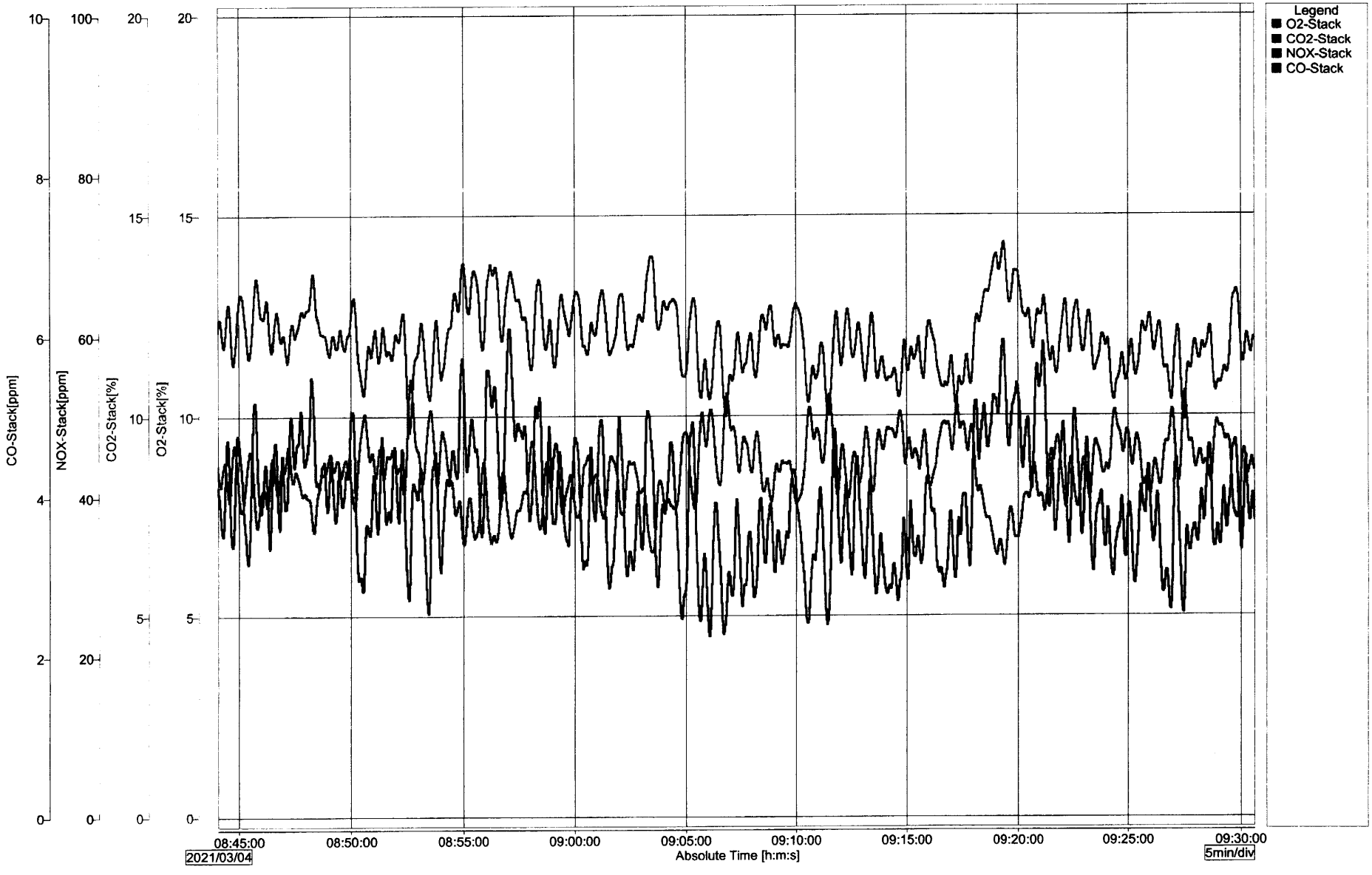


W002AS-006514-RT-2247

File Name : 000351_TV 6_210304_062428.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/04 06:24:28.000
Stop Time : 2021/03/04 18:18:54.000

Print Groups : GROUP 1
Print Range : 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000



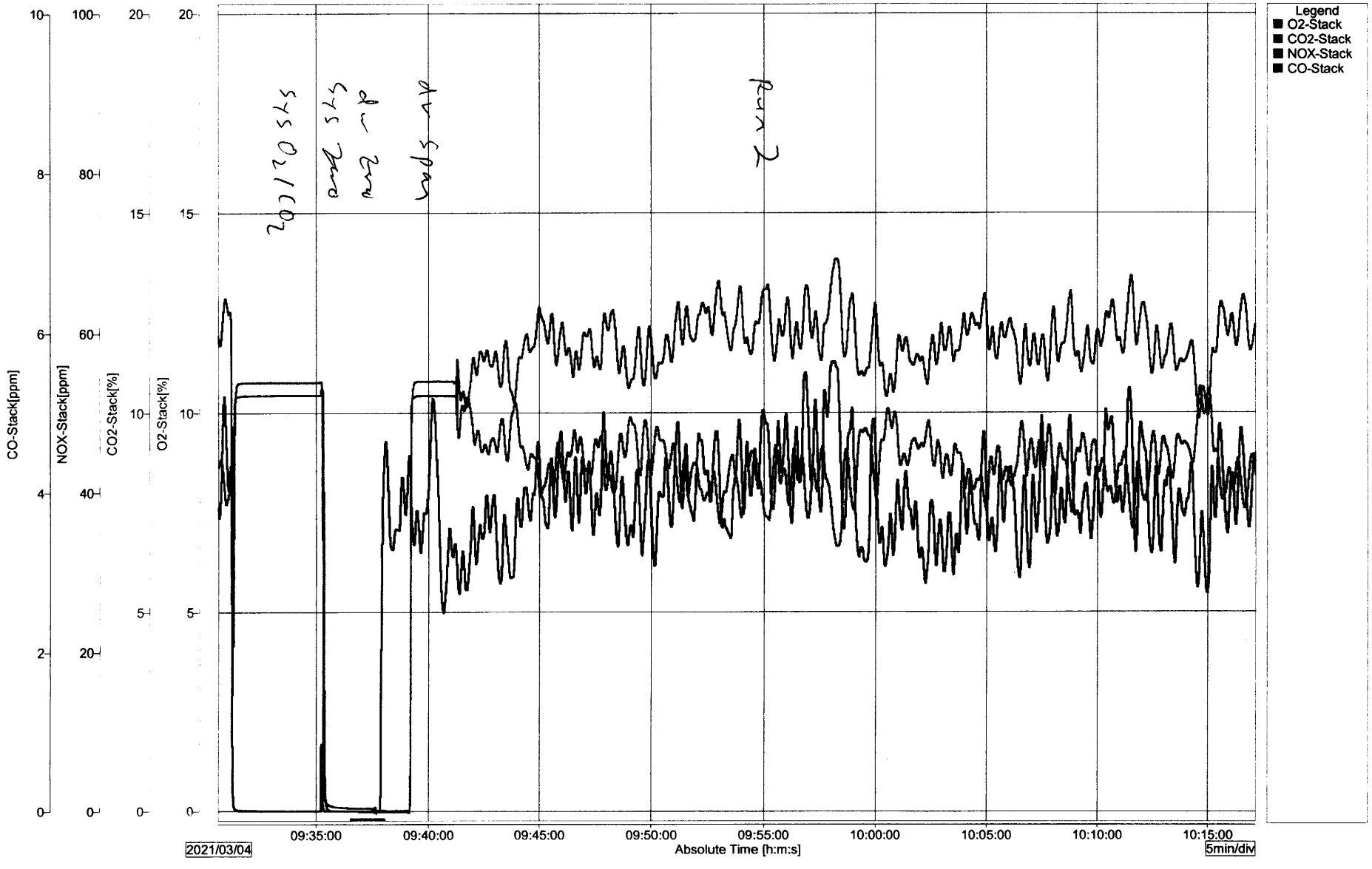
W002AS-006514-RT-2247

200 of 613

File Name : 000351_TV 6_210304_062428.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/04 06:24:28.000
Stop Time : 2021/03/04 18:18:54.000

Print Groups : GROUP 1
Print Range : 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000



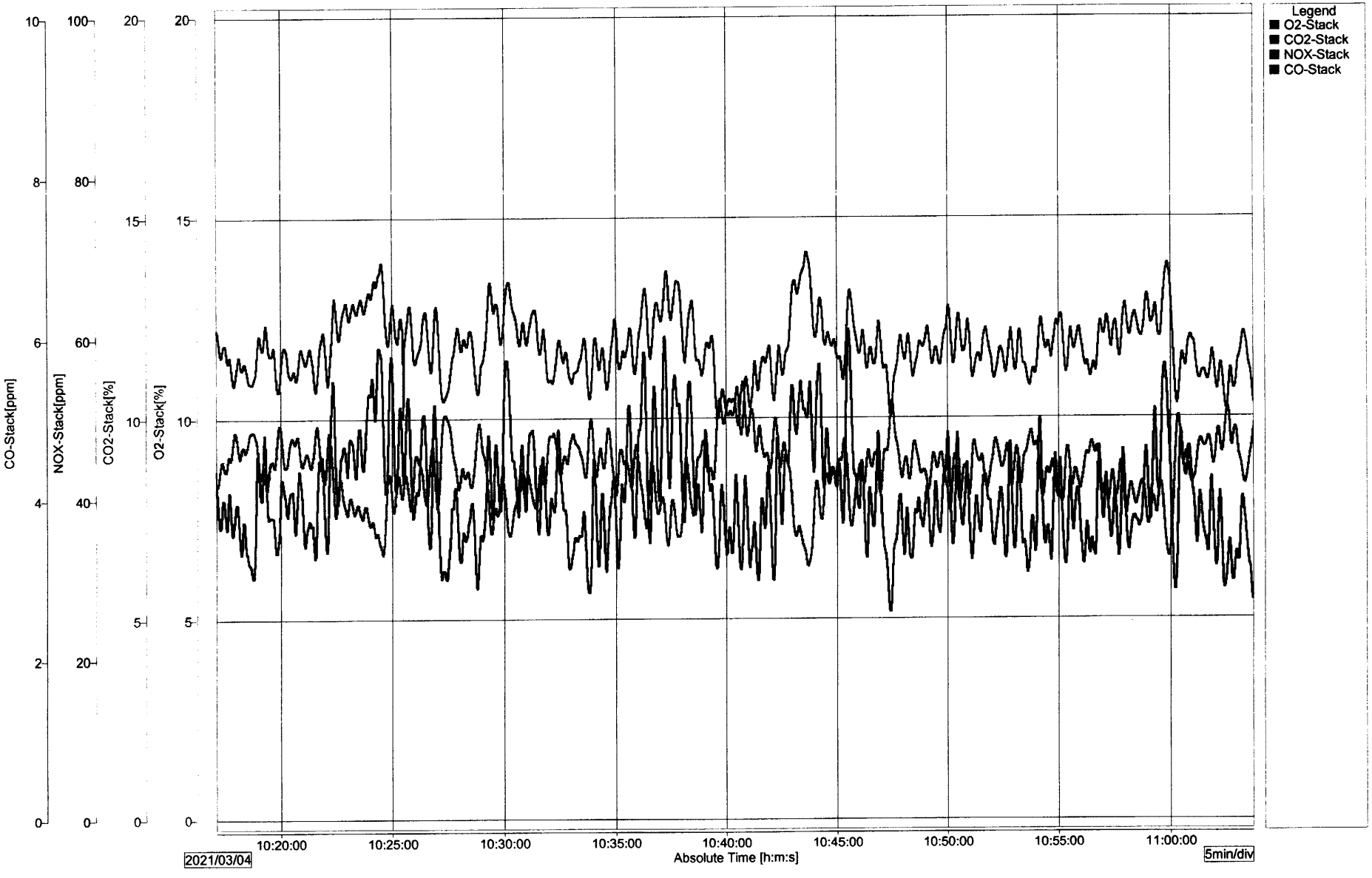
W002AS-006514-RT-2247

201 of 613

File Name : 000351_TV 6_210304_062428.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/04 06:24:28.000
Stop Time : 2021/03/04 18:18:54.000

Print Groups : GROUP 1
Print Range : 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000



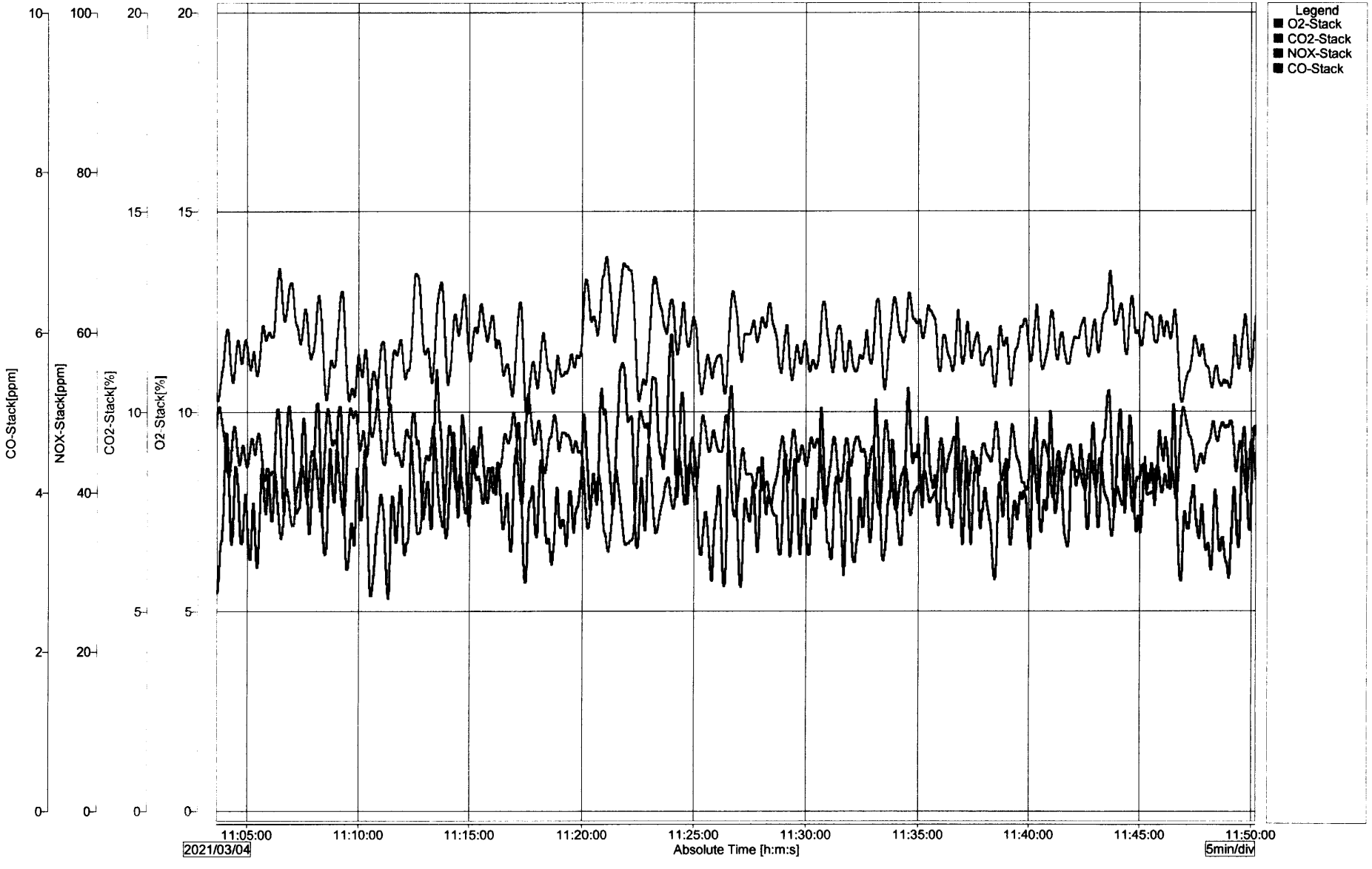
W002AS-006514-RT-2247

202 of 613

File Name : 000351_TV 6_210304_062428.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/04 06:24:28.000
Stop Time : 2021/03/04 18:18:54.000

Print Groups : GROUP 1
Print Range : 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000

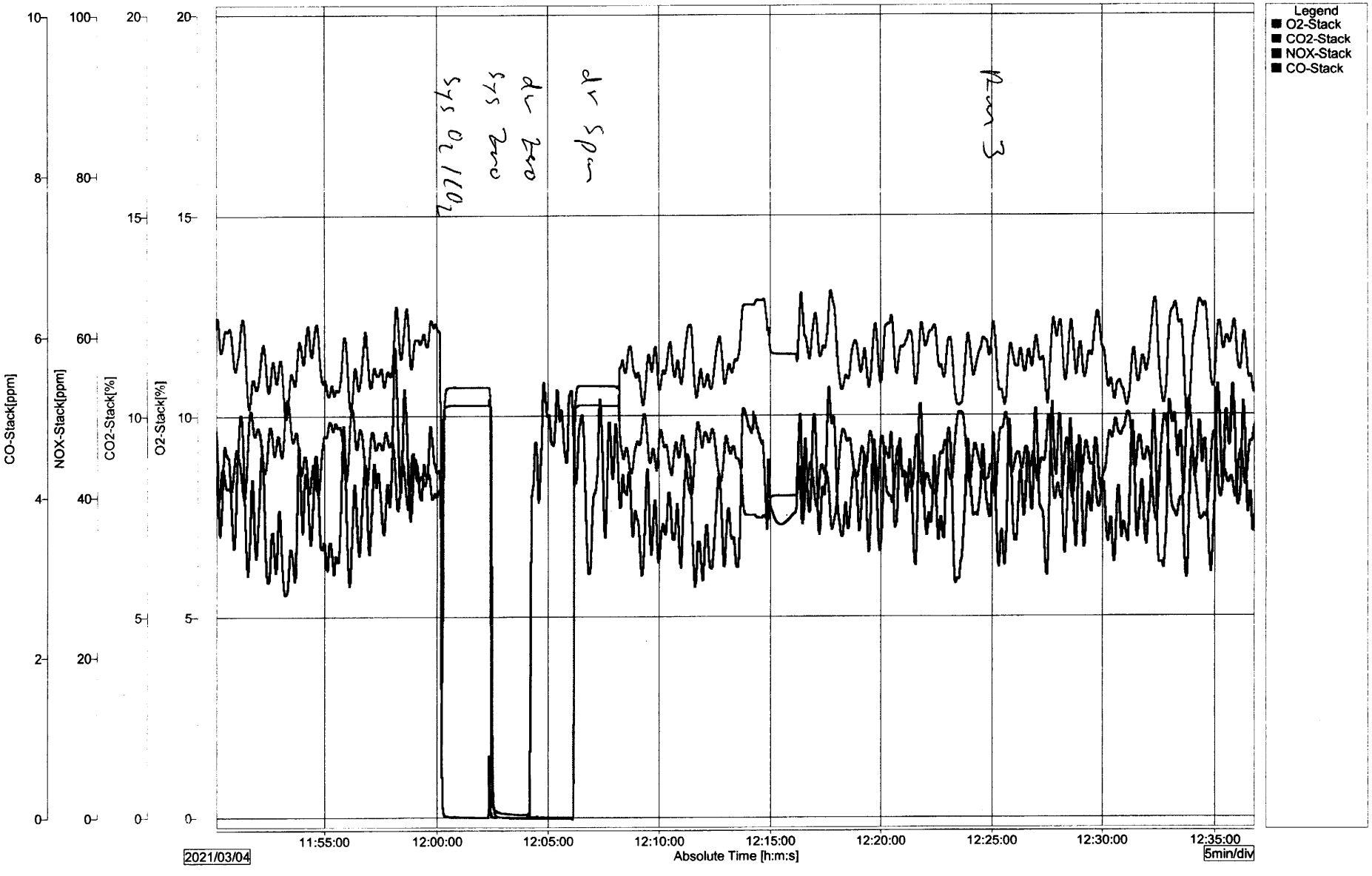


W002AS-006514-RT-2247

File Name : 000351_TV 6_210304_062428.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/04 06:24:28.000
Stop Time : 2021/03/04 18:18:54.000

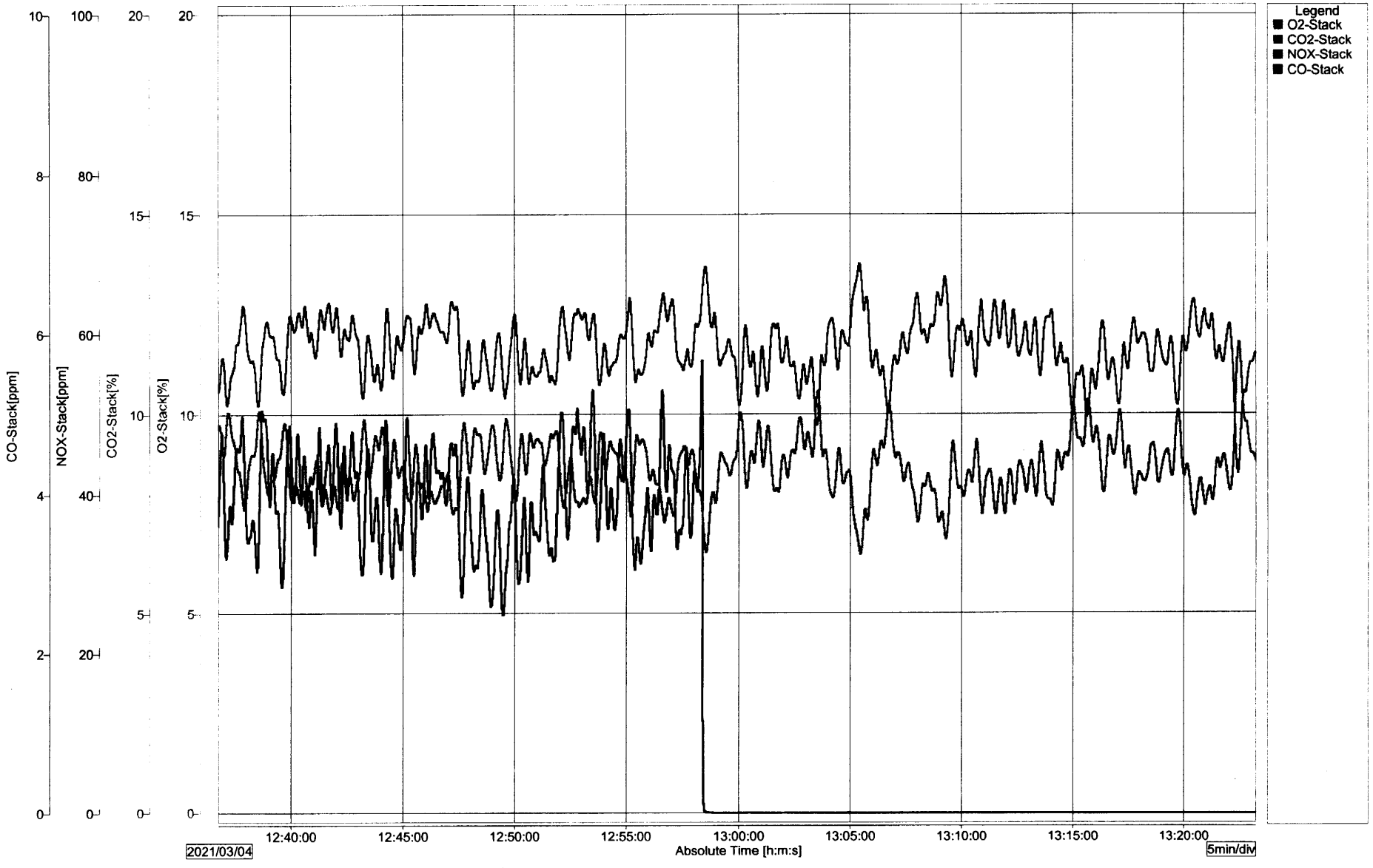
Print Groups : GROUP 1
Print Range : 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000



File Name : 000351_TV 6_210304_062428.DSD
Device Type : DX2000
Serial No. : S5U604838

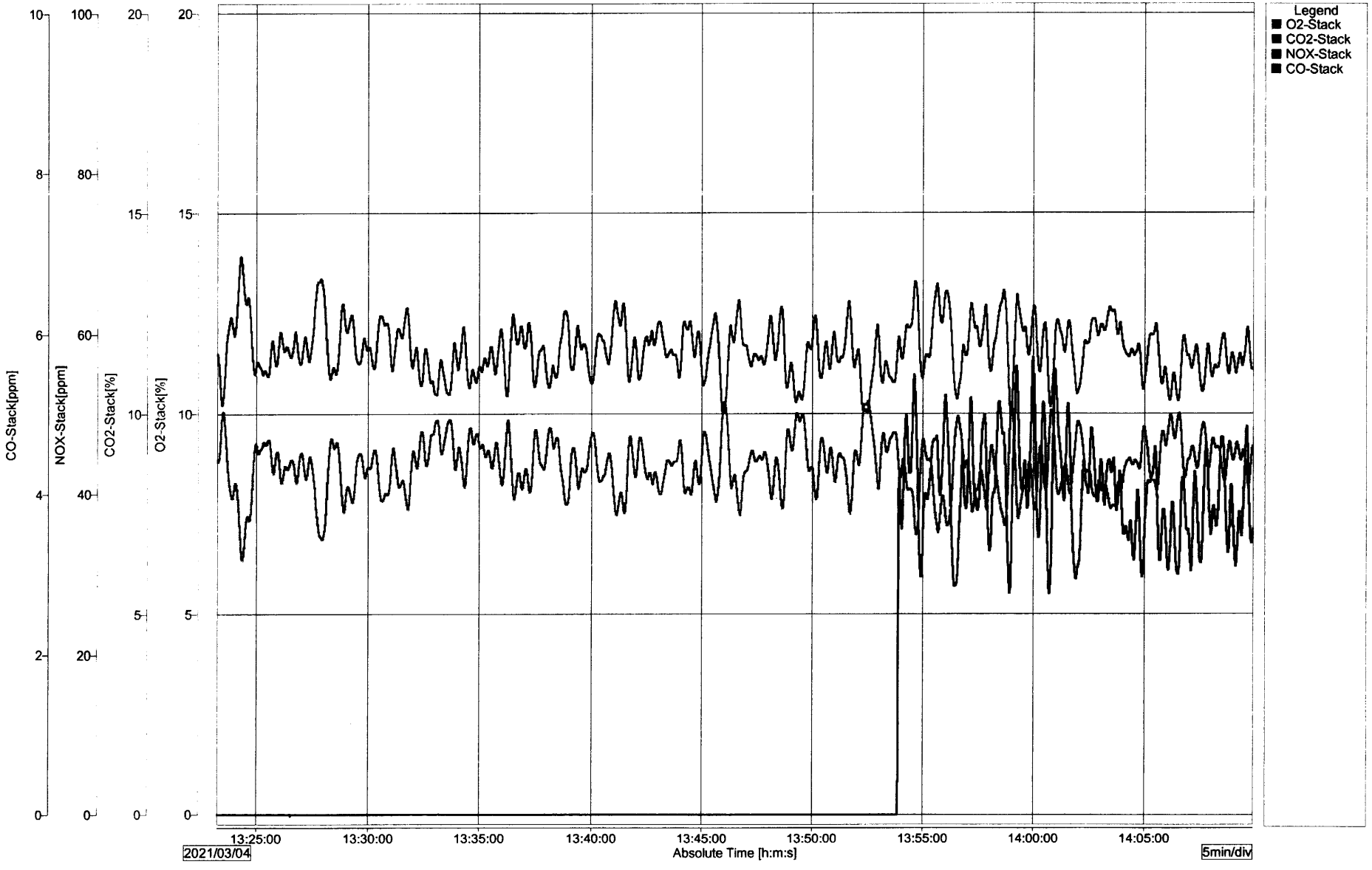
Start Time : 2021/03/04 06:24:28.000
Stop Time : 2021/03/04 18:18:54.000

Print Groups : GROUP 1
Print Range : 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000

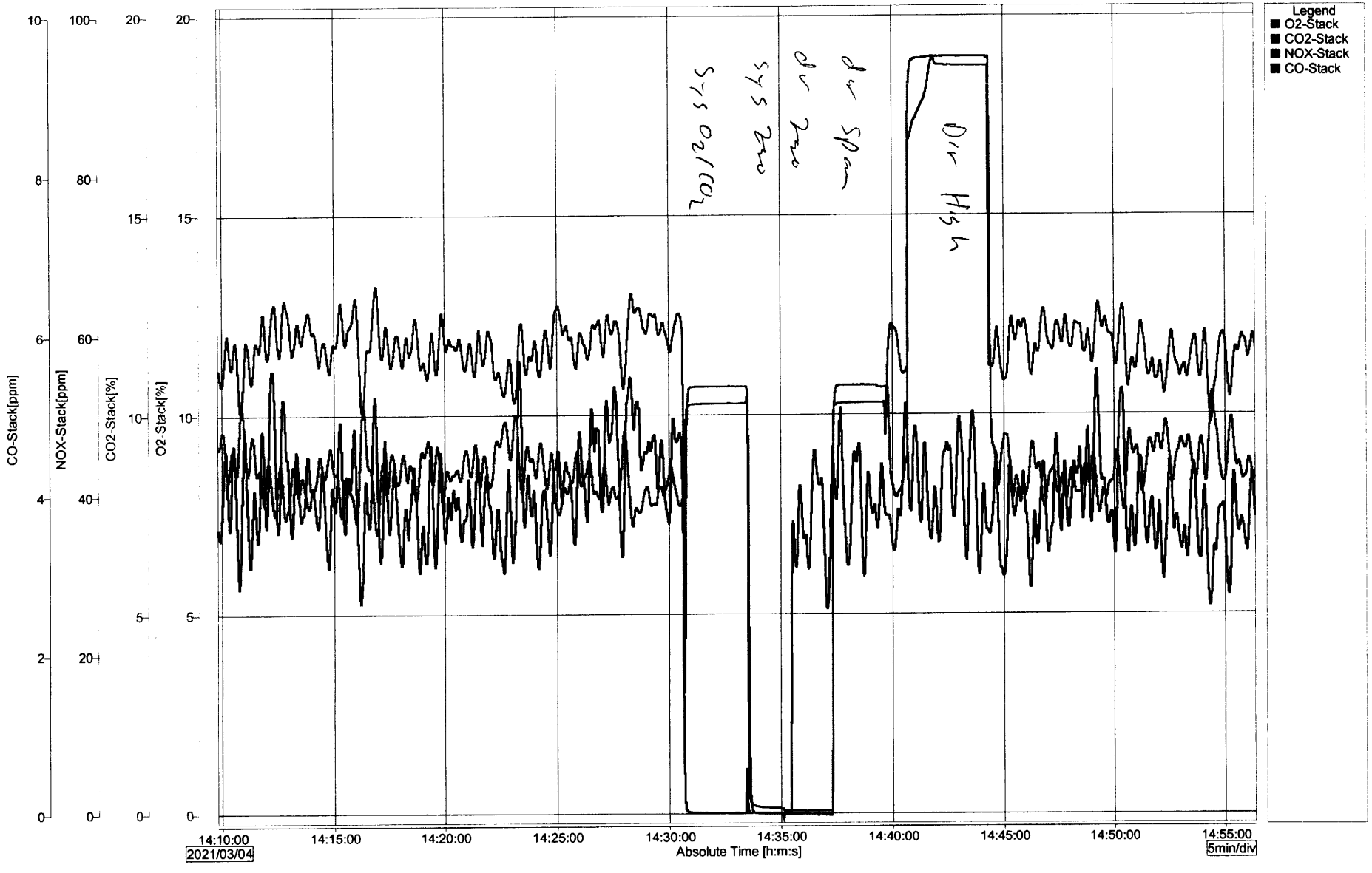


W002AS-006514-RT-2247

File Name	: 000351_TV 6_210304_062428.DSD		
Device Type	: DX2000	Start Time	: 2021/03/04 06:24:28.000
Serial No.	: S5U604838	Stop Time	: 2021/03/04 18:18:54.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000		



File Name	: 000351_TV 6_210304_062428.DSD	Start Time	: 2021/03/04 06:24:28.000
Device Type	: DX2000	Stop Time	: 2021/03/04 18:18:54.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/04 06:24:28.000 - 2021/03/04 18:18:54.000		



W002AS-006514-RT-2247

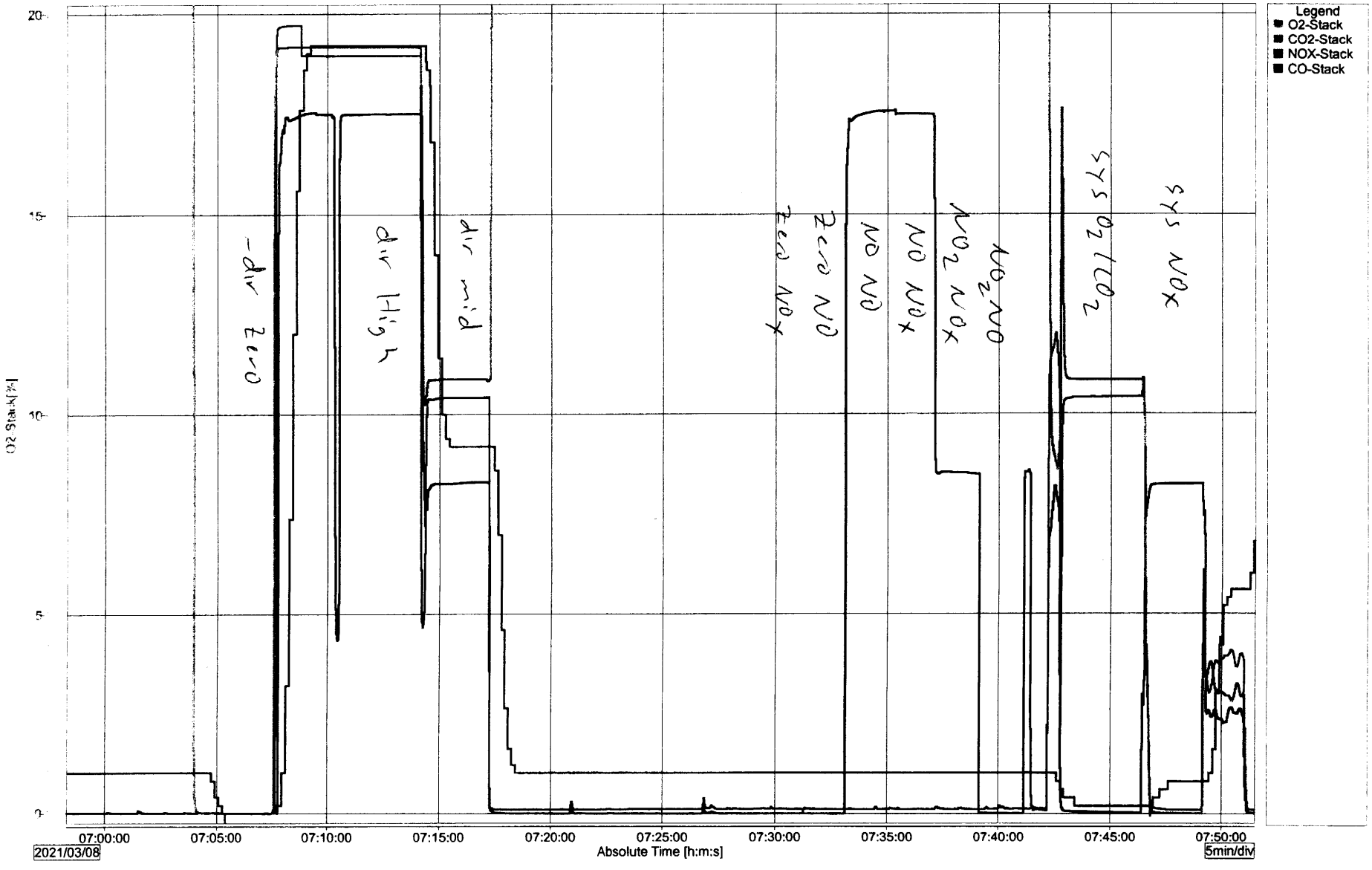
Montrose
SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 2

DATE: 3/8/2021
BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94
NO_x	DT0029993	41.3	CC244416	87
CO	DT0024950	4.6	ALM046645	9.64

File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		



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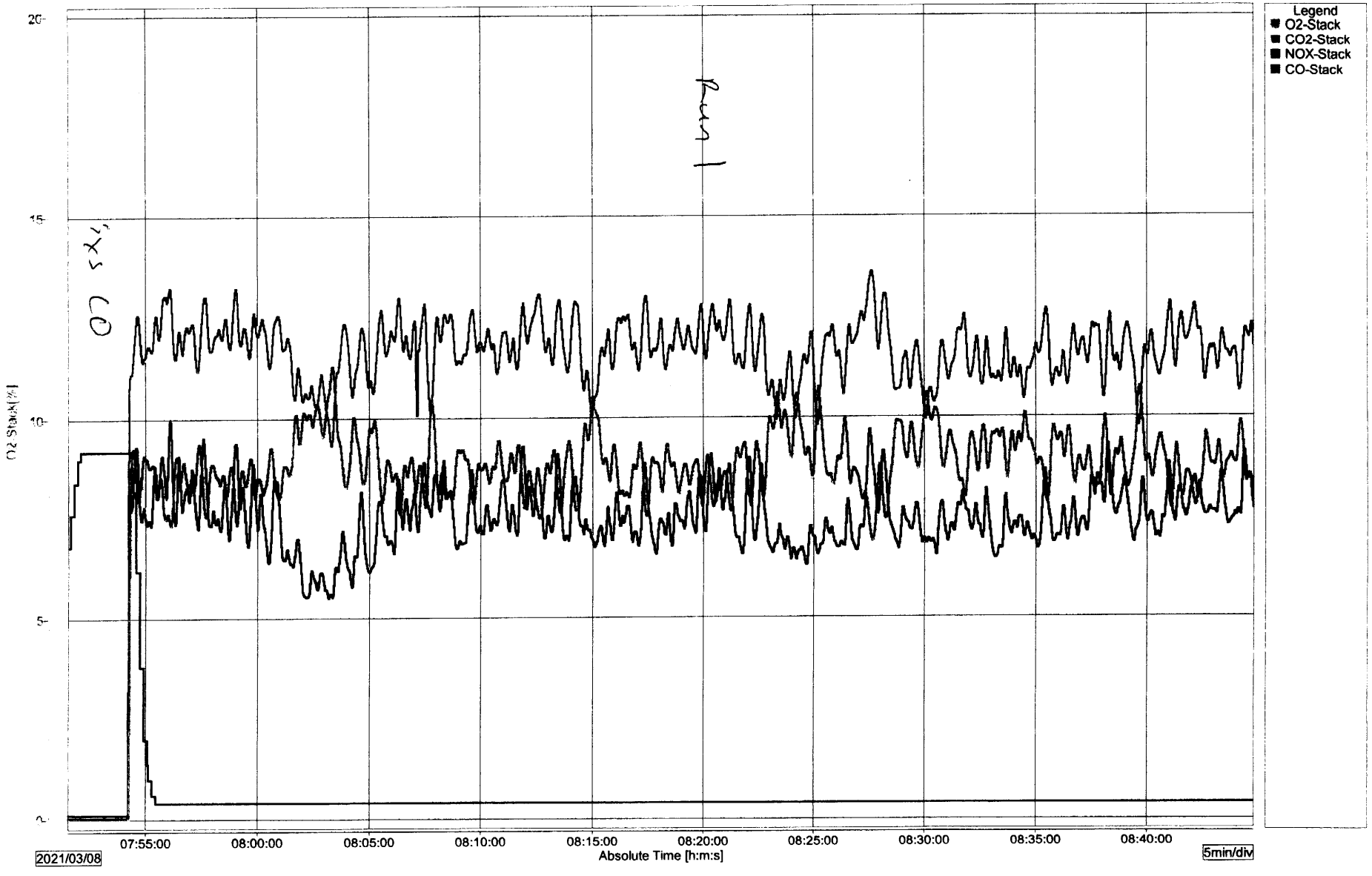
File Name : 000354_TV 6_210308_065818.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/08 06:58:18.000
Stop Time : 2021/03/09 06:58:16.000

Print Groups : GROUP 1
Print Range : 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000



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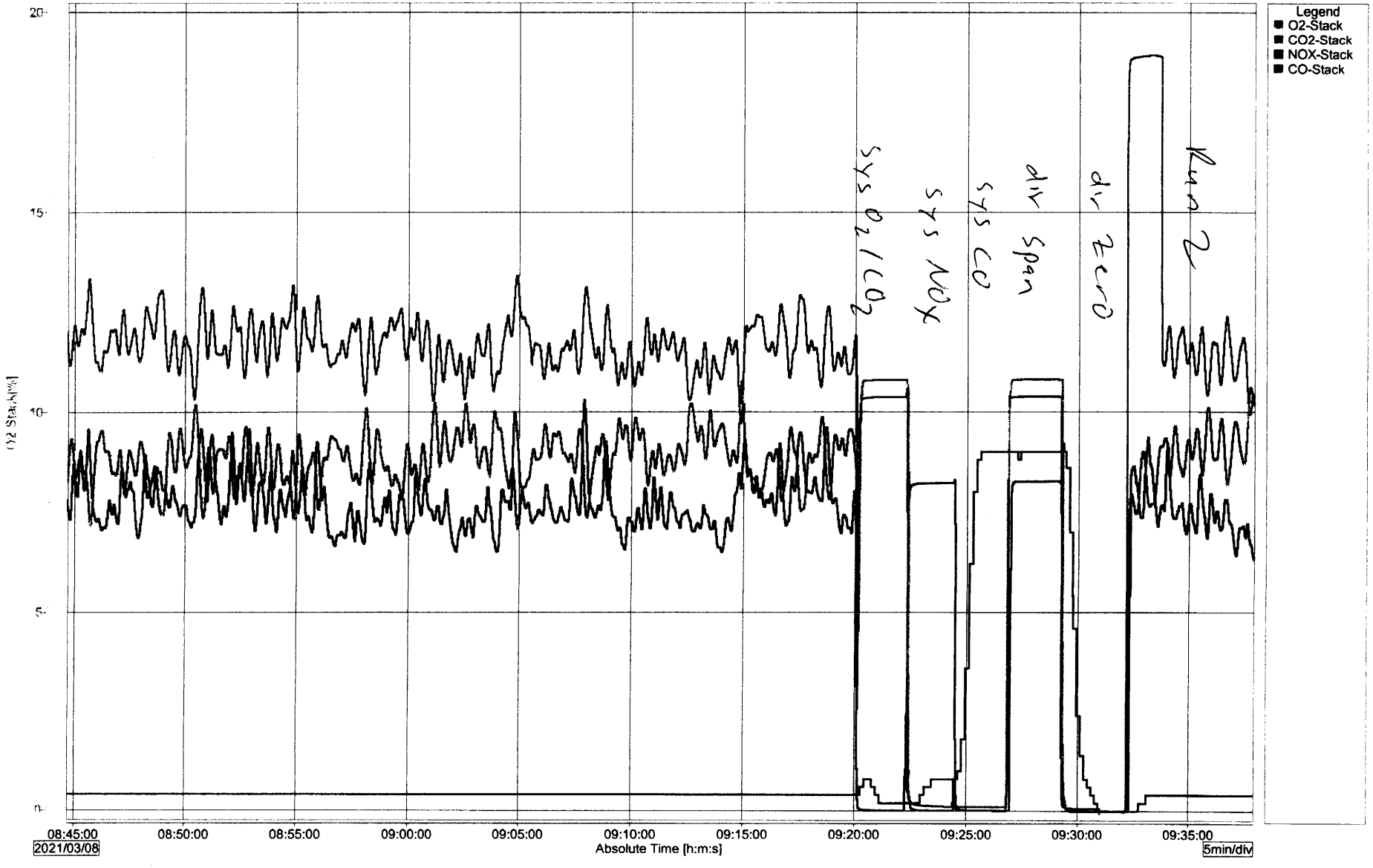
210 of 613

File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		



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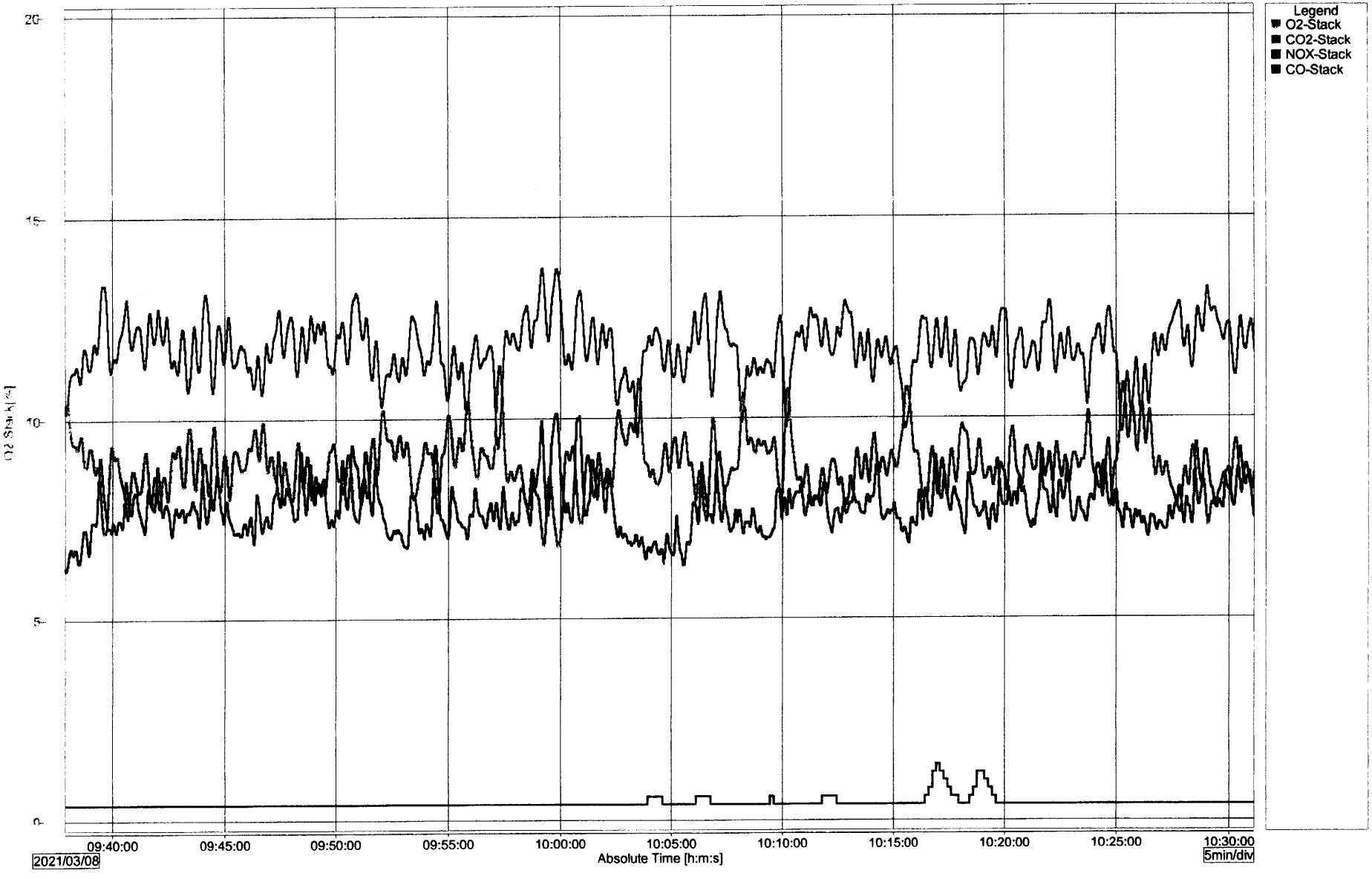
File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		



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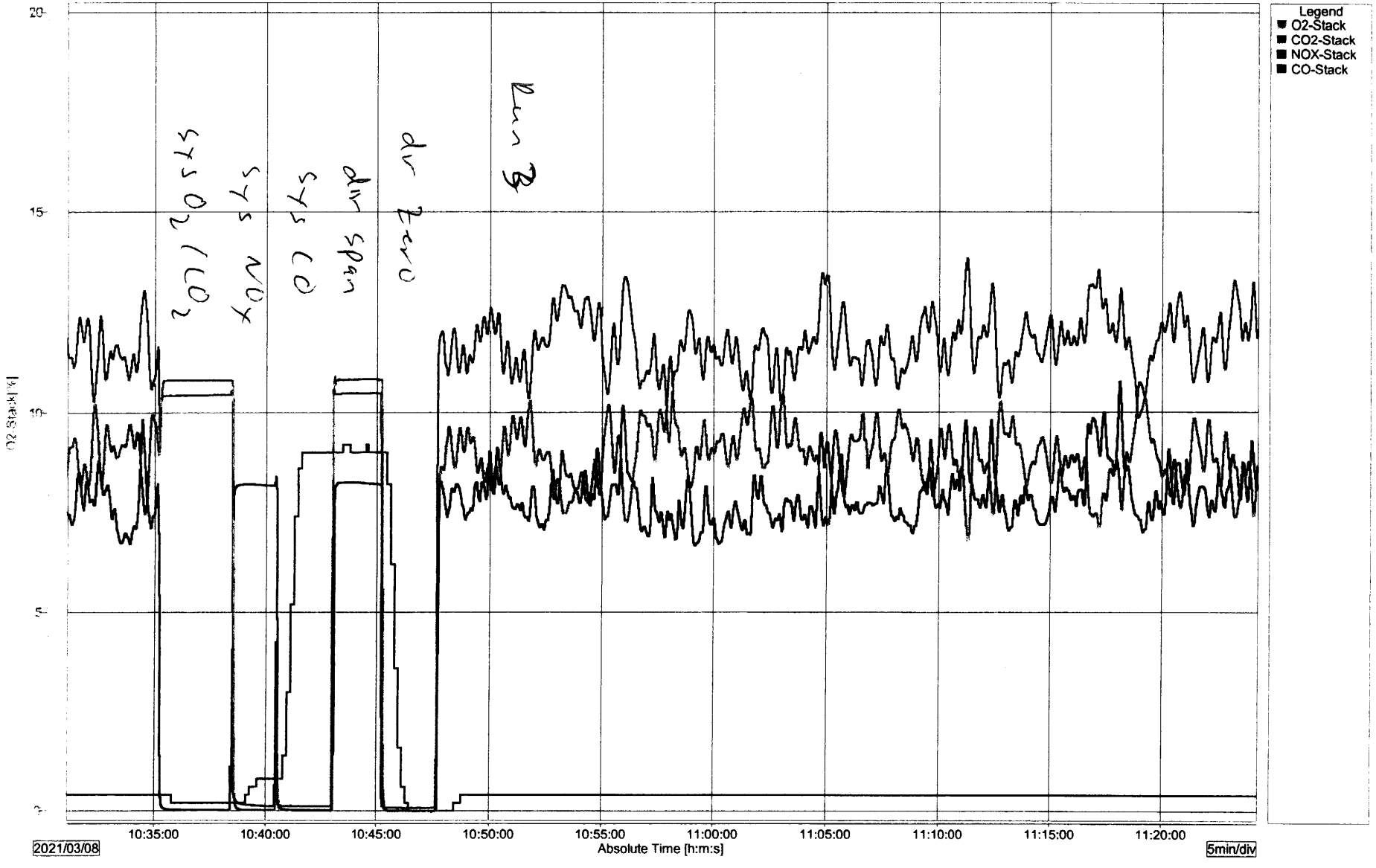
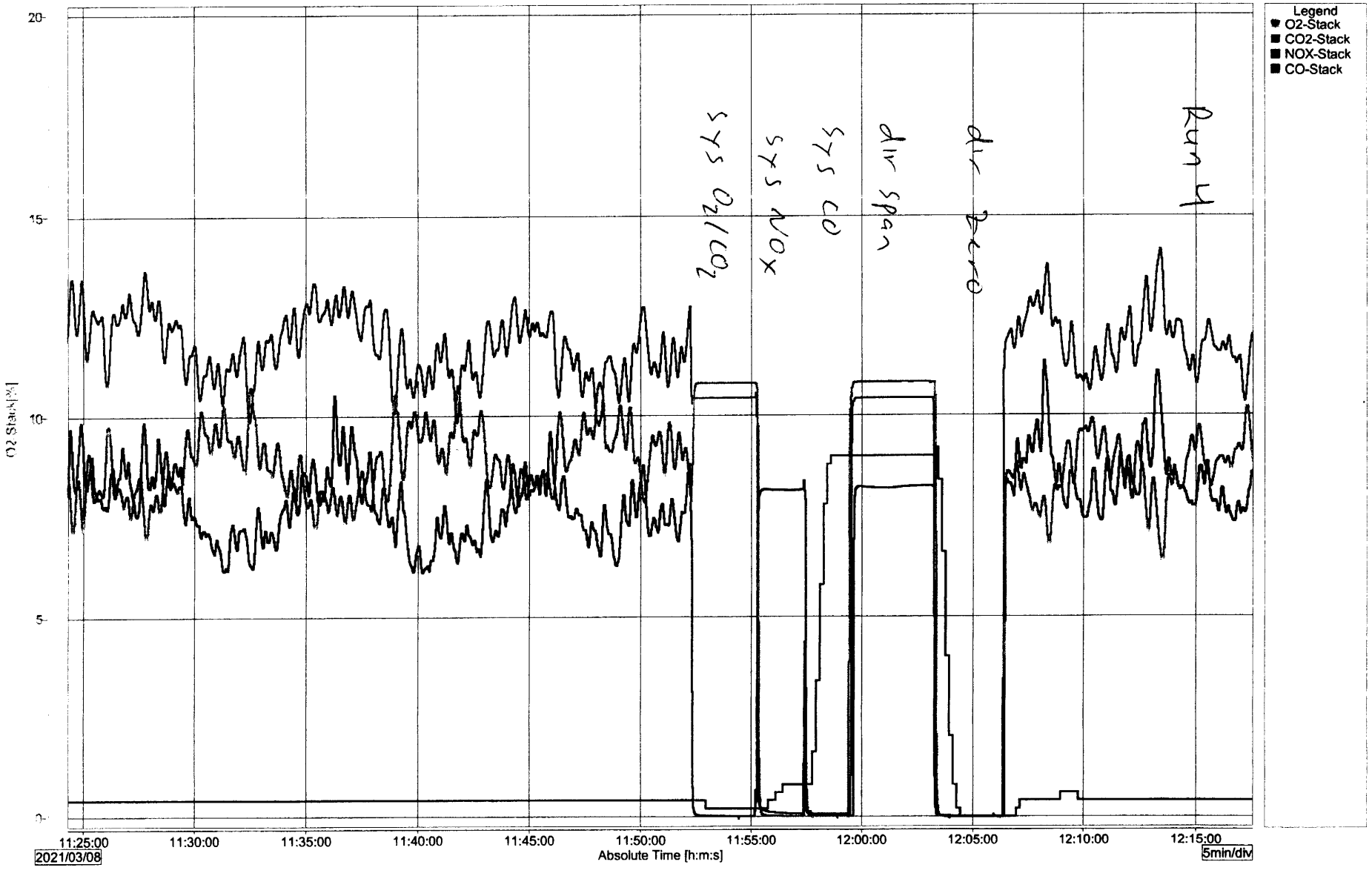
File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		

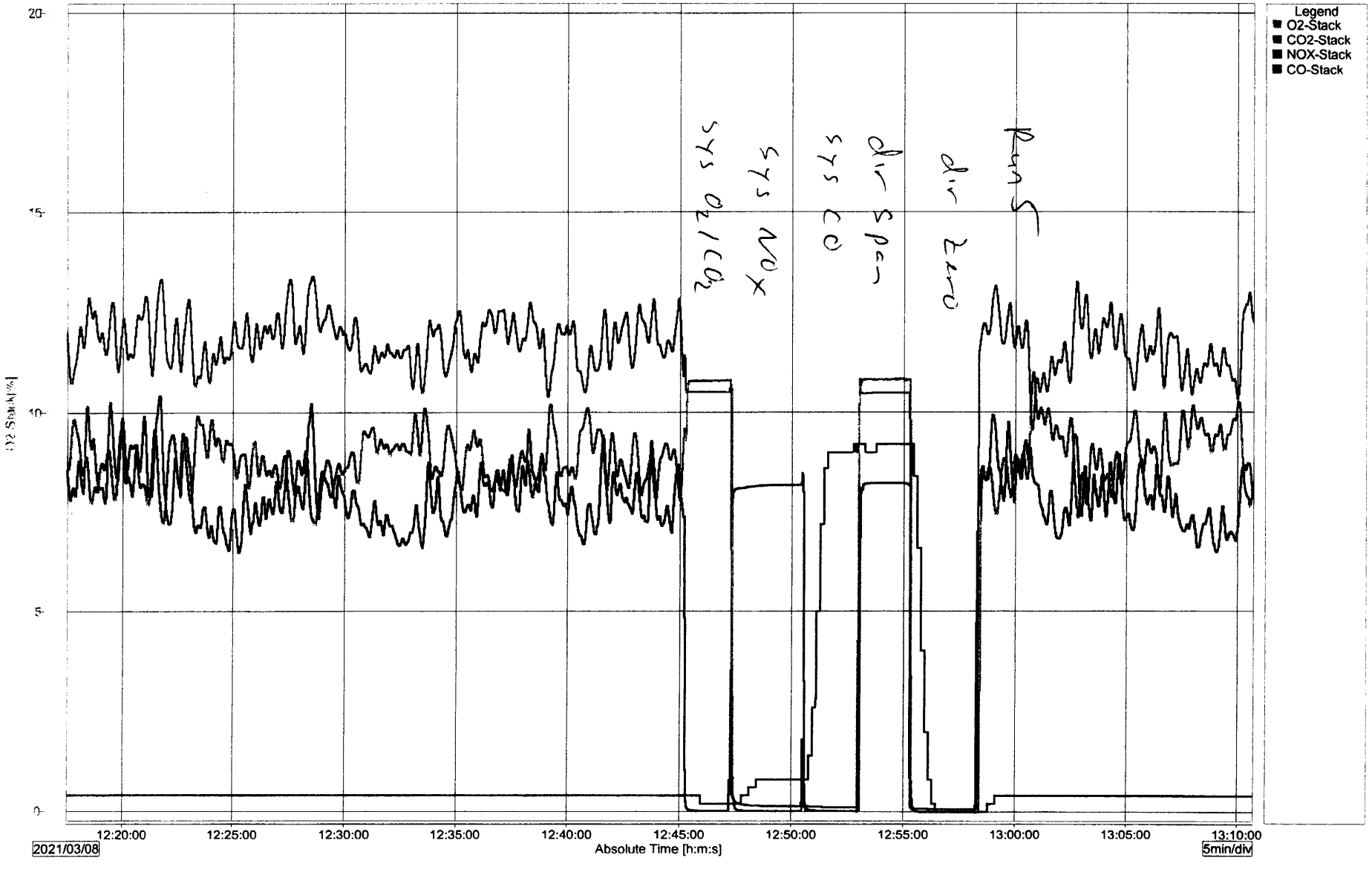


W002AS-006514-RT-2247 213 of 613

File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		

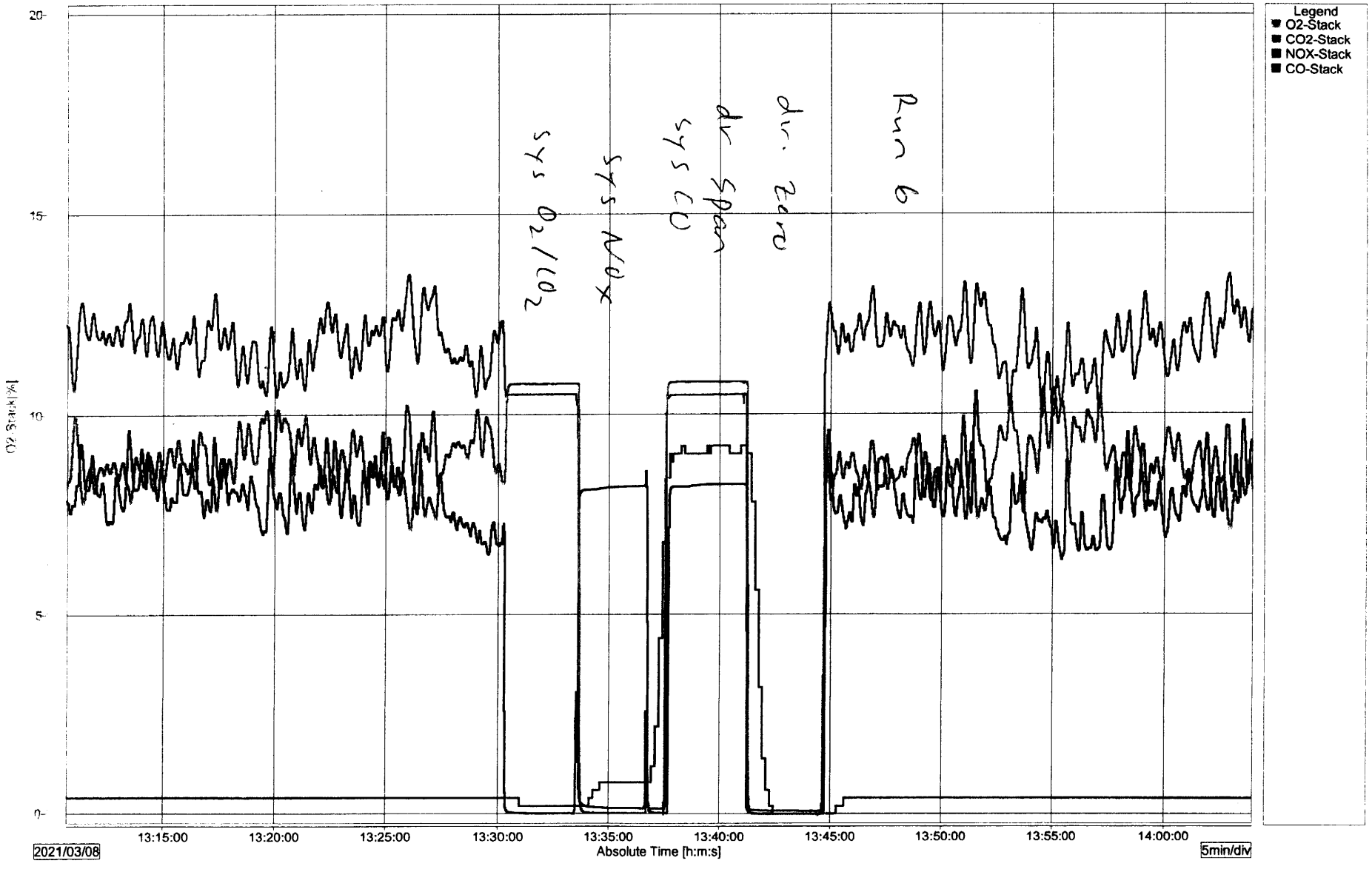


File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		

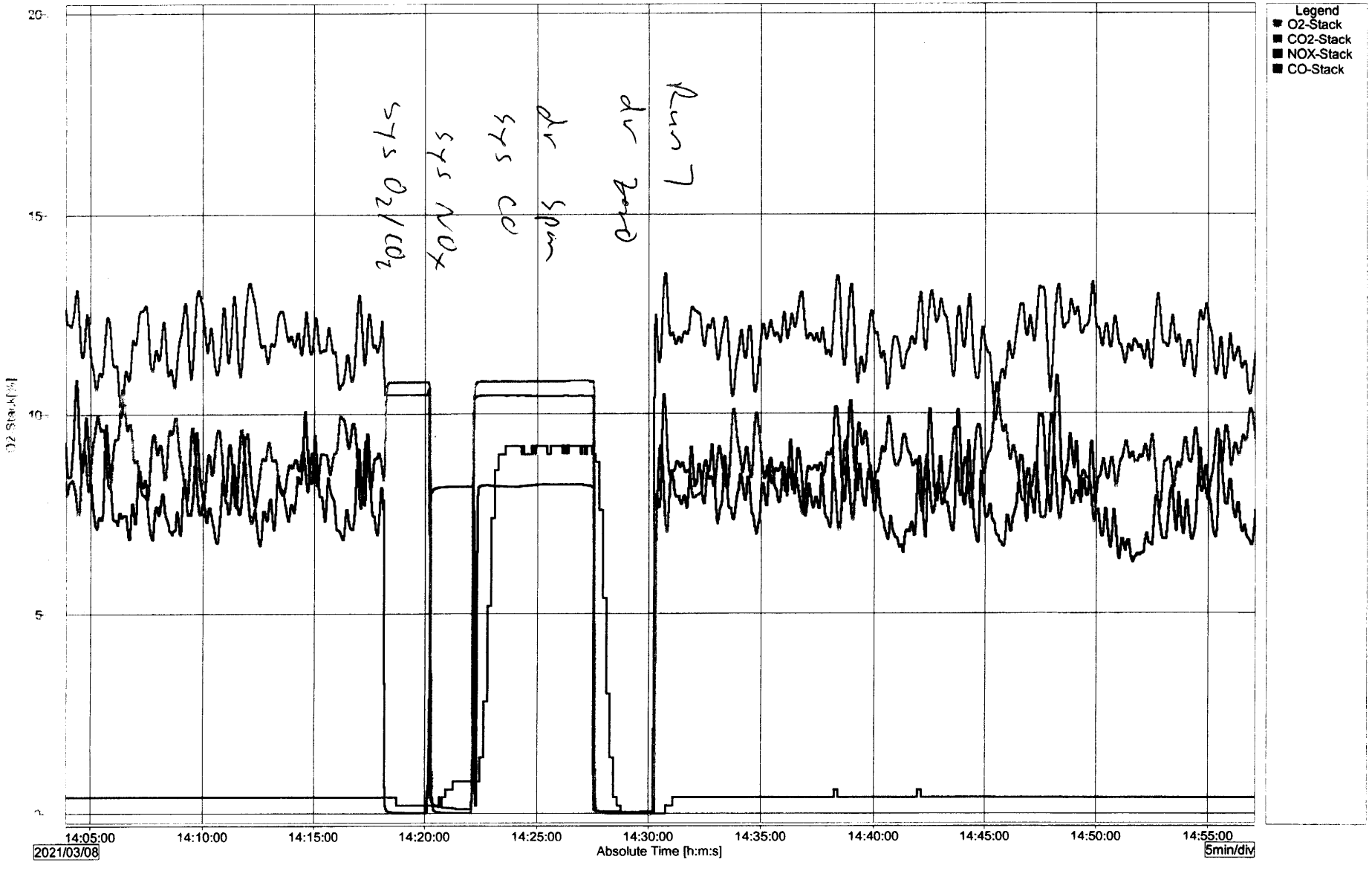


W002AS-006514-RT-2247

File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		



File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		



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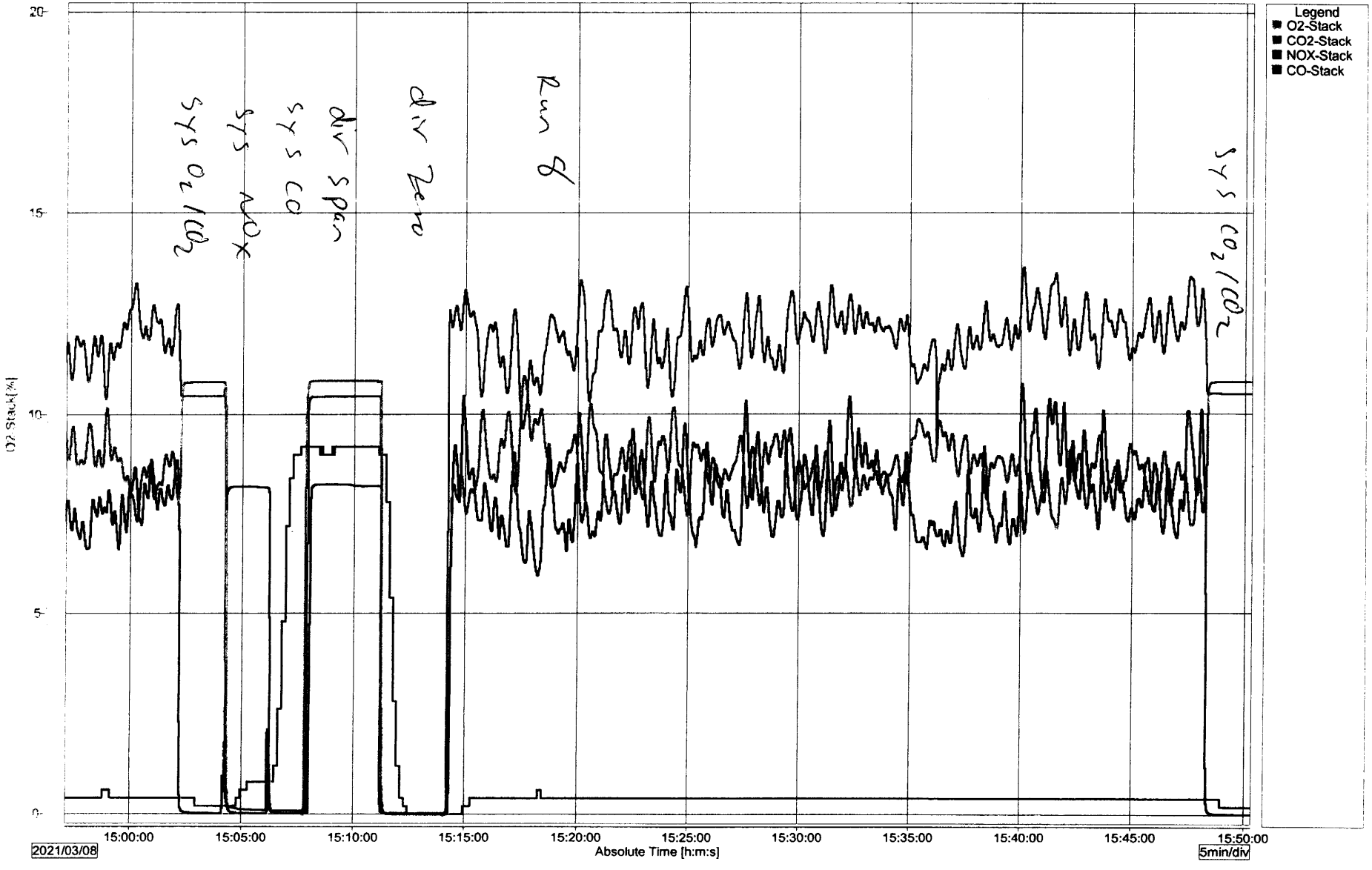
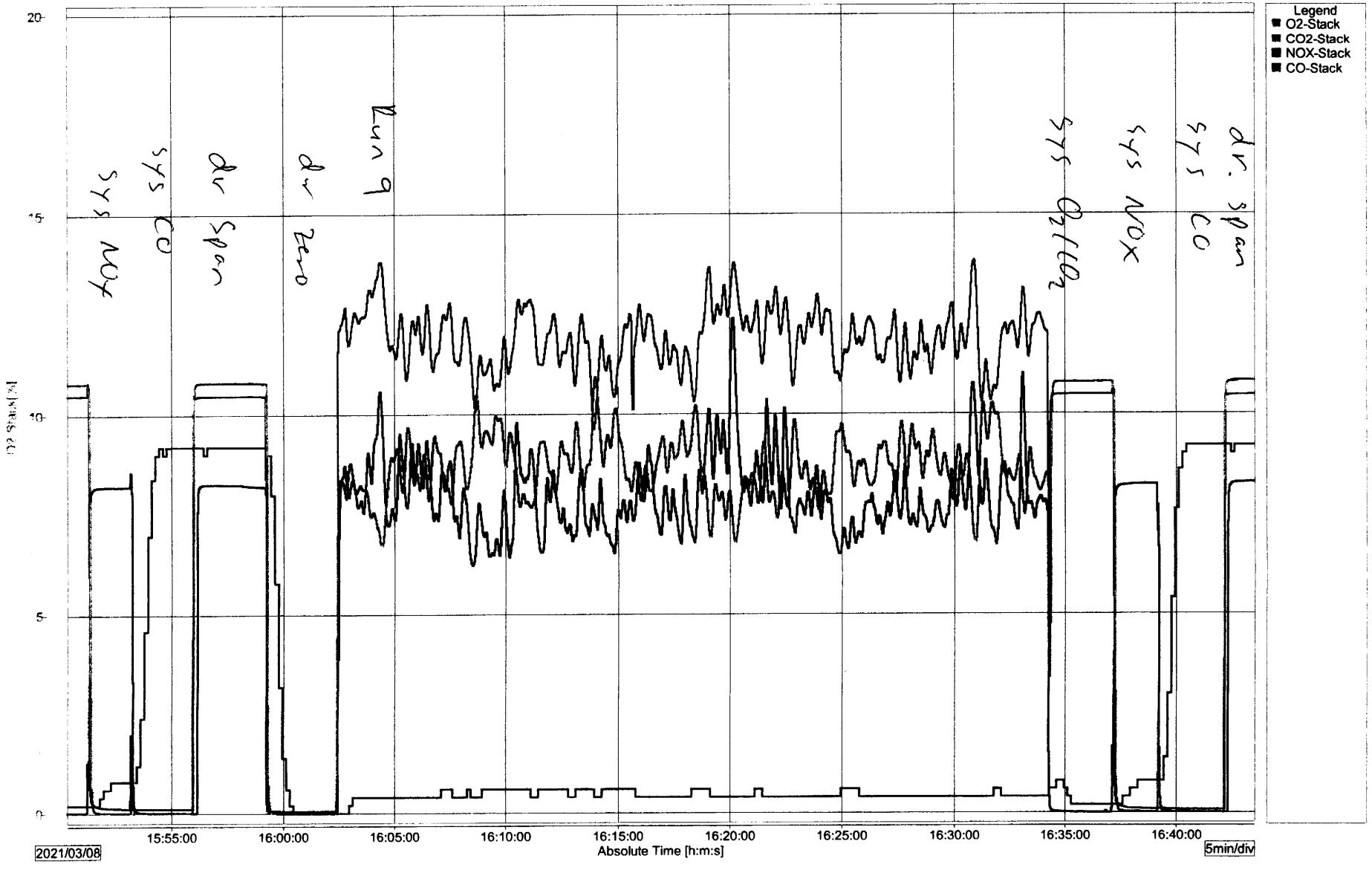
File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		



W002AS-006514-RT-2247

File Name	: 000354_TV 6_210308_065818.DSD		
Device Type	: DX2000	Start Time	: 2021/03/08 06:58:18.000
Serial No.	: S5U604838	Stop Time	: 2021/03/09 06:58:16.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000		



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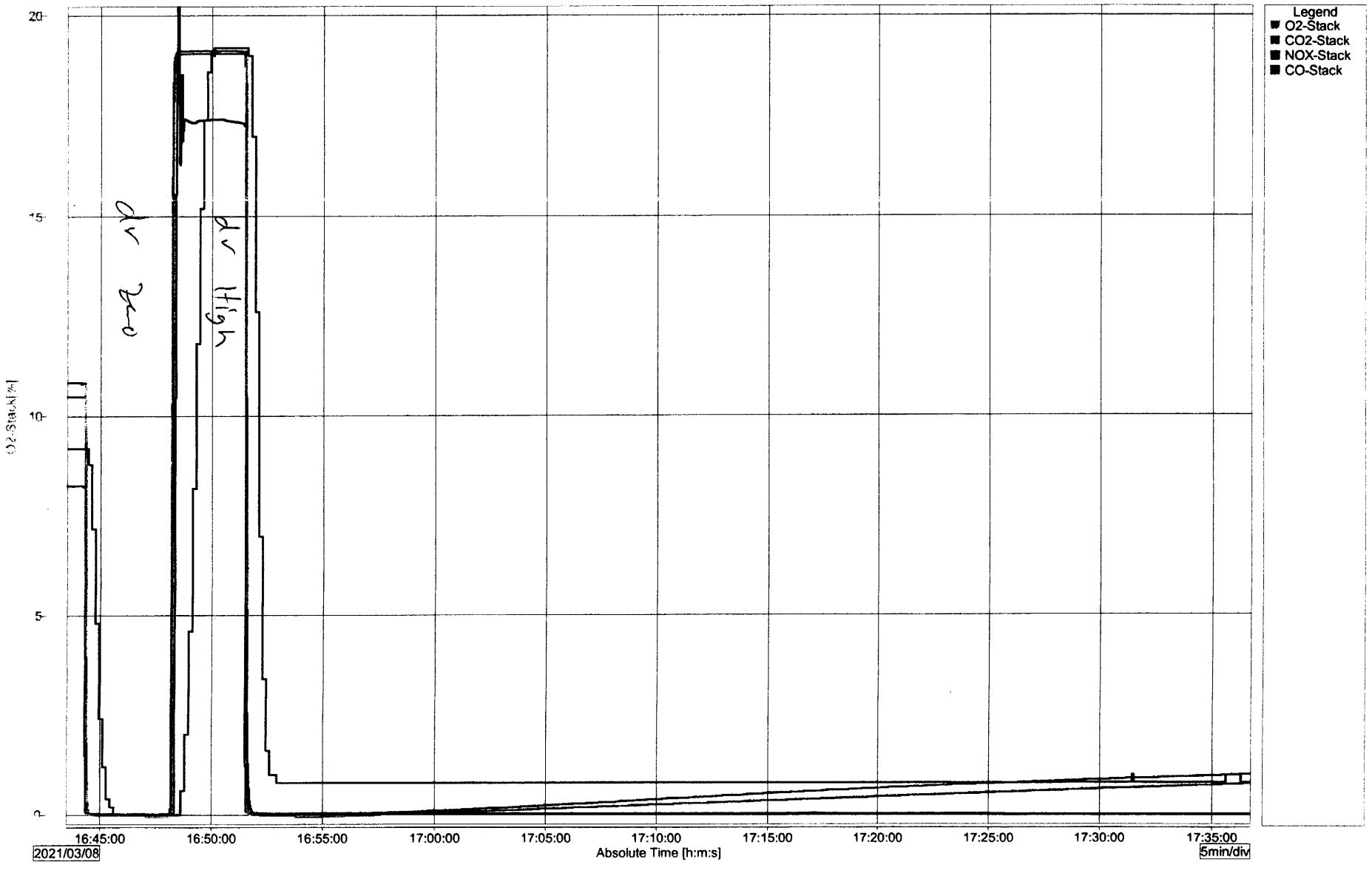
File Name : 000354_TV 6_210308_065818.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/08 06:58:18.000
Stop Time : 2021/03/09 06:58:16.000

Print Groups : GROUP 1
Print Range : 2021/03/08 06:58:18.000 - 2021/03/09 06:58:16.000



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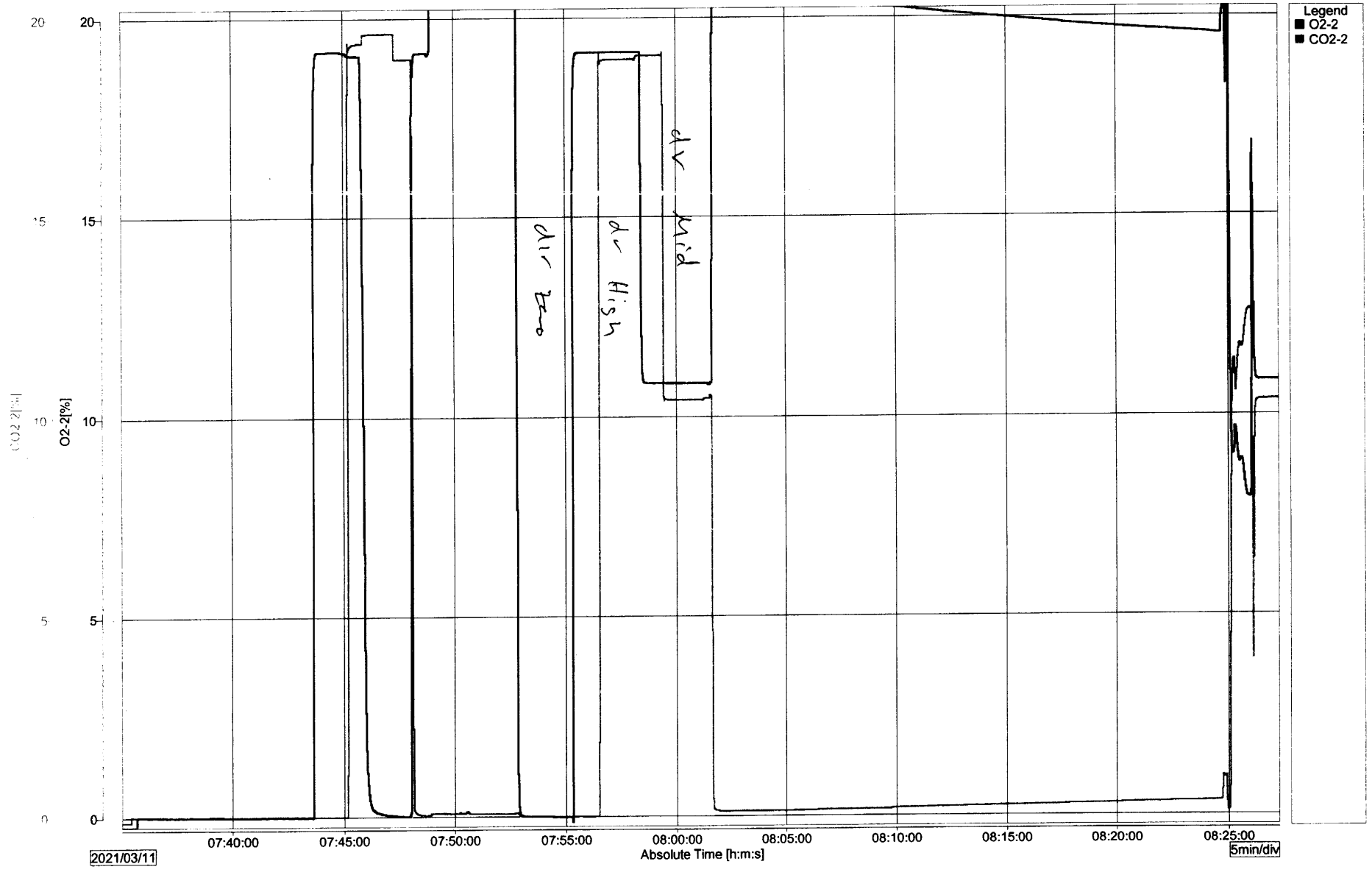
SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 2

DATE: 3/11/2021
BY: DW

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0.00		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

File Name	: 000359_TV 6_210311_073502.DSD		
Device Type	: DX2000	Start Time	: 2021/03/11 07:35:02.000
Serial No.	: S5U604838	Stop Time	: 2021/03/11 15:05:34.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/11 07:35:02.000 - 2021/03/11 15:05:34.000		

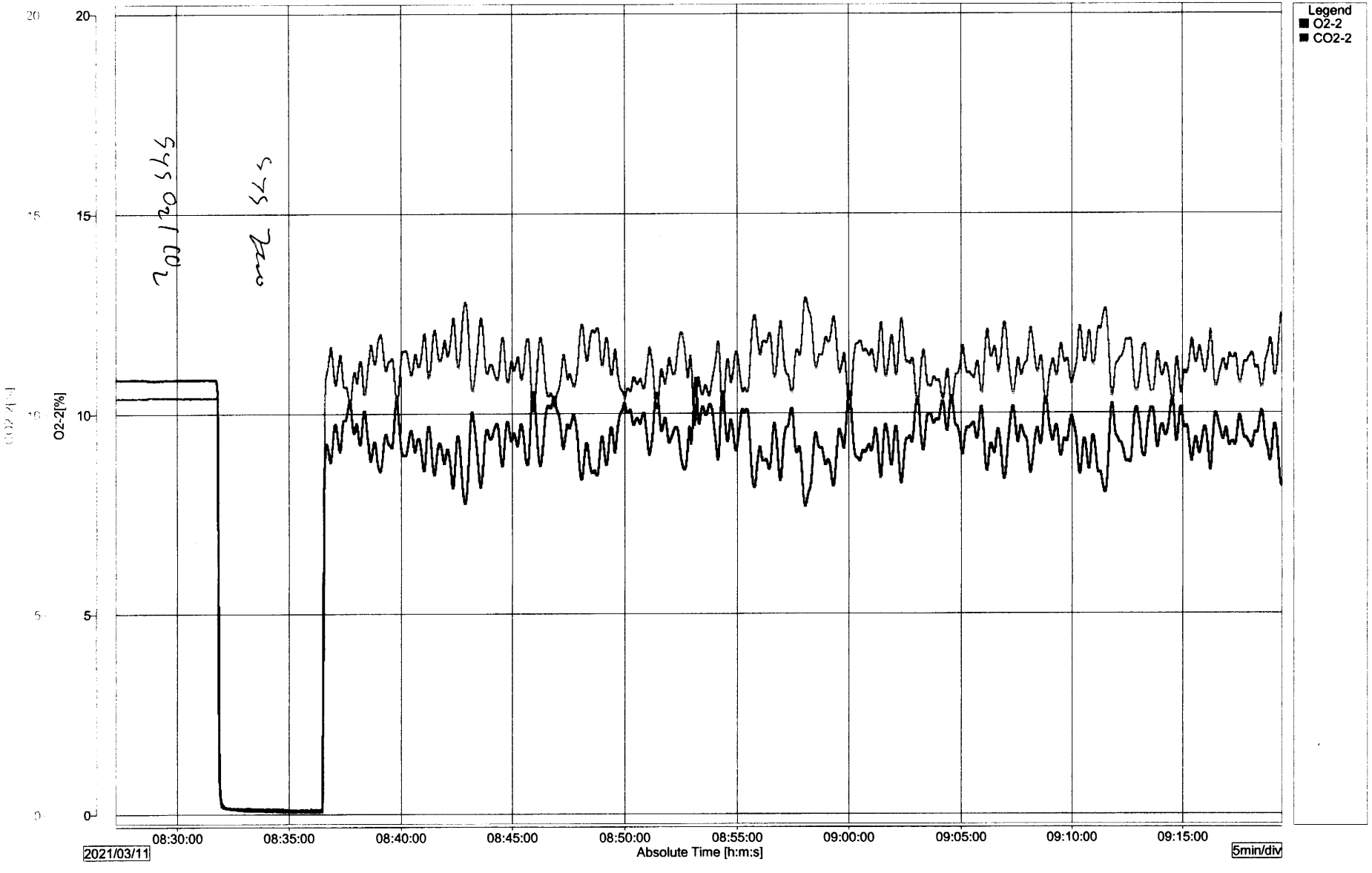


W002AS-006514-RT-2247

File Name : 000359_TV 6_210311_073502.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/11 07:35:02.000
Stop Time : 2021/03/11 15:05:34.000

Print Groups : GROUP 1
Print Range : 2021/03/11 07:35:02.000 - 2021/03/11 15:05:34.000

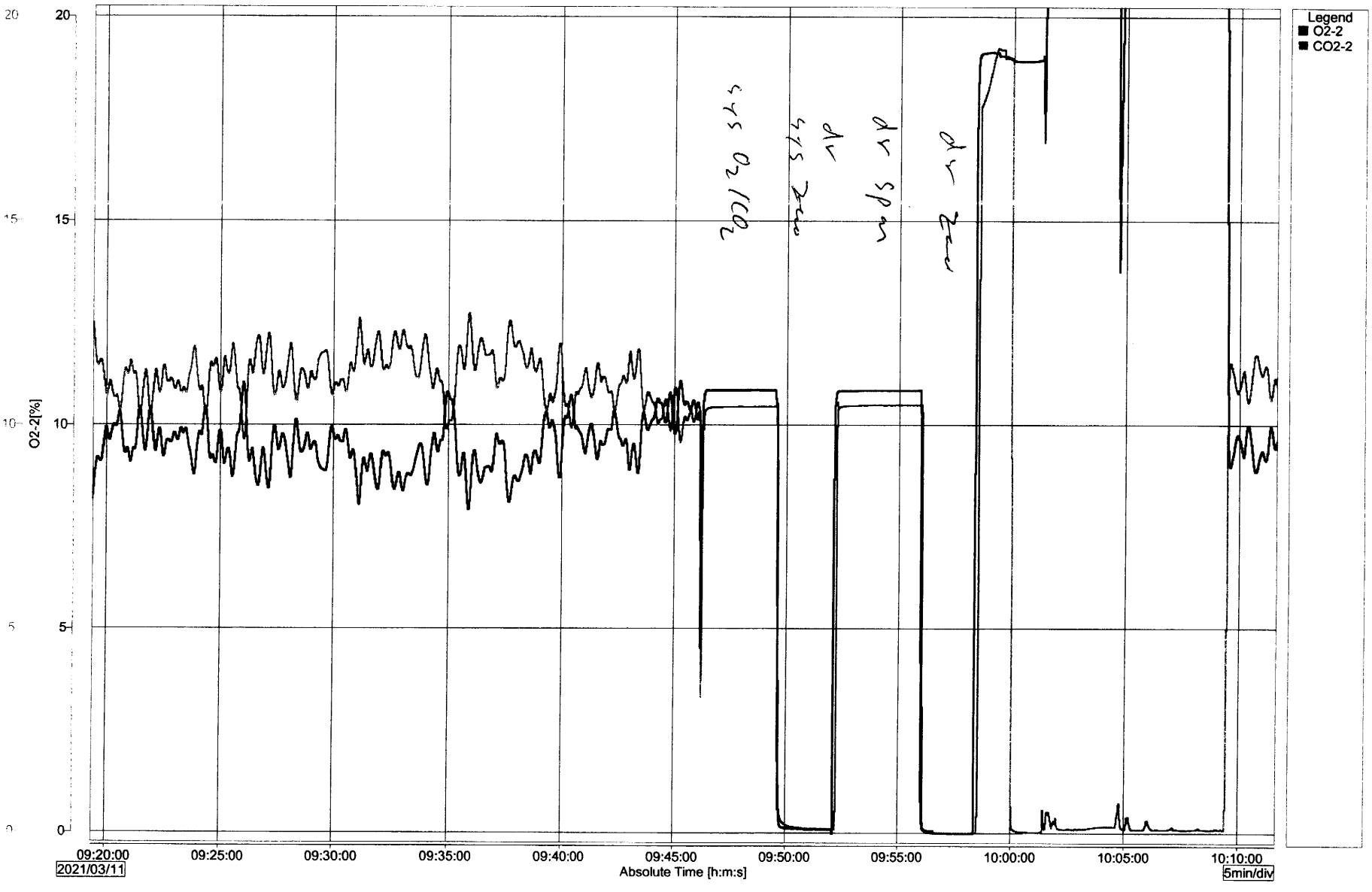


W002AS-006514-RT-2247

File Name : 000359_TV 6_210311_073502.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/11 07:35:02.000
Stop Time : 2021/03/11 15:05:34.000

Print Groups : GROUP 1
Print Range : 2021/03/11 07:35:02.000 - 2021/03/11 15:05:34.000



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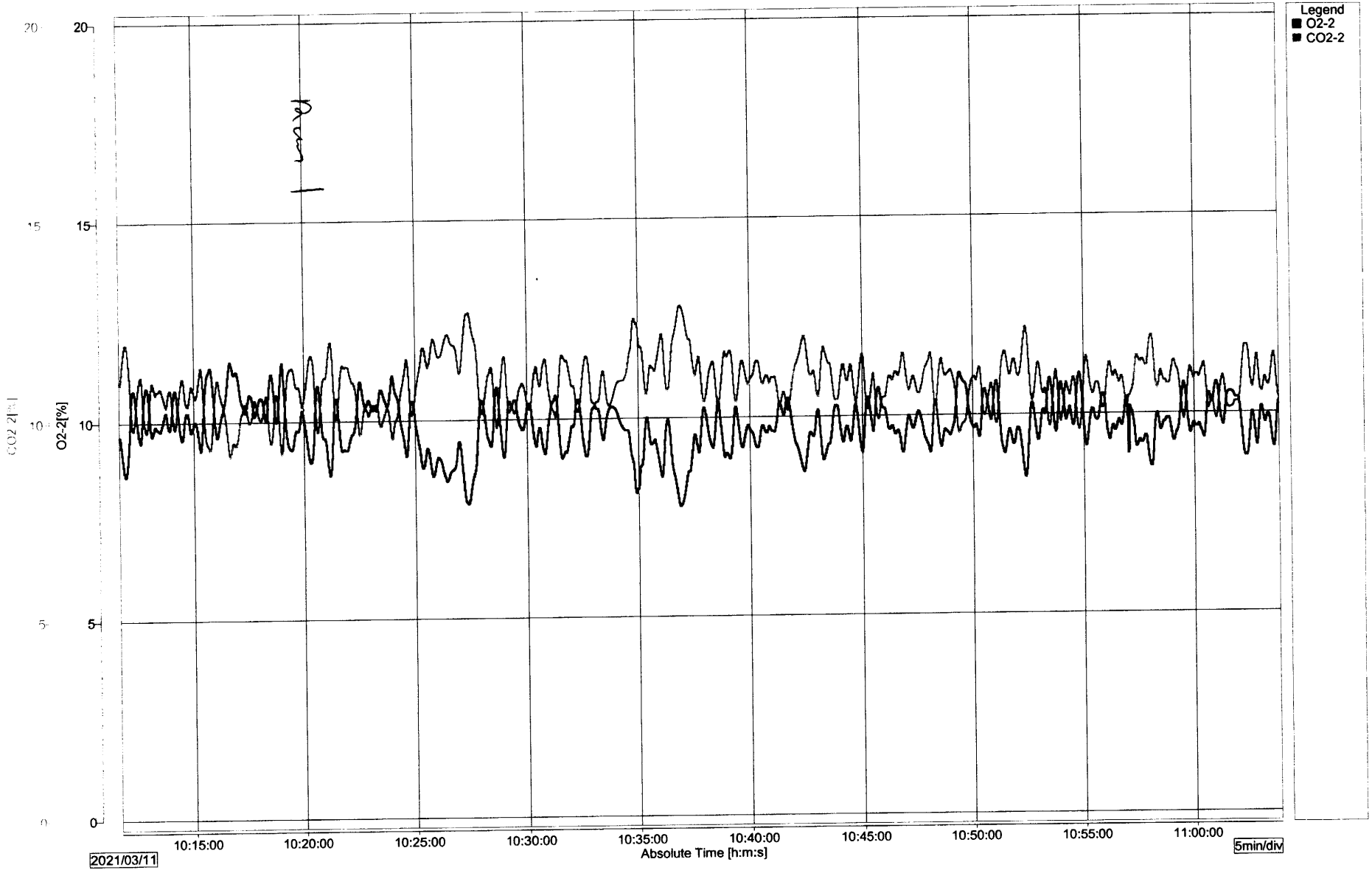
File Name : 000359_TV 6_210311_073502.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/11 07:35:02.000
Stop Time : 2021/03/11 15:05:34.000

Print Groups : GROUP 1
Print Range : 2021/03/11 07:35:02.000 - 2021/03/11 15:05:34.000



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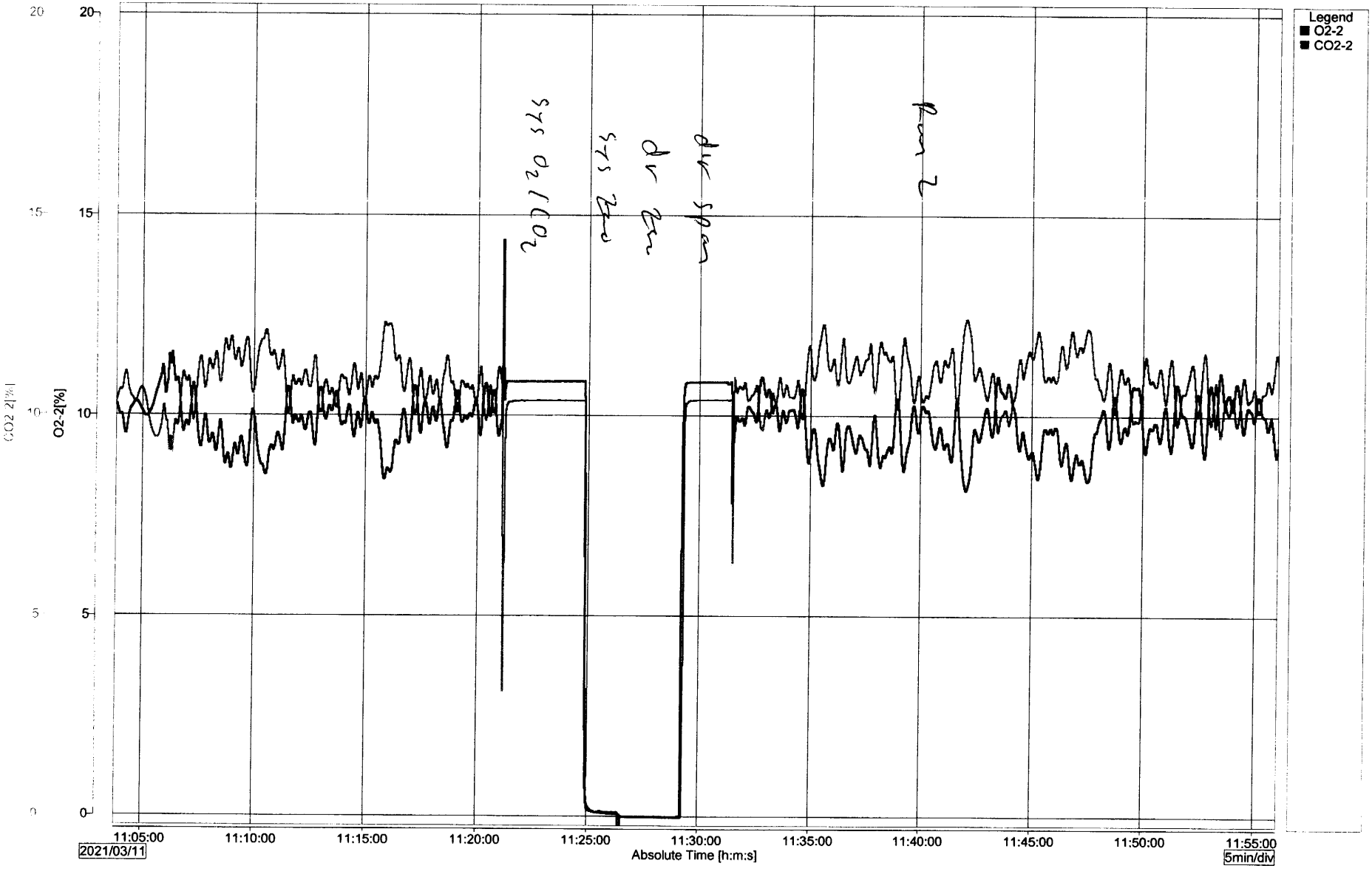
File Name	: 000359_TV 6_210311_073502.DSD		
Device Type	: DX2000	Start Time	: 2021/03/11 07:35:02.000
Serial No.	: S5U604838	Stop Time	: 2021/03/11 15:05:34.000
Print Groups	: GROUP 1		
Print Range	: 2021/03/11 07:35:02.000 - 2021/03/11 15:05:34.000		



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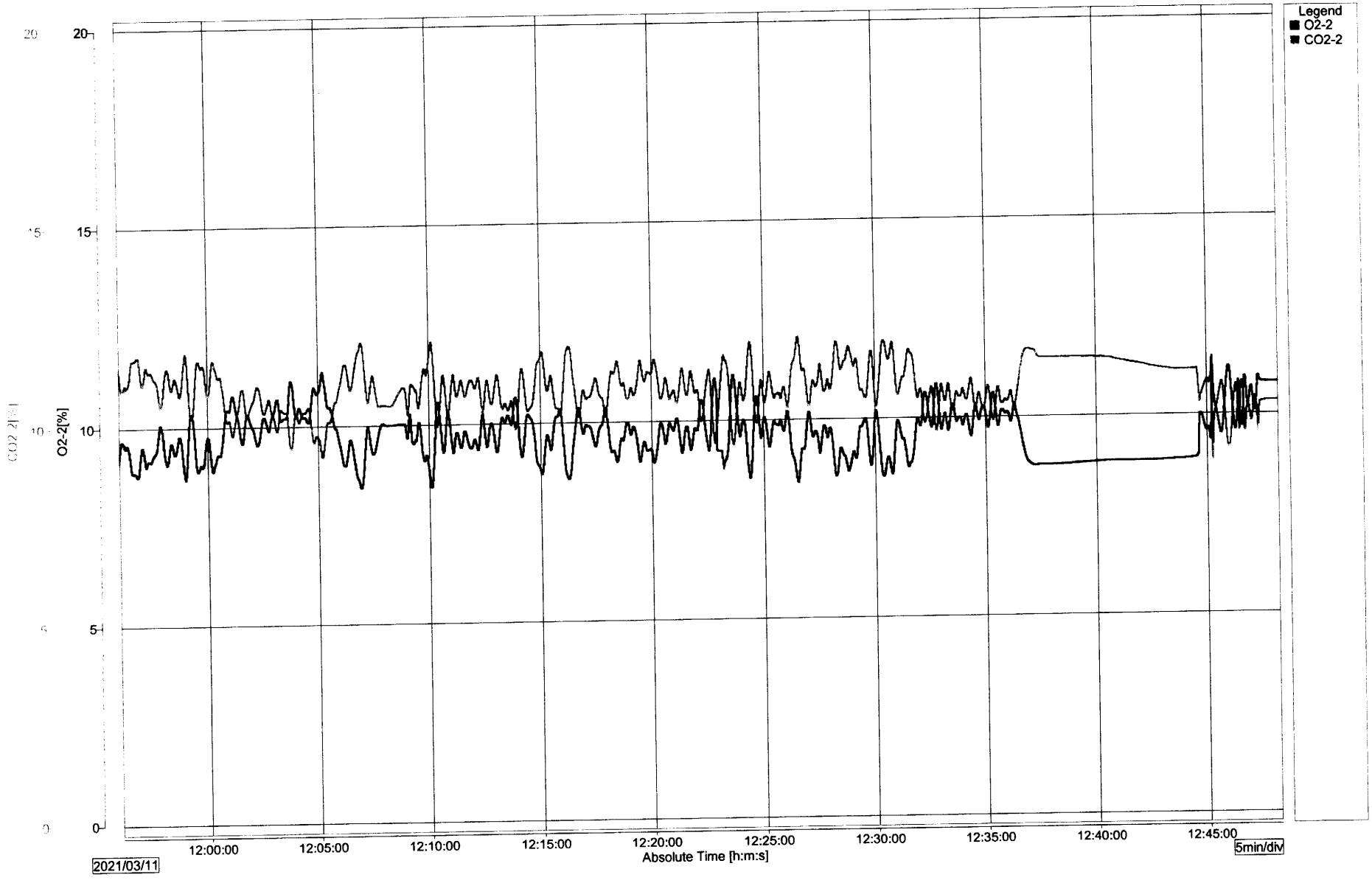
File Name	: 000359_TV 6_210311_073502.DSD	Start Time	: 2021/03/11 07:35:02.000
Device Type	: DX2000	Stop Time	: 2021/03/11 15:05:34.000
Serial No.	: S5U604838		
Print Groups	: GROUP 1		
Print Range	: 2021/03/11 07:35:02.000 - 2021/03/11 15:05:34.000		



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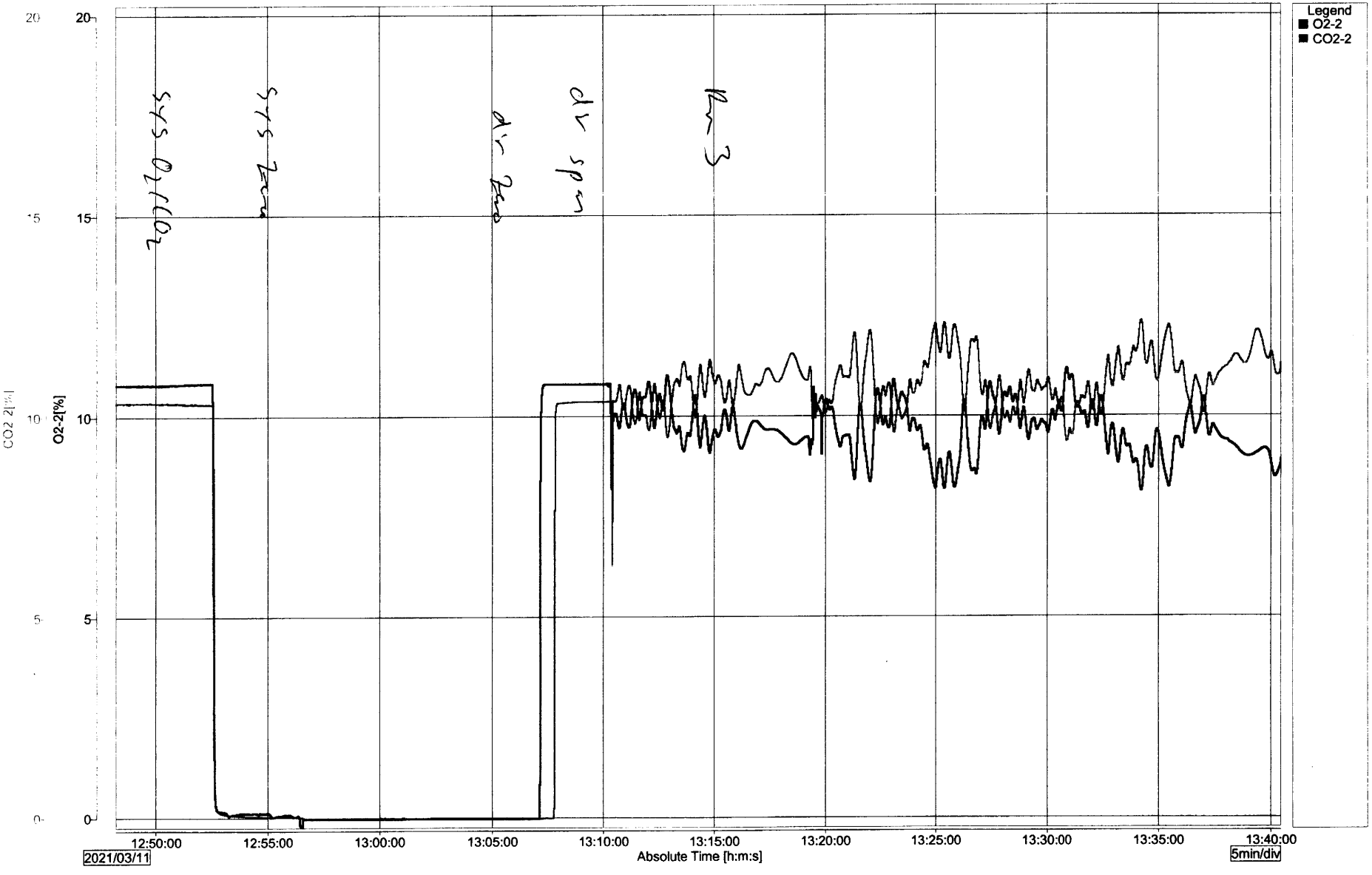
File Name : 000359_TV 6_210311_073502.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/11 07:35:02.000
Stop Time : 2021/03/11 15:05:34.000

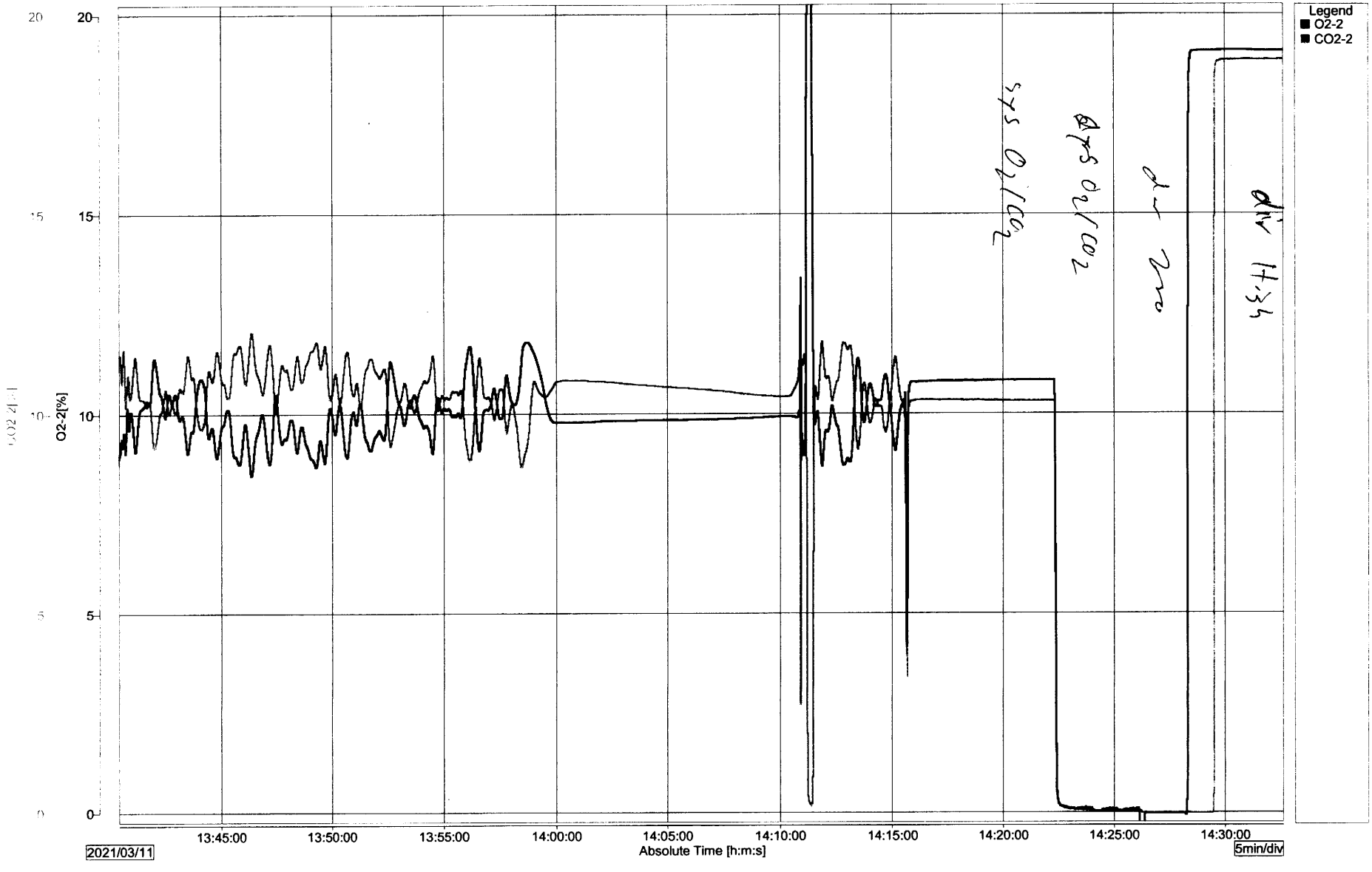
Print Groups : GROUP 1
Print Range : 2021/03/11 07:35:02.000 - 2021/03/11 15:05:34.000



File Name : 000359_TV 6_210311_073502.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/11 07:35:02.000
Stop Time : 2021/03/11 15:05:34.000

Print Groups : GROUP 1
Print Range : 2021/03/11 07:35:02.000 - 2021/03/11 15:05:34.000

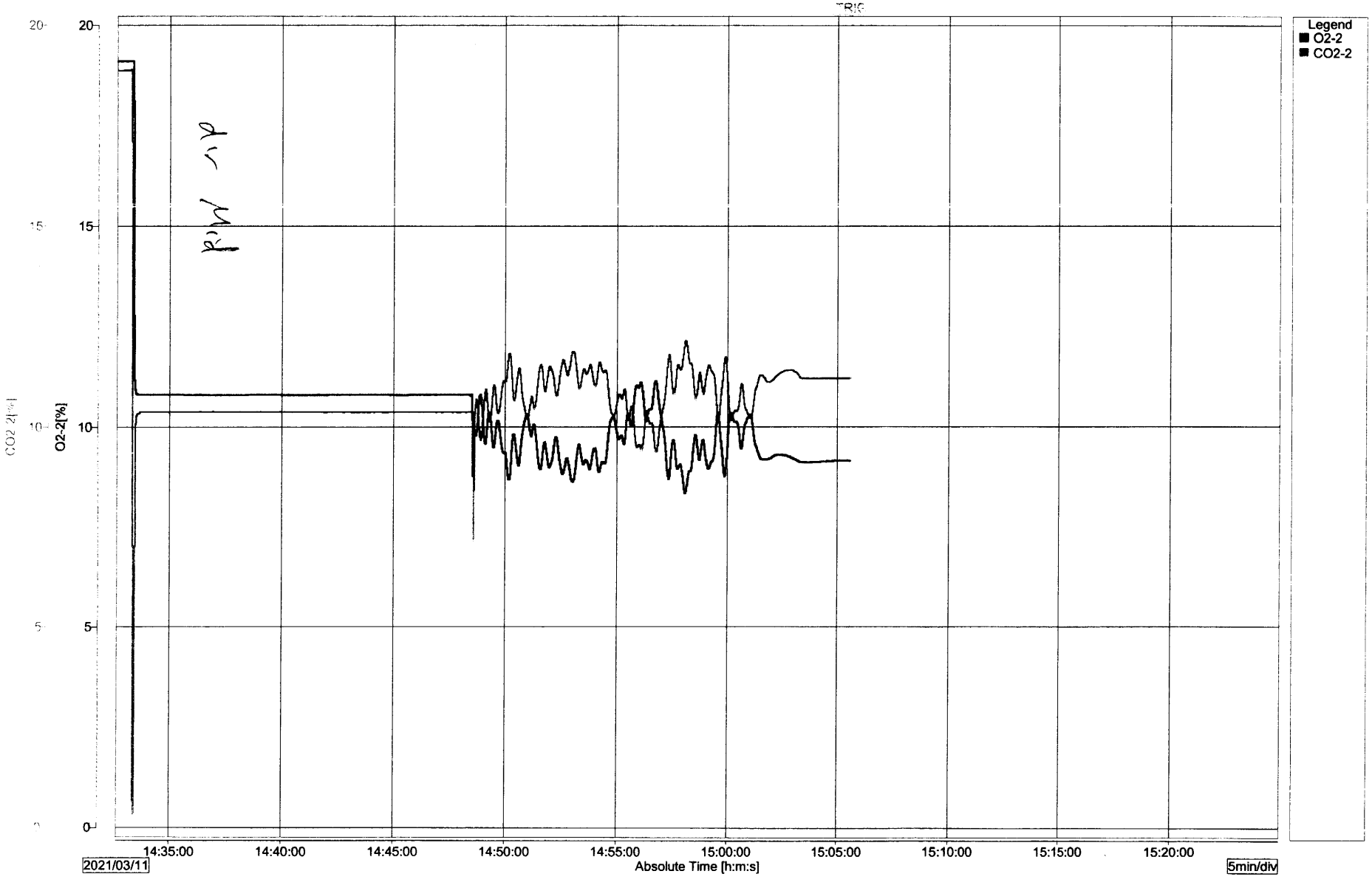


W002AS-006514-RT-2247

File Name : 000359_TV 6_210311_073502.DSD
Device Type : DX2000
Serial No. : S5U604838

Start Time : 2021/03/11 07:35:02.000
Stop Time : 2021/03/11 15:05:34.000

Print Groups : GROUP 1
Print Range : 2021/03/11 07:35:02.000 - 2021/03/11 15:05:34.000



Appendix A.2.4
Unit 2 Hydrogen Chloride Data

SEE STACK FLOW FROM PM DATA

Appendix A.2.5
Unit 2 Particulate Data

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Desert View
LOCATION: U-2 Steele Breeching
DATE: 3-4-21
RUN NO: 1-PM-U2
OPERATOR: DW
METER BOX NO: 23-WCS
METER ΔH@: 1.691
METER Yd: ~~0.997~~ TDW 3-4-21 1.003
STACK AREA, FT²: 38.84
TRAVERSE POINTS, MIN/POINT: 4x30
ΔH= 1.5 X ΔP:
Probe Condition, pre/post-test: ✓/✓
Silica Gel Expended, Y/N: N
Filter Condition after Test: ✓
Check Weight: 500.0 / 500.0

AMBIENT TEMPERATURE: 48°F
BAROMETRIC PRESSURE: 30.26
ASSUMED MOISTURE: 15%
PITOT TUBE COEFF, Cp: .84
PROBE ID NO/MATERIAL: 89 / Glass
PROBE LENGTH: 6'
NOZZLE ID NO/ MATERIAL: 196 / S.S.
NOZZLE DIAMETER: 0.239
FILTER NO/TYPE: 83-4162 / 1"
PRE-TEST LEAK RATE: : ~~0.003~~ CFM@ 15 in. Hg.
POST-TEST LEAK RATE: : ~~0.003~~ CFM@ 15 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN TT
SAMPLER DW
SAMPLE CUSTODIAN RD

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	DI H2O	998.4	795.9	202.5
2	DI H2O	891.7	722.5	169.2
3	Empty	587.4	585.9	1.5
4	Silica	1031.3	1024.2	7.1
	Rinse	100		-100
Total:				280.3

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
5	0725	174.200	.77	1.1	358	254	253	40	52	54	5"		-.69
4	0729	176.620	.85	1.2	359	251	250	39	55	57	5"		
3	0733	179.315	.96	1.4	357	255	250	39	60	63	5"		
2	0737	181.730	.99	1.4	355	256	250	40	62	66	5"		
1	0741	184.825	.88	1.3	358	257	251	41	64	67	5"		
P.C.	0745	187.411											
5	0746	187.411	.95	1.4	358	255	258	42	63	64	5"		
4	0750	189.999	1.1	1.6	359	254	257	43	62	64	5"		
3	0754	192.555	1.2	1.8	360	256	254	44	62	63	5"		
2	0758	195.455	1.1	1.6	357	258	255	43	61	63	5"		
1	0802	198.225	.97	1.5	355	254	253	42	62	62	5"		
P.C.	0806	200.918											
5	0807	200.918	1.0	1.3	357	254	252	44	60	60	5"		
4	0811	203.710	.95	1.4	356	252	255	43	59	60	5"		
3	0815	206.400	.88	1.3	358	251	252	43	59	60	5"		
2	0819	208.935	.90	1.4	358	252	251	43	59	60	5"		
1	0823	211.730	.83	1.2	354	255	252	44	58	60	5"		
P.C.	0827	214.174											
Average:		85.013	1.0086	1.55	355.2				59.4				

Comments: Factor @ 0720 = 1.45 / Factor @ 0745 =

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT:
LOCATION:
DATE:
RUN NO: Pg 1
OPERATOR:
METER BOX NO: Lee
METER ΔH@:
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= _____ 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: Pg 1
PROBE ID NO/MATERIAL:
PROBE LENGTH: See
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
1	DI H2O	998.4	795.9	
2	DI H2O	891.7	722.5	
3	Empty	587.4	585.9	
4	Silica	1031.3	1024.2	
		See	Pg 1	
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
5	0828	214.174	1.1	1.6	354	252	256	45	58	60	5"		+.64
4	0832	217.345	.98	1.5	352	254	255	45	57	60	5"		
3	0836	219.995	1.0	1.6	355	251	256	45	57	60	5"		
2	0840	222.910	.93	1.5	352	284	258	45	56	60	5"		
1	0844	225.875	.95	1.5	353	256	258	45	56	59	5"		
P.C.	0848	228.584											
5	0849	228.584	.98	1.5	352	254	257	46	56	58	5"		
4	0853	231.555	1.2	1.9	355	253	284	46	57	58	5"		
3	0857	234.665	1.3	2.1	352	252	283	46	57	58	5"		
2	0901	237.925	1.2	1.9	352	254	285	46	57	58	5"		
1	0905	241.245	1.0	1.6	353	256	287	47	57	59	5"		
P.C.	0909	244.148											
5	0910	244.148	1.0	1.6	352	255	254	47	57	59	5"		
4	0914	246.815	1.1	1.8	354	254	256	48	57	58	5"		
3	0918	249.930	1.2	1.9	355	252	253	48	57	59	5"		
2	0922	253.445	1.1	1.8	356	284	253	48	58	60	5"		
1	0926	256.380	1.0	1.6	355	252	254	48	57	60	5"		
END	0930	259.213											
Average:													

Comments: Factor @ 0918 = 1.6

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Desert View
LOCATION: Unit 2
DATE: 3/4/21
RUN NO: 2-PM-U2
OPERATOR: PW
METER BOX NO: 23-VCS
METER ΔH@: 1.691
METER Yd: 1.000
STACK AREA, FT²: 58.84
TRAVERSE POINTS, MIN/POINT: 4/30
ΔH= 1.65 X ΔP:
Probe Condition, pre/post test: ✓/✓
Silica Gel Expended, Y/N: Good
Filter Condition after Test: ✓
Check Weight: 500.0/500.0

AMBIENT TEMPERATURE: 73°F
BAROMETRIC PRESSURE: 30.26
ASSUMED MOISTURE: 15%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 89 / Glass
PROBE LENGTH: 6'
NOZZLE ID NO/ MATERIAL: 196/S.S.
NOZZLE DIAMETER: 0.239
FILTER NO/TYPE: 83-4/64 / Tare 0.3183
PRE-TEST LEAK RATE: : <0.005 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: : <0.005 CFM@ 15 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN TT
SAMPLER PW
SAMPLE CUSTODIAN TT

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	DI H2O	946.1	735.8	210.3
2	DI H2O	735.2	685.5	49.7
3	Empty	644.8	642.2	2.6
4	Silica	889.3	861.2	28.1
	Line Rinse		~~100~~ T.T 3/4.	
Total:				290.7

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
5	0955	264.000	1.0	1.6	350	254	253	44	60	60	5"		1.69
4	0959	266.830	1.1	1.7	348	254	252	44	65	67	5"		
3	1003	269.800	1.2	1.9	347	257	255	44	67	69	5"		
2	1007	272.935	1.1	1.7	348	255	251	46	69	70	5"		
1	1011	276.010	1.0	1.6	349	256	254	47	71	73	5"		
P.C.	1015	278.968											
5	1016	278.968	.97	1.5	350	255	257	48	74	75	5"		
4	1020	281.900	1.1	1.9	352	258	254	48	76	77	5"		
3	1024	285.020	1.3	2.2	356	254	258	49	77	79	5"		
2	1028	288.480	1.2	2.0	355	255	256	51	79	81	5"		
1	1032	291.785	1.1	1.9	352	253	257	52	80	83	5"		
P.C.	1036	295.038											
5	1037	295.038	.94	1.6	354	251	256	52	80	84	5"		
4	1041	298.040	.98	1.7	351	252	257	53	81	84	5"		
3	1045	301.165	1.0	1.7	353	254	258	53	82	85	5"		
2	1049	304.155	1.1	1.9	351	256	258	53	82	84	5"		
1	1053	307.265	.93	1.6	352	254	257	53	82	84	5"		
P.C.	1057	310.264											
Average:		90.252	0.9807	1.633	351.9				79.8				

Comments: Factor @ 0952 = 1.55 / @ 1018 = 1.7

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MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Desert View
LOCATION: Unit 2
DATE: 3/4/21
RUN NO: 2-PM-1/2
OPERATOR: PW
METER BOX NO:
METER ΔH@: See Pg 1
METER Yd:
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT:
ΔH= _____ X ΔP:
Probe Condition, pre/post test:
Silica Gel Expended, Y/N:
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE: 30.26
ASSUMED MOISTURE:
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL:
PROBE LENGTH:
NOZZLE ID NO/ MATERIAL: See Pg 1
NOZZLE DIAMETER:
FILTER NO/TYPE: 89-4464 / Tare 0.3483
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
1	DI H2O	735.8
2	DI H2O	685.5
3	Empty	642.2
4	Silica	861.2
	Line Rinse	100
Total:	See Pg 1	

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
5	1058	310.264	.94	1.6	352	254	255	53	81	84	5"		+.69
4	1102	313.270	.88	1.5	353	257	256	54	80	84	5"		
3	1106	316.155	.95	1.6	351	257	257	55	81	84	5"		
2	1110	319.070	.93	1.6	352	255	254	56	82	83	5"		
1	~~1114~~ 1114	322.055	.86	1.3	351	254	254	56	83	85	5"		
P.C.	~~1118~~ 1118	325.528											
5	~~1119~~ 1119	325.528	.93	1.6	352	255	257	57	83	86	5"		
4	~~1123~~ 1123	328.015	1.7	1.7	353	254	258	57	83	86	5"		
3	~~1127~~ 1127	331.450	.94	1.6	355	252	256	57	83	86	5"		
2	~~1131~~ 1131	334.375	.86	1.5	352	255	257	54	82	85	5"		
1	~~1135~~ 1135	337.264	.82	1.4	353	256	259	54	82	84	5"		
P.C.	1139	340.088											
5	1140	340.088	.94	1.5	354	253	257	55	82	85	5"		
4	1144	343.075	.88	1.4	355	256	253	55	83	86	5"		
3	1148	345.900	.84	1.3	352	258	254	56	82	85	5"		
2	1152	348.655	.90	1.4	353	255	252	56	83	84	5"		
1	1156	351.510	.83	1.3	352	256	253	56	84	84	5"		
END	1200	354.252											
Average:													

Comments: K-2PW 3-4-21 Factor @ 1140 = 1.6

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MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Desert View
LOCATION: V-2
DATE: 3-4-21
RUN NO: 3-PM-V2
OPERATOR: PW
METER BOX NO: 23-WCS
METER ΔH@: 1.691
METER Yd: 1.000
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT: 4 x 30
ΔH= 1.65 X ΔP:
Probe Condition, pre/post test: V/V
Silica Gel Expended, Y/N: NO
Filter Condition after Test: V
Check Weight: 500 / 500.0

AMBIENT TEMPERATURE: 75°F
BAROMETRIC PRESSURE: 30.26
ASSUMED MOISTURE: 15%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: / 316SS
PROBE LENGTH: 6'
NOZZLE ID NO/ MATERIAL: 196 / SS
NOZZLE DIAMETER: 0.239
FILTER NO/TYPE: 83-4163 / [redacted]
PRE-TEST LEAK RATE: : 0.000 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: : 0.000 CFM@ 15 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN TT
SAMPLER PW
SAMPLE CUSTODIAN TT

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	DI H2O	993.2	799.2	194.0
2	DI H2O	804.5	721.3	83.2
3	Empty	590.6	588.7	1.9
4	Silica	1033.7	1031.3	2.4
Total:				281.5

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, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O2 %	Pstatic in. H2O
5	1225	358.000	.94	1.5	352	254	255	46	80	83	5		1.69
4	1229	360.535	.93	1.5	353	256	254	44	81	82	5		
3	1233	363.445	.97	1.6	352	258	257	42	80	83	5		
2	1237	366.410	.91	1.5	351	254	252	42	81	83	5		
1	1241	369.335	.80	1.3	351	256	257	42	81	83	5		
P.C.	1245	371.939											
5	1246	371.939	.98	1.7	353	256	252	43	81	84	5		
4	1250	375.025	1.0	1.7	358	255	253	43	82	84	5		
3	1254	378.430	.94	1.6	356	257	254	44	83	86	5		
2	1258	381.240	.92	1.6	354	254	258	44	82	86	5		
1	1302	384.400	.90	1.5	353	252	251	44	83	87	5		
P.C.	1306	387.233											
5	1307	387.233	1.0	1.7	354	256	254	45	84	85	5		
4	1311	390.310	.96	1.6	352	258	257	45	84	86	5		
3	1315	393.245	.92	1.6	353	257	251	46	84	86	5		
2	1319	396.140	.88	1.5	353	251	254	46	84	87	5		
1	1323	399.110	.83	1.4	351	256	255	46	84	84	5		
P.C.	1327	401.822											
Average:		91.154	0.9883	1.677	353.4				65.1				

Comments: Factor @ H2O = 1.65 / @ 1244-27

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: _____
LOCATION: _____
DATE: _____
RUN NO: _____
OPERATOR: See Pg 1
METER BOX NO: _____
METER ΔH@: _____
METER Yd: _____
STACK AREA, FT²: _____
TRAVERSE POINTS, MIN/POINT: _____
ΔH= _____ 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: See Pg 1
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	
	See Pg 1		
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
5	1328	401.822	1.0	1.7	353	251	256	46	84	88	5"		-.89
4	1332	404.935	.96	1.6	354	252	258	47	84	87	5"		
3	1336	407.875	.94	1.6	352	251	256	47	85	88	5"		
2	1340	410.820	.91	1.5	353	252	255	48	84	88	5"		
1	1344	413.680	.87	1.5	351	251	253	48	84	88	5"		
P.C.	1348	416.555											
5	1349	416.555	1.1	1.9	352	250	257	49	85	89	5"		
4	1353	420.130	1.2	2.0	351	256	258	49	86	89	5"		
3	1357	422.990	1.1	1.9	357	257	255	50	85	89	5"		
2	1401	426.300	1.0	1.7	354	256	258	50	85	89	5"		
1	1405	429.415	.98	1.7	352	254	253	51	84	89	5"		
P.C.	1409	432.522											
5	1410	432.522	1.2	2.0	354	256	257	51	84	88	5"		
4	1414	435.800	1.1	1.9	355	254	258	51	84	88	5"		
3	1418	439.075	1.1	1.9	356	253	256	52	85	88	5"		
2	1422	442.350	1.3	2.2	357	254	255	52	85	89	5"		
1	1426	445.855	1.1	1.9	358	257	253	53	86	90	5"		
END	1430	449.154											
Average:													

Comments: _____

Appendix A.2.6
Unit 2 SO_2 Data and Velocity Data

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Deseret Power | LOCATION/UNIT: U2 Stack Breeching
PERFORMED BY: PW | TEST DATE: 3-8-21
BAR. PRESSURE: 30.14 | TC READOUT ID: 23-WCS
DP INDICATOR ID: 23-WCS | TC ID: #013
DP INDICATOR TYPE: 0-10" | PITOT TUBE ID: #013 | Cp: .84
ZERO: ✓ LEVEL: ✓ | LEAK CHECK PRE- ✓ POST- ✓

Run #: 1-SO2	Ps: 4.55	Start: 0820	Stop: 0920

Sample Point	Velocity Head inches H_2O	Temp, °F
5	1.0	328
4	.97	330
3	.95	331
2	.82	332
1	.77	330
5	.98	329
4	.99	330
3	.83	331
2	.80	333
1	.77	332
Heated Line Temp. °F		312
Chiller Temp. °C		00.7

Run #:	Ps:
Start:	Stop:

Sample Point	Velocity Head inches H_2O	Temp, °F
5	.85	330
4	.85	331
3	.95	333
2	.97	331
1	.99	330
5	1.0	329
4	1.1	331
3	1.2	332
2	1.0	332
1	.93	331
Heated Line Temp. °F		
Chiller Temp. °C		

Run #:	Ps:
Start:	Stop:

Sample Point	Velocity Head inches H_2O	Temp, °F
5	1.4	330
4	1.3	331
3	1.2	333
2	1.3	332
1	1.1	331
5	1.4	332
4	1.3	331
3	1.3	333
2	1.2	332
1	1.1	331
Heated Line Temp. °F.		
Chiller Temp. °C		

MOISTURE DATA FOR TEST RUNS 1-SO2 THROUGH 1-SO2

METER ID: 23-WCS | METER Yd: 1.000 | BALANCE CHECK WEIGHT: 499.9 / 500.0

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
0820	450.500	1.5	74	75	50	5"	#1	H_2O_2	917.7	732.8	
0840	464.770	1.5	73	75	50	5"	#2	H_2O_2	725	710.6	
0900	479.040	1.5	78	80	55	5"	#3	Empty	638.9	638.6	
0920	492.982						#4	Silica Gel	917.1	905.2	
							Total	LR		50	

Pre-Test Leak Check: 12.005 CFM @ 15 in. Hg., Post-Test Leak Check: 12.005 CFM @ 15 in. Hg

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desertview
LOCATION/UNIT: U2 Stack Breaching
PERFORMED BY: PW/S.S.
TEST DATE: 3-8-21
BAR. PRESSURE: 30.14
TC READOUT ID: 23-WCS
DP INDICATOR ID: 23-WCS
TC ID: #013
DP INDICATOR TYPE: 0-10"
PITOT TUBE ID: #013
Cp: .84
ZERO: ✓ LEVEL: ✓
LEAK CHECK PRE- ✓ POST- ✓

Run #: 2-Sox	Ps: 1.55		Run #:	Ps:		Run #:	Ps:	
Start: 0935	Stop: 1035		Start:	Stop:		Start:	Stop:	
Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5	1.0	333	5	.86	332	5	1.4	332
4	.98	334	4	.88	332	4	1.2	333
3	.94	335	3	.94	333	3	1.3	334
2	.83	336	2	.92	334	2	1.2	332
1	.76	333	1	.98	333	1	1.0	333
5	.97	334	5	1.0	332	5	1.4	331
4	.95	335	4	1.1	334	4	1.4	332
3	.85	336	3	1.3	333	3	1.3	334
2	.82	334	2	1.0	333	2	.98	331
1	.78	332	1	.96	331	1	.97	333
Heated Line Temp. °F		311	Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C		20.7	Chiller Temp. °C			Chiller Temp. °C		

MOISTURE DATA FOR TEST RUNS 2-Sox **THROUGH** 2-Sox

METER ID: 23-WCS METER Yd: 1.000 BALANCE CHECK WEIGHT: ~~500.0~~ 499.9 / 500.0

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T imp	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
0935	494.000	1.5	83	85	55	5"	#1	H_2O_2	804.9	635.7	
0955	506.550	1.5	85	88	54	5"	#2	H_2O_2	747.1	742.3	
1015	522.810	1.5	86	87	57	5"	#3	Empty	595.0	592.0	
1035	537.194						#4	Silica Gel	859.0	839.6	
							Total	LR		50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

* 47 3/8/21

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Deseret Power | LOCATION/UNIT: U2 Stack Breaching
PERFORMED BY: PM/S.S. | TEST DATE: 3-8-21
BAR. PRESSURE: 30.14 | TC READOUT ID: 23-WCS
DP INDICATOR ID: 23-WCS | TC ID: #013
DP INDICATOR TYPE: 0-10" | PITOT TUBE ID: #013 | Cp: .84 ✓
ZERO: ✓ | LEVEL: ✓ | LEAK CHECK PRE- ✓ | POST- ✓

Run #: 3-5a	Ps: +55	Run #:	Ps:	Run #:	Ps:
Start: 1052	Stop: 1152	Start:	Stop:	Start:	Stop:

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5	.97	330	5	.87	332	5	1.4	332
4	.96	331	4	.85	331	4	1.2	333
3	.92	332	3	.93	332	3	1.2	332
2	.81	331	2	.91	331	2	1.1	331
1	.75	331	1	.96	332	1	1.0	330
5	.98	332	5	.98	331	5	1.2	332
4	.92	333	4	1.1	333	4	1.4	331
3	.83	332	3	1.2	332	3	1.2	332
2	.81	334	2	.99	332	2	1.3	331
1	.74	332	1	.95	331	1	1.0	331
Heated Line Temp. °F		310	Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C		00.8	Chiller Temp. °C			Chiller Temp. °C		

MOISTURE DATA FOR TEST RUNS 3-5a THROUGH 3-5a1

METER ID: 23-WCS | METER Yd: 1.000 | BALANCE CHECK WEIGHT: 499.9/500.0

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
1052	538.900	1.5	84	85	53	5"	#1	H_2O	905.6	731.7	
1112	552.760	1.5	85	90	54	5"	#2	H_2O	724.9	719.8 (~~720~~)	
1132	567.000	1.5	87	90	55	5"	#3	Empty	640.0	638.9	
1152	581.334						#4	Silica Gel	925.6	917.1	
							Total	LR		50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

Appendix A.2.7
Unit 2 Hydrocarbon Data

SCAQMD METHOD 25.3
EVACUATED CANISTER SAMPLING DATA

Client/Facility: DESERT VIEW Date: 3/8/21

Unit/Location: UNIT 2 - STACK BREACHING Performed By: ES

Probe Material SS Probe Length 3'

Connecting Tubing Material TEFLON Connecting Tubing Length 1'

Barometric Pressure 30.14 Ambient Temperature 78

Test No.		1-VOC-2		2-VOC2			
Vial ID							
Canister ID		9A-C80025		9B-C80034			
		Time	Vacuum	Time	Vacuum	Time	Vacuum
Pre-Test Leak Check	Start	0915	30"	915	30"		
Pre-Test Leak Check	Stop	0925	30"	0925	30"		
Sample Collection	Start	0935	30"	0935	30"	N	
		0945	27"	0945	27"		
		0955	23"	0955	23"		
		1005	18"	1005	18"		
		1015	15"	1015	15"		
		1025	12	1025	12"		A
		1035	10"	1035	10"		
Sample Collection	Stop	1035	10"	1035	10"		
Post -Test Leak Check	Start	1038	10"	1030	10"		
Post-Test Leak Check	Stop	1049	10"	1049	10"		
Line Rinse Volume							

Comments:

Appendix A.2.8
Unit 2 Mercury Data

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 2 - STACK BLEACHING
DATE: 3/11/21
RUN NO: 12-Hg-02
OPERATOR: SS
METER BOX NO: 21-WCS
METER ΔH@: N/A
METER Yd: A = 0.99888 B = 0.9901
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/30
TARGET SAMPLING RATE:
Probe Condition, pre/post test: GOOD
Silica Gel Expended, Y/N: NO
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 72
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6
TRAP NO/DESC: A OLC137227
TRAP NO/DESC: B OLC160774
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0-00005
TRAIN "B" LEAK CHECK:
PRE-TEST: 0-000 @15 POST TEST: 0-000 @15
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER SS
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l		ΔH in. H_2O		Meter Temp A, °F		Meter Temp B, °F		Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F		Rotameter Setting		Vacuum In. Hg	
						In	Out	In	Out								
		A	B	A	B							A	B	A	B	A	B
	1020	9346.307	3036.864			~~70~~	70	-	70	319	233	DRY	DRY	1.0	1.0	3	3
	1025	9349.664	3039.999				70		70	319	235			1.0	1.0	3	3
	1030	9353.021	3043.564				70		70	319	245			1.0	1.0	3	3
	1035	9356.378	3046.914				70		70	319	299			0.7	0.7	3	3
	1040	9359.735	3050.264				72		72	319	300			0.7	0.7	3	3
	1045	9363.092	3053.614				72		72	319	303			0.7	0.7	3	3
	1050	9366.449	3056.964				72		72	319	303			0.7	0.7	3	3
	1055	9369.805	3060.314				72		72	319	302			0.7	0.7	3	3
	1100	9373.162	3063.665				73		73	319	302			0.7	0.7	3	3
	1105	9376.519	3067.015				73		73	319	302			0.7	0.7	3	3
	1110	9379.876	3070.354				73		73	319	302			0.7	0.7	3	3
	1115	9383.233	3073.614				73		73	319	302			0.7	0.7	3	3
	1120	9386.590	3077.064														
Average:																	

Comments: SS 3/11/21

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 2 - STACK BREACHING
DATE: 3/11/21
RUN NO: 2-Hg-02
OPERATOR: SS
METER BOX NO: 20 WCS
METER ΔH@: N/A
METER Yd: A= 99087 B= 0.99926
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/sp
TARGET SAMPLING RATE:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: NO
P, static in. H_2O: NA

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6
TRAP NO/DESC: C OLC160581
TRAP NO/DESC: D OLC132337
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.000@5
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.000 @5
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER: SS
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l		ΔH in. H_2O		Meter Temp A, °F		Meter Temp B, °F		Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F		Rotameter Setting		Vacuum In. Hg	
		C	D	C	D	In	Out	In	Out			C	D	C	D	C	D
										319	233						
	1020	4953.190	3105.056				68		68	319	235	DRY	DRY	1.0	1.0	2	2
	1025	4956.534	3108.400				68		68	319	245			1.0	1.0	2	2
	1030	4959.879	3111.760				68		68	319	299			1.0	1.0	2	2
	1035	4963.223	3115.120				68		68	319	300			0.7	0.7	2	2
	1040	4966.568	3118.470				68		68	319	303			0.7	0.7	2	2
	1045	4969.912	3121.830				69		69	319	303			0.7	0.7	2	2
	1050	4973.257	3125.185				69		69	319	303			0.7	0.7	2	2
	1055	4976.610	3128.545				69		69	319	302			0.7	0.7	2	2
	1100	4979.940	3131.900				70		70	319	302			0.7	0.7	2	2
	1105	4983.295	3135.258				70		70	319	302			0.7	0.7	2	2
	1110	4986.624	3138.615				70		70	319	302			0.7	0.7	2	2
	1115	4989.980	3141.976				70		70								
	1120	4993.321	3145.328				70		70								
	1127																
Average:																	

Comments:

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 2 - STACK BREACHING
DATE: 3/11/21
RUN NO: 2-Hg-U2
OPERATOR: SS
METER BOX NO: 21 WCS
METER ΔH@: N/A
METER Yd: A- 0.99888 B- 0.9901
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/60
TARGET SAMPLING RATE:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: no
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 73
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6'
TRAP NO/DESC: A OLC 149000
TRAP NO/DESC: B OLC 148880
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.000 @15
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.000 @15
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER SS
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l		ΔH in. H_2O		Meter Temp A, °F In	Meter Temp A, °F Out	Meter Temp B, °F In	Meter Temp B, °F Out	Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F		Rotameter Setting		Vacuum In. Hg	
		A	B	A	B						~~300~~	A	B	A	B	A	B
	1140	9387.415	3077.826				70		70	321	300	DRY	DRY	0.7	0.7	2	2
	1145	9390.766	3081.172				70		70	321	300			0.7	0.7	2	2
	1150	9394.119	3084.519				70		70	321	300			0.7	0.7	2	2
	1155	9397.464	3087.860				70		70	321	300			0.7	0.7	2	2
	1200	9400.815	3091.212				70		70	321	300			0.7	0.7	2	2
	1205	9404.160	3094.558				70		70	321	301			0.7	0.7	2	2
	1210	9407.517	3097.905				71		71	321	301			0.7	0.7	2	2
	1215	9410.865	3101.597				71		71	321	301			0.7	0.7	2	2
	1220	9414.212	3104.944				71		71	321	301			0.7	0.7	2	2
	1225	9417.560	3108.290				73		73	321	301			0.7	0.7	2	2
	1230	9420.915	3111.637				73		73	321	301			0.7	0.7	2	2
	1235	9424.260	3114.983				73		73	321	301			0.7	0.7	2	2
	1240	9427.615	3117.900														
Average:																	

Comments:

MONTROSE

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 2 - STACK BREACHING
DATE: 3/11/21
RUN NO: 2 - Hg U2
OPERATOR: SS
METER BOX NO: 20 - WCS
METER ΔH@: N/A
METER Yd: A 0.99887 - B 0.99926
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/SP
TARGET SAMPLING RATE:
Probe Condition, pre/post test: GOOD
Silica Gel Expended, Y/N: NO
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 72
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6'
TRAP NO/DESC: C OLC 149014
TRAP NO/DESC: D OLC 131609
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @ 15 POST TEST: 0.000 @ 15
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 @ 15 POST TEST: 0.000 @ 15
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER SS
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l		ΔH in. H_2O		Meter Temp A, °F		Meter Temp B, °F		Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F		Rotameter Setting		Vacuum In. Hg	
						In	Out	In	Out								
		C	D	C	D							C	D	C	D	C	D
SS	1040	4994.405	3146.130				71		91	321	300	DRY	DRY	0.7	0.7	2	2
	1045	4997.749	3149.474				71		71	321	300			0.7	0.7	2	2
	1050	5001.092	3152.820				77		71	321	300			0.7	0.7	2	2
	1055	5004.434	3156.175				71		71	321	300			0.7	0.7	2	2
	1200	5007.782	3159.530				71		71	321	300			0.7	0.7	2	2
	1205	5011.124	3162.874				71		71	321	300			0.7	0.7	2	2
	1210	5014.465	3166.215				72		72	321	301			0.7	0.7	2	2
	1215	5017.811	3169.573				72		72	321	301			0.7	0.7	2	2
	1220	5021.154	3172.925				72		72	321	301			0.7	0.7	2	2
	1225	5024.500	3176.275				72		72	321	301			0.7	0.7	2	2
	1230	5027.843	3179.624				72		72	321	301			0.7	0.7	2	2
	1235	5031.187	3182.973				72		72	321	301			0.7	0.7	2	2
	1240	5034.530	3186.325														
Average:																	

Comments:

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 2 STACK BREACHING
DATE: 3/11/21
RUN NO: 3-Hg-U2
OPERATOR: SS
METER BOX NO: 21-WCS
METER ΔH@: N/A
METER Yd: A = 0.99888 B = 0.9901
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/SP
TARGET SAMPLING RATE:
Probe Condition, pre/post test: GOOD
Silica Gel Expended, Y/N: NO
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: #135
PROBE LENGTH: 6'
TRAP NO/DESC: A OLC160618
TRAP NO/DESC: B OLC137166
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.000 @15
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 @15 POST TEST: 0.000 @15
CHAIN OF CUSTODY: SAMPLE CUSTODIAN MW
SAMPLER SS
SAMPLE CUSTODIAN MW

Point	Time	Meter Volume, l A	Meter Volume, l B	ΔH in. H_2O A	ΔH in. H_2O B	Meter Temp A, °F In	Meter Temp A, °F Out	Meter Temp B, °F In	Meter Temp B, °F Out	Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F A	Impinger Out Temp, °F B	Rotameter Setting A	Rotameter Setting B	Vacuum In. Hg A	Vacuum In. Hg B
	1315	9428.565	3136.734				72		73	323	300	DRY	DRY	0.7	0.7	2	2
	1320	9431.932	3140.086				72		73	323	300			0.7	0.7	2	2
	1325	9435.291	3143.438				72		73	323	300			0.7	0.7	2	2
	1330	9438.660	3146.791				73		74	323	300			0.7	0.7	2	2
	1335	9442.026	3150.140				73		74	323	300			0.7	0.7	2	2
	1340	9445.391	3153.493				73		74	323	300			0.7	0.7	2	2
	1345	9448.757	3156.845				72		74	323	302			0.7	0.7	2	2
	1350	9452.122	3160.192				72		73	323	302			0.7	0.7	2	2
	1355	9455.487	3163.550				72		73	322	302			0.7	0.7	2	2
	1400	9458.852	3166.900				72		73	322	302			0.7	0.7	2	2
	1405	9462.218	3170.252				72		73	322	302			0.7	0.7	2	2
	1410	9465.581	3173.605				72		73	322	302			0.7	0.7	2	2
	1415	9468.950	3176.956														
Average:																	

Comments:

MONTROSE

METHOD 30B SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: DESERT VIEW
LOCATION: UNIT 2 - STACK BREACHING
DATE: 3/11/21
RUN NO: 3-Hg-U2
OPERATOR: SS
METER BOX NO: 20-WCS
METER ΔH@: N/A
METER Yd: A = 0.99887 B = 0.99926
STACK AREA, FT²: N/A
TRAVERSE POINTS, MIN/POINT: 60/sp
TARGET SAMPLING RATE:
Probe Condition, pre/post test: Good
Silica Gel Expended, Y/N: No
P, static in. H_2O: N/A

AMBIENT TEMPERATURE: 76
BAROMETRIC PRESSURE: 30.14
ASSUMED MOISTURE: N/A
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL/TYPE: # 135
PROBE LENGTH: 6'
TRAP NO/DESC: C OLC160765
TRAP NO/DESC: D OLC131647
TRAIN "A" LEAK CHECK:
PRE-TEST: 0.000 @ 15 POST TEST: 0.000 @ 15
TRAIN "B" LEAK CHECK:
PRE-TEST: 0.000 @ 15 POST TEST: 0.000 @ 15
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER
SAMPLE CUSTODIAN

Point	Time	Meter Volume, l		ΔH in. H_2O		Meter Temp A, °F		Meter Temp B, °F		Stack Temp, °F	Probe Temp °F	Impinger Out Temp, °F		Rotameter Setting		Vacuum In. Hg	
		In	Out	In	Out												
		C	D	C	D							C	D	C	D	C	D
	1315	5035.724	3186.907				71		71	323	300	dry	dry	0.7	0.7	2	2
	1320	6039.066	3190.255				71		71	323	300			0.7	0.7	2	2
	1325	5042.407	3193.625				72		72	323	300			0.7	0.7	2	2
	1330	5045.749	3196.988				72		72	323	300			0.7	0.7	2	2
	1335	5049.091	3200.350				72		72	323	300			0.7	0.7	2	2
	1340	5052.433	3203.717				72		72	323	302			0.7	0.7	2	2
	1345	5055.772	3207.080				72		72	323	302			0.7	0.7	2	2
	1350	5059.118	3210.450				72		72	322	302			0.7	0.7	3	2
	1355	5062.560	3213.815				72		72	322	302			0.7	0.7	2	2
	1400	5065.900	3217.180				72		72	322	302			0.7	0.7	2	2
	1405	5069.141	3220.555				72		72	322	302			0.7	0.7	2	2
	1410	5072.484	3223.909				72		72	322	302			0.7	0.7	2	2
	1415	5075.824	3227.250														
Average:																	

Comments: SS 3/11/21

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desert View Power | LOCATION/UNIT: Unit - 2
PERFORMED BY: Patrick Whitman | TEST DATE: 3/11/2021
BAR. PRESSURE: 30.4 | TC READOUT ID: 23 WCS
DP INDICATOR ID: 23 WC | TC ID: 13
DP INDICATOR TYPE: 0-10" Manometer | PITOT TUBE ID: # 13 | Cp: 0.84
ZERO: ✓ LEVEL: ✓ | LEAK CHECK PRE- ✓ | POST- ✓

Run #: 2 | **Ps:** +.55
Start: 1020 | **Stop:** 1120

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5, 55.3"	0.97	320	5	1.0	363	5	1.2	364
4, 45.9"	0.92	321	4	0.93	363	4	0.95	364
3, 36.5"	0.91	321	3	0.88	359	3	0.92	365
2, 27.1"	0.81	322	2	0.84	359	2	0.61	363
1, 17.7	0.73	319	1	0.80	359	1	0.63	363
5	0.93	320	5	0.85	361	5	0.96	362
4	0.91	320	4	0.83	363	4	0.91	362
3	0.82	321	3	0.92	364	3	0.84	360
2	0.79	321	2	0.98	364	2	1.0	361
1	0.76	319	1	0.99	364	1	1.1	361

	Probe Temp. °F	Filter Temp. °C		Heated Line Temp. °F	Chiller Temp. °C			
1								
2								
3								

MOISTURE DATA FOR TEST RUNS 2 **THROUGH** ____

METER ID: 23 WCS | METER Yd: 1.000 | BALANCE CHECK WEIGHT: 500.0/500

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T imp	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
1020	815.050	2.0	78	79	56	5	#1	H_2O_2	827.2	734.2	
1035	823.600	2.0	79	80	52	5	#2	H_2O_2	749.5	740.5	
1050	838.100	2.0	80	80	52	5	#3	Empty	649.4	639.4	
1105	847.100	2.0	81	81	55	5	#4	Silica Gel	938.2	917.8	
1120	859.300						Total	Line rinse		50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desert View Power LOCATION/UNIT: Unit - 2
PERFORMED BY: Patrick Whitman TEST DATE: 3/11/2021
BAR. PRESSURE: 30.14 TC READOUT ID: 23-WCS
DP INDICATOR ID: 23-WCS TC ID: #13
DP INDICATOR TYPE: 0-10" Manometer PITOT TUBE ID: #13 Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓

Run #: 2 **Ps:** +055
Start: 1140 **Stop:** 1240

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5, 55.3"	0.96	320	5	1.2	361	5	0.85	364
4, 45.9"	0.95	321	4	1.2	360	4	0.84	364
3, 36.5"	0.90	322	3	1.3	361	3	0.92	361
2, 27.1"	0.82	322	2	1.4	362	2	0.97	361
1, 17.7	0.77	322	1	1.0	362	1	0.99	361
5	0.93	319	5	1.0	363	5	0.99	362
4	0.91	320	4	0.93	363	4	1.0	362
3	0.83	321	3	0.88	363	3	0.85	362
2	0.82	321	2	0.85	364	2	0.99	360
1	0.78	320	1	0.80	364	1	1.1	361
	Probe Temp. °F	Filter Temp. °C		Heated Line Temp. °F	Chiller Temp. °C			
1								
2								
3								

MOISTURE DATA FOR TEST RUNS 2 **THROUGH** ____

METER ID: 23 WCS METER Yd: 1.000 BALANCE CHECK WEIGHT: 500.0/ 500

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
1140	858.400	2.0	81	83	59	5	#1	H_2O_2	784.3	624.9	
1155	870.400	2.0	83	83	58	5	#2	H_2O_2	758.4	754.1	
1210	883.800	2.0	82	83	58	5	#3	Empty	598.6	597.7	
1225	892.900	2.0	83	83	59	5	#4	Silica Gel	~~908.0~~	896.4	
1240	905.100						Total	Line rinse	906.0	3/11/21 50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

FLUE GAS VELOCITY AND MOISTURE DATA AND WORKSHEET

CLIENT: Desert View Power | LOCATION/UNIT: Unit - 2
PERFORMED BY: Patrick Whitman | TEST DATE: 3/11/2021
BAR. PRESSURE: 30.14 | TC READOUT ID: #23WCS05
DP INDICATOR ID: 23WCS05 | TC ID: #13
DP INDICATOR TYPE: 0-10" Manometer | PITOT TUBE ID: #13 | Cp: 0.84
ZERO: ✓ | LEVEL: ✓ | LEAK CHECK PRE- ✓ | POST- ✓

Run #: 3 **Ps:** +.55
Start: 1315 **Stop:** 1415

Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F	Sample Point	Velocity Head inches H_2O	Temp, °F
5, 55.3"	0.97	322	5	1.0	362	5	1.2	360
4, 45.9"	0.95	322	4	0.93	362	4	0.96	360
3, 36.5"	0.93	323	3	0.83	364	3	0.93	361
2, 27.1"	0.84	323	2	0.85	364	2	0.63	361
1, 17.7	0.76	323	1	0.80	364	1	0.59	363
5	0.93	321	5	0.85	363	5	0.96	364
4	0.95	321	4	0.83	361	4	0.92	364
3	0.83	322	3	0.89	362	3	0.83	364
2	0.80	322	2	0.91	362	2	1.00	364
1	0.74	321	1	0.99	362	1	1.10	363
	Probe Temp. °F	Filter Temp. °C		Heated Line Temp. °F	Chiller Temp. °C			
1								
2								
3								

MOISTURE DATA FOR TEST RUNS 3 THROUGH _____

METER ID: 23 WCS METER Yd: 1.000 BALANCE CHECK WEIGHT: 500.0/500

Dry Gas Meter							Impinger Data				
Time	Volume	Delta H	Tm (in)	Tm (out)	T_{imp}	Vacuum	No.	Material	End Wt.	Start Wt.	Diff.
1315	905.600	2.0	80	82	50	5	#1	H_2O_2	868.0	754.0	
1330	921.000	2.0	80	82	50	5	#2	H_2O_2	747.9	744.5	
1345	931.600	2.0	82	83	51	5	#3	Empty	648.3	641.4	
1400 1415	942.665	2.0	83	87	51	5	#4	Silica Gel	939.8	930.2	
1435	953.100						Total	Line rinse		50	

Pre-Test Leak Check: 0.005 CFM @ 15 in. Hg., Post-Test Leak Check: 0.005 CFM @ 15 in. Hg

Appendix A.3
Laboratory Reports

Appendix A.3.1
Hydrogen Chloride Laboratory Data

MONTROSE
AIR QUALITY SERVICES

GreenLeaf Power Desert View
Mecca, CA
Units 1 & 2
USEPA Method 321
Hydrogen Chloride Testing
March 4 - 5, 2021
PROJ-006514

By

Trevor Tilmann
Sr. Field Technician / Chemist

March 9, 2021

2625 Denison Drive · Mount Pleasant, MI 48858 · (989) 772-5088 · Fax (989) 772-5870

MONTROSE
AIR QUALITY SERVICES

GreenLeaf Power Desert View
Mecca, CA
FTIR Emissions Testing
March 4th – 5th, 2021
PROJ-006514

Scope

Montrose Air Quality Services (MAQS, Mt. Pleasant, MI), was contracted to conduct emissions testing for GreenLeaf Power Desert View (Mecca, CA). Effluent emissions from Units 1 and 2 were tested for gaseous hydrogen chloride (HCl). Testing was performed March 4th and 5th, 2021.

Extractive Fourier transform infrared (FTIR) spectrometry following US EPA Method 321 was used to quantify gaseous hydrogen chloride emissions from the effluent stream of Units 1 and 2. Trevor Tilmann (MAQS) performed the data collection, data validation and report generation. Phillip Kauppi (MAQS) reviewed the test data and report.

Procedures

FTIR Instrumental Configuration

FTIR data were collected using an MKS MultiGas 2030 FTIR spectrometer. See Table 1 below for sampling system details.

The FTIR was equipped with a temperature-controlled, 5.11-meter multipass gas cell maintained at 191°C. Gas flows and sampling system pressures were monitored using rotameters and pressure transducers. All data were collected at 0.5 cm^{-1} resolution. Each spectrum was derived from the coaddition of 64 scans, with a new data point generated approximately every 60 seconds.

Table 1 – FTIR Sampling System

Source	MKS Serial #	Sampling Line	Probe Assembly	Particulate Filter Media	Operating Temperatures
Units 1 & 2	000928622	50' 3/8" dia. Teflon	3', 3/8" dia. Stainless steel + heated filter element	0.01µ borosilicate glass fiber	191°C FTIR + system

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FTIR QA/QC Methodology

QA/QC procedures followed US EPA Method 321. See Tables 2 and 3 below for QA/QC procedure details and list of calibration gas standards. All calibration gases were introduced to the analyzers and the sampling systems using instrument grade stainless steel rotameters. All QA/QC procedures were within the acceptance criteria allowance of the EPA methodology. QA/QC procedures were run at each sampling location. 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
M321: Zero	Verify that the FTIR is free of contaminants & zero the FTIR	Nitrogen (zero)	Direct to FTIR	pre/post test	< MDL or Noise	Pass
M321: Calibration Transfer Standard (CTS) Direct	Verify FTIR stability, confirm optical path length	Ethylene	Direct to FTIR	pre/post test	+/- 5% cert. value	Pass
M321: Analyte Direct	Verify FTIR calibration	HCl/SF_6	Direct to FTIR	pretest	+/- 5% cert. value	Pass
M321: CTS Response	Verify system stability, recovery, RT	Ethylene	Sampling System	pre/post each run	+/- 5% of Direct Measurement	Pass
M321: Zero Response	Verify system is free of contaminants, system bias	Nitrogen (zero)	Sampling System	pre/post test	Bias correct data	Pass
M321: Analyte Spike	Verify system ability to deliver and quantify analyte of interest in the presence of other effluent gases	HCl/SF_6	Dynamic Addition to Sampling System, 1:10 effluent	pre/post each run	+/- 30% theoretical recovery	Pass

Table 3 – Calibration Gas Standards

Components	Concentration (ppm)	Vendor	Cylinder #	Standard Type
Ethylene	100.0	Airgas	EB0119650	Primary +/- 1%
HCl, SF_6	99.5, 5.01	Airgas	CC715686	GMACS +/- 2%, 5% NIST Traceable
Nitrogen	Zero gas	Praxair	CC68761	CEMs Zero

FTIR QA/QC Calculations

Method 321: Analyte Spiking

Hydrogen chloride spiking was performed at each source prior to and after each test run to verify the ability of the sampling systems to quantitatively deliver a sample containing hydrogen chloride from the base of the probe to the FTIR. The spike target dilution ratio was 1:10 or less. Analyte spiking assures the ability of the FTIR to quantify hydrogen chloride in the presence of effluent gas.

As part of the spiking procedure, samples from the source were measured to determine hydrogen chloride concentrations to be used in the spike recovery calculations. The analyte spiking gas 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

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calculate the concentration of the spiked hydrogen chloride. The following equations illustrates the percent recovery calculation.

$$DF = \frac{SF6(spk)}{SF6(dir)} \quad \text{(Sec. 9.3.1 (3) USEPA Method 321)}$$

$$\%R = 100\ x\ \frac{Sm - Su(1-DF)}{DF\ x\ Cs} \quad \text{(Sec. 9.3.1 (1) USEPA Method 321)}$$

$$Ce = DF * Cs + Su(1 - DF) \quad \text{(Sec. 9.3.1 (2) USEPA Method 321)}$$

DF = Dilution factor of the spike gas
$SF_{6(dir)}$ = SF_6 concentration measured directly in undiluted spike gas
$SF_{6(spk)}$ = Diluted SF_6 concentration measured in a spiked sample
Ce = Expected concentration of the spiked samples (theoretical)
Cs = Cylinder concentration of spike gas
Su = Native concentration of analytes in unspiked samples
Sm = Mean concentration of the analyte spiked effluent 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 possible causes leading to misquantified data.

Results and Discussion

Detection Limit

The detection limit of each analyte was calculated following Annex A2 of ASTM D6348-12 procedure using spectra that contained similar amounts of moisture.

Table 4 - FTIR Detection Limits

Analyte	Detection Limit
HCl	0.2 (ppmv wet)

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Unit 1

Testing was performed on March 5th, 2021. Three, two-hour test runs were performed on Unit 1. Hydrogen chloride was detected during the test runs. Analyte spiking was performed prior to and after each test run to confirm the ability of the measurement system to deliver and quantify hydrogen chloride. See the Unit 1 - FTIR QA/QC Data Appendix for results. All concentration data were calculated on a wet volume basis. See Table 5 below for a summary of the analyte averages during the separate run periods. See the Unit 1 - FTIR Test Run Data Appendix for detailed run time results.

Table 5 – Unit 1 Run Summary

Condition	Calculation	HCl (ppmv wet)
03/05/2021 Unit 1 - Run 1 07:20 - 09:20	Minimum	9.71
	Maximum	15.55
	Average	12.16
03/05/2021 Unit 1 - Run 2 09:42 - 11:42	Minimum	6.86
	Maximum	15.05
	Average	10.28
03/05/2021 Unit 1 - Run 3 12:10 - 14:10	Minimum	6.63
	Maximum	13.60
	Average	10.07

Unit 2

Testing was performed on March 4th, 2021. Three, two-hour test runs were performed on Unit 2. Hydrogen chloride was detected during the test runs. Analyte spiking was performed prior to and after each test run to confirm the ability of the measurement system to deliver and quantify hydrogen chloride. See the Unit 2 - FTIR QA/QC Data Appendix for results. All concentration data were calculated on a wet volume basis. See Table 6 below for a summary of the analyte averages during the separate run periods. See the Unit 2 - FTIR Test Run Data Appendix for detailed run time results.

Table 6 – Unit 2 Run Summary

Condition	Calculation	HCl (ppmv wet)
03/04/2021 Unit 2 - Run 1 07:25 - 09:25	Minimum	4.75
	Maximum	13.35
	Average	6.88
03/04/2021 Unit 2 - Run 2 09:55 - 11:55	Minimum	7.30
	Maximum	15.91
	Average	11.50
03/04/2021 Unit 2 - Run 3 12:25 - 14:25	Minimum	7.29
	Maximum	15.71
	Average	10.81

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The following Appendices include FTIR data and QA/QC procedures:

- Unit 1 - FTIR Test Run Data
- Unit 1 - FTIR QA/QC Data
- Unit 2 - FTIR Test Run Data
- Unit 2 - FTIR QA/QC Data
- Gas Certificates

Date: March 9, 2021

Trevor Tilmann
Sr. Field Technician / Chemist

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APPENDIX

Unit 1 – FTIR Test Run Data

Unit 1 - Run 1

Spectrum	Date	Time	HCl (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT1_1964.LAB	3/5/2021	7:20:11	12.23	191.8	1.023
UNIT1_1965.LAB	3/5/2021	7:21:11	11.61	191.8	1.021
UNIT1_1966.LAB	3/5/2021	7:22:11	11.28	191.8	1.020
UNIT1_1967.LAB	3/5/2021	7:23:11	12.24	191.9	1.021
UNIT1_1968.LAB	3/5/2021	7:24:12	12.67	191.9	1.022
UNIT1_1969.LAB	3/5/2021	7:25:12	12.22	191.9	1.020
UNIT1_1970.LAB	3/5/2021	7:26:12	12.80	191.8	1.021
UNIT1_1971.LAB	3/5/2021	7:27:12	11.95	191.9	1.020
UNIT1_1972.LAB	3/5/2021	7:28:12	12.48	191.9	1.021
UNIT1_1973.LAB	3/5/2021	7:29:12	12.19	191.9	1.019
UNIT1_1974.LAB	3/5/2021	7:30:12	10.92	191.9	1.021
UNIT1_1975.LAB	3/5/2021	7:31:12	13.09	191.9	1.020
UNIT1_1976.LAB	3/5/2021	7:32:12	12.53	191.9	1.021
UNIT1_1977.LAB	3/5/2021	7:33:12	12.20	191.9	1.021
UNIT1_1978.LAB	3/5/2021	7:34:12	11.41	191.8	1.021
UNIT1_1979.LAB	3/5/2021	7:35:13	10.73	191.9	1.019
UNIT1_1980.LAB	3/5/2021	7:36:13	11.06	191.9	1.022
UNIT1_1981.LAB	3/5/2021	7:37:13	12.32	191.9	1.021
UNIT1_1982.LAB	3/5/2021	7:38:13	11.49	191.9	1.021
UNIT1_1983.LAB	3/5/2021	7:39:13	11.48	191.9	1.022
UNIT1_1984.LAB	3/5/2021	7:40:13	11.47	191.9	1.020
UNIT1_1985.LAB	3/5/2021	7:41:13	10.57	191.8	1.020
UNIT1_1986.LAB	3/5/2021	7:42:13	10.93	191.8	1.021
UNIT1_1987.LAB	3/5/2021	7:43:13	11.12	191.8	1.021
UNIT1_1988.LAB	3/5/2021	7:44:14	11.84	191.9	1.020
UNIT1_1989.LAB	3/5/2021	7:45:14	12.47	191.9	1.022
UNIT1_1990.LAB	3/5/2021	7:46:14	12.27	191.9	1.022
UNIT1_1991.LAB	3/5/2021	7:47:14	13.13	191.9	1.019
UNIT1_1992.LAB	3/5/2021	7:48:14	12.38	191.9	1.020
UNIT1_1993.LAB	3/5/2021	7:49:14	13.20	191.9	1.020
UNIT1_1994.LAB	3/5/2021	7:50:14	13.14	191.9	1.020
UNIT1_1995.LAB	3/5/2021	7:51:14	12.47	191.9	1.021
UNIT1_1996.LAB	3/5/2021	7:52:14	12.00	191.9	1.019
UNIT1_1997.LAB	3/5/2021	7:53:14	10.68	191.9	1.021
UNIT1_1998.LAB	3/5/2021	7:54:15	11.78	191.9	1.019
UNIT1_1999.LAB	3/5/2021	7:55:15	11.14	191.9	1.025
UNIT1_2000.LAB	3/5/2021	7:56:15	11.39	191.8	1.018
UNIT1_2001.LAB	3/5/2021	7:57:15	11.83	191.8	1.019
UNIT1_2002.LAB	3/5/2021	7:58:15	11.55	191.9	1.020
UNIT1_2003.LAB	3/5/2021	7:59:15	10.81	191.9	1.021
UNIT1_2004.LAB	3/5/2021	8:00:15	10.62	191.9	1.020
UNIT1_2005.LAB	3/5/2021	8:01:15	9.71	191.9	1.020
UNIT1_2006.LAB	3/5/2021	8:02:15	9.80	191.9	1.020
UNIT1_2007.LAB	3/5/2021	8:03:15	11.01	191.9	1.020
UNIT1_2008.LAB	3/5/2021	8:04:16	12.46	191.9	1.019
UNIT1_2009.LAB	3/5/2021	8:05:16	10.07	191.9	1.019
UNIT1_2010.LAB	3/5/2021	8:06:16	10.64	191.9	1.022
UNIT1_2011.LAB	3/5/2021	8:07:16	11.06	191.9	1.019
UNIT1_2012.LAB	3/5/2021	8:08:16	12.24	191.9	1.022
UNIT1_2013.LAB	3/5/2021	8:09:16	13.17	191.8	1.021
UNIT1_2014.LAB	3/5/2021	8:10:16	12.55	191.9	1.022
UNIT1_2015.LAB	3/5/2021	8:11:16	14.31	191.9	1.023
UNIT1_2016.LAB	3/5/2021	8:12:16	13.59	191.9	1.022
UNIT1_2017.LAB	3/5/2021	8:13:16	11.50	191.9	1.022
UNIT1_2018.LAB	3/5/2021	8:14:17	10.85	191.9	1.022
UNIT1_2019.LAB	3/5/2021	8:15:17	10.91	191.9	1.022
UNIT1_2020.LAB	3/5/2021	8:16:17	11.51	191.9	1.019
UNIT1_2021.LAB	3/5/2021	8:17:17	11.59	191.9	1.020
UNIT1_2022.LAB	3/5/2021	8:18:17	10.56	191.9	1.021
UNIT1_2023.LAB	3/5/2021	8:19:17	11.13	191.9	1.019

Description	Date	Time	NO (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT1_2024.LAB	3/5/2021	8:20:17	11.69	191.9	1.020
UNIT1_2025.LAB	3/5/2021	8:21:17	12.07	191.9	1.022
UNIT1_2026.LAB	3/5/2021	8:22:17	12.28	191.9	1.019
UNIT1_2027.LAB	3/5/2021	8:23:17	12.41	191.9	1.021
UNIT1_2028.LAB	3/5/2021	8:24:18	11.69	191.9	1.021
UNIT1_2029.LAB	3/5/2021	8:25:18	10.60	191.9	1.023
UNIT1_2030.LAB	3/5/2021	8:26:18	10.22	191.9	1.021
UNIT1_2031.LAB	3/5/2021	8:27:18	10.46	191.9	1.020
UNIT1_2032.LAB	3/5/2021	8:28:18	11.75	191.9	1.018
UNIT1_2033.LAB	3/5/2021	8:29:18	11.81	191.9	1.022
UNIT1_2034.LAB	3/5/2021	8:30:18	11.84	191.9	1.021
UNIT1_2035.LAB	3/5/2021	8:31:18	11.97	191.9	1.020
UNIT1_2036.LAB	3/5/2021	8:32:18	10.92	191.9	1.021
UNIT1_2037.LAB	3/5/2021	8:33:18	11.16	191.9	1.019
UNIT1_2038.LAB	3/5/2021	8:34:19	11.64	191.9	1.021
UNIT1_2039.LAB	3/5/2021	8:35:19	12.54	191.9	1.022
UNIT1_2040.LAB	3/5/2021	8:36:19	14.23	191.9	1.022
UNIT1_2041.LAB	3/5/2021	8:37:19	11.52	191.9	1.021
UNIT1_2042.LAB	3/5/2021	8:38:19	11.07	191.9	1.021
UNIT1_2043.LAB	3/5/2021	8:39:19	10.97	191.9	1.022
UNIT1_2044.LAB	3/5/2021	8:40:19	10.40	191.9	1.019
UNIT1_2045.LAB	3/5/2021	8:41:19	11.85	191.9	1.020
UNIT1_2046.LAB	3/5/2021	8:42:19	11.57	191.9	1.021
UNIT1_2047.LAB	3/5/2021	8:43:19	12.82	191.9	1.019
UNIT1_2048.LAB	3/5/2021	8:44:20	12.26	191.9	1.021
UNIT1_2049.LAB	3/5/2021	8:45:20	11.84	191.9	1.020
UNIT1_2050.LAB	3/5/2021	8:46:20	13.08	191.8	1.022
UNIT1_2051.LAB	3/5/2021	8:47:20	12.22	191.9	1.020
UNIT1_2052.LAB	3/5/2021	8:48:20	12.64	191.9	1.021
UNIT1_2053.LAB	3/5/2021	8:49:20	14.11	191.9	1.020
UNIT1_2054.LAB	3/5/2021	8:50:20	13.31	191.9	1.019
UNIT1_2055.LAB	3/5/2021	8:51:20	12.56	191.9	1.020
UNIT1_2056.LAB	3/5/2021	8:52:20	12.60	191.9	1.021
UNIT1_2057.LAB	3/5/2021	8:53:20	12.63	191.9	1.022
UNIT1_2058.LAB	3/5/2021	8:54:21	13.02	191.9	1.020
UNIT1_2059.LAB	3/5/2021	8:55:21	11.80	191.9	1.020
UNIT1_2060.LAB	3/5/2021	8:56:21	11.58	191.9	1.020
UNIT1_2061.LAB	3/5/2021	8:57:21	13.14	191.9	1.018
UNIT1_2062.LAB	3/5/2021	8:58:21	13.17	191.9	1.020
UNIT1_2063.LAB	3/5/2021	8:59:21	12.34	191.9	1.019
UNIT1_2064.LAB	3/5/2021	9:00:21	13.59	192.0	1.020
UNIT1_2065.LAB	3/5/2021	9:01:21	12.88	192.0	1.021
UNIT1_2066.LAB	3/5/2021	9:02:21	13.20	191.9	1.020
UNIT1_2067.LAB	3/5/2021	9:03:21	13.23	191.9	1.019
UNIT1_2068.LAB	3/5/2021	9:04:22	12.45	192.0	1.024
UNIT1_2069.LAB	3/5/2021	9:05:22	11.46	192.0	1.022
UNIT1_2070.LAB	3/5/2021	9:06:22	12.75	191.9	1.020
UNIT1_2071.LAB	3/5/2021	9:07:22	12.47	191.9	1.022
UNIT1_2072.LAB	3/5/2021	9:08:22	13.09	191.9	1.021
UNIT1_2073.LAB	3/5/2021	9:09:22	12.94	191.9	1.022
UNIT1_2074.LAB	3/5/2021	9:10:22	12.76	191.9	1.020

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Spectrum	Date	Time	HCl (ppm wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (atm)
UNIT1_2075.LAB	3/5/2021	9:11:22	14.16	191.9	1.020
UNIT1_2076.LAB	3/5/2021	9:12:22	12.85	191.9	1.021
UNIT1_2077.LAB	3/5/2021	9:13:22	13.05	191.9	1.022
UNIT1_2078.LAB	3/5/2021	9:14:23	13.86	191.9	1.020
UNIT1_2079.LAB	3/5/2021	9:15:23	14.58	191.9	1.020
UNIT1_2080.LAB	3/5/2021	9:16:23	15.55	191.9	1.023
UNIT1_2081.LAB	3/5/2021	9:17:23	15.12	191.9	1.021
UNIT1_2082.LAB	3/5/2021	9:18:23	14.80	191.9	1.020
UNIT1_2083.LAB	3/5/2021	9:19:23	15.41	191.9	1.018
UNIT1_2084.LAB	3/5/2021	9:20:23	14.97	191.9	1.020
[illegible]	[illegible]	[illegible]	8.71		
[illegible]	[illegible]	[illegible]	15.55		
[illegible]	[illegible]	[illegible]	12.16		

Unit 1 - Run 2

Spectrum	Date	Time	HCl (ppm wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (atm)
UNIT1_2170.LAB	3/5/2021	9:42:25	13.44	192.0	1.017
UNIT1_2171.LAB	3/5/2021	9:43:25	12.91	192.0	1.020
UNIT1_2172.LAB	3/5/2021	9:44:25	13.97	191.9	1.021
UNIT1_2173.LAB	3/5/2021	9:45:25	14.03	191.9	1.021
UNIT1_2174.LAB	3/5/2021	9:46:25	14.80	191.9	1.019
UNIT1_2175.LAB	3/5/2021	9:47:25	14.65	191.9	1.019
UNIT1_2176.LAB	3/5/2021	9:48:25	13.47	191.9	1.019
UNIT1_2177.LAB	3/5/2021	9:49:25	12.59	191.9	1.019
UNIT1_2178.LAB	3/5/2021	9:50:25	12.22	191.9	1.018
UNIT1_2179.LAB	3/5/2021	9:51:25	12.28	192.0	1.019
UNIT1_2180.LAB	3/5/2021	9:52:26	11.83	192.0	1.020
UNIT1_2181.LAB	3/5/2021	9:53:26	12.30	192.0	1.018
UNIT1_2182.LAB	3/5/2021	9:54:26	12.18	192.0	1.020
UNIT1_2183.LAB	3/5/2021	9:55:26	12.28	192.0	1.020
UNIT1_2184.LAB	3/5/2021	9:56:26	11.43	191.9	1.021
UNIT1_2185.LAB	3/5/2021	9:57:26	11.25	191.9	1.019
UNIT1_2186.LAB	3/5/2021	9:58:26	12.87	191.9	1.019
UNIT1_2187.LAB	3/5/2021	9:59:26	12.04	191.9	1.020
UNIT1_2188.LAB	3/5/2021	10:00:26	12.81	191.9	1.019
UNIT1_2189.LAB	3/5/2021	10:01:26	13.69	191.9	1.020
UNIT1_2190.LAB	3/5/2021	10:02:27	15.05	192.0	1.021
UNIT1_2191.LAB	3/5/2021	10:03:27	12.22	192.0	1.021
UNIT1_2192.LAB	3/5/2021	10:04:27	11.25	192.0	1.020
UNIT1_2193.LAB	3/5/2021	10:05:27	10.83	192.0	1.020
UNIT1_2194.LAB	3/5/2021	10:06:27	9.91	191.9	1.019
UNIT1_2195.LAB	3/5/2021	10:07:27	10.45	191.9	1.022
UNIT1_2196.LAB	3/5/2021	10:08:27	9.86	191.9	1.019
UNIT1_2197.LAB	3/5/2021	10:09:27	9.83	191.9	1.020
UNIT1_2198.LAB	3/5/2021	10:10:27	10.02	191.9	1.021
UNIT1_2199.LAB	3/5/2021	10:11:28	9.53	191.9	1.019
UNIT1_2200.LAB	3/5/2021	10:12:28	9.91	192.0	1.020
UNIT1_2201.LAB	3/5/2021	10:13:28	10.76	192.0	1.019
UNIT1_2202.LAB	3/5/2021	10:14:28	9.37	192.0	1.020
UNIT1_2203.LAB	3/5/2021	10:15:28	9.92	192.0	1.017
UNIT1_2204.LAB	3/5/2021	10:16:28	8.95	191.9	1.019
UNIT1_2205.LAB	3/5/2021	10:17:28	8.97	191.9	1.019
UNIT1_2206.LAB	3/5/2021	10:18:28	8.18	191.9	1.018
UNIT1_2207.LAB	3/5/2021	10:19:28	8.30	191.9	1.021
UNIT1_2208.LAB	3/5/2021	10:20:28	7.61	191.9	1.017
UNIT1_2209.LAB	3/5/2021	10:21:29	8.59	191.9	1.020
UNIT1_2210.LAB	3/5/2021	10:22:29	11.04	191.9	1.018
UNIT1_2211.LAB	3/5/2021	10:23:29	10.45	191.9	1.019
UNIT1_2212.LAB	3/5/2021	10:24:29	9.22	191.9	1.018
UNIT1_2213.LAB	3/5/2021	10:25:29	7.92	191.9	1.020

Specimen	Date	Time	NO (ppmv dry)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (atm)
UNIT1_2214.LAB	3/5/2021	10:26:29	8.60	191.9	1.020
UNIT1_2215.LAB	3/5/2021	10:27:29	8.12	191.9	1.019
UNIT1_2216.LAB	3/5/2021	10:28:29	7.06	191.9	1.019
UNIT1_2217.LAB	3/5/2021	10:29:29	8.18	191.9	1.020
UNIT1_2218.LAB	3/5/2021	10:30:30	9.63	191.9	1.020
UNIT1_2219.LAB	3/5/2021	10:31:30	9.50	191.9	1.018
UNIT1_2220.LAB	3/5/2021	10:32:30	8.91	191.9	1.019
UNIT1_2221.LAB	3/5/2021	10:33:30	8.19	191.9	1.019
UNIT1_2222.LAB	3/5/2021	10:34:30	8.40	192.0	1.019
UNIT1_2223.LAB	3/5/2021	10:35:30	7.44	192.0	1.019
UNIT1_2224.LAB	3/5/2021	10:36:30	7.93	192.0	1.018
UNIT1_2225.LAB	3/5/2021	10:37:30	8.92	191.9	1.018
UNIT1_2226.LAB	3/5/2021	10:38:30	8.98	191.9	1.019
UNIT1_2227.LAB	3/5/2021	10:39:31	7.55	191.9	1.018
UNIT1_2228.LAB	3/5/2021	10:40:31	7.87	191.9	1.018
UNIT1_2229.LAB	3/5/2021	10:41:31	8.94	191.9	1.020
UNIT1_2230.LAB	3/5/2021	10:42:31	8.67	192.0	1.018
UNIT1_2231.LAB	3/5/2021	10:43:31	8.39	192.0	1.018
UNIT1_2232.LAB	3/5/2021	10:44:31	9.17	192.0	1.017
UNIT1_2233.LAB	3/5/2021	10:45:31	8.17	192.0	1.021
UNIT1_2234.LAB	3/5/2021	10:46:31	7.89	192.0	1.019
UNIT1_2235.LAB	3/5/2021	10:47:31	7.71	192.0	1.019
UNIT1_2236.LAB	3/5/2021	10:48:31	6.86	192.0	1.019
UNIT1_2237.LAB	3/5/2021	10:49:32	7.52	192.0	1.019
UNIT1_2238.LAB	3/5/2021	10:50:32	8.60	192.0	1.019
UNIT1_2239.LAB	3/5/2021	10:51:32	8.73	192.0	1.020
UNIT1_2240.LAB	3/5/2021	10:52:32	8.46	192.0	1.017
UNIT1_2241.LAB	3/5/2021	10:53:32	9.78	192.0	1.019
UNIT1_2242.LAB	3/5/2021	10:54:32	9.07	192.0	1.017
UNIT1_2243.LAB	3/5/2021	10:55:32	10.81	192.0	1.017
UNIT1_2244.LAB	3/5/2021	10:56:32	11.15	192.0	1.017
UNIT1_2245.LAB	3/5/2021	10:57:32	11.59	192.0	1.019
UNIT1_2246.LAB	3/5/2021	10:58:32	10.86	191.9	1.018
UNIT1_2247.LAB	3/5/2021	10:59:33	9.57	191.9	1.018
UNIT1_2248.LAB	3/5/2021	11:00:33	9.22	191.9	1.018
UNIT1_2249.LAB	3/5/2021	11:01:33	9.75	191.9	1.019
UNIT1_2250.LAB	3/5/2021	11:02:33	9.79	191.9	1.019
UNIT1_2251.LAB	3/5/2021	11:03:33	10.88	191.9	1.019
UNIT1_2252.LAB	3/5/2021	11:04:33	11.83	192.0	1.020
UNIT1_2253.LAB	3/5/2021	11:05:33	11.28	192.0	1.019
UNIT1_2254.LAB	3/5/2021	11:06:33	10.65	192.0	1.019
UNIT1_2255.LAB	3/5/2021	11:07:33	9.93	192.0	1.017
UNIT1_2256.LAB	3/5/2021	11:08:33	9.67	191.9	1.018
UNIT1_2257.LAB	3/5/2021	11:09:34	10.43	191.9	1.018
UNIT1_2258.LAB	3/5/2021	11:10:34	11.22	191.9	1.018
UNIT1_2259.LAB	3/5/2021	11:11:34	11.25	191.9	1.018
UNIT1_2260.LAB	3/5/2021	11:12:34	11.11	191.9	1.018
UNIT1_2261.LAB	3/5/2021	11:13:34	11.37	191.9	1.019
UNIT1_2262.LAB	3/5/2021	11:14:34	11.93	191.9	1.019
UNIT1_2263.LAB	3/5/2021	11:15:34	12.97	191.9	1.018
UNIT1_2264.LAB	3/5/2021	11:16:34	12.54	191.9	1.021
UNIT1_2265.LAB	3/5/2021	11:17:34	10.86	191.9	1.019
UNIT1_2266.LAB	3/5/2021	11:18:35	11.84	191.9	1.017
UNIT1_2267.LAB	3/5/2021	11:19:35	11.63	191.9	1.018
UNIT1_2268.LAB	3/5/2021	11:20:35	10.59	191.9	1.021
UNIT1_2269.LAB	3/5/2021	11:21:35	10.35	191.8	1.018
UNIT1_2270.LAB	3/5/2021	11:22:35	11.16	191.8	1.018
UNIT1_2271.LAB	3/5/2021	11:23:35	12.02	191.8	1.020
UNIT1_2272.LAB	3/5/2021	11:24:35	11.51	191.9	1.018
UNIT1_2273.LAB	3/5/2021	11:25:35	11.67	191.8	1.018
UNIT1_2274.LAB	3/5/2021	11:26:35	11.16	191.8	1.018

Spectrum	Date	Time	NO (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (atm)
UNIT1_2275.LAB	3/5/2021	11:27:35	8.69	191.8	1.017
UNIT1_2276.LAB	3/5/2021	11:28:36	9.70	191.8	1.018
UNIT1_2277.LAB	3/5/2021	11:29:36	9.04	191.8	1.019
UNIT1_2278.LAB	3/5/2021	11:30:36	8.52	191.8	1.020
UNIT1_2279.LAB	3/5/2021	11:31:36	7.97	191.8	1.019
UNIT1_2280.LAB	3/5/2021	11:32:36	8.90	191.8	1.018
UNIT1_2281.LAB	3/5/2021	11:33:36	9.34	191.8	1.016
UNIT1_2282.LAB	3/5/2021	11:34:36	9.82	191.8	1.016
UNIT1_2283.LAB	3/5/2021	11:35:36	10.04	191.8	1.018
UNIT1_2284.LAB	3/5/2021	11:36:36	9.81	191.8	1.019
UNIT1_2285.LAB	3/5/2021	11:37:36	10.04	191.8	1.018
UNIT1_2286.LAB	3/5/2021	11:38:37	9.35	191.8	1.019
UNIT1_2287.LAB	3/5/2021	11:39:37	10.32	191.8	1.018
UNIT1_2288.LAB	3/5/2021	11:40:37	9.57	191.8	1.020
UNIT1_2289.LAB	3/5/2021	11:41:37	10.56	191.8	1.019
UNIT1_2290.LAB	3/5/2021	11:42:37	11.13	191.8	1.018
[illegible]	Minimum		6.86		
Unit 1 - Run 2	Maximum		15.05		
[illegible]	Range		10.20		

Unit 1 - Run 3

Spectrum	Date	Time	NO (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (atm)
UNIT1_2351.LAB	3/5/2021	12:10:14	10.88	191.8	1.017
UNIT1_2352.LAB	3/5/2021	12:11:14	10.24	191.8	1.017
UNIT1_2353.LAB	3/5/2021	12:12:14	10.39	191.8	1.019
UNIT1_2354.LAB	3/5/2021	12:13:14	12.09	191.8	1.018
UNIT1_2355.LAB	3/5/2021	12:14:14	11.91	191.8	1.018
UNIT1_2356.LAB	3/5/2021	12:15:14	12.40	191.8	1.018
UNIT1_2357.LAB	3/5/2021	12:16:15	11.35	191.8	1.017
UNIT1_2358.LAB	3/5/2021	12:17:15	13.46	191.8	1.019
UNIT1_2359.LAB	3/5/2021	12:18:15	11.98	191.8	1.019
UNIT1_2360.LAB	3/5/2021	12:19:15	11.19	191.8	1.015
UNIT1_2361.LAB	3/5/2021	12:20:15	10.63	191.8	1.018
UNIT1_2362.LAB	3/5/2021	12:21:15	9.99	191.8	1.016
UNIT1_2363.LAB	3/5/2021	12:22:15	10.02	191.8	1.016
UNIT1_2364.LAB	3/5/2021	12:23:15	10.58	191.8	1.016
UNIT1_2365.LAB	3/5/2021	12:24:15	10.68	191.8	1.017
UNIT1_2366.LAB	3/5/2021	12:25:15	10.29	191.8	1.018
UNIT1_2367.LAB	3/5/2021	12:26:16	9.79	191.8	1.016
UNIT1_2368.LAB	3/5/2021	12:27:16	9.10	191.8	1.017
UNIT1_2369.LAB	3/5/2021	12:28:16	8.61	191.8	1.017
UNIT1_2370.LAB	3/5/2021	12:29:16	8.70	191.8	1.016
UNIT1_2371.LAB	3/5/2021	12:30:16	8.41	191.8	1.017
UNIT1_2372.LAB	3/5/2021	12:31:16	9.06	191.8	1.015
UNIT1_2373.LAB	3/5/2021	12:32:16	9.12	191.8	1.017
UNIT1_2374.LAB	3/5/2021	12:33:16	8.80	191.8	1.018
UNIT1_2375.LAB	3/5/2021	12:34:16	8.77	191.8	1.017
UNIT1_2376.LAB	3/5/2021	12:35:17	9.61	191.8	1.015
UNIT1_2377.LAB	3/5/2021	12:36:17	9.94	191.8	1.017
UNIT1_2378.LAB	3/5/2021	12:37:17	10.49	191.8	1.016
UNIT1_2379.LAB	3/5/2021	12:38:17	10.20	191.8	1.017
UNIT1_2380.LAB	3/5/2021	12:39:17	9.68	191.8	1.018
UNIT1_2381.LAB	3/5/2021	12:40:17	9.12	191.8	1.018
UNIT1_2382.LAB	3/5/2021	12:41:17	9.42	191.8	1.018
UNIT1_2383.LAB	3/5/2021	12:42:18	10.66	191.8	1.017
UNIT1_2384.LAB	3/5/2021	12:43:17	10.35	191.8	1.018
UNIT1_2385.LAB	3/5/2021	12:44:17	9.95	191.8	1.017
UNIT1_2386.LAB	3/5/2021	12:45:18	8.94	191.8	1.017
UNIT1_2387.LAB	3/5/2021	12:46:18	9.38	191.8	1.016
UNIT1_2388.LAB	3/5/2021	12:47:18	8.50	191.8	1.017

Description	Date	Time	HCl (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT1_2389.LAB	3/5/2021	12:48:18	8.86	191.8	1.017
UNIT1_2390.LAB	3/5/2021	12:49:18	10.65	191.8	1.018
UNIT1_2391.LAB	3/5/2021	12:50:18	10.97	191.8	1.017
UNIT1_2392.LAB	3/5/2021	12:51:18	10.18	191.8	1.019
UNIT1_2393.LAB	3/5/2021	12:52:18	10.45	191.8	1.015
UNIT1_2394.LAB	3/5/2021	12:53:18	9.85	191.8	1.015
UNIT1_2395.LAB	3/5/2021	12:54:18	9.80	191.8	1.017
UNIT1_2396.LAB	3/5/2021	12:55:19	8.72	191.8	1.017
UNIT1_2397.LAB	3/5/2021	12:56:19	9.18	191.8	1.017
UNIT1_2398.LAB	3/5/2021	12:57:19	8.98	191.8	1.017
UNIT1_2399.LAB	3/5/2021	12:58:19	9.96	191.8	1.016
UNIT1_2400.LAB	3/5/2021	12:59:19	10.76	191.8	1.016
UNIT1_2401.LAB	3/5/2021	13:00:19	10.89	191.8	1.017
UNIT1_2402.LAB	3/5/2021	13:01:19	10.28	191.8	1.017
UNIT1_2403.LAB	3/5/2021	13:02:19	10.16	191.8	1.017
UNIT1_2404.LAB	3/5/2021	13:03:19	9.45	191.8	1.017
UNIT1_2405.LAB	3/5/2021	13:04:19	8.96	191.8	1.016
UNIT1_2406.LAB	3/5/2021	13:05:20	8.74	191.8	1.016
UNIT1_2407.LAB	3/5/2021	13:06:20	8.97	191.8	1.017
UNIT1_2408.LAB	3/5/2021	13:07:20	9.47	191.8	1.016
UNIT1_2409.LAB	3/5/2021	13:08:20	9.27	191.8	1.016
UNIT1_2410.LAB	3/5/2021	13:09:20	9.67	191.8	1.015
UNIT1_2411.LAB	3/5/2021	13:10:20	9.96	191.8	1.015
UNIT1_2412.LAB	3/5/2021	13:11:20	11.91	191.8	1.016
UNIT1_2413.LAB	3/5/2021	13:12:20	11.74	191.8	1.016
UNIT1_2414.LAB	3/5/2021	13:13:20	10.39	191.8	1.017
UNIT1_2415.LAB	3/5/2021	13:14:20	9.27	191.8	1.016
UNIT1_2416.LAB	3/5/2021	13:15:21	9.60	191.8	1.015
UNIT1_2417.LAB	3/5/2021	13:16:21	10.52	191.8	1.017
UNIT1_2418.LAB	3/5/2021	13:17:21	10.20	191.8	1.017
UNIT1_2419.LAB	3/5/2021	13:18:21	9.70	191.8	1.018
UNIT1_2420.LAB	3/5/2021	13:19:21	9.86	191.8	1.017
UNIT1_2421.LAB	3/5/2021	13:20:21	10.00	191.8	1.017
UNIT1_2422.LAB	3/5/2021	13:21:21	9.99	191.8	1.013
UNIT1_2423.LAB	3/5/2021	13:22:21	11.32	191.8	1.016
UNIT1_2424.LAB	3/5/2021	13:23:21	11.71	191.8	1.017
UNIT1_2425.LAB	3/5/2021	13:24:22	10.00	191.8	1.015
UNIT1_2426.LAB	3/5/2021	13:25:22	10.19	191.8	1.016
UNIT1_2427.LAB	3/5/2021	13:26:22	12.27	191.8	1.015
UNIT1_2428.LAB	3/5/2021	13:27:22	13.60	191.8	1.014
UNIT1_2429.LAB	3/5/2021	13:28:22	13.09	191.8	1.015
UNIT1_2430.LAB	3/5/2021	13:29:22	10.86	191.8	1.017
UNIT1_2431.LAB	3/5/2021	13:30:22	9.41	191.8	1.014
UNIT1_2432.LAB	3/5/2021	13:31:22	10.38	191.8	1.016
UNIT1_2433.LAB	3/5/2021	13:32:22	10.34	191.8	1.015
UNIT1_2434.LAB	3/5/2021	13:33:22	10.38	191.8	1.014
UNIT1_2435.LAB	3/5/2021	13:34:22	10.44	191.8	1.017
UNIT1_2436.LAB	3/5/2021	13:35:23	10.44	191.8	1.016
UNIT1_2437.LAB	3/5/2021	13:36:23	9.50	191.8	1.015
UNIT1_2438.LAB	3/5/2021	13:37:23	10.79	191.8	1.014
UNIT1_2439.LAB	3/5/2021	13:38:23	10.26	191.8	1.018
UNIT1_2440.LAB	3/5/2021	13:39:23	11.32	191.8	1.015
UNIT1_2441.LAB	3/5/2021	13:40:23	12.39	191.8	1.016
UNIT1_2442.LAB	3/5/2021	13:41:23	11.73	191.8	1.018
UNIT1_2443.LAB	3/5/2021	13:42:23	10.70	191.8	1.014
UNIT1_2444.LAB	3/5/2021	13:43:23	10.40	191.8	1.015
UNIT1_2445.LAB	3/5/2021	13:44:24	11.32	191.8	1.014
UNIT1_2446.LAB	3/5/2021	13:45:24	11.97	191.8	1.016
UNIT1_2447.LAB	3/5/2021	13:46:24	11.35	191.8	1.015
UNIT1_2448.LAB	3/5/2021	13:47:24	12.12	191.8	1.013
UNIT1_2449.LAB	3/5/2021	13:48:24	12.72	191.8	1.014

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Spectrum	Date	Time	HCl (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT1_2450.LAB	3/5/2021	13:49:24	13.18	191.8	1.014
UNIT1_2451.LAB	3/5/2021	13:50:24	11.48	191.8	1.016
UNIT1_2452.LAB	3/5/2021	13:51:24	10.12	191.8	1.015
UNIT1_2453.LAB	3/5/2021	13:52:24	8.62	191.8	1.016
UNIT1_2454.LAB	3/5/2021	13:53:24	9.35	191.8	1.015
UNIT1_2455.LAB	3/5/2021	13:54:24	10.36	191.8	1.014
UNIT1_2456.LAB	3/5/2021	13:55:25	9.13	191.8	1.015
UNIT1_2457.LAB	3/5/2021	13:56:25	8.58	191.8	1.015
UNIT1_2458.LAB	3/5/2021	13:57:25	8.43	191.8	1.013
UNIT1_2459.LAB	3/5/2021	13:58:25	8.98	191.8	1.014
UNIT1_2460.LAB	3/5/2021	13:59:25	8.41	191.8	1.016
UNIT1_2461.LAB	3/5/2021	14:00:25	8.64	191.8	1.013
UNIT1_2462.LAB	3/5/2021	14:01:25	9.13	191.8	1.013
UNIT1_2463.LAB	3/5/2021	14:02:25	8.01	191.8	1.015
UNIT1_2464.LAB	3/5/2021	14:03:25	7.87	191.8	1.016
UNIT1_2465.LAB	3/5/2021	14:04:25	7.19	191.8	1.016
UNIT1_2466.LAB	3/5/2021	14:05:26	6.63	191.8	1.014
UNIT1_2467.LAB	3/5/2021	14:06:26	6.70	191.8	1.014
UNIT1_2468.LAB	3/5/2021	14:07:26	7.37	191.8	1.015
UNIT1_2469.LAB	3/5/2021	14:08:26	8.23	191.8	1.013
UNIT1_2470.LAB	3/5/2021	14:09:26	9.61	191.8	1.016
UNIT1_2471.LAB	3/5/2021	14:10:26	8.98	191.8	1.014
03/05/2021 Unit 1 - Run 3 12:10 - 14:10	Minimum		6.63		
	Maximum		13.18		
	Average		10.07		

APPENDIX

Unit 1 – FTIR QAQC Data

Nitrogen Direct to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT1_N2_DIR_1845BKG.LAB	3/5/2021	6:31:09	0.00	0.00	0.00	0.00
UNIT1_N2_DIR_1846.LAB	3/5/2021	6:31:22	0.00	-0.04	0.00	-0.17
UNIT1_N2_DIR_1847.LAB	3/5/2021	6:31:30	-0.02	0.04	0.00	-0.19
UNIT1_N2_DIR_1848.LAB	3/5/2021	6:31:37	0.03	0.05	0.01	-0.09
UNIT1_N2_DIR_1849.LAB	3/5/2021	6:31:45	-0.04	0.03	0.00	0.03
UNIT1_N2_DIR_1850.LAB	3/5/2021	6:31:53	0.01	-0.11	0.00	-0.23
UNIT1_N2_DIR_1851.LAB	3/5/2021	6:32:00	-0.01	0.23	0.01	-0.08
UNIT1_N2_DIR_1852.LAB	3/5/2021	6:32:07	-0.07	-0.02	0.00	-0.03
UNIT1_N2_DIR_1853.LAB	3/5/2021	6:32:15	-0.02	0.05	0.00	0.25

CTS, 100.0 ppm Ethylene Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT1_CTS_DIR_1854.LAB	3/5/2021	6:33:02	-0.02	0.01	0.00	100.28	**100.3%**
UNIT1_CTS_DIR_1855.LAB	3/5/2021	6:33:09	0.01	-0.09	-0.01	99.97	**100.0%**
UNIT1_CTS_DIR_1856.LAB	3/5/2021	6:33:17	0.02	-0.14	-0.01	100.30	**100.3%**
UNIT1_CTS_DIR_1857.LAB	3/5/2021	6:33:24	0.01	0.15	-0.01	100.15	**100.2%**
UNIT1_CTS_DIR_1858.LAB	3/5/2021	6:33:32	-0.04	0.20	-0.02	100.10	**100.1%**
UNIT1_CTS_DIR_1859.LAB	3/5/2021	6:33:39	0.00	0.22	0.00	100.53	**100.5%**
UNIT1_CTS_DIR_1860.LAB	3/5/2021	6:33:47	0.04	0.04	-0.01	99.64	**99.6%**
UNIT1_CTS_DIR_1861.LAB	3/5/2021	6:33:54	0.00	0.20	0.00	100.05	**100.0%**
		Average				100.13	

99.5 ppm HCl/5.01 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT1_HCL_DIR_1865.LAB	3/5/2021	6:39:31	-0.02	98.48	4.93	-0.45
UNIT1_HCL_DIR_1866.LAB	3/5/2021	6:39:38	-0.02	98.60	4.92	-0.57
UNIT1_HCL_DIR_1867.LAB	3/5/2021	6:39:46	0.05	100.20	4.93	-0.55
UNIT1_HCL_DIR_1868.LAB	3/5/2021	6:39:54	0.04	100.52	4.92	-0.59
UNIT1_HCL_DIR_1869.LAB	3/5/2021	6:40:01	-0.05	98.23	4.92	-0.53
UNIT1_HCL_DIR_1870.LAB	3/5/2021	6:40:08	-0.04	98.91	4.93	-0.70
UNIT1_HCL_DIR_1871.LAB	3/5/2021	6:40:16	-0.03	98.88	4.91	-0.57
UNIT1_HCL_DIR_1872.LAB	3/5/2021	6:40:23	0.03	100.86	4.92	-0.59
		Average		99.33	4.92	

CTS, 100.0 ppm Ethylene System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)	Response Time (sec)
UNIT1_CTS_RT_1873.LAB	3/5/2021	6:42:01	0.88	0.13	-0.01	-0.27	**-0.3%**	-
UNIT1_CTS_RT_1874.LAB	3/5/2021	6:42:09	0.42	0.05	0.22	19.80	**19.8%**	**8**
UNIT1_CTS_RT_1875.LAB	3/5/2021	6:42:16	-0.01	-0.13	0.00	100.68	**100.6%**	**15**
UNIT1_CTS_RT_1876.LAB	3/5/2021	6:42:24	0.01	-0.12	0.00	101.52	**101.4%**	
UNIT1_CTS_RT_1877.LAB	3/5/2021	6:42:31	0.05	0.13	-0.02	100.35	**100.2%**	
UNIT1_CTS_RT_1878.LAB	3/5/2021	6:42:39	-0.01	0.06	0.01	100.32	**100.2%**	
UNIT1_CTS_RT_1879.LAB	3/5/2021	6:42:46	0.00	-0.30	-0.01	100.89	**100.8%**	
UNIT1_CTS_RT_1880.LAB	3/5/2021	6:42:54	0.01	0.07	0.00	101.18	**101.0%**	
UNIT1_CTS_RT_1881.LAB	3/5/2021	6:43:01	0.04	0.03	0.00	101.02	**100.9%**	
UNIT1_CTS_RT_1882.LAB	3/5/2021	6:43:09	0.04	-0.06	-0.01	100.79	**100.7%**	

Nitrogen (Zero) System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)	Rise Time (sec)
UNIT1_N2_RT_1884.LAB	3/5/2021	6:43:52	-0.02	-0.32	0.01	101.28	**101.2%**	-
UNIT1_N2_RT_1885.LAB	3/5/2021	6:44:00	0.21	-0.05	-0.02	61.02	**60.9%**	**8**
UNIT1_N2_RT_1886.LAB	3/5/2021	6:44:07	-0.02	0.11	0.00	0.84	**0.8%**	**15**
UNIT1_N2_RT_1887.LAB	3/5/2021	6:44:14	-0.03	-0.11	0.01	-0.10	**-0.1%**	**23**
UNIT1_N2_RT_1888.LAB	3/5/2021	6:44:22	0.02	-0.18	0.01	0.00	**0.0%**	
UNIT1_N2_RT_1889.LAB	3/5/2021	6:44:29	0.00	0.17	0.00	0.09	**0.1%**	
UNIT1_N2_RT_1890.LAB	3/5/2021	6:44:37	0.04	-0.05	-0.01	0.02	**0.0%**	
UNIT1_N2_RT_1891.LAB	3/5/2021	6:44:45	0.03	0.01	0.00	-0.06	**-0.1%**	
UNIT1_N2_RT_1892.LAB	3/5/2021	6:44:52	0.04	0.10	-0.01	-0.04	**0.0%**	
UNIT1_N2_RT_1893.LAB	3/5/2021	6:45:00	0.02	0.10	0.00	-0.01	**0.0%**	
UNIT1_N2_RT_1894.LAB	44260	6:45:07	0.0	-0.1	0.0	-0.10	**-0.1%**	

Unit 1, Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT1_1904.LAB	3/5/2021	6:56:17	13.19	9.86	-0.01	0.73
UNIT1_1905.LAB	3/5/2021	6:57:17	14.09	10.28	-0.01	0.80
UNIT1_1906.LAB	3/5/2021	6:58:17	13.17	9.37	-0.01	0.80
	Native Average		**13.48**	**9.84**	**-0.01**	

Unit 1 Analyte Spike, Using 99.5 ppm HCl/5.01 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Factor	HCl Recovery (%)
UNIT1_HCL_SPK_1934.LAB	3/5/2021	7:02:12	11.76	18.08	0.41	0.57	**0.085**	**107.4%**
UNIT1_HCL_SPK_1935.LAB	3/5/2021	7:02:19	12.16	18.28	0.41	0.80	**0.085**	**110.2%**
UNIT1_HCL_SPK_1936.LAB	3/5/2021	7:02:27	11.84	17.67	0.41	0.61	**0.085**	**103.1%**
UNIT1_HCL_SPK_1937.LAB	3/5/2021	7:02:34	12.18	17.70	0.40	0.57	**0.083**	**105.6%**
UNIT1_HCL_SPK_1938.LAB	3/5/2021	7:02:42	12.24	17.90	0.41	0.88	**0.084**	**106.2%**
UNIT1_HCL_SPK_1939.LAB	3/5/2021	7:02:49	12.59	18.64	0.41	0.57	**0.085**	**113.7%**
UNIT1_HCL_SPK_1940.LAB	3/5/2021	7:02:57	12.55	19.21	0.41	0.71	**0.086**	**119.6%**
UNIT1_HCL_SPK_1941.LAB	3/5/2021	7:03:04	12.37	19.11	0.42	0.44	**0.086**	**118.4%**
	Spike Average							**111.7%**

CTS, 100.0 ppm Ethylene System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT1_CTS_SYS_1942.LAB	3/5/2021	7:03:49	0.04	0.62	0.00	100.40	**100.3%**
UNIT1_CTS_SYS_1943.LAB	3/5/2021	7:03:56	0.05	0.73	-0.01	101.36	**101.2%**
UNIT1_CTS_SYS_1944.LAB	3/5/2021	7:04:04	-0.01	0.65	0.00	100.53	**100.4%**
UNIT1_CTS_SYS_1945.LAB	3/5/2021	7:04:11	0.05	0.16	0.00	100.80	**100.7%**
UNIT1_CTS_SYS_1946.LAB	3/5/2021	7:04:19	0.04	0.60	0.01	100.71	**100.6%**
UNIT1_CTS_SYS_1947.LAB	3/5/2021	7:04:26	0.04	0.36	-0.01	101.29	**101.2%**
UNIT1_CTS_SYS_1948.LAB	3/5/2021	7:04:34	0.00	0.38	0.00	100.88	**100.7%**
UNIT1_CTS_SYS_1949.LAB	3/5/2021	7:04:41	0.03	0.26	0.01	100.34	**100.2%**

Unit 1, Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT1_2085.LAB	3/5/2021	9:21:23	13.54	13.48	-0.01	0.67
UNIT1_2086.LAB	3/5/2021	9:22:23	13.51	13.04	-0.01	0.82
UNIT1_2087.LAB	3/5/2021	9:23:24	13.72	13.12	-0.01	0.72
	Native Average		**13.59**	**13.22**	**-0.01**	

Unit 1 Analyte Spike, Using 99.5 ppm HCl/5.01 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor	HCl Recovery (%)
UNIT1_HCL_SPK_2142.LAB	3/5/2021	9:30:40	13.05	22.63	0.47	0.48	**0.098**	**110.4%**
UNIT1_HCL_SPK_2143.LAB	3/5/2021	9:30:48	13.84	23.09	0.47	0.50	**0.098**	**114.6%**
UNIT1_HCL_SPK_2144.LAB	3/5/2021	9:30:55	13.69	22.85	0.46	0.76	**0.095**	**115.6%**
UNIT1_HCL_SPK_2145.LAB	3/5/2021	9:31:03	11.65	21.14	0.47	0.69	**0.097**	**96.0%**
UNIT1_HCL_SPK_2146.LAB	3/5/2021	9:31:10	11.60	20.89	0.47	0.58	**0.098**	**92.4%**
UNIT1_HCL_SPK_2147.LAB	3/5/2021	9:31:18	13.52	22.62	0.47	0.81	**0.098**	**110.0%**
UNIT1_HCL_SPK_2148.LAB	3/5/2021	9:31:25	14.13	23.45	0.45	0.60	**0.094**	**123.2%**
UNIT1_HCL_SPK_2149.LAB	3/5/2021	9:31:33	13.29	22.74	0.47	0.64	**0.098**	**111.4%**
	Spike Average							**109.3%**

CTS, 100.0 ppm Ethylene System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT1_CTS_SYS_2156.LAB	3/5/2021	9:33:01	0.03	0.07	0.00	101.06	**100.9%**
UNIT1_CTS_SYS_2157.LAB	3/5/2021	9:33:09	-0.01	0.24	0.00	100.76	**100.6%**
UNIT1_CTS_SYS_2158.LAB	3/5/2021	9:33:16	0.03	0.33	0.00	100.09	**100.0%**
UNIT1_CTS_SYS_2159.LAB	3/5/2021	9:33:24	0.01	0.36	0.01	100.61	**100.5%**
UNIT1_CTS_SYS_2160.LAB	3/5/2021	9:33:31	0.03	0.00	0.00	101.15	**101.0%**
UNIT1_CTS_SYS_2161.LAB	3/5/2021	9:33:39	-0.03	0.34	0.00	99.90	**99.8%**
UNIT1_CTS_SYS_2162.LAB	3/5/2021	9:33:46	-0.04	0.39	0.00	101.78	**101.6%**
UNIT1_CTS_SYS_2163.LAB	3/5/2021	9:33:54	-0.01	0.00	-0.01	100.51	**100.4%**

Unit 1, Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT1_2293.LAB	3/5/2021	11:45:37	14.26	10.56	-0.01	0.67
UNIT1_2294.LAB	3/5/2021	11:46:37	14.78	10.56	-0.01	0.78
UNIT1_2295.LAB	3/5/2021	11:47:38	14.48	10.98	-0.01	0.82
	Native Average		**14.51**	**10.70**	**-0.01**	

Unit 1 Analyte Spike, Using 99.5 ppm HCl/5.01 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor	HCl Recovery (%)
UNIT1_HCL_SPK_2323.LAB	3/5/2021	11:51:31	13.76	16.91	0.36	0.63	**0.074**	**95.1%**
UNIT1_HCL_SPK_2324.LAB	3/5/2021	11:51:39	13.33	16.70	0.35	0.93	**0.072**	**94.3%**
UNIT1_HCL_SPK_2325.LAB	3/5/2021	11:51:46	13.24	16.83	0.35	0.59	**0.073**	**94.9%**
UNIT1_HCL_SPK_2326.LAB	3/5/2021	11:51:54	12.32	16.30	0.37	0.39	**0.076**	**85.0%**
UNIT1_HCL_SPK_2327.LAB	3/5/2021	11:52:01	12.16	15.96	0.36	0.38	**0.075**	**81.4%**
UNIT1_HCL_SPK_2328.LAB	3/5/2021	11:52:09	13.30	16.88	0.36	0.79	**0.075**	**93.7%**
UNIT1_HCL_SPK_2329.LAB	3/5/2021	11:52:16	13.27	17.29	0.36	0.81	**0.076**	**98.3%**
UNIT1_HCL_SPK_2330.LAB	3/5/2021	11:52:24	12.91	16.58	0.36	0.72	**0.075**	**89.4%**
	Spike Average							**91.9%**

CTS, 100.0 ppm Ethylene System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT1_CTS_SYS_2332.LAB	3/5/2021	11:56:51	0.05	0.31	0.00	100.94	**100.8%**
UNIT1_CTS_SYS_2333.LAB	3/5/2021	11:56:59	0.06	0.52	-0.01	100.68	**100.6%**
UNIT1_CTS_SYS_2334.LAB	3/5/2021	11:57:06	0.05	0.07	-0.01	101.01	**100.9%**
UNIT1_CTS_SYS_2335.LAB	3/5/2021	11:57:14	0.05	0.40	0.00	100.19	**100.1%**
UNIT1_CTS_SYS_2336.LAB	3/5/2021	11:57:21	-0.01	0.35	0.00	101.01	**100.9%**
UNIT1_CTS_SYS_2337.LAB	3/5/2021	11:57:29	0.03	0.16	0.00	100.63	**100.5%**
UNIT1_CTS_SYS_2338.LAB	3/5/2021	11:57:36	0.01	0.22	0.00	100.52	**100.4%**
UNIT1_CTS_SYS_2339.LAB	3/5/2021	11:57:44	0.07	0.21	-0.02	101.13	**101.0%**

Unit 1, Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT1_2468.LAB	3/5/2021	14:07:26	14.48	7.37	0.00	0.75
UNIT1_2469.LAB	3/5/2021	14:08:26	14.90	8.23	-0.01	0.86
UNIT1_2470.LAB	3/5/2021	14:09:26	15.16	9.61	0.00	0.83
UNIT1_2471.LAB	3/5/2021	14:10:26	13.99	8.98	-0.01	0.70
UNIT1_2472.LAB	3/5/2021	14:11:26	13.90	8.95	-0.01	0.71
UNIT1_2473.LAB	3/5/2021	14:12:26	12.65	7.98	-0.01	0.65
UNIT1_2474.LAB	3/5/2021	14:13:26	12.89	7.49	-0.01	0.66
UNIT1_2475.LAB	3/5/2021	14:14:26	13.85	8.00	-0.01	0.78
	Native Average		13.90	8.33	-0.01	

Unit 1 Analyte Spike, Using 99.5 ppm HCl/5.01 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor	HCl Recovery (%)
UNIT1_HCL_SPK_2513.LAB	3/5/2021	14:20:08	13.56	15.39	0.39	0.83	**0.080**	**96.7%**
UNIT1_HCL_SPK_2514.LAB	3/5/2021	14:20:16	13.08	15.23	0.38	0.73	**0.079**	**96.4%**
UNIT1_HCL_SPK_2515.LAB	3/5/2021	14:20:23	12.23	15.26	0.39	0.37	**0.080**	**95.4%**
UNIT1_HCL_SPK_2516.LAB	3/5/2021	14:20:31	12.70	14.79	0.39	0.47	**0.081**	**89.2%**
UNIT1_HCL_SPK_2517.LAB	3/5/2021	14:20:38	13.10	15.36	0.38	0.68	**0.079**	**97.9%**
UNIT1_HCL_SPK_2518.LAB	3/5/2021	14:20:46	13.82	16.04	0.39	0.78	**0.080**	**105.7%**
UNIT1_HCL_SPK_2519.LAB	3/5/2021	14:20:54	14.03	16.77	0.38	0.56	**0.079**	**116.3%**
UNIT1_HCL_SPK_2520.LAB	3/5/2021	14:21:01	13.42	16.24	0.39	0.50	**0.081**	**106.9%**
	Spike Average							**100.4%**

CTS, 100.0 ppm Ethylene System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT1_CTS_SYS_2528.LAB	3/5/2021	14:22:44	-0.04	0.71	0.00	100.73	**100.6%**
UNIT1_CTS_SYS_2529.LAB	3/5/2021	14:22:52	0.02	0.54	0.01	101.46	**101.3%**
UNIT1_CTS_SYS_2530.LAB	3/5/2021	14:22:59	-0.02	0.29	-0.01	101.37	**101.2%**
UNIT1_CTS_SYS_2531.LAB	3/5/2021	14:23:07	0.00	0.39	-0.01	100.88	**100.8%**
UNIT1_CTS_SYS_2532.LAB	3/5/2021	14:23:14	0.01	0.42	0.00	100.60	**100.5%**
UNIT1_CTS_SYS_2533.LAB	3/5/2021	14:23:22	0.00	0.22	0.01	100.90	**100.8%**
UNIT1_CTS_SYS_2534.LAB	3/5/2021	14:23:29	0.04	0.17	0.00	100.62	**100.5%**
UNIT1_CTS_SYS_2535.LAB	3/5/2021	14:23:37	0.04	0.19	-0.01	100.68	**100.6%**

Nitrogen (Zero) System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT1_N2_SYS_2537.LAB	3/5/2021	14:24:23	-0.05	0.09	-0.01	-0.19
UNIT1_N2_SYS_2538.LAB	3/5/2021	14:24:30	0.02	0.19	-0.01	0.23
UNIT1_N2_SYS_2539.LAB	3/5/2021	14:24:38	-0.01	0.25	0.01	-0.01
UNIT1_N2_SYS_2540.LAB	3/5/2021	14:24:46	0.01	0.14	0.00	0.13
UNIT1_N2_SYS_2541.LAB	3/5/2021	14:24:53	0.03	0.15	0.01	-0.10
UNIT1_N2_SYS_2542.LAB	3/5/2021	14:25:00	0.08	0.23	-0.01	0.16
UNIT1_N2_SYS_2543.LAB	3/5/2021	14:25:08	-0.01	0.24	0.00	-0.07
UNIT1_N2_SYS_2544.LAB	3/5/2021	14:25:15	-0.05	0.12	0.00	-0.09

Nitrogen Direct to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT1_N2_DIR_2549.LAB	3/5/2021	14:36:46	0.00	0.02	0.00	0.03
UNIT1_N2_DIR_2550.LAB	3/5/2021	14:38:46	0.01	-0.06	0.00	0.04
UNIT1_N2_DIR_2551.LAB	3/5/2021	14:40:47	0.00	0.02	0.00	0.01

APPENDIX

Unit 2 – FTIR Test Run Data

Unit 2 - Run 1

Date	Time	NO (ppmv,wet)	FTIR Stack Cell Temp (C)	FTIR Gas Cell Pressure (atm)
UNIT2_1274.LAB	3/4/2021	7:25:18	5.61	191.8	1.022
UNIT2_1275.LAB	3/4/2021	7:26:18	6.16	191.8	1.021
UNIT2_1276.LAB	3/4/2021	7:27:18	6.22	191.8	1.019
UNIT2_1277.LAB	3/4/2021	7:28:19	6.55	191.8	1.020
UNIT2_1278.LAB	3/4/2021	7:29:19	6.13	191.8	1.020
UNIT2_1279.LAB	3/4/2021	7:30:19	5.64	191.8	1.020
UNIT2_1280.LAB	3/4/2021	7:31:19	5.60	191.8	1.022
UNIT2_1281.LAB	3/4/2021	7:32:19	5.74	191.7	1.018
UNIT2_1282.LAB	3/4/2021	7:33:19	5.93	191.8	1.021
UNIT2_1283.LAB	3/4/2021	7:34:19	5.75	191.7	1.022
UNIT2_1284.LAB	3/4/2021	7:35:19	6.17	191.7	1.021
UNIT2_1285.LAB	3/4/2021	7:36:19	6.33	191.7	1.018
UNIT2_1286.LAB	3/4/2021	7:37:19	6.17	191.8	1.022
UNIT2_1287.LAB	3/4/2021	7:38:20	6.47	191.8	1.020
UNIT2_1288.LAB	3/4/2021	7:39:20	6.64	191.8	1.020
UNIT2_1289.LAB	3/4/2021	7:40:20	6.79	191.8	1.019
UNIT2_1290.LAB	3/4/2021	7:41:20	7.31	191.7	1.020
UNIT2_1291.LAB	3/4/2021	7:42:20	6.72	191.7	1.020
UNIT2_1292.LAB	3/4/2021	7:43:20	5.47	191.8	1.020
UNIT2_1293.LAB	3/4/2021	7:44:20	4.91	191.8	1.019
UNIT2_1294.LAB	3/4/2021	7:45:20	4.78	191.8	1.021
UNIT2_1295.LAB	3/4/2021	7:46:20	5.02	191.8	1.021
UNIT2_1296.LAB	3/4/2021	7:47:21	5.69	191.8	1.021
UNIT2_1297.LAB	3/4/2021	7:48:21	5.61	191.8	1.020
UNIT2_1298.LAB	3/4/2021	7:49:21	5.41	191.8	1.019
UNIT2_1299.LAB	3/4/2021	7:50:21	5.87	191.8	1.021
UNIT2_1300.LAB	3/4/2021	7:51:21	5.64	191.8	1.020
UNIT2_1301.LAB	3/4/2021	7:52:21	5.44	191.7	1.022
UNIT2_1302.LAB	3/4/2021	7:53:21	5.40	191.8	1.021
UNIT2_1303.LAB	3/4/2021	7:54:21	5.73	191.8	1.021
UNIT2_1304.LAB	3/4/2021	7:55:21	5.31	191.7	1.020
UNIT2_1305.LAB	3/4/2021	7:56:21	5.65	191.7	1.022
UNIT2_1306.LAB	3/4/2021	7:57:22	5.52	191.8	1.022
UNIT2_1307.LAB	3/4/2021	7:58:22	5.40	191.8	1.021
UNIT2_1308.LAB	3/4/2021	7:59:22	5.46	191.8	1.021
UNIT2_1309.LAB	3/4/2021	8:00:22	5.91	191.8	1.022
UNIT2_1310.LAB	3/4/2021	8:01:22	6.21	191.8	1.023
UNIT2_1311.LAB	3/4/2021	8:02:22	6.33	191.8	1.020
UNIT2_1312.LAB	3/4/2021	8:03:22	6.03	191.8	1.020
UNIT2_1313.LAB	3/4/2021	8:04:22	5.76	191.8	1.021
UNIT2_1314.LAB	3/4/2021	8:05:22	6.06	191.9	1.019
UNIT2_1315.LAB	3/4/2021	8:06:23	5.34	191.8	1.022
UNIT2_1316.LAB	3/4/2021	8:07:23	4.98	191.8	1.022
UNIT2_1317.LAB	3/4/2021	8:08:23	5.09	191.9	1.022
UNIT2_1318.LAB	3/4/2021	8:09:23	4.75	191.8	1.021
UNIT2_1319.LAB	3/4/2021	8:10:23	4.98	191.9	1.020
UNIT2_1320.LAB	3/4/2021	8:11:23	5.26	191.8	1.021
UNIT2_1321.LAB	3/4/2021	8:12:23	5.05	191.9	1.022
UNIT2_1322.LAB	3/4/2021	8:13:23	5.29	191.8	1.019
UNIT2_1323.LAB	3/4/2021	8:14:23	5.55	191.9	1.022
UNIT2_1324.LAB	3/4/2021	8:15:23	5.73	191.8	1.024
UNIT2_1325.LAB	3/4/2021	8:16:24	5.97	191.8	1.021
UNIT2_1326.LAB	3/4/2021	8:17:24	5.02	191.8	1.021
UNIT2_1327.LAB	3/4/2021	8:18:24	5.53	191.8	1.021
UNIT2_1328.LAB	3/4/2021	8:19:24	5.98	191.8	1.021
UNIT2_1329.LAB	3/4/2021	8:20:24	5.78	191.9	1.023
UNIT2_1330.LAB	3/4/2021	8:21:24	5.92	191.9	1.020
UNIT2_1331.LAB	3/4/2021	8:22:24	5.98	191.9	1.022
UNIT2_1332.LAB	3/4/2021	8:23:24	6.01	191.9	1.021
UNIT2_1333.LAB	3/4/2021	8:24:24	6.19	191.9	1.020

Spectrum	Date	Time	HCl (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT2_1334.LAB	3/4/2021	8:25:24	5.78	191.9	1.020
UNIT2_1335.LAB	3/4/2021	8:26:25	5.44	191.9	1.024
UNIT2_1336.LAB	3/4/2021	8:27:25	7.14	191.8	1.021
UNIT2_1337.LAB	3/4/2021	8:28:25	7.43	191.9	1.021
UNIT2_1338.LAB	3/4/2021	8:29:25	7.52	191.9	1.022
UNIT2_1339.LAB	3/4/2021	8:30:25	8.79	191.9	1.019
UNIT2_1340.LAB	3/4/2021	8:31:25	9.16	191.9	1.020
UNIT2_1341.LAB	3/4/2021	8:32:25	11.16	191.9	1.020
UNIT2_1342.LAB	3/4/2021	8:33:25	9.36	191.9	1.020
UNIT2_1343.LAB	3/4/2021	8:34:25	8.25	191.9	1.020
UNIT2_1344.LAB	3/4/2021	8:35:25	9.69	191.9	1.021
UNIT2_1345.LAB	3/4/2021	8:36:26	9.54	191.9	1.021
UNIT2_1346.LAB	3/4/2021	8:37:26	9.32	191.9	1.021
UNIT2_1347.LAB	3/4/2021	8:38:26	12.21	191.9	1.021
UNIT2_1348.LAB	3/4/2021	8:39:26	13.35	191.9	1.020
UNIT2_1349.LAB	3/4/2021	8:40:26	11.85	191.9	1.022
UNIT2_1350.LAB	3/4/2021	8:41:26	9.75	191.9	1.020
UNIT2_1351.LAB	3/4/2021	8:42:26	9.14	191.9	1.020
UNIT2_1352.LAB	3/4/2021	8:43:26	9.33	191.9	1.021
UNIT2_1353.LAB	3/4/2021	8:44:26	9.23	191.9	1.022
UNIT2_1354.LAB	3/4/2021	8:45:26	8.51	191.9	1.024
UNIT2_1355.LAB	3/4/2021	8:46:27	6.71	191.9	1.022
UNIT2_1356.LAB	3/4/2021	8:47:27	6.56	191.9	1.022
UNIT2_1357.LAB	3/4/2021	8:48:27	7.31	191.8	1.022
UNIT2_1358.LAB	3/4/2021	8:49:27	6.71	191.8	1.022
UNIT2_1359.LAB	3/4/2021	8:50:27	7.65	191.8	1.023
UNIT2_1360.LAB	3/4/2021	8:51:27	6.32	191.9	1.023
UNIT2_1361.LAB	3/4/2021	8:52:27	6.21	191.9	1.022
UNIT2_1362.LAB	3/4/2021	8:53:27	6.10	191.9	1.023
UNIT2_1363.LAB	3/4/2021	8:54:27	6.65	191.9	1.022
UNIT2_1364.LAB	3/4/2021	8:55:28	8.64	191.9	1.022
UNIT2_1365.LAB	3/4/2021	8:56:28	9.41	191.9	1.022
UNIT2_1366.LAB	3/4/2021	8:57:28	9.82	191.9	1.021
UNIT2_1367.LAB	3/4/2021	8:58:28	8.89	191.9	1.024
UNIT2_1368.LAB	3/4/2021	8:59:28	8.94	191.9	1.022
UNIT2_1369.LAB	3/4/2021	9:00:28	8.93	191.9	1.022
UNIT2_1370.LAB	3/4/2021	9:01:28	7.63	191.9	1.022
UNIT2_1371.LAB	3/4/2021	9:02:28	7.36	191.9	1.020
UNIT2_1372.LAB	3/4/2021	9:03:28	8.60	191.9	1.022
UNIT2_1373.LAB	3/4/2021	9:04:28	8.90	191.9	1.022
UNIT2_1374.LAB	3/4/2021	9:05:29	7.62	191.9	1.022
UNIT2_1375.LAB	3/4/2021	9:06:29	6.87	191.9	1.021
UNIT2_1376.LAB	3/4/2021	9:07:29	6.33	191.9	1.022
UNIT2_1377.LAB	3/4/2021	9:08:29	6.40	191.9	1.021
UNIT2_1378.LAB	3/4/2021	9:09:29	6.30	191.9	1.024
UNIT2_1379.LAB	3/4/2021	9:10:29	6.21	191.9	1.023
UNIT2_1380.LAB	3/4/2021	9:11:29	5.78	191.9	1.020
UNIT2_1381.LAB	3/4/2021	9:12:29	6.23	191.9	1.022
UNIT2_1382.LAB	3/4/2021	9:13:29	6.49	191.9	1.023
UNIT2_1383.LAB	3/4/2021	9:14:29	5.85	191.9	1.024
UNIT2_1384.LAB	3/4/2021	9:15:30	6.39	191.9	1.022
UNIT2_1385.LAB	3/4/2021	9:16:30	6.73	191.9	1.021
UNIT2_1386.LAB	3/4/2021	9:17:30	6.46	191.9	1.022
UNIT2_1387.LAB	3/4/2021	9:18:30	8.12	191.9	1.022
UNIT2_1388.LAB	3/4/2021	9:19:30	9.90	191.9	1.023
UNIT2_1389.LAB	3/4/2021	9:20:30	9.20	191.9	1.022
UNIT2_1390.LAB	3/4/2021	9:21:30	8.76	191.9	1.021
UNIT2_1391.LAB	3/4/2021	9:22:30	8.40	191.9	1.019
UNIT2_1392.LAB	3/4/2021	9:23:31	7.58	191.9	1.023
UNIT2_1393.LAB	3/4/2021	9:24:30	6.29	191.9	1.022

Spectrum	Date	Time	HCl (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT2_1394.LAB	3/4/2021	9:25:31	6.65	191.9	1.021
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		

Unit 2 - Run 2

Spectrum	Date	Time	HCl (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT2_1462.LAB	3/4/2021	9:55:03	12.99	191.9	1.022
UNIT2_1463.LAB	3/4/2021	9:56:03	11.55	191.9	1.022
UNIT2_1464.LAB	3/4/2021	9:57:03	13.62	191.9	1.023
UNIT2_1465.LAB	3/4/2021	9:58:03	15.81	191.9	1.022
UNIT2_1466.LAB	3/4/2021	9:59:03	14.32	191.9	1.023
UNIT2_1467.LAB	3/4/2021	10:00:03	13.02	191.9	1.023
UNIT2_1468.LAB	3/4/2021	10:01:03	12.51	191.8	1.019
UNIT2_1469.LAB	3/4/2021	10:02:03	12.22	191.9	1.024
UNIT2_1470.LAB	3/4/2021	10:03:04	12.44	191.9	1.021
UNIT2_1471.LAB	3/4/2021	10:04:04	12.98	191.9	1.023
UNIT2_1472.LAB	3/4/2021	10:05:04	13.43	191.9	1.023
UNIT2_1473.LAB	3/4/2021	10:06:04	13.12	191.9	1.024
UNIT2_1474.LAB	3/4/2021	10:07:04	12.46	191.9	1.023
UNIT2_1475.LAB	3/4/2021	10:08:04	12.68	191.8	1.021
UNIT2_1476.LAB	3/4/2021	10:09:04	11.67	191.8	1.021
UNIT2_1477.LAB	3/4/2021	10:10:04	8.91	191.9	1.020
UNIT2_1478.LAB	3/4/2021	10:11:04	9.72	191.9	1.020
UNIT2_1479.LAB	3/4/2021	10:12:04	10.91	191.9	1.023
UNIT2_1480.LAB	3/4/2021	10:13:04	10.21	191.9	1.023
UNIT2_1481.LAB	3/4/2021	10:14:05	9.46	191.9	1.021
UNIT2_1482.LAB	3/4/2021	10:15:05	8.58	191.9	1.022
UNIT2_1483.LAB	3/4/2021	10:16:05	10.23	191.9	1.019
UNIT2_1484.LAB	3/4/2021	10:17:05	11.54	191.9	1.023
UNIT2_1485.LAB	3/4/2021	10:18:05	9.38	191.9	1.024
UNIT2_1486.LAB	3/4/2021	10:19:05	9.59	191.9	1.022
UNIT2_1487.LAB	3/4/2021	10:20:05	9.25	191.8	1.022
UNIT2_1488.LAB	3/4/2021	10:21:05	10.10	191.8	1.023
UNIT2_1489.LAB	3/4/2021	10:22:05	11.12	191.8	1.020
UNIT2_1490.LAB	3/4/2021	10:23:06	12.69	191.8	1.021
UNIT2_1491.LAB	3/4/2021	10:24:06	14.17	191.9	1.022
UNIT2_1492.LAB	3/4/2021	10:25:06	14.22	191.9	1.024
UNIT2_1493.LAB	3/4/2021	10:26:06	13.37	191.9	1.022
UNIT2_1494.LAB	3/4/2021	10:27:06	12.19	191.9	1.022
UNIT2_1495.LAB	3/4/2021	10:28:06	11.44	191.9	1.024
UNIT2_1496.LAB	3/4/2021	10:29:06	11.57	191.9	1.022
UNIT2_1497.LAB	3/4/2021	10:30:06	13.56	191.9	1.022
UNIT2_1498.LAB	3/4/2021	10:31:06	13.01	191.9	1.022
UNIT2_1499.LAB	3/4/2021	10:32:07	11.70	191.9	1.022
UNIT2_1500.LAB	3/4/2021	10:33:07	10.38	191.9	1.024
UNIT2_1501.LAB	3/4/2021	10:34:07	9.94	191.9	1.022
UNIT2_1502.LAB	3/4/2021	10:35:07	9.66	191.9	1.022
UNIT2_1503.LAB	3/4/2021	10:36:07	10.61	191.9	1.024
UNIT2_1504.LAB	3/4/2021	10:37:07	11.67	191.9	1.023
UNIT2_1505.LAB	3/4/2021	10:38:07	11.91	191.9	1.023
UNIT2_1506.LAB	3/4/2021	10:39:07	8.49	191.9	1.022
UNIT2_1507.LAB	3/4/2021	10:40:07	7.30	191.9	1.022
UNIT2_1508.LAB	3/4/2021	10:41:07	7.47	191.9	1.023
UNIT2_1509.LAB	3/4/2021	10:42:08	8.07	191.9	1.022
UNIT2_1510.LAB	3/4/2021	10:43:08	9.94	191.9	1.022
UNIT2_1511.LAB	3/4/2021	10:44:08	11.14	191.8	1.022
UNIT2_1512.LAB	3/4/2021	10:45:08	10.24	191.8	1.024
UNIT2_1513.LAB	3/4/2021	10:46:08	11.12	191.9	1.022
UNIT2_1514.LAB	3/4/2021	10:47:08	10.06	191.9	1.022

Spectrum	Date	Time	HCl (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (atm)
UNIT2_1515.LAB	3/4/2021	10:48:08	9.59	191.9	1.022
UNIT2_1516.LAB	3/4/2021	10:49:08	9.76	191.9	1.022
UNIT2_1517.LAB	3/4/2021	10:50:08	10.04	191.9	1.023
UNIT2_1518.LAB	3/4/2021	10:51:08	9.92	191.9	1.021
UNIT2_1519.LAB	3/4/2021	10:52:09	9.83	191.9	1.023
UNIT2_1520.LAB	3/4/2021	10:53:09	9.96	191.9	1.022
UNIT2_1521.LAB	3/4/2021	10:54:09	10.15	191.9	1.022
UNIT2_1522.LAB	3/4/2021	10:55:09	10.66	191.8	1.021
UNIT2_1523.LAB	3/4/2021	10:56:09	10.04	191.8	1.021
UNIT2_1524.LAB	3/4/2021	10:57:09	10.46	191.8	1.020
UNIT2_1525.LAB	3/4/2021	10:58:09	10.84	191.9	1.020
UNIT2_1526.LAB	3/4/2021	10:59:09	9.93	191.9	1.020
UNIT2_1527.LAB	3/4/2021	11:00:09	11.02	191.9	1.023
UNIT2_1528.LAB	3/4/2021	11:01:09	10.19	191.9	1.021
UNIT2_1529.LAB	3/4/2021	11:02:10	9.83	191.9	1.025
UNIT2_1530.LAB	3/4/2021	11:03:10	9.39	191.9	1.021
UNIT2_1531.LAB	3/4/2021	11:04:10	10.29	191.9	1.021
UNIT2_1532.LAB	3/4/2021	11:05:10	11.83	191.9	1.020
UNIT2_1533.LAB	3/4/2021	11:06:10	12.67	191.8	1.021
UNIT2_1534.LAB	3/4/2021	11:07:10	15.36	191.8	1.021
UNIT2_1535.LAB	3/4/2021	11:08:10	13.37	191.8	1.021
UNIT2_1536.LAB	3/4/2021	11:09:10	14.01	191.9	1.021
UNIT2_1537.LAB	3/4/2021	11:10:10	12.43	191.9	1.022
UNIT2_1538.LAB	3/4/2021	11:11:10	11.87	191.9	1.022
UNIT2_1539.LAB	3/4/2021	11:12:11	13.26	191.9	1.022
UNIT2_1540.LAB	3/4/2021	11:13:11	15.48	191.9	1.023
UNIT2_1541.LAB	3/4/2021	11:14:11	15.75	191.9	1.020
UNIT2_1542.LAB	3/4/2021	11:15:11	15.91	191.9	1.020
UNIT2_1543.LAB	3/4/2021	11:16:11	14.94	191.9	1.022
UNIT2_1544.LAB	3/4/2021	11:17:11	13.18	191.9	1.021
UNIT2_1545.LAB	3/4/2021	11:18:11	12.78	191.9	1.020
UNIT2_1546.LAB	3/4/2021	11:19:11	12.02	191.9	1.021
UNIT2_1547.LAB	3/4/2021	11:20:12	11.10	191.9	1.022
UNIT2_1548.LAB	3/4/2021	11:21:13	12.18	191.9	1.023
UNIT2_1549.LAB	3/4/2021	11:22:13	14.35	191.9	1.020
UNIT2_1550.LAB	3/4/2021	11:23:13	14.20	191.9	1.020
UNIT2_1551.LAB	3/4/2021	11:24:13	14.82	191.9	1.022
UNIT2_1552.LAB	3/4/2021	11:25:13	13.51	191.9	1.020
UNIT2_1553.LAB	3/4/2021	11:26:13	12.88	191.9	1.022
UNIT2_1554.LAB	3/4/2021	11:27:13	13.79	191.8	1.023
UNIT2_1555.LAB	3/4/2021	11:28:13	13.96	191.9	1.023
UNIT2_1556.LAB	3/4/2021	11:29:13	13.16	191.9	1.021
UNIT2_1557.LAB	3/4/2021	11:30:14	12.39	191.9	1.025
UNIT2_1558.LAB	3/4/2021	11:31:14	13.06	191.9	1.022
UNIT2_1559.LAB	3/4/2021	11:32:14	12.04	191.9	1.021
UNIT2_1560.LAB	3/4/2021	11:33:14	12.71	191.9	1.021
UNIT2_1561.LAB	3/4/2021	11:34:14	13.27	191.9	1.021
UNIT2_1562.LAB	3/4/2021	11:35:14	13.71	191.9	1.022
UNIT2_1563.LAB	3/4/2021	11:36:14	11.97	191.9	1.023
UNIT2_1564.LAB	3/4/2021	11:37:14	10.09	191.9	1.022
UNIT2_1565.LAB	3/4/2021	11:38:14	8.99	191.9	1.021
UNIT2_1566.LAB	3/4/2021	11:39:15	9.32	191.9	1.022
UNIT2_1567.LAB	3/4/2021	11:40:15	9.20	191.9	1.024
UNIT2_1568.LAB	3/4/2021	11:41:15	9.46	191.9	1.021
UNIT2_1569.LAB	3/4/2021	11:42:15	9.66	191.9	1.020
UNIT2_1570.LAB	3/4/2021	11:43:15	10.29	191.9	1.022
UNIT2_1571.LAB	3/4/2021	11:44:15	11.21	191.9	1.022
UNIT2_1572.LAB	3/4/2021	11:45:15	10.59	191.9	1.022
UNIT2_1573.LAB	3/4/2021	11:46:15	10.87	191.9	1.022
UNIT2_1574.LAB	3/4/2021	11:47:15	10.19	191.9	1.019
UNIT2_1575.LAB	3/4/2021	11:48:15	9.23	191.9	1.021

Spectrum	Date	Time	HCl (ppmw wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT2_1576.LAB	3/4/2021	11:49:15	9.29	191.9	1.023
UNIT2_1577.LAB	3/4/2021	11:50:16	10.56	191.9	1.022
UNIT2_1578.LAB	3/4/2021	11:51:16	11.23	191.9	1.022
UNIT2_1579.LAB	3/4/2021	11:52:16	10.29	191.9	1.023
UNIT2_1580.LAB	3/4/2021	11:53:16	9.93	192.0	1.021
UNIT2_1581.LAB	3/4/2021	11:54:16	10.67	192.0	1.020
UNIT2_1582.LAB	3/4/2021	11:55:16	10.32	192.0	1.021
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	Average	11.58		

Unit 2 - Run 3

Spectrum	Date	Time	HCl (ppmw wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT2_1661.LAB	3/4/2021	12:25:22	13.56	192.0	1.022
UNIT2_1662.LAB	3/4/2021	12:26:22	13.60	192.0	1.021
UNIT2_1663.LAB	3/4/2021	12:27:22	14.11	192.0	1.023
UNIT2_1664.LAB	3/4/2021	12:28:22	15.28	192.0	1.022
UNIT2_1665.LAB	3/4/2021	12:29:22	14.44	192.0	1.022
UNIT2_1666.LAB	3/4/2021	12:30:23	13.38	191.9	1.020
UNIT2_1667.LAB	3/4/2021	12:31:23	12.21	191.9	1.021
UNIT2_1668.LAB	3/4/2021	12:32:23	13.59	191.9	1.021
UNIT2_1669.LAB	3/4/2021	12:33:23	15.06	191.9	1.021
UNIT2_1670.LAB	3/4/2021	12:34:23	15.42	191.9	1.021
UNIT2_1671.LAB	3/4/2021	12:35:23	15.08	191.9	1.022
UNIT2_1672.LAB	3/4/2021	12:36:23	13.95	192.0	1.021
UNIT2_1673.LAB	3/4/2021	12:37:23	12.97	192.0	1.023
UNIT2_1674.LAB	3/4/2021	12:38:23	13.13	192.0	1.021
UNIT2_1675.LAB	3/4/2021	12:39:23	13.35	191.9	1.021
UNIT2_1676.LAB	3/4/2021	12:40:23	13.11	191.9	1.019
UNIT2_1677.LAB	3/4/2021	12:41:24	9.05	191.9	1.022
UNIT2_1678.LAB	3/4/2021	12:42:24	9.44	191.9	1.019
UNIT2_1679.LAB	3/4/2021	12:43:24	8.88	191.9	1.020
UNIT2_1680.LAB	3/4/2021	12:44:24	8.60	191.9	1.021
UNIT2_1681.LAB	3/4/2021	12:45:24	9.24	191.9	1.021
UNIT2_1682.LAB	3/4/2021	12:46:24	10.04	192.0	1.019
UNIT2_1683.LAB	3/4/2021	12:47:24	11.02	192.0	1.022
UNIT2_1684.LAB	3/4/2021	12:48:24	10.27	192.0	1.021
UNIT2_1685.LAB	3/4/2021	12:49:24	8.48	191.9	1.021
UNIT2_1686.LAB	3/4/2021	12:50:25	9.07	192.0	1.021
UNIT2_1687.LAB	3/4/2021	12:51:25	8.80	191.9	1.022
UNIT2_1688.LAB	3/4/2021	12:52:25	10.92	191.9	1.022
UNIT2_1689.LAB	3/4/2021	12:53:25	11.72	191.9	1.021
UNIT2_1690.LAB	3/4/2021	12:54:25	11.06	191.9	1.021
UNIT2_1691.LAB	3/4/2021	12:55:25	10.94	191.9	1.022
UNIT2_1692.LAB	3/4/2021	12:56:25	9.42	191.9	1.021
UNIT2_1693.LAB	3/4/2021	12:57:25	9.03	192.0	1.020
UNIT2_1694.LAB	3/4/2021	12:58:25	9.84	191.9	1.021
UNIT2_1695.LAB	3/4/2021	12:59:25	9.49	192.0	1.021
UNIT2_1696.LAB	3/4/2021	13:00:26	8.38	192.0	1.022
UNIT2_1697.LAB	3/4/2021	13:01:26	8.01	192.0	1.022
UNIT2_1698.LAB	3/4/2021	13:02:26	7.98	191.9	1.021
UNIT2_1699.LAB	3/4/2021	13:03:26	7.70	191.9	1.023
UNIT2_1700.LAB	3/4/2021	13:04:26	8.19	191.9	1.023
UNIT2_1701.LAB	3/4/2021	13:05:26	9.57	191.9	1.019
UNIT2_1702.LAB	3/4/2021	13:06:26	8.91	191.9	1.021
UNIT2_1703.LAB	3/4/2021	13:07:26	8.58	192.0	1.022
UNIT2_1704.LAB	3/4/2021	13:08:27	9.72	192.0	1.023
UNIT2_1705.LAB	3/4/2021	13:09:27	10.39	191.9	1.021
UNIT2_1706.LAB	3/4/2021	13:10:27	10.07	192.0	1.022
UNIT2_1707.LAB	3/4/2021	13:11:27	10.86	191.9	1.019

Data Point	Date	Time	HCl (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT2_1708.LAB	3/4/2021	13:12:27	10.68	191.9	1.020
UNIT2_1709.LAB	3/4/2021	13:13:27	9.54	191.9	1.021
UNIT2_1710.LAB	3/4/2021	13:14:27	9.13	191.9	1.023
UNIT2_1711.LAB	3/4/2021	13:15:27	8.50	191.9	1.022
UNIT2_1712.LAB	3/4/2021	13:16:27	8.35	191.9	1.021
UNIT2_1713.LAB	3/4/2021	13:17:27	7.60	192.0	1.021
UNIT2_1714.LAB	3/4/2021	13:18:27	7.80	192.0	1.022
UNIT2_1715.LAB	3/4/2021	13:19:28	7.29	192.0	1.021
UNIT2_1716.LAB	3/4/2021	13:20:28	8.16	192.0	1.021
UNIT2_1717.LAB	3/4/2021	13:21:28	8.68	192.0	1.023
UNIT2_1718.LAB	3/4/2021	13:22:28	7.67	192.0	1.021
UNIT2_1719.LAB	3/4/2021	13:23:28	7.94	191.9	1.021
UNIT2_1720.LAB	3/4/2021	13:24:28	10.13	191.9	1.020
UNIT2_1721.LAB	3/4/2021	13:25:28	9.31	191.9	1.022
UNIT2_1722.LAB	3/4/2021	13:26:28	9.48	191.9	1.020
UNIT2_1723.LAB	3/4/2021	13:27:28	10.82	192.0	1.021
UNIT2_1724.LAB	3/4/2021	13:28:28	12.30	192.0	1.022
UNIT2_1725.LAB	3/4/2021	13:29:29	13.43	192.0	1.020
UNIT2_1726.LAB	3/4/2021	13:30:29	13.71	192.0	1.019
UNIT2_1727.LAB	3/4/2021	13:31:29	14.19	192.0	1.021
UNIT2_1728.LAB	3/4/2021	13:32:29	12.91	192.0	1.022
UNIT2_1729.LAB	3/4/2021	13:33:29	9.19	191.9	1.021
UNIT2_1730.LAB	3/4/2021	13:34:29	9.68	191.9	1.018
UNIT2_1731.LAB	3/4/2021	13:35:29	9.69	191.9	1.021
UNIT2_1732.LAB	3/4/2021	13:36:29	10.85	191.9	1.020
UNIT2_1733.LAB	3/4/2021	13:37:30	11.53	191.9	1.020
UNIT2_1734.LAB	3/4/2021	13:38:30	12.35	192.0	1.022
UNIT2_1735.LAB	3/4/2021	13:39:30	12.00	192.0	1.020
UNIT2_1736.LAB	3/4/2021	13:40:30	13.57	192.0	1.023
UNIT2_1737.LAB	3/4/2021	13:41:30	14.63	192.0	1.023
UNIT2_1738.LAB	3/4/2021	13:42:30	14.99	192.0	1.022
UNIT2_1739.LAB	3/4/2021	13:43:30	13.77	191.9	1.022
UNIT2_1740.LAB	3/4/2021	13:44:30	14.38	191.9	1.020
UNIT2_1741.LAB	3/4/2021	13:45:30	14.40	191.9	1.020
UNIT2_1742.LAB	3/4/2021	13:46:30	15.36	191.9	1.022
UNIT2_1743.LAB	3/4/2021	13:47:31	13.83	191.9	1.020
UNIT2_1744.LAB	3/4/2021	13:48:31	15.18	192.0	1.019
UNIT2_1745.LAB	3/4/2021	13:49:31	13.67	192.0	1.021
UNIT2_1746.LAB	3/4/2021	13:50:31	15.47	192.0	1.021
UNIT2_1747.LAB	3/4/2021	13:51:31	15.71	192.0	1.018
UNIT2_1748.LAB	3/4/2021	13:52:31	10.70	192.0	1.020
UNIT2_1749.LAB	3/4/2021	13:53:31	9.76	192.0	1.019
UNIT2_1750.LAB	3/4/2021	13:54:31	11.67	192.0	1.022
UNIT2_1751.LAB	3/4/2021	13:55:31	12.41	191.9	1.020
UNIT2_1752.LAB	3/4/2021	13:56:31	12.14	191.9	1.021
UNIT2_1753.LAB	3/4/2021	13:57:31	11.49	191.9	1.020
UNIT2_1754.LAB	3/4/2021	13:58:32	11.19	192.0	1.020
UNIT2_1755.LAB	3/4/2021	13:59:32	11.69	192.0	1.020
UNIT2_1756.LAB	3/4/2021	14:00:32	11.73	192.0	1.023
UNIT2_1757.LAB	3/4/2021	14:01:32	12.06	192.0	1.019
UNIT2_1758.LAB	3/4/2021	14:02:32	12.22	192.0	1.020
UNIT2_1759.LAB	3/4/2021	14:03:32	12.99	192.0	1.020
UNIT2_1760.LAB	3/4/2021	14:04:32	11.76	191.9	1.019
UNIT2_1761.LAB	3/4/2021	14:05:32	11.67	191.9	1.019
UNIT2_1762.LAB	3/4/2021	14:06:33	10.49	191.9	1.020
UNIT2_1763.LAB	3/4/2021	14:07:33	10.31	191.9	1.022
UNIT2_1764.LAB	3/4/2021	14:08:33	8.59	192.0	1.020
UNIT2_1765.LAB	3/4/2021	14:09:33	8.34	192.0	1.021
UNIT2_1766.LAB	3/4/2021	14:10:33	8.08	192.0	1.021
UNIT2_1767.LAB	3/4/2021	14:11:33	8.38	192.0	1.020
UNIT2_1768.LAB	3/4/2021	14:12:33	9.77	192.0	1.020

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Spectrum	Date	Time	HCl (ppmv wet)	FTIR Gas Cell Temp (C)	FTIR Gas Cell Pressure (Atm)
UNIT2_1769.LAB	3/4/2021	14:13:34	9.26	192.0	1.020
UNIT2_1770.LAB	3/4/2021	14:14:33	8.79	192.0	1.020
UNIT2_1771.LAB	3/4/2021	14:15:33	9.58	191.9	1.021
UNIT2_1772.LAB	3/4/2021	14:16:33	8.80	191.9	1.020
UNIT2_1773.LAB	3/4/2021	14:17:34	8.26	191.9	1.021
UNIT2_1774.LAB	3/4/2021	14:18:34	8.13	191.9	1.019
UNIT2_1775.LAB	3/4/2021	14:19:34	8.02	192.0	1.021
UNIT2_1776.LAB	3/4/2021	14:20:34	7.87	192.0	1.020
UNIT2_1777.LAB	3/4/2021	14:21:34	7.83	192.0	1.021
UNIT2_1778.LAB	3/4/2021	14:22:34	7.31	192.0	1.019
UNIT2_1779.LAB	3/4/2021	14:23:34	7.49	192.0	1.021
UNIT2_1780.LAB	3/4/2021	14:24:34	7.94	192.0	1.020
UNIT2_1781.LAB	3/4/2021	14:25:34	7.92	192.0	1.019
[illegible]	[illegible]		7.83		
[illegible]	[illegible]		9.58		
[illegible]	[illegible]		8.31		

APPENDIX

Unit 2 – FTIR QA/QC Data

Nitrogen Direct to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT2_N2_DIR_1076BKG.LAB	3/4/2021	6:21:31	0.00	0.00	0.00	0.00
UNIT2_N2_DIR_1077.LAB	3/4/2021	6:21:45	-0.05	0.09	0.01	-0.10
UNIT2_N2_DIR_1078.LAB	3/4/2021	6:21:52	0.03	0.03	0.00	-0.15
UNIT2_N2_DIR_1079.LAB	3/4/2021	6:22:00	-0.02	-0.05	0.00	0.08
UNIT2_N2_DIR_1080.LAB	3/4/2021	6:22:07	0.07	0.03	0.01	0.07
UNIT2_N2_DIR_1081.LAB	3/4/2021	6:22:15	0.00	0.15	0.00	-0.14
UNIT2_N2_DIR_1082.LAB	3/4/2021	6:22:22	-0.03	-0.09	-0.01	-0.16
UNIT2_N2_DIR_1083.LAB	3/4/2021	6:22:30	0.03	0.13	0.00	-0.01
UNIT2_N2_DIR_1084.LAB	3/4/2021	6:22:37	-0.01	-0.09	0.00	-0.11

CTS, 100.0 ppm Ethylene Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT2_CTS_DIR_1085.LAB	3/4/2021	6:23:17	0.04	0.08	-0.01	100.02	**100.0%**
UNIT2_CTS_DIR_1086.LAB	3/4/2021	6:23:25	0.02	-0.05	0.00	100.17	**100.2%**
UNIT2_CTS_DIR_1087.LAB	3/4/2021	6:23:32	0.01	-0.08	0.00	100.14	**100.1%**
UNIT2_CTS_DIR_1088.LAB	3/4/2021	6:23:40	-0.01	-0.02	-0.01	100.41	**100.4%**
UNIT2_CTS_DIR_1089.LAB	3/4/2021	6:23:47	-0.01	0.24	0.00	100.21	**100.2%**
UNIT2_CTS_DIR_1090.LAB	3/4/2021	6:23:55	-0.05	-0.07	0.00	100.14	**100.1%**
UNIT2_CTS_DIR_1091.LAB	3/4/2021	6:24:02	0.00	-0.04	-0.01	100.07	**100.1%**
UNIT2_CTS_DIR_1092.LAB	3/4/2021	6:24:10	0.08	-0.01	-0.01	100.28	**100.3%**
		Average				100.18	

99.5 ppm HCl/5.01 ppm SF6 Direct Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT2_HCL_DIR_1103.LAB	3/4/2021	6:29:19	0.00	99.39	4.91	-0.31
UNIT2_HCL_DIR_1104.LAB	3/4/2021	6:29:26	0.02	99.29	4.91	-0.35
UNIT2_HCL_DIR_1105.LAB	3/4/2021	6:29:34	0.01	99.08	4.90	-0.63
UNIT2_HCL_DIR_1106.LAB	3/4/2021	6:29:41	0.02	99.40	4.90	-0.56
UNIT2_HCL_DIR_1107.LAB	3/4/2021	6:29:49	0.04	99.10	4.90	-0.49
UNIT2_HCL_DIR_1108.LAB	3/4/2021	6:29:56	-0.01	97.37	4.89	-0.62
UNIT2_HCL_DIR_1109.LAB	3/4/2021	6:30:04	0.04	99.13	4.90	-0.42
UNIT2_HCL_DIR_1110.LAB	3/4/2021	6:30:11	-0.09	97.46	4.90	-0.90
		Average		98.79	4.90	

CTS, 100.0 ppm Ethylene System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)	Response Time (sec)
UNIT2_CTS_RT2_1118.LAB	3/4/2021	6:34:42	0.76	0.04	0.01	0.19	**0.2%**	-
UNIT2_CTS_RT2_1119.LAB	3/4/2021	6:34:50	0.46	0.21	-0.02	28.16	**28.1%**	8
UNIT2_CTS_RT2_1120.LAB	3/4/2021	6:34:57	0.03	0.07	-0.01	100.89	**100.7%**	15
UNIT2_CTS_RT2_1121.LAB	3/4/2021	6:35:05	-0.03	-0.20	0.00	101.02	**100.8%**	
UNIT2_CTS_RT2_1122.LAB	3/4/2021	6:35:12	-0.01	0.00	0.00	100.80	**100.6%**	
UNIT2_CTS_RT2_1123.LAB	3/4/2021	6:35:20	0.00	0.12	0.00	100.31	**100.1%**	
UNIT2_CTS_RT2_1124.LAB	3/4/2021	6:35:27	0.01	0.21	0.00	100.80	**100.6%**	
UNIT2_CTS_RT2_1125.LAB	3/4/2021	6:35:35	0.02	0.28	-0.01	100.80	**100.6%**	
UNIT2_CTS_RT2_1126.LAB	3/4/2021	6:35:42	0.01	0.07	0.01	101.11	**100.9%**	
UNIT2_CTS_RT2_1127.LAB	3/4/2021	6:35:50	0.01	0.09	0.00	100.80	**100.6%**	

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Nitrogen (Zero) System Purge and Response Time Test

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)	Rise Time (sec)
UNIT2_N2_RT_1128.LAB	3/4/2021	6:36:16	0.02	-0.04	0.00	101.39	**101.2%**	-
UNIT2_N2_RT_1129.LAB	3/4/2021	6:36:23	0.15	0.12	-0.01	57.76	**57.7%**	8
UNIT2_N2_RT_1130.LAB	3/4/2021	6:36:31	0.03	-0.09	0.01	0.42	**0.4%**	16
UNIT2_N2_RT_1131.LAB	3/4/2021	6:36:38	0.00	-0.18	0.00	0.09	**0.1%**	
UNIT2_N2_RT_1132.LAB	3/4/2021	6:36:46	-0.02	0.04	0.01	0.00	**0.0%**	
UNIT2_N2_RT_1133.LAB	3/4/2021	6:36:53	0.01	0.21	0.00	0.00	**0.0%**	
UNIT2_N2_RT_1134.LAB	3/4/2021	6:37:01	-0.03	-0.09	0.00	-0.19	**-0.2%**	
UNIT2_N2_RT_1135.LAB	3/4/2021	6:37:08	0.03	0.03	0.00	0.12	**0.1%**	
UNIT2_N2_RT_1136.LAB	3/4/2021	6:37:16	0.08	0.02	0.01	0.02	**0.0%**	
UNIT2_N2_RT_1137.LAB	3/4/2021	6:37:23	0.02	-0.16	0.00	0.27	**0.3%**	

Unit 2, Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT2_1142.LAB	3/4/2021	6:45:33	13.95	3.65	-0.01	0.83
UNIT2_1143.LAB	3/4/2021	6:46:33	14.08	3.82	-0.01	0.87
UNIT2_1144.LAB	3/4/2021	6:47:33	13.39	3.82	-0.01	0.74
	Native Average		13.81	3.76	-0.01	

Unit 2 Analyte Spike, Using 99.5 ppm HCl/5.01 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor	HCl Recovery (%)
UNIT2_HCL_SPK_1190.LAB	3/4/2021	6:53:48	13.09	13.24	0.42	0.64	**0.086**	**115.1%**
UNIT2_HCL_SPK_1191.LAB	3/4/2021	6:53:56	11.64	13.16	0.43	0.71	**0.089**	**111.0%**
UNIT2_HCL_SPK_1192.LAB	3/4/2021	6:54:03	11.51	12.71	0.43	0.62	**0.089**	**106.0%**
UNIT2_HCL_SPK_1193.LAB	3/4/2021	6:54:11	13.33	13.28	0.42	0.32	**0.087**	**114.5%**
UNIT2_HCL_SPK_1194.LAB	3/4/2021	6:54:18	13.72	13.52	0.42	0.95	**0.086**	**118.5%**
UNIT2_HCL_SPK_1195.LAB	3/4/2021	6:54:26	13.37	13.12	0.42	0.76	**0.086**	**113.6%**
UNIT2_HCL_SPK_1196.LAB	3/4/2021	6:54:33	13.25	13.17	0.41	0.69	**0.086**	**114.5%**
UNIT2_HCL_SPK_1197.LAB	3/4/2021	6:54:41	12.43	13.20	0.43	0.75	**0.089**	**110.9%**
	Spike Average							**114.4%**

CTS, 100.0 ppm Ethylene System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT2_CTS_SYS_1198.LAB	3/4/2021	6:55:24	0.04	0.67	0.00	100.32	**100.1%**
UNIT2_CTS_SYS_1199.LAB	3/4/2021	6:55:32	0.03	0.43	0.01	100.89	**100.7%**
UNIT2_CTS_SYS_1200.LAB	3/4/2021	6:55:39	0.02	0.37	0.00	100.26	**100.1%**
UNIT2_CTS_SYS_1201.LAB	3/4/2021	6:55:47	0.08	0.48	-0.01	101.47	**101.3%**
UNIT2_CTS_SYS_1202.LAB	3/4/2021	6:55:54	0.01	0.34	-0.01	101.20	**101.0%**
UNIT2_CTS_SYS_1203.LAB	3/4/2021	6:56:02	0.04	0.42	-0.01	101.29	**101.1%**
UNIT2_CTS_SYS_1204.LAB	3/4/2021	6:56:09	0.04	0.43	-0.01	100.58	**100.4%**
UNIT2_CTS_SYS_1205.LAB	3/4/2021	6:56:17	0.03	0.33	-0.01	100.58	**100.4%**

Unit 2, Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT2_1211.LAB	3/4/2021	7:02:46	14.47	6.49	0.00	0.86
UNIT2_1212.LAB	3/4/2021	7:03:46	14.21	6.80	0.00	0.85
UNIT2_1213.LAB	3/4/2021	7:04:46	14.08	6.54	0.00	0.85
	Native Average		14.25	6.61	0.00	

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Unit 2 Analyte Spike, Using 99.5 ppm HCl/5.01 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor	HCl Recovery (%)
UNIT2_HCL_SPK_1246.LAB	3/4/2021	7:09:21	12.25	15.19	0.42	0.41	0.085	108.5%
UNIT2_HCL_SPK_1247.LAB	3/4/2021	7:09:29	12.12	15.31	0.42	0.73	0.085	109.8%
UNIT2_HCL_SPK_1248.LAB	3/4/2021	7:09:36	12.01	15.21	0.42	0.60	0.086	108.5%
UNIT2_HCL_SPK_1249.LAB	3/4/2021	7:09:44	12.68	15.45	0.42	0.63	0.085	111.6%
UNIT2_HCL_SPK_1250.LAB	3/4/2021	7:09:51	13.33	16.08	0.41	0.62	0.084	120.6%
UNIT2_HCL_SPK_1251.LAB	3/4/2021	7:09:59	13.03	15.65	0.41	0.84	0.085	114.7%
UNIT2_HCL_SPK_1252.LAB	3/4/2021	7:10:06	12.37	14.71	0.42	0.75	0.086	102.7%
UNIT2_HCL_SPK_1253.LAB	3/4/2021	7:10:14	13.27	15.91	0.41	0.79	0.085	117.3%
	Spike Average							111.7%

CTS, 100.0 ppm Ethylene System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT2_CTS_SYS_1254.LAB	3/4/2021	7:10:54	0.08	0.88	0.00	100.87	100.7%
UNIT2_CTS_SYS_1255.LAB	3/4/2021	7:11:02	0.05	0.81	0.00	101.74	101.6%
UNIT2_CTS_SYS_1256.LAB	3/4/2021	7:11:09	0.07	0.54	0.00	100.12	99.9%
UNIT2_CTS_SYS_1257.LAB	3/4/2021	7:11:17	0.03	0.41	0.00	100.40	100.2%
UNIT2_CTS_SYS_1258.LAB	3/4/2021	7:11:24	0.00	0.50	0.00	101.01	100.8%
UNIT2_CTS_SYS_1259.LAB	3/4/2021	7:11:32	0.04	0.61	0.00	101.32	101.1%
UNIT2_CTS_SYS_1260.LAB	3/4/2021	7:11:39	0.01	0.16	0.00	101.25	101.1%
UNIT2_CTS_SYS_1261.LAB	3/4/2021	7:11:47	0.03	0.36	0.00	101.25	101.1%

Unit 2, Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT2_1394.LAB	3/4/2021	9:25:31	14.38	6.65	0.00	0.86
UNIT2_1395.LAB	3/4/2021	9:26:31	14.02	6.56	-0.01	0.83
UNIT2_1396.LAB	3/4/2021	9:27:31	13.80	6.40	0.00	0.77
	Native Average		14.07	6.54	0.00	

Unit 2 Analyte Spike, Using 99.5 ppm HCl/5.01 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor	HCl Recovery (%)
UNIT2_HCL_SPK_1427.LAB	3/4/2021	9:32:03	12.73	14.13	0.41	0.52	0.083	98.8%
UNIT2_HCL_SPK_1428.LAB	3/4/2021	9:32:11	12.71	14.10	0.41	0.72	0.084	97.6%
UNIT2_HCL_SPK_1429.LAB	3/4/2021	9:32:18	12.48	14.44	0.41	0.65	0.084	101.7%
UNIT2_HCL_SPK_1430.LAB	3/4/2021	9:32:26	13.35	14.72	0.41	0.57	0.084	104.8%
UNIT2_HCL_SPK_1431.LAB	3/4/2021	9:32:33	12.57	14.16	0.39	0.43	0.081	101.8%
UNIT2_HCL_SPK_1432.LAB	3/4/2021	9:32:41	12.41	13.82	0.40	0.75	0.082	96.3%
UNIT2_HCL_SPK_1433.LAB	3/4/2021	9:32:48	12.32	13.60	0.41	0.66	0.084	91.4%
UNIT2_HCL_SPK_1434.LAB	3/4/2021	9:32:56	12.70	13.93	0.41	0.63	0.084	96.1%
	Spike Average							98.0%

CTS, 100.0 ppm Ethylene System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT2_CTS_SYS_1435.LAB	3/4/2021	9:33:36	0.04	0.32	0.00	99.95	99.8%
UNIT2_CTS_SYS_1436.LAB	3/4/2021	9:33:44	-0.02	0.33	0.01	100.21	100.0%
UNIT2_CTS_SYS_1437.LAB	3/4/2021	9:33:51	0.03	0.27	0.00	101.27	101.1%
UNIT2_CTS_SYS_1438.LAB	3/4/2021	9:33:59	0.04	-0.01	-0.01	100.84	100.7%
UNIT2_CTS_SYS_1439.LAB	3/4/2021	9:34:06	0.06	0.19	0.00	100.70	100.5%
UNIT2_CTS_SYS_1440.LAB	3/4/2021	9:34:14	0.00	0.26	-0.02	101.37	101.2%
UNIT2_CTS_SYS_1441.LAB	3/4/2021	9:34:21	0.02	0.23	0.01	101.00	100.8%
UNIT2_CTS_SYS_1442.LAB	3/4/2021	9:34:29	0.00	0.11	-0.01	100.54	100.4%

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Unit 2, Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT2_1581.LAB	3/4/2021	11:54:16	14.42	10.67	0.00	0.73
UNIT2_1582.LAB	3/4/2021	11:55:16	13.34	10.32	-0.01	0.80
UNIT2_1583.LAB	3/4/2021	11:56:16	13.60	10.53	-0.01	0.73
	Native Average		13.79	10.51	-0.01	

Unit 2 Analyte Spike, Using 99.5 ppm HCl/5.01 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor	HCl Recovery (%)
UNIT2_HCL_SPK_1626.LAB	3/4/2021	12:02:08	12.39	17.94	0.40	0.76	0.082	102.4%
UNIT2_HCL_SPK_1627.LAB	3/4/2021	12:02:15	13.23	18.55	0.42	0.71	0.086	105.3%
UNIT2_HCL_SPK_1628.LAB	3/4/2021	12:02:23	13.84	18.73	0.41	0.80	0.085	108.6%
UNIT2_HCL_SPK_1629.LAB	3/4/2021	12:02:30	13.61	19.27	0.41	0.72	0.086	114.1%
UNIT2_HCL_SPK_1630.LAB	3/4/2021	12:02:38	13.63	19.39	0.42	0.60	0.087	114.6%
UNIT2_HCL_SPK_1631.LAB	3/4/2021	12:02:46	14.27	19.91	0.41	0.72	0.086	121.6%
UNIT2_HCL_SPK_1632.LAB	3/4/2021	12:02:53	13.62	19.48	0.41	0.73	0.085	117.5%
UNIT2_HCL_SPK_1633.LAB	3/4/2021	12:03:00	13.16	19.15	0.39	0.72	0.082	117.7%
	Spike Average							112.7%

CTS, 100.0 ppm Ethylene System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT2_CTS_SYS_1634.LAB	3/4/2021	12:03:50	0.03	0.33	0.01	100.82	100.6%
UNIT2_CTS_SYS_1635.LAB	3/4/2021	12:03:58	0.03	0.30	-0.01	100.87	100.7%
UNIT2_CTS_SYS_1636.LAB	3/4/2021	12:04:05	0.04	0.25	0.01	100.39	100.2%
UNIT2_CTS_SYS_1637.LAB	3/4/2021	12:04:13	0.01	0.16	-0.01	100.89	100.7%
UNIT2_CTS_SYS_1638.LAB	3/4/2021	12:04:20	0.01	0.32	-0.01	100.76	100.6%
UNIT2_CTS_SYS_1639.LAB	3/4/2021	12:04:28	0.05	0.04	0.00	100.49	100.3%
UNIT2_CTS_SYS_1640.LAB	3/4/2021	12:04:35	-0.02	0.40	-0.01	100.39	100.2%
UNIT2_CTS_SYS_1641.LAB	3/4/2021	12:04:43	-0.04	0.20	0.00	100.65	100.5%

Unit 2, Prior to Analyte Spike

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT2_1780.LAB	3/4/2021	14:24:34	14.66	7.94	0.00	0.84
UNIT2_1781.LAB	3/4/2021	14:25:34	14.73	7.92	0.00	0.85
UNIT2_1782.LAB	3/4/2021	14:26:34	14.60	7.80	0.00	0.84
	Native Average		14.66	7.89	0.00	

Unit 2 Analyte Spike, Using 99.5 ppm HCl/5.01 ppm SF6

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Dilution Factor	HCl Recovery (%)
UNIT2_HCL_SPK_1813.LAB	3/4/2021	14:31:12	13.94	14.94	0.37	0.86	0.075	103.3%
UNIT2_HCL_SPK_1814.LAB	3/4/2021	14:31:20	13.26	14.64	0.38	0.71	0.077	96.7%
UNIT2_HCL_SPK_1815.LAB	3/4/2021	14:31:27	12.84	14.27	0.37	0.88	0.076	93.1%
UNIT2_HCL_SPK_1816.LAB	3/4/2021	14:31:35	14.00	14.71	0.37	0.72	0.076	98.6%
UNIT2_HCL_SPK_1817.LAB	3/4/2021	14:31:42	14.90	15.76	0.37	0.78	0.076	113.1%
UNIT2_HCL_SPK_1818.LAB	3/4/2021	14:31:50	13.60	15.30	0.38	0.69	0.077	105.2%
UNIT2_HCL_SPK_1819.LAB	3/4/2021	14:31:57	12.88	14.71	0.37	0.74	0.076	99.4%
UNIT2_HCL_SPK_1820.LAB	3/4/2021	14:32:05	13.61	15.02	0.37	0.53	0.076	103.5%
	Spike Average							101.9%

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CTS, 100.0 ppm Ethylene System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)	Ethylene Recovery (%)
UNIT2_CTS_SYS_1821.LAB	3/4/2021	14:32:48	0.01	0.60	-0.01	100.55	**100.4%**
UNIT2_CTS_SYS_1822.LAB	3/4/2021	14:32:55	0.04	0.48	0.00	101.08	**100.9%**
UNIT2_CTS_SYS_1823.LAB	3/4/2021	14:33:03	-0.03	0.36	-0.01	99.98	**99.8%**
UNIT2_CTS_SYS_1824.LAB	3/4/2021	14:33:10	-0.01	0.51	-0.01	101.25	**101.1%**
UNIT2_CTS_SYS_1825.LAB	3/4/2021	14:33:18	0.01	0.44	-0.01	101.33	**101.2%**
UNIT2_CTS_SYS_1826.LAB	3/4/2021	14:33:25	-0.02	0.10	0.00	100.43	**100.3%**
UNIT2_CTS_SYS_1827.LAB	3/4/2021	14:33:33	-0.02	0.17	0.00	100.31	**100.1%**
UNIT2_CTS_SYS_1828.LAB	3/4/2021	14:33:40	-0.03	0.24	-0.01	100.29	**100.1%**

Nitrogen (Zero) System Purge

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT2_N2_SYS_1829.LAB	3/4/2021	14:34:21	0.07	0.22	0.00	0.18
UNIT2_N2_SYS_1830.LAB	3/4/2021	14:34:29	-0.02	0.28	0.00	0.05
UNIT2_N2_SYS_1831.LAB	3/4/2021	14:34:36	0.03	0.44	0.01	0.06
UNIT2_N2_SYS_1832.LAB	3/4/2021	14:34:44	0.00	-0.02	-0.01	0.37
UNIT2_N2_SYS_1833.LAB	3/4/2021	14:34:51	0.01	0.14	0.01	-0.03
UNIT2_N2_SYS_1834.LAB	3/4/2021	14:34:59	0.01	-0.08	0.01	-0.05
UNIT2_N2_SYS_1835.LAB	3/4/2021	14:35:06	-0.03	0.22	0.00	0.23
UNIT2_N2_SYS_1836.LAB	3/4/2021	14:35:14	-0.05	0.35	0.01	-0.09

Nitrogen Direct to FTIR

Spectrum	Date	Time	H2O (%v)	HCl (ppmv wet)	SF6 (ppmv wet)	Ethylene (ppmv wet)
UNIT2_N2_DIR_1838.LAB	3/4/2021	14:41:14	-0.01	0.21	0.00	0.03
UNIT2_N2_DIR_1839.LAB	3/4/2021	14:43:14	0.00	0.05	0.00	0.02
UNIT2_N2_DIR_1840.LAB	3/4/2021	14:45:14	0.00	0.08	0.00	0.00

APPENDIX

Certificates of Analysis

Airgas
an Air Liquide company

CERTIFICATE OF ACCURACY: HCl GMACS (Gas Manufacturer Alternative Certified Standard)

ASSAY LABORATORY

AIRGAS SPECIALTY GASES
Exploratory Products Group
6141 Easton Road
Plumsteadville, PA 18949

Lot No.: 160-401942174-1
P.O. No.: 1052249

CUSTOMER INFORMATION

Montrose Air Quality Service
2625 Denison Drive
Mount Pleasant, MI 48858-5596
USA

PRODUCT INFORMATION

COMPOSITION	CERTIFIED CONCENTRATION		UNCERTAINTY (Abs)		UNCERTAINTY (Rel)	
Hydrogen Chloride	99.5	PPM	4.32	PPM	3.47	%
Sulfur Hexafluoride	5.01	PPM	0.02	PPM	0.42	%
Nitrogen	Bal					

Cylinder Number: CC715686
Cylinder Type: 30L Aluminum
Cylinder Pressure: 2000 PSIG
Mixture Dew Point: N / A

Certification Date: 4-Dec-2020
Prior Certification Date: None
Expiration Date: 5-Dec-2022
Part No.: X02NI99T1SEC013

CERTIFICATION DATA

	CERTIFIED CONCENTRATION		UNCERTAINTY (Abs)		UNCERTAINTY (Rel)	
Hydrogen Chloride	2000.2	PPM	1.020	PPM	1.02	%
Sulfur Hexafluoride	5.01	PPM	0.021	PPM	0.42	%

Reference Standard

COMPOSITION	MEASURED CONCENTRATION		UNCERTAINTY (Abs)		UNCERTAINTY (Rel)	
Hydrogen Chloride	99.0	PPM	3.28	PPM	3.31	%

INSTRUMENT MODEL / ANALYTICAL PRINCIPLE
[illegible] Model 700 FTIR

Reference Standard
Cylinder Number [illegible]

ASSAY RESULTS	CERTIFIED CONCENTRATION		UNCERTAINTY (Abs)		UNCERTAINTY (Rel)		EXPIRES
Hydrogen Chloride	97.9	PPM	2.87	PPM	2.87	%	31-Jul-2021

Calibration Curve Data

	Curve Order	Correlation	Slope	Intercept
	1st Order - 6 points with zero	[illegible]	0.996320	0.554920

INTERLOCK STATISTICS

	UNCERTAINTY (Abs)		UNCERTAINTY (Rel)	
[illegible]	1.020	PPM	1.02	%
[illegible]	3.28	PPM	3.31	%
[illegible]	4.32	PPM	3.47	%

[illegible]

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA, LLC
24075 US Hwy 6
Stryker, OH 43557
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: PRIMARY STANDARD

Part Number:	X02NI99P15AD524	Reference Number:	141-401892862-1
Cylinder Number:	EB0119650	Cylinder Volume:	144.4 CF
Laboratory:	124 - Stryker (SAP) - OH	Cylinder Pressure:	2015 PSIG
Analysis Date:	Aug 27, 2020	Valve Outlet:	350
Lot Number:	141-401892862-1		

Expiration Date: Aug 27, 2023

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
ETHYLENE	100.0 PPM	100.0 PPM	+/- 1%
NITROGEN	Balance		

Signature on file
Approved for Release

PRAXAIR
Making our planet more productive

Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles, CA 90058
Tel: 323-585-2164
Fax: 714-542-6689

MONTROSE
AIR QUALITY SERVICES

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705
Customer PO Number: [illegible]

Certificate Issuance Date: 4/13/2020

Certification Date: 4/13/2020
Lot Number: N70086009903
Part Number: NI 5.5CE-AS
DocNumber: 215415

N2
CC68761

CERTIFICATE OF ANALYSIS

Nitrogen, 5.5 Continuous Emission Monitoring Zero

Analytes F.D. 4/8/20	Specification	Analytical Results	Analytical Reference	Analytical Uncertainty
Nitrogen	99.9995 %	99.9995 %	4	-----
Carbon Dioxide	≤ 1 ppm	< 0.1 ppm	2	± 10%
Carbon Monoxide	≤ 0.5 ppm	< 0.1 ppm	2	± 15%
Total Hydrocarbons	≤ 0.1 ppm	< 0.1 ppm	5	± 15%
Oxides of Nitrogen	≤ 0.1 ppm	< 0.1 ppm	7	± 15%
[illegible]	≤ 0.5 ppm	< 0.4 ppm	6	± 15%
[illegible]	≤ 0.1 ppm	< 0.1 ppm	1	± 15%
[illegible]	≤ 2 ppm	< 0.5 ppm	3	± 10%

[illegible] AS
[illegible] 2000 psig
Cylinder Volume: 142 ft3
Valve Outlet Connection: CGA 580
Cylinder Number(s): CC108502, CC306057, CC68761, CC256213, CC37860, DT0018588, DT0014245, CC188153
Analyzed Cylinder Number(s): CC108502

Fill Date: 4/8/2020
Analysis Date: 4/8/2020
Filling Method: Pressure/Temperature

Amalia Real (QH)
Analyst: Amalia Real

Ying Yu (CPA)
Approved Signer: Ying Yu

Key to Analytical Techniques:

Reference	Analytical Instrument - Analytical Principle
1	Amalek 921CE S/N AW-921-S321 - UV Spectrometry
2	Horiba Instruments Inc. GA-360E - NDIR
3	Mesco Aquavoil PLUS - Specific Water Analyzer
4	N/A - By Difference of Typical Impurities
5	[illegible] FID Total Hydrocarbon Analyzer
6	[illegible] - Electrolytic Cell/Electrochemical
7	[illegible] - Chemiluminescence

[illegible] using instruments whose calibration is certified using Praxair Distribution, Inc. Reference Materials which are [illegible] to the National Institute of Standards and Technology (NIST) or Measurement Canada, or through NIST Standard [illegible]

[illegible] (ppm) unless otherwise noted. Analytical uncertainty is expressed as a Relative % unless otherwise noted

[illegible] Praxair Distribution, Inc. [illegible] we believe the information is accurate within the limits of the analytical [illegible] as to the suitability of the use of the information for any particular purpose [illegible] in no event shall liability of Praxair Distribution, Inc. arising out of the use [illegible]

Appendix A.3.2
Particulate Laboratory Data

MONTROSE
AIR QUALITY SERVICES

PARTICULATE
EPA METHOD 5

Project # PROJ-006514
Client/Location Desert View
Sample Location Unit 1 Stack
Test # 1-PM-U1

Acetone Blank mg/ml 0.0000

Sample Date 3/12/21
Data Analysis Date 3/15/21
Analyst Initials KC

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	83-4179	0.3536	0.3527	0.9	0.0	—	0.9
2. Probe and Nozzle Wash (Acetone)	6915	28.5842	28.5839	0.3	0.0	89.0/89.0	0.3
Acetone Blank	6895	28.2451	28.2451	0.0	—	136.0/136.0	—

Total Particulate = 1.2 mg

Method of Sample Prep/Notes

MONTROSE

PARTICULATE

EPA METHOD 5

Project # PROJ-006514
Client/Location Desert View
Sample Location Unit 1 Stack
Test # 1-PM-U1

Acetone Blank (mg/ml) 0.0000

Sample Date 3/12/2021
Analysis Date 3/15/2021
Analyst KC

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	83-4179	0.3536	0.3527	0.9	0.0	-------	0.9
2. Probe and Nozzle Wash	6915	28.5842	28.5839	0.3	0.00	89.0 89.0	0.30
Acetone Field Blank	6895	28.2451	28.2451	0.0	----	136.0 136.0	----

Total Particulate = 1.2

Method of Sample Prep/Analysis Notes

MONTROSE
AIR QUALITY SERVICES

PARTICULATE
EPA METHOD 5

Project # PROJ-006514
Client/Location Desert View
Sample Location Unit 1 Stack
Test # 2-PM-U1
Acetone Blank mg/ml 0.0000
Sample Date 3/12/21
Data Analysis Date 3/15/21
Analyst Initials KC

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	83-4181	0.3531	0.3526	0.5	0.0	-	0.5
2. Probe and Nozzle Wash (Acetone)	6916	29.5177	29.5152	2.5	0.0	90.5/90.5	2.5

Total Particulate = 3.0 mg

Method of Sample Prep/Notes

MONTROSE

PARTICULATE

EPA METHOD 5

Project #	PROJ-006514				
Client/Location	Desert View			**Sample Date**	3/12/2021
Sample Location	Unit 1 Stack			**Analysis Date**	3/15/2021
Test #	2-PM-U1	**Acetone Blank (mg/ml)**	0.0000	**Analyst**	KC

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	83-4181	0.3531	0.3526	0.5	0.0	-------	0.50
2. Probe and Nozzle Wash	6916	29.5177	29.5152	2.5	0.00	90.5 90.5	2.50

Total Particulate = 3.0

Method of Sample Prep/Analysis Notes

MONTROSE
AIR QUALITY SERVICES

PARTICULATE
EPA METHOD 5

Project # PROJ-006514
Client/Location Desert View
Sample Location Unit 1 Stack
Test # 3-PM-U1
Acetone Blank mg/ml 0.0000

Sample Date 3/12/21
Data Analysis Date 3/15/21
Analyst Initials KC

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	83-4180	0.3526	0.3504	2.2	0.0	—	2.2
2. Probe and Nozzle Wash (Acetone)	6914	29.7510	29.7486	2.4	0.0	91.0/91.0	2.4

Total Particulate = 4.6 mg

Method of Sample Prep/Notes

MONTROSE

PARTICULATE

EPA METHOD 5

Project #	PROJ-006514				
Client/Location	Desert View			**Sample Date**	3/12/2021
Sample Location	Unit 1 Stack			**Analysis Date**	3/15/2021
Test #	3-PM-U1	**Acetone Blank (mg/ml)**	0.0000	**Analyst**	KC

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	83-4180	0.3526	0.3504	2.2	0.0	-------	2.20
2. Probe and Nozzle Wash	6914	29.751	29.7486	2.4	0.00	91.0 91.0	2.40

Total Particulate = 4.6

Method of Sample Prep/Analysis Notes

MONTROSE

PARTICULATE
EPA METHOD 5

Project # PROJ 006514
Client/Location Desert View
Sample Location Unit 2
Test # 1-PM

Acetone Blank mg/ml 0.0000

Sample Date 3/4/21
Data Analysis Date 3/10/21
Analyst Initials KC

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	83-4162	0.3237	0.3237	0.0	0.0	—	0.0
2. Probe and Nozzle Wash (Acetone)	6896	28.4524	28.4529	0.0	0.0	110.1 / 110.1	0.0
Acetone Blank	6895	28.2451	28.2451	0.0		136.0 / 136.0	
Filter Blank	83-4191	0.3475	0.3475	0.0		—	

Total Particulate = 0.0 mg

Method of Sample Prep/Notes

MONTROSE

PARTICULATE

EPA 5

Project #	PROJ-006514				
Client/Location	Desert View			**Sample Date**	3/4/2021
Sample Location	Unit 2			**Analysis Date**	3/10/2021
Test #	1-PM	**Acetone Blank (mg/ml)**	0.0000	**Analyst**	KC

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	83-4162	0.3237	0.3237	0.0	0.0	-----	0.0
2. Probe and Nozzle Wash (Acetone)	6896	28.4524	28.4526	0.0	0.0	110.1 110.1	0.0
Acetone Blank	6895	28.2451	28.2451	0.0		136.0 136.0	
Filter Blank	83-4191	0.3475	0.3475	0.0		-----	

Total Particulate= 0.0 mg

Method of Sample Prep/Analysis Notes

MONTROSE

PARTICULATE
EPA METHOD 5

Project # PROJ 006514
Client/Location Desert View
Sample Location Unit 2
Test # 2-PM

Acetone Blank mg/ml 0.0000

Sample Date 3/4/21
Data Analysis Date 3/10/21
Analyst Initials KC

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	83-4164	0.3180	0.3183	0.0	0.0	KC 3/10/21 86.0/86.0	0.0
2. Probe and Nozzle Wash (Acetone)	6897	29.2350	29.2330	2.0	0.0	86.0/86.0	2.0

Total Particulate = 2.0 mg

Method of Sample Prep/Notes

MONTROSE

PARTICULATE

EPA METHOD 5

Project #	PROJ-006514				
Client/Location	Desert View			**Sample Date**	3/4/2021
Sample Location	Unit 2			**Analysis Date**	3/10/2021
Test #	2-PM	**Acetone Blank (mg/ml)**	0.0000	**Analyst**	KC

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	83-4164	0.318	0.3183	0.0	0.0	--------	0.00
2. Probe and Nozzle Wash	6897	29.2356	29.233	2.6	0.00	86 86	2.60

Total Particulate = 2.6

Method of Sample Prep/Analysis Notes

MONTROSE

PARTICULATE
EPA METHOD 5

Project # PROJ 006514
Client/Location Desert View
Sample Location Unit 2
Test # 3-PM

Acetone Blank mg/ml 0.0000

Sample Date 3/4/21
Data Analysis Date 3/10/21
Analyst Initials KC

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	83-4163	0.3182	0.3184	0.0	0.0	—	0.0
2. Probe and Nozzle Wash (Acetone)	6894	29.3420	29.3377	4.3	0.0	109.8/109.8	4.3

Total Particulate = 4.3 mg

Method of Sample Prep/Notes

MONTROSE

PARTICULATE

EPA METHOD 5

Project # PROJ-006514
Client/Location Desert View
Sample Location Unit 2
Test # 3-PM
Acetone Blank (mg/ml) 0.0000

Sample Date 3/4/2021
Analysis Date 3/10/2021
Analyst KC

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	83-4163	0.3182	0.3184	0.0	0.0	--------	0.00
2. Probe and Nozzle Wash	6894	29.342	29.3377	4.3	0.00	109.8 109.8	4.30

Total Particulate = 4.3

Method of Sample Prep/Analysis Notes

Appendix A.3.3
SO_x Laboratory Data

MONTROSE
AIR QUALITY SERVICES

SULFATE TITRATION

Project # PROJ-006514
Client/Location Desert View Power
Sample Location Unit 1
Titrant Used 0.01 N $BaCl_2$

Sample Date 3/10/2021
Analysis Date 3/10/2021
Analyst Initials LM

Test Number	Sample Description	Total Vol (ml) (TV)	V_{recon}	V_{evap}	Aliquot Vol (ml) (Va)	Titrant Volume (ml) (Vt)	X-Blank Vol (ml)	Comments	mg/Sample
Blank (V_b): 20 mL 3% H_2O_2 + 80 mL IPA					20	0.13 0.18	0.16		
Blank (V_b): 20 mL DI H_2O + 80 mL IPA					20	0.16 0.14	0.15	N = (0.02*Va)/Vt	
Standardization: 15 ml DI H_2O + 5 ml 0.0200 N H_2SO_4 + 80 mL IPA					5	10.48 10.50	10.34	N= 0.00967118	
Audit Sample: 5 ml 1000 ppm SO_4 + 15 DI H_2O + 80 mL IPA					5	10.55 10.55	10.40	97 % recovery	
1-SO_2		511.9			20	2.43 2.45	2.28	in 3% H_2O_2	
2-SO_2		513.1			20	2.95 2.90	2.77	in 3% H_2O_2	
3-SO_2		503.1			20	3.15 3.15	2.99	in 3% H_2O_2	
4-SO_2		459.4			20	2.89 2.84	2.71	in 3% H_2O_2	
5-SO_2		445.6			20	3.02 3.00	2.85	in 3% H_2O_2	
6-SO_2		439.5			20	2.75 2.78	2.61	in 3% H_2O_2	
7-SO_2		449.4			20	2.75 2.75	2.59	in 3% H_2O_2	
8-SO_2		447.2			20	3.15 3.18	3.01	in 3% H_2O_2	
9-SO_2		469.1			20	3.30 3.32	3.15	in 3% H_2O_2	
10-SO_2		411.7			20	3.35 3.40	3.22	in 3% H_2O_2	
					mg $H_2SO_4 \cdot 2H_2O$ = (Vt-Vbl) (N) (67) (TV/V_{evap}) (V_{recon}/Va)				

Method of Sample Prep/Analysis Notes

MONTROSE
AIR QUALITY SERVICES

SULFATE TITRATION

Project #	PROJ-006514		
Client/Location	Desert View Power	Sample Date	3/10/2021
Sample Location	Unit 1	Analysis Date	3/10/2021
Titrant Used	0.01 N $BaCl_2$	Analyst Initials	LM

Test Number	Sample Description	Total Vol (ml) (TV)	V_{recon}	V_{evap}	Aliquot Vol (ml) (Va)	Titrant Volume (ml) (Vt)	X-Blank Vol (ml)	Comments	X-Blank (mL)
Blank (V_b): 20 mL 3% H_2O_2 + 80 mL IPA					20	0.13 0.18	0.16		
Blank (V_b): 20 mL DI H_2O + 80 mL IPA					20	0.16 0.14	0.15		
Standardization: 15 ml DI H_2O + 5 ml 0.0200 N H_2SO_4 + 80 mL IPA					5	10.48 10.50	10.34	N= 0.00967118	
Audit Sample: 5 ml 1000 ppm SO_4 + 15 DI H_2O + 80 mL IPA					5	10.55 10.55	10.40	97% recovery	
1-SO2		511.9			20	2.45 2.43	2.28	in 3% H2O2	
2-SO2		513.1			20	2.95 2.90	2.77	in 3% H2O2	
3-SO2		503.1			20	3.15 3.15	2.99	in 3% H2O2	
4-SO2		459.4			20	2.89 2.84	2.71	in 3% H2O2	
5-SO2		445.6			20	3.02 3.00	2.85	in 3% H2O2	
6-SO2		439.5			20	2.75 2.78	2.61	in 3% H2O2	
7-SO2		449.4			20	2.75 2.75	2.59	in 3% H2O2	
8-SO2		447.2			20	3.15 3.18	3.01	in 3% H2O2	
9-SO2		469.1			20	3.30 3.32	3.15	in 3% H2O2	
10-SO2		411.7			20	3.35 3.40	3.22	in 3% H2O2	
					mg $H_2SO_4 \cdot 2H_2O$ = (Vt-Vbl) (N) (67) (TV/V_{evap}) (V_{recon}/Va)				

Method of Sample Prep/Analysis Notes

Date of last revision 02/22/19

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Santa Ana\Forms\Lab Datasheets

MONTROSE
AIR QUALITY SERVICES

SULFATE TITRATION

Project # PROJ-006514
Client/Location Desert View Power
Sample Location Unit 2
Titrant Used 0.01 N Ba(ClO4)2

Sample Date 3/8/2021
Analysis Date 3/8/2021
Analyst Initials LM

Test Number	Sample Description	Total Vol (ml) (TV)	V_{recon}	V_{evap}	Aliquot Vol (ml) (Va)	Titrant Volume (ml) (Vt)	X-Blank Vol (ml)	Comments	mg/Sample
Blank (V_b): 20 mL 3% H_2O_2 + 80 mL IPA					20	0.20 0.22	0.21		
Blank (V_b): 20 mL DI H_2O + 80 mL IPA					20	0.19 0.19	0.19	N = (0.02*Va)/Vt	
Standardization: 15 ml DI H_2O + 5 ml 0.0200 N H_2SO_4 + 80 mL IPA					5	10.50 10.52	10.32	N= 0.00968992	
Audit Sample: 5 ml 1000 ppm SO_4 + 15 DI H_2O + 80 mL IPA					5	10.58 10.55	10.38	97 % recovery	
1-SO2		459.4			20	4.11 4.06	3.88	in 3% H_2O_2	
2-SO2		422.3			20	4.40 4.38	4.18	in 3% H_2O_2	
3-SO2		428.6			20	4.42 4.45	4.23	in 3% H_2O_2	
4-SO2		414.8			20	3.30 3.33	3.11	in 3% H_2O_2	
5-SO2		450.4			20	3.10 3.06	2.87	in 3% H_2O_2	
6-SO2		436.8			20	3.00 2.97	2.78	in 3% H_2O_2	
7-SO2		444.5			20	3.10 3.05	2.87	in 3% H_2O_2	
8-SO2		447.2			20	3.30 3.30	3.09	in 3% H_2O_2	
9-SO2		418.3			20	2.95 2.98	2.76	in 3% H_2O_2	
					mg $H_2SO_4 \cdot 2H_2O$ = (Vt-Vbl) (N) (67) (TV/V_{evap}) (V_{recon}/Va)				

Method of Sample Prep/Analysis Notes

MONTROSE
AIR QUALITY SERVICES

SULFATE TITRATION

Project #	PROJ-006514		
Client/Location	Desert View Power	Sample Date	3/8/2021
Sample Location	Unit 2	Analysis Date	3/8/2021
Titrant Used	0.01 N $BaCl_2$	Analyst Initials	LM

Test Number	Sample Description	Total Vol (ml) (TV)	V_{recon}	V_{evap}	Aliquot Vol (ml) (Va)	Titrant Volume (ml) (Vt)	X-Blank Vol (ml)	Comments	X-Blank (mL)
Blank (V_b): 20 mL 3% H_2O_2 + 80 mL IPA					20	0.20 0.22	0.21		
Blank (V_b): 20 mL DI H_2O + 80 mL IPA					20	0.19 0.19	0.19		
Standardization: 15 ml DI H_2O + 5 ml 0.0200 N H_2SO_4 + 80 mL IPA					5	10.50 10.52	10.32	N= 0.00968992	
Audit Sample: 5 ml 1000 ppm SO_4 + 15 DI H_2O + 80 mL IPA					5	10.58 10.55	10.38	97% recovery	
1-SO2		459.4			20	4.11 4.06	3.88	in 3% H2O2	
2-SO2		422.3			20	4.40 4.38	4.18	in 3% H2O2	
3-SO2		428.6			20	4.42 4.45	4.23	in 3% H2O2	
4-SO2		414.8			20	3.30 3.33	3.11	in 3% H2O2	
5-SO2		450.4			20	3.10 3.06	2.87	in 3% H2O2	
6-SO2		436.8			20	3.00 2.97	2.78	in 3% H2O2	
7-SO2		444.5			20	3.10 3.05	2.87	in 3% H2O2	
8-SO2		447.2			20	3.30 3.30	3.09	in 3% H2O2	
9-SO2		418.3			20	2.95 2.98	2.76	in 3% H2O2	
					mg $H_2SO_4 \bullet 2H_2O$ = (Vt-Vbl) (N) (67) (TV/V_{evap}) (V_{recon}/Va)				

Method of Sample Prep/Analysis Notes

Date of last revision 02/22/19

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Appendix A.3.4
Hydrocarbon Laboratory Report

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 442362
Report Level: II
Report Date: 03/25/2021

Analytical Report *prepared for:*

Dave Wonderly
Montrose Air Quality Services
1631 E. St Andrew Pl
Santa Ana, CA 92705

Location: Desert View Power Unit 1 and Unit 2

Authorized for release by:

Richard Villafania, Project Manager
richard.villafania@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105, CDC ELITE Member

ENTHALPY ANALYTICAL

Sample Summary

Dave Wonderly	Lab Job #:	442362
Montrose Air Quality Services	Location:	Desert View Power Unit 1 and Unit 2
1631 E. St Andrew Pl	Date Received:	03/12/21
Santa Ana, CA 92705		

Sample ID	Lab ID	Collected	Matrix
1A-VOC-U1	442362-001	03/08/21 10:35	Air
1B-VOC-U1	442362-002	03/08/21 10:35	Air
2A-VOC-U2	442362-003	03/10/21 11:24	Air
2B-VOC-U2	442362-004	03/10/21 11:24	Air
TRIP BLANK	442362-005	03/08/21 00:00	Air

ENTHALPY ANALYTICAL

Case Narrative

Montrose Air Quality Services	Lab Job Number: 442362
1631 E. St Andrew Pl	Location: Desert View Power Unit 1 and Unit 2
Santa Ana, CA 92705	Date Received: 03/12/21
Dave Wonderly	

This data package contains sample and QC results for four air samples, requested for the above referenced project on 03/12/21. The samples were received intact.

Non-Methane Non-Ethane Organic Compounds (SCAQMD 25.3):

This data package contains the raw instrument data for the samples and QA/QC as well as the ICAL and MDL/PQL summary. Supporting field documentation (if supplied by the client) follows the COC and receipt documentation. Samples were analyzed by SCAQMD method 25.3 and 10.1 modified (% and ppm level fixed gases). No analytical problems were encountered.

442362

CHAIN OF CUSTODY

CLIENT: Desert View Power PROJECT NO: PROJ-006514 TEST DATE(S): 3/8/2021 & 3/10/2021

LOCATION: Unit 1 and Unit 2 SAMPLER(S): Patrick Whitman

SAMPLE LOCATION: Stack Breaching PROJECT MANAGER: Rik Dupont

TEST METHOD(S): SCAQMD 25.3 DATE DUE:

OUTSIDE LAB REQUIRED?: Yes COMPLIANCE TEST? Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
3/8/2021	935/1035	1A-VOC-U1	Tank # 9AVial #9A	1	PW	
3/8/2021	935/1035	1B-VOC-U1	Tank # 9B Vial #9B	1	PW	
3/10/2021	1034/1124	2A-VOC-U2	Tank # 10A Vial #10A	1	PW	
3/10/2021	1034/1124	2B-VOC-U2	Tank # 10B Vial #10B	1	PW	
3/8/2021		Blank	Vial M94			

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
[illegible] (CARB)	3-12-21 1140	[illegible]	3/12/21 1138

ANALYSIS REQUIRED: Total TGNMO By SCAQMD Method 25.3 Include O2, CO2

14-3/13.8

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: MAQS

Project: Desert View Power

Date Received: 3/12/21

Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 13.0 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: vials temp.

Section 3

Was the cooler packed with: ☐ Ice ☑ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 14.3 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)		✓	
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?			✓
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

sample IDs do not match COC.

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☑ Email (email sent to/on): RV / 3/12/21

Project Manager's response:

Completed By: Anne Cano Date: 3/12/21

Enthalpy Analytical, a subsidiary of Montrose Environmental Group ,Inc.
931 W. Barkley Ave, Orange, CA 92868 • T: (714) 771-6900 • F: (714) 538-1209
www.enthalpy.com/socal

ENTHALPY ANALYTICAL

Analysis Results for 442362

Dave Wonderly
Montrose Air Quality Services
1631 E. St Andrew Pl
Santa Ana, CA 92705

Lab Job #: 442362
Location: Desert View Power Unit 1 and Unit 2
Date Received: 03/12/21

Sample ID: 1A-VOC-U1 **Lab ID: 442362-001** **Collected: 03/08/21 10:35**
Matrix: Air

442362-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SCAQMD 25.3									
Methane	<1.74		ppmC	1.74	1.7	263886	03/18/21	03/18/21	MPD
Carbon Monoxide	<1.74		ppmC	1.74	1.7	263886	03/18/21	03/18/21	MPD
Ethene/Ethane	<1.74		ppmC	1.74	1.7	263886	03/18/21	03/18/21	MPD
Carbon Dioxide	**11.3**		mol %	0.000174	1.7	263886	03/18/21	03/18/21	MPD
Oxygen	**9.13**		mol %	0.174	1.7	263886	03/18/21	03/18/21	MPD
TNMNEOC	**4.60**		ppmC	0.522	1.7	263886	03/18/21	03/18/21	MPD

Sample ID: 1B-VOC-U1 **Lab ID: 442362-002** **Collected: 03/08/21 10:35**
Matrix: Air

442362-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SCAQMD 25.3									
Methane	<1.76		ppmC	1.76	1.8	263886	03/18/21	03/18/21	MPD
Carbon Monoxide	<1.76		ppmC	1.76	1.8	263886	03/18/21	03/18/21	MPD
Ethene/Ethane	<1.76		ppmC	1.76	1.8	263886	03/18/21	03/18/21	MPD
Carbon Dioxide	**11.4**		mol %	0.000176	1.8	263886	03/18/21	03/18/21	MPD
Oxygen	**9.21**		mol %	0.176	1.8	263886	03/18/21	03/18/21	MPD
TNMNEOC	**4.60**		ppmC	0.528	1.8	263886	03/18/21	03/18/21	MPD

Sample ID: 2A-VOC-U2 **Lab ID: 442362-003** **Collected: 03/10/21 11:24**
Matrix: Air

442362-003 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SCAQMD 25.3									
Methane	<1.97		ppmC	1.97	2	263886	03/18/21	03/18/21	MPD
Carbon Monoxide	<1.97		ppmC	1.97	2	263886	03/18/21	03/18/21	MPD
Ethene/Ethane	<1.97		ppmC	1.97	2	263886	03/18/21	03/18/21	MPD
Carbon Dioxide	**11.4**		mol %	0.000197	2	263886	03/18/21	03/18/21	MPD
Oxygen	**9.32**		mol %	0.197	2	263886	03/18/21	03/18/21	MPD
TNMNEOC	**4.79**		ppmC	0.591	2	263886	03/18/21	03/18/21	MPD

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Analysis Results for 442362

Sample ID: 2B-VOC-U2	Lab ID: 442362-004	Collected: 03/10/21 11:24
	Matrix: Air	

442362-004 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SCAQMD 25.3									
Methane	<1.81		ppmC	1.81	1.8	263886	03/18/21	03/18/21	MPD
Carbon Monoxide	<1.81		ppmC	1.81	1.8	263886	03/18/21	03/18/21	MPD
Ethene/Ethane	<1.81		ppmC	1.81	1.8	263886	03/18/21	03/18/21	MPD
Carbon Dioxide	**3.83**		mol %	0.000181	1.8	263886	03/18/21	03/18/21	MPD
Oxygen	**17.1**		mol %	0.181	1.8	263886	03/18/21	03/18/21	MPD
TNMNEOC	**2.63**		ppmC	0.543	1.8	263886	03/18/21	03/18/21	MPD

< Value is less than indicated concentration

Results for any subcontracted analyses are not included in this section.

ENTHALPY
ANALYTICAL

Results

SCAQMD 25.3/10.1 Results Summary

Parameter	Units	Nomenclature	Sample 1	Sample 2
Enthalpy LR/Sample ID #	none	Eid	442362-001	442362-002
Client Sample ID#	none	Cid	1A-VOC-U1	1B-VOC-U1
Sample Data				
Canister ID #	none	Tid	C80025	C80024
Canister Volume	Liters (L)	Vc	6.0	6.0
Initial Canister Pressure	mmHg (A)	Pi	0.0	0.0
Initial Canister Pressure Check Date	mm/dd/yy	none	2/26/2021	2/26/2021
Post Sampling Canister Pressure	mmHg (A)	Pr	515.9	510.6
Post Purge Final Canister Pressure	mmHg (A)	Pf	900.20	900.70
Canister Reciept Date	mm/dd/yy	none	3/12/2021	3/12/2021
Atmospheric Pressure	mmHg (A)	Pa	760.0	760.0
Canister Dilution Factor	none	Dftank	1.74	1.76
Sample Volume	Liters (L)	Vsample	4.07	4.03
Aqueous Impinger Volume	Milliliters (ml)	Vi	3.031	3.022
TOC Analysis Dilution Factor	none	Dftoc	4.0	4.0
Ideal Gas Volume	Liters/mole	Vid	24.47	24.47
Atomic Weight of Carbon	grams/mole	Ac	12.01	12.01
Bias Correction Factor	none	CFb	1.086	1.086
Results and Calculations				
Avg Raw TOC Result	ppmC	Ci	0.44	0.57
TOC Trip Blank Result	ppmC	Cb	0.10	0.10
Final Gaseous TOC Result = (((Ci - Cb) x TOCdf) x Vi xPa xVid)/(Vc x Pr xAc)	ppmC	Cw	2.05	2.91
Avg Raw NMNEOC Result	ppmC	Cm	1.25	0.75
Final NMNEOC Result = Cm x (Pf/Pr-Pi)	ppmC	Cc	2.18	1.32
Final Methane Result = Avg Conc x (Pf/Pr-Pi)	ppmC	Cmt	< 1.74	< 1.76
Final Carbon Monoxide Result = Avg Conc x (Pf/Pr-Pi)	ppmC	Cco	< 1.74	< 1.76
Final Ethene/Ethane Result = Avg Conc x (Pf/Pr-Pi)	ppmC	Cet	< 1.74	< 1.76
Final Carbon Dioxide Result = Avg Conc x (Pf/Pr-Pi)	%	Cco2	11.29	11.38
Final Oxygen Result = Avg Conc x (Pf/Pr-Pi)	%	Co2	9.13	9.21
Final TNMNEOC Result = (Cc +Cw) x CFb	ppmC	Cvoc	4.60	4.60

SCAQMD 25.3/10.1 Sampling & Analytical Summary

Parameter	Units	Nomenclature	Sample 3	Sample 4
Enthalpy LR/Sample ID #	none	Eid	442362-003	442362-004
Client Sample ID#	none	Cid	2A-VOC-U2	2B-VOC-U2
Sample Data				
Canister ID #	none	Tid	C80013	C80047
Canister Volume	Liters (L)	Vc	6.0	6.0
Initial Canister Pressure	mmHg (A)	Pi	0.0	0.0
Initial Canister Pressure Check Date	mm/dd/yy	none	2/26/2021	2/26/2021
Post Sampling Canister Pressure	mmHg (A)	Pr	457.8	497.9
Post Purge Final Canister Pressure	mmHg (A)	Pf	900.60	900.70
Canister Reciept and Purge Date	mm/dd/yy	none	3/12/2021	3/12/2021
Atmospheric Pressure	mmHg (A)	Pa	760.0	760.0
Canister Dilution Factor	none	Dftank	1.97	1.81
Sample Volume	Liters (L)	Vsample	3.61	3.93
Aqueous Impinger Volume	Milliliters (ml)	Vi	3.027	3.011
TOC Analysis Dilution Factor	none	Dftoc	4.0	4.0
Ideal Gas Volume	Liters/mole	Vid	24.47	24.47
Atomic Weight of Carbon	grams/mole	Ac	12.01	12.01
Bias Correction Factor	none	CFb	1.086	1.086
Results and Calculations				
Avg Raw TOC Result	ppmC	Ci	0.66	0.43
TOC Trip Blank Result	ppmC	Cb	0.10	0.10
Final Gaseous TOC Result = (((Ci - Cb) x TOCdf) x Vi xPa xVid)/(Vc x Pr xAc)	ppmC	Cw	3.82	2.06
Avg Raw NMNEOC Result	ppmC	Cm	0.30	0.20
Final NMNEOC Result = Cm x (Pf/Pr-Pi)	ppmC	Cc	0.59	0.36 (J)
Final Methane Result = Avg Conc x (Pf/Pr-Pi)	ppmC	Cmt	< 1.97	< 1.81
Final Carbon Monoxide Result = Avg Conc x (Pf/Pr-Pi)	ppmC	Cco	< 1.97	< 1.81
Final Ethene/Ethane Result = Avg Conc x (Pf/Pr-Pi)	ppmC	Cet	< 1.97	< 1.81
Final Carbon Dioxide Result = Avg Conc x (Pf/Pr-Pi)	%	Cco2	11.39	3.83
Final Oxygen Result = Avg Conc x (Pf/Pr-Pi)	%	Co2	9.32	17.06
Final TNMNEOC Result = (Cc +Cw) x CFb	ppmC	Cvoc	4.79	2.63 (J)

Sample Data

Enthalpy ID	442362-001	442362-002	442362-003	442362-004
Client ID	1A-VOC-U1	1B-VOC-U1	2A-VOC-U2	2B-VOC-U2
Canister ID #	C80025	C80024	C80013	C80047
Canister Cleaning Date	1/18/21	1/18/21	1/18/21	1/19/21
Canister Volume	6.0	6.0	6.0	6.0
Initial Canister Pressure	0	0	0	0
Canister Pressure Check Date	2/26/2021	2/26/2021	2/26/2021	2/26/2021
Post Sampling Canister Pressure	-244.1	-249.4	-302.2	-262.1
Post Purge Final Canister Pressure	140.2	140.7	140.6	140.7
Canister Reciept and Purge Date	3/12/2021	3/12/2021	3/12/2021	3/12/2021
Reagent Water ID	022621A	022621A	022621A	022621A
Vial ID#	9A	9B	10A	10B
TOC final return Volume	3.031	3.022	3.027	3.011
TOC Analytical Dilution Factor	4.00	4.00	4.00	4.00
Result 1	0.00	0.00	0.00	0.60
Result 2	0.00	0.00	0.00	0.70
RPD %	#DIV/0!	#DIV/0!	#DIV/0!	15.38
Avg Methane Result	0.00	0.00	0.00	0.65
Result 1	0.70	0.50	0.60	0.50
Result 2	0.60	0.60	0.50	0.70
RPD %	15.38	18.18	18.18	33.33
Avg Carbon Monoxide Result	0.65	0.55	0.55	0.60
Result 1	1.30	0.70	0.30	0.20
Result 2	1.20	0.80	0.30	0.20
RPD %	8.00	13.33	0.00	0.00
Avg TNMNEOC Result	1.25	0.75	0.30	0.20
Result 1	64687.80	64535.10	57882.00	21171.90
Result 2	64696.30	64465.30	57893.60	21169.60
RPD %	0.01	0.11	0.02	0.01
Avg Carbon Dioxide Result	64692.05	64500.20	57887.80	21170.75
Result 1	0.00	0.00	0.00	0.00
Result 2	0.00	0.00	0.00	0.00
RPD %	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Avg Ethene/Ethane Result	0.0	0.0	0.0	0.0
Result 1	5.24	5.22	4.74	9.40
Result 2	5.23	5.22	4.74	9.46
RPD %	0.19	0.00	0.00	0.64
Avg Oxygen Result	5.24	5.22	4.74	9.43
Result 1	44.30	44.11	40.11	42.87
Result 2	44.26	44.12	40.11	43.78
RPD %	0.09	0.02	0.00	2.10
Avg Nitrogen Result	44.28	44.12	40.11	43.33
Avg raw TOC	0.4352	0.5732	0.6561	0.4265
TOC Blank	0.0965	0.0965	0.0965	0.0965

Fixed Gases Total %	97.7	98.4	99.6	99.3

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 15-52-15 442362-001 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-001

Injection Date: 2021-03-18 15:52 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle - FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox	0.7	6.982	-0.043	3749	BV	18.6	
3	NMNEOC	1.3	14.451	0.127	32466	BB	24.7	
	Totals:	2.0		0.084	36215			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 5 Rejected Peaks: 3 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 26 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 15-52-15 442362-001 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-001

Injection Date: 2021-03-18 15:52 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front - FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	64687.8	4.647	-0.045	639593408	BB	17.4	
2	Ethane		9.836					M
	Totals:	64687.8		-0.045	639593408			

Status Codes:
M - Missing peak

Total Unidentified Counts : 34659 counts

Detected Peaks: 7 Rejected Peaks: 3 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 10 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 15-52-15 442362-001 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-001

Injection Date: 2021-03-18 15:52 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	5.24	2.941	-0.008	1644313	BP	3.2	
4	Nitrogen	44.30	3.444	-0.155	10936758	PB	8.9	C
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	49.54		-0.163	12581071			

Status Codes:
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 119 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

Print Date: Wed Mar 24 08:20:19 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 16-18-07 442362-001 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-001

Injection Date: 2021-03-18 16:18 Calculation Date: 2021-03-24 08:20

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Middle = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
			4.823					M
1	Methane		6.977	-0.048	3040	BV	17.5	
2	Carbon Monox	0.6	14.450	0.126	30309	BB	24.9	
3	NMNEOC	1.2						
	Totals:	1.8		0.078	33349			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 5 Rejected Peaks: 3 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 25 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 16-18-07 442362-001 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-001

Injection Date: 2021-03-18 16:18 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	64696.3	4.653	-0.039	639677504	BB	17.4	
2	Ethane		9.836					M
	Totals:	64696.3		-0.039	639677504			

Status Codes:
M - Missing peak

Total Unidentified Counts : 13055 counts

Detected Peaks: 4 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 24 microVolts - monitored before this run

Manual injection

****

Print Date: Wed Mar 24 08:20:19 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 16-18-07 442362-001 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-001

Injection Date: 2021-03-18 16:18 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear - TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	5.23	2.942	-0.007	1641308	BP	3.2	
4	Nitrogen	44.26	3.444	-0.155	10925042	PB	8.9	C
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	49.49		-0.162	12566350			

Status Codes:
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 308 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 148 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 16-44-04 442362-002 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-002

Injection Date: 2021-03-18 16:44 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox	0.5	6.975	-0.050	2158	BB	18.4	
3	NMNEOC	0.7	14.432	0.108	18574	BB	28.0	
	Totals:	1.2		0.058	20732			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 3 Rejected Peaks: 1 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 45 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Print Date: Wed Mar 24 08:20:27 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 16-44-04 442362-002 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-002

Injection Date: 2021-03-18 16:44 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	64535.1	4.652	-0.040	638083648	BB	17.6	
2	Ethane		9.836					M
	Totals:	64535.1		-0.040	638083648			

Status Codes:
M - Missing peak

Total Unidentified Counts : 31664 counts

Detected Peaks: 6 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 11 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 16-44-04 442362-002 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-002

Injection Date: 2021-03-18 16:44 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	5.22	2.938	-0.011	1637056	BP	3.3	
4	Nitrogen	44.11	3.441	-0.158	10888874	PB	9.0	C
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	49.33		-0.169	12525930			

Status Codes:
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 260 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 17-10-02 442362-002 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-002

Injection Date: 2021-03-18 17:10 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox	0.6	6.966	-0.059	2839	BV	18.0	
3	NMNEOC	0.8	14.428	0.104	19242	BB	27.4	
	Totals:	1.4		0.045	22081			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 6 Rejected Peaks: 4 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 20 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Print Date: Wed Mar 24 08:20:34 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 17-10-02 442362-002 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-002

Injection Date: 2021-03-18 17:10 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	64465.3	4.651	-0.041	637393728	BB	17.5	
2	Ethane		9.836					M
	Totals:	64465.3		-0.041	637393728			

Status Codes:
M - Missing peak

Total Unidentified Counts : 12548 counts

Detected Peaks: 4 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 19 microVolts - monitored before this run

Manual injection

****

Print Date: Wed Mar 24 08:20:34 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 17-10-02 442362-002 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-002

Injection Date: 2021-03-18 17:10 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	5.22	2.940	-0.009	1636583	BP	3.2	
4	Nitrogen	44.12	3.444	-0.155	10891533	PB	8.9	C
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	49.34		-0.164	12528116			

Status Codes:
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 217 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

Print Date: Wed Mar 24 09:59:34 2021 Page 1 of 1

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-18 17-36-00 442362-003 inj 1 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : 442362-003

Injection Date: 2021-03-18 17:36 Calculation Date: 2021-03-24 09:59

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox	0.6	6.976	-0.049	2661	BV	18.3	
3	NMNEOC	0.3	14.678	0.354	6505	BB	63.4	
	Totals:	0.9		0.305	9166			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 6 Rejected Peaks: 4 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 18 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 17-36-00 442362-003 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-003

Injection Date: 2021-03-18 17:36 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	57882.0	4.671	-0.021	572302464	BB	17.7	
2	Ethane		9.836					M
	Totals:	57882.0		-0.021	572302464			

Status Codes:
M - Missing peak

Total Unidentified Counts : 27675 counts

Detected Peaks: 7 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 6 microVolts - monitored before this run

Manual injection

****

Print Date: Wed Mar 24 08:20:41 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 17-36-00 442362-003 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-003

Injection Date: 2021-03-18 17:36 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	4.74	2.937	-0.012	1487215	BP	3.3	
4	Nitrogen	40.11	3.449	-0.150	9901586	PB	8.9	C
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	44.85		-0.162	11388801			

Status Codes:
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 114 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

Print Date: Wed Mar 24 10:00:04 2021 Page 1 of 1

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-18 18-01-56 442362-003 inj 2 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : 442362-003

Injection Date: 2021-03-18 18:01 Calculation Date: 2021-03-24 09:59

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox	0.5	6.973	-0.052	2101	BV	17.3	
3	NMNEOC	0.3	14.685	0.361	6340	BB	56.1	
	Totals:	0.8		0.309	8441			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 8 Rejected Peaks: 6 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 16 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 18-01-56 442362-003 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-003

Injection Date: 2021-03-18 18:01 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	57893.6	4.672	-0.020	572416832	BB	17.8	
2	Ethane		9.836					M
	Totals:	57893.6		-0.020	572416832			

Status Codes:
M - Missing peak

Total Unidentified Counts : 13207 counts

Detected Peaks: 4 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 16 microVolts - monitored before this run

Manual injection

****

Print Date: Wed Mar 24 08:20:48 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 18-01-56 442362-003 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-003

Injection Date: 2021-03-18 18:01 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear - TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	4.74	2.941	-0.008	1487524	BP	3.3	
4	Nitrogen	40.11	3.454	-0.145	9902226	PB	8.7	C
5	Methane		4.781					M
6	Carbon Monox	0.00	6.621	-0.254	777	BB	0.0	
	Totals:	44.85		-0.407	11390527			

Status Codes:
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 216 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

Print Date: Wed Mar 24 10:00:23 2021 Page 1 of 1

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-18 18-27-54 442362-004 inj 1 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : 442362-004

Injection Date: 2021-03-18 18:27 Calculation Date: 2021-03-24 10:00

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	0.6	4.808	-0.015	3867	BB	9.2	
2	Carbon Monox	0.5	6.975	-0.050	2131	BB	18.2	
3	NMNEOC	0.2	14.672	0.348	4533	BB	34.6	
	Totals:	1.3		0.283	10531			

Total Unidentified Counts : 0 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 44 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 18-27-54 442362-004 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-004

Injection Date: 2021-03-18 18:27 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	21171.9	4.784	0.092	209335008	BB	18.7	
2	Ethane		9.836					M
	Totals:	21171.9		0.092	209335008			

Status Codes:
M - Missing peak

Total Unidentified Counts : 12629 counts

Detected Peaks: 4 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 18 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 18-27-54 442362-004 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-004

Injection Date: 2021-03-18 18:27 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	9.40	2.937	-0.012	2948164	BP	3.3	
4	Nitrogen	42.87	3.444	-0.155	10583026	PB	8.8	C
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	52.27		-0.167	13531190			

Status Codes:
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 127 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

Print Date: Wed Mar 24 10:00:42 2021 Page 1 of 1

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-18 18-53-48 442362-004 inj 2 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : 442362-004

Injection Date: 2021-03-18 18:53 Calculation Date: 2021-03-24 10:00

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	0.7	4.808	-0.015	4388	BB	9.3	
2	Carbon Monox	0.7	6.959	-0.066	3264	BV	17.2	
3	NMNEOC	0.2	14.672	0.348	4288	BB	23.3	
	Totals:	1.6		0.267	11940			

Total Unidentified Counts : 0 counts

Detected Peaks: 5 Rejected Peaks: 2 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 20 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 18-53-48 442362-004 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 442362-004

Injection Date: 2021-03-18 18:53 Calculation Date: 2021-03-24 08:21

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	21169.6	4.786	0.094	209312576	BB	18.7	
2	Ethane		9.836					M
	Totals:	21169.6		0.094	209312576			

Status Codes:
M - Missing peak

Total Unidentified Counts : 8105 counts

Detected Peaks: 4 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 30 microVolts - monitored before this run

Manual injection

****

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-18 18-53-48 442362-004 inj 2 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : 442362-004

Injection Date: 2021-03-18 18:53 Calculation Date: 2021-03-24 10:04

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	9.46	2.939	-0.010	2967218	BV	3.3	
4	Nitrogen	43.78	3.445	-0.154	10808371	VB	8.8	C
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	53.24		-0.164	13775589			

Status Codes:
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 114 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

General Info

Analysis Name	20210316A.adb
Template Name	03162021 A.tdb
Operator	Administrator
Date	3/16/2021
Time	4:51:14 AM

Template Settings

Element	Integration Time	Samples	Extra Samples	Max. CV	Volume	Max Conc.
Carbon	75	3	2	5	200	20
Nitrogen	100	2	2	2	200	20
Sample Time	300					

Calibration Info

CurveNo	Type	FileName:	Volume	Correlation	R-squared	A0:	A1:	A2:
1	IC	20200603E.adb	200	0.9988	0.99768	0	594,425	0
2	TC	20200603E.adb	200	0.9996	0.99929	0	545,093	0

Sample Info

Identification	Inj. Type	Conc.	Area	CV	Inj. Volume
System Rinse	TOC	0.1029	-	-	
	TC	0.2338	127457	5.5	200
	IC	0.1309	77829	4.0	200
MB 031621	TOC	0.0573	-	-	
	TC	0.1923	104804	3.1	200
	IC	0.1350	80250	2.8	200
Opening CV 1.0ug/ml TOC PSTOC-0023	TOC	0.9505	-	-	
	TC	1.2721	693389	2.5	200
	IC	0.3216	191171	1.8	200
Opening CV 10.0ug/ml TOC PSTOC-0024	TOC	10.1767	-	-	
	TC	10.5522	5751903	0.5	200
	IC	0.3754	223165	3.3	200
Water Blank	TOC	0.4298	-	-	
	TC	0.5729	312282	10.0	200
	IC	0.1431	85044	6.5	200
442362 Trip Blank	TOC	0.0965	-	-	
	TC	0.2331	127044	2.6	200
	IC	0.1366	81178	3.8	200
442362-001 x4	TOC	0.4352	-	-	
	TC	2.0113	1096366	2.1	200
	IC	1.5762	936911	1.0	200
442362-002 x4	TOC	0.5732	-	-	
	TC	2.3535	1282871	4.5	200
	IC	1.7803	1058238	5.6	200
442362-003 x4	TOC	0.6561	-	-	
	TC	2.7042	1474059	0.5	200
	IC	2.0481	1217452	2.5	200
442362-004 x4	TOC	0.4265	-	-	
	TC	1.8160	989901	4.0	200
	IC	1.3896	825990	4.7	200
Water Blank	TOC	0.1433	-	-	
	TC	0.2839	154737	3.9	200
	IC	0.1406	83578	1.0	200
Closing CV 1.0ug/ml TOC PSTOC-0023	TOC	0.9992	-	-	
	TC	1.3077	712841	5.4	200
	IC	0.3085	183389	4.9	200
Closing CV 10.0ug/ml TOC PSTOC-0024	TOC	9.9971	-	-	
	TC	10.3570	5645549	0.8	200
	IC	0.3600	213977	2.3	200

ENTHALPY
ANALYTICAL

QA/QC Data

SCAQMD 25.3/10.1 QAQC Summary

Opening TNMNEOC CV's			
Analyte	Target	Result	% rec
TNMNEOC Low	1.0	1.0	100.0
TNMNEOC High	10.4	10.0	96.4

Opening FG's CV's			
Analyte	Target	Result	% rec
Oxygen	21.5	21.0	97.7
Nitrogen	78.1	78.8	100.8
Carbon Monoxide	5.00	5.1	102.7
Methane	5.02	5.2	103.3
Carbon Dioxide	4.99	4.6	92.9

Opening TOC CV's			
Analyte	Target	Result	% rec
TOC Low	1.00	0.95	95.1
TOC High	10.00	10.18	101.8

Continuing TNMNEOC CV's			
Analyte	Target	Result	% rec
TNMNEOC Low	1.0	0.9	90.0
TNMNEOC High	10.4	10.0	96.4

Closing TNMNEOC CV's			
Analyte	Target	Result	% rec
TNMNEOC Low	1.0	0.9	90.0
TNMNEOC High	10.4	9.4	90.4

Closing FG's CV's			
Analyte	Target	Result	% rec
Oxygen	21.5	21.0	97.7
Nitrogen	78.1	78.6	100.7
Carbon Monoxide	5.00	5.1	101.9
Methane	5.02	5.1	102.5
Carbon Dioxide	4.99	4.6	92.7

Closing TOC CV's			
Analyte	Target	Result	% rec
TOC Low	1.00	1.00	99.9
TOC High	10.00	10.00	100.0

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 06-47-07 argon blank inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-18 06:47 Calculation Date: 2021-03-24 08:21

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Middle = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox		7.025					M
3	NMNEOC		14.324					M
	Totals:	0.0		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 1 Rejected Peaks: 1 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 38 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

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Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 06-47-07 argon blank inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-18 06:47 Calculation Date: 2021-03-24 08:21

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen		2.949					M
4	Nitrogen		3.599					M
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	0.00		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 0 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 125 microVolts

Manual injection

Data Handling: No peaks

****

Print Date: Wed Mar 24 08:21:32 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 06-47-07 argon blank inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-18 06:47 Calculation Date: 2021-03-24 08:21

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi		4.692					M
2	Ethane		9.836					M
	Totals:	0.0		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 31760 counts

Detected Peaks: 6 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -81 microVolts LSB: 1 microVolts

Noise (used): 18 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 07-13-01 argon blank inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-18 07:13 Calculation Date: 2021-03-24 08:21

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox		7.025					M
3	NMNEOC		14.324					M
	Totals:	0.0		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 6 Rejected Peaks: 6 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 23 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

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Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 07-13-01 argon blank inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-18 07:13 Calculation Date: 2021-03-24 08:21

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Rear = TCD

Detector Type: 4XX-GC (10 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen		2.949					M
4	Nitrogen		3.599					M
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	0.00		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 0 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 228 microVolts

Manual injection

Data Handling: No peaks

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 07-13-01 argon blank inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-18 07:13 Calculation Date: 2021-03-24 08:21

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front - FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi		4.692					M
2	Ethane		9.836					M
	Totals:	0.0		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 22888 counts

Detected Peaks: 4 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 22 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 07-39-03 1.0 ppmc s12351 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 1.0 ppmC S12351

Injection Date: 2021-03-18 07:39 Calculation Date: 2021-03-24 08:21

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Middle = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	0.9	4.820	-0.003	5380	BB	9.5	
2	Carbon Monox	1.1	6.991	-0.034	5611	VV	16.8	
3	NMNEOC	1.0	14.284	-0.040	24921	BV	18.5	
	Totals:	3.0		-0.077	35912			

Total Unidentified Counts : 0 counts

Detected Peaks: 12 Rejected Peaks: 9 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 15 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

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Title :
Run File : C:\BrukerWS\data\2021\031821_253\2021-03-18 07-39-03 1.0 ppmc s12351 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 1.0 ppmC S12351

Injection Date: 2021-03-18 07:39 Calculation Date: 2021-03-24 08:21

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	1.2	4.861	0.169	12274	BB	18.8	
2	Ethane	0.9	9.829	-0.007	8604	BB	28.7	
	Totals:	2.1		0.162	20878			

Total Unidentified Counts : 23293 counts

Detected Peaks: 6 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 16 microVolts - monitored before this run

Manual injection

****

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Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 08-04-57 1.0 ppmc s12351 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 1.0 ppmC S12351

Injection Date: 2021-03-18 08:04 Calculation Date: 2021-03-24 08:21

Auto sampler mis-injected.
Dup not analyzed ~~3/18~~ 3/24/21

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Middle - FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 1.#J Hz
Run Time : 0.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox		7.025					M
3	NMNEOC		14.324					M
Totals:		0.0		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : -1 counts

Detected Peaks: 196 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 25 microVolts - monitored before this run

Manual injection

Data Handling: Mis-matched blank baseline frequency
Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Print Date: Wed Mar 24 08:21:54 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 08-04-57 1.0 ppmc s12351 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 1.0 ppmC S12351

Injection Date: 2021-03-18 08:04 Calculation Date: 2021-03-24 08:21

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 1.#J Hz
Channel : Rear = TCD Run Time : 0.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen		2.949					M
4	Nitrogen		3.599					M
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	0.00		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : -1 counts

Detected Peaks: 10 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 174 microVolts

Manual injection

Data Handling: Mis-matched blank baseline frequency

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 08-04-57 1.0 ppmc s12351 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 1.0 ppmC S12351

Injection Date: 2021-03-18 08:04 Calculation Date: 2021-03-24 08:21

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 1.#J Hz
Run Time : 0.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi		4.692					M
2	Ethane		9.836					M
	Totals:	0.0		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : -1 counts

Detected Peaks: 213 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 7 microVolts - monitored before this run

Manual injection

Data Handling: Mis-matched blank baseline frequency

****

Print Date: Wed Mar 24 08:22:01 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 08-30-59 10 ppmc s12352 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 10 ppmC S12352

Injection Date: 2021-03-18 08:30 Calculation Date: 2021-03-24 08:22

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle - FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	10.5	4.817	-0.006	61619	BB	9.3	
2	Carbon Monox	10.7	6.962	-0.063	59445	BB	16.1	
3	NMNEOC	10.0	14.283	-0.041	250279	BB	17.4	
	Totals:	31.2		-0.110	371343			

Total Unidentified Counts : 0 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 67 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Print Date: Wed Mar 24 08:22:01 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 08-30-59 10 ppmc s12352 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 10 ppmC S12352

Injection Date: 2021-03-18 08:30 Calculation Date: 2021-03-24 08:22

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	10.9	4.858	0.166	107482	BB	18.7	
2	Ethane	10.7	9.842	0.006	99234	BB	30.2	
	Totals:	21.6		0.172	206716			

Total Unidentified Counts : 8713 counts

Detected Peaks: 5 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 15 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 08-56-49 10 ppmc s12352 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 10 ppmC S12352

Injection Date: 2021-03-18 08:56 Calculation Date: 2021-03-24 08:22

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Middle = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	9.5	4.813	-0.010	55712	BB	9.3	
2	Carbon Monox	9.7	6.955	-0.070	53978	PB	16.1	
3	NMNEOC	10.1	14.282	-0.042	250852	BB	17.5	
	Totals:	29.3		-0.122	360542			

Total Unidentified Counts : 0 counts

Detected Peaks: 8 Rejected Peaks: 5 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 17 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Print Date: Wed Mar 24 08:22:09 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 08-56-49 10 ppmc s12352 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 10 ppmC S12352

Injection Date: 2021-03-18 08:56 Calculation Date: 2021-03-24 08:22

Operator : G8G
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front - FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	9.9	4.859	0.167	97932	BB	18.7	
2	Ethane	10.8	9.843	0.007	100251	BB	30.3	
	Totals:	20.7		0.174	198183			

Total Unidentified Counts : 4175 counts

Detected Peaks: 4 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 15 microVolts - monitored before this run

Manual injection

****

Print Date: Wed Mar 24 09:48:06 2021 Page 1 of 1

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-18 09-22-52 fgs ccv s14181 inj 1 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : FGs CCV S14181

Injection Date: 2021-03-18 09:22 Calculation Date: 2021-03-24 09:47

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	46370.9	4.695	0.003	458487136	VB	18.6	
2	Ethane		9.836					M
	Totals:	46370.9		0.003	458487136			

Status Codes:
M - Missing peak

Total Unidentified Counts : 928413312 counts

Detected Peaks: 5 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 16 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821_253\2021-03-18 09-22-52 fgs ccv s14181 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : FGs CCV S14181

Injection Date: 2021-03-18 09:22 Calculation Date: 2021-03-24 08:22

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Rear - TCD

Detector Type: 4XX-GC (10 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
			2.322					M
1	Helium		2.392					M
2	Hydrogen	3.56	2.940	-0.009	1117821	BB	3.7	
3	Oxygen	5.34	3.564	-0.035	1318610	BB	5.9	
4	Nitrogen	5.18	4.719	-0.062	3743359	BB	9.6	
5	Methane	5.14	6.745	-0.130	1249895	BB	16.8	
6	Carbon Monox							
	Totals:	19.22		-0.236	7429685			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 228 microVolts

Manual injection

****

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-18 09-48-42 fgs ccv s14181 inj 2 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : FGs CCV S14181

Injection Date: 2021-03-18 09:48 Calculation Date: 2021-03-24 09:48

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	46944.5	4.692	-0.000	464158560	VB	18.5	
2	Ethane		9.836					M
	Totals:	46944.5		0.000	464158560			

Status Codes:
M - Missing peak

Total Unidentified Counts : 941673536 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 28 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 09-48-42 fgs ccv s14181 inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : FGs CCV S14181

Injection Date: 2021-03-18 09:48 Calculation Date: 2021-03-24 08:22

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Rear = TCD

Detector Type: 4XX-GC (10 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
								M
1	Helium		2.322					M
2	Hydrogen		2.392					
3	Oxygen	3.62	2.940	-0.009	1135963	BB	3.8	
4	Nitrogen	5.24	3.564	-0.035	1293743	BB	5.9	
5	Methane	5.25	4.718	-0.063	3795173	BB	9.6	
6	Carbon Monox	5.23	6.743	-0.132	1273118	BB	16.8	
	Totals:	19.34		-0.239	7497997			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 110 microVolts

Manual injection

****

Print Date: Wed Mar 24 08:18:37 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 10-14-46 lab air inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Lab Air

Injection Date: 2021-03-18 10:14 Calculation Date: 2021-03-24 08:18

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	2.0	4.810	-0.013	12165	BB	9.3	
2	Carbon Monox	2.1	6.980	-0.045	11392	PB	18.7	
3	NMNEOC	0.4	14.354	0.030	10915	BB	29.9	
	Totals:	4.5		-0.028	34472			

Total Unidentified Counts : 0 counts

Detected Peaks: 7 Rejected Peaks: 4 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 13 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Print Date: Wed Mar 24 08:18:37 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 10-14-46 lab air inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Lab Air

Injection Date: 2021-03-18 10:14 Calculation Date: 2021-03-24 08:18

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	523.7	4.858	0.166	5178358	BB	18.5	
2	Ethane		9.836					M
	Totals:	523.7		0.166	5178358			

Status Codes:
M - Missing peak

Total Unidentified Counts : 13215 counts

Detected Peaks: 4 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 24 microVolts - monitored before this run

Manual injection

****

Print Date: Wed Mar 24 09:52:42 2021 Page 1 of 1

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-18 10-14-46 lab air inj 1 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : Lab Air

Injection Date: 2021-03-18 10:14 Calculation Date: 2021-03-24 09:52

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	21.00	2.941	-0.008	6588628	BV	2.9	U
4	Nitrogen	78.75	3.385	-0.214	19440980	VB	11.3	UC
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	99.75		-0.222	26029608			

Status Codes:
U - User-defined peak endpoint(s)
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 93 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

Print Date: Wed Mar 24 08:18:44 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 10-40-37 lab air inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Lab Air

Injection Date: 2021-03-18 10:40 Calculation Date: 2021-03-24 08:18

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Middle = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	1.9	4.809	-0.014	11376	BB	9.5	
2	Carbon Monox	1.4	6.980	-0.045	7612	VV	19.3	
3	NMNEOC	0.5	14.362	0.038	12314	BB	41.1	
	Totals:	3.8		-0.021	31302			

Total Unidentified Counts : 1323 counts

Detected Peaks: 7 Rejected Peaks: 3 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 18 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Print Date: Wed Mar 24 08:18:45 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 10-40-37 lab air inj 2 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Lab Air

Injection Date: 2021-03-18 10:40 Calculation Date: 2021-03-24 08:18

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	525.3	4.856	0.164	5193823	BB	18.5	
2	Ethane		9.836					M
	Totals:	525.3		0.164	5193823			

Status Codes:
M - Missing peak

Total Unidentified Counts : 12787 counts

Detected Peaks: 4 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 24 microVolts - monitored before this run

Manual injection

****

Print Date: Wed Mar 24 09:53:09 2021 Page 1 of 1

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-18 10-40-37 lab air inj 2 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : Lab Air

Injection Date: 2021-03-18 10:40 Calculation Date: 2021-03-24 09:53

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Rear = TCD

Detector Type: 4XX-GC (10 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	21.00	2.941	-0.008	6588434	BV	2.9	U
4	Nitrogen	78.68	3.384	-0.215	19424098	VB	11.3	UC
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	99.68		-0.223	26012532			

Status Codes:
U - User-defined peak endpoint(s)
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 106 microVolts

Manual injection

Calib. out of range; No Recovery Action Specified

****

Print Date: Wed Mar 24 08:19:50 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 14-34-18 argon blank inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-18 14:34 Calculation Date: 2021-03-24 08:19

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox		7.025					M
3	NMNEOC		14.324					M
	Totals:	0.0		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 5 Rejected Peaks: 5 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 21 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 14-34-18 argon blank inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-18 14:34 Calculation Date: 2021-03-24 08:19

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Rear = TCD

Detector Type: 4XX-GC (10 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen		2.949					M
4	Nitrogen		3.599					M
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	0.00		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 0 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 90 microVolts

Manual injection

Data Handling: No peaks

****

Print Date: Wed Mar 24 08:19:50 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 14-34-18 argon blank inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-18 14:34 Calculation Date: 2021-03-24 08:19

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	0.4	4.752	0.060	3715	BB	15.0	
2	Ethane		9.836					M
	Totals:	0.4		0.060	3715			

Status Codes:
M - Missing peak

Total Unidentified Counts : 21576 counts

Detected Peaks: 5 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 18 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 15-00-14 1.0 ppmc s12351 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 1.0 ppmC S12351

Injection Date: 2021-03-18 15:00 Calculation Date: 2021-03-24 08:19

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Middle = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	0.9	4.808	-0.015	5544	BB	9.5	
2	Carbon Monox	0.9	6.974	-0.051	4891	VV	16.2	
3	NMNEOC	0.9	14.285	-0.039	23538	BB	18.2	
	Totals:	2.7		-0.105	33973			

Total Unidentified Counts : 0 counts

Detected Peaks: 13 Rejected Peaks: 10 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 15 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 15-00-14 1.0 ppmc s12351 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 1.0 ppmC S12351

Injection Date: 2021-03-18 15:00 Calculation Date: 2021-03-24 08:19

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front - FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	0.9	4.858	0.166	9012	BB	18.8	
2	Ethane	1.0	9.832	-0.004	9568	VB	30.8	
	Totals:	1.9		0.162	18580			

Total Unidentified Counts : 12442 counts

Detected Peaks: 6 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 12 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 15-26-12 10 ppmc s12352 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 10 ppmC S12352

Injection Date: 2021-03-18 15:26 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	9.2	4.807	-0.016	54360	BB	9.3	
2	Carbon Monox	9.4	6.947	-0.078	52430	BB	16.1	
3	NMNEOC	10.0	14.284	-0.040	250448	BB	17.5	
	Totals:	28.6		-0.134	357238			

Total Unidentified Counts : 0 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 32 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-18 15-26-12 10 ppmc s12352 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 10 ppmC S12352

Injection Date: 2021-03-18 15:26 Calculation Date: 2021-03-24 08:20

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front - FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	9.7	4.854	0.162	96325	BB	18.7	
2	Ethane	10.8	9.834	-0.002	99995	BB	30.3	
	Totals:	20.5		0.160	196320			

Total Unidentified Counts : 8771 counts

Detected Peaks: 5 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 24 microVolts - monitored before this run

Manual injection

****

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Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-19 13-55-27 argon blank inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-19 13:55 Calculation Date: 2021-03-24 08:49

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Middle = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		4.823					M
2	Carbon Monox		7.025					M
3	NMNEOC	0.1	14.470	0.146	1810	BV	50.9	
	Totals:	0.1		0.146	1810			

Status Codes:
M - Missing peak

Total Unidentified Counts : 1082 counts

Detected Peaks: 5 Rejected Peaks: 3 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 16 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Print Date: Wed Mar 24 08:49:33 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-19 13-55-27 argon blank inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-19 13:55 Calculation Date: 2021-03-24 08:49

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	0.1	4.758	0.066	1208	BB	0.0	
2	Ethane		9.836					M
	Totals:	0.1		0.066	1208			

Status Codes:
M - Missing peak

Total Unidentified Counts : 30688 counts

Detected Peaks: 5 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -14 microVolts LSB: 1 microVolts

Noise (used): 20 microVolts - monitored before this run

Manual injection

****

Print Date: Wed Mar 24 08:49:33 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-19 13-55-27 argon blank inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Argon Blank

Injection Date: 2021-03-19 13:55 Calculation Date: 2021-03-24 08:49

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen		2.949					M
4	Nitrogen		3.599					M
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	0.00		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 0 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 35 microVolts

Manual injection

Data Handling: No peaks

****

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-19 14-21-24 1.0 ppmc s12351 inj 1 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : 1.0 ppmC S12351

Injection Date: 2021-03-19 14:21 Calculation Date: 2021-03-24 09:55

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	0.9	4.805	-0.018	5329	BB	9.4	
2	Carbon Monox	1.1	6.968	-0.057	5556	BB	16.2	
3	NMNEOC	0.9	14.301	-0.023	21215	BV	0.0	U
	Totals:	2.9		-0.098	32100			

Status Codes:
U - User-defined peak endpoint(s)

Total Unidentified Counts : 5501 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 36 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-19 14-21-24 1.0 ppmc s12351 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 1.0 ppmC S12351

Injection Date: 2021-03-19 14:21 Calculation Date: 2021-03-24 08:49

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	0.8	4.857	0.165	7838	BB	18.5	
2	Ethane	0.9	9.834	-0.002	8423	BB	28.7	
	Totals:	1.7		0.163	16261			

Total Unidentified Counts : 0 counts

Detected Peaks: 4 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 23 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-19 14-47-19 10 ppmc s12352 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 10 ppmC S12352

Injection Date: 2021-03-19 14:47 Calculation Date: 2021-03-24 08:49

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	9.2	4.804	-0.019	54035	BB	9.3	
2	Carbon Monox	9.3	6.941	-0.084	51687	BB	16.1	
3	NMNEOC	9.4	14.299	-0.025	233605	BB	17.7	
	Totals:	27.9		-0.128	339327			

Total Unidentified Counts : 0 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 52 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-19 14-47-19 10 ppmc s12352 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : 10 ppmC S12352

Injection Date: 2021-03-19 14:47 Calculation Date: 2021-03-24 08:49

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	9.7	4.858	0.166	95922	VB	18.7	
2	Ethane	10.9	9.839	0.003	100883	BB	30.4	
	Totals:	20.6		0.169	196805			

Total Unidentified Counts : 8544 counts

Detected Peaks: 5 Rejected Peaks: 2 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 12 microVolts - monitored before this run

Manual injection

****

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-19 15-13-18 fgs ccv s14181 inj 1 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : FGs CCV S14181

Injection Date: 2021-03-19 15:13 Calculation Date: 2021-03-24 09:49

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	46275.1	4.695	0.003	457540576	VB	18.6	
2	Ethane		9.836					M
	Totals:	46275.1		0.003	457540576			

Status Codes:
M - Missing peak

Total Unidentified Counts : 925950272 counts

Detected Peaks: 7 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 9 microVolts - monitored before this run

Manual injection

****

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-19 15-13-18 fgs ccv s14181 inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : FGs CCV S14181

Injection Date: 2021-03-19 15:13 Calculation Date: 2021-03-24 08:49

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Rear = TCD

Detector Type: 4XX-GC (10 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	3.54	2.933	-0.016	1110204	BB	3.8	
4	Nitrogen	5.40	3.554	-0.045	1333062	BB	5.9	
5	Methane	5.14	4.706	-0.075	3715096	BB	9.5	
6	Carbon Monox	5.10	6.724	-0.151	1239886	BB	16.8	
	Totals:	19.18		-0.287	7398248			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 226 microVolts

Manual injection

****

Print Date: Wed Mar 24 08:50:02 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-19 15-39-16 lab air inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Lab Air

Injection Date: 2021-03-19 15:39 Calculation Date: 2021-03-24 08:50

Operator : GSG Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	2.0	4.803	-0.020	11969	BB	9.4	
2	Carbon Monox	1.1	6.970	-0.055	5828	BB	17.2	
3	NMNEOC	4.7	14.392	0.068	116469	BB	30.4	
	Totals:	7.8		-0.007	134266			

Total Unidentified Counts : 0 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 30 microVolts - monitored before this run

Manual injection

Warning: Include Origin with 1/n, 1/nX, or 1/nX2 Weight

****

Print Date: Wed Mar 24 08:50:02 2021 Page 1 of 1

Title :
Run File : C:\BrukerWS\data\2021\031821 253\2021-03-19 15-39-16 lab air inj 1 - master scaqmd 253 analysis.run
Method File : C:\BrukerWS\methods\Active GC Methods 2019\SCAQMD 253 ICAL 01-04,26-2021.mth
Sample ID : Lab Air

Injection Date: 2021-03-19 15:39 Calculation Date: 2021-03-24 08:50

Operator : GSG
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Front = FID

Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	495.8	4.854	0.162	4902299	BB	18.5	
2	Ethane		9.836					M
	Totals:	495.8		0.162	4902299			

Status Codes:
M - Missing peak

Total Unidentified Counts : 11851 counts

Detected Peaks: 4 Rejected Peaks: 1 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 21 microVolts - monitored before this run

Manual injection

****

Title :
Run File : c:\brukerws\data\2021\031821 253\2021-03-19 15-39-16 lab air inj 1 - master scaqmd 253 analysis.run
Method File : c:\brukerws\methods\active gc methods 2019\scaqmd 253 ical 01-04,26-2021.mth
Sample ID : Lab Air

Injection Date: 2021-03-19 15:39 Calculation Date: 2021-03-24 09:53

Operator : GSG Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis - Subtract Blank Baseline
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Helium		2.322					M
2	Hydrogen		2.392					M
3	Oxygen	21.00	2.938	-0.011	6587736	BV	3.0	U
4	Nitrogen	78.63	3.379	-0.220	19411720	VB	11.0	UC
5	Methane		4.781					M
6	Carbon Monox		6.875					M
	Totals:	99.63		-0.231	25999456			

Status Codes:
U - User-defined peak endpoint(s)
M - Missing peak
C - Out of calibration range

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 6

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 205 microVolts

Manual injection

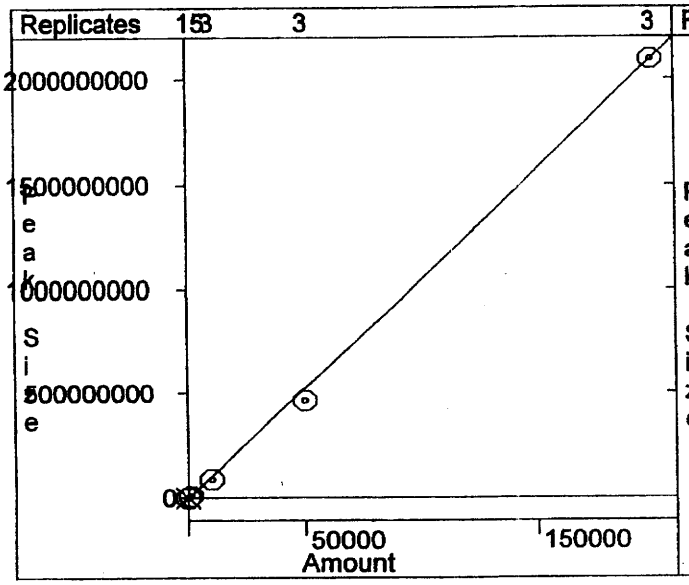
Calib. out of range; No Recovery Action Specified

****

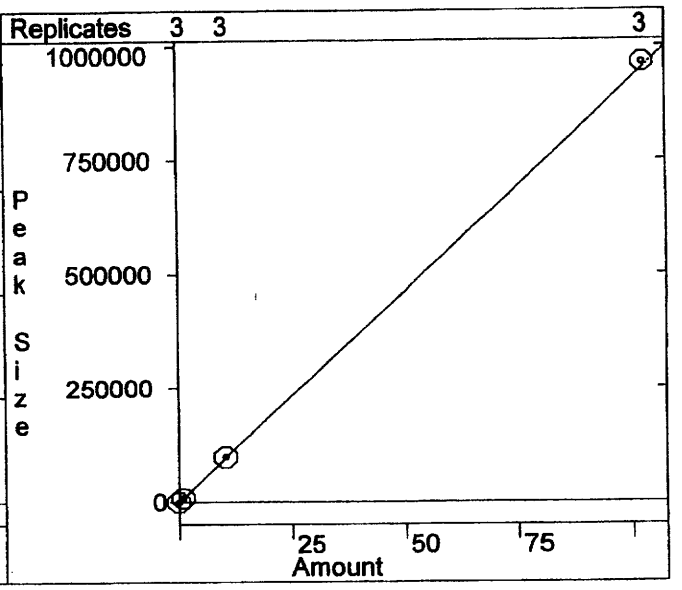
ICAL Data

Print Date: 19 Jan 2021 09:28:17
Calibration Curves Report
File: c:\.. \active gc methods 2019\scaqmd 253 ical 01-04-2021.mth
Detector: 45X-GC, Address: 44, Channel ID: Front

Carbon Dioxide
External Standard Analysis - Locked
Resp. Fact. RSD: 20.14%
Curve Type: Linear
Origin: Force
Coeff. Det.(r^2): 0.999157
y = +1.0486e+004x

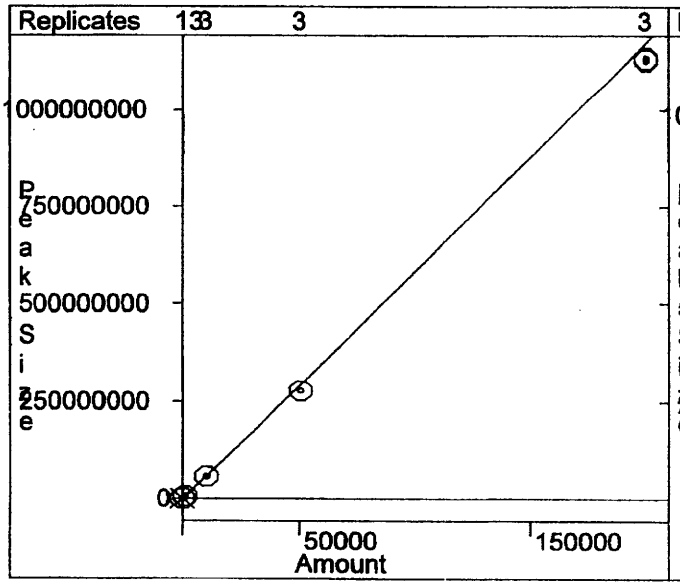


Ethane
External Standard Analysis - Locked
Resp. Fact. RSD: 2.959%
Curve Type: Linear
Origin: Force
Coeff. Det.(r^2): 0.999997
y = +9.2554e+003x

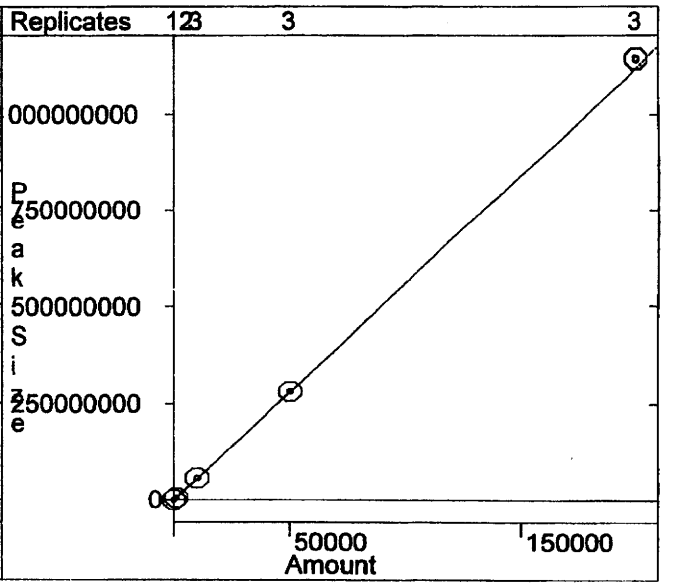


Print Date: 19 Jan 2021 09:28:18
Calibration Curves Report
File: c:\... \active gc methods 2019\scaqmd 253 ical 01-04-2021.mth
Detector: 45X-GC, Address: 44, Channel ID: Middle

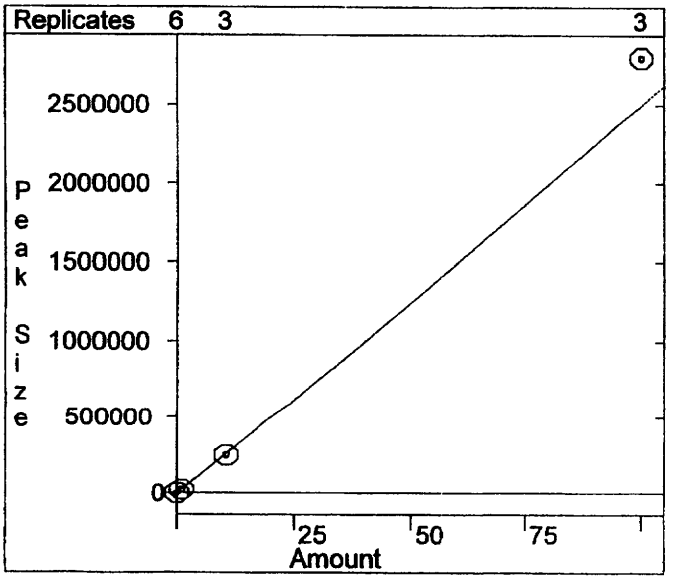
Methane
External Standard Analysis - Locked
Resp. Fact. RSD: 6.297%
Curve Type: Linear
Origin: Include
Coeff. Det.(r^2): 0.999969
y = +5.8648e+003x +2.1358e+002



Carbon Monoxide
External Standard Analysis - Locked
Resp. Fact. RSD: 10.92%
Curve Type: Linear
Origin: Include
Coeff. Det.(r^2): 0.999977
y = +5.6225e+003x -4.3536e+002

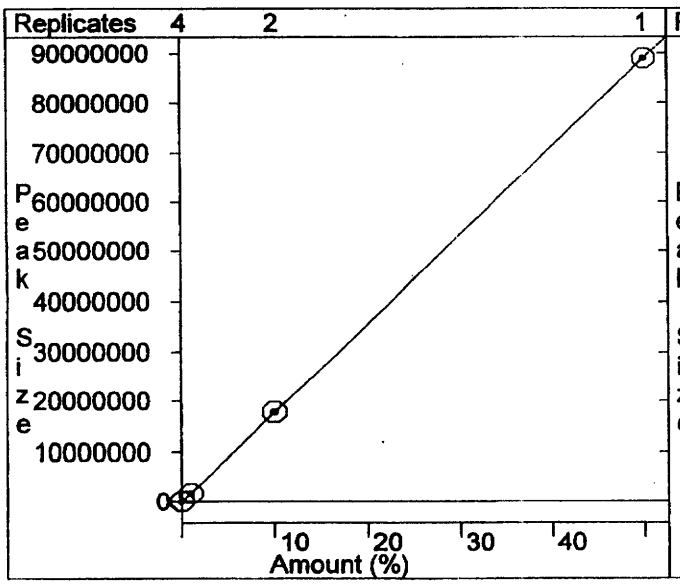


NMNEOC
External Standard Analysis - Locked
Resp. Fact. RSD: 9.145%
Curve Type: Linear
Origin: Include
Coeff. Det.(r^2): 0.999800
y = +2.4953e+004x -8.6199e+001

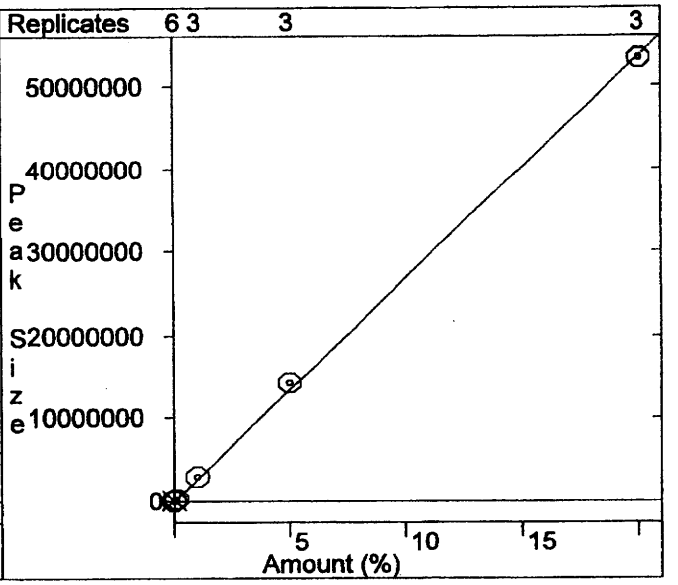


Print Date: 19 Jan 2021 08:32:48
Calibration Curves Report - Page 1
File: c:\... \active gc methods 2019\scaqmd 253 ical 01-04-2021.mth
Detector: 45X-GC, Address: 44, Channel ID: Rear

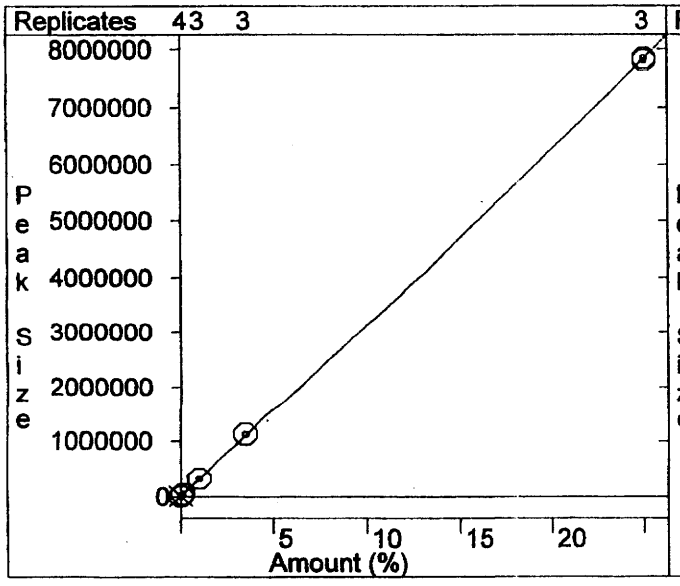
Helium
External Standard Analysis - Locked
Resp. Fact. RSD: 4.570%
Curve Type: Linear
Origin: Force
Coeff. Det.(r^2): 0.999999
y = +1.7804e+006x



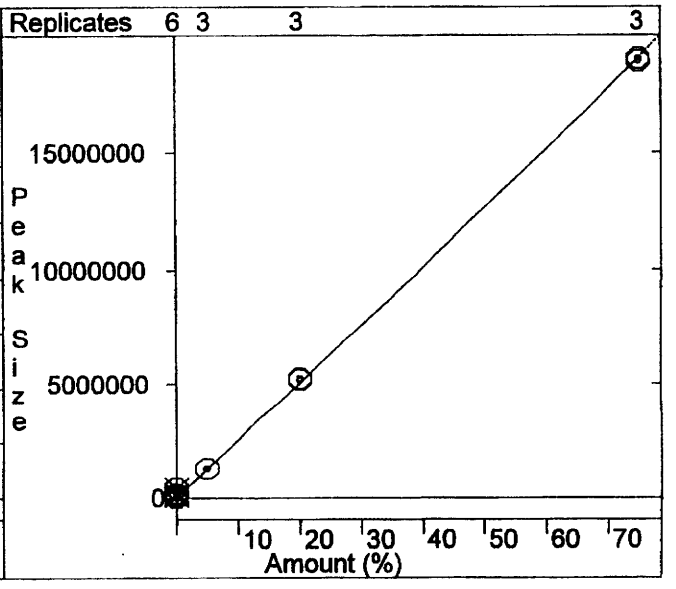
Hydrogen
External Standard Analysis - Locked
Resp. Fact. RSD: 5.151%
Curve Type: Linear
Origin: Force
Coeff. Det.(r^2): 0.999673
y = +2.6777e+006x



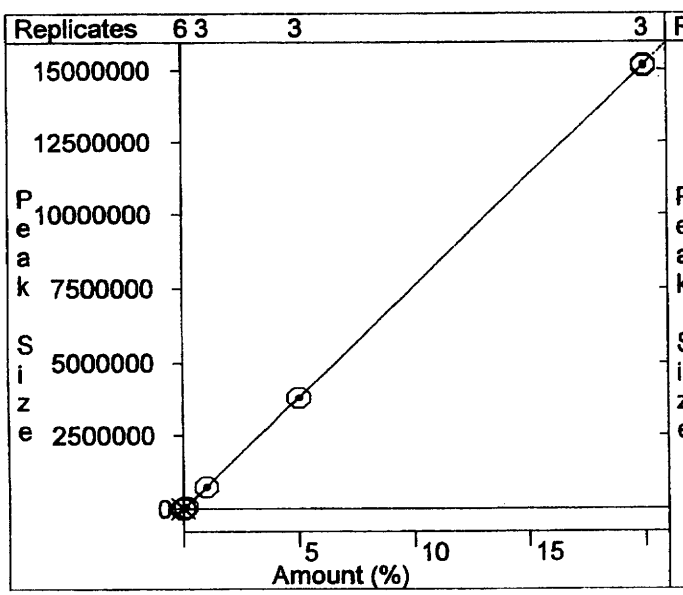
Oxygen
External Standard Analysis - Locked
Resp. Fact. RSD: 20.15%
Curve Type: Linear
Origin: Force
Coeff. Det.(r^2): 0.999984
y = +3.1373e+005x



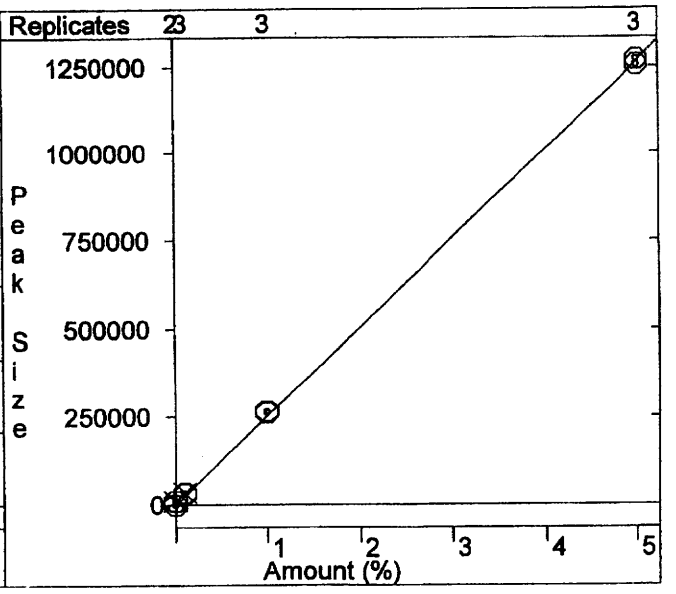
Nitrogen
External Standard Analysis - Locked
Resp. Fact. RSD: 1.780%
Curve Type: Linear
Origin: Force
Coeff. Det.(r^2): 0.999891
y = +2.5243e+005x



Methane
External Standard Analysis - Locked
Resp. Fact. RSD: 2.821%
Curve Type: Linear
Origin: Force
Coeff. Det.(r^2): 0.999992
y = +7.5779e+005x



Carbon Monoxide
External Standard Analysis - Locked
Resp. Fact. RSD: 12.81%
Curve Type: Linear
Origin: Force
Coeff. Det.(r^2): 0.999852
y = +2.5239e+005x



02/16/21 06:16:21
Formacs HT Software Version 3.09.3 Release
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General Info

Analysis Name	20200603E.adb
Type	TC

Calibration Info

R^2:	0.99929	**Correlation**	0.99964
A2:	0	**Volume**	200
A1:	545,093	**Curve Order**	1st Order Through Zero
A0:	0		

Single Info:

Conc. Templ.	Area	Selected
0.00	105,758	No
0.00	109,670	No
0.00	122,934	Yes
0.00	121,038	Yes
0.00	116,241	Yes
0.25	405,947	Yes
0.25	390,326	Yes
0.25	403,977	Yes
0.50	648,913	Yes
0.50	648,181	Yes
0.50	653,490	Yes
1.00	677,079	Yes
1.00	681,429	Yes
1.00	696,141	Yes
5.00	2,909,861	Yes
5.00	2,952,212	Yes
5.00	2,949,912	Yes
10.00	5,585,423	Yes
10.00	5,743,982	Yes
10.00	5,655,290	Yes
20.00	10,930,819	Yes
20.00	11,292,428	Yes
20.00	11,171,757	Yes

02/16/21 06:16:30
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General Info

Analysis Name 20200603E.adb
Type IC

Calibration Info

R^2:	0.99768	**Correlation**	0.99884
A2:	0	**Volume**	200
A1:	594,425	**Curve Order**	1st Order Through Zero
A0:	0		

Single Info:

Conc. Templ.	Area	Selected
0.00	121,707	Yes
0.00	118,355	Yes
0.00	125,811	Yes
0.25	495,162	Yes
0.25	477,832	Yes
0.25	483,827	Yes
0.50	895,988	Yes
0.50	876,125	Yes
0.50	882,155	Yes
1.00	1,151,175	Yes
1.00	1,139,057	Yes
1.00	1,121,294	Yes
5.00	3,636,516	Yes
5.00	3,633,143	Yes
5.00	3,637,215	Yes
10.00	6,633,628	Yes
10.00	6,634,215	Yes
10.00	6,626,793	Yes
20.00	12,182,060	Yes
20.00	12,175,827	Yes
20.00	12,187,061	Yes

Appendix A.3.5
Mercury Laboratory Data

MONTROSE

30B Run 1A Summary

Run 1 - 03/11/21 - 15:25 to 16:25

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 1		

Trap A Data

Serial Number:	OLC160589
Section 1 result (ng):	346.6
Section 2 result (ng):	4.5
Total mercury (ng/sample):	351.1
Sample volume (sL):	40.7
Result (ug/m^3)	**8.63**

Trap A QA/QC

Breakthrough, %:	1.3%	< 10%
Recovery sample volume, %	99.7%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap B Data

Serial Number:	OLC137222
Section 1 result (ng):	344.4
Section 2 result (ng):	5.1
Total mercury (ng/sample):	349.5
Sample volume (sL):	40.7
Result (ug/m^3)	**8.59**

Trap B QA/QC

Breakthrough, %:	1.5%	< 10%
Recovery sample volume, %	99.7%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	0.24%	< 10%

Average µg/m^3 dry: 8.609

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 1B Summary

Run 2 - 03/11/21 - 15:25 to 16:25

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 1		

Trap C Data

Serial Number:	OLC149182		Breakthrough, %:	1.6%	< 10%
Section 1 result (ng):	381.5				
Section 2 result (ng):	6.1		Recovery sample volume, %	100.6%	80% to 120%
			Leak Check:	PASS	
			Flow Rate Maintained	PASS	
Total mercury (ng/sample):	387.6		Breakthrough:	PASS	
Sample volume (sL):	41.1				
Result (ug/m^3)	**9.44**		Recovery sample volume:	PASS	

Trap D Data

Serial Number:	OL544313		Breakthrough, %:	0.4%	< 10%
Section 1 result (ng):	752.1		Spike Recovered, %	93.3%	85% to 115%
Section 2 result (ng):	3.3		Recovery sample volume, %	99.9%	80% to 120%
			Leak Check:	PASS	
Spike level (ng)	400.0		Flow Rate Maintained	PASS	
Total mercury (ng/sample):	355.4		Breakthrough:	PASS	
Sample volume (sL):	40.8		Spike Recovery:	PASS	
Result (ug/m^3)	**8.72**		Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	3.98%	< 10%

Average µg/m^3 dry: 9.077

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 2A Summary

Run 3 - 03/11/21 - 16:50 to 17:50

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 1		

Trap A Data		**Trap A QA/QC**		
Serial Number:	OLC160643	Breakthrough, %:	0.5%	< 10%
Section 1 result (ng):	404.3			
Section 2 result (ng):	2.2	Recovery sample volume, %	100.8%	80% to 120%
		Leak Check:	PASS	
		Flow Rate Maintained	PASS	
Total mercury (ng/sample):	406.5	Breakthrough:	PASS	
Sample volume (sL):	41.1			
Result (ug/m^3)	**9.88**	Recovery sample volume:	PASS	

Trap B Data		**Trap B QA/QC**		
Serial Number:	OLC160707	Breakthrough, %:	0.3%	< 10%
Section 1 result (ng):	435.5			
Section 2 result (ng):	1.3	Recovery sample volume, %	100.7%	80% to 120%
		Leak Check:	PASS	
		Flow Rate Maintained	PASS	
Total mercury (ng/sample):	436.8	Breakthrough:	PASS	
Sample volume (sL):	41.1			
Result (ug/m^3)	**10.63**	Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	3.63%	< 10%

Average µg/m^3 dry: 10.257

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 2B Summary

Run 4 - 03/11/21 - 16:50 to 17:50

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 1		

Trap C Data

Serial Number:	OLC160571
Section 1 result (ng):	404.6
Section 2 result (ng):	2.6
Total mercury (ng/sample):	407.2
Sample volume (sL):	41.1
Result (ug/m^3)	**9.90**

Trap C QA/QC

Breakthrough, %:	0.6%	< 10%
Recovery sample volume, %	100.8%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap D Data

Serial Number:	OL544358
Section 1 result (ng):	816.0
Section 2 result (ng):	0.0
Spike level (ng)	400.0
Total mercury (ng/sample):	416.0
Sample volume (sL):	40.7
Result (ug/m^3)	**10.23**

Trap D QA/QC

Breakthrough, %:	0.0%	< 10%
Spike Recovered, %	103.9%	85% to 115%
Recovery sample volume, %	99.7%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Spike Recovery:	PASS	
Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	1.61%	< 10%

Average µg/m^3 dry: 10.064

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 3A Summary

Run 5 - 03/11/21 - 18:10 to 19:10

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 1		

Trap A Data		**Trap A QA/QC**		
Serial Number:	OLC136861	Breakthrough, %:	1.1%	< 10%
Section 1 result (ng):	550.1			
Section 2 result (ng):	6.1	Recovery sample volume, %	101.2%	80% to 120%
		Leak Check:	PASS	
		Flow Rate Maintained	PASS	
Total mercury (ng/sample):	556.2	Breakthrough:	PASS	
Sample volume (sL):	41.3			
Result (ug/m^3)	**13.47**	Recovery sample volume:	PASS	

Trap B Data		**Trap B QA/QC**		
Serial Number:	OLC160585	Breakthrough, %:	0.8%	< 10%
Section 1 result (ng):	545.0			
Section 2 result (ng):	4.6	Recovery sample volume, %	100.6%	80% to 120%
		Leak Check:	PASS	
		Flow Rate Maintained	PASS	
Total mercury (ng/sample):	549.6	Breakthrough:	PASS	
Sample volume (sL):	41.0			
Result (ug/m^3)	**13.39**	Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	0.31%	< 10%

Average µg/m^3 dry: 13.432

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 3B Summary

Run 6 - 03/11/21 - 18:10 to 19:10

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 1		

Trap C Data

Serial Number:	OLC160653
Section 1 result (ng):	539.0
Section 2 result (ng):	4.7
Total mercury (ng/sample):	543.7
Sample volume (sL):	41.2
Result (ug/m^3)	**13.19**

Trap C QA/QC

Breakthrough, %:	0.9%	< 10%
Recovery sample volume, %	101.0%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap D Data

Serial Number:	OL544362
Section 1 result (ng):	927.0
Section 2 result (ng):	1.0
Spike level (ng)	400.0
Total mercury (ng/sample):	528.0
Sample volume (sL):	40.9
Result (ug/m^3)	**12.90**

Trap D QA/QC

Breakthrough, %:	0.1%	< 10%
Spike Recovered, %	97.9%	85% to 115%
Recovery sample volume, %	100.4%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Spike Recovery:	PASS	
Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	1.14%	< 10%

Average µg/m^3 dry: 13.043

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

Example Calculation Sheet (Hg)
EPA Method 30B
Total Vapor Phase Mercury (Hg)
Montrose Air Quality Services

Client:	Desert View Power
Location:	Desert View Power, Mecca, California
Site:	Unit 1
Date:	3/11/21
Run #:	1-A

Total Vapor Phase Mercury (Hg) Emission Calculations

Volume sampled ($V_{m\ STD}$):	**1-A**	**40.687**	**dscL**	/ 1000 L/m =	**0.041**	**dscm**						
Volume sampled ($V_{m\ STD}$):	**1-B**	**40.693**	**dscL**	/ 1000 L/m =	**0.041**	**dscm**						
Volume sampled ($V_{m\ STD}$):	**1-C**	**41.063**	**dscL**	/ 1000 L/m =	**0.041**	**dscm**						
Volume sampled ($V_{m\ STD}$):	**1-D**	**40.778**	**dscL**	/ 1000 L/m =	**0.041**	**dscm**						
Volume sampled ($V_{m\ STD}$):	**R1**	**40.805**	**dscL**	Average $V_{m\ STD}$=	**0.041**	**dscm**						
Hg in Sample (µg):	**1-A**	**351.1**	**ng**	/ 1000 ng/µg =	**0.351**	**µg**	/	0.041	dscm =	**8.629**	**µg/dscm**	**ADL**
Hg in Sample (µg):	**1-B**	**349.5**	**ng**	/ 1000 ng/µg =	**0.349**	**µg**	/	0.041	dscm =	**8.588**	**µg/dscm**	**ADL**
Hg in Sample (µg):	**1-C**	**387.6**	**ng**	/ 1000 ng/µg =	**0.388**	**µg**	/	0.041	dscm =	**9.438**	**µg/dscm**	**ADL**
Hg in Sample (µg):	**1-D**	**355.4**	**ng**	/ 1000 ng/µg =	**0.355**	**µg**	/	0.041	dscm =	**8.716**	**µg/dscm**	**ADL**
Hg in Sample (µg):	**R1**	**360.883**	**ng**						**Average Hg Concentration =**	**8.843**	**µg/dscm**	**ADL**
Average Hg Concentration:	**R1**	**8.843**	**µg/dscm**	**ADL**								
Average Hg Concentration:	**R1**	**8.84E-03**	**mg/dscm**	**ADL**	**(µg/1000 = mg)**							

lb/hr = Hg (mg/dscm) / 35.31 dscf/dscm * airflow (dscf/min) /453600 mg/lb * 60 min/hr **0 dscf/min Airflow during run 1**

= 8.84E-03 / 35.315 dscf/dscm * 0 / 453600 * 60

= **0.00E+00 lb/hr Hg** **ADL**

lb/MMBtu = Hg (lb/hr) / MMBtu heat input **0 MMBtu/hr Heat Input Rate during run 1**

= 0.00E+00 / 0 MMBtu/hr

= **#DIV/0! lb/MMBtu** **ADL**

30B Run 1A Summary

Run 1 - 03/11/21 - 10:20 to 11:20

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 2		

Trap A Data		Trap A QA/QC		
Serial Number:	OLC137227	Breakthrough, %:	0.2%	< 10%
Section 1 result (ng):	1596.0			
Section 2 result (ng):	3.7	Recovery sample volume, %	99.9%	80% to 120%
		Leak Check:	PASS	
		Flow Rate Maintained	PASS	
Total mercury (ng/sample):	1599.7	Breakthrough:	PASS	
Sample volume (sL):	40.3			
Result (ug/m^3)	**39.74**	Recovery sample volume:	PASS	

Trap B Data		Trap B QA/QC		
Serial Number:	OLC160774	Breakthrough, %:	0.7%	< 10%
Section 1 result (ng):	1496.0			
Section 2 result (ng):	11.2	Recovery sample volume, %	98.8%	80% to 120%
		Leak Check:	PASS	
		Flow Rate Maintained	PASS	
Total mercury (ng/sample):	1507.2	Breakthrough:	PASS	
Sample volume (sL):	39.8			
Result (ug/m^3)	**37.85**	Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	2.43%	< 10%

Average µg/m^3 dry: 38.795

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 1B Summary

Run 2 - 03/11/21 - 10:20 to 11:20

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 2		

Trap C Data

Serial Number:	OLC160581
Section 1 result (ng):	1542.0
Section 2 result (ng):	13.8
Total mercury (ng/sample):	1555.8
Sample volume (sL):	40.3
Result (ug/m^3)	**38.60**

Trap C QA/QC

Breakthrough, %:	0.9%	< 10%
Recovery sample volume, %	100.0%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap D Data

Serial Number:	OLC132337
Section 1 result (ng):	1966.0
Section 2 result (ng):	13.0
Spike level (ng)	400.0
Total mercury (ng/sample):	1579.0
Sample volume (sL):	40.4
Result (ug/m^3)	**39.06**

Trap D QA/QC

Breakthrough, %:	0.7%	< 10%
Spike Recovered, %	104.9%	85% to 115%
Recovery sample volume, %	100.3%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Spike Recovery:	PASS	
Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	0.60%	< 10%

Average µg/m^3 dry: 38.827

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 2A Summary

Run 3 - 03/11/21 - 11:40 to 12:40

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 2		

Trap B Data

Serial Number:	OLC149014
Section 1 result (ng):	423.4
Section 2 result (ng):	3.2
Total mercury (ng/sample):	426.6
Sample volume (sL):	40.1
Result (ug/m^3)	**10.64**

Trap B QA/QC

Breakthrough, %:	0.7%	< 10%
Recovery sample volume, %	99.5%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap C Data

Serial Number:	OLC148880
Section 1 result (ng):	440.0
Section 2 result (ng):	3.2
Total mercury (ng/sample):	443.2
Sample volume (sL):	39.7
Result (ug/m^3)	**11.15**

Trap C QA/QC

Breakthrough, %:	0.7%	< 10%
Recovery sample volume, %	98.6%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	2.37%	< 10%

Average µg/m^3 dry: 10.894

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 2B Summary

Run 4 - 03/11/21 - 11:40 to 12:40

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 2		

Trap A Data

Serial Number:	OLC149000
Section 1 result (ng):	540.0
Section 2 result (ng):	7.2
Total mercury (ng/sample):	547.2
Sample volume (sL):	40.2
Result (ug/m^3)	**13.60**

Trap A QA/QC

Breakthrough, %:	1.3%	< 10%
Recovery sample volume, %	99.8%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap D Data

Serial Number:	OLC131609
Section 1 result (ng):	904.0
Section 2 result (ng):	6.3
Spike level (ng)	400.0
Total mercury (ng/sample):	510.3
Sample volume (sL):	40.2
Result (ug/m^3)	**12.70**

Trap D QA/QC

Breakthrough, %:	0.7%	< 10%
Spike Recovered, %	91.1%	85% to 115%
Recovery sample volume, %	99.7%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Spike Recovery:	PASS	
Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	3.45%	< 10%

Average µg/m^3 dry: 13.150

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 3A Summary

Run 5 - 03/11/21 - 13:15 to 14:15

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 2		

Trap C Data

Serial Number:	OLC160765
Section 1 result (ng):	315.5
Section 2 result (ng):	5.7
Total mercury (ng/sample):	321.2
Sample volume (sL):	40.1
Result (ug/m^3)	**8.02**

Trap C QA/QC

Breakthrough, %:	1.8%	< 10%
Recovery sample volume, %	99.4%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap B Data

Serial Number:	OLC137166
Section 1 result (ng):	278.0
Section 2 result (ng):	3.9
Total mercury (ng/sample):	281.9
Sample volume (sL):	39.7
Result (ug/m^3)	**7.10**

Trap B QA/QC

Breakthrough, %:	1.4%	< 10%
Recovery sample volume, %	98.5%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	6.08%	< 10%

Average µg/m^3 dry: 7.559

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

MONTROSE

30B Run 3B Summary

Run 6 - 03/11/21 - 13:15 to 14:15

Client:	Desert View Power	Analyst:	Van der Jagt
Location:	Desert View Power, Mecca, California	Reference Method:	EPA Method 30B
Unit Name, Serial #:	Unit 2		

Trap A Data

Serial Number:	OLC160618
Section 1 result (ng):	340.0
Section 2 result (ng):	1.2
Total mercury (ng/sample):	341.2
Sample volume (sL):	40.3
Result (ug/m^3)	**8.46**

Trap A QA/QC

Breakthrough, %:	0.4%	< 10%
Recovery sample volume, %	100.0%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Recovery sample volume:	PASS	

Trap D Data

Serial Number:	OLC131647
Section 1 result (ng):	760.3
Section 2 result (ng):	2.0
Spike level (ng)	400.0
Total mercury (ng/sample):	362.3
Sample volume (sL):	40.3
Result (ug/m^3)	**8.99**

Trap D QA/QC

Breakthrough, %:	0.3%	< 10%
Spike Recovered, %	105.1%	85% to 115%
Recovery sample volume, %	100.0%	80% to 120%
Leak Check:	PASS	
Flow Rate Maintained	PASS	
Breakthrough:	PASS	
Spike Recovery:	PASS	
Recovery sample volume:	PASS	

Trap A & B Relative Deviation %	3.00%	< 10%

Average µg/m^3 dry: 8.726

QA Criteria

A. AverageSPike Recovery must be within 85% and 115%

B. Breakthrough must be ≤10% of Section 1 Mass for Hg concentrations ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

C. Tube Correlation (A+B) must be ≤ 10% relative deviation ≥ 1µg/m3 or ≤ 20% or ≤ 0.20 µg/m3 absolute difference for stack concentrations ≤ 1 µg/m3

D. CCV must be within ≤10% of verification standard

Example Calculation Sheet (Hg)
EPA Method 30B
Total Vapor Phase Mercury (Hg)
Montrose Air Quality Services

Client:	Desert View Power
Location:	Desert View Power, Mecca, California
Site:	Unit 2
Date:	3/11/21
Run #:	1-A

Total Vapor Phase Mercury (Hg) Emission Calculations

Volume sampled ($V_{m\ STD}$):	**1-A**	**40.255**	**dscL**	/ 1000 L/m =	**0.040**	**dscm**						
Volume sampled ($V_{m\ STD}$):	**1-B**	**39.818**	**dscL**	/ 1000 L/m =	**0.040**	**dscm**						
Volume sampled ($V_{m\ STD}$):	**1-C**	**40.310**	**dscL**	/ 1000 L/m =	**0.040**	**dscm**						
Volume sampled ($V_{m\ STD}$):	**1-D**	**40.428**	**dscL**	/ 1000 L/m =	**0.040**	**dscm**						
Volume sampled ($V_{m\ STD}$):	**R1**	**40.203**	**dscL**	Average $V_{m\ STD}$=	**0.040**	**dscm**						
Hg in Sample (µg):	**1-A**	**1599.7**	**ng**	/ 1000 ng/µg =	**1.600**	**µg**	/ 0.040	dscm =	**39.738**	**µg/dscm**	**ADL**	
Hg in Sample (µg):	**1-B**	**1507.2**	**ng**	/ 1000 ng/µg =	**1.507**	**µg**	/ 0.040	dscm =	**37.852**	**µg/dscm**	**ADL**	
Hg in Sample (µg):	**1-C**	**1555.8**	**ng**	/ 1000 ng/µg =	**1.556**	**µg**	/ 0.040	dscm =	**38.596**	**µg/dscm**	**ADL**	
Hg in Sample (µg):	**1-D**	**1579.0**	**ng**	/ 1000 ng/µg =	**1.579**	**µg**	/ 0.040	dscm =	**39.058**	**µg/dscm**	**ADL**	
Hg in Sample (µg):	**R1**	**1560.428**	**ng**					**Average Hg Concentration =**	**38.811**	**µg/dscm**	**ADL**	
Average Hg Concentration:	**R1**	**38.811**	**µg/dscm**	**ADL**								
Average Hg Concentration:	**R1**	**3.88E-02**	**mg/dscm**	**ADL**	**(µg/1000 = mg)**							

lb/hr = Hg (mg/dscm) / 35.31 dscf/dscm * airflow (dscf/min) /453600 mg/lb * 60 min/hr — **0 dscf/min Airflow during run 1**

= 3.88E-02 / 35.315 dscf/dscm * 0 / 453600 * 60

= **0.00E+00 lb/hr Hg** **ADL**

lb/MMBtu = Hg (lb/hr) / MMBtu heat input — **0 MMBtu/hr Heat Input Rate during run 1**

= 0.00E+00 / 0 MMBtu/hr

= **#DIV/0! lb/MMBtu** **ADL**

ANALYTICAL REPORT
METHOD 30B MERCURY
OHIO LUMEX SERIAL NO.: 3576
ANALYTICAL BIAS TEST

Prepared By:

Montrose Air Quality Services, LLC
1371 Brummel Avenue
Elk Grove Village, Illinois

Document Number: MW3576 Bias-LR-10
Document Date: March 29, 2021

ACCREDITED
TO ASTM D7036 ONLY
CERT #3923.01

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APPENDIX A CALIBRATION DATA

APPENDIX B RESULTS

Ohio Lumex Serial No.: 3576
Analytical Bias Test

REPORT CERTIFICATION

STATEMENT OF CONFORMANCE AND LABORATORY REPORT CERTIFICATION

The following data has been reviewed for completeness, accuracy, adherence to method protocol and compliance with quality assurance guidelines.

Performance data is available upon request.

Benjamin Hilgendorf, National Laboratory Director
Montrose Air Quality Services, LLC

Henry M. Taylor 03 / 29 / 2021

Henry Taylor, Senior Reporting Specialist
Montrose Air Quality Services, LLC

MONTROSE
AIR QUALITY SERVICES

1.0 PROJECT SUMMARY

1.1 GENERAL

TABLE 1-1
ANALYSIS INFORMATION

Project Information	
Date Analysis Performed	3/23/2021 – 3/24/2021
Analytical Protocol	EPA Method 30B

TABLE 1-2
ANALYTICAL EQUIPMENT

Equipment Information	Manufacturer	Model	Serial No.
Zeeman Mercury Spectrometer	Ohio Lumex	RA-915+	3576

1.2 METHODOLOGY

All samples were analyzed according to the EPA Method 30B procedures found in 40 CFR Part 60 Appendix A. The samples were analyzed at the Montrose Laboratory in Elk Grove Village, Illinois.

The Method 30B analytical bias test is performed by analyzing three sorbent traps spiked with a known mass of elemental mercury at each of two levels. The two levels should be chosen based on the level at which actual samples are expected. Two sets of three standards at the same level as the sorbent traps are then analyzed. The measured value of all sets of three must be within 10% of expected values.

1.3 QA/QC

The analytical bias test was performed using two different parameters as defined by Ohio Lumex. The first curve was performed at a temperature of 680 °C with a flow rate of 2.0 liters per minute to demonstrate compliance for mercury masses up to 2,500 ng. The second curve was performed at a temperature of 652 °C with a flow rate of 3.8 liters per minute to demonstrate compliance for mercury masses up to 4,000 ng.

Each mercury calibration curve was generated using six calibration standards made with aqueous mercury solutions. The standards were prepared using a micro pipette to transfer a known amount of NIST traceable mercury standards to a bed of activated carbon and covered with sodium carbonate.

The preparation of the mercury standards used for this project is detailed in the table below. All standards where supplied by Ohio Lumex, Cleveland, Ohio.

TABLE 1-3
SUMMARY OF LOW-LEVEL CALIBRATION STANDARDS

Concentration (µg/ml)	Volume (µl)	Final Hg (ng)
0.1	50	5
1.0	25	25
1.0	50	50
1.0	100	100
10.0	50	500
10.0	100	1,000
100.0	25	2,500

TABLE 1-4
SUMMARY OF HIGH-LEVEL CALIBRATION STANDARDS

Concentration (µg/ml)	Volume (µl)	Final Hg (ng)
0.1	50	5
1.0	25	25
1.0	100	100
10.0	50	500
10.0	100	1,000
100.0	20	2,000
100.0	40	4,000

1.4 RESULTS OF ANALYTICAL BIAS TESTS

Ohio Lumex analyzer identified as serial number 3576 passed the Method 30B analytical bias tests at both the low- and high-level parameters. The final results can be viewed in Appendix B.

APPENDIX A
CALIBRATION DATA

GENERAL INFORMATION

Date:	2/24/2021
Analyzer:	3576
Analyst:	BH
Furnace Temp. (°C)	652
Flow Rate (L/min)	3.8
Pipette ID	L34592C
Standard Set ID	3

INITIAL CALIBRATION

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)	Valid?
1	4000	360,000	0.01111	3632	-9.21	Yes
2	2000	187,000	0.01070	1887	-5.67	Yes
3	1000	105,000	0.00952	1059	5.93	Yes
4	500	53,000	0.00943	535	6.94	Yes
5	100	10,000	0.01000	100.9	0.883	Yes
6	25	2,560	0.00977	25.8	3.30	Yes

Average Response Factor (ng/area)	0.01009
R-Squared	0.998

LOW LEVEL STANDARD - FOR QUANTIFICATION BELOW 5 NG

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)	Valid?
NA	5	504	0.00992	5.08	1.69	NA

SECOND SOURCE CHECK STANDARD ANALYSIS

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)	Valid?
NA	1000	91,400	0.01094	922	-7.79	Yes

BLANK ANALYSIS

Standard Number	Amount (ng)	Response (area)	Calculated Value (ng)
NA	0	7	0.071

CONTINUING CALIBRATION VERIFICATION STANDARDS

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)	Valid?
NA	25	2,510	0.00996	25.3	1.29	Yes
NA	2,000	187,000	0.01070	1887	-5.67	Yes
NA	2,000	186,000	0.01075	1876	-6.18	Yes
NA	500	49,900	0.01002	503	0.681	Yes

METHOD DETECTION LIMIT

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)
1	5	518	0.00965	5.23	4.51
2	5	507	0.00986	5.11	2.30
3	5	533	0.00938	5.38	7.54
4	5	528	0.00947	5.33	6.53
5	5	536	0.00933	5.41	8.15
6	5	534	0.00936	5.39	7.74
7	5	528	0.00947	5.33	6.53
8	5	507	0.00986	5.11	2.30

Average Response (ng)	5.28
Standard Deviation	0.119
Method Detection Limit (MDL) (ng)	0.356

Unit 3576
Annual Method Studies - High Level

EPA Method 30B
Ohio Lumex Raw Data

Good through 2/2022

No	Description	M, mg	C, ng/g	Area	Maximum	Time
1	Std__4000	1	3630	360000	14900	7:22:02 AM
2	Std__2000	1	1880	187000	11700	7:24:10 AM
3	Std__1000	1	1050	105000	5520	7:26:55 AM
4	Std__500	1	534	53000	3880	7:29:19 AM
5	Std__100	1	100	10000	648	7:31:33 AM
6	Std__25	1	25	2560	159	7:33:41 AM
7	Std__5	1	5.1	504	40	7:36:40 AM
8	Std__Sec Src 1000	1	922	91400	6550	7:39:14 AM
9	BLANK	1	0.1	7	5	7:41:57 AM
10	Std__5 MDL	1	5.2	518	36	7:44:18 AM
11	Std__5 MDL	1	5.1	507	38	7:46:44 AM
12	Std__5 MDL	1	5.4	533	42	7:48:38 AM
13	Std__5 MDL	1	5.3	528	29	7:50:53 AM
14	Std__5 MDL	1	5.4	536	28	7:53:07 AM
15	Std__5 MDL	1	5.4	534	33	7:55:30 AM
16	Std__5 MDL	1	5.3	528	38	7:57:59 AM
17	Std__5 MDL	1	5.1	507	31	8:00:10 AM
18	577430_F	1	9.8	967	58	8:03:07 AM
19	577430_B	1	-0.1	-7	3	8:05:15 AM
20	577449_F	1	10	1010	11	8:08:02 AM
21	577449_B	1	-0.1	-10	2	8:10:29 AM
22	577409_F	1	8.2	914	39	8:14:42 AM
23	577409_B	1	-0.1	-7	3	8:18:02 AM
24	Std__25	1	25	2510	181	8:21:27 AM
25	099494_F	1	3640	361000	13100	8:25:31 AM
26	099494_B	1	9.3	920	-60	8:28:37 AM
27	099672_F	1	3750	372000	15900	8:34:49 AM
28	099672_B	1	0.8	81	3	8:39:13 AM
29	099787_F	1	3680	365000	9720	8:44:56 AM
30	099787_B	1	0.5	48	-29	8:47:42 AM
31	Std__2000	1	1880	187000	14900	8:50:06 AM
32	Std__10	1	10	1040	92	8:56:45 AM
33	Std__10	1	10.0	987	83	8:59:40 AM
34	Std__10	1	9.9	982	73	9:03:01 AM
35	Std__4000	1	3620	359000	32200	9:05:23 AM
36	Std__4000	1	3680	365000	25500	9:08:11 AM
37	Std__4000	1	3690	366000	24900	9:10:55 AM
38	Std__2000	1	1870	186000	12700	9:13:59 AM
39	566873_F	1	253	25100	989	9:17:40 AM
40	566873_B	1	1.3	130	22	9:20:02 AM
41	566879_F	1	231	22900	1180	9:22:51 AM
42	566879_B	1	0.4	41	3	9:25:17 AM
43	566804_F	1	241	23900	1080	9:28:13 AM
44	566804_B	1	0.4	37	3	9:30:42 AM
45	Std__500	1	503	49900	3660	9:32:55 AM

GENERAL INFORMATION

Date:	2/23/2021
Analyzer:	3576
Analyst:	BH
Furnace Temp. (°C)	680
Flow Rate (L/min)	2.0
Pipette ID	L34592C
Standard Set ID	3

INITIAL CALIBRATION

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)	Valid?
1	2500	414,000	0.00604	2287	-8.50	Yes
2	1000	181,000	0.00552	1000	0.00	Yes
3	500	92,100	0.00543	509	1.77	Yes
4	100	18,600	0.00538	103	2.77	Yes
5	50	9,060	0.00552	50.1	0.115	Yes
6	25	4,750	0.00526	26.2	4.98	Yes
Average Response Factor (ng/area)			0.00553			
R-Squared			0.998			

LOW LEVEL STANDARD - FOR QUANTIFICATION BELOW 5 NG

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)	Valid?
NA	5	990	0.00505	5.47	9.40	NA

SECOND SOURCE CHECK STANDARD ANALYSIS

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)	Valid?
NA	1000	177,000	0.00565	978	-2.21	Yes

BLANK ANALYSIS

Standard Number	Amount (ng)	Response (area)	Calculated Value (ng)
NA	0	12	0.07

CONTINUING CALIBRATION VERIFICATION STANDARDS

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)	Valid?
NA	25	4,620	0.00541	25.5	2.10	Yes
NA	1,000	182,000	0.00549	1006	0.557	Yes
NA	500	91,100	0.00549	503	0.667	Yes
NA	500	89,500	0.00559	494	-1.10	Yes

METHOD DETECTION LIMIT

Standard Number	Amount (ng)	Response (area)	RF (ng/area)	Calculated Value (ng)	Error (%)
1	3	496	0.00605	2.74	-8.65
2	3	560	0.00536	3.09	3.14
3	3	523	0.00574	2.89	-3.68
4	3	578	0.00519	3.19	6.45
5	3	548	0.00547	3.03	0.93
6	3	543	0.00552	3.00	0.00
7	3	556	0.00540	3.07	2.40
8	3	531	0.00565	2.93	-2.21

Average Response (ng)	2.99
Standard Deviation	0.139
Method Detection Limit (MDL) (ng)	0.418

Unit 3576
Annual Method Studies - Low Level

EPA Method 30B
Ohio Lumex Raw Data

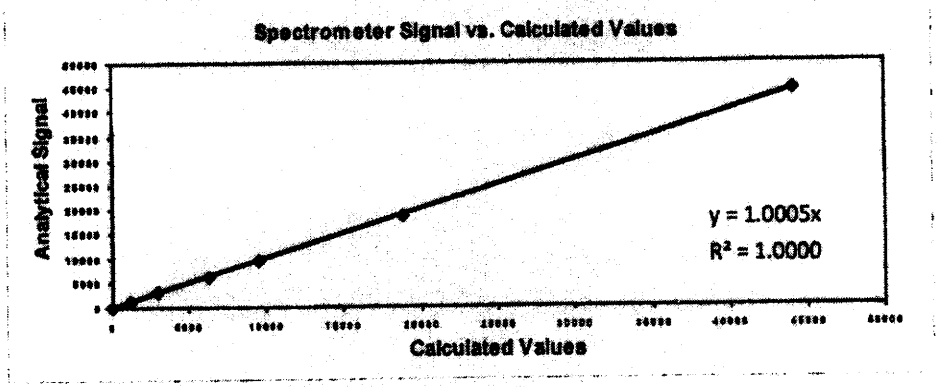
Good through 2/2022

No	Description	M, mg	C, ng/g	Area	Maximum	Time
1	Std__2500	1	2280	414000	23700	11:32:57 AM
2	Std__1000	1	1000	181000	17600	11:35:07 AM
3	Std__500	1	509	92100	8520	11:37:18 AM
4	Std__100	1	102	18600	1560	11:39:21 AM
5	Std__50	1	50	9060	900	11:41:33 AM
6	Std__25	1	26	4750	291	11:43:45 AM
7	Std__5	1	5.5	990	85	11:45:47 AM
8	Std__Sec Src 1000	1	978	177000	17000	11:48:26 AM
9	BLANK	1	0.1	12	9	11:50:39 AM
10	Std__3 MDL	1	2.7	496	56	11:53:28 AM
11	Std__3 MDL	1	3.1	560	59	11:55:45 AM
12	Std__3 MDL	1	2.9	523	65	11:57:55 AM
13	Std__3 MDL	1	3.2	578	55	11:59:59 AM
14	Std__3 MDL	1	3.0	548	41	12:02:17 PM
15	Std__3 MDL	1	3.0	543	41	12:04:37 PM
16	Std__3 MDL	1	3.1	556	56	12:07:28 PM
17	Std__3 MDL	1	2.9	531	45	12:10:37 PM
18	577307_F	1	9.7	1750	112	12:14:01 PM
19	577307_B	1	-0.1	-17	5	12:16:29 PM
20	577399_F	1	10	1830	120	12:18:45 PM
21	577399_B	1	0.3	61	3	12:20:56 PM
22	577410_F	1	9.6	1740	109	12:24:04 PM
23	577410_B	1	0.2	38	4	12:26:13 PM
24	Std__25	1	25	4620	542	12:28:18 PM
25	577462_F	1	984	178000	13000	12:30:36 PM
26	577462_B	1	0.4	72	3	12:33:32 PM
27	577495_F	1	945	171000	9330	12:36:28 PM
28	577495_B	1	0.2	34	4	12:38:45 PM
29	577324_F	1	945	171000	8070	12:41:58 PM
30	577324_B	1	0.0	-8	3	12:44:52 PM
31	Std__1000	1	1000	182000	19400	12:47:06 PM
32	Std__100	1	100	18100	1490	12:49:17 PM
33	Std__100	1	101	18400	1760	12:51:35 PM
34	Std__100	1	103	18700	1650	12:53:53 PM
35	Std__10	1	9.9	1790	181	12:56:02 PM
36	Std__10	1	9.9	1790	165	12:58:13 PM
37	Std__10	1	10	1860	112	1:00:11 PM
38	Std__1000	1	984	178000	14900	1:02:35 PM
39	Std__1000	1	1010	183000	15100	1:05:04 PM
40	Std__1000	1	978	177000	14300	1:07:28 PM
41	Std__500	1	503	91100	8460	1:09:46 PM
42	566788_F	1	92	16800	545	1:12:47 PM
43	566788_B	1	0.2	34	4	1:15:31 PM
44	566996_F	1	92	16700	508	1:18:29 PM
45	566996_B	1	-0.1	-13	2	1:20:52 PM
46	566896_F	1	95	17200	945	1:24:24 PM
47	566896_B	1	-0.2	-32	2	1:26:26 PM
48	Std__500	1	494	89500	8870	1:28:24 PM

Spectrometer Calibration Certificate

RA-915+ 3576

Standard No.	Temp (°C)	Calculated Value	Signal (10m cell)
1	24	0	0
2	24	1131	1130
3	24	2896	2921
4	24	6214	6190
5	24	9531	9540
6	24	18814	18682
7	24	44150	44205



Calibration Gas certified value: 2.6 µg/m³ **Reading observed: 2.6 µg/m³**
Calibration Parameter A: 767 **Calibration Parameter B: 36000**

CALIBRATION DATE: 12/4/2020 **NEXT CALIBRATION DUE: 12/5/2021**

ON THE DATE CALIBRATED, THIS UNIT OPERATED WITHIN SPECIFIED TOLERANCES

Digital Barometer:	**Cert. 1081-8782151**	**Cal. Due 6/22/2021**
Digital Thermometer:	**Cert. 1081-8782151**	**Cal. Due 6/22/2021**
Gas NIST Traceable Standard:	**Thermo Hg Calibrator Serial # 0722923640**	

Concentration: 2.6 µg/m³, Analytical Accuracy: +/- 10%, Recertification Date: 6/23/2022

Service Technician: V. Silva

QA/QC Check:

Jonathan Cross (Dec 10, 2020 14:56 EST)

RECOMMENDATION NOTE: INSTRUMENT SHOULD BE RECALIBRATED EVERY 12 MONTHS OR SOONER, IF EXPOSED TO EXTREME CONDITIONS OR DAMAGE IS SUSPECTED

Ohio Lumex Co. Inc. 30350 Bruce Industrial Parkway, Solon, OH 44139
mail@ohiolumex.com **1.888.876.2611**

Air Quality Instruments
27 Forge Parkway
Franklin, MA 02038 USA
(866) 282-0430
(508) 520-0430
www.thermoscientific.com/AQI

ThermoFisher SCIENTIFIC

Thermo Scientific Model 81i Calibrator Certification Report

Certification Date: 6/23/2020

	Candidate		*Reference*
Location:	THERMO	ID:	Vendor Prime
Device:	81i-Ohio Lumex Company	S/N:	0712322224
S/N:	0722923640		

RA# SE-2005290699 Chiller Temp 7 Deg C Chiller S/N 202

As Found Data: *As Left Data:*

Candidate User Information		Candidate User Generator Certification					Reference Generator
		Certification Values		Certifications Uncertainties			Uncertainties
2.7	2.74	2.7	2.70	0.0264	0.0528	1.95%	2.11%
5.7	6.03	5.7	5.74	0.0359	0.0719	1.25%	2.05%
8.1	8.73	8.1	8.17	0.0468	0.0935	1.14%	1.98%

At each concentration level, the results of the bracketing certification procedure are acceptable if the expanded uncertainty of the elemental mercury generator concentration, calculated in accordance with Section 6.3 in the Interim EPA Traceability Protocol for Qualification and Certification of Elemental Mercury Gas Generators, does not exceed 5.0 percent of the certified value, or is not more than 2.0 percent above the Vendor Prime uncertainty at the closest set point, whichever is less restrictive (Source Interim EPA Traceability Protocol for Qualification and Certification of Elemental Mercury Gas Generators: Section 8.4)

Protocol applies only to Hg monitoring system span values greater than or equal to 5.0 micrograms per cubic meter (µg/m3) (Source Interim EPA Traceability Protocol for Qualification and Certification of Elemental Mercury Gas Generators: Section 1.0)

This document certifies that the above instrument has been calibrated and tested in accordance with Thermo Fisher Scientific procedure conducted under the conditions noted with standards, which are certified traceable to the National Institute of Standards and Technology (NIST). This Calibration Certificate may not be reproduced expect in full, without written permissions from Thermo Fisher Scientific. The results of this report relate only to the instrument tested and calibrated as identified on this certificate.

Calibration

Certification

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Ohio Lumex Company, Inc.
30350 Bruce Industrial Parkway
Solon, OH 44139
Toll Free (888) 876 2611, (440) 264 2500, Fax. (440) 264 2501
www.ohiolumex.com

Certified Reference Material (Mercury Standard) Certificate of Analysis

1.0 ACCREDITATION / REGISTRATION

The certified reference material manufacturer is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" (A2LA certificate number 883.02) and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories" (A2LA certificate number 883.01) and it is also ISO 9001 registered (CSR Certificate Number QSR-1034).

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	RPM-639
Lot Number:	P2-MEB686962
Matrix:	10% (v/v) HCl
Value / Analyte(s):	0.1 µg/mL ea: Mercury

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Mercury, Hg	0.1000 ± 0.0005 µg/mL		

Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \Sigma w_i (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance

$$w_i = (1/u_{char\ i}^2) / (\Sigma 1/u_{char\ i}^2)$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$$

k = coverage factor = 2

$u_{char} = [\Sigma (w_i)^2 u_{char\ i}^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_A) \pm u_{char\ a}$$

X_A = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed outer bag.

- While stored in the sealed outer bag, transpiration of this CRM/RM is negligible. After opening the sealed outer bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed outer bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA, Telephone: 800.669.6799, 540.585.3030, Fax: 540.585.3012, inorganicventures.com, info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 19, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- November 19, 2023

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed outer Bag Open Date: 12/1/20

- This CRM/RM should not be used longer than one year from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael J Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

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Solon, OH 44139
Toll Free (888) 876 2611, (440) 264 2500, Fax. (440) 264 2501
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Certified Reference Material (Mercury Standard) Certificate of Analysis

1.0 ACCREDITATION / REGISTRATION

The certified reference material manufacturer is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" (A2LA certificate number 883.02) and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories" (A2LA certificate number 883.01) and it is also ISO 9001 registered (QSR Certificate Number QSR-1034).

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	RPM-043QC
Lot Number:	P2-HG681569
Matrix:	10% (v/v) HCl
Value / Analyte(s):	1 µg/mL ea: Mercury
Starting Material:	Hg metal
Starting Material Lot#:	1959
Starting Material Purity:	99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1.0016 ± 0.0043 µg/mL

Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.
Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.
Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 01, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 01, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.000001	M	Eu	<	0.000201	O	Na		0.000001	M	Se	<	0.015915	O	Zn	<	0.001510
O	Al		0.000001	O	Fe		0.000001	M	Nb	<	0.000201	O	Si		0.000001	M	Zr	<	0.000201
M	As	<	0.000402	M	Ga	<	0.000201	M	Nd	<	0.000201	M	Sm	<	0.000201				
M	Au	<	0.003631	M	Gd	<	0.000201	M	Ni	<	0.000402	M	Sn	<	0.001007				
M	B	<	0.001208	M	Ge	<	0.000201	M	Os	<	0.000605	M	Sr	<	0.000201				
M	Ba	<	0.000201	M	Hf	<	0.000201	O	P	<	0.032370	M	Ta	<	0.000201				
M	Be	<	0.000201	s	Hg	<		M	Pb	<	0.000201	M	Tb	<	0.000201				
M	Bi	<	0.000201	M	Ho	<	0.000201	M	Pd	<	0.000403	M	Te	<	0.002216				
O	Ca		0.000001	M	In	<	0.000201	M	Pr	<	0.000201	M	Th	<	0.000201				
M	Cd	<	0.000201	M	Ir	<	0.000201	M	Pt	<	0.000402	M	Ti	<	0.000402				
M	Ce	<	0.000201	O	K		0.000002	M	Rb	<	0.000201	O	Tl	<	0.016508				
M	Co	<	0.000201	M	La	<	0.000201	M	Re	<	0.000201	M	Tm	<	0.000201				
O	Cr	<	0.003021	O	Li	<	0.000107	M	Rh	<	0.000201	M	U	<	0.008058				
M	Cs	<	0.001208	M	Lu	<	0.000201	M	Ru	<	0.000201	M	V	<	0.000201				
M	Cu	<	0.000402	O	Mg		0.000001	O	S	<	0.053950	M	W	<	0.000604				
M	Dy	<	0.000201	M	Mn	<	0.000604	M	Sb	<	0.001208	M	Y	<	0.000201				
M	Er	<	0.000201	M	Mo		0.000001	M	Sc	<	0.000201	M	Yb	<	0.000201				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed outer bag.

- While stored in the sealed outer bag, transpiration of this CRM/RM is negligible. After opening the sealed outer bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed outer bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

11.3 Period of Validity

- Sealed outer Bag Open Date: 12/1/20

- This CRM/RM should not be used longer than one year from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael J Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Ohio Lumex Company, Inc.
30350 Bruce Industrial Parkway
Solon, OH 44139
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Certified Reference Material (Mercury Standard) Certificate of Analysis

1.0 ACCREDITATION / REGISTRATION

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2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	RPM-043
Lot Number:	R2-MEB691338
Matrix:	10% (v/v) HCl
Value / Analyte(s):	1 µg/mL ea: Mercury

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Mercury, Hg	1.000 ± 0.005 µg/mL		

Density: 1.019 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method I with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed outer bag.

- While stored in the sealed outer bag, transpiration of this CRM/RM is negligible. After opening the sealed outer bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed outer bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073. USA; Telephone: 800.669.6799; 540.585.3030. Fax: 540.585.3012, inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 06, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified

11.2 Lot Expiration Date

- **April 06, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed outer Bag Open Date: 12/1/20

- This CRM/RM should not be used longer than one year from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael J Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Ohio Lumex Company, Inc.
30350 Bruce Industrial Parkway
Solon, OH 44139
Toll Free (888) 876 2611, (440) 264 2500, Fax. (440) 264 2501
www.ohiolumex.com

Certified Reference Material (Mercury Standard) Certificate of Analysis

1.0 ACCREDITATION / REGISTRATION

The certified reference material manufacturer is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" (A2LA certificate number 883.02) and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories" (A2LA certificate number 883.01) and it is also ISO 9001 registered (QSR Certificate Number QSR-1034).

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	RPM-044
Lot Number:	R2-MEB690870
Matrix:	10% (v/v) HCl
Value / Analyte(s):	10 µg/mL ea: Mercury

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Mercury, Hg	**10.00 ± 0.04 µg/mL**		

Density: 1.019 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)\,(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = (\Sigma((w_i)^2\,(u_{char\ i})^2))^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed outer bag.

- While stored in the sealed outer bag, transpiration of this CRM/RM is negligible. After opening the sealed outer bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed outer bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 06, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 06, 2024

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed outer Bag Open Date: 12/1/20

- This CRM/RM should not be used longer than one year from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec 7.1.

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Certificate Approved By:

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Manager, Quality Control

Michael J Booth

Certifying Officer:

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2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	RPM-042
Lot Number:	P2-HG683300
Matrix:	10% (v/v) HCl
Value / Analyte(s):	10 µg/mL ea: Mercury
Starting Material:	Hg metal
Starting Material Lot#:	1959
Starting Material Purity:	99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.004 ± 0.066 µg/mL

Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \Sigma(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighing factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i})^2 / (\Sigma(1/u_{char\ i})^2)$$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{tts})^{1/2}$

k = coverage factor = 2

$u_{char} = (\Sigma(w_i)^2 u_{char\ i}^2)^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{tts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)\,(u_{char\ a})$$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{tts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{tts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.000011	M	Eu	<	0.000201	O	Na		0.000004	M	Se	<	0.015915	O	Zn	<	0.001510
O	Al		0.000001	O	Fe		0.000001	M	Nb	<	0.000201	O	Si		0.000005	M	Zr	<	0.000201
M	As	<	0.000402	M	Ga	<	0.000201	M	Nd	<	0.000201	M	Sm	<	0.000201				
M	Au	<	0.003631	M	Gd	<	0.000201	M	Ni	<	0.000402	M	Sn	<	0.001007				
M	B	<	0.001208	M	Ge	<	0.000201	M	Os	<	0.000605	M	Sr	<	0.000201				
M	Ba	<	0.000201	M	Hf	<	0.000201	O	P	<	0.032370	M	Ta	<	0.000201				
M	Be	<	0.000201	s	Hg	<		M	Pb	<	0.000201	M	Tb	<	0.000201				
M	Bi	<	0.000201	M	Ho	<	0.000201	M	Pd	<	0.000403	M	Te	<	0.002216				
O	Ca		0.000007	M	In	<	0.000201	M	Pr	<	0.000201	M	Th	<	0.000201				
M	Cd	<	0.000201	M	Ir	<	0.000201	M	Pt	<	0.000402	M	Ti	<	0.000402				
M	Ce	<	0.000201	O	K		0.000020	M	Rb	<	0.000201	O	Tl	<	0.016508				
M	Co	<	0.000201	M	La	<	0.000201	M	Re	<	0.000201	M	Tm	<	0.000201				
O	Cr	<	0.003021	O	Li	<	0.000107	M	Rh	<	0.000201	M	U	<	0.008058				
M	Cs	<	0.001208	M	Lu	<	0.000201	M	Ru	<	0.000201	M	V	<	0.000201				
M	Cu	<	0.000402	O	Mg		0.000001	O	S	<	0.053950	M	W	<	0.000604				
M	Dy	<	0.000201	M	Mn	<	0.000604	M	Sb	<	0.001208	M	Y	<	0.000201				
M	Er	<	0.000201	M	Mo		0.000009	M	Sc	<	0.000201	M	Yb	<	0.000201				

M - Checked by ICP-MS O - Checked by ICP-OES I - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed outer bag.

- While stored in the sealed outer bag, transpiration of this CRM/RM is negligible. After opening the sealed outer bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed outer bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.
Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.
Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Te, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 28, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 28, 2023

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed outer Bag Open Date: 12/1/20

- This CRM/RM should not be used longer than one year from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael J Booth

Certifying Officer:

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CEO, Senior Technical Director

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Certified Reference Material (Mercury Standard) Certificate of Analysis

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The certified reference material manufacturer is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" (A2LA certificate number 883.02) and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories" (A2LA certificate number 883.01) and it is also ISO 9001 registered (QSR Certificate Number QSR-1034).

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	RPM-041
Lot Number:	R2-MEB689453
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	100 µg/mL ea: Mercury

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Mercury, Hg	**100.0 ± 0.4 µg/mL**		

Density: 1.034 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

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X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

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Characterization of CRM/RM by One Method

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4.0 TRACEABILITY TO NIST

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- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

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4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed outer bag.

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8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

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11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

Unit 3576 High level study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL577409

☐ **Unspiked** ☒ **Spiked At:** 10ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) ~

QA/QC Signature (Spike) [signature]

Production Lot: S-424D Carbon Lot: 4C

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Spike Date: 1/11/2021 Spike Time: 1119

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/24/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2024

Unit 3576 High level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL577449

☐ **Unspiked** ☒ **Spiked At:** 10ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) _____

QA/QC Signature (Spike) _____

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Production Lot: S-424D Carbon Lot: 4C

Spike Date: 1/11/2021 Spike Time: 1119 Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	BHB	2/24/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2024

Unit 3576 High Level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL577430

☐ **Unspiked** ☒ **Spiked At:** 10ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) _____

QA/QC Signature (Spike) _____

Production Lot: S-424D Carbon Lot: 4C

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Spike Date: 1/11/2021 Spike Time: 1119

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____
(stack, FGD inlet, etc.)

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/24/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2024

Unit 3576 High level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL566873

☐ **Unspiked** ☒ **Spiked At:** 250ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) _____

QA/QC Signature (Spike) _____

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Production Lot: S-3FE6 Carbon Lot: 4C

Spike Date: 9/16/2020 Spike Time: 1256

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/24/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: September 2023

Unit 3576 High level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID

OL566804

☐ **Unspiked** ☒ **Spiked At:** 250ng

Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) _____

QA/QC Signature (Spike) _____

Production Lot: S-3FE6 Carbon Lot: 4C

☐ High Flow ☐ Coil Pre-filter ☐ 240 mm
☐ Static Pre-filter ☐ AGS ☒ 300 mm
☐ Fluffy Pre-filter ☐ 185 mm ☐ 450 mm

Spike Date: 9/16/2020 Spike Time: 1256

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:

STARTUP **SHUTDOWN**

For CEMENT KILNS Only

No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	BHH	2/24/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: September 2023

Unit 3576 High level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL566879

☐ **Unspiked** ☒ **Spiked At:** 250ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) _____

QA/QC Signature (Spike) _____

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Production Lot: S-3FE6 Carbon Lot: 4C

Spike Date: 9/16/2020 Spike Time: 1256

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:

STARTUP **SHUTDOWN**

For CEMENT KILNS Only

No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	BHG	2/24/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: September 2023

1 440 264 2500 office
1 888 876 2611 toll free
www.ohiolumex.com
mail@ohiolumex.com
30350 Bruce Industrial Pkwy.
Cleveland, OH 44139 USA

Unit 3576 High level Study

OHIO LUMEX™

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OLC099787

☐ **Unspiked** ☒ **Spiked At:** 4000ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Maker) _____

QA/QC Signature (Spiker) _____

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Production Lot: S-39DF Carbon Lot: 4C

Spike Date: 1/15/2020 Spike Time: 0917

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/24/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2023

1 440 264 2500 office
1 888 876 2611 toll free
www.ohiolumex.com
mail@ohiolumex.com
30350 Bruce Industrial Pkwy.
Cleveland, OH 44139 USA

Unit 3576 High level Study

OHIO LUMEX™

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OLC099672

☐ **Unspiked** ☒ **Spiked At:** 4000ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Maker) _____

QA/QC Signature (Spiker) _____

Production Lot: S-39DF Carbon Lot: 4C

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Spike Date: 1/15/2020 Spike Time: 0917

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/24/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2023

Unit 3576 High level Study

OHIO LUMEX™

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OLC099494

☐ **Unspiked** ☒ **Spiked At:** 4000ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Maker) _____

QA/QC Signature (Spiker) _____

Production Lot: S-39DF Carbon Lot: 4C

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Spike Date: 1/15/2020 Spike Time: 0917

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	BHH	2/24/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2023

Unit 3576 Low level study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL577399

☐ **Unspiked** ☒ **Spiked At:** 10ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) _____

QA/QC Signature (Spike) _____

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Production Lot: S-424D Carbon Lot: 4C

Spike Date: 1/11/2021 Spike Time: 1119 Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/23/24		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon -- Refer to SDS

Best Before: January 2024

Unit 3576 Lo level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL577410

☐ **Unspiked** ☒ **Spiked At:** 10ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) _____

QA/QC Signature (Spike) _____

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Production Lot: S-424D Carbon Lot: 4C

Spike Date: 1/11/2021 Spike Time: 1119

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	BHH	2/23/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2024

Unit 3576 low level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL577307

☐ **Unspiked** ☒ **Spiked At:** 10ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) _____

QA/QC Signature (Spike) _____

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Production Lot: S-424D Carbon Lot: 4C

Spike Date: 1/11/2021 Spike Time: 1119

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/23/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2024

Unit 3576 Low level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL566996

☐ **Unspiked** ☒ **Spiked At:** 100ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) [signature]

QA/QC Signature (Spike) [signature]

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Production Lot: S-4047 Carbon Lot: 4C

Spike Date: 10/5/2020 Spike Time: 1525

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/23/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: October 2023

Unit 3576 Low level study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL566896

☐ **Unspiked** ☒ **Spiked At:** 100ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) JH

QA/QC Signature (Spike) JH

Production Lot: S-4047 Carbon Lot: 4C

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Spike Date: 10/5/2020 Spike Time: 1525

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	JH	2/23/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: October 2023

1 440 264 2500 office
1 888 876 2611 toll free
www.ohiolumex.com
mail@ohiolumex.com
30350 Bruce Industrial Pkwy.
Cleveland, OH 44139 USA

Unit 35 & 6 Low level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL566788

☐ **Unspiked** ☒ **Spiked At:** 100ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) [signature]

QA/QC Signature (Spike) [signature]

Production Lot: S-4047 Carbon Lot: 4C

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Spike Date: 10/5/2020 Spike Time: 1525

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/23/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool impregnated Activated Carbon – Refer to SDS

Best Before: October 2023

1 440 264 2500 office
1 888 876 2611 toll free
www.ohiolumex.com
mail@ohiolumex.com
30350 Bruce Industrial Pkwy.
Cleveland, OH 44139 USA

Unit 3576 low level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL577495

☐ **Unspiked** ☒ **Spiked At:** 1000ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) Emily

QA/QC Signature (Spike) [signature]

Production Lot: S-424E Carbon Lot: 4C

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Spike Date: 1/11/2021 Spike Time: 1145

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/23/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2024

Unit 3576 Low level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL577462

☐ **Unspiked** ☒ **Spiked At:** 1000ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) Emily

QA/QC Signature (Spike) [illegible]

Production Lot: S-424E Carbon Lot: 4C

☐ High Flow ☐ Coil Pre-filter ☐ 240 mm
☐ Static Pre-filter ☐ AGS ☒ 300 mm
☐ Fluffy Pre-filter ☐ 185 mm ☐ 450 mm

Spike Date: 1/11/2021 Spike Time: 1145

Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ (stack, FGD inlet, etc.)

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

Notes: _____

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/23/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2024

Unit 3576 Low level Study

OHIO LUMEX

Ohio Lumex Co., Inc.
Sorbent Trap Chain of Custody Form

Trap ID
OL577324

☐ **Unspiked** ☒ **Spiked At:** 1000ng
Spiking Method Cold Vapor Adsorption Via Impinger Sparging
Certified Accuracy ± 10%, Traceable to NIST

QA/QC Signature (Trap Assembly) Emily

QA/QC Signature (Spike) [signature]

☐High Flow ☐Coil Pre-filter ☐240 mm
☐Static Pre-filter ☐AGS ☒300 mm
☐Fluffy Pre-filter ☐185 mm ☐450 mm

Production Lot: S-424E Carbon Lot: 4C

Spike Date: 1/11/2021 Spike Time: 1145 Type of Trap: 30B

TO BE FILLED OUT BY SAMPLING TECHNICIAN

Plant/Source: _____

Boiler ID: _____

Sampling Location: _____ *(stack, FGD inlet, etc.)*

Run Number (optional): _____

Sampling Train (circle one): **A** **B**

PRE-Run Leak Check (circle one): **PASS** **FAIL**

Run START: _____ Date _____ Time

Run END: _____ Date _____ Time

POST-Run Leak Check (circle one): **PASS** **FAIL**

Notes: _____

SAMPLING CONDITIONS AND PARAMETERS

Ave Duct Temp (F°): _____

Ave Trap Temp (F°): _____

Ave Flow Rate (cc/min): _____

Total Volume (L) _____ or (dscm): _____

Estimated Ave Hg Concentration (µg/dscm): _____

Circle Event if Occurred During Sampling:
STARTUP **SHUTDOWN**

For CEMENT KILNS Only
No. of RAW MILL OFF Events During Sampling: _____

REQUIRED IF RETURNING TO OHIO LUMEX FOR ANALYSIS

Estimated Hg Mass in Section 1 of Sorbent Trap (ng): _____

Note: Analyzer calibration range will be set based on this value. Leaving this blank may result in out-of-calibration analysis. Please contact us if you require assistance estimating this value.

Chain Of Custody

Signatures along with Date/Time required for insertion, removal, lab receiving and lab analysis of trap.

	Signature	Date	Time	Security Seal
Trap inserted by				**If Applicable** Place Chain of Custody seal here (See Security Seal Instruction Sheet)
Trap removed and sealed by				
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Courier/Other (If Applicable)				Seal intact as received Yes ☐ No ☐
Trap received by lab				Seal intact as received Yes ☐ No ☐
Trap analyzed by	[signature]	2/23/21		Seal intact as received Yes ☐ No ☐

Make sure all of your sampling conditions prevent moisture condensation in the trap media. Moisture condensation is a major cause of breakthrough and spike loss in sorbent traps and should be prevented at all costs. Deactivated glass and glass wool Impregnated Activated Carbon – Refer to SDS

Best Before: January 2024

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mail@ohiolumex.com
30350 Bruce Industrial Pkwy.
Cleveland, OH 44139 USA

11.1 Certification Issue Date

January 31, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 31, 2024

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed outer Bag Open Date: 12/. /20

- This CRM/RM should not be used longer than one year from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael J Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

APPENDIX B
RESULTS

Bias Test Results (Pass/Fail): Pass

Low Level Parameters

Trap Spike Level (ng)	10			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OL577430**	**OL577449**	**OL577409**	
Front Half (area)	967	1,010	914	
Back Half (area)	0	0	0	
RESULTS				**Average**
Front Half (ng)	9.76	10.2	9.22	
Back Half (ng)	0.00	0.00	0.00	
Breakthrough (%)	0.00	0.00	0.00	
Total Mercury (ng)	9.76	10.2	9.22	
Error (%)	-2.45	1.89	-7.79	**-2.78**
Validity	Yes	Yes	Yes	

Standard Level (ng)	10			
	Run 1	**Run 2**	**Run 3**	
Area Count	1,040	987	982	
RESULTS				**Average**
Calculated Value (ng)	10.5	9.96	9.91	**10.1**
Error (%)	4.92	-0.429	-0.933	**1.19**
Validity				**Yes**

High Level Parameters

Trap Spike Level (ng)	4,000			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OLC099494**	**OLC099672**	**OLC099787**	
Front Half (area)	361,000	372,000	365,000	
Back Half (area)	920	81	48	
RESULTS				**Average**
Front Half (ng)	3642	3753	3682	
Back Half (ng)	9.13	0.804	0.476	
Breakthrough (%)	0.251	0.021	0.013	
Total Mercury (ng)	3651	3754	3683	
Error (%)	-8.73	-6.16	-7.93	**-7.61**
Validity	Yes	Yes	Yes	

Standard Level (ng)	4,000			
	Run 1	**Run 2**	**Run 3**	
Area Count	359,000	365,000	366,000	
RESULTS				**Average**
Calculated Value (ng)	3622	3682	3692	**3665**
Error (%)	-9.46	-7.94	-7.69	**-8.36**
Validity				**Yes**

Bias Test Results (Pass/Fail): Pass

Low Level Parameters

Trap Spike Level (ng)	10			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OL577430**	**OL577449**	**OL577409**	
Front Half (area)	967	1,010	914	
Back Half (area)	0	0	0	
RESULTS				**Average**
Front Half (ng)	9.76	10.2	9.22	
Back Half (ng)	0.00	0.00	0.00	
Breakthrough (%)	0.00	0.00	0.00	
Total Mercury (ng)	9.76	10.2	9.2	
Error (%)	-2.45	1.89	-7.79	**-2.78**
Validity	Yes	Yes	Yes	**Yes**

Mid Level Parameters

Trap Spike Level (ng)	250			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OL566873**	**OL566879**	**OL566804**	
Front Half (area)	25,100	22,900	23,900	
Back Half (area)	130	41	37	
RESULTS				**Average**
Front Half (ng)	253	231	241	
Back Half (ng)	1.29	0.407	0.367	
Breakthrough (%)	0.509	0.176	0.152	
Total Mercury (ng)	255	231	241	
Error (%)	1.80	-7.43	-3.41	**-3.01**
Validity	Yes	Yes	Yes	**Yes**

High Level Parameters

Trap Spike Level (ng)	4,000			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OLC099494**	**OLC099672**	**OLC099787**	
Front Half (area)	361,000	372,000	365,000	
Back Half (area)	920	81	48	
RESULTS				**Average**
Front Half (ng)	3642	3753	3682	
Back Half (ng)	9.13	0.804	0.476	
Breakthrough (%)	0.251	0.021	0.013	
Total Mercury (ng)	3651	3754	3683	
Error (%)	-8.73	-6.159	-7.93	**-7.61**
Validity	Yes	Yes	Yes	**Yes**

Bias Test Results (Pass/Fail): Pass

Low Level Parameters

Trap Spike Level (ng)	10			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OL577307**	**OL577399**	**OL577410**	
Front Half (area)	1,750	1,830	1,740	
Back Half (area)	0	61	38	
RESULTS				**Average**
Front Half (ng)	9.67	10.1	9.61	
Back Half (ng)	0.00	0.308	0.192	
Breakthrough (%)	0.00	3.05	2.00	
Total Mercury (ng)	9.67	10.4	9.81	
Error (%)	-3.31	4.19	-1.94	**-0.355**
Validity	Yes	Yes	Yes	

Standard Level (ng)	10			
	Run 1	**Run 2**	**Run 3**	
Area Count	1,790	1,790	1,860	
RESULTS				**Average**
Calculated Value (ng)	9.89	9.89	10.3	**10.0**
Error (%)	-1.10	-1.10	2.77	**0.189**
Validity				**Yes**

High Level Parameters

Trap Spike Level (ng)	1,000			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OL577462**	**OL577495**	**OL577324**	
Front Half (area)	178,000	171,000	171,000	
Back Half (area)	72	34	0	
RESULTS				**Average**
Front Half (ng)	983	945	945	
Back Half (ng)	0.364	0.172	0.00	
Breakthrough (%)	0.037	0.018	0.00	
Total Mercury (ng)	984	945	945	
Error (%)	-1.62	-5.50	-5.52	**-4.21**
Validity	Yes	Yes	Yes	

Standard Level (ng)	1,000			
	Run 1	**Run 2**	**Run 3**	
Area Count	178,000	183,000	177,000	
RESULTS				**Average**
Calculated Value (ng)	983	1011	978	**991**
Error (%)	-1.65	1.11	-2.21	**-0.916**
Validity				**Yes**

Bias Test Results (Pass/Fail): Pass

Low Level Parameters

Trap Spike Level (ng)	10			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OL577307**	**OL577399**	**OL577410**	
Front Half (area)	1,750	1,830	1,740	
Back Half (area)	0	61	38	
RESULTS				**Average**
Front Half (ng)	9.67	10.1	9.61	
Back Half (ng)	0.00	0.308	0.192	
Breakthrough (%)	0.00	3.05	2.00	
Total Mercury (ng)	9.67	10.4	9.81	
Error (%)	-3.31	4.19	-1.94	**-0.355**
Validity	Yes	Yes	Yes	**Yes**

Mid Level Parameters

Trap Spike Level (ng)	100			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OL566788**	**OL566996**	**OL566896**	
Front Half (area)	16,800	16,700	17,200	
Back Half (area)	34	0	0	
RESULTS				**Average**
Front Half (ng)	92.8	92.3	95.0	
Back Half (ng)	0.172	0.00	0.00	
Breakthrough (%)	0.185	0.00	0.00	
Total Mercury (ng)	93.0	92.3	95.0	
Error (%)	-7.01	-7.73	-4.97	**-6.57**
Validity	Yes	Yes	Yes	**Yes**

High Level Parameters

Trap Spike Level (ng)	1,000			
	Run 1	**Run 2**	**Run 3**	
Trap ID	**OL577462**	**OL577495**	**OL577324**	
Front Half (area)	178,000	171,000	171,000	
Back Half (area)	72	34	0	
RESULTS				**Average**
Front Half (ng)	983	945	945	
Back Half (ng)	0.364	0.172	0.00	
Breakthrough (%)	0.037	0.018	0.00	
Total Mercury (ng)	984	945	945	
Error (%)	-1.62	-5.50	-5.52	**-4.21**
Validity	Yes	Yes	Yes	**Yes**

Appendix A.3.6
Fuel Analysis Data

INFORMATION KEPT ON FILE AT FACILITY

Appendix A.4
Sample Chain of Custody

CHAIN OF CUSTODY

CLIENT: Desert View Power Unit 2 PROJECT NUMBER: PROJ-006514 TEST DATE(S): 3/4/2021

LOCATION: Unit 2 SAMPLER(S): PW

SAMPLE LOCATION: Stack PROJECT MANAGER: RD

TEST METHOD(S): EPA 5 DATE DUE: 3/14/2021

OUTSIDE LAB REQUIRED? No COMPLIANCE TEST? Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
3/4/2021		1-PM	Probe/FH Filter	1	PW	
3/4/2021		1-PM	BH Filter/Line/Impingers	1	PW	
3/4/2021		1-PM	Filter	1	PW	
3/4/2021		2-PM	Probe/FH Filter	1	PW	
3/4/2021		2-PM	BH Filter/Line/Impingers	1	PW	
3/4/2021		2-PM	Filter	1	PW	
3/4/2021		3-PM	Probe/FH Filter	1	PW	
3/4/2021		3-PM	BH Filter/Line/Impingers	1	PW	
3/4/2021		3-PM	Filter	1	PW	
3/4/21		RB-Acetone	ACETone	1	RD	
3/4/21		2B-DI H2O	DI WATER	1	RD	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Takuma Takada	3/5/21 2000	Yim-Mei Chu (LAB)	3/5/21 2000

ANALYSIS REQUIRED:

MONTROSE

CHAIN OF CUSTODY

CLIENT: Desert View Power Unit 2* 1 PROJECT NUMBER: PROJ-006514 TEST DATE(S): 3/12/2021

LOCATION: Unit 2* Unit 1 SAMPLER(S): SS

SAMPLE LOCATION: Stack PROJECT MANAGER: RD

TEST METHOD(S): EPA 5 DATE DUE: 3/22/2021

OUTSIDE LAB REQUIRED? No COMPLIANCE TEST? Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
3/12/2021		1-PM	Probe/FH Filter	1	SS	
3/12/2021		1-PM	BH Filter/Line/Impingers	1	SS	
3/12/2021		1-PM	Filter	1	SS	
3/4/2021		2-PM	Probe/FH Filter	1	SS	
3/4/2021		2-PM	BH Filter/Line/Impingers	1	SS	
3/4/2021		2-PM	Filter	1	SS	
3/4/2021		3-PM	Probe/FH Filter	1	SS	
3/4/2021		3-PM	BH Filter/Line/Impingers	1	SS	
3/4/2021		3-PM	Filter	1	SS	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
(LAB)	3/14/21 @ 1015	Yim-Nei Chan (LAB)	3/15/21 @ 9:00am

ANALYSIS REQUIRED: * KC 3/29/21

MONTROSE AIR QUALITY SERVICES

DS834001 - Excel

Appendix A.5
Calibration Data

Barometric Pressure Determination

Date: 03/04/21

Time: 04 Mar 05:52 AM PST

Data By: RD

Reference: http://forecast.weather.gov/MapClick.php?CityName=Orange

Reference Barometer ID	Palm Springs, Jacqueline Cochran Regional Airport (KTRM)
Reference Barometer Location	Lat: 33.62667°NLon: 116.15944°WElev: -125ft.
Reference Barometer Other Info.	04 Mar 05:52 AM PST
Reference Barometer Indication, corrected to sea	30.15
Reference Barometer Reference Elevation	**-125.00**
Reference Barometer Actual Pressure	30.28
	0.00
Test Barometer Location/Site	**0.00**
Location/Site Elevation	**-127**
Location/Site Barometric Pressure	30.28
Sampling Location Height (above/below site elevation	**20**
Sampling Location Barometric Pressure	**30.26**

Barometric Pressure Determination

Date: 03/05/21

Time: 05 Mar 05:35 AM PST

Data By: RD

Reference: https://forecast.weather.gov/MapClick.php?lat=33.6278

Reference Barometer ID	Palm Springs, Regional Airport (KTRM)
Reference Barometer Location	Lat: 33.62667°NLon: 116.15944°WElev: -125ft.
Reference Barometer Other Info.	05 Mar 05:35 AM PST
Reference Barometer Indication, corrected to sea	**30.17**
Reference Barometer Reference Elevation	-125.00
Reference Barometer Actual Pressure	30.30
Test Barometer Location/Site	
Location/Site Elevation	**-127**
Location/Site Barometric Pressure	30.30
Sampling Location Height (above/below site elevation	**20**
Sampling Location Barometric Pressure	**30.28**

Date: 03/08/21

Time: 08 Mar 08:35 AM PST

Data By: RD

Reference: http://forecast.weather.gov/MapClick.php?City

Reference Barometer ID	Palm Springs, Jacqueline Cochran Regional Airport (KTRM)
Reference Barometer Location	Lat: 33.62667°NLon: 116.15944°WElev: -125ft.
Reference Barometer Other Info.	08 Mar 08:35 AM PST
Reference Barometer Indication, corrected to sea level	30.03
Reference Barometer Reference Elevation	**-125**
Reference Barometer Actual Pressure	30.16
	0.00
Test Barometer Location/Site	**0.00**
Location/Site Elevation	**-127**
Location/Site Barometric Pressure	30.16
Sampling Location Height (above/below site elevation)	**20**
Sampling Location Barometric Pressure	**30.14**

Barometric Pressure Determination

Date: 03/10/21

Time: 10 Mar 05:35 AM PST

Data By: RD

Reference: http://forecast.weather.gov/MapClick.php?

Reference Barometer ID	**Palm Springs, Jacqueline Cochran Regional Airport (KTRM)**
Reference Barometer Location	**Lat: 33.62667°NLon: 116.15944°WElev: -125ft.**
Reference Barometer Other Info.	10 Mar 05:35 AM PST
Reference Barometer Indication, corrected to sea level	30.00
Reference Barometer Reference Elevation	**-125**
Reference Barometer Actual Pressure	30.13
Test Barometer Location/Site	
Location/Site Elevation	**-127**
Location/Site Barometric Pressure	30.13
Sampling Location Height (above/below site elevation)	**20**
Sampling Location Barometric Pressure	**30.11**

Barometric Pressure Determination

Date: 03/11/21

Time: 11 Mar 06:52 AM PST

Data By: RD

Reference: https://forecast.weather.gov/MapClick.php?lat=33.6278

Reference Barometer ID	Palm Springs, Regional Airport (KTRM)
Reference Barometer Location	Lat: 33.62667°NLon: 116.15944°WElev: -125ft.
Reference Barometer Other Info.	11 Mar 06:52 AM PST
Reference Barometer Indication, corrected to sea	**30.03**
Reference Barometer Reference Elevation	-125.00
Reference Barometer Actual Pressure	30.16
Test Barometer Location/Site	
Location/Site Elevation	**-127**
Location/Site Barometric Pressure	30.16
Sampling Location Height (above/below site elevation	**20**
Sampling Location Barometric Pressure	**30.14**

Barometric Pressure Determination

Date: 03/12/21

Time: 12 Mar 06:16 AM PST

Data By: RD

Reference: http://forecast.weather.gov/MapClick.php?CityName=O

Reference Barometer ID	Palm Springs, Regional Airport (KTRM)
Reference Barometer Location	Lat: 33.62667°NLon: 116.15944°WElev: -125ft.
Reference Barometer Other Info.	12 Mar 06:16 AM PST
Reference Barometer Indication, corrected to sea	30.11
Reference Barometer Reference Elevation	**-125.00**
Reference Barometer Actual Pressure	30.24
Test Barometer Location/Site	
Location/Site Elevation	**-127**
Location/Site Barometric Pressure	30.24
Sampling Location Height (above/below site elevation	**20**
Sampling Location Barometric Pressure	**30.22**

EPA SPAN GAS RECORD

ENT/LOCATION: Desert View Power DATE: 3/4/2021

BY: DW

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	SA17192		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Span	19.15	18.94				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.01	0.00				--
Error (% of cal span)	-0.1%	0.0%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.15	19.26				--
Error (% of cal span)	0.0%	1.7%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.83	10.56				--
Error (% of cal span)	0.2%	0.0%				PASS
Linearity at Mid Point	0.3%	-0.9%				

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Span	19.15	18.94				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.03	0.06				--
Error (% of cal span)	-0.1%	0.3%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	18.97	18.74				--
Error (% of cal span)	-1.0%	-1.0%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.73	10.29				--
Error (% of cal span)	-0.3%	-1.4%				PASS

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE)/HIGH SPAN * 100%
ALLOWABLE DEVIATION IS 2% OF HIGH SPAN

EPA SPAN GAS RECORD

ENT/LOCATION: Desert View Power

DATE: 3/5/2021

BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	SA17192		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Span	19.15	18.94				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	0.00	0.00				--
Error (% of cal span)	0.0%	0.0%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.15	18.95				--
Error (% of cal span)	0.0%	0.0%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.84	10.39				--
Error (% of cal span)	0.3%	-0.9%				PASS
Linearity at Mid Point	0.3%	-0.9%				

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Span	19.15	18.94				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.01	-0.03				--
Error (% of cal span)	0.0%	-0.2%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	18.86	18.94				--
Error (% of cal span)	-1.5%	0.0%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.67	10.42				--
Error (% of cal span)	-0.6%	-0.7%				PASS

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE)/HIGH SPAN * 100%
ALLOWABLE DEVIATION IS 2% OF HIGH SPAN

SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 2

DATE: 3/4/2021
BY: DW

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0.00		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Range	20	20				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.01	0.00				--
Error (% of scale)	-0.1%	0.0%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.15	19.26				--
Error (% of scale)	0.0%	1.6%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.83	10.56				--
Error (% of scale)	0.2%	0.0%				PASS
Linearity at Mid Point	0.3%	-0.9%				

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Range	20	20				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.03	0.06				--
Error (% of scale)	-0.1%	0.3%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	18.97	18.74				--
Error (% of scale)	-0.9%	-1.0%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.73	10.29				--
Error (% of scale)	-0.3%	-1.4%				PASS
Linearity at Mid Point	0.3%	-0.9%				

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE OF SPAN)/RANGE * 100%
ALLOWABLE DEVIATION IS 2% OF FULL SCALE (2 SQUARES ON STRIPCHART)

EPA SPAN GAS RECORD

ENT/LOCATION: Desert View Power
Unit 2

DATE: 3/4/2021
BY: DW

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0.00		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Span	19.15	18.94				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.01	0.00				--
Error (% of cal span)	-0.1%	0.0%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.15	19.26				--
Error (% of cal span)	0.0%	1.7%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.83	10.56				--
Error (% of cal span)	0.2%	0.0%				PASS
Linearity at Mid Point	0.3%	-0.9%				

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Span	19.15	18.94				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.03	0.06				--
Error (% of cal span)	-0.1%	0.3%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	18.97	18.74				--
Error (% of cal span)	-1.0%	-1.0%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.73	10.29				--
Error (% of cal span)	-0.3%	-1.4%				PASS

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE)/HIGH SPAN * 100%
ALLOWABLE DEVIATION IS 2% OF HIGH SPAN

Montrose
SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 2

DATE: 3/8/2021
BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	99.999		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94
NO_x	DT0029993	41.3	CC244416	87
CO	DT0024950	4.6	ALM046645	9.64

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2	NO_x	CO		
Analyzer Range	20	20	100	10		
Zero Gas Value	0	0	0	0		--
Analyzer Reads	0.00	0.00	0.01	0.00		--
Error (% of scale)	0.0%	0.0%	0.0%	0.0%		PASS
High Gas Value	19.15	18.94	87	9.64		--
Analyzer Reads	19.16	18.92	87.55	9.63		--
Error (% of scale)	0.0%	-0.1%	0.5%	-0.1%		PASS
Mid Gas Value	10.78	10.56	41.3	4.6		--
Analyzer Reads	10.86	10.41	41.56	4.60		--
Error (% of scale)	0.4%	-0.8%	0.3%	0.0%		PASS
Linearity at Mid Point	0.4%	-0.7%	0.0%	0.11%		

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2	NO_x	CO		
Analyzer Range	20	20	100	10		
Zero Gas Value	0	0	0	0		--
Analyzer Reads	-0.01	0.02	0.00	0.00		--
Error (% of scale)	0.0%	0.1%	0.0%	0.0%		PASS
High Gas Value	19.15	18.94	87	9.64		--
Analyzer Reads	19.11	19.05	87.03	9.61		--
Error (% of scale)	-0.2%	0.6%	0.0%	-0.3%		PASS
Mid Gas Value	10.78	10.56	41.3	4.6		--
Analyzer Reads	10.83	10.47	41.34	4.60		--
Error (% of scale)	0.2%	-0.4%	0.0%	0.0%		PASS
Linearity at Mid Point	0.4%	-0.8%	0.0%	0.1%		

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE OF SPAN)/RANGE * 100%
ALLOWABLE DEVIATION IS 2% OF FULL SCALE (2 SQUARES ON STRIPCHART)

NO2 to NO Converter Efficiency Test

				Cylinder #
Analyzer Manufacturer:	CAI	NO Cal Gas Value:	87.0	87
Analyzer Model:	600 Series	NO2 Cal Gas Value:	44.2	CC506464
Analyzer Serial Number:	S03003	Performed By:	DW	
Date:	3/8/2021	CEMS ID#:	3-CEMS	

GAS	ANALYZER MODE	ANALYZER RESPONSE	CAL CORRECTED	LABEL
Zero	NOx	0.0	--	--
Zero	NO	0.0	--	--
NO	NO	87.8	--	--
NO	NOx	87.5	--	--
NO2	NO	0.1	0.1	C_1
NO2	NOx	42.5	42.3	C_2

		Label	Requirement
Abs. Value C_o-C_1:	44.1	D_1	--
Abs. Value C_2-C_1:	42.2	D_2	--
C_1/C_2	0%	D_3	< 5%
CE = D_2/D_1 * 100%:	95.7%	--	> 90%

Montrose

EPA SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 2

DATE: 3/8/2021
BY: DW

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94
NO_x	DT0029993	41.3	CC244416	87
CO	DT0024950	4.6	ALM046645	9.64

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2	NO_x	CO		
Analyzer Span	19.15	18.94	87	9.64		
Zero Gas Value	0	0	0	0		--
Analyzer Reads	-0.002	-0.001	0.014	-0.001		--
Error (% of cal span)	0.0%	0.0%	0.0%	0.0%		PASS
High Gas Value	19.15	18.94	87	9.64		--
Analyzer Reads	19.158	18.924	87.547	9.627		--
Error (% of cal span)	0.0%	-0.1%	0.6%	-0.1%		PASS
Mid Gas Value	10.78	10.56	41.3	4.6		--
Analyzer Reads	10.857	10.41	41.555	4.604		--
Error (% of cal span)	0.4%	-0.8%	0.3%	0.0%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2	NO_x	CO		
Analyzer Span	19.15	18.94	87	9.64		
Zero Gas Value	0	0	0	0		--
Analyzer Reads	-0.007	0.023	0.002	0.002		--
Error (% of cal span)	0.0%	0.1%	0.0%	0.0%		PASS
High Gas Value	19.15	18.94	87	9.64		--
Analyzer Reads	19.114	19.051	87.03	9.609		--
Error (% of cal span)	-0.2%	0.6%	0.0%	-0.3%		PASS
Mid Gas Value	10.78	10.56	41.3	4.6		--
Analyzer Reads	10.829	10.474	41.342	4.596		--
Error (% of cal span)	0.3%	-0.5%	0.0%	0.0%		PASS

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE)/HIGH SPAN * 100%
ALLOWABLE DEVIATION IS 2% OF HIGH SPAN

NO2 to NO Converter Efficiency Test

			Cylinder #
Analyzer Manufacturer:	CAI	NO Cal Gas Value: 87.0	CC244416
Analyzer Model:	600 Series	NO2 Cal Gas Value: 44.2	CC506464
Analyzer Serial Number:	D05005	Performed By: DW	
Date:	3/10/2021	CEMS ID#: 3-CEMS	

GAS	ANALYZER MODE	ANALYZER RESPONSE	CAL CORRECTED	LABEL
Zero	NOx	0.0	--	--
Zero	NO	0.0	--	--
NO	NO	87.8	--	--
NO	NOx	87.5	--	--
NO2	NO	0.1	0.1	C_1
NO2	NOx	42.6	42.3	C_2

		Label	Requirement
Abs. Value C_o-C_1:	44.1	D_1	--
Abs. Value C_2-C_1:	42.2	D_2	--
C_1/C_2	0%	D_3	< 5%
CE = D_2/D_1 * 100%:	95.8%	--	> 90%

Montrose AQS
SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 1

DATE: 3/10/2021
BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94
NO_x	DT0029993	41.3	CC244416	87
CO	DT0024950	4.6	ALM046645	9.64

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2	NO_x	CO		
Analyzer Range	20	20	100	10		
Zero Gas Value	0	0	0	0		--
Analyzer Reads	0.01	0.01	0.02	0.01		--
Error (% of scale)	0.0%	0.0%	0.0%	0.1%		PASS
High Gas Value	19.15	18.94	87	9.64		--
Analyzer Reads	19.19	18.97	87.48	9.63		--
Error (% of scale)	0.2%	0.2%	0.5%	-0.1%		PASS
Mid Gas Value	10.78	10.56	41.3	4.6		--
Analyzer Reads	10.87	10.43	41.49	4.61		--
Error (% of scale)	0.4%	-0.7%	0.2%	0.1%		PASS
Linearity at Mid Point	0.3%	-0.8%	0.0%	0.10%		

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2	NO_x	CO		
Analyzer Range	20	20	100	10		
Zero Gas Value	0	0	0	0		--
Analyzer Reads	0.005	0.03	0.017	0.013		--
Error (% of scale)	0.0%	0.2%	0.0%	0.1%		PASS
High Gas Value	19.15	18.94	87	9.64		--
Analyzer Reads	19.188	18.947	87.173	9.658		--
Error (% of scale)	0.2%	0.0%	0.2%	0.2%		PASS
Mid Gas Value	10.78	10.56	41.3	4.6		--
Analyzer Reads	10.869	10.609	41.309	4.606		--
Error (% of scale)	0.4%	0.2%	0.0%	0.1%		PASS
Linearity at Mid Point	0.3%	0.2%	-0.1%	-0.1%		

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE OF SPAN)/RANGE * 100%
ALLOWABLE DEVIATION IS 2% OF FULL SCALE (2 SQUARES ON STRIPCHART)

Montrose AQS
EPA SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power

DATE: 3/10/2021
BY: DW

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94
NO_x	DT0029993	41.3	CC244416	87
CO	DT0024950	4.6	ALM046645	9.64

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2	NO_x	CO		
Analyzer Span	19.15	18.94	87	9.64		
Zero Gas Value	0	0	0	0		--
Analyzer Reads	0.005	0.009	0.016	0.005		--
Error (% of cal span)	0.0%	0.0%	0.0%	0.1%		PASS
High Gas Value	19.15	18.94	87	9.64		--
Analyzer Reads	19.191	18.973	87.478	9.634		--
Error (% of cal span)	0.2%	0.2%	0.5%	-0.1%		PASS
Mid Gas Value	10.78	10.56	41.3	4.6		--
Analyzer Reads	10.869	10.425	41.494	4.61		--
Error (% of cal span)	0.5%	-0.7%	0.2%	0.1%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2	NO_x	CO		
Analyzer Span	19.15	18.94	87	9.64		
Zero Gas Value	0	0	0	0		--
Analyzer Reads	0.005	0.03	0.017	0.013		--
Error (% of cal span)	0.0%	0.2%	0.0%	0.1%		PASS
High Gas Value	19.15	18.94	87	9.64		--
Analyzer Reads	19.188	18.947	87.173	9.658		--
Error (% of cal span)	0.2%	0.0%	0.2%	0.2%		PASS
Mid Gas Value	10.78	10.56	41.3	4.6		--
Analyzer Reads	10.869	10.609	41.309	4.606		--
Error (% of cal span)	0.5%	0.3%	0.0%	0.1%		PASS

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE)/HIGH SPAN * 100%
ALLOWABLE DEVIATION IS 2% OF HIGH SPAN

EPA SPAN GAS RECORD

ENT/LOCATION: Desert View Power DATE: 3/11/2021

BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	SA17192		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Span	19.15	18.94				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.02	-0.02				--
Error (% of cal span)	-0.1%	-0.1%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.16	18.97				--
Error (% of cal span)	0.0%	0.2%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.84	10.42				--
Error (% of cal span)	0.3%	-0.8%				PASS
Linearity at Mid Point	0.3%	-0.8%				

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Span	19.15	18.94				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.02	-0.01				--
Error (% of cal span)	-0.1%	-0.1%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.17	19.00				--
Error (% of cal span)	0.1%	0.3%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.85	10.42				--
Error (% of cal span)	0.4%	-0.8%				PASS

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE)/HIGH SPAN * 100%
ALLOWABLE DEVIATION IS 2% OF HIGH SPAN

SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 2

DATE: 3/11/2021
BY: DW

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0.00		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					
	O_2	CO_2				STATUS
Analyzer Range	20	20				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	0.00	0.00				--
Error (% of scale)	0.0%	0.0%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.15	18.95				--
Error (% of scale)	0.0%	0.0%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.84	10.42				--
Error (% of scale)	0.3%	-0.7%				PASS
Linearity at Mid Point	0.3%	-0.7%				

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					
	O_2	CO_2				STATUS
Analyzer Range	20	20				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.02	-0.02				--
Error (% of scale)	-0.1%	-0.1%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.09	18.86				--
Error (% of scale)	-0.3%	-0.4%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.81	10.36				--
Error (% of scale)	0.1%	-1.0%				PASS
Linearity at Mid Point	0.3%	-0.7%				

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE OF SPAN)/RANGE * 100%
ALLOWABLE DEVIATION IS 2% OF FULL SCALE (2 SQUARES ON STRIPCHART)

SPAN GAS RECORD

CLIENT/LOCATION: Desert View Power
Unit 1

DATE: 3/12/2021
BY: RD

	MID SPAN CYLINDER		HIGH SPAN CYLINDER	
	CYLINDER NO.	CONCENTRATION	CYLINDER NO.	CONCENTRATION
ZERO	SA17192	0.00		
O_2	DT0016473	10.78	DT0011386	19.15
CO_2	DT0016473	10.56	DT0011386	18.94

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Range	20	20				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	0.00	0.01				--
Error (% of scale)	0.0%	0.0%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.18	18.97				--
Error (% of scale)	0.1%	0.1%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.86	10.43				--
Error (% of scale)	0.4%	-0.6%				PASS
Linearity at Mid Point	0.3%	-0.7%				

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O_2	CO_2				
Analyzer Range	20	20				
Zero Gas Value	0.0	0.0				--
Analyzer Reads	-0.03	0.04				--
Error (% of scale)	-0.1%	0.2%				PASS
High Gas Value	19.15	18.94				--
Analyzer Reads	19.14	19.00				--
Error (% of scale)	-0.1%	0.3%				PASS
Mid Gas Value	10.78	10.56				--
Analyzer Reads	10.83	10.43				--
Error (% of scale)	0.2%	-0.7%				PASS
Linearity at Mid Point	0.3%	-0.9%				

% ERROR CALCULATION:
(AS FOUND - ACTUAL VALUE OF SPAN)/RANGE * 100%
ALLOWABLE DEVIATION IS 2% OF FULL SCALE (2 SQUARES ON STRIPCHART)

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Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles, CA 90058
Tel: 323-585-2154
Fax: 714-542-6689

MONTROSE

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705
Customer PO Number: **79541336**

Certificate Issuance Date: **12/16/2020**
Certification Date: **12/16/2020**
Lot Number: **N70086034701**
Part Number: **NI 5.5CE-AS**
DocNumber: **296082**

CERTIFICATE OF ANALYSIS

Nitrogen, 5.5 Continuous Emission Monitoring Zero

Analytes	Specification	Analytical Results	Analytical Reference	Analytical Uncertainty
Nitrogen	**≥ 99.9995 %**	**≥ 99.9995 %**	**4**	**N/A**
Carbon Dioxide	**≤ 1 ppm**	**≤ 0.1 ppm**	**2**	**± 10%**
Carbon Monoxide	**≤ 0.5 ppm**	**≤ 0.1 ppm**	**2**	**± 15%**
Total Hydrocarbons	**≤ 0.1 ppm**	**≤ 0.1 ppm**	**5**	**± 15%**
Oxides of Nitrogen	**≤ 0.1 ppm**	**≤ 0.1 ppm**	**7**	**± 15%**
Oxygen	**≤ 0.5 ppm**	**≤ 0.5 ppm**	**6**	**± 15%**
Sulfur Dioxide	**≤ 0.1 ppm**	**≤ 0.1 ppm**	**1**	**± 15%**
Water	**≤ 2 ppm**	**≤ 0.6 ppm**	**3**	**± 10%**

Cylinder Style: **AS**
Cylinder Pressure @ 70 F: **2000 psig**
Cylinder Volume: **141 ft3**
Valve Outlet Connection: **CGA 580**
Fill Date: **12/12/2020**
Analysis Date: **12/15/2020**
Filling Method: **Pressure/Temperature**
Cylinder Number(s): **CC248864, CC248794, SA17192, CC257756, CC168269, SA3289, CC702520, CC167659, CC243762, CC110424, SA6076**
Analyzed Cylinder Number(s): **CC248864**

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	Horiba Instruments Inc. GA-360E - NDIR
3	Meeco Aquavolt PLUS - Specific Water Analyzer
4	N/A - By Difference of Typical Impurities
5	Rosemount/Beckman 400A - FID Total Hydrocarbon Analyzer
6	Servomex DF310E SN# PT-25457-V6 - Electrolytic Cell/Electrochemical
7	Thermo Electron 42i-LS S/N 1030645077 - Chemiluminescence

LO 12-21-2020

This analysis of the product described herein was prepared by Praxair Distribution, Inc. using instruments whose calibration is certified using Praxair Distribution, 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 (e.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 Praxair Distribution, 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 Praxair Distribution, Inc. arising out of the use of the information contained herein exceed the fee established for providing such information.

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MONTROSE

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705

Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22020

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Certificate Issuance Date: 08/10/2020
Praxair Order Number: 71393969
Part Number: NI CD10.5O6E-AS
Customer PO Number: 79385953

Fill Date: 08/04/2020
Lot Number: 70086021701
Cylinder Style & Outlet: AS CGA 590
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	08/10/2028	NIST Traceable
Cylinder Number:	DT0016473	Expanded Uncertainty
10.56 %	**Carbon dioxide**	**± 0.5 %**
10.78 %	**Oxygen**	**± 0.4 %**
Balance	**Nitrogen**	

Certification Information:

Certification Date: 08/10/2020 *Term:* 96 Months *Expiration Date:* 08/10/2028

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1.

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: 10.5 %
Certified Concentration: 10.56 %
Instrument Used: Horiba VIA-510 S/N 20C194WK
Analytical Method: NDIR
Last Multipoint Calibration: 07/23/2020

Reference Standard: Type / Cylinder #: GMIS / CC134179
Concentration / Uncertainty: 16.02 % ±0.286%
Expiration Date: 07/10/2022
Traceable to: SRM # / Sample # / Cylinder #: SRM 1675b / 6-F-51 / CAL014538
SRM Concentration / Uncertainty: 13.963% / ±0.034%
SRM Expiration Date: 05/16/2022

First Analysis Data:						Date	08/10/2020
Z:	0	R:	16.02	C:	10.56	Conc:	10.56
R:	16.02	Z:	0	C:	10.56	Conc:	10.56
Z:	0	C:	10.58	R:	16.04	Conc:	10.58
UOM:	%			Mean Test Assay:			10.56 %

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: 10.5 %
Certified Concentration: 10.78 %
Instrument Used: OXYMAT 5E
Analytical Method: Paramagnetic
Last Multipoint Calibration: 07/23/2020

Reference Standard: Type / Cylinder #: NTRM / DT0010287
Concentration / Uncertainty: 9.875 % ±0.4%
Expiration Date: 11/18/2022
Traceable to: SRM # / Sample # / Cylinder #: NTRM / 170701 / NTRM DT0010287
SRM Concentration / Uncertainty: 9.875% / ±0.040%
SRM Expiration Date: 11/18/2022

First Analysis Data:						Date	08/10/2020
Z:	0	R:	9.88	C:	10.8	Conc:	10.79
R:	9.88	Z:	0	C:	10.8	Conc:	10.79
Z:	0	C:	10.78	R:	9.89	Conc:	10.77
UOM:	%			Mean Test Assay:			10.78 %

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: Jenna Lopez

O2 10.78
CO2 10.56
DT0016473
EXP. 8/10/2028

LO 11/12/2020

F22020

This document is prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that the information is accurate within the limits of the analytical methods employed and 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 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 the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.

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5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22019

MONTROSE AIR QUALITY SERVICES

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

1631 E. St Andrew Pl.
Santa Ana, CA 92705

Certificate Issuance Date: 11/14/2019
Praxair Order Number: 90362737
Part Number: NI CD19O2E-AS
Customer PO Number: VERBAL MIKE

Fill Date: 11/11/2019
Lot Number 70086931505
Cylinder Style & Outlet: AS CGA 590
Cylinder Pressure and Volume: 2000 psig 156 ft3

O2 19.15
CO2 18.94
DT0011386
Exp 11/15/27
F22019

Certified Concentration

Expiration Date:	11/15/2027	NIST Traceable
Cylinder Number:	DT0011386	Expanded Uncertainty
18.94 %	Carbon dioxide	± 0.5 %
19.15 %	Oxygen	± 0.1 %
Balance	Nitrogen	

ProSpec EZ Cert

Certification Information: *Certification Date:* 11/15/2019 *Term:* 96 Months *Expiration Date:* 11/15/2027

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1.
Do Not Use this cylinder 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:

(Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. *Component:* Carbon Dioxide

Requested Concentration: 19 %
Certified Concentration: 18.94 %
Instrument Used: Horiba VIA-510 S/N 20C194WK
Analytical Method: NDIR
Last Multipoint Calibration: 10/21/2019

First Analysis Data:					Date	11/15/2019
Z: 0	R: 19.98	C: 18.94	Conc: 18.94			
R: 19.98	Z: 0	C: 18.94	Conc: 18.94			
Z: 0	C: 18.96	R: 19.99	Conc: 18.96			
UOM: %		Mean Test Assay:	18.94 %			

Reference Standard: Type / Cylinder #: GMIS / CC149981
Concentration / Uncertainty: 19.98 % ±0.279%
Expiration Date: 06/07/2026
Traceable to: SRM # / Sample # / Cylinder #: RGM#CC28033 / N/A / RGM#CC28033
SRM Concentration / Uncertainty: 19.67% / ±0.04%
SRM Expiration Date: 07/15/2021

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: 19.15 %
Instrument Used: OXYMAT 5E
Analytical Method: Paramagnetic
Last Multipoint Calibration: 10/21/2019

First Analysis Data:					Date	11/15/2019
Z: 0	R: 20.88	C: 19.15	Conc: 19.13			
R: 20.88	Z: 0	C: 19.17	Conc: 19.15			
Z: 0	C: 19.17	R: 20.9	Conc: 19.15			
UOM: %		Mean Test Assay:	19.15 %			

Reference Standard: Type / Cylinder #: GMIS / CC506521
Concentration / Uncertainty: 20.87 % ±0.108%
Expiration Date: 12/14/2026
Traceable to: SRM # / Sample # / Cylinder #: SRM 2659a / 71-E-19 / FF22331
SRM Concentration / Uncertainty: 20.863% / ±0.021%
SRM Expiration Date: 08/23/2021

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: Jenna Lackman

CR
12/16/19

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that 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 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 the liability of Praxair Distribution, Inc. arising out of the use of the information contained herein exceed the fee established for providing such information.

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Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22019

MONTROSE

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Montrose Air Quality Services, LLC
631 E. St. Andrew Pl.
Santa Ana, CA 92705

Certificate Issuance Date: 08/06/2019
Praxair Order Number: 82720155
Part Number: NI NO42ME-AS

Fill Date: 07/25/2019
Lot Number: 70088920808
Cylinder Style & Outlet: AS CGA 660
Cylinder Pressure and Volume: 2000 psig 140 ft3

NOx 41.3
DT0029993
EXP. 8.6.2022
I 22019

Certified Concentration

ProSpec EZ Cert

Expiration Date:	08/06/2022	NIST Traceable
Cylinder Number:	DT0029993	Expanded Uncertainty
41.2 ppm	Nitric oxide	± 0.9 %
Balance	Nitrogen	

For Reference Only: *NOx 41.3 ppm*

Certification Information: *Certification Date:* 08/06/2019 *Term:* 36 Months *Expiration Date:* 08/06/2022

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1.
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:*** **Nitric oxide**

Requested Concentration: 42 ppm
Certified Concentration: 41.2 ppm
Instrument Used: Thermo Electron 42i-LS S/N 1030645077
Analytical Method: Chemiluminescence
Last Multipoint Calibration: 07/12/2019

Reference Standard: Type / Cylinder #: NTRM / CC506118
Concentration / Uncertainty: 49.23 ppm ±0.853%
Expiration Date: 07/18/2022
Traceable to: SRM # / Sample # / Cylinder #: NTRM#CC506118 / 18070107 / CC506118
SRM Concentration / Uncertainty: 49.23 ppm / ±0.42 ppm
SRM Expiration Date: 07/18/2022

First Analysis Data:						Date	07/30/2019
Z:	0	R:	49.2	C:	41.1	Conc:	41.2
R:	49.2	Z:	0	C:	40.9	Conc:	41
Z:	0	C:	41	R:	49.1	Conc:	41.1
UOM:	ppm			Mean Test Assay:			41.1 ppm

Second Analysis Data:						Date	08/06/2019
Z:	0	R:	49.2	C:	41.2	Conc:	41.3
R:	49.2	Z:	0	C:	41.4	Conc:	41.5
Z:	0	C:	41.3	R:	49.1	Conc:	41.4
UOM:	ppm			Mean Test Assay:			41.4 ppm

Analyzed By: Henry Koung

Certified By: Leeanna Flores

LO 8.16.19

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that 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 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 the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.

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MONTROSE AIR QUALITY SERVICES

1631 E. St Andrew Pl.
Santa Ana, CA 92705

1631 E ST ANDREWS PLACE
SANTA ANA CA 92705

Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22018

E OF ANALYSIS / EPA PROTOCOL GAS

Certificate Modification Date: 11/29/2018
Praxair Order Number: 70789714
Part Number: NI CO9.5ME-AS

Fill Date: 11/15/2018
Lot Number: 70086831902
Cylinder Style & Outlet: AS CGA 350
Cylinder Pressure and Volume: 2000 psig 140 ft3

CO 9.64
ALM-046645
Exp 11/20/26
F 22018

Certified Concentration

Expiration Date:		**11/20/2026**	NIST Traceable
Cylinder Number:		**ALM-046645**	Expanded Uncertainty
9.64 ppm	**Carbon monoxide**		**± 0.5 %**
Balance	**Nitrogen**		

ProSpec EZ Cert

Certification Information: *Certification Date:* 11/20/2018 *Term:* 96 Months *Expiration Date:* 11/20/2026

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1.

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: 9.64 ppm
Instrument Used: MKS Multigas 2031 FTIR
Analytical Method: FTIR
Last Multipoint Calibration: 11/19/2018

Reference Standard: Type / Cylinder #: GMIS / CC28034
Concentration / Uncertainty: 9.920 ppm ±0.596%
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**	11/20/2018
Z:	0	**R:**	9.536	**C:**	9.263	**Conc:**	9.63
R:	9.538	**Z:**	0	**C:**	9.259	**Conc:**	9.63
Z:	0	**C:**	9.273	**R:**	9.539	**Conc:**	9.64
UOM:	ppm				**Mean Test Assay:**		9.64 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 **Danielle Burns**

Certified By **Jose Vasquez**

CR
10/23/19

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that 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 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 the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.

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DocNumber: 394206

MONTROSE

Montrose Air Quality Services, LLC
531 E. St. Andrew Pl.
Santa Ana, CA 92705

Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22021

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Certificate Issuance Date: 02/20/2021 — *Fill Date:* 02/15/2021
Praxair Order Number: 35007608 — *Lot Number:* 70086104603
Part Number: NI CO4.7ME-AS — *Cylinder Style & Outlet:* AS — CGA 350
Customer PO Number: VERBAL; LUIS — *Cylinder Pressure and Volume:* 2000 psig — 140 ft3

CO 4.60 PPM
Exp: 2/20/29
DT0024950
F22021

Certified Concentration

Expiration Date:	02/20/2029	NIST Traceable
Cylinder Number:	DT0024950	Expanded Uncertainty
4.60 ppm	Carbon monoxide	± 0.04 ppm
Balance	Nitrogen	

ProSpec EZ Cert

Certification Information: *Certification Date:* 02/20/2021 *Term:* 96 Months *Expiration Date:* 02/20/2029

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: 4.60 ppm
Instrument Used: Horiba VIA-510 S/N 43827990042
Analytical Method: NDIR
Last Multipoint Calibration: 01/29/2021

Reference Standard: Type / Cylinder #: GMIS / CC707274
Concentration / Uncertainty: 9.914 ppm ±0.050 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	02/20/2021
Z:	0	R:	95.5	C:	44.2	Conc:	4.59
R:	95.5	Z:	0	C:	44.4	Conc:	4.61
Z:	0	C:	44.3	R:	95.6	Conc:	4.6
UOM:	ppm					Mean Test Assay:	4.6 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: Jose Vasquez

Certified By: Amelia Real

PW 2/26/21

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that 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 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 the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.

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DocNumber: 341723

Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22021

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

MONTROSE AIR QUALITY SERVICES

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705

Certificate Issuance Date: 01/29/2021
Praxair Order Number: 71560640
Part Number: NI NO85ME-AS
Customer PO Number: 79556791

Fill Date: 01/18/2021
Lot Number: 70086101808
Cylinder Style & Outlet: AS CGA 660
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	01/29/2029	NIST Traceable
Cylinder Number:	CC244416	Expanded Uncertainty
86.9 ppm	Nitric oxide	± 0.6 ppm
Balance	Nitrogen	

For Reference Only: *NOx 87.0 ppm*

Certification Information: *Certification Date:* 01/29/2021 *Term:* 96 Months *Expiration Date:* 01/29/2029

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:*** **Nitric oxide**

Requested Concentration: 85 ppm
Certified Concentration: 86.9 ppm
Instrument Used: Thermo Electron 42i S/N 0726024326
Analytical Method: Chemiluminescence
Last Multipoint Calibration: 01/08/2021

Reference Standard: Type / Cylinder #: GMIS / CC703092
Concentration / Uncertainty: 97.0 ppm ±0.5 ppm
Expiration Date: 01/15/2028
Traceable to: SRM # / Sample # / Cylinder #: 1684b / 44-T-89 / FF9260
SRM Concentration / Uncertainty: 99.75 ppm / ±0.50 ppm
SRM Expiration Date: 01/25/2020

First Analysis Data:						Date	01/22/2021
Z: 0	R: 97	C: 86.8	Conc: 86.8				
R: 97	Z: 0	C: 86.8	Conc: 86.8				
Z: 0	C: 86.7	R: 97	Conc: 86.7				
UOM: ppm			Mean Test Assay:	86.8	ppm		

Second Analysis Data:						Date	01/29/2021
Z: 0	R: 97	C: 86.8	Conc: 86.8				
R: 97	Z: 0	C: 87	Conc: 87				
Z: 0	C: 87	R: 97	Conc: 87				
UOM: ppm			Mean Test Assay:	86.9	ppm		

Analyzed By: Nelson Ma

Certified By: Quinn Halles

NOX 87.0
CC244416
EXP. 1-29-2029
F22021

Lo 2/15/2021

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DocNumber: 315289

MONTROSE

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705

Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22020

OF ANALYSIS / EPA PROTOCOL GAS

Certificate Issuance Date: 10/16/2020 — *Fill Date:* 10/05/2020
Praxair Order Number: 71450583 — *Lot Number:* 70086027908
Part Number: Al NX45MZ1E-AS — *Cylinder Style & Outlet:* AS — CGA 660
Customer PO Number: 79444011 — *Cylinder Pressure and Volume:* 2000 psig — 140 ft3

NO2 44.2
CC506464
EXP. 10/16/2021
F22020

Certified Concentration

Expiration Date:	**10/16/2021**	NIST Traceable
Cylinder Number:	**CC506464**	Expanded Uncertainty
44.2 ppm	**Nitrogen dioxide (as NOx)**	**± 1.6 %**
Balance	**Air**	

ProSpec EZ Cert

For Reference Only: *HNO3 0.74 ppm*

Certification Information: *Certification Date:* 10/16/2020 *Term:* 12 Months *Expiration Date:* 10/16/2021

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 relative 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.

The above certified concentration of Total Oxides of Nitrogen (NOx) excludes HNO3.

Analytical Data: *(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)*

1. ***Component:*** **Nitrogen dioxide (as NOx)**

Requested Concentration: 45 ppm
Certified Concentration: 44.2 ppm
Instrument Used: MKS Multigas 2031 FTIR
Analytical Method: FTIR
Last Multipoint Calibration: 09/18/2020

Reference Standard: Type / Cylinder #: GMIS / GN0009634
Concentration / Uncertainty: 51.63 ppm ±1%
Expiration Date: 07/20/2021
Traceable to: SRM # / Sample # / Cylinder #: PRM#D791124 / N/A / PRM#D791124
SRM Concentration / Uncertainty: 50.0 ppm / ±0.5 ppm
SRM Expiration Date: 12/30/2020

First Analysis Data:						**Date**	10/12/2020
Z:	0	R:	51.5	C:	44.3	**Conc:**	44.5
R:	51.2	Z:	0	C:	43.9	**Conc:**	44.1
Z:	0	C:	44.1	R:	51.3	**Conc:**	44.3
UOM:	ppm				**Mean Test Assay:**		44.3 ppm

Second Analysis Data:						**Date**	10/16/2020
Z:	0	R:	51.2	C:	43.9	**Conc:**	44.1
R:	51.4	Z:	0	C:	44	**Conc:**	44.2
Z:	0	C:	44	R:	51.4	**Conc:**	44.2
UOM:	ppm				**Mean Test Assay:**		44.1 ppm

Analyzed By — Leeanna Flores

Certified By — Henry Koung

Lo 10/27/20

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SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: C:\Users\dwonderly\Information\Calibrations\Dry Gas Meters\1-P&M\2021\[1P&M Semi Annual Cal 2-28-2021.xls]WCS
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

Model #:
ID #: 1 P&M
Date: 2/28/2021
Bar. Pressure: 30.16 (in. Hg)
Performed By: L.Olivares
Meter Serial #: 8520465.00

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS			Ambient Temperature		
					Initial Temps.		Final Temps.							
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.12	26.00	416.600	421.770	5.170	68.0	67.0	69.0	67.0	33	0.1552	18.0	65.0	65.0	65.0
0.12	26.00	421.770	426.945	5.175	69.0	67.0	69.0	67.0	33	0.1552	18.0	65.0	65.0	65.0
0.12	26.00	426.945	432.118	5.173	69.0	67.0	70.0	68.0	33	0.1552	18.0	65.0	65.0	65.0
0.60	12.00	400.500	405.660	5.160	73.0	67.0	74.0	68.0	48	0.3346	19.0	65.0	65.0	65.0
0.60	12.00	405.660	410.825	5.165	74.0	68.0	74.0	68.0	48	0.3346	19.0	65.0	65.0	65.0
0.60	12.00	410.825	415.992	5.167	74.0	68.0	75.0	68.0	48	0.3346	19.0	65.0	65.0	65.0
1.90	7.00	375.900	381.250	5.350	77.0	65.0	77.0	66.0	63	0.5918	14.0	64.0	64.0	64.0
1.90	7.00	381.250	386.605	5.355	77.0	66.0	78.0	66.0	63	0.5918	14.0	64.0	64.0	64.0
1.90	7.00	386.605	391.958	5.353	78.0	66.0	79.0	66.0	63	0.5918	14.0	64.0	64.0	64.0
3.20	5.00	363.400	368.460	5.060	73.0	64.0	76.0	64.0	73	0.7681	13.0	64.0	64.0	64.0
3.20	5.00	368.460	373.510	5.050	76.0	64.0	78.0	65.0	73	0.7681	13.0	64.0	64.0	64.0
3.20	5.00	373.510	378.562	5.052	78.0	65.0	80.0	66.0	73	0.7681	13.0	64.0	64.0	64.0

DRY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
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)	Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.213	147.6	5.310	150.4	5.240	1.019	1.634	**Pass**			
5.216	147.7	5.310	150.4	5.240	1.018	1.634	**Pass**			
5.209	147.5	5.310	150.4	5.240	1.019	1.633	**Pass**			
				Average	**1.019**	**1.634**		**Pass**	**Pass**	**Pass**
5.182	146.8	5.285	149.7	5.215	1.020	1.756	**Pass**			
5.183	146.8	5.285	149.7	5.215	1.020	1.754	**Pass**			
5.182	146.8	5.285	149.7	5.215	1.020	1.754	**Pass**			
				Average	**1.020**	**1.755**		**Pass**	**Pass**	**Pass**
5.383	152.4	5.458	154.6	5.375	1.014	1.781	**Pass**			
5.383	152.4	5.458	154.6	5.375	1.014	1.779	**Pass**			
5.375	152.2	5.458	154.6	5.375	1.015	1.779	**Pass**			
				Average	**1.014**	**1.780**		**Pass**	**Pass**	**Pass**
5.126	145.2	5.060	143.3	4.984	0.987	1.785	**Pass**			
5.102	144.5	5.060	143.3	4.984	0.992	1.783	**Pass**			
5.089	144.1	5.060	143.3	4.984	0.994	1.780	**Pass**			
				Average	**0.991**	**1.783**		**Pass**	**Pass**	**Pass**

Average Yd: 1.011 **dH@: 1.738**

Q @ dH = 1: 0.569

SIGNED: Signature on File

Date: 2/28/2021

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: C:\Users\dwonderly\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\04Q0SUOW\[30WCS Semi Annual Cal 1
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

ID #: C-5000
Date: 30-WCS
Bar. Pressure: 1/13/2021
Performed By: 30.25 (in. Hg)
Meter Serial #: L.Olivares

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
					Initial Temps.		Final Temps.					Ambient Temperature		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.14	26.00	683.600	689.002	5.402	70.0	67.0	71.0	67.0	33	0.1552	16.0	60.0	60.0	60.0
0.14	26.00	689.002	694.406	5.404	71.0	67.0	72.0	68.0	33	0.1552	16.0	60.0	60.0	60.0
0.14	26.00	694.406	699.825	5.419	72.0	68.0	74.0	68.0	33	0.1552	16.0	60.0	60.0	60.0
0.61	12.00	667.200	672.520	5.320	70.0	65.0	70.0	66.0	48	0.3346	17.0	59.0	59.0	59.0
0.61	12.00	672.520	677.860	5.340	70.0	66.0	70.0	67.0	48	0.3346	17.0	59.0	59.0	59.0
0.61	12.00	677.860	683.195	5.335	70.0	67.0	70.0	67.0	48	0.3346	17.0	59.0	59.0	59.0
1.90	7.00	649.600	655.105	5.505	69.0	64.0	71.0	64.0	63	0.5918	14.0	59.0	59.0	59.0
1.90	7.00	655.105	660.619	5.514	71.0	64.0	72.0	65.0	63	0.5918	14.0	59.0	59.0	59.0
1.90	7.00	660.619	666.121	5.502	72.0	65.0	72.0	65.0	63	0.5918	14.0	59.0	59.0	59.0
3.30	5.00	632.000	637.066	5.066	65.0	61.0	69.0	62.0	73	0.7681	11.0	60.0	60.0	60.0
3.30	5.00	637.066	642.148	5.082	69.0	62.0	72.0	63.0	73	0.7681	11.0	60.0	60.0	60.0
3.30	5.00	642.148	647.248	5.100	72.0	63.0	72.0	63.0	73	0.7681	11.0	60.0	60.0	60.0

RY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
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)	Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.454	154.4	5.351	151.6	5.215	0.981	1.883	**Pass**			
5.448	154.3	5.351	151.6	5.215	0.982	1.881	**Pass**			
5.453	154.4	5.351	151.6	5.215	0.981	1.879	**Pass**			
				Average	**0.982**	**1.881**		**Pass**	**Pass**	**Pass**
5.387	152.6	5.331	151.0	5.185	0.990	1.766	**Pass**			
5.402	153.0	5.331	151.0	5.185	0.987	1.763	**Pass**			
5.395	152.8	5.331	151.0	5.185	0.988	1.761	**Pass**			
				Average	**0.988**	**1.763**		**Pass**	**Pass**	**Pass**
5.600	158.6	5.500	155.8	5.350	0.982	1.763	**Pass**			
5.598	158.5	5.500	155.8	5.350	0.982	1.762	**Pass**			
5.581	158.0	5.500	155.8	5.350	0.986	1.760	**Pass**			
				Average	**0.983**	**1.762**		**Pass**	**Pass**	**Pass**
5.198	147.2	5.095	144.3	4.965	0.980	1.830	**Pass**			
5.192	147.0	5.095	144.3	4.965	0.981	1.827	**Pass**			
5.200	147.3	5.095	144.3	4.965	0.980	1.825	**Pass**			
				Average	**0.980**	**1.827**		**Pass**	**Pass**	**Pass**

Average Yd: 0.983 **dH@: 1.808**

Q @ dH = 1: 0.558

SIGNED: Signature on File

Date: 1/13/2021

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: C:\Users\dwonderly\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\04Q0SUOW\[23-WCS Semi Annual Cal
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

C-5000
ID #: 23-WCS
Date: 1/20/2021
Bar. Pressure: 29.96 (in. Hg)
Performed By: L.Olivares
Meter Serial #:

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS			Ambient Temperature		
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)	Initial (deg F)	Final (deg F)	Average (deg F)
0.13	26.00	592.200	597.529	5.329	76.0	75.0	76.0	75.0	33	0.1552	13.5	72.0	72.0	72.0
0.13	26.00	597.529	602.855	5.326	76.0	75.0	77.0	75.0	33	0.1552	13.5	72.0	72.0	72.0
0.13	26.00	602.855	608.188	5.333	77.0	75.0	78.0	76.0	33	0.1552	13.5	72.0	72.0	72.0
0.58	12.00	575.500	580.811	5.311	78.0	74.0	79.0	74.0	48	0.3346	15.0	71.0	71.0	71.0
0.58	12.00	580.811	586.120	5.309	79.0	74.0	80.0	75.0	48	0.3346	15.0	71.0	71.0	71.0
0.58	12.00	586.120	591.432	5.312	80.0	75.0	80.0	75.0	48	0.3346	15.0	71.0	71.0	71.0
1.70	7.00	544.100	549.488	5.388	83.0	71.0	84.0	72.0	63	0.5918	12.0	69.0	69.0	69.0
1.70	7.00	549.488	554.870	5.382	84.0	72.0	85.0	73.0	63	0.5918	12.0	69.0	69.0	69.0
1.70	7.00	554.870	560.275	5.405	85.0	73.0	85.0	74.0	63	0.5918	12.0	69.0	69.0	69.0
3.00	5.00	527.600	532.668	5.068	76.0	68.0	80.0	69.0	73	0.7681	11.5	68.0	68.0	68.0
3.00	5.00	532.668	537.749	5.081	80.0	69.0	83.0	69.0	73	0.7681	11.5	68.0	68.0	68.0
3.00	5.00	537.749	542.819	5.070	83.0	69.0	85.0	70.0	73	0.7681	11.5	68.0	68.0	68.0

DRY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
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)	Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.261	149.0	5.240	148.4	5.275	0.996	1.779	**Pass**			
5.256	148.8	5.240	148.4	5.275	0.997	1.779	**Pass**			
5.255	148.8	5.240	148.4	5.275	0.997	1.777	**Pass**			
				Average	**0.997**	**1.779**		**Pass**	**Pass**	**Pass**
5.242	148.4	5.220	147.8	5.245	0.996	1.707	**Pass**			
5.232	148.2	5.220	147.8	5.245	0.998	1.705	**Pass**			
5.230	148.1	5.220	147.8	5.245	0.998	1.704	**Pass**			
				Average	**0.997**	**1.705**		**Pass**	**Pass**	**Pass**
5.320	150.7	5.396	152.8	5.401	1.014	1.601	**Pass**			
5.304	150.2	5.396	152.8	5.401	1.017	1.598	**Pass**			
5.319	150.6	5.396	152.8	5.401	1.014	1.595	**Pass**			
				Average	**1.015**	**1.598**		**Pass**	**Pass**	**Pass**
5.060	143.3	5.008	141.8	5.003	0.990	1.683	**Pass**			
5.054	143.1	5.008	141.8	5.003	0.991	1.681	**Pass**			
5.029	142.4	5.008	141.8	5.003	0.996	1.680	**Pass**			
				Average	**0.992**	**1.681**		**Pass**	**Pass**	**Pass**

Average Yd: 1.000 **dH@: 1.691**

Q @ dH = 1: 0.577

SIGNED: Signature on File

Date: 1/20/2021

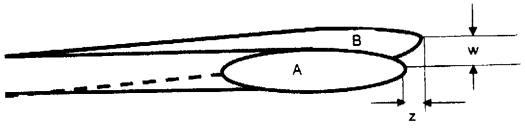
MONTROSE

NOZZLE CALIBRATION

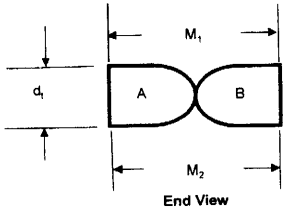
Nozzle #	Date	Performed By	D_1	D_2	D_3	Average D_n	Status
196	1/12/18	JG	0.237	0.240	0.239	0.239	Pass

MONTROSE

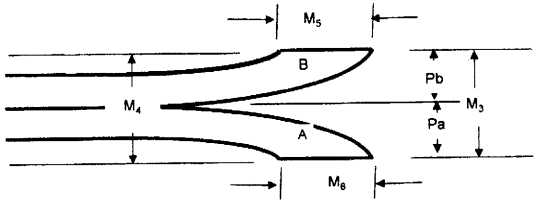
S Type Pitot Tube Dimensional Calibration Record



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
013	1/4/21	1/0/00	Y	Y	Y	0.370	0.948	0.948	1.005	0.955	0.415	0.410	0.0	3.5	1.3	Pass
089	1/4/21	1/0/00	Y	Y	Y	0.375	0.930	0.921	0.952	0.929	0.423	0.420	0.7	1.6	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

THERMOCOUPLE CALIBRATION

Thermocouple ID: 13
Date: 1/4/2021
Performed By: RD/DA/RM/DH

Calibrated Digital Temperature Readout ID: PTC-66
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
13	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-66	350	350	350	350	352	352	352	352	2.0	0.2%	Pass
T2 (Boiling H_2O)	PTC-66	211	211	211	211	212	212	212	212	1.0	0.1%	Pass
T1 (Ice/Water)	PTC-66	33	33	33	33	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: 89
Date: 1/4/2021
Performed By: RD/DA/RM/DH

Calibrated Digital Temperature Readout ID: PTC-66
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
89	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-66	350	350	350	350	352	352	352	352	2.0	0.2%	Pass
T2 (Boiling H_2O)	PTC-66	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (Ice/Water)	PTC-66	33	33	33	33	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

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 23 WCS
Readout Description: Control Box
Date: 1/4/2021
Performed By: RD/DA/RM/DH

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

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)	23 WCS	352	352	352	352	352	352	352	352	0.0	0.0%	Pass
T2 (Boiling H_2O)	23 WCS	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (Ice/Water)	23 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	650	650	650	650	650	650	650	650	0.0	0.0%	Pass
T3 (~370 F)	129103	375	375	375	375	370	370	370	370	5.0	0.6%	Pass
T2 (~212 F)	129103	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (~32 F)	129103	33	33	33	33	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

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 30-WCS
Readout Description: Control Box
Date: 1/4/2021
Performed By: RD/DA/RM/DH

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

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)	30-WCS	355	355	355	355	352	352	352	352	3.0	0.4%	Pass
T2 (Boiling H_2O)	30-WCS	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	30-WCS	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)

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	658	658	658	658	650	650	650	650	8.0	0.7%	Pass
T3 (~370 F)	129103	376	376	376	376	370	370	370	370	6.0	0.7%	Pass
T2 (~212 F)	129103	217	217	217	217	212	212	212	212	5.0	0.7%	Pass
T1 (~32 F)	129103	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)

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: PTC-42
Readout Description: Handheld
Date: 1/4/2021
Performed By: RD/DA/RM/DH

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

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)	PTC-42	353	353	353	353	352	352	352	352	1.0	0.1%	Pass
T2 (Boiling H_2O)	PTC-42	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (Ice/Water)	PTC-42	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	650	650	650	650	650	650	650	650	0.0	0.0%	Pass
T3 (~370 F)	129103	371	371	371	371	370	370	370	370	1.0	0.1%	Pass
T2 (~212 F)	129103	214	214	214	214	212	212	212	212	2.0	0.3%	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)

CERTIFICATE OF CALIBRATION

CUSTOMER:	**MONTROSE**	**CALIBRATION DATE:**	08/03/20
PO NUMBER:		**CALIBRATION DUE:**	08/03/21
INST. MANUFACTURER:	APEX INSTRUMENTS	**PROCEDURE:**	NAVAIR 17-20MG-02
INST. DESCRIPTION:	AIR SAMPLER	**CALIBRATION FLUID:**	AIR @ 14.7 PSIA 70 F
MODEL NUMBER:	XC-260	**STANDARD(S) USED:**	A5, A24 DUE 05-2021
SERIAL NUMBER:	1110016; ID# 00222517	**NIST TRACE #' S:**	1329407628, 89576, 1583314714
RATED UNCERTAINTY:	+/- 1 % RD.	**AMBIENT CONDITIONS:**	759 mm HGA 51 % RH 75 F
UNCERTAINTY GIVEN:	TOTAL measurement uncertainty: +/- .190 % RD. K=2	**CERTIFICATE FILE #:**	481162.481163.20

NOTES: AS RECEIVED/ AS LEFT WITHIN SPECS. REFERENCE CONDITIONS ARE: 760 mm HGA 70 F **READINGS ADDDED @ LOWER M3/ HR POINTS**

20-WCS

481162
A

TEST POINT NUMBER	UUT INDICATED M3/HR PD.METER	DM.STD. ACTUAL M3/HR PD.METER	CORRRECTION FACTOR	UUT INDICATED FLOWMETER SCCM	DM.STD. ACTUAL FLOWMETER SCCM
1	0.02016	0.020	0.9921	0.2	0.218
1	0.03024	0.030	0.9921	0.6	0.615
1	0.05030	0.050	0.9940	0.8	0.813
2	0.1006	0.100	0.9940	1.1	1.121
3	0.2510	0.250	0.9960	1.4	1.421
4	0.4988	0.500	1.0024	TEMPERATURE	TEMPERATURE
5	0.9956	1.000	1.0044	F DEG.	F DEG.
6	1.4924	1.500	1.0051	73	73.03
7	1.9910	2.000	1.0045		
8	2.4899	2.500	1.0041		
		AVERAGE	0.99887		

481163
B

TEST POINT NUMBER	UUT INDICATED M3/HR PD.METER	DM.STD. ACTUAL M3/HR PD.METER	CORRRECTION FACTOR	UUT INDICATED FLOWMETER SCCM	DM.STD. ACTUAL FLOWMETER SCCM
1	0.02018	0.020	0.9911	0.2	0.217
1	0.03027	0.030	0.9911	0.6	0.615
1	0.05022	0.050	0.9956	0.8	0.814
2	0.1008	0.100	0.9921	1.1	1.119
3	0.2502	0.250	0.9992	1.4	1.423
4	0.4980	0.500	1.0040	TEMPERATURE	TEMPERATURE
5	0.9949	1.000	1.0051	F DEG.	F DEG.
6	1.4920	1.500	1.0054	74	74.02
7	1.9904	2.000	1.0048		
8	2.4894	2.500	1.0043		
		AVERAGE	0.99926		

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) used and the unit under test (UUT) is a minimum of 4:1, unless otherwise noted. Calibration has been performed per the shown procedure number, in accordance with ISO 10012:2003, ISO 17025:2005, ANSI/NCSL-Z-540.3, and/or MIL-STD-45662A. Test methods: API2530-92 & ASME MFC-3M-1989.

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This Calibration Certificate shall not be reproduced, except in full, without approval by DICK MUNNS COMPANY. The data shown applies only to the instrument being calibrated and under the stated conditions of calibration.

Date: 8/3/2020 Approved By: Calibration Technician:

CERTIFICATE OF CALIBRATION

CUSTOMER:	**MONTROSE**	**CALIBRATION DATE:**	08/03/20
PO NUMBER:		**CALIBRATION DUE:**	08/03/21
INST. MANUFACTURER:	APEX INSTRUMENTS	**PROCEDURE:**	NAVAIR 17-20MG-02
INST. DESCRIPTION:	AIR SAMPLER	**CALIBRATION FLUID:**	AIR @ 14.7 PSIA 70 F
MODEL NUMBER:	XC-260	**STANDARD(S) USED:**	A5, A24 DUE 05-2021
SERIAL NUMBER:	1110015; D# 00222516	**NIST TRACE #' S:**	1329407628, 89576, 1583314714
RATED UNCERTAINTY:	+/- 1 % RD.	**AMBIENT CONDITIONS:**	759 mm HGA 51 % RH 75 F
UNCERTAINTY GIVEN:	TOTAL measurement uncertainty: +/- .190 % RD. K=2	**CERTIFICATE FILE #:**	481164.481165.20

NOTES: AS RECEIVED/ AS LEFT WITHIN SPECS. REFERENCE CONDITIONS ARE: 760 mm HGA 70 F **READINGS ADDDED @ LOWER M3/ HR POINTS**

Z1-WCS

481164
A

TEST POINT NUMBER	UUT INDICATED M3/HR PD.METER	DM.STD. ACTUAL M3/HR PD.METER	CORRRECTION FACTOR	UUT INDICATED FLOWMETER SCCM	DM.STD. ACTUAL FLOWMETER SCCM
1	0.02017	0.020	0.9916	0.2	0.217
1	0.03022	0.030	0.9927	0.6	0.616
1	0.05014	0.050	0.9972	0.8	0.818
2	0.1009	0.100	0.9911	1.1	1.118
3	0.2506	0.250	0.9976	1.4	1.422
4	0.4988	0.500	1.0024	TEMPERATURE	TEMPERATURE
5	0.9966	1.000	1.0034	F DEG.	F DEG.
6	1.4936	1.500	1.0043	73	73.02
7	1.9914	2.000	1.0043		
8	2.4895	2.500	1.0042		
		AVERAGE	0.99888		

481165
B

TEST POINT NUMBER	UUT INDICATED M3/HR PD.METER	DM.STD. ACTUAL M3/HR PD.METER	CORRRECTION FACTOR	UUT INDICATED FLOWMETER SCCM	DM.STD. ACTUAL FLOWMETER SCCM
1	0.02015	0.020	0.9926	0.2	0.215
1	0.03026	0.030	0.9914	0.6	0.617
1	0.05028	0.050	0.9944	0.8	0.816
2	0.1004	0.100	0.9960	1.1	1.119
3	0.2509	0.250	0.9964	1.4	1.421
4	0.4984	0.500	1.0032	TEMPERATURE	TEMPERATURE
5	0.9961	1.000	1.0039	F DEG.	F DEG.
6	1.4940	1.500	1.0040	72	72.04
7	1.9917	2.000	1.0042		
8	2.4902	2.500	1.0039		
		AVERAGE	0.99901		

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) used and the unit under test (UUT) is a minimum of 4:1, unless otherwise noted. Calibration has been performed per the shown procedure number, in accordance with ISO 10012:2003, ISO 17025:2005, ANSI/NCSL-Z-540.3, and/or MIL-STD-45662A. Test methods: API2530-92 & ASME MFC-3M-1989.

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Date: 8/3/2020 Approved By: Calibration Technician:

APPENDIX B
PLANT DATA

Appendix B.1
Plant Process Data

TAG	DESCRIPTION		VALUE	Unit 1	Unit 2	MW
HIC-1704	#NULL!	#NULL!	LBS/HR	202.508	199.766	47.937
FIC-1753	BLR1 NOX LBS/HR CONTROL	19.935	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.787	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1750.125	LBS/HR			
PI-93	700# HEADER STM INLET	124.717	PSI	206.287	194.833	47.653
FI-1040	BLR1 OUTLET STEAM	206.287	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	194.833	LBS/HR			
EX-MW	GENERATOR MW	47.653	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	847.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	357.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1785.446	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	28.262	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.403	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1429.645	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	124.749	PSI	203.589	205.038	48.579
FI-1040	BLR1 OUTLET STEAM	203.589	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	205.038	LBS/HR			
EX-MW	GENERATOR MW	48.579	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	792.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	330.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1106.527	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	22.886	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	28.789	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1758.888	LBS/HR			
PI-93	700# HEADER STM INLET	125.503	PSI	207.685	200.329	48.579
FI-1040	BLR1 OUTLET STEAM	207.685	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	200.329	LBS/HR			
EX-MW	GENERATOR MW	48.579	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	739.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	326.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1237.809	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	21.500	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.797	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1203.055	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	199.284	204.041	48.157
FI-1040	BLR1 OUTLET STEAM	199.284	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	204.041	LBS/HR			
EX-MW	GENERATOR MW	48.157	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	684.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	325.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	803.951	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	15.810	LBS/HR			

FIC-2753	BLR2 NOX LBS/HR CONTROL	22.243	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1439.660	LBS/HR			
PI-93	700# HEADER STM INLET	124.717	PSI	196.680	199.124	47.214
FI-1040	BLR1 OUTLET STEAM	196.680	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	199.124	LBS/HR			
EX-MW	GENERATOR MW	47.214	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	636.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	325.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	680.170	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	27.770	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.333	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1424.281	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.094	PSI	204.539	197.522	48.010
FI-1040	BLR1 OUTLET STEAM	204.539	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	197.522	LBS/HR			
EX-MW	GENERATOR MW	48.010	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	587.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	323.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	755.378	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	21.349	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.380	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1540.676	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	200.383	200.337	47.799
FI-1040	BLR1 OUTLET STEAM	200.383	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	200.337	LBS/HR			
EX-MW	GENERATOR MW	47.799	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	536.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	312.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1069.017	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	24.887	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.099	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1608.260	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.503	PSI	201.62	196.906	47.506
FI-1040	BLR1 OUTLET STEAM	201.620	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	196.906	LBS/HR			
EX-MW	GENERATOR MW	47.506	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	479.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	290.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	886.472	LBS/HR			

TAG	DESCRIPTION	VALUE		Unit 1	Unit 2	MW
HIC-1704	#NULL!	#NULL!	LBS/HR	197.613	204.050	48.063
FIC-1753	BLR1 NOX LBS/HR CONTROL	25.358	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	29.064	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1102.905	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	187.195	205.462	47.323
FI-1040	BLR1 OUTLET STEAM	187.195	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	205.462	LBS/HR			
EX-MW	GENERATOR MW	47.323	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	932.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	283.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1465.366	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	31.812	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	28.183	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1233.100	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.094	PSI	197.952	204.352	48.157
FI-1040	BLR1 OUTLET STEAM	197.952	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	204.352	LBS/HR			
EX-MW	GENERATOR MW	48.157	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	886.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	279.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1085.271	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	31.873	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.851	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1246.558	LBS/HR			
PI-93	700# HEADER STM INLET	125.094	PSI	204.678	207.065	49.148
FI-1040	BLR1 OUTLET STEAM	204.678	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	207.065	LBS/HR			
EX-MW	GENERATOR MW	49.148	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	828.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	273.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1209.052	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	17.955	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	32.878	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1444.667	LBS/HR			
PI-93	700# HEADER STM INLET	125.094	PSI	194.934	202.813	47.766
FI-1040	BLR1 OUTLET STEAM	194.934	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	202.813	LBS/HR			
EX-MW	GENERATOR MW	47.766	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	770.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	258.000	TONS			
SI-2345	fpget("S1-2345.C_DESC")	1262.816	LBS/HR			

TAG	DESCRIPTION	VALUE	E/U
HIC-1704	#NULL!	#NULL!	LBS/HR
FIC-1753	BLR1 NOX LBS/HR CONTROL	37.293	LBS/HR

FIC-2753	BLR2 NOX LBS/HR CONTROL	25.176	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1198.047	LBS/HR			
PI-93	700# HEADER STM INLET	125.094	PSI	202.011	204.199	48.742
FI-1040	BLR1 OUTLET STEAM	202.011	LBS/HR			
FI-2040	BLR2 OUTLET STEAM LBS/HR	204.199	LBS/HR			
EX-MW	GENERATOR MW	48.742	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	714.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	214.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1398.199	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	22.142	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.293	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1176.765	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	124.749	PSI	196.951	200.275	47.539
FI-1040	BLR1 OUTLET STEAM	196.951	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	200.275	LBS/HR			
EX-MW	GENERATOR MW	47.539	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	664.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	175.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1379.095	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NUL L!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	23.962	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.307	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1301.627	LBS/HR			
PI-93	700# HEADER STM INLET	125.503	PSI	200.072	202.705	48.173
FI-1040	BLR1 OUTLET STEAM	200.072	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	202.705	LBS/HR			
EX-MW	GENERATOR MW	48.173	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	613.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	141.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1769.192	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	33.403	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.358	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1348.272	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.126	PSI	199.966	203.928	48.449
FI-1040	BLR1 OUTLET STEAM	199.966	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	203.928	LBS/HR			
EX-MW	GENERATOR MW	48.449	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	557.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	97.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1221.861	LBS/HR			
TAG						
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	28.36	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	22.372	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	635.795	LBS/HR			

PI-93	700# HEADER STM INLET PRESS	125.126	PSI	197.593	193.896	46.645
FI-1040	BLR1 OUTLET STEAM	197.593	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	193.896	LBS/HR			
EX-MW	GENERATOR MW	46.645	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	502.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	62.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1194.049	LBS/HR			
TAG						
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	30.313	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	31.105	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1139.209	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.126	PSI	198.999	212.893	49.144
FI-1040	BLR1 OUTLET STEAM	198.999	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	212.893	LBS/HR			
EX-MW	GENERATOR MW	49.144	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	446.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	36.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1855.464	LBS/HR			
TAG						
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	18.299	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.637	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1164.247	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.126	PSI	193.39	206.958	47.604
FI-1040	BLR1 OUTLET STEAM	193.390	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	206.958	LBS/HR			
EX-MW	GENERATOR MW	47.604	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	391.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	35.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1772.943	LBS/HR			

TAG	DESCRIPTION		VALUE	Unit 1	Unit 2	MW
HIC-1704	#NULL!	#NULL!	LBS/HR	191.913	201.174	47.025
FIC-1753	BLR1 NOX LBS/HR CONTROL	26.577	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	24.609	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	346.770	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	179.349	196.119	44.937
FI-1040	BLR1 OUTLET STEAM	179.349	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	196.119	LBS/HR			
EX-MW	GENERATOR MW	44.937	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	866.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	570.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	950.238	LBS/HR			
TAG						
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	28.366	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	28.831	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	416.875	LBS/HR			
PI-93	700# HEADER STM INLET	124.749	PSI	181.863	207.143	46.840
FI-1040	BLR1 OUTLET STEAM	181.863	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	207.143	LBS/HR			
EX-MW	GENERATOR MW	46.840	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	817.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	527.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	886.693	LBS/HR			
TAG	DESCRIPTION		VALUE			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	25.073	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.257	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	490.736	LBS/HR			
PI-93	700# HEADER STM INLET	125.094	PSI	183.164	201.501	46.189
FI-1040	BLR1 OUTLET STEAM	183.164	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	201.501	LBS/HR			
EX-MW	GENERATOR MW	46.189	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	757.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	488.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1009.002	LBS/HR			
TAG	DESCRIPTION		VALUE			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	13.788	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.242	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	540.811	LBS/HR			
PI-93	700# HEADER STM INLET	125.094	PSI	189.331	199.010	46.282
FI-1040	BLR1 OUTLET STEAM	189.331	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	199.010	LBS/HR			
EX-MW	GENERATOR MW	46.282	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	710.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	488.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	691.423	LBS/HR			
TAG	DESCRIPTION		VALUE			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	39.381	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	29.835	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	789.935	LBS/HR			
PI-93	700# HEADER STM INLET	125.503	PSI	201.041	204.316	48.222
FI-1040	BLR1 OUTLET STEAM	201.041	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	204.316	LBS/HR			

EX-MW	GENERATOR MW	48.222	MEGWAT			
FQI2 -6105	B2 DAILY TOTAL FLOW	659.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	467.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	708.927	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	31.412	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.341	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	623.435	LBS/HR			
PI-93	700# HEADER STM INLET	124.372	PSI	197.511	199.254	47.425
FI-1040	BLR1 OUTLET STEAM	197.511	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	199.254	LBS/HR			
EX-MW	GENERATOR MW	47.425	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	604.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	435.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	816.454	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	24.509	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.594	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	634.702	LBS/HR			
PI-93	700# HEADER STM INLET	125.879	PSI	194.789	201.904	47.555
FI-1040	BLR1 OUTLET STEAM	194.789	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	201.904	LBS/HR			
EX-MW	GENERATOR MW	47.555	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	548.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	391.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1076.789	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	41.144	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	24.641	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1141.713	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	202.333	198.149	47.913
FI-1040	BLR1 OUTLET STEAM	202.333	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	198.149	LBS/HR			
EX-MW	GENERATOR MW	47.913	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	493.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	341.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1132.783	LBS/HR			
TAG						
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	28.63	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.717	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1156.735	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	LBS/HR	LBS/HR	MEGWAT
FI-1040	BLR1 OUTLET STEAM	200.770	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	208.320	LBS/HR			
EX-MW	GENERATOR MW	48.526	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	436.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	304.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1548.274	LBS/HR			
TAG						
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	29.532	LBS/HR			

FIC-2753	BLR2 NOX LBS/HR CONTROL	24.343	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1124.187	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	197.832	203.17	47.864
FI-1040	BLR1 OUTLET STEAM	197.832	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	203.170	LBS/HR			
EX-MW	GENERATOR MW	47.864	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	385.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	273.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1277.819	LBS/HR			

TAG	DESCRIPTION	VALUE		Unit 1	Unit 2	MW
HIC-1704	#NULL!	#NULL!	LBS/HR	198.284	203.547	47.847
FIC-1753	BLR1 NOX LBS/HR CONTROL	35.543	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	23.789	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	749.875	LBS/HR			
PI-93	700# HEADER STM INLET	125.879	PSI	198.205	202.766	47.506
FI-1040	BLR1 OUTLET STEAM	198.205	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	202.766	LBS/HR			
EX-MW	GENERATOR MW	47.506	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	949.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	689.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1129.315	LBS/HR			

TAG	DESCRIPTION	VALUE	E/U			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	19.000	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	22.338	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	811.217	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	124.749	PSI	193.504	202.010	47.376
FI-1040	BLR1 OUTLET STEAM LBS/HR	193.504	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	202.010	LBS/HR			
EX-MW	GENERATOR MW	47.376	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	894.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	652.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	829.165	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	25.447	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	23.211	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	302.954	LBS/HR			
PI-93	700# HEADER STM INLET	125.503	PSI	193.294	200.427	46.868
FI-1040	BLR1 OUTLET STEAM	193.294	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	200.427	LBS/HR			
EX-MW	GENERATOR MW	46.868	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	837.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	625.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1684.171	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	30.665	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.068	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	421.883	LBS/HR			
PI-93	700# HEADER STM INLET	125.094	PSI	204.040	207.794	48.791
FI-1040	BLR1 OUTLET STEAM	204.040	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	207.794	LBS/HR			
EX-MW	GENERATOR MW	48.791	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	783.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	604.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	468.867	LBS/HR			

TAG	DESCRIPTION	VALUE	
HIC-1704	#NULL!	#NULL!	LBS/HR
FIC-1753	BLR1 NOX LBS/HR CONTROL	14.972	LBS/HR

FIC-2753	BLR2 NOX LBS/HR CONTROL	23.206	LBS/HR		
SI-1345	#1 LIMESTONE FEED RATE	638.458	LBS/HR		
PI-93	700# HEADER STM INLET	125.848	PSI	197.986	204.414 47.795
FI-1040	BLR1 OUTLET STEAM	197.986	LBS/HR		
FI-2040	BLR2 OUTLET STEAM	204.414	LBS/HR		
EX-MW	GENERATOR MW	47.795	MEGWAT		
FQI2-6105	82 DAILY TOTAL FLOW	716.000	TONS		
FQI2-6120	83 DAILY TOTAL FLOW	566.000	TONS		
SI-2345	fpget("SI-2345.C_DESC")	657.664	LBS/HR		
TAG	**DESCRIPTION**		**VALUE**		
HIC-1704	#NULL!	#NULL!	LBS/HR		
FIC-1753	BLR1 NOX LBS/HR CONTROL	20.042	LBS/HR		
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.388	LBS/HR		
SI-1345	#1 LIMESTONE FEED RATE	486.859	LBS/HR		
PI-93	700# HEADER STM INLET PRESS	124.749	PSI	195.519	205.213 47.588
FI-1040	BLR1 OUTLET STEAM	195.519	LBS/HR		
FI-2040	BLR2 OUTLET STEAM	205.213	LBS/HR		
EX-MW	GENERATOR MW	47.588	MEGWAT		
FQI2-6105	B2 DAILY TOTAL FLOW	677.000	TONS		
FQI2-6120	B3 DAILY TOTAL FLOW	534.000	TONS		
SI-2345	fpget("SI-2345.C_DESC")	630.315	LBS/HR		
TAG	**DESCRIPTION**		**VALUE**		
HIC-1704	#NULL!	#NULL!	LBS/HR		
FIC-1753	BLR1 NOX LBS/HR CONTROL	28.693	LBS/HR		
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.375	LBS/HR		
SI-1345	#1 LIMESTONE FEED RATE	893.841	LBS/HR		
PI-93	700# HEADER STM INLET	125.126	PSI	201.610	201.543 48.222
FI-1040	BLR1 OUTLET STEAM	201.610	LBS/HR		
FI-2040	BLR2 OUTLET STEAM	201.543	LBS/HR		
EX-MW	GENERATOR MW	48.222	MEGWAT		
FQI2-6105	82 DAILY TOTAL FLOW	604.000	TONS		
FQI2-6120	83 DAILY TOTAL FLOW	467.000	TONS		
SI-2345	fpget("SI-2345.C_DESC")	955.239	LBS/HR		
TAG	**DESCRIPTION**		**VALUE**		
HIC-1704					
FIC-1753	BLR1 NOX LBS/HR CONTROL	26.381	LBS/HR		
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.116	LBS/HR		
SI-1345	#1 LIMESTONE FEED RATE	1080.371	LBS/HR		
PI-93	700# HEADER STM INLET PRESS	125.094	PSI	203.08	202.347 48.189
FI-1040	BLR1 OUTLET STEAM	203.080	LBS/HR		
FI-2040	BLR2 OUTLET STEAM	202.347	LBS/HR		
EX-MW	GENERATOR MW	48.189	MEGWAT		
FQI2-6105	82 DAILY TOTAL FLOW	551.000	TONS		
FQI2-6120	83 DAILY TOTAL FLOW	421.000	TONS		
SI-2345	fpget("SI-2345.C_DESC")	665.166	LBS/HR		
TAG					
HIC-1704					
FIC-1753	BLR1 NOX LBS/HR CONTROL	25.408	LBS/HR		
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.720	LBS/HR		
SI-1345	#1 LIMESTONE FEED RATE	647.059	LBS/HR		

PI-93	700# HEADER STM INLET PRESS	125.503	PSI	192.742	206.341	47.636
FI-1040	BLR1 OUTLET STEAM	192.742	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	206.341	LBS/HR			
EX-MW	GENERATOR MW	47.636	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	505.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	379.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	862.716	LBS/HR			
TAG						
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	38.638	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.107	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	915.123	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	124.749	PSI	203.657	201.963	48.335
FI-1040	BLR1 OUTLET STEAM	203.657	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	201.963	LBS/HR			
EX-MW	GENERATOR MW	48.335	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	438.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	316.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	983.996	LBS/HR			
TAG						
HIC-1704						
FIC-1753	BLR1 NOX LBS/HR CONTROL	31.182	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	17.828	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1316.976	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.094	PSI	197.492	204.202	48.01
FI-1040	BLR1 OUTLET STEAM	197.492	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	204.202	LBS/HR			
EX-MW	GENERATOR MW	48.010	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	384.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	272.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1697.924	LBS/HR			
TAG						
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	21.943	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	21.917	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1727.159	LBS/HR			
PI-93	700# HEADER STM INLET PRESS "A"	125.094	PSI	194.655	203.458	47.604
FI-1040	BLR1 OUTLET STEAM LBS/HR	194.655	LBS/HR			
FI-2040	BLR2 OUTLET STEAM LBS/HR	203.458	LBS/HR			
EX-MW	GENERATOR MW GROSS	47.604	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	337	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	246	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1708.354	LBS/HR			

TAG	DESCRIPTION	VALUE		Unit 1	Unit 2	MW
HIC-1704	#NULL!	#NULL!	LBS/HR	198.507	199.239	47.309
FIC-1753	BLR1 NOX LBS/HR CONTROL	26.222	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.218	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1099.149	LBS/HR			
PI-93	700# HEADER STM INLET	125.094	PSI	199.649	199.350	47.409
FI-1040	BLR1 OUTLET STEAM	199.649	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	199.350	LBS/HR			
EX-MW	GENERATOR MW	47.409	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	933.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	614.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	811.453	LBS/HR			
TAG	**DESCRIPTION**	**VALUE**				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	31.146	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.546	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	947.672	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	124.749	PSI	201.181	201.546	47.892
FI-1040	BLR1 OUTLET STEAM	201.181	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	201.546	LBS/HR			
EX-MW	GENERATOR MW	47.892	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	878.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	577.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	664.082	LBS/HR			
TAG	**DESCRIPTION**	**VALUE**				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	18.770	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.244	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	614.672	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	194.064	198.366	46.791
FI-1040	BLR1 OUTLET STEAM	194.064	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	198.366	LBS/HR			
EX-MW	GENERATOR MW	46.791	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	817.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	532.000	TONS			
SI-2345	fpget("S1-2345.C_DESC")	537.634	LBS/HR			
TAG	**DESCRIPTION**	**VALUE**				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	25.062	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.297	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1511.017	LBS/HR			
PI-93	700# HEADER STM INLET	124.749	PSI	200.645	197.939	47.327
FI-1040	BLR1 OUTLET STEAM	200.645	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	197.939	LBS/HR			
EX-MW	GENERATOR MW	47.327	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	775.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	501.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	929.215	LBS/HR			
TAG	**DESCRIPTION**	**VALUE**				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	18.773	LBS/HR			

FIC-2753	BLR2 NOX LBS/HR CONTROL	24.900	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1970.456	LBS/HR			
PI-93	700# HEADER STM INLET	125.094	PSI	198.464	200.006	47.149
FI-1040	BLR1 OUTLET STEAM	198.464	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	200.006	LBS/HR			
EX-MW	GENERATOR MW	47.149	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	731.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	473.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	2163.582	LBS/HR			

TAG	DESCRIPTION	VALUE	E/U			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	23.988	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	30.756	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	559.589	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	122.833	PSI	197.536	203.368	47.616
FI-1040	BLR1 OUTLET STEAM	197.536	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	203.368	LBS/HR			
EX-MW	GENERATOR MW	47.616	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	684.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	445.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	535.134	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	23.391	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	23.386	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	592.138	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	194.132	195.300	46.563
FI-1040	BLR1 OUTLET STEAM	194.132	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	195.300	LBS/HR			
EX-MW	GENERATOR MW	46.563	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	645.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	422.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	228.807	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	17.488	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	24.975	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1343.265	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.126	PSI	203.817	198.581	47.783
FI-1040	BLR1 OUTLET STEAM	203.817	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	198.581	LBS/HR			
EX-MW	GENERATOR MW	47.783	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	599.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	388.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1025.256	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	22.199	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	28.684	LBS/HR			

SI-1345	#1 LIMESTONE FEED RATE	1962.945	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.126	PSI	193.627	197.475	46.819
FI-1040	BLR1 OUTLET STEAM	193.627	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	197.475	LBS/HR			
EX-MW	GENERATOR MW	46.819	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	561.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	359.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	2481.870	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	33.411	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.312	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	246.620	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.503	PSI	198.766	199.422	47.409
FI-1040	BLR1 OUTLET STEAM	198.766	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	199.422	LBS/HR			
EX-MW	GENERATOR MW	47.409	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	518.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	315.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	247.562	LBS/HR			
TAG	**DESCRIPTION**		**VALUE**			
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	26.449	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.102	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	731.097	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.126	PSI	201.692	200.280	47.636
FI-1040	BLR1 OUTLET STEAM	201.692	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	200.280	LBS/HR			
EX-MW	GENERATOR MW	47.636	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	475.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	301.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1204.051	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR	Unit 1	Unit 2	MW
FIC-1753	BLR1 NOX LBS/HR CONTROL	32.171	LBS/HR	198.868	196.697	46.807
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.505	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1226.533	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	204.524	202.624	48.189
FI-1040	BLR1 OUTLET STEAM	204.524	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	202.624	LBS/HR			
EX-MW	GENERATOR MW	48.189	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	802.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	530.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	472.618	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	23.067	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	23.125	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	260.391	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.126	PSI	190.264	189.944	44.921
FI-1040	BLR1 OUTLET STEAM	190.264	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	189.944	LBS/HR			
EX-MW	GENERATOR MW	44.921	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	751.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	484.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	270.068	LBS/HR			

TAG	DESCRIPTION	VALUE				
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	23.007	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.369	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	240.361	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	201.788	200.914	47.848
FI-1040	BLR1 OUTLET STEAM	201.788	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	200.914	LBS/HR			
EX-MW	GENERATOR MW	47.848	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	693.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	448.000	TONS			
SI-2345						

TAG						
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	26.646	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	27.346	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	778.668	LBS/HR			
PI-93	700# HEADER STM INLET	125.126	PSI	197.713	190.305	45.637
FI-1040	BLR1 OUTLET STEAM	197.713	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	190.305	LBS/HR			
EX-MW	GENERATOR MW	45.637	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	644.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	430.000	TONS			
SI-2345						

TAG			
HIC-1704	#NULL!	#NULL!	LBS/HR

FIC-1753	BLR1 NOX LBS/HR CONTROL	22.954	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	24.133	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	419.379	LBS/HR			
PI-93	700# HEADER STM INLET	125.503	PSI	198.529	194.669	46.645
FI-1040	BLR1 OUTLET STEAM	198.529	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	194.669	LBS/HR			
EX-MW	GENERATOR MW GROSS	46.645	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	601.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	397.000	TONS			
SI-2345						
TAG						
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	23.668	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	25.155	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	409.364	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.094	PSI	200.038	197.82	47.295
FI-1040	BLR1 OUTLET STEAM	200.038	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	197.820	LBS/HR			
EX-MW	GENERATOR MW	47.295	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	553.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	376.000	TONS			
SI-2345						
TAG						
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	19.086	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	23.799	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1335.754	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.094	PSI	197.479	197.751	46.775
FI-1040	BLR1 OUTLET STEAM	197.479	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	197.751	LBS/HR			
EX-MW	GENERATOR MW	46.775	MEGWAT			
FQI2-6105	B2 DAILY TOTAL FLOW	506.000	TONS			
FQI2-6120	B3 DAILY TOTAL FLOW	352.000	TONS			
SI-2345						

TAG	**DESCRIPTION**	**VALUE**				
E/U						
HIC-1704	#NULL!	#NULL!	LBS/HR			
FIC-1753	BLR1 NOX LBS/HR CONTROL	32.267	LBS/HR			
FIC-2753	BLR2 NOX LBS/HR CONTROL	26.532	LBS/HR			
SI-1345	#1 LIMESTONE FEED RATE	1720.080	LBS/HR			
PI-93	700# HEADER STM INLET PRESS	125.126	PSI	206.265	205.477	48.531
FI-1040	BLR1 OUTLET STEAM	206.265	LBS/HR			
FI-2040	BLR2 OUTLET STEAM	205.477	LBS/HR			
EX-MW	GENERATOR MW	48.531	MEGWAT			
FQI2-6105	82 DAILY TOTAL FLOW	461.000	TONS			
FQI2-6120	83 DAILY TOTAL FLOW	322.000	TONS			
SI-2345	fpget("SI-2345.C_DESC")	1559.140	LBS/HR			

Appendix B.2
HCl Surrogate Limit Data

	Unit 2 3/4/2021			Unit 2 3/5/2021		
	Run 1 7:25-9:25 SO 2ppm @ 3% O2	Run 2 9:55-11:55 SO 2ppm @ 3% O2	Run 3 12:25-14:25 SO 2ppm @ 3% O2	Run 1 3/5/21 SO 2ppm @ 3% O2	Run 2 9:42-11:42 SO 2ppm @ 3% O2	Run 312:10-14:10 SO 2ppm @ 3% O2
15 minute average	**16.9**	**20.9**	**18.8**	**18.0**	**16.8**	**12.6**
15 minute average	**16.1**	**18.0**	**16.5**	**16.1**	**14.0**	**8.8**
15 minute average	**16.5**	**17.5**	**15.3**	**15.4**	**12.0**	**9.5**
15 minute average	**15.4**	**16.2**	**14.7**	**16.0**	**10.5**	**8.9**
15 minute average	**22.3**	**16.3**	**20.8**	**14.5**	**13.3**	**9.5**
15 minute average	**13.4**	**21.4**	**23.6**	**14.2**	**16.4**	**10.4**
15 minute average	**15.1**	**15.7**	**19.4**	**14.3**	**14.1**	**9.2**
15 minute average	**14.3**	**13.6**	**13.4**	**16.5**	**10.4**	**7.6**
Hourly Average	**16.2**	**18.2**	**16.3**	Highest hourly **16.4**	**13.3**	**10.0**
Hourly Average	**16.3**	**16.8** Highest hourly	**19.3**	**14.9**	**13.5**	**9.2**
Average	**16.2**	**17.6** st Test Average	**17.8**	Highest Test Average **15.6**	**13.5**	**9.6**

7:25	14.46	9:55	26.45	12:25	18.12	7:20	15.8	9:42	18.72	12:10	14.82
7:26	11.62	9:56	24.05	12:26	16.71	7:21	16.58	9:43	18.28	12:11	10.85
7:27	13.72	9:57	28.03	12:27	17.23	7:22	17.16	9:44	17.23	12:12	10.13
7:28	15.35	9:58	30.11	12:28	19.4	7:23	17.35	9:45	19.65	12:13	10.39
7:29	19.89	9:59	36.69	12:29	21.4	7:24	20.04	9:46	18.17	12:14	13.18
7:30	18.15	10:00	23.15	12:30	19.19	7:25	20.04	9:47	19.77	12:15	14.68
7:31	15.05	10:01	19.66	12:31	15.12	7:26	18.33	9:48	18.91	12:16	15.97
7:32	14.93	10:02	17.03	12:32	13.55	7:27	18.83	9:49	15.46	12:17	14.3
7:33	16.07	10:03	14.66	12:33	19.38	7:28	19.35	9:50	13.95	12:18	20.62
7:34	17.02	10:04	16.44	12:34	23.78	7:29	19.21	9:51	15.64	12:19	15.22
7:35	18.11	10:05	19.37	12:35	23.45	7:30	16.68	9:52	16.86	12:20	12.67
7:36	17.68	10:06	19.29	12:36	23.01	7:31	17.77	9:53	14.64	12:21	10.7
7:37	18.1	10:07	17.63	12:37	18.04	7:32	19.89	9:54	15.54	12:22	9.11
7:38	16.38	10:08	17.33	12:38	16.91	7:33	17.25	9:55	16.46	12:23	9.44
7:39	19.89	10:09	18.54	12:39	17.28	7:34	17.21	9:56	15.73	12:24	10.88
7:40	21.33	10:10	12	12:40	17.57	7:35	14.69	9:57	15.12	12:25	10.98
7:41	15.61	10:11	16.17	12:41	15.33	7:36	13.57	9:58	13.61	12:26	10.46
7:42	13.2	10:12	21.23	12:42	13.81	7:37	15.62	9:59	16.57	12:27	9.68
7:43	11.98	10:13	19.04	12:43	19.18	7:38	15.97	10:00	15.9	12:28	8.31
7:44	13.41	10:14	15.4	12:44	14.82	7:39	13.58	10:01	19.14	12:29	7.69
7:45	16.45	10:15	12.66	12:45	14.79	7:40	15.54	10:02	20.25	12:30	7.56

7:46	20.94	10:16	12.17	12:46	16.43
7:47	18.51	10:17	19.05	12:47	20.24
7:48	16.69	10:18	17.19	12:48	22.2
7:49	23.08	10:19	11.35	12:49	14.86
7:50	18.29	10:20	14.94	12:50	12.16
7:51	17.4	10:21	14.46	12:51	13
7:52	13.34	10:22	14.6	12:52	13.83
7:53	16.02	10:23	20.61	12:53	19.13
7:54	11.91	10:24	25.25	12:54	21.16
7:55	15.03	10:25	36.27	12:55	16.68
7:56	15.64	10:26	28.32	12:56	16.06
7:57	15.49	10:27	22.65	12:57	13.2
7:58	15.32	10:28	17.15	12:58	14.65
7:59	20.51	10:29	15.48	12:59	20.28
8:00	21.71	10:30	20.35	13:00	17.51
8:01	19.49	10:31	25.46	13:01	12.65
8:02	18.91	10:32	21.54	13:02	11.57
8:03	15.32	10:33	15.69	13:03	11.21
8:04	19.04	10:34	12.65	13:04	9.83
8:05	15	10:35	12.45	13:05	11.67
8:06	13.9	10:36	24.26	13:06	20.52
8:07	14.83	10:37	17.86	13:07	15.96
8:08	11.75	10:38	11.03	13:08	14
8:09	13.52	10:39	8.76	13:09	18.07
8:10	16.56	10:40	9	13:10	21.76
8:11	13.8	10:41	10.56	13:11	18.7
8:12	14.68	10:42	26.74	13:12	20.69
8:13	16.46	10:43	21.98	13:13	19.47
8:14	16.85	10:44	22.34	13:14	14.26
8:15	15.84	10:45	19.87	13:15	16.42
8:16	11.11	10:46	14.94	13:16	12.79
8:17	16.76	10:47	13.32	13:17	10.47
8:18	18.91	10:48	13.51	13:18	8.68
8:19	17.47	10:49	14.87	13:19	10.5
8:20	17.3	10:50	14.24	13:20	9.84
8:21	15.32	10:51	13.43	13:21	14.33
8:22	15.07	10:52	13.64	13:22	16.23
8:23	15.35	10:53	14.8	13:23	13.12
8:24	13.72	10:54	15.14	13:24	13.31
8:25	12.41	10:55	13.02	13:25	21.53
8:26	20.07	10:56	15.5	13:26	17.73

7:41	14.26	10:03	23.8	12:31	7.44
7:42	12.59	10:04	17.19	12:32	8.37
7:43	14.78	10:05	13.5	12:33	8.17
7:44	13.64	10:06	12.34	12:34	8.13
7:45	17.72	10:07	9.46	12:35	8.36
7:46	20.55	10:08	10.14	12:36	8.6
7:47	18.54	10:09	9.63	12:37	9.51
7:48	18.5	10:10	8.97	12:38	10.68
7:49	19.3	10:11	9.26	12:39	9.7
7:50	16.88	10:12	9.83	12:40	9.07
7:51	16.51	10:13	11.24	12:41	8.69
7:52	13.12	10:14	12.65	12:42	8.94
7:53	16.94	10:15	10.39	12:43	11.26
7:54	15.04	10:16	12.84	12:44	10.5
7:55	16.39	10:17	10.82	12:45	9.83
7:56	17.28	10:18	10.47	12:46	8.12
7:57	17.02	10:19	9.21	12:47	7.97
7:58	15.01	10:20	9.74	12:48	7.99
7:59	14.94	10:21	8.52	12:49	7.46
8:00	13.07	10:22	11.23	12:50	11.32
8:01	12.66	10:23	19.62	12:51	12.13
8:02	17.93	10:24	17.81	12:52	10.03
8:03	18.26	10:25	13.61	12:53	11.03
8:04	12.59	10:26	10.9	12:54	9.02
8:05	13.99	10:27	11.56	12:55	8.82
8:06	14.34	10:28	10.54	12:56	7.72
8:07	16.92	10:29	8.26	12:57	8.09
8:08	18.32	10:30	10.18	12:58	7.95
8:09	16.5	10:31	12.98	12:59	10.57
8:10	21.71	10:32	12.58	13:00	11.76
8:11	17.78	10:33	11.29	13:01	11.75
8:12	13.68	10:34	9.74	13:02	10.04
8:13	13.94	10:35	9.47	13:03	9.76
8:14	14.65	10:36	8.09	13:04	8.92
8:15	15.6	10:37	8.76	13:05	7.94
8:16	15.19	10:38	11.94	13:06	7.93
8:17	12.78	10:39	12.23	13:07	7.68
8:18	15.24	10:40	9.67	13:08	7.68
8:19	16.81	10:41	9.49	13:09	7.66
8:20	16.97	10:42	12.58	13:10	8.15
8:21	16.26	10:43	11.84	13:11	8.03

8:27	22.77	10:57	15.28	13:27	16.9
8:28	19.4	10:58	20.66	13:28	23.09
8:29	27.93	10:59	20.14	13:29	25.52
8:30	24.29	11:00	14.6	13:30	24.31
8:31	33.39	11:01	11.81	13:31	23.06
8:32	20.43	11:02	11.14	13:32	23.75
8:33	16.44	11:03	13.66	13:33	18.85
8:34	19.49	11:04	13.51	13:34	12
8:35	18.73	11:05	23.5	13:35	13.4
8:36	18.63	11:06	22.25	13:36	18.82
8:37	26.55	11:07	18.95	13:37	19.47
8:38	30.96	11:08	17.76	13:38	21.61
8:39	22.11	11:09	13.43	13:39	24.88
8:40	13.56	11:10	12.29	13:40	29.11
8:41	11.37	11:11	19.93	13:41	26.12
8:42	12.78	11:12	20.71	13:42	22.18
8:43	12.94	11:13	21.93	13:43	25.18
8:44	11.57	11:14	20.77	13:44	24.91
8:45	10.56	11:15	17	13:45	26.63
8:46	11.17	11:16	16.85	13:46	22.81
8:47	14.57	11:17	14.23	13:47	25.4
8:48	12.39	11:18	12.7	13:48	20.53
8:49	13.51	11:19	19.07	13:49	25.13
8:50	9.05	11:20	34.46	13:50	24.98
8:51	10.42	11:21	29.49	13:51	14.54
8:52	9.38	11:22	30.57	13:52	15.18
8:53	12.97	11:23	26.2	13:53	25.57
8:54	22.49	11:24	19.51	13:54	29.25
8:55	25.19	11:25	18.31	13:55	25.76
8:56	22.93	11:26	19.08	13:56	22.88
8:57	18.59	11:27	19.12	13:57	24.12
8:58	16.73	11:28	18.22	13:58	25.53
8:59	16.57	11:29	16.39	13:59	23.75
9:00	Bkflsh	11:30	Bkflsh	14:00	Bkflsh
9:01	Bkflsh	11:31	Bkflsh	14:01	Bkflsh
9:02	12.47	11:32	16.84	14:02	22.84
9:03	14.63	11:33	15.05	14:03	21.61
9:04	22.27	11:34	17.86	14:04	23.4
9:05	20.49	11:35	19.81	14:05	19.36
9:06	13.71	11:36	18.65	14:06	18.43
9:07	10.4	11:37	13.76	14:07	14.42

8:22	16.53	10:44	12.92	13:12	11.38
8:23	14.86	10:45	10.76	13:13	11.06
8:24	12.44	10:46	10.76	13:14	9.29
8:25	12.74	10:47	9.57	13:15	8.18
8:26	12.85	10:48	10.37	13:16	7.91
8:27	15.37	10:49	13.63	13:17	9.4
8:28	17.11	10:50	12.67	13:18	9.76
8:29	15.37	10:51	11.62	13:19	8.62
8:30	15.1	10:52	13.47	13:20	8.9
8:31	12.15	10:53	13.07	13:21	8.64
8:32	11.42	10:54	17.97	13:22	8
8:33	12.26	10:55	16.65	13:23	11.41
8:34	16.03	10:56	17.28	13:24	12.62
8:35	17.09	10:57	16.96	13:25	9.76
8:36	13.4	10:58	13.47	13:26	8.88
8:37	13.14	10:59	13.87	13:27	12.98
8:38	12.98	11:00	14.85	13:28	15.78
8:39	11.63	11:01	15.02	13:29	15.06
8:40	14.64	11:02	18.32	13:30	11.36
8:41	14.76	11:03	21.57	13:31	8.78
8:42	15.32	11:04	20.02	13:32	9.62
8:43	13.69	11:05	17.38	13:33	9.48
8:44	12.61	11:06	14.72	13:34	9.98
8:45	15.31	11:07	14.8	13:35	9.44
8:46	13.39	11:08	15.63	13:36	9.57
8:47	14.91	11:09	16.9	13:37	8.02
8:48	17.74	11:10	17.38	13:38	8.95
8:49	14.85	11:11	15.09	13:39	8.17
8:50	14.92	11:12	16.26	13:40	9.18
8:51	13.8	11:13	17.71	13:41	11.01
8:52	15.15	11:14	18.34	13:42	10.04
8:53	14.8	11:15	17.64	13:43	8.16
8:54	12.41	11:16	13.68	13:44	7.93
8:55	Bkflsh	11:17	Bkflsh	13:45	Bkflsh
8:56	Bkflsh	11:18	Bkflsh	13:46	Bkflsh
8:57	12.28	11:19	13.87	13:47	9.96
8:58	16.27	11:20	14.56	13:48	10.76
8:59	15.49	11:21	11.45	13:49	10.4
9:00	14.46	11:22	10.63	13:50	11.67
9:01	16.06	11:23	11.51	13:51	9.54
9:02	13.54	11:24	12.97	13:52	7.74

9:08	8.32	11:38	9.97	14:08	13.55
9:09	9.46	11:39	9.77	14:09	10.38
9:10	10.17	11:40	10.05	14:10	11.86
9:11	11.12	11:41	10.84	14:11	12.65
9:12	8.45	11:42	12.34	14:12	14.23
9:13	11.42	11:43	13.17	14:13	20.31
9:14	11.04	11:44	16.2	14:14	18.57
9:15	8.29	11:45	17.53	14:15	15.83
9:16	9.91	11:46	15	14:16	17.66
9:17	11.38	11:47	16.3	14:17	14.96
9:18	9.15	11:48	12.91	14:18	12.78
9:19	17.97	11:49	9.48	14:19	11.96
9:20	29.46	11:50	11.39	14:20	11.38
9:21	23.58	11:51	14.88	14:21	11.03
9:22	20.19	11:52	16.18	14:22	10.13
9:23	17.47	11:53	12.62	14:23	9.36
9:24	13.63	11:54	11.08	14:24	9.77
9:25	10.72	11:55	13.68	14:25	10.25

9:03	13.75	11:25	13.21	13:53	8.2
9:04	14.36	11:26	14.44	13:54	7.1
9:05	12.91	11:27	13.83	13:55	7.15
9:06	12.41	11:28	8.86	13:56	7.5
9:07	14.45	11:29	12.42	13:57	7.55
9:08	14.92	11:30	11.74	13:58	7.59
9:09	15.21	11:31	10.04	13:59	7.17
9:10	15.2	11:32	8.2	14:00	7.58
9:11	14.91	11:33	8.42	14:01	7.08
9:12	17.47	11:34	9.7	14:02	7.18
9:13	14.8	11:35	10.59	14:03	7.47
9:14	16.24	11:36	11.54	14:04	7.82
9:15	16.19	11:37	11.89	14:05	7.91
9:16	19.14	11:38	10.52	14:06	8.23
9:17	20.27	11:39	10.46	14:07	7.63
9:18	19.05	11:40	10.89	14:08	7.19
9:19	18.05	11:41	10.01	14:09	6.88
9:20	19.07	11:42	10.48	14:10	8.72

APPENDIX C
CALCULATIONS

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

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 - 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6}\right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528°R}$$

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

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

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
$C_{12\%\ CO_2} = C (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
$M = C * Q_{sd} * (60\ min/hr) / (7000\ gr/lb)$

(d) Particulate emission factor

$$lb/10^6\ Btu = Cx \frac{1\ lb}{7000\ gr} * F * \frac{20.9}{20.9 - \% O_2}$$

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	=	particulate grain loading, gr/dscf
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
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

Appendix C.2
Unit 1 Calculations

Appendix C.2.1
Unit 1 Gaseous Calculations

Montrose AQS
RELATIVE ACCURACY TEST AUDIT
DATA AND WORKSHEET
Desert View Power UNIT 1

PRE-TEST INFORMATION
GENERAL

Test:	1-RA-U1
Date:	3/10/2021
Start Time:	7:46
Station:	Desert View Power
Unit:	#1
Test Condition:	Full Load
Performed By:	DW

PRE-TEST INFORMATION
SAMPLE TRAIN

Barom. Pressure:		psi
	30.11	"Hg
Meter No.	1 P&M	
Meter Y_d	1.0110	
Meter Pressure:	1.5	iwg
Pstack:	0.48	iwg
Pstack:	30.14	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft^2

METHOD 4 DATA
Impingers

#/Matl.	End	Start	Diff.
1/H2O	910.8	731.4	179.4
2/H2O	711.1	710.4	0.7
3/Empty	638.4	638.4	0.0
4/S.G.	866.9	857.1	9.8
Rinse		50.0	-50.0
Total			139.9

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	660.100	60	61
		61	62
Stop	698.957	62	64
Total	38.857		61.7

Summary

Sample Volume:	40.153	dscf
H_2O Volume :	6.603	scf
Moisture Content:	14.1	%

METHOD 3A, 6C, 7E DATA

	O_2	CO_2	NO_x	CO
Analyzer Span	19.15	18.94	87.00	9.64
Actual Span Value	10.78	10.56	41.3	4.6
Pre Test Zero Direct	0.01	0.01	0.02	0.01
Pre Test Span Direct	10.87	10.43	41.49	4.61
Pre-test Zero	0.04	0.11	0.06	0.12
Pre-test Span	10.84	10.44	41.21	4.61
0-30 min	9.10	11.60	35.05	0.24
Post Test Zero Direct	0.01	0.03	0.02	0.03
Post Test Span Direct	10.87	10.47	41.46	4.65
Post-test Zero	0.03	0.11	0.04	0.14
Post-test Span	10.84	10.52	41.19	4.64
Average	9.10	11.60	35.05	0.24
Corr. Results	9.04	11.70	35.13	0.12
	Cal Error <2%. Bias <5%; Drift <3%			
Calibrtion Error	0.5%	-0.7%	0.2%	0.1%
Pre-Test Zero Bias	0.2%	0.5%	0.1%	1.1%
Pre-Test Span Bias	-0.2%	0.1%	-0.3%	0.0%
Post-Test Zero Bias	0.1%	0.4%	0.0%	1.1%
Post-Test Span Bias	-0.2%	0.3%	-0.3%	-0.1%
Zero Drift	-0.1%	0.0%	0.0%	0.2%
Span Drift	0.0%	0.5%	0.0%	0.4%
[illegible]	PASS	PASS	PASS	PASS

METHOD 2 DATA

Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	1.10	1.0488	357	73.32
4	0.98	0.9899	358	69.25
3	0.84	0.9165	360	64.19
2	1.00	1.0000	360	70.04
1	0.95	0.9747	358	68.18
5	1.40	1.1832	357	82.72
4	1.20	1.0954	358	76.63
3	0.85	0.9220	359	64.53
2	0.82	0.9055	360	63.42
1	0.80	0.8944	360	62.64
5	0.90	0.9487	357	66.32
4	0.90	0.9487	358	66.36
3	0.94	0.9695	356	67.74
2	0.92	0.9592	357	67.06
1	0.98	0.9899	355	69.12
5	1.00	1.0000	357	69.91
4	1.10	1.0488	358	73.37
3	1.30	1.1402	359	79.81
2	1.00	1.0000	360	70.04
1	1.00	1.0000	358	69.95
5	1.40	1.1832	357	82.72
4	1.20	1.0954	358	76.63
3	1.30	1.1402	359	79.81
2	1.20	1.0954	358	76.63
1	1.00	1.0000	358	69.95
5	1.40	1.1832	357	82.72
4	1.40	1.1832	358	82.77
3	1.30	1.1402	356	79.66
2	1.20	1.0954	358	76.63
1	1.10	1.0488	357	73.32
Average	1.0747	1.0367	357.9	72.51

RELATIVE ACCURACY DATA

Parameter	Units	Ref. Meth	CEMS	Diff.	Diff. %
Flow	kdscfh	5662.65	5986.87	-324.21	-5.7%
O_2	% dry	9.04	9.2	-0.12	-1.4%
CO_2	% dry	11.70	11.5	0.16	1.3%
NO_x	ppm dry	35.13	37.1	-1.97	-5.6%
NO_x	ppm @ 3% O_2	53.02	56.1	-3.09	-5.8%
NO_x	lb/hr	23.75	26.66	-2.91	-12.2%
SO_2	ppm dry	5.97	6.21	-0.25	-4.1%
SO_2	ppm @ 3% O_2	9.01	9.40	-0.40	-4.4%
SO_2	lb/hr	5.61	6.198	-0.585	-10.4%
CO	ppm dry	0.12	1.19	-1.07	
CO	ppm @ 3% O_2	0.18	1.82	-1.64	
CO	lb/hr	0.050	0.518	-0.47	

TEST SUMMARY

O_2:	9.040	% dry
	7.764	% wet
CO_2:	11.700	% dry
	10.047	% wet
NO_x:	35.130	ppm dry
	30.169	ppm wet
	23.750	lb/hr
SO_2:	5.9667267	ppm dry
SO2:	5.612	lb/hr
CO:	0.12	ppm dry
	0.10	ppm wet
	0.050	lb/hr
H_2O:	14.1	%
MW:	28.51	lb/lb-mole
Flow:	168,989	wacfm
	94.38	mdscfm
	5662.65	kdscfh

SOx Titration Summary

	B1/2	Probe
N BaCl2	0.0096712	
Total VOL (ml)	511.9	
Aliquot VOL (ml)	20	
Titrant VOL (ml)	2.28	

Montrose AQS
RELATIVE ACCURACY TEST AUDIT
DATA AND WORKSHEET
Desert View Power UNIT 1

PRE-TEST INFORMATION
GENERAL

Test:	2-RA-U1
Date:	3/10/2021
Start Time:	9:08
Station:	Desert View Power
Unit:	#1
Test Condition:	Full Load
Performed By:	DW

PRE-TEST INFORMATION
SAMPLE TRAIN

Barom. Pressure:		psi
	30.11	"Hg
Meter No.	1 P&M	
Meter Y_d:	1.0110	
Meter Pressure:	1.5	iwg
Pstack:	0.48	iwg
Pstack:	30.14	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft^2

METHOD 4 DATA
Impingers

#/Matl.	End	Start	Diff.
1/H2O	845.9	655.2	190.7
2/H2O	730.0	728.6	1.4
3/Empty	592.9	591.9	1.0
4/S.G.	896.3	881.1	15.2
Rinse		50.0	-50.0
Total			158.3

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	700.100	70	71
		74	76
Stop	743.024	75	78
Total	42.924		74.0

Summary

Sample Volume:	43.332	dscf
H_2O Volume :	7.472	scf
Moisture Content:	14.7	%

METHOD 2 DATA

Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	1.20	1.0954	362	76.92
4	1.00	1.0000	364	70.31
3	0.98	0.9899	365	69.64
2	1.00	1.0000	366	70.39
1	0.96	0.9798	368	69.05
5	1.40	1.1832	368	83.39
4	1.20	1.0954	369	77.25
3	0.92	0.9592	370	67.68
2	0.96	0.9798	368	69.05
1	0.83	0.9110	369	64.25
5	0.94	0.9695	365	68.21
4	0.98	0.9899	369	69.81
3	0.92	0.9592	368	67.60
2	0.93	0.9644	369	68.01
1	1.00	1.0000	368	70.48
5	1.00	1.0000	368	70.48
4	1.10	1.0488	368	73.92
3	1.30	1.1402	369	80.40
2	1.10	1.0488	370	74.01
1	1.20	1.0954	369	77.25
5	1.50	1.2247	368	86.32
4	1.20	1.0954	369	77.25
3	1.30	1.1402	368	80.36
2	1.30	1.1402	369	80.40
1	1.00	1.0000	370	70.56
5	1.40	1.1832	368	83.39
4	1.30	1.1402	369	80.40
3	1.30	1.1402	368	80.36
2	1.20	1.0954	369	77.25
1	1.20	1.0954	368	77.20
Average	1.1141	1.0555	367.9	74.39

METHOD 3A, 6C, 7E DATA

	O_2	CO_2	NO_x	CO
Analyzer Span	19.15	18.94	87.00	9.64
Actual Span Value	10.78	10.56	41.3	4.60
Pre Test Zero Direct	0.01	0.03	0.02	0.03
Pre Test Span Direct	10.87	10.47	41.46	4.65
Pre-test Zero	0.03	0.11	0.04	0.14
Pre-test Span	10.84	10.52	41.19	4.64
0-30 min	9.06	11.45	34.11	0.25
Post Test Zero Direct	0.00	-0.03	0.02	-0.01
Post Test Span Direct	10.82	10.23	41.40	4.56
Post-test Zero	0.02	0.03	0.07	0.11
Post-test Span	10.78	10.25	41.13	4.55
Average	9.06	11.45	34.11	0.25
Corr. Results	9.03	11.65	34.22	0.13
	Cal Error <2%, Bias <5%; Drift <3%			
Calibrtion Error	0.5%	-0.5%	0.2%	0.6%
Pre-Test Zero Bias	0.1%	0.4%	0.0%	1.1%
Pre-Test Span Bias	-0.2%	0.3%	-0.3%	-0.1%
Post-Test Zero Bias	0.1%	0.3%	0.1%	1.2%
Post-Test Span Bias	-0.2%	0.1%	-0.3%	-0.1%
Zero Drift	0.0%	-0.4%	0.0%	-0.3%
Span Drift	-0.3%	-1.4%	-0.1%	-0.9%
CAL SHIFT	PASS	PASS	PASS	PASS

TEST SUMMARY

O_2:	9.031	% dry
	7.703	% wet
CO_2:	11.648	% dry
	9.935	% wet
NO_x:	34.221	ppm dry
	29.188	ppm wet
	23.286	lb/hr
SO_2:	6.733102	ppm dry
	6.374	lb/hr
CO:	0.13	ppm dry
	0.11	ppm wet
	0.055	lb/hr
H_2O:	14.7	%
MW:	28.43	lb/lb-mole
Flow:	173,350	wacfm
	94.992	mdscfm
	5699.54	kdscfh

SOx Titration Summary

	B1/2	Probe
N BaCl2	0.0096712	
Total VOL (ml)	513.1	
Aliquot VOL (ml)	20	
Titrant VOL (ml)	2.77	

RELATIVE ACCURACY DATA

Parameter	Units	Ref. Meth	CEMS	Diff.	Diff. %
Flow	kdscfh	5699.54	5988.87	-289.33	-5.1%
O_2	% dry	9.03	9.2	-0.12	-1.3%
CO_2	% dry	11.65	11.5	0.13	1.1%
NO_x	ppm dry	34.22	36.1	-1.88	-5.5%
NO_x	ppm @ 3% O_2	51.61	54.6	-3.03	-5.9%
NO_x	lb/hr	23.29	25.9	-2.65	-11.4%
SO_2	ppm dry	6.73	6.94	-0.21	-3.1%
SO_2	ppm @ 3% O_2	10.15	10.52	-0.37	-3.6%
SO_2	lb/hr	6.374	6.921	-0.546	-8.6%
CO	ppm dry	0.13	0.32	-0.18	
CO	ppm @ 3% O_2	0.20	0.48	-0.28	
CO	lb/hr	0.055	0.142		

Montrose AQS
RELATIVE ACCURACY TEST AUDIT
DATA AND WORKSHEET
Desert View Power UNIT 1

PRE-TEST INFORMATION
GENERAL

Test:	3-RA-U1
Date:	3/10/2021
Start Time:	10:34
Station:	Desert View Power
Unit:	#1
Test Condition:	Full Load
Performed By:	DW

SAMPLE TRAIN

Barom. Pressure:	30.11	psi "Hg
Meter No.	1 P&M	
Meter Y_d	1.0110	
Meter Pressure:	1.5	iwg
Pstack:	0.48	iwg
Pstack:	30.14	"Hg
Cp:	0 84	
Tref:	68	°F
Stack Area:	38.84	ft²

METHOD 4 DATA
Impingers

#/Matl.	End	Start	Diff.
1/H2O	927.7	737.1	190.6
2/H2O	712.6	711.1	1.5
3/Empty	639.9	639.6	0.3
4/S.G.	877.0	866.9	10.1
Rinse		50.0	-50.0
Total			152.5

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	745.000	73	76
		74	77
Stop	786.418	78	78
Total	41.418		76.0

Summary

Sample Volume:	41.655	dscf
H_2O Volume :	7.198	scf
Moisture Content:	14.7	%

METHOD 2 DATA

Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	1.30	1.1402	371	80.48
4	0.99	0.9950	372	70.28
3	0.98	0.9899	373	69.96
2	1.10	1.0488	372	74.08
1	0.97	0.9849	371	69.52
5	1.40	1.1832	370	83.47
4	1.30	1.1402	371	80.48
3	0.94	0.9695	372	68.48
2	0.97	0.9849	371	69.52
1	0.82	0.9055	372	63.96
5	0.96	0.9798	371	69.16
4	0.99	0.9950	372	70.28
3	0.93	0.9644	372	68.11
2	0.92	0.9592	371	67.71
1	1.10	1.0488	372	74.08
5	1.10	1.0488	371	74.03
4	1.20	1.0954	372	77.37
3	1.30	1.1402	371	80.48
2	1.10	1.0488	371	74.03
1	1.20	1.0954	372	77.37
5	1.50	1.2247	372	86.51
4	1.20	1.0954	371	77.33
3	1.30	1.1402	372	80.53
2	1.20	1.0954	371	77.33
1	1.10	1.0488	370	73.99
5	1.40	1.1832	369	83.42
4	1.30	1.1402	370	80.44
3	1.20	1.0954	371	77.33
2	1.20	1.0954	371	77.33
1	1.10	1.0488	370	73.99
Average	1.1297	1.0629	371.2	75.04

METHOD 3A, 6C, 7E DATA

	O_2	CO_2	NO_x	CO
Span	19.15	18.94	87.00	9.64
Actual Span Value	10.78	10.56	41.3	4.60
Pre Test Zero Direct	0.00	-0.03	0.02	-0.01
Pre Test Span Direct	10.82	10.23	41.40	4.56
Pre-test Zero	0.02	0.03	0.07	0.11
Pre-test Span	10.78	10.25	41.13	4.55
0-30 min	8.84	11.34	39.62	0.17
Post Test Zero Direct	-0.01	-0.03	0.04	-0.06
Post Test Span Direct	10.75	10.04	41.24	4.43
Post-test Zero	0.01	0.04	0.08	0.08
Post-test Span	10.72	10.04	40.88	4.42
Average	8.84	11.34	39.62	0.17
Corr. Results	8.86	11.80	39.91	0.08
	Cal Error <2%, Bias <5%; Drift <3%			
Calibrtion Error	0.2%	-1.8%	0.1%	-0.4%
Pre-Test Zero Bias	0.1%	0.3%	0.1%	1.2%
Pre-Test Span Bias	-0.2%	0.1%	-0.3%	-0.1%
Post-Test Zero Bias	0.1%	0.3%	0.0%	1.5%
Post-Test Span Bias	-0.2%	0.0%	-0.4%	-0.1%
Zero Drift	0.0%	0.1%	0.0%	-0.3%
Span Drift	-0.3%	-1.1%	-0.3%	-1.3%
CAL STATUS	PASS	PASS	PASS	PASS

TEST SUMMARY

O_2:	8.859	% dry
	7.554	% wet
CO_2:	11.803	% dry
	10.064	% wet
NO_x:	39.905	ppm dry
	34.025	ppm wet
	27.273	lb/hr
SO_2:	7.4129918	ppm dry
	7.049	lb/hr
CO:	0.08	ppm dry
	0.07	ppm wet
	0.033	lb/hr
H_2O:	14.7	%
MW:	28.44	lb/lb-mole
Flow:	174,864	wacfm
	95.41	mdscfm
	5724.72	kdscfh

SOx Titration Summary

	B1/2	Probe
N BaCl2	0.0096712	
Total VOL (ml)	503.1	
Aliquot VOL (ml)	20	
Titrant VOL (ml)	2.99	

RELATIVE ACCURACY DATA

Parameter	Units	Ref. Meth	CEMS	Diff.	Diff. %
Flow	kdscfh	5724.72	5089	635.62	11.1%
O_2	% dry	8.86	9.0	-0.13	-1.5%
CO_2	% dry	11.80	11.7	0.14	1.2%
NO_x	ppm dry	39.91	41.6	-1.66	-4.2%
NO_x	ppm @ 3% O_2	59.32	62.1	-2.75	-4.6%
NO_x	lb/hr	27.27	25.33	1.94	7.1%
SO_2	ppm dry	7.41	8.20	-0.78	-10.6%
SO_2	ppm @ 3% O_2	11.02	12.21	-1.19	-10.8%
SO_2	lb/hr	7.049	7.004	0.045	0.6%
CO	ppm dry	0.08	0.77	-0.69	
CO	ppm @ 3% O_2	0.12	1.15	-1.04	
CO	lb/hr	0.033	0.288	-0.26	

Appendix C.2.2
Unit 1 Hydrogen Chloride Calculations

HCL
Desert View Power - Unit 1

Test No	1-HCl	2-HCl	3-HCl	Average	Limit
Date	3/5/2021	3/5/2021	3/5/2021		
Start Time	7:20	9:42	12:10		
Stop Time	9:20	11:42	14:10		
Test Information					
Reference Temperature, °F	68	68	68		
Diluent Emissions and Stack Flow Rate					
Moisture Fraction, %	13.1	12.5	13.7	13.1	
O_2, % vol. dry	9.01	9.00	8.92	8.98	
CO_2, % vol. Dry	11.61	11.66	11.72	11.66	
Stack Flow Rate (dscfm)	92,396	93,518	92,706	92,873	
Fuel F_d Factor, dscf/MMBtu @ 68°.....	9,240	9,240	9,240		
Fuel F_d Factor, dscf/MMBtu @ 60°.....	9,100	9,100	9,100		
HCl Emissions					
ppmvw	12.16	10.28	10.07	10.84	
ppmvd	14.00	11.75	11.66	12.47	
lb/hr (as HCl)	7.5	6.3	6.2	6.68	
lb/MMBtu	0.0215	0.0181	0.0178	0.019	**0.022**

Montrose AQS
Run 1 CEMS
DATA AND WORKSHEET
Desert View Power UNIT 1

PRE-TEST INFORMATION
GENERAL

Test:	1-O2/CO2-U1
Date:	3/5/2021
Start Time:	7:20
Station:	Desert View Power
Unit:	Unit 1
Test Condition:	Full Load
Performed By:	RD

PRE-TEST INFORMATION
SAMPLE TRAIN

Barom. Pressure:		psi
	30.28	"Hg
Meter No.	30-WCS	
Meter Y_d:	0.9830	
Meter Pressure:	1.5	iwg
dstack:	0.53	iwg
Pstack:	30.32	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft2

METHOD 4 DATA
Impingers

#/Matl.	End	Start	Diff.
1/H2O	898.9	742.1	156.8
2/H2O	722.5	651.6	70.9
3/Empty	666.1	660.2	5.9
4/S.G.	964.0	936.0	28.0
Rinse			0.0
Total			261.6

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	103.200	60	60
		64	62
Stop	184.177	66	63
Total	80.977		62.5

Summary

Sample Volume:	81.689	dscf
H_2O Volume :	12.348	scf
Moisture Content:	13.1	%

METHOD 3A, 6C, 7E DATA

	O_2	CO_2
Analyzer Span	19.15	18.94
Actual Span Value	10.78	10.56
Pre Test Zero Direct	0.00	0.00
Pre Test Span Direct	10.84	10.39
Pre-test Zero	0.14	0.04
Pre-test Span	10.88	10.32
Average	9.08	11.40
Post Test Zero Direct	0.00	-0.01
Post Test Span Direct	10.87	10.43
Post-test Zero	0.03	0.08
Post-test Span	10.80	10.44
Average	9.08	11.40
Corr. Results	9.01	11.61

Cal Error <2%, Bias <5%; Drift <3%

Calibrtion Error	0.3%	-0.9%
Pre-Test Zero Bias	0.7%	0.2%
Pre-Test Span Bias	0.2%	-0.4%
Post-Test Zero Bias	0.1%	0.5%
Post-Test Span Bias	-0.4%	0.0%
Zero Drift	-0.6%	0.2%
Span Drift	-0.4%	0.6%

METHOD 2 DATA

Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	1.30	1.1402	358	79.38
4	0.98	0.9899	359	68.96
3	0.64	0.8000	354	55.56
2	1.00	1.0000	355	69.49
1	0.99	0.9950	352	69.02
5	1.40	1.1832	356	82.27
4	1.00	1.0000	358	69.62
3	0.92	0.9592	357	66.74
2	0.68	0.8246	352	57.20
1	0.66	0.8124	351	56.32
5	0.87	0.9327	353	64.74
4	0.83	0.9110	352	63.19
3	0.80	0.8944	354	62.12
2	0.91	0.9539	355	66.29
1	0.93	0.9644	356	67.06
5	1.40	1.1832	357	82.33
4	1.10	1.0488	358	73.02
3	0.84	0.9165	357	63.77
2	0.82	0.9055	355	62.93
1	0.80	0.8944	354	62.12
5	1.30	1.1402	352	79.09
4	1.10	1.0488	353	72.79
3	1.00	1.0000	354	69.45
2	1.10	1.0488	355	72.88
1	1.00	1.0000	352	69.36
5	1.40	1.1832	353	82.12
4	1.30	1.1402	354	79.18
3	1.30	1.1402	356	79.28
2	1.00	1.0000	357	69.58
1	1.00	1.0000	355	69.49
Average	1.0007	1.0004	354.8	69.51

TEST SUMMARY

O_2:	9.012	% dry
	7.829	% wet
CO_2:	11.610	% dry
	10.086	% wet
H_2O:	13.1	%
MW:	28.61	lb/lb-mole
Flow:	161,992	wacfm
	92.40	mdscfm
	5543.75	kdscfh

Montrose AQS
Run 2 CEMS
DATA AND WORKSHEET
Desert View Power UNIT 1

PRE-TEST INFORMATION

GENERAL

Test:	2-O2/CO2-U1
Date:	3/5/2021
Start Time:	9:42
Station:	Desert View Power
Unit:	Unit 1
Test Condition:	Full Load
Performed By:	RD

PRE-TEST INFORMATION

SAMPLE TRAIN

Barom. Pressure:		psi
	30.28	"Hg
Meter No.	1 P&M	
[illegible]	1 0110	
Meter Pressure:	1.5	iwg
Pstack:	0.53	iwg
Pstack:	30.32	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft2

METHOD 4 DATA

Impingers

#/Matl.	End	Start	Diff.
1/H2O	991.6	812.9	178.7
2/H2O	807.5	734.2	73.3
3/Empty	588.2	586.7	1.5
4/S.G.	1035.9	1034.5	1.4
Rinse			0.0
Total			254.9

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	490.000	74	76
		77	80
Stop	573.448	81	84
Total	83.448		78.7

Summary

Sample Volume:	83.981	dscf
[illegible]	12.031	scf
Moisture Content:	12.5	%
	3	

METHOD 3A, 6C, 7E DATA

	[illegible]	[illegible]
Analyzer Span	19.15	18.94
Actual Span Value	10.78	10.56
Pre Test Zero Direct	0.00	-0.01
Pre Test Span Direct	10.87	10.43
Pre-test Zero	0.03	0.08
Pre-test Span	10.80	10.44
Average	8.99	11.38
Post Test Zero Direct	0.00	-0.02
Post Test Span Direct	10.77	10.18
Post-test Zero	0.03	0.08
Post-test Span	10.73	10.19
Average	8.99	11.38
Corr. Results	9.00	11.66

Cal Error <2%, Bias <5%; Drift <3%

Calibrtion Error	0.5%	-0.7%
Pre-Test Zero Bias	0.1%	0.5%
Pre-Test Span Bias	-0.4%	0.0%
Post-Test Zero Bias	0.1%	0.5%
Post-Test Span Bias	-0.2%	0.1%
Zero Drift	0.0%	0.0%
Span Drift	-0.4%	-1.3%

METHOD 2 DATA

Point	dP [illegible]	dP [illegible]	Temp (°F)	Velocity (fps)
5	1.40	1.1832	356	82.16
4	1.20	1.0954	357	76.11
3	1.30	1.1402	358	79.27
2	1.10	1.0488	356	72.83
1	1.00	1.0000	355	69.40
5	1.20	1.0954	354	75.97
4	1.10	1.0488	356	72.83
3	1.00	1.0000	357	69.48
2	1.00	1.0000	358	69.52
1	1.10	1.0488	359	72.96
5	1.30	1.1402	354	79.08
4	1.20	1.0954	355	76.02
3	0.86	0.9274	355	64.36
2	0.84	0.9165	356	63.64
1	0.80	0.8944	356	62.11
5	0.91	0.9539	359	66.36
4	0.84	0.9165	356	63.64
3	0.82	0.9055	358	62.96
2	0.89	0.9434	359	65.63
1	0.91	0.9539	354	66.16
5	1.30	1.1402	352	78.98
4	1.00	1.0000	353	69.31
3	0.98	0.9899	354	68.66
2	0.72	0.8485	355	58.88
1	0.69	0.8307	356	57.68
5	1.40	1.1832	354	82.06
4	0.98	0.9899	355	68.70
3	0.92	0.9592	356	66.60
2	0.99	0.9950	355	69.05
1	0.97	0.9849	356	68.39
Average	1.0154	1.0076	355.8	69.96

TEST SUMMARY

O_2:	9.001	% dry
	7.873	% wet
CO_2:	11.656	% dry
	10.195	% wet
H_2O:	12.5	%
MW:	28.69	lb/lb-mole
Flow:	163,036	wacfm
	93.52	mdscfm
	5611.11	kdscfh

Montrose AQS
Run 3 CEMS
DATA AND WORKSHEET
Desert View Power UNIT 1

PRE-TEST INFORMATION

GENERAL

Test:	3-O2/CO2-U1
Date:	3/5/2021
Start Time:	12:10
Station:	Desert View Power
Unit:	Unit 1
Test Condition:	Full Load
Performed By:	RD

PRE-TEST INFORMATION

SAMPLE TRAIN

Barom. Pressure:		psi
	30.28	"Hg
Meter No.	1 P&M	
[illegible]	1.0110	
Meter Pressure:	1.5	iwg
Pstack:	0.53	iwg
Pstack:	30.32	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft2

METHOD 4 DATA

Impingers

#/Matl.	End	Start	Diff.
1/H2O	927.6	755.0	172.6
2/H2O	724.4	647.6	76.8
3/Empty	668.9	666.1	2.8
4/S.G.	973.2	950.3	22.9
Rinse			0.0
Total			275.1

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	575.000	86	88
		90	92
Stop	658.337	94	96
Total	83.337		91.0

Summary

Sample Volume:	81.992	dscf
[illegible]	12.985	scf
Moisture Content:	13.7	%
3		

METHOD 3A, 6C, 7E DATA

	[illegible]	[illegible]
Analyzer Span	19.15	18.94
Actual Span Value	10.78	10.56
Pre Test Zero Direct	0.00	-0.02
Pre Test Span Direct	10.77	10.18
Pre-test Zero	0.03	0.08
Pre-test Span	10.73	10.19
Average	8.85	11.20
Post Test Zero Direct	-0.01	-0.03
Post Test Span Direct	10.67	10.42
Post-test Zero	0.03	0.06
Post-test Span	10.64	10.00
Average	8.85	11.20
Corr. Results	8.92	11.72

Cal Error <2%, Bias <5%; Drift <3%

Calibrtion Error	-0.1%	-2.0%
Pre-Test Zero Bias	0.1%	0.5%
Pre-Test Span Bias	-0.2%	0.1%
Post-Test Zero Bias	0.2%	0.5%
Post-Test Span Bias	-0.2%	-2.3%
Zero Drift	0.0%	-0.1%
Span Drift	-0.4%	-1.1%

METHOD 2 DATA

Point	dP [illegible]	dP [illegible]	Temp (°F)	Velocity (fps)
5	1.30	1.1402	356	79.36
4	0.96	0.9798	357	68.24
3	0.90	0.9487	358	66.11
2	0.95	0.9747	357	67.88
1	0.95	0.9747	356	67.84
5	1.40	1.1832	357	82.40
4	0.98	0.9899	358	68.99
3	0.95	0.9747	357	67.88
2	0.77	0.8775	358	61.15
1	0.70	0.8367	358	58.30
5	0.94	0.9695	356	67.48
4	0.85	0.9220	357	64.21
3	0.83	0.9110	355	63.37
2	0.90	0.9487	354	65.95
1	0.89	0.9434	352	65.50
5	1.30	1.1402	353	79.21
4	1.30	1.1402	354	79.26
3	1.00	1.0000	355	69.56
2	0.86	0.9274	356	64.54
1	0.77	0.8775	357	61.11
5	1.30	1.1402	354	79.26
4	1.10	1.0488	355	72.95
3	1.00	1.0000	356	69.60
2	0.98	0.9899	357	68.94
1	1.00	1.0000	354	69.51
5	1.40	1.1832	356	82.35
4	1.40	1.1832	355	82.30
3	1.20	1.0954	357	76.29
2	1.00	1.0000	354	69.51
1	0.98	0.9899	352	68.73
Average	1.0195	1.0097	355.7	70.26

TEST SUMMARY

O_2:	8.922	% dry
	7.702	% wet
CO_2:	11.724	% dry
	10.121	% wet
H_2O:	13.7	%
MW:	28.56	lb/lb-mole
Flow:	163,734	wacfm
	92.71	mdscfm
	5562.34	kdscfh

Appendix C.2.3
Unit 1 Particulate Calculations

EPA METHOD 5 SOURCE TEST

DATA AND WORKSHEET

Client	Desert View Power	Parameter		Full Load
Loaction	Mecca	Fuel		Biomass
Unit	1	Data By		DW
Test Number	1-PM-U1	2-PM-U1	3-PM-U1	Average
Reference Temperature, F	68	68	68	
Test Date	3/12/2021	3/12/2021	3/12/2021	
Sample Train	30-WCS	30-WCS	30-WCS	-
Pitot Factor	0.840	0.840	0.840	-
Meter Calibration Factor	0.983	0.983	0.983	-
Stack Area (sq ft)	38.84	38.84	38.84	-
Sample Time (Min)	120	120	120	120
Barometric Pressure (in Hg)	30.22	30.22	30.22	30.22
Nozzle Diam (in)	0.239	0.239	0.239	0.239
Start/Stop Time	840/1100	1120/1336	1352/1602	-
Stack Pressure (iwg)	0.49	0.49	0.50	0.49
Delta P (iwg)	1.002	0.9759	0.9906	0.9894
Meter Pressure (iwg)	1.757	1.753	1.757	1.756
Stack Temperature (F)	363.0	362.9	362.6	362.8
Meter Temperature (F)	69.5	78.9	73.4	73.9
Meter Volume (acf)	89.125	90.560	90.760	90.148
Liquid Volume (ml)	274.0	283.3	315.3	290.9
Stack O2 (%)	9.12	9.31	9.03	9.2
Stack CO2 (%)	11.60	11.38	11.70	11.6
Standard Sample Volume (SCF)	88.594	88.463	89.568	88.875
Moisture Fraction	0.127	0.131	0.142	0.134
Molecular Weight (wet)	28.66	28.59	28.49	28.58
Stack Gas Velocity (ft/sec)	69.91	69.09	69.72	69.57
Stack Flow Rate (wacfm)	162,912	161,000	162,466	162,126
Stack Flow Rate (dscfm)	92,202	90,718	90,405	91,108
Isokinetic Ratio (%)	99.79	101.27	102.89	101.32
Analysis				
Filter mg	0.90	0.50	2.20	1.20
Probe/Nozzle mg	0.30	2.50	2.40	1.73
Particulate Catch, mg	1.20	3.00	4.60	2.93
Particulate Emissions				
Grain Loading gr/dscf	0.00021	0.00052	0.00079	0.00051
Grain Loading @ 12% CO2	0.00022	0.00055	0.00081	0.00053
Part emission lb/hr	0.165	0.407	0.614	0.395
F-Factor (dscf/MMBtu)	9240	9240	9240	
Emission rate, lb/MMBtu	0.0005	0.0012	0.0018	0.0012

MOBILE EMISSION LABORATORY
CONTINUOUS GASEOUS MEASUREMENTS SUMMARY

Client:	Desert View Power		Condition:	----	
Unit:	1		Load:	> 90%	
Location:	Mecca		Date	3/12/2021	

	O2%	CO2%			
Analyzer Range:	20	20			
Span Value:	10.78	10.56			
	O2%	CO2%			
As Found	10.855	10.434			
Linearity	0.4%	-0.6%			<2% **Pass**
3/12/2021	O2%	CO2%			
1 -HCL-U1					
Analyzer Range:	20	20			
Span Value:	10.78	10.56			
Pre test Direct Zero	0.00	0.01			
Pre test Direct Span	10.86	10.43			
System Zero	0.00	0.12			
System Span	10.82	10.50			
Average	9.15	11.52			
System Zero	0.00	0.12			
System Span	10.82	10.50			
Post test Direct Zero	-0.01	0.05			
Post test Direct Span	10.85	10.49			
Corrected Conc.	9.12	11.60			
System Bias Check					
Zero Pre-test	0.02%	0.59%			< 5% **PASS**
Zero Post-test	0.02%	0.59%			< 5% **PASS**
Span Pre-test	0.20%	-0.29%			< 5% **PASS**
Span Post-test	0.20%	-0.29%			<5% **PASS**

3/12/2021	O2%	CO2%				
2-CEM-U1						
Analyzer Range:	20	20				
Span Value:	10.78	10.56				
Pre test Direct Zero	-0.01	0.05				
Pre test Direct Span	10.85	10.49				
System Zero	0.00	0.12				
System Span	10.82	10.50				
Raw concentration	9.34	11.29				
System Zero	0.00	0.12				
System Span	10.81	10.47				
Post test Direct Zero	-0.02	0.05				
Post test Direct Span	10.83	10.46				
Corrected Conc.	9.31	11.38				
System Bias Check						
Zero Pre-test	0.02%	0.59%			< 5%	**PASS**
Zero Post-test	0.01%	0.58%			< 5%	**PASS**
Span Pre-test	0.20%	-0.29%			< 5%	**PASS**
Span Post-test	0.14%	-0.47%			<5%	**PASS**
3/12/2021	O2%	CO2%				
3-CEM-U1						
Analyzer Range:	20	20				
Span Value:	10.78	10.56				
Pre test Direct Zero	-0.02	0.05				
Pre test Direct Span	10.83	10.46				
System Zero	0.00	0.12				
System Span	10.81	10.47				
Raw concentration	9.06	11.57				
System Zero	0.00	0.13				
System Span	10.80	10.46				
Post test Direct Zero	-0.03	0.04				
Post test Direct Span	10.83	10.43				
Corrected Conc.	9.03	11.70				
System Bias Check						
Zero Pre-test	0.01%	0.58%			< 5%	**PASS**
Zero Post-test	0.02%	0.65%			< 5%	**PASS**
Span Pre-test	0.14%	-0.47%			< 5%	**PASS**
Span Post-test	0.11%	-0.53%			<5%	**PASS**

	1-PM-U1						2-PM-U1						3-PM-U1					
	dP	(dP)^.5	dH	Ts	Tm		dP	(dP)^.5	dH	Ts	Tm		dP	(dP)^.5	dH	Ts	Tm	
5	1.10	1.049	1.9	364	63	63	1.10	1.049	2.0	363	75	76	1.00	1.000	1.8	363	74	73
4	0.98	0.990	1.7	363	64	63	1.20	1.095	2.1	362	76	76	1.20	1.095	2.1	362	74	73
3	0.87	0.933	1.5	364	64	63	1.20	1.095	2.1	363	77	77	1.30	1.140	2.3	362	74	73
2	0.99	0.995	1.7	364	65	64	1.10	1.049	2.0	363	78	79	1.10	1.049	2.0	363	75	74
1	1.00	1.000	1.7	365	65	64	1.00	1.000	1.8	362	80	80	1.00	1.000	1.8	364	74	72
5	1.20	1.095	2.1	363	64	63	1.20	1.095	2.1	363	80	80	1.20	1.095	2.1	364	74	73
4	0.96	0.980	1.6	363	64	63	1.10	1.049	2.0	364	80	80	1.10	1.049	2.0	364	74	73
3	0.99	0.995	1.7	364	65	66	1.20	1.095	2.1	364	81	80	1.30	1.140	2.3	363	73	72
2	0.66	0.812	1.1	364	66	66	1.40	1.183	2.5	363	82	81	1.40	1.183	2.5	363	72	72
1	0.62	0.787	1.1	362	67	67	1.10	1.049	2.0	363	82	81	1.00	1.000	1.8	363	72	72
5	0.96	0.980	1.6	361	68	67	0.91	0.954	1.6	362	82	82	1.10	1.049	2.0	362	74	74
4	0.91	0.954	1.6	362	67	68	0.89	0.943	1.6	363	82	81	0.93	0.964	1.7	362	75	75
3	0.85	0.922	1.5	362	67	68	0.85	0.922	1.5	364	82	81	0.89	0.943	1.6	362	76	75
2	1.00	1.000	1.7	362	69	69	0.80	0.894	1.4	364	83	83	0.84	0.917	1.5	363	76	75
1	1.10	1.049	1.9	362	69	69	0.80	0.894	1.4	363	83	83	0.80	0.894	1.4	364	77	77
5	0.85	0.922	1.5	362	71	70	0.85	0.922	1.5	362	80	80	0.86	0.927	1.5	362	76	75
4	0.83	0.911	1.5	361	71	72	0.83	0.911	1.5	363	80	79	0.83	0.911	1.5	362	76	74
3	0.92	0.959	1.6	363	72	72	0.92	0.959	1.6	362	80	78	0.92	0.959	1.6	363	75	74
2	0.97	0.985	1.7	364	72	73	0.96	0.980	1.7	364	79	78	0.97	0.985	1.7	364	75	74
1	0.99	0.995	1.7	363	73	73	0.99	0.995	1.8	362	79	78	0.98	0.990	1.7	364	74	73
5	1.10	1.049	1.9	363	73	73	1.20	1.095	2.1	362	79	78	1.20	1.095	2.1	363	73	73
4	1.30	1.140	2.3	364	73	73	0.95	0.975	1.7	363	78	78	1.00	1.000	1.8	363	73	72
3	1.20	1.095	2.1	364	74	74	0.93	0.964	1.7	364	78	77	0.98	0.990	1.1	362	73	72
2	1.20	1.095	2.1	364	75	74	0.62	0.787	1.1	364	78	77	0.62	0.787	1.1	362	73	71
1	1.00	1.000	1.8	363	75	74	0.60	0.775	1.1	364	77	76	0.65	0.806	1.2	361	73	71
5	1.00	1.000	1.8	363	75	73	0.96	0.980	1.7	363	77	76	0.96	0.980	1.7	362	73	71
4	1.30	1.140	2.3	363	75	73	0.91	0.954	1.6	362	77	76	0.92	0.959	1.6	362	73	71
3	1.20	1.095	2.1	362	75	74	0.85	0.922	1.5	362	76	76	0.90	0.949	1.6	360	73	71
2	1.20	1.095	2.1	363	76	74	1.00	1.000	1.8	362	76	76	1.00	1.000	1.8	361	72	70
1	1.00	1.000	1.8	362	76	74	1.10	1.049	2.0	362	76	75	1.00	1.000	1.8	362	72	70
Average		1.0016	1.757	363.0	69.5		Average	0.9759	1.753	362.9	78.9		Average	0.9906	1.757	362.6	73.4	
			Meter Vol	Imp	Imp				Meter Vol	Imp	Imp				Meter Vol	Imp	Imp	
Delta P (iwg)		1.002	813.500	971.0	725.3	245.7	Delta P (iwg)	0.976	902.950	948.8	752.6	196.2	Delta P (iwg)	0.991	993.800	954.8	734.8	220.0
Meter Pressure (iwg)		1.757	902.625	702.5	694.5	8.0	Meter Pressure (iwg)	1.753	993.510	698.6	635	63.6	Meter Pressure (iwg)	1.757	1084.56	783.9	711.8	72.1
Stack Temperature (F		362.967	89.125	644.1	643.5	0.6	Stack Temperature (F	362.900	90.560	663.5	662.4	1.1	Stack Temperature (F	362.567	90.760	644.2	644.1	0.1
Meter Temperature (F		69.533		936.1	916.4	19.7	Meter Temperature (F	78.850		946.4	924	22.4	Meter Temperature (F	73.383		927.9	904.8	23.1
Meter Volume (acf)		89.125				0.0	Meter Volume (acf)	90.560				0.0	Meter Volume (acf)	90.760				0.0
Liquid Volume (ml)		274.0				274.0	Liquid Volume (ml)	283.3				283.3	Liquid Volume (ml)	315.3				315.3

Appendix C.2.4
Unit 1 Hydrocarbon Calculations

SCAQMD 25.3 SOURCE TEST
DATA AND WORKSHEET

Client	Desert View Power	Parameter	>90%
Loaction	Mecca	Fuel	Biomass/coke
Unit	Unit 1	Data By	DW
Test Number	1A-VOC-U2	1B-VOC-U2	Average
Reference Temperature, F	68	68	
Test Date	3/10/2021	3/10/2021	
Sample Time (Min)	~60	~60	~60
Barometric Pressure (in Hg)	30.11	30.11	30.11
Start/Stop Time	1034/1126	1034/1126	
Stack O2 (%)	8.86	8.86	8.9
Stack CO2 (%)	11.80	11.80	11.8
Stack H2O (%)	14.7%	14.7%	14.7%
Stack Flow Rate (wacfm)	174,864	174,864	174,864
Stack Flow Rate (dscfm)	95,412	95,412	95,412
Laboraotory Results			
TGNMO ppm	4.60	4.60	4.60
TGNMO ppm @ 3% O2	6.84	6.84	6.84
TGNMO lb/hr	1.09	1.09	1.09

Note: Flow rates from Test RATA Run 3

Per Method 25.3 when the difference between the paired canisters is >20% the higher of the two results is used.

Appendix C.2.5
Unit 1 Mercury Calculations

Montrose AQS
Run 1 CEMS
DATA AND WORKSHEET
Desert View Power UNIT 1

PRE-TEST INFORMATION
GENERAL

Test:	1-O2/CO2-U1
Date:	3/11/2021
Start Time:	15:25
Station:	Desert View Power
Unit:	Unit 1
Test Condition:	Full Load
Performed By:	RD

PRE-TEST INFORMATION
SAMPLE TRAIN

Barom. Pressure:		psi
	30.14	"Hg
Meter No.	23-WCS	
Meter Y_d	1.0000	
Meter Pressure:	2.0	iwg
Pstack:	0.49	iwg
Pstack:	30.17	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft2

METHOD 4 DATA
Impingers

#/Matl.	End	Start	Diff.
1/H2O	780.7	686.6	94.1
2/H2O	769.2	758.4	10.8
3/Empty	608.4	598.6	9.8
4/S.G.	936.3	910.0	26.3
Rinse			0.0
Total			141.0

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	953.800	62	63
		62	63
Stop	999.872	62	63
		62	62
Total	46.072		62.4

Summary

Sample Volume:	47.131	dscf
H_2O Volume :	6.655	scf
Moisture Content:	12.4	%

METHOD 3A, 6C, 7E DATA

	O_2	CO_2
Analyzer Span	19.15	18.94
Actual Span Value	10.78	10.56
Pre Test Zero Direct	-0.02	-0.02
Pre Test Span Direct	10.84	10.42
Pre-test Zero	0.01	0.06
Pre-test Span	10.81	10.42
Average	9.62	10.99
Post Test Zero Direct	-0.02	-0.01
Post Test Span Direct	10.84	10.42
Post-test Zero	0.00	0.05
Post-test Span	10.81	10.42
Average	9.62	10.99
Corr. Results	9.59	11.14
Cal Error <2%, Bias <5%; Drift <3%		
Calibrtion Error	0.3%	-0.8%
Pre-Test Zero Bias	0.1%	0.4%
Pre-Test Span Bias	-0.1%	0.0%
Post-Test Zero Bias	0.1%	0.3%
Post-Test Span Bias	-0.2%	0.0%
Zero Drift	-0.1%	-0.1%
Span Drift	0.0%	0.0%

METHOD 2 DATA

Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	1.00	1.0000	365	70.03
4	1.20	1.0954	366	76.76
3	1.30	1.1402	366	79.89
2	1.30	1.1402	366	79.89
1	1.00	1.0000	366	70.07
5	1.10	1.0488	366	73.49
4	1.10	1.0488	366	73.49
3	1.20	1.0954	366	76.76
2	1.40	1.1832	361	82.65
1	1.10	1.0488	361	73.27
5	1.10	1.0488	367	73.53
4	0.93	0.9644	367	67.61
3	0.88	0.9381	368	65.81
2	0.85	0.9220	368	64.68
1	0.80	0.8944	367	62.71
5	0.85	0.9220	364	64.52
4	0.83	0.9110	364	63.76
3	0.92	0.9592	364	67.13
2	0.97	0.9849	365	68.97
1	0.99	0.9950	365	69.67
5	1.20	1.0954	363	76.62
4	0.95	0.9747	363	68.17
3	0.92	0.9592	363	67.08
2	0.62	0.7874	364	55.10
1	0.60	0.7746	364	54.21
5	0.96	0.9798	365	68.61
4	0.91	0.9539	366	66.84
3	0.85	0.9220	366	64.60
2	1.00	1.0000	366	70.07
1	1.10	1.0488	366	73.49
Average	0.9891	0.9945	365.1	69.65

TEST SUMMARY

O_2:	9.591	% dry
	8.404	% wet
CO_2:	11.139	% dry
	9.761	% wet
H_2O:	12.4	%
MW:	28.66	lb/lb-mole
Flow:	162,311	wacfm
	91.78	mdscfm
	5506.83	kdscfh

Montrose AQS
Run 2 CEMS
DATA AND WORKSHEET
Desert View Power UNIT 1

PRE-TEST INFORMATION		
GENERAL		
Test:	2-O2/CO2-U1	
Date:	3/11/2021	
Start Time:	16:50	
Station:	Desert View Power	
Unit:	Unit 1	
Test Condition:	Full Load	
Performed By:	RD	
PRE-TEST INFORMATION		
SAMPLE TRAIN		
Barom. Pressure:		psi
	30.14	"Hg
Meter No.	23-WCS	
Meter Y_d:	1.0000	
Meter Pressure:	2.0	iwg
Pstack:	0.49	iwg
Pstack:	30.17	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft2

METHOD 4 DATA			
Impingers			
#/Matl.	End	Start	Diff.
1/H2O	859.6	764.6	95.0
2/H2O	759.6	747.9	11.7
3/Empty	650.3	642.3	8.0
4/S.G.	969.8	939.8	30.0
Rinse			0.0
Total			144.7
Dry Gas Meter			
Time	Vol.	Tm(in)	Tm(out)
Start	1.000	58	58
		59	59
Stop	45.122	57	58
		58	59
Total	44.122		58.3
Summary			
Sample Volume:		45.496	dscf
H_2O Volume :		6.830	scf
Moisture Content:		13.1	%

METHOD 3A, 6C, 7E DATA		
	O_2	CO_2
Analyzer Span	19.15	18.94
Actual Span Value	10.78	10.56
Pre Test Zero Direct	-0.02	-0.01
Pre Test Span Direct	10.84	10.42
Pre-test Zero	0.00	0.05
Pre-test Span	10.81	10.42
Average	9.24	11.32
Post Test Zero Direct	-0.02	-0.02
Post Test Span Direc	10.84	10.42
Post-test Zero	0.00	0.07
Post-test Span	10.81	10.43
Average	9.24	11.32
Corr. Results	9.22	11.48
Cal Error <2%, Bias <5%; Drift <3%		
Calibrtion Error	0.3%	-0.8%
Pre-Test Zero Bias	0.1%	0.3%
Pre-Test Span Bias	-0.2%	0.0%
Post-Test Zero Bias	0.1%	0.4%
Post-Test Span Bias	-0.1%	0.1%
Zero Drift	0.0%	0.1%
Span Drift	0.0%	0.0%

METHOD 2 DATA				
Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	1.00	1.0000	361	69.91
4	1.20	1.0954	360	76.54
3	1.20	1.0954	360	76.54
2	1.00	1.0000	359	69.83
1	1.00	1.0000	359	69.83
5	1.10	1.0488	359	73.24
4	1.10	1.0488	358	73.19
3	1.20	1.0954	359	76.49
2	1.30	1.1402	360	79.67
1	1.20	1.0954	361	76.59
5	1.00	1.0000	359	69.83
4	0.94	0.9695	360	67.74
3	0.89	0.9434	361	65.96
2	0.86	0.9274	363	64.92
1	0.82	0.9055	363	63.39
5	0.84	0.9165	361	64.08
4	0.83	0.9110	361	63.70
3	0.94	0.9695	361	67.78
2	0.99	0.9950	360	69.52
1	1.00	1.0000	360	69.87
5	1.20	1.0954	359	76.49
4	0.95	0.9747	358	68.02
3	0.93	0.9644	357	67.26
2	0.63	0.7937	357	55.36
1	0.60	0.7746	358	54.06
5	0.96	0.9798	360	68.46
4	0.91	0.9539	360	66.65
3	0.85	0.9220	360	64.42
2	1.00	1.0000	359	69.83
1	1.10	1.0488	359	73.24
Average	0.9778	0.9888	359.7	69.08

TEST SUMMARY		
O_2:	9.216	% dry
	8.013	% wet
CO_2:	11.479	% dry
	9.980	% wet
H_2O:	13.1	%
MW:	28.61	lb/lb-mole
Flow:	160,986	wacfm
	90.92	mdscfm
	5455.26	kdscfh

Montrose AQS
Run 3 CEMS
DATA AND WORKSHEET
Desert View Power UNIT 1

PRE-TEST INFORMATION GENERAL		
Test:	3-O2/CO2-U1	
Date:	3/11/2021	
Start Time:	18:10	
Station:	Desert View Power	
Unit:	Unit 1	
Test Condition:	Full Load	
Performed By:	RD	

PRE-TEST INFORMATION SAMPLE TRAIN		
Barom. Pressure:		psi
	30.14	"Hg
Meter No.	23-WCS	
Meter Y_d	1.0000	
Meter Pressure:	2.0	iwg
Pstack:	0.49	iwg
Pstack:	30.17	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft2

METHOD 4 DATA Impingers			
#/Matl.	End	Start	Diff.
1/H2O	856.7	758.7	98.0
2/H2O	765.1	752.4	12.7
3/Empty	641.8	637.8	4.0
4/S.G.	1000.8	969.8	31.0
Rinse			0.0
Total			145.7

Dry Gas Meter			
Time	Vol.	Tm(in)	Tm(out)
Start	45.800	56	57
		56	57
Stop	89.872	56	57
		57	51
Total	44.072		55.9

Summary		
Sample Volume:	45.653	dscf
H_2O Volume :	6.877	scf
Moisture Content:	13.1	%

METHOD 3A, 6C, 7E DATA	O_2	CO_2
Analyzer Span	19.15	18.94
Actual Span Value	10.78	10.56
Pre Test Zero Direct	-0.02	-0.02
Pre Test Span Direct	10.84	10.42
Pre-test Zero	0.00	0.07
Pre-test Span	10.81	10.43
Average	9.05	11.55
Post Test Zero Direct	-0.02	-0.01
Post Test Span Direct	10.85	10.42
Post-test Zero	0.00	0.05
Post-test Span	10.81	10.42
Average	9.05	11.55
Corr. Results	9.02	11.71
Cal Error <2%, Bias <5%; Drift <3%		
Calibrtion Error	0.3%	-0.8%
Pre-Test Zero Bias	0.1%	0.4%
Pre-Test Span Bias	-0.1%	0.1%
Post-Test Zero Bias	0.1%	0.3%
Post-Test Span Bias	-0.2%	0.0%
Zero Drift	0.0%	-0.1%
Span Drift	0.0%	-0.1%

METHOD 2 DATA				
Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	1.10	1.0488	361	73.30
4	1.30	1.1402	360	79.64
3	1.20	1.0954	360	76.51
2	1.20	1.0954	363	76.65
1	1.00	1.0000	363	69.98
5	1.20	1.0954	363	76.65
4	1.20	1.0954	363	76.65
3	1.30	1.1402	364	79.83
2	1.40	1.1832	364	82.85
1	1.10	1.0488	363	73.39
5	1.10	1.0488	360	73.26
4	0.92	0.9592	361	67.04
3	0.88	0.9381	360	65.52
2	0.84	0.9165	361	64.06
1	0.79	0.8888	360	62.08
5	0.84	0.9165	359	63.98
4	0.82	0.9055	363	63.37
3	0.92	0.9592	362	67.08
2	0.98	0.9899	362	69.23
1	0.98	0.9899	362	69.23
5	1.20	1.0954	362	76.61
4	0.95	0.9747	363	68.20
3	0.93	0.9644	364	67.52
2	0.62	0.7874	363	55.10
1	0.60	0.7746	362	54.17
5	0.96	0.9798	360	68.44
4	0.91	0.9539	361	66.67
3	0.85	0.9220	362	64.48
2	1.00	1.0000	363	69.98
1	1.10	1.0488	364	73.44
Average	0.9971	0.9985	361.9	69.83

TEST SUMMARY		
O_2:	9.018	% dry
	7.837	% wet
CO_2:	11.706	% dry
	10.173	% wet
H_2O:	13.1	%
MW:	28.63	lb/lb-mole
Flow:	162,733	wacfm
	91.62	mdscfm
	5497.22	kdscfh

	QA/QC Spike Pair				QA/QC Spike Pair						QA/QC Spike Pair		
Test Number	**1-Hg-A**	**1-Hg-B**	**1-Hg-C**	**1-Hg-S**	**2-Hg-A**	**2-Hg-B**	**2-Hg-C**	**2-Hg-S**	**3-Hg-A**	**3-Hg-B**	**3-Hg-C**	**3-Hg-S**	**Average**
Date	Point	Point	Point	Point	Point	Point	Point	Point	Point	Point	Point	Point	
Start Time	15:25	15:25	15:25	15:25	16:50	16:50	16:50	16:50	18:10	18:10	18:10	18:10	
End Time	16:25	16:25	16:25	16:25	17:50	17:50	17:50	17:50	19:10	19:10	19:10	19:10	
Test Type	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	
Spiked	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes	
Sorbent ID	OLC160589	OLC137222	OLC149182	OL544313	OLC160643	OLC160707	OLC160571	OLC544358	OLC136861	OLC160585	OLC160653	OLC544362	
Operating Condition	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Sorbent Trap Result													
Average if paired samples, result if single, ug/dsm3		**8.61**		**9.08**		**10.26**		**10.07**		**13.43**		**13.04**	
Sampling Data													
Total volume, dsm3	0.04067	0.04069	0.04106	0.04077	0.04112	0.04109	0.04112	0.04067	0.04127	0.04104	0.04121	0.04094	
Total volume, dscf	1.43618	1.43684	1.44970	1.43963	1.45185	1.45074	1.45179	1.43622	1.45720	1.44915	1.45517	1.44559	
Moisture, %, from Flow test	12.373	12.373	12.373	12.373	13.053	13.053	13.053	13.053	13.092	13.092	13.092	13.092	
Stack O2, %	9.59	9.59	9.59	9.59	9.22	9.22	9.22	9.22	9.02	9.02	9.02	9.02	
Stack CO2, %	11.14	11.14	11.14	11.14	11.48	11.48	11.48	11.48	11.71	11.71	11.71	11.71	
Fuel F_d Factor, dscf/MMBtu @ 68°	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	
Fuel F_d Factor, dscf/MMBtu @ 60°	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	
Flow, dscfm	91,780	91,780	91,780	91,780	90,921	90,921	90,921	90,921	91,620	91,620	91,620	91,620	
Laboratory Data													
ng, Sec 1	346.60	344.40	381.50	352.10	404.30	435.30	404.60	416.00	550.10	545.00	539.00	527.00	
ng, Sec 2	4.49	5.07	6.05	3.32	2.20	1.28	2.60	0.00	6.10	4.60	4.70	1.00	
ng, total	351.09	349.47	387.55	355.42	406.50	436.58	407.20	416.00	556.20	549.60	543.70	528.00	
Spike level, ng				**400**				**400**				**400**	
Spike result ng, Sec 1				752.10				816.00				927.00	
Spike result ng, Sec 2				3.32				0.00				1.00	
Spike result ng, total				755.42				816.00				928.00	
Results													
Total ug/dscm	8.632	8.588	9.439	8.717	9.886	10.626	9.904	10.227	13.477	13.392	13.193	12.897	10.767
Total ug/dscf	0.244	0.243	0.267	0.247	0.280	0.301	0.280	0.290	0.382	0.379	0.374	0.365	0.305
Total lb/hr	2.97E-03	2.95E-03	3.24E-03	2.99E-03	3.36E-03	3.62E-03	3.37E-03	3.48E-03	4.62E-03	4.59E-03	4.52E-03	4.42E-03	3.68E-03
Total lb/MMBtu	9.19E-06	9.15E-06	1.01E-05	9.29E-06	1.02E-05	1.10E-05	1.02E-05	1.05E-05	1.37E-05	1.36E-05	1.34E-05	1.31E-05	1.11E-05
QA/QC													
Spike , ug/dsm3				18.53				20.06				22.67	
Spike , expected, ug/dsm3				9.81				9.83				9.77	
Spike, actual (spike-sample), ug/dsm3				9.09				10.16				9.47	
% recovery				92.6%				103.3%				97.0%	
Breaktrough,on sample, Sec 2, %	1.3%	1.5%	1.6%	0.9%	0.5%	0.3%	0.6%	0.0%	1.1%	0.8%	0.9%	0.2%	
Relative Percent Difference on paired samples		0.3%				3.6%				0.3%			

Note: <10% breakthrough is criteria in most cases
< 10% RPD is criteria for paired trains in most cases
85%-115% average spike recovery is Method 30B criteria
Low sample levels show more variation

Mercury			
ug/dscm	10.767	**MACT Limit**	
lb/hr (as Hg)	3.68E-03		
lb/MMBtu	1.11E-05	**5.70E-06**	

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Mercury by Method 30B
Desert View Power - Unit 1

Test Number	1-Hg-A	1-Hg-B	2-Hg-A	2-Hg-B	3-Hg-A	3-Hg-B	Averages	Limits
Date	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021		
Start Time	15:25	15:25	16:50	16:50	18:10	18:10		
End Time	16:25	16:25	17:50	17:50	19:10	19:10		
Pre-Test Information:								
Fuel F_d Factor, dscf/MMBtu	9,240	9,240	9,240	9,240	9,240	9,240		
Reference Temperature, °F	68	68	68	68	68	68		
Pollutant Emissions:								
Mercury								
Total ug/dscm	8.632	8.588	9.886	10.626	13.477	13.392	10.767	
ug/dscf	0.244	0.243	0.280	0.301	0.382	0.379	0.305	
lb/MMBtu	9.19E-06	9.15E-06	1.02E-05	1.10E-05	1.37E-05	1.36E-05	1.11E-05	**5.70E-06**

Date	Start Time	End Time	Run #	Trap #	Spiked / Unspiked	Start Vol, l	Stop Vol,l	Total Vol,l	Total Vol, m3	Total Vol,ft3	Meter No.	Yd	delta H	Meter Temp	Stack Temp	Trap Temp	Vacuum	P bar	Ref Temp	Vm std, dscm	Vm std, dscf
Point	15:25	16:25	1-Hg-A	OLC160589	Unspiked	5080.875	5121.100	40.225	0.040225	1.4203	20-A	0.99887	0.00	65.3	356.3	301.3	1.0	30.14	68	0.04067	1.43618
Point	15:25	16:25	1-Hg-B	OLC137222	Unspiked	3232.792	3273.007	40.215	0.040215	1.4200	20-B	0.99926	0.00	65.2	356.3	301.3	1.0	30.14	68	0.04069	1.43684
Point	15:25	16:25	1-Hg-C	OLC149182	Unspiked	9479.109	9519.300	40.191	0.040191	1.4191	21-C	0.99888	0.00	60.0	356.3	301.3	1.0	30.14	68	0.04106	1.44970
Point	15:25	16:25	1-Hg-S	OL544313	Spiked	3181.747	3222.013	40.266	0.040266	1.4218	21-S	0.99010	0.00	60.0	356.3	301.3	1.0	30.14	68	0.04077	1.43963
Point	16:50	17:50	2-Hg-A	OLC160643	Unspiked	5122.357	5162.492	40.135	0.040135	1.4172	20-A	0.9989	0.00	58.5	359.0	300.0	1.0	30.14	68	0.04112	1.45185
Point	16:50	17:50	2-Hg-B	OLC160707	Unspiked	3274.611	3314.777	40.166	0.040166	1.4183	20-B	0.9993	0.00	59.5	359.0	300.0	1.0	30.14	68	0.04109	1.45074
Point	16:50	17:50	2-Hg-C	OLC160571	Unspiked	9520.726	9560.859	40.133	0.040133	1.4171	21-C	0.9989	0.00	58.5	359.0	300.0	1.0	30.14	68	0.04112	1.45179
Point	16:50	17:50	2-Hg-S	OLC544358	Spiked	3223.099	3263.231	40.132	0.040132	1.4171	21-S	0.9901	0.00	59.5	359.0	300.0	1.0	30.14	68	0.04067	1.43622
Point	18:10	19:10	3-Hg-A	OLC136861	Unspiked	5163.246	5203.529	40.283	0.040283	1.4224	20-A	0.9989	0.00	58.5	362.0	301.0	1.0	30.14	68	0.04127	1.45720
Point	18:10	19:10	3-Hg-B	OLC160585	Unspiked	3317.735	3357.857	40.122	0.040122	1.4167	20-B	0.9993	0.00	59.5	362.0	301.0	1.0	30.14	68	0.04104	1.44915
Point	18:10	19:10	3-Hg-C	OLC160653	Unspiked	9561.274	9601.384	40.110	0.040110	1.4163	21-C	0.9989	0.00	57.0	362.0	301.0	1.0	30.14	68	0.04121	1.45517
Point	18:10	19:10	3-Hg-S	OLC544362	Spiked	3263.873	3304.150	40.277	0.040277	1.4222	21-S	0.9901	0.00	58.0	362.0	301.0	1.0	30.14	68	0.04094	1.44559

Run: 1-Hg-A 1-Hg-B

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePres Actual A	OrificePres Actual B	StackTem pA	StackTe mpB	Probe Temp A	Probe Temp B	TrapTemp A	TrapTemp B	Dry Gas A	Dry Gas B	Pump Vac A	Pump Vac B	Sample Rate A	Sample Rate B	Notes
	0	10	3:25:00 PM	5080.875	3232.792	n/a	0	0	356	356	300	300	300	300	64	64	1	1	0.7	0.7	
	10	20	3:35:00 PM	5087.589	3239.490	n/a	0	0	356	356	300	300	300	300	65	64	1	1	0.7	0.7	
	20	30	3:45:00 PM	5094.310	3246.190	n/a	0	0	357	357	302	302	302	302	65	65	1	1	0.7	0.7	
	30	40	3:55:00 PM	5101.013	3252.900	n/a	0	0	357	357	302	302	302	302	66	66	1	1	0.7	0.7	
	40	50	4:05:00 PM	5107.725	3259.602	n/a	0	0	356	356	302	302	302	302	66	66	1	1	0.7	0.7	
	50	60	4:15:00 PM	5114.438	3266.301	n/a	0	0	356	356	302	302	302	302	66	66	1	1	0.7	0.7	
	60		4:25:00 PM	5121.100	3273.007																

Run: 1-Hg-C 1-Hg-S

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePres Actual C	OrificePres Actual D	StackTem pA	StackTe mpB	Probe Temp C	Probe Temp D	TrapTemp A	TrapTemp B	Dry Gas C	Dry Gas D	Pump Vac C	Pump Vac D	Sample Rate C	Sample Rate D	Notes
	0	10	3:25:00 PM	9479.109	3181.747	n/a	0	0	356	356	300	300	300	300	61	61	1	1	0.7	0.7	
	10	20	3:35:00 PM	9485.809	3188.512	n/a	0	0	356	356	300	300	300	300	61	61	1	1	0.7	0.7	
	20	30	3:45:00 PM	9492.509	3195.165	n/a	0	0	357	357	302	302	302	302	60	60	1	1	0.7	0.7	
	30	40	3:55:00 PM	9499.209	3001.877	n/a	0	0	357	357	302	302	302	302	60	60	1	1	0.7	0.7	
	40	50	4:05:00 PM	9505.900	3208.591	n/a	0	0	356	356	302	302	302	302	59	59	1	1	0.7	0.7	
	50	60	4:15:00 PM	9512.609	3215.300	n/a	0	0	356	356	302	302	302	302	59	59	1	1	0.7	0.7	
	60		4:25:00 PM	9519.300	3222.013																

Run: 2-Hg-A 2-Hg-B

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePres Actual A	OrificePres Actual B	StackTem pA	StackTe mpB	Probe Temp A	Probe Temp B	TrapTemp A	TrapTemp B	Dry Gas A	Dry Gas B	Pump Vac A	Pump Vac B	Sample Rate A	Sample Rate B	Notes
	0	10	4:50:00 PM	5122.357	3274.611	n/a	0	0	359	359	300	300	300	300	58	59	1	1	0.7	0.7	
	10	20	5:00:00 PM	5129.037	3281.303	n/a	0	0	359	359	300	300	300	300	58	59	1	1	0.7	0.7	
	20	30	5:10:00 PM	5135.725	3287.999	n/a	0	0	359	359	300	300	300	300	58	59	1	1	0.7	0.7	
	30	40	5:20:00 PM	5142.426	3294.615	n/a	0	0	359	359	300	300	300	300	59	60	1	1	0.7	0.7	
	40	50	5:30:00 PM	5149.110	3201.386	n/a	0	0	359	359	300	300	300	300	59	60	1	1	0.7	0.7	
	50	60	5:40:00 PM	5155.883	3308.424	n/a	0	0	359	359	300	300	300	300	59	60	1	1	0.7	0.7	
	60		5:50:00 PM	5162.492	3314.777																

Run: 2-Hg-C 2-Hg-S

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePres Actual C	OrificePres Actual D	StackTem pA	StackTe mpB	Probe Temp C	Probe Temp D	TrapTemp A	TrapTemp B	Dry Gas C	Dry Gas D	Pump Vac C	Pump Vac D	Sample Rate C	Sample Rate D	Notes
	0	10	4:50:00 PM	9520.726	3223.099	n/a	0	0	359	359	300	300	300	300	59	60	1	1	0.7	0.7	
	10	20	5:00:00 PM	9527.410	3229.747	n/a	0	0	359	359	300	300	300	300	59	60	1	1	0.7	0.7	
	20	30	5:10:00 PM	9534.114	3236.475	n/a	0	0	359	359	300	300	300	300	59	60	1	1	0.7	0.7	
	30	40	5:20:00 PM	9540.792	3243.165	n/a	0	0	359	359	300	300	300	300	58	59	1	1	0.7	0.7	
	40	50	5:30:00 PM	9547.881	3249.814	n/a	0	0	359	359	300	300	300	300	58	59	1	1	0.7	0.7	
	50	60	5:40:00 PM	9554.170	3256.443	n/a	0	0	359	359	300	300	300	300	58	59	1	1	0.7	0.7	

	60		5:50:00 PM	9560.859	3263.231																

Run: 3-Hg-A 3-Hg-B

Point	BeginTim e	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePres Actual A	OrificePres Actual B	StackTem pA	StackTe mpB	Probe Temp A	Probe Temp B	TrapTemp A	TrapTemp B	Dry Gas A	Dry Gas B	Pump Vac A	Pump Vac B	Sample Rate A	Sample Rate B	Notes
	0	10	6:10:00 PM	5163.246	3317.735	n/a	0	0	362	362	301	301	301	301	59	60	1	1	0.7	0.7	
	10	20	6:20:00 PM	5169.961	3324.420	n/a	0	0	362	362	301	301	301	301	59	60	1	1	0.7	0.7	
	20	30	6:30:00 PM	5176.675	3331.959	n/a	0	0	362	362	301	301	301	301	59	60	1	1	0.7	0.7	
	30	40	6:40:00 PM	5183.387	3337.800	n/a	0	0	362	362	301	301	301	301	58	59	1	1	0.7	0.7	
	40	50	6:50:00 PM	5190.100	3344.423	n/a	0	0	362	362	301	301	301	301	58	59	1	1	0.7	0.7	
	50	60	7:00:00 PM	5196.870	3351.170	n/a	0	0	362	362	301	301	301	301	58	59	1	1	0.7	0.7	
	60		7:10:00 PM	5203.529	3357.857																

Run: 3-Hg-C 3-Hg-S

Point	BeginTim e	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePres Actual C	OrificePres Actual D	StackTem pA	StackTe mpB	Probe Temp C	Probe Temp D	TrapTemp A	TrapTemp B	Dry Gas C	Dry Gas D	Pump Vac C	Pump Vac D	Sample Rate C	Sample Rate D	Notes
	0	10	6:10:00 PM	9561.274	3263.873	n/a	0	0	362	362	301	301	301	301	57	58	1	1	0.7	0.7	
	10	20	6:20:00 PM	9567.958	3270.580	n/a	0	0	362	362	301	301	301	301	57	58	1	1	0.7	0.7	
	20	30	6:30:00 PM	9574.544	3277.291	n/a	0	0	362	362	301	301	301	301	57	58	1	1	0.7	0.7	
	30	40	6:40:00 PM	9581.330	3284.009	n/a	0	0	362	362	301	301	301	301	57	58	1	1	0.7	0.7	
	40	50	6:50:00 PM	9588.014	3290.720	n/a	0	0	362	362	301	301	301	301	57	58	1	1	0.7	0.7	
	50	60	7:00:00 PM	9594.699	3297.450	n/a	0	0	362	362	301	301	301	301	57	58	1	1	0.7	0.7	
	60		7:10:00 PM	9601.384	3304.150																

Appendix C.3
Unit 2 Calculations

Appendix C.3.1
Unit 2 Gaseous Calculations

MONTROSE AQS
RELATIVE ACCURACY TEST AUDIT
DATA AND WORKSHEET
Desert View Power UNIT 2

PRE-TEST INFORMATION
GENERAL

Test:	1-RA-U2
Date:	3/8/2021
Start Time:	8:20
Station:	Desert View Power
Unit:	Unit 2
Test Condition:	Full Load
Performed By:	RD

PRE-TEST INFORMATION
SAMPLE TRAIN

Barom. Pressure:		psi
	30.14	"Hg
Meter No.	23-WCS	
Meter Y_d:	1.0000	
Meter Pressure:	1.5	iwg
Pstack:	0.55	iwg
Pstack:	30.18	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft^2

METHOD 4 DATA
Impingers

#/Matl.	End	Start	Diff.
1/H2O	917.7	732.8	184.9
2/H2O	712.5	710.6	1.9
3/Empty	638.9	638.6	0.3
4/S.G.	917.1	905.2	11.9
Rinse		50.0	-50.0
Total			149.0

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	450.500	74	75
		73	75
Stop	492.982	78	80
Total	42.482		75.8

Summary

Sample Volume:	42.316	dscf
H_2O Volume :	7.033	scf
Moisture Content:	14.3	%

METHOD 3A, 6C, 7E DATA

	O_2	CO_2	NO_x	CO
Analyzer Span	19.15	18.94	87.00	9.64
Actual Span Value	10.78	10.56	41.3	4.6
Pre Test Zero Direct	0.00	0.00	0.01	0.00
Pre Test Span Direct	10.86	10.41	41.56	4.60
Pre-test Zero	0.01	0.11	0.25	0.10
Pre-test Span	10.83	10.41	41.22	4.58
0-60 min	8.89	11.63	38.26	0.22
Post Test Zero Direct	-0.01	0.00	0.01	-0.02
Post Test Span Direct	10.82	10.38	41.33	4.52
Post-test Zero	0.01	0.13	0.06	0.09
Post-test Span	10.80	10.37	41.10	4.52
Average	8.89	11.63	38.26	0.22
Corr. Results	8.86	11.83	38.39	0.13
Cal Error <2%, Bias <5%; Drift <3%				
Calibration Error	0.4%	-0.8%	0.3%	0.0%
Pre-Test Zero Bias	0.1%	0.6%	0.3%	1.0%
Pre-Test Span Bias	-0.2%	0.0%	-0.4%	-0.3%
Post-Test Zero Bias	0.1%	0.7%	0.1%	1.2%
Post-Test Span Bias	-0.1%	0.0%	-0.3%	0.0%
Zero Drift	0.0%	0.1%	-0.2%	-0.1%
Span Drift	-0.2%	-0.2%	-0.1%	-0.5%
Cal Status	PASS	PASS	PASS	PASS

METHOD 2 DATA

Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	1.00	1.0000	328	68.62
4	0.97	0.9849	330	67.67
3	0.95	0.9747	331	67.01
2	0.82	0.9055	332	62.30
1	0.77	0.8775	330	60.29
5	0.98	0.9899	329	67.98
4	0.99	0.9950	330	68.36
3	0.83	0.9110	331	62.64
2	0.80	0.8944	333	61.57
1	0.77	0.8775	332	60.37
5	0.85	0.9220	330	63.35
4	0.85	0.9220	331	63.39
3	0.95	0.9747	333	67.10
2	0.97	0.9849	331	67.71
1	0.99	0.9950	330	68.36
5	1.00	1.0000	329	68.67
4	1.10	1.0488	331	72.11
3	1.20	1.0954	332	75.36
2	1.00	1.0000	332	68.80
1	0.93	0.9644	331	66.30
5	1.40	1.1832	330	81.30
4	1.30	1.1402	331	78.39
3	1.20	1.0954	333	75.41
2	1.30	1.1402	332	78.44
1	1.10	1.0488	331	72.11
5	1.40	1.1832	332	81.40
4	1.30	1.1402	331	78.39
3	1.30	1.1402	333	78.49
2	1.20	1.0954	332	75.36
1	1.10	1.0488	331	72.11
Average	1.0359	1.0178	331.1	69.98

RELATIVE ACCURACY DATA

Parameter	Units	Ref. Meth	CEMS	Diff.	Diff. %
Flow	kdscfh	5648.30	5229.95	418.35	7.4%
O_2	% dry	8.86	8.9	0.00	0.0%
CO_2	% dry	11.83	11.6	0.20	1.7%
NO_x	ppm dry	38.39	40.1	-1.68	-4.4%
NO_x	ppm @ 3% O_2	57.06	59.6	-2.49	-4.4%
NO_x	lb/hr	25.89	25.04	0.85	3.3%
SO_2	ppm dry	8.66	9.72	-1.05	-12.2%
SO_2	ppm @ 3% O_2	12.88	14.36	-1.48	-11.5%
SO_2	lb/hr	8.13	8.486	-0.358	-4.4%
CO	ppm dry	0.13	0.00	0.13	
CO	ppm @ 3% O_2	0.19	0.00	0.19	
CO	lb/hr	0.052	0.000		

TEST SUMMARY

O_2:	8.859	% dry
CO_2:	11.834	% dry
NO_x:	38.386	ppm dry
	25.885	lb/hr
SO_2:	8.6636472	ppm dry
SO2:	8.128	lb/hr
CO:	0.13	ppm dry
	0.052	lb/hr
H_2O:	14.3	%
MW:	28.50	lb/lb-mole
Flow:	163,079	wacfm
	94.14	mdscfm
	5648.30	kdscfh

SOx Titration Summary

	B1/2
N BaCl2	0.0096899
Total VOL (ml)	459.4
Aliquot VOL (ml)	20
Titrant VOL (ml)	3.88

MONTROSE AQS
RELATIVE ACCURACY TEST AUDIT
DATA AND WORKSHEET
Desert View Power UNIT 2

PRE-TEST INFORMATION
GENERAL

Test:	2-RA-U2
Date:	3/8/2021
Start Time:	9:35
Station:	Desert View Power
Unit:	Unit 2
Test Condition:	Full Load
Performed By:	RD

PRE-TEST INFORMATION
SAMPLE TRAIN

Barom. Pressure:		psi
	30.14	"Hg
Meter No.	23-WCS	
Meter Y_d	1.0000	
Meter Pressure:	1.5	iwg
Pstack:	0.55	iwg
Pstack:	30.18	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft^2

METHOD 4 DATA
Impingers

#/Matl.	End	Start	Diff.
1/H2O	804.9	635.7	169.2
2/H2O	747.1	742.3	4.8
3/Empty	595.0	592.0	3.0
4/S.G.	859.0	839.6	19.4
Rinse		50.0	-50.0
Total			146.4

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	494.000	83	85
		85	88
Stop	537.198	86	87
Total	43.198		85.7

Summary

Sample Volume:	42.254	dscf
H_2O Volume :	6.910	scf
Moisture Content:	14.1	%

METHOD 3A, 6C, 7E DATA

	O_2	CO_2	NO_x	CO
Analyzer Span	19.15	18.94	87.00	9.64
Actual Span Value	10.78	10.56	41.3	4.6
Pre Test Zero Direct	-0.01	0.00	0.01	-0.02
Pre Test Span Direct	10.82	10.38	41.33	4.52
Pre-test Zero	0.01	0.13	0.06	0.09
Pre-test Span	10.80	10.37	41.10	4.52
0-60 min	8.83	11.68	38.88	0.22
Post Test Zero Direct	-0.01	0.07	0.02	0.11
Post Test Span Direct	10.82	10.48	41.16	4.54
Post-test Zero	0.01	0.13	0.07	0.08
Post-test Span	10.80	10.44	40.96	4.52
Average	8.83	11.68	38.88	0.22
Corr. Results	8.82	11.87	39.14	0.14
Cal Error <2%, Bias <5%, Drift <3%				
Calibrtion Error	0.2%	-1.0%	0.0%	-0.8%
Pre-Test Zero Bias	0.1%	0.7%	0.1%	1.2%
Pre-Test Span Bias	-0.1%	0.0%	-0.3%	0.0%
Post-Test Zero Bias	0.1%	0.3%	0.1%	-0.3%
Post-Test Span Bias	-0.1%	-0.3%	-0.2%	-0.2%
Zero Drift	0.0%	0.0%	0.0%	-0.1%
Span Drift	0.0%	0.4%	-0.2%	-0.1%
CAL STATUS	PASS	PASS	PASS	PASS

METHOD 2 DATA

Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	1.00	1.0000	333	68.81
4	0.98	0.9899	334	68.16
3	0.94	0.9695	335	66.79
2	0.83	0.9110	336	62.80
1	0.76	0.8718	333	59.98
5	0.97	0.9849	334	67.81
4	0.95	0.9747	335	67.15
3	0.85	0.9220	336	63.56
2	0.82	0.9055	334	62.35
1	0.78	0.8832	332	60.73
5	0.86	0.9274	332	63.77
4	0.88	0.9381	332	64.50
3	0.94	0.9695	333	66.71
2	0.92	0.9592	334	66.04
1	0.98	0.9899	333	68.11
5	1.00	1.0000	332	68.76
4	1.10	1.0488	334	72.21
3	1.30	1.1402	333	78.45
2	1.00	1.0000	333	68.81
1	0.96	0.9798	331	67.33
5	1.40	1.1832	332	81.36
4	1.20	1.0954	333	75.37
3	1.30	1.1402	334	78.50
2	1.20	1.0954	332	75.33
1	1.00	1.0000	333	68.81
5	1.40	1.1832	331	81.31
4	1.40	1.1832	332	81.36
3	1.30	1.1402	334	78.50
2	0.98	0.9899	331	68.03
1	0.97	0.9849	333	67.77
Average	1.0242	1.0120	333.1	69.64

TEST SUMMARY

O_2:	8.816	% dry
CO_2:	11.873	% dry
NO_x:	39.136	ppm dry
	26.254	lb/hr
SO_2:	8.592399	ppm dry
	8.020	lb/hr
CO:	0.14	ppm dry
	0.057	lb/hr
H_2O:	14.1	%
MW:	28.53	lb/lb-mole
Flow:	162,287	wacfm
	93.65	mdscfm
	5619.04	kdscfh

SOx Titration Summary

	B1/2
N BaCl2	0.0096899
Total VOL (ml)	422.3
Aliquot VOL (ml)	20
Titrant VOL (ml)	4.18

RELATIVE ACCURACY DATA

Parameter	Units	Ref. Meth	CEMS	Diff.	Diff. %
Flow	kdscfh	5619.04	5130.45	488.59	8.7%
O_2	% dry	8.82	8.9	-0.13	-1.5%
CO_2	% dry	11.87	11.8	0.07	0.6%
NO_x	ppm dry	39.14	40.6	-1.48	-3.8%
NO_x	ppm @ 3% O_2	57.97	60.8	-2.84	-4.9%
NO_x	lb/hr	26.25	24.9	1.35	5.1%
SO_2	ppm dry	8.59	9.27	-0.67	-7.8%
SO_2	ppm @ 3% O_2	12.73	13.83	-1.10	-8.6%
SO_2	lb/hr	8.020	7.933	0.087	1.1%
CO	ppm dry	0.14	0.11	0.03	
CO	ppm @ 3% O_2	0.20	0.16	0.04	
CO	lb/hr	0.057	0.041		

MONTROSE AQS
RELATIVE ACCURACY TEST AUDIT
DATA AND WORKSHEET
Desert View Power UNIT 2

PRE-TEST INFORMATION
GENERAL

Test:	3-RA-U2
Date:	3/8/2021
Start Time:	10:52
Station:	Desert View Power
Unit:	Unit 2
Test Condition:	Full Load
Performed By:	RD

SAMPLE TRAIN

Barom. Pressure:		psi
	30.14	"Hg
Meter No.	23-WCS	
Meter Y_d	1.0000	
Meter Pressure:	1.5	iwg
Pstack:	0.55	iwg
Pstack:	30.18	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft^2

METHOD 4 DATA
Impingers

#/Matl.	End	Start	Diff.
1/H2O	905.6	731.7	173.9
2/H2O	724.9	719.8	5.1
3/Empty	640.0	638.9	1.1
4/S.G.	925.6	917.1	8.5
Rinse		50.0	-50.0
Total			138.6

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	538.500	84	85
		85	90
Stop	581.334	87	90
Total	42.834		86.8

Summary

Sample Volume:	41.808	dscf
H_2O Volume :	6.542	scf
Moisture Content:	13.5	%

METHOD 3A, 6C, 7E DATA

	O_2	CO_2	NO_x	CO
Span	19.15	18.94	87.00	9.64
Actual Span Value	10.78	10.56	41.3	4.6
Pre Test Zero Direct	-0.01	0.07	0.02	0.11
Pre Test Span Direct	10.82	10.48	41.16	4.54
Pre-test Zero	0.01	0.13	0.07	0.08
Pre-test Span	10.80	10.44	40.96	4.52
0-60 min	8.84	11.76	39.13	0.20
Post Test Zero Direct	-0.01	0.01	0.02	-0.02
Post Test Span Direct	10.83	10.43	41.21	4.54
Post-test Zero	0.01	0.09	0.06	0.08
Post-test Span	10.80	10.45	40.75	4.52
Average	8.84	11.76	39.13	0.20
Corr. Results	8.82	11.91	39.56	0.13
Cal Error <2%, Bias <5%; Drift <3%				
Calibrtion Error	0.2%	-0.4%	-0.2%	-0.6%
Pre-Test Zero Bias	0.1%	0.3%	0.1%	-0.3%
Pre-Test Span Bias	-0.1%	-0.3%	-0.2%	-0.2%
Post-Test Zero Bias	0.1%	0.4%	0.1%	1.0%
Post-Test Span Bias	-0.1%	0.1%	-0.5%	-0.2%
Zero Drift	0.0%	-0.2%	0.0%	0.0%
Span Drift	0.0%	0.1%	-0.2%	0.0%
CAL STATUS	PASS	PASS	PASS	PASS

METHOD 2 DATA

Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	0.97	0.9849	330	67.55
4	0.96	0.9798	331	67.25
3	0.92	0.9592	332	65.87
2	0.81	0.9000	331	61.77
1	0.75	0.8660	331	59.44
5	0.98	0.9899	332	67.99
4	0.92	0.9592	333	65.92
3	0.83	0.9110	332	62.57
2	0.81	0.9000	334	61.89
1	0.74	0.8602	332	59.08
5	0.87	0.9327	332	64.06
4	0.85	0.9220	331	63.28
3	0.93	0.9644	332	66.23
2	0.91	0.9539	331	65.47
1	0.96	0.9798	332	67.29
5	0.98	0.9899	331	67.94
4	1.10	1.0488	333	72.08
3	1.20	1.0954	332	75.23
2	0.99	0.9950	332	68.33
1	0.95	0.9747	331	66.90
5	1.40	1.1832	332	81.26
4	1.20	1.0954	333	75.28
3	1.20	1.0954	332	75.23
2	1.10	1.0488	331	71.98
1	1.00	1.0000	330	68.59
5	1.20	1.0954	332	75.23
4	1.40	1.1832	331	81.21
3	1.20	1.0954	332	75.23
2	1.30	1.1402	331	78.26
1	1.00	1.0000	330	68.59
Average	1.0070	1.0035	331.6	68.90

RELATIVE ACCURACY DATA

Parameter	Units	Ref. Meth	CEMS	Diff.	Diff. %
Flow	kdscfh	5604.05	5085.67	518.39	9.3%
O_2	% dry	8.82	8.9	-0.12	-1.4%
CO_2	% dry	11.91	11.8	0.11	1.0%
NO_x	ppm dry	39.56	40.9	-1.31	-3.3%
NO_x	ppm @ 3% O_2	58.61	61.1	-2.51	-4.3%
NO_x	lb/hr	26.47	24.8648	1.60	6.0%
SO_2	ppm dry	8.92	10.35	-1.43	-16.0%
SO_2	ppm @ 3% O_2	13.21	15.36	-2.15	-16.3%
SO_2	lb/hr	8.302	8.810	-0.507	-6.1%
CO	ppm dry	0.13	0.58	-0.45	
CO	ppm @ 3% O_2	0.19	0.86	-0.67	
CO	lb/hr	0.053	0.214	-0.16	

TEST SUMMARY

O_2:	8.819	% dry
CO_2:	11.914	% dry
NO_x:	39.556	ppm dry
	26.465	lb/hr
SO_2:	8.9189176	ppm dry
	8.302	lb/hr
CO:	0.13	ppm dry
	0.053	lb/hr
H_2O:	13.5	%
MW:	28.60	lb/lb-mole
Flow:	160,567	wacfm
	93.40	mdscfm
	5604.05	kdscfh

SOx Titration Summary

	B1/2
N BaCl2	0.0096899
Total VOL (ml)	428.6
Aliquot VOL (ml)	20
Titrant VOL (ml)	4.23

Appendix C.3.2
Unit 2 Hydrogen Chloride Calculations

Desert View Power - Unit 2

Test No	1-HCl	2-HCl	3-HCl	Average	Limit
Date	3/4/2021	3/4/2021	3/4/2021		
Start Time	7:25	9:55	12:25		
Stop Time	9:25	11:55	14:25		
Test Information					
Reference Temperature, °F	68	68	68		
Diluent Emissions and Stack Flow Rate					
Moisture Fraction, %	13.10	13.28	12.91	13.1	
O_2, % vol. dry	8.62	8.70	8.69	8.67	
CO_2, % vol. Dry	12.09	12.01	11.97	12.02	
Stack Flow Rate (dscfm)	92,651	91,402	92,004	91,703	
Fuel F_d Factor, dscf/MMBtu @ 68°.....	9,240	9,240	9,240	9,240	
Fuel F_d Factor, dscf/MMBtu @ 60°.....	9,100	9,100	9,100	9,100	
HCl Emissions					
ppmvw	6.88	11.50	10.81	9.73	
ppmvd	7.92	13.26	12.41	11.20	
lb/hr (as HCl)	4.2	7.0	6.6	6.79	
lb/MMBtu	**0.0118**	**0.0199**	**0.0186**	**0.017**	**0.022**

NOTE: O2/CO2 and stack flow are from PM Test.

Appendix C.3.3
Unit 2 Particulate Calculations

EPA METHOD 5 SOURCE TEST

DATA AND WORKSHEET

Client	Desert View Power	Parameter		Full Load
Loaction	Mecca	Fuel		Biomass
Unit	Unit 2	Data By		DW
Test Number	1-PM-U2	2-PM-U2	3-PM-U2	Average
Reference Temperature, F	68	68	68	
Test Date	3/4/2021	3/4/2021	3/28/2018	
Sample Train	23-WCS	23-WCS	23-WCS	-
Pitot Factor	0.840	0.840	0.840	-
Meter Calibration Factor	1.000	1.000	1.000	-
Stack Area (sq ft)	38.84	38.84	38.84	-
Sample Time (Min)	120	120	120	120
Barometric Pressure (in Hg)	30.26	30.26	30.26	30.26
Nozzle Diam (in)	0.239	0.239	0.239	0.239
Start/Stop Time	725/935	955/1200	1225/1430	-
Stack Pressure (iwg)	0.69	0.69	0.69	0.69
Delta P (iwg)	1.009	0.9807	0.9883	0.9925
Meter Pressure (iwg)	1.550	1.633	1.677	1.620
Stack Temperature (F)	355.2	351.9	353.4	353.5
Meter Temperature (F)	59.4	79.8	85.1	74.7
Meter Volume (acf)	85.013	90.252	91.154	88.806
Liquid Volume (ml)	280.3	290.7	281.5	284.2
Stack O2 (%)	8.62	8.70	8.69	8.7
Stack CO2 (%)	12.09	12.01	11.97	12.0
Standard Sample Volume (SCF)	87.725	89.624	89.649	88.999
Moisture Fraction	0.131	0.133	0.129	0.131
Molecular Weight (wet)	28.67	28.64	28.68	28.66
Stack Gas Velocity (ft/sec)	69.75	68.67	68.95	69.12
Stack Flow Rate (wacfm)	162,543	160,033	160,687	161,088
Stack Flow Rate (dscfm)	92,651	91,402	92,004	92,019
Isokinetic Ratio (%)	98.33	101.83	101.20	100.45
Analysis				
Filter mg	0.00	0.00	0.00	0.00
Probe/Nozzle mg	0.00	2.60	4.30	2.30
Particulate Catch, mg	0.00	2.60	4.30	2.30
Particulate Emissions				
Grain Loading gr/dscf	0.00000	0.00045	0.00074	0.0004
Grain Loading @ 12% CO2	0.00000	0.00045	0.00074	0.0004
Part emission lb/hr	0.000	0.351	0.584	0.311
F-Factor (dscf/MMBtu)	9240	9240	9240	
Emission rate, lb/MMBtu	0.0000	0.0010	0.0017	0.0009

MOBILE EMISSION LABORATORY
CONTINUOUS GASEOUS MEASUREMENTS SUMMARY

Client:	Desert View Power		Condition:	----	
Unit:	Unit 2		Load:	> 90%	
Location:	Mecca		Date	3/4/2021	

	O2%	CO2%				
Analyzer Range:	20	20				
Span Value:	10.78	10.56				
	O2%	CO2%				
As Found	10.826	10.558				
Linearity	0.2%	0.0%			<2%	**Pass**
3/4/2021	O2%	CO2%				
1pm-cem-U2						
Analyzer Range:	20	20				
Span Value:	10.78	10.56				
Pre test Direct Zero	-0.01	0.00				
Pre test Direct Span	10.83	10.56				
System Zero	0.02	0.07				
System Span	10.82	10.58				
Average	8.64	12.01				
System Zero	-0.02	0.02				
System Span	10.79	10.42				
Post test Direct Zero	0.00	0.09				
Post test Direct Span	10.76	10.44				
Corrected Conc.	8.62	12.09				
System Bias Check						
Zero Pre-test	0.08%	0.33%			< 5%	**PASS**
Zero Post-test	-0.10%	0.10%			< 5%	**PASS**
Span Pre-test	0.19%	0.07%			< 5%	**PASS**
Span Post-test	0.06%	-0.69%			<5%	**PASS**
3/4/2021	O2%	CO2%				
2-CEM-U2						
Analyzer Range:	20	20				
Span Value:	10.78	10.56				
Pre test Direct Zero	-0.02	0.02				
Pre test Direct Span	10.79	10.42				
System Zero	0.00	0.09				
System Span	10.76	10.44				
Raw concentration	8.67	11.76				
Raw concentration	8.67	11.76				
System Zero	-0.03	0.01				
System Span	10.74	10.25				
Post test Direct Zero	-0.01	0.09				
Post test Direct Span	10.72	10.27				
Corrected Conc.	8.70	12.01				
System Bias Check						
Zero Pre-test	-0.01%	0.45%			< 5%	**PASS**
Zero Post-test	-0.13%	0.06%			< 5%	**PASS**
Span Pre-test	-0.09%	-0.61%			< 5%	**PASS**
Span Post-test	-0.18%	-1.53%			<5%	**PASS**

3/10/2015	O2%	CO2%				
3-CEM-U2						
Analyzer Range:	20	20				
Span Value:	10.78	10.56				
Pre test Direct Zero	-0.03	0.01				
Pre test Direct Span	10.74	10.25				
System Zero	-0.01	0.09				
System Span	10.72	10.27				
Raw concentration	8.64	11.64				
System Zero	-0.03	0.06				
System Span	10.73	10.29				
Post test Direct Zero	-0.01	0.15				
Post test Direct Span	10.70	10.28				
Corrected Conc.	8.69	11.97				
System Bias Check						
Zero Pre-test	-0.04%	0.44%			< 5%	**PASS**
Zero Post-test	-0.13%	0.32%			< 5%	**PASS**
Span Pre-test	-0.30%	-1.46%			< 5%	**PASS**
Span Post-test	-0.27%	-1.36%			<5%	**PASS**

	1-PM-U1						2-PM-U1						3-PM-U1					
	dP	(dP)^.5	dH	Ts	Tm		dP	(dP)^.5	dH	Ts	Tm		dP	(dP)^.5	dH	Ts	Tm	
5	0.77	0.877	1.1	358	52	54	1.00	1.000	1.6	350	60	60	0.94	0.970	1.5	352	80	83
4	0.85	0.922	1.2	359	55	57	1.10	1.049	1.7	348	65	67	0.93	0.964	1.5	353	81	82
3	0.96	0.980	1.4	357	60	63	1.20	1.095	1.9	347	67	69	0.97	0.985	1.6	352	80	83
2	0.99	0.995	1.4	355	62	66	1.10	1.049	1.7	348	69	70	0.91	0.954	1.5	351	81	83
1	0.88	0.938	1.3	358	64	67	1.00	1.000	1.6	349	71	73	0.80	0.894	1.3	351	81	83
5	0.95	0.975	1.4	358	63	64	0.97	0.985	1.5	350	74	75	0.98	0.990	1.7	353	81	84
4	1.10	1.049	1.6	359	62	64	1.10	1.049	1.9	352	76	77	1.00	1.000	1.7	358	82	84
3	1.20	1.095	1.8	360	62	63	1.30	1.140	2.2	356	77	79	0.94	0.970	1.6	356	83	86
2	1.10	1.049	1.6	357	61	63	1.20	1.095	2.0	355	79	81	0.92	0.959	1.6	354	82	86
1	0.97	0.985	1.5	355	62	62	1.10	1.049	1.9	352	80	83	0.90	0.949	1.5	353	83	87
5	1.00	1.000	1.5	357	60	60	0.94	0.970	1.6	354	80	84	1.00	1.000	1.7	354	84	85
4	0.95	0.975	1.4	356	59	60	0.98	0.990	1.7	351	81	84	0.96	0.980	1.6	352	84	86
3	0.88	0.938	1.3	358	59	60	1.00	1.000	1.7	353	82	85	0.92	0.959	1.6	353	84	86
2	0.90	0.949	1.4	352	59	60	1.10	1.049	1.9	351	82	84	0.88	0.938	1.5	353	84	87
1	0.83	0.911	1.2	354	58	60	0.93	0.964	1.6	352	82	84	0.83	0.911	1.4	351	84	89
5	1.10	1.049	1.6	354	58	60	0.94	0.970	1.6	352	81	84	1.00	1.000	1.7	353	84	88
4	0.98	0.990	1.5	352	57	60	0.88	0.938	1.5	353	80	84	0.96	0.980	1.6	354	84	87
3	1.00	1.000	1.6	355	57	60	0.95	0.975	1.6	351	81	84	0.94	0.970	1.6	352	85	88
2	0.93	0.964	1.5	352	56	60	0.93	0.964	1.6	352	82	85	0.91	0.954	1.5	353	84	88
1	0.95	0.975	1.5	353	56	59	0.86	0.927	1.5	351	83	85	0.87	0.933	1.5	351	84	88
5	0.98	0.990	1.5	352	56	58	0.93	0.964	1.6	352	83	86	1.10	1.049	1.9	352	85	89
4	1.20	1.095	1.9	355	57	58	1.00	1.000	1.7	353	83	86	1.20	1.095	2.0	351	86	89
3	1.30	1.140	2.1	352	57	58	0.94	0.970	1.6	355	83	86	1.10	1.049	1.9	353	85	89
2	1.20	1.095	1.9	352	57	58	0.86	0.927	1.5	352	82	85	1.00	1.000	1.7	354	85	89
1	1.00	1.000	1.6	353	57	59	0.82	0.906	1.4	353	82	84	0.98	0.990	1.7	352	84	89
5	1.00	1.000	1.6	352	57	59	0.94	0.970	1.5	354	82	85	1.20	1.095	2.0	354	84	88
4	1.10	1.049	1.8	354	57	58	0.88	0.938	1.4	355	83	86	1.10	1.049	1.9	355	84	88
3	1.20	1.095	1.9	355	57	59	0.84	0.917	1.3	352	82	85	1.10	1.049	1.9	356	85	88
2	1.10	1.049	1.8	356	58	60	0.90	0.949	1.4	353	83	84	1.30	1.140	2.2	357	85	89
1	1.00	1.000	1.6	355	57	60	0.83	0.911	1.3	352	84	84	1.10	1.049	1.9	358	86	90
Average		1.0086	1.550	355.2	59.4		Average	0.9807	1.633	351.9	79.8		Average	0.9883	1.677	353.4	85.1	
			Meter Vol	Imp	Imp				Meter Vol	Imp	Imp				Meter Vo	Imp	Imp	
Delta P (iwg)		1.009	174.200	998.4	795.9	202.5	Delta P (iwg)	0.981	264	946.1	735.8	210.3	Delta P (iwg)	0.988	358	993.2	799.2	194.0
Meter Pressure (iwg)		1.550	259.213	891.7	722.5	169.2	Meter Pressure (iwg)	1.633	354.252	735.2	685.5	49.7	Meter Pressure (iwg)	1.677	449.15	804.5	721.3	83.2
Stack Temperature (F		355.167	85.013	587.4	585.9	1.5	Stack Temperature (F	351.933	90.252	644.8	642.2	2.6	Stack Temperature (I	353.367	91.154	590.6	588.7	1.9
Meter Temperature (F		59.350		1031.3	1024.2	7.1	Meter Temperature (F	79.783		889.3	861.2	28.1	Meter Temperature (I	85.083		1033.7	1031.3	2.4
Meter Volume (acf)		85.013			100	-100.0	Meter Volume (acf)	90.252				0.0	Meter Volume (acf)	91.154				0.0
Liquid Volume (ml)		280.300				280.3	Liquid Volume (ml)	290.700				290.7	Liquid Volume (ml)	281.5				281.5

Appendix C.3.4
Unit 2 Hydrocarbon Calculations

SCAQMD 25.3 SOURCE TEST DATA AND WORKSHEET

Client	Desert View Power	Parameter	>90%
Loaction	Mecca	Fuel	Biomass/coke
Unit	Unit 2	Data By	DW
Test Number	1A-VOC-U2	1B-VOC-U2	Average
Reference Temperature, F	68	68	
Test Date	3/8/2021	3/8/2021	
Sample Time (Min)	~60	~60	~60
Barometric Pressure (in Hg)	30.14	30.14	30.14
Start/Stop Time	935/1035	935/1035	
Stack O2 (%)	8.82	8.82	8.8
Stack CO2 (%)	11.87	11.87	11.9
Stack H2O (%)	14.1%	14.1%	14.1%
Stack Flow Rate (wacfm)	162,287	162,287	162,287
Stack Flow Rate (dscfm)	93,651	93,651	93,651
Laboraotory Results			
TGNMO ppm	4.79	2.63	4.79
TGNMO ppm @ 3% O2	7.10	3.90	7.10
TGNMO lb/hr	1.12	0.61	1.12

Note: Flow rates from Test RATA Run 2

Per Method 25.3 when the difference between the paired canisters is >20% the higher of the two results is used.

Appendix C.3.5
Unit 2 Mercury Calculations

Mercury by Method 30B
Desert View Power - Unit 2

			QA/QC Spike Pair				QA/QC Spike Pair				QA/QC Spike Pair		
Test Number	**1-Hg-A**	**1-Hg-B**	**1-Hg-C**	**1-Hg-S**	**2-Hg-A**	**2-Hg-B**	**2-Hg-C**	**2-Hg-S**	**3-Hg-A**	**3-Hg-B**	**3-Hg-C**	**3-Hg-S**	**Average**
Date	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	3/11/2021	
Start Time	10:20	10:20	10:20	10:20	11:40	11:40	11:40	11:40	13:15	13:15	13:15	13:15	
End Time	11:20	11:20	11:20	11:20	12:40	12:40	12:40	12:40	14:15	14:15	14:15	14:15	
Test Type	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	Total Hg	
Spiked	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes	
Sorbent ID	OLC137227	OLC160774	OLC160581	OLC132337	OLC149000	OLC148880	OLC149014	OLC131609	OLC160618	OLC137166	OLC160765	OLC131647	
Operating Condition	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Sorbent Trap Result													
Average if paired samples, result if single, ug/dsm3		**38.80**		**38.80**		**12.37**		**11.53**		**7.78**		**8.50**	
Sampling Data													
Total volume, dsm3	0.04025	0.03981	0.04032	0.04047	0.04024	0.03975	0.04010	0.04109	0.04030	0.03971	0.04005	0.04031	
Total volume, dscf	1.42113	1.40574	1.42379	1.42890	1.42087	1.40353	1.41599	1.45086	1.42294	1.40211	1.41422	1.42334	
Moisture, from Flow test (Data from HCl)	0.127	0.127	0.127	0.127	0.140	0.140	0.140	0.140	0.119	0.119	0.119	0.119	
Stack O2, %	9.66	9.66	9.66	9.66	9.62	9.62	9.62	9.62	9.72	9.72	9.72	9.72	
Stack CO2, %	11.09	11.09	11.09	11.09	11.08	11.08	11.08	11.08	11.01	11.01	11.01	11.01	
Fuel F_d Factor, dscf/MMBtu @ 68°	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	9,240	
Fuel F_d Factor, dscf/MMBtu @ 60°	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	9,100	
Flow, dscfm (Data from HCl)	87,469	87,469	87,469	87,469	89,454	89,454	89,454	89,454	88,235	88,235	88,235	88,235	
Laboratory Data													
ng, Sec 1	1596.00	1496.00	1542.00	1566.00	540.00	440.00	423.40	504.00	340.00	278.00	315.50	360.30	
ng, Sec 2	3.65	11.21	13.82	13.03	7.18	3.24	3.20	6.32	1.20	3.90	5.70	2.00	
ng, total	1599.65	1507.21	1555.82	1579.03	547.18	443.24	426.60	510.32	341.20	281.90	321.20	362.30	
Spike level, ng				**400**				**400**				**400**	
Spike result ng, Sec 1				1966.00				904.00				760.30	
Spike result ng, Sec 2				13.03				6.32				2.00	
Spike result ng, total				1979.03				910.32				762.30	
Results													
Total ug/dscm	39.746	37.859	38.584	39.020	13.598	11.151	10.638	12.420	8.467	7.099	8.020	8.988	19.653
Total ug/dscf	1.126	1.072	1.093	1.105	0.385	0.316	0.301	0.352	0.240	0.201	0.227	0.255	0.557
Total lb/hr	1.30E-02	1.24E-02	1.26E-02	1.28E-02	4.55E-03	3.73E-03	3.56E-03	4.16E-03	2.80E-03	2.34E-03	2.65E-03	2.97E-03	6.47E-03
Total lb/MMBtu	4.26E-05	4.06E-05	4.14E-05	4.18E-05	1.45E-05	1.19E-05	1.14E-05	1.33E-05	9.12E-06	7.65E-06	8.64E-06	9.68E-06	2.11E-05
QA/QC													
Spike , ug/dsm3				48.90				22.15				18.91	
Spike , expected, ug/dsm3				9.88				9.73				9.92	
Spike, actual (spike-sample), ug/dsm3				10.32				11.52				10.89	
% recovery				104.4%				118.3%				109.8%	
Breaktrough,on sample. Sec 2, %	0.2%	0.7%	0.9%	0.8%	1.3%	0.7%	0.8%	1.3%	0.4%	1.4%	1.8%	0.6%	
Relative Percent Difference on paired samples		2.4%		0.6%		4.5%		2.4%		3.0%		6.1%	

Note: <10% breakthrough is criteria in most cases
< 10% RPD is criteria for paired trains in most cases
85%-115% average spike recovery is Method 30B criteria
Low sample levels show more variation

Mercury	
ug/dscm	19.653
lb/hr (as Hg)	6.47E-03
lb/MMBtu	2.11E-05

M002-TS-Q2021-R1-22127
EPA 30B 0613

Montrose AQS
Run 1 CEMS
DATA AND WORKSHEET
Desert View Power UNIT 2

PRE-TEST INFORMATION
GENERAL

st:	1-O2/CO2-U2
ate:	3/11/2021
Start Time:	10:20
Station:	Desert View Power
nit:	Unit 2
Test Condition:	Full Load
Performed By:	DW

PRE-TEST INFORMATION
SAMPLE TRAIN

Barom. Pressure:		psi
	30.14	"Hg
eter No.	23 wcs	
Meter Y_d:	1.0000	
eter Pressure:	2.0	iwg
stack:	0.55	iwg
Pstack:	30.18	"Hg
Cp:	0.84	
ef:	68	°F
Stack Area:	38.84	ft2

METHOD 4 DATA
Impingers

#/Matl.	End	Start	Diff.
1/H2O	827.2	734.2	93.0
2/H2O	749.5	740.5	9.0
3/Empty	649.4	639.4	10.0
4/S.G.	938.2	917.8	20.4
Rinse			0.0
Total			132.4

Dry Gas Meter

Time	Vol.	Tm(in)	Tm(out)
Start	815.050	78	79
		79	80
Stop	858.300	80	80
		81	81
Total	43.250		79.8

Summary

Sample Volume:	42.820	dscf
H_2O Volume :	6.249	scf
Moisture Content:	12.7	%

METHOD 3A, 6C, 7E DATA

	O_2	CO_2
nalyzer Span	19.15	18.94
Actual Span Value	10.78	10.56
e Test Zero Direct	0.00	0.00
e Test Span Direct	10.84	10.42
Pre-test Zero	0.11	0.06
Pre-test Span	10.87	10.39
Average	9.74	10.90
ost Test Zero Direct	-0.01	-0.03
ost Test Span Direct	10.84	10.38
Post-test Zero	0.00	0.01
ost-test Span	10.85	10.36
verage	9.74	10.90
Corr. Results	9.66	11.09
Cal Error <2%, Bias <5%; Drift <3%		
alibrtion Error	0.3%	-0.7%
Pre-Test Zero Bias	0.6%	0.3%
Pre-Test Span Bias	0.1%	-0.1%
ost-Test Zero Bias	0.0%	0.2%
Post-Test Span Bias	0.1%	-0.1%
Zero Drift	-0.6%	-0.2%
pan Drift	-0.1%	-0.2%

METHOD 2 DATA

Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	0.97	0.9849	320	67.11
4	0.92	0.9592	321	65.40
3	0.91	0.9539	321	65.04
2	0.81	0.9000	322	61.41
1	0.73	0.8544	319	58.18
5	0.93	0.9644	320	65.71
4	0.91	0.9539	320	65.00
3	0.82	0.9055	321	61.74
2	0.79	0.8888	321	60.60
1	0.76	0.8718	319	59.37
5	1.00	1.0000	363	70.00
4	0.93	0.9644	363	67.50
3	0.88	0.9381	359	65.50
2	0.84	0.9165	359	64.00
1	0.80	0.8944	359	62.45
5	0.85	0.9220	361	64.45
4	0.83	0.9110	363	63.77
3	0.92	0.9592	364	67.18
2	0.98	0.9899	364	69.33
1	0.99	0.9950	364	69.69
5	1.20	1.0954	364	76.72
4	0.95	0.9747	364	68.26
3	0.92	0.9592	365	67.22
2	0.61	0.7810	363	54.67
1	0.63	0.7937	363	55.56
5	0.96	0.9798	362	68.54
4	0.91	0.9539	362	66.73
3	0.84	0.9165	360	64.03
2	1.00	1.0000	361	69.91
1	1.10	1.0488	361	73.32
Average	0.8855	0.9410	348.3	65.28

TEST SUMMARY

O_2:	9.661	% dry
	8.431	% wet
CO_2:	11.089	% dry
	9.677	% wet
H_2O:	12.7	%
MW:	28.61	lb/lb-mole
Flow:	152,131	wacfm
	87.47	mdscfm
	5248.13	kdscfh

Montrose AQS
Run 2 CEMS
DATA AND WORKSHEET
Desert View Power UNIT 2

PRE-TEST INFORMATION		
GENERAL		
Test:	2-O2/CO2-U2	
Date:	3/11/2021	
Start Time:	11:40	
Station:	Desert View Power	
Unit:	Unit 2	
Test Condition:	Full Load	
Performed By:	DW	
PRE-TEST INFORMATION		
SAMPLE TRAIN		
Barom. Pressure:		psi
	30.14	"Hg
Meter No.	23 wcs	
Meter Y_d:	1.0000	
Meter Pressure:	2.0	iwg
Pstack:	0.55	iwg
Pstack:	30.18	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft2

METHOD 4 DATA			
Impingers			
#/Matl.	End	Start	Diff.
1/H2O	784.3	641.9	142.4
2/H2O	758.4	754.1	4.3
3/Empty	598.6	597.7	0.9
4/S.G.	908.0	896.4	11.6
Rinse			0.0
Total			159.2
Dry Gas Meter			
Time	Vol.	Tm(in)	Tm(out)
Start	858.400	81	83
		83	83
Stop	905.100	82	83
		83	83
Total	46.700		82.6
Summary			
Sample Volume:	45.991	dscf	
H_2O Volume :	7.514	scf	
Moisture Content:	14.0	%	

METHOD 3A, 6C, 7E DATA		
	O_2	CO_2
Analyzer Span	19.15	18.94
Actual Span Value	10.78	10.56
Pre Test Zero Direct	-0.01	-0.03
Pre Test Span Direct	10.84	10.38
Pre-test Zero	0.00	0.01
Pre-test Span	10.85	10.36
Average	9.66	10.86
Post Test Zero Direct	-0.02	-0.03
Post Test Span Direc	10.80	10.36
Post-test Zero	0.07	0.02
Post-test Span	10.80	10.33
Average	9.66	10.86
Corr. Results	9.62	11.08
Cal Error <2%, Bias <5%; Drift <3%		
Calibrtion Error	0.3%	-1.0%
Pre-Test Zero Bias	0.0%	0.2%
Pre-Test Span Bias	0.1%	-0.1%
Post-Test Zero Bias	0.4%	0.3%
Post-Test Span Bias	0.0%	-0.1%
Zero Drift	0.4%	0.0%
Span Drift	-0.3%	-0.2%

METHOD 2 DATA				
Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	0.96	0.9798	320	66.95
4	0.95	0.9747	321	66.65
3	0.90	0.9487	322	64.91
2	0.82	0.9055	322	61.96
1	0.77	0.8775	322	60.04
5	0.93	0.9644	319	65.86
4	0.81	0.9000	320	61.50
3	0.83	0.9110	321	62.30
2	0.82	0.9055	321	61.92
1	0.78	0.8832	320	60.35
5	1.20	1.0954	361	76.80
4	1.20	1.0954	360	76.75
3	1.30	1.1402	361	79.94
2	1.40	1.1832	362	83.00
1	1.00	1.0000	362	70.15
5	1.00	1.0000	363	70.19
4	0.93	0.9644	363	67.69
3	0.88	0.9381	363	65.85
2	0.85	0.9220	364	64.75
1	0.80	0.8944	364	62.82
5	0.85	0.9220	364	64.75
4	0.84	0.9165	364	64.37
3	0.92	0.9592	361	67.25
2	0.97	0.9849	361	69.05
1	0.99	0.9950	361	69.76
5	0.99	0.9950	362	69.80
4	1.00	1.0000	362	70.15
3	0.85	0.9220	362	64.68
2	0.99	0.9950	360	69.71
1	1.10	1.0488	361	73.53
Average	0.9488	0.9741	348.3	67.78

TEST SUMMARY		
O_2:	9.619	% dry
	8.268	% wet
CO_2:	11.084	% dry
	9.527	% wet
H_2O:	14.0	%
MW:	28.45	lb/lb-mole
Flow:	157,958	wacfm
	89.45	mdscfm
	5367.25	kdscfh

Montrose AQS
Run 3 CEMS
DATA AND WORKSHEET
Desert View Power UNIT 2

PRE-TEST INFORMATION		
GENERAL		
Test:	3-O2/CO2-U2	
Date:	3/11/2021	
Start Time:	13:15	
Station:	Desert View Power	
Unit:	Unit 2	
Test Condition:	Full Load	
Performed By:	DW	
PRE-TEST INFORMATION		
SAMPLE TRAIN		
Barom. Pressure:		psi
	30.14	"Hg
Meter No.	23 wcs	
Meter Y_d:	1.0000	
Meter Pressure:	2.0	iwg
Pstack:	0.55	iwg
Pstack:	30.18	"Hg
Cp:	0.84	
Tref:	68	°F
Stack Area:	38.84	ft2

METHOD 4 DATA			
Impingers			
#/Matl.	End	Start	Diff.
1/H2O	868.0	754.0	114.0
2/H2O	747.9	744.5	3.4
3/Empty	648.3	641.4	6.9
4/S.G.	939.8	930.2	9.6
Rinse			0.0
Total			133.9
Dry Gas Meter			
Time	Vol.	Tm(in)	Tm(out)
Start	905.600	80	82
		80	82
Stop	953.100	80	83
		83	83
Total	47.500		81.6
Summary			
Sample Volume:		46.865	dscf
H_2O Volume :		6.320	scf
Moisture Content:		11.9	%

METHOD 3A, 6C, 7E DATA		
	O_2	CO_2
Analyzer Span	19.15	18.94
Actual Span Value	10.78	10.56
Pre Test Zero Direct	-0.02	-0.03
Pre Test Span Direct	10.80	10.36
Pre-test Zero	0.07	0.02
Pre-test Span	10.80	10.33
Average	9.75	10.76
Post Test Zero Direct	-0.02	-0.02
Post Test Span Direc	10.80	10.36
Post-test Zero	0.06	0.04
Post-test Span	10.83	10.31
Average	9.75	10.76
Corr. Results	9.72	11.01
Cal Error <2%, Bias <5%; Drift <3%		
Calibrtion Error	0.1%	-1.1%
Pre-Test Zero Bias	0.4%	0.3%
Pre-Test Span Bias	0.0%	-0.1%
Post-Test Zero Bias	0.4%	0.3%
Post-Test Span Bias	0.2%	-0.3%
Zero Drift	0.0%	0.1%
Span Drift	0.2%	-0.1%

METHOD 2 DATA				
Point	dP (in. H_2O)	dP^2 (in. H_2O^2)	Temp (°F)	Velocity (fps)
5	0.97	0.9849	322	67.09
4	0.95	0.9747	322	66.39
3	0.93	0.9644	323	65.73
2	0.84	0.9165	323	62.47
1	0.76	0.8718	323	59.42
5	0.93	0.9644	321	65.65
4	0.95	0.9747	321	66.35
3	0.83	0.9110	322	62.06
2	0.80	0.8944	322	60.93
1	0.74	0.8602	321	58.56
5	1.00	1.0000	362	69.84
4	0.93	0.9644	362	67.35
3	0.83	0.9110	364	63.70
2	0.85	0.9220	364	64.46
1	0.80	0.8944	364	62.54
5	0.85	0.9220	363	64.43
4	0.83	0.9110	361	63.59
3	0.89	0.9434	362	65.88
2	0.97	0.9849	362	68.78
1	0.99	0.9950	362	69.49
5	1.20	1.0954	360	76.41
4	0.96	0.9798	360	68.34
3	0.93	0.9644	361	67.31
2	0.63	0.7937	361	55.40
1	0.59	0.7681	363	53.68
5	0.96	0.9798	364	68.51
4	0.92	0.9592	364	67.07
3	0.83	0.9110	364	63.70
2	1.00	1.0000	364	69.92
1	1.10	1.0488	365	73.38
Average	0.8877	0.9422	349.1	65.28

TEST SUMMARY		
O_2:	9.716	% dry
	8.562	% wet
CO_2:	11.013	% dry
	9.705	% wet
H_2O:	11.9	%
MW:	28.71	lb/lb-mole
Flow:	152,130	wacfm
	88.24	mdscfm
	5294.12	kdscfh

Date	Start Time	End Time	Run #	Trap #	Spiked / Unspiked	Start Vol, l	Stop Vol,l	Total Vol,l	Total Vol, m3	Total Vol,ft3	Meter No.	Yd	delta H	Meter Temp	Stack Temp	Trap Temp	Vacuum	P bar	Ref Temp	Vm std, dscm	Vm std, dscf
3/11/2021	10:20	11:20	1-Hg-A	OLC137227	Unspiked	9346.307	9386.590	40.283	0.040283	1.4224	21-A	0.9989	0.00	71.7	319.0	280.8	1.0	30.14	68	0.04025	1.42113
3/11/2021	10:20	11:20	1-Hg-B	OLC160774	Unspiked	3036.864	3077.064	40.200	0.040200	1.4195	21-B	0.9901	0.00	71.7	319.0	280.8	1.0	30.14	68	0.03981	1.40574
3/11/2021	10:20	11:20	1-Hg-C	OLC160581	Unspiked	4953.190	4993.321	40.131	0.040131	1.4170	20-C	0.9989	0.00	68.7	319.0	280.8	1.0	30.14	68	0.04032	1.42379
3/11/2021	10:20	11:20	1-Hg-S	OLC132337	Spiked	3105.056	3145.328	40.272	0.040272	1.4220	20-S	0.9993	0.00	68.8	319.0	280.8	1.0	30.14	68	0.04047	1.42890
3/11/2021	11:40	12:40	2-Hg-A	OLC149000	Unspiked	9387.415	9427.615	40.200	0.040200	1.4195	21-A	0.9989	0.00	70.7	321.0	300.5	1.0	30.14	68	0.04024	1.42087
3/11/2021	11:40	12:40	2-Hg-B	OLC148880	Unspiked	3077.826	3117.900	40.074	0.040074	1.4150	21-B	0.9901	0.00	70.8	321.0	300.5	1.0	30.14	68	0.03975	1.40353
3/11/2021	11:40	12:40	2-Hg-C	OLC149014	Unspiked	4994.405	5034.530	40.125	0.040125	1.4168	20-C	0.9989	0.00	71.5	321.0	300.5	1.0	30.14	68	0.04010	1.41599
3/11/2021	11:40	12:40	2-Hg-S	OLC131609	Spiked	3146.130	3186.325	40.195	0.040195	1.4193	20-S	0.9993	0.00	59.8	321.0	300.5	1.0	30.14	68	0.04109	1.45086
3/11/2021	13:15	14:15	3-Hg-A	OLC160618	Unspiked	9428.565	9468.950	40.385	0.040385	1.4260	21-A	0.9989	0.00	72.3	322.8	301.0	1.0	30.14	68	0.04030	1.42294
3/11/2021	13:15	14:15	3-Hg-B	OLC137166	Unspiked	3136.734	3176.956	40.222	0.040222	1.4202	21-B	0.9901	0.00	73.3	322.8	301.0	1.0	30.14	68	0.03971	1.40211
3/11/2021	13:15	14:15	3-Hg-C	OLC160765	Unspiked	5035.724	5075.824	40.100	0.040100	1.4159	20-C	0.9989	0.00	71.8	322.8	301.0	1.0	30.14	68	0.04005	1.41422
3/11/2021	13:15	14:15	3-Hg-S	OLC131647	Spiked	3186.907	3227.250	40.343	0.040343	1.4245	20-S	0.9993	0.00	71.8	322.8	301.0	1.0	30.14	68	0.04031	1.42334

Run: 1-Hg-A 1-Hg-B

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePresActual A	OrificePresActual B	StackTempA	StackTempB	Probe Temp A	Probe Temp B	TrapTemp A	TrapTemp B	Dry Gas A	Dry Gas B	Pump Vac A	Pump Vac B	Sample Rate A	Sample Rate B	Notes
	0	10	10:20:00 AM	9346.307	3036.864	n/a	0	0	319	319	233	233	233	233	70	70	1	1	0.7	0.7	
	10	20	10:30:00 AM	9353.021	3043.564	n/a	0	0	319	319	245	245	245	245	70	70	1	1	0.7	0.7	
	20	30	10:40:00 AM	9359.735	3050.264	n/a	0	0	319	319	300	300	300	300	72	72	1	1	0.7	0.7	
	30	40	10:50:00 AM	9366.449	3056.964	n/a	0	0	319	319	303	303	303	303	72	72	1	1	0.7	0.7	
	40	50	11:00:00 AM	9373.162	3063.665	n/a	0	0	319	319	302	302	302	302	73	73	1	1	0.7	0.7	
	50	60	11:10:00 AM	9379.876	3070.354	n/a	0	0	319	319	302	302	302	302	73	73	1	1	0.7	0.7	
	60		11:20:00 AM	9386.590	3077.064																

Run: 1-Hg-C 1-Hg-S

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePresActual C	OrificePresActual D	StackTempA	StackTempB	Probe Temp C	Probe Temp D	TrapTemp A	TrapTemp B	Dry Gas C	Dry Gas D	Pump Vac C	Pump Vac D	Sample Rate C	Sample Rate D	Notes
	0	10	10:20:00 AM	4953.190	3105.056	n/a	0	0	319	319	233	233	233	233	68	68	1	1	0.7	0.7	
	10	20	10:30:00 AM	4959.879	3111.760	n/a	0	0	319	319	245	245	245	245	68	68	1	1	0.7	0.7	
	20	30	10:40:00 AM	4966.568	3118.470	n/a	0	0	319	319	300	300	300	300	68	68	1	1	0.7	0.7	
	30	40	10:50:00 AM	4973.257	3125.185	n/a	0	0	319	319	303	303	303	303	69	69	1	1	0.7	0.7	
	40	50	11:00:00 AM	4979.940	3131.900	n/a	0	0	319	319	302	302	302	302	69	70	1	1	0.7	0.7	
	50	60	11:10:00 AM	4986.624	3138.615	n/a	0	0	319	319	302	302	302	302	70	70	1	1	0.7	0.7	
	60		11:20:00 AM	4993.321	3145.328																

Run: 2-Hg-A 2-Hg-B

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePresActual A	OrificePresActual B	StackTempA	StackTempB	Probe Temp A	Probe Temp B	TrapTemp A	TrapTemp B	Dry Gas A	Dry Gas B	Pump Vac A	Pump Vac B	Sample Rate A	Sample Rate B	Notes
	0	10	11:40:00 AM	9387.415	3077.826	n/a	0	0	321	321	300	300	300	300	70	70	1	1	0.7	0.7	
	10	20	11:50:00 AM	9394.117	3084.519	n/a	0	0	321	321	300	300	300	300	70	70	1	1	0.7	0.7	
	20	30	12:00:00 PM	9400.815	3091.212	n/a	0	0	321	321	300	300	300	300	70	70	1	1	0.7	0.7	
	30	40	12:10:00 PM	9407.517	3097.905	n/a	0	0	321	321	301	301	301	301	70	71	1	1	0.7	0.7	
	40	50	12:20:00 PM	9414.212	3104.944	n/a	0	0	321	321	301	301	301	301	71	71	1	1	0.7	0.7	
	50	60	12:30:00 PM	9420.915	3114.637	n/a	0	0	321	321	301	301	301	301	73	73	1	1	0.7	0.7	
	60		12:40:00 PM	9427.615	3117.900																

Run: 2-Hg-C 2-Hg-S

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePresActual C	OrificePresActual D	StackTempA	StackTempB	Probe Temp C	Probe Temp D	TrapTemp A	TrapTemp B	Dry Gas C	Dry Gas D	Pump Vac C	Pump Vac D	Sample Rate C	Sample Rate D	Notes
	0	10	11:40:00 AM	4994.405	3146.130	n/a	0	0	321	321	300	300	300	300	71	71	1	1	0.7	0.7	
	10	20	11:50:00 AM	5001.092	3152.820	n/a	0	0	321	321	300	300	300	300	71	1	1	1	0.7	0.7	
	20	30	12:00:00 PM	5007.782	3159.530	n/a	0	0	321	321	300	300	300	300	71	71	1	1	0.7	0.7	
	30	40	12:10:00 PM	5014.465	3166.215	n/a	0	0	321	321	301	301	301	301	72	72	1	1	0.7	0.7	
	40	50	12:20:00 PM	5021.154	3172.925	n/a	0	0	321	321	301	301	301	301	72	72	1	1	0.7	0.7	

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	50	60	12:30:00 PM	5027.843	3179.624	n/a	0	0	321	321	301	301	301	301	72	72	1	1	0.7	0.7	
	60		12:40:00 PM	5034.530	3186.325																

Run: 3-Hg-A 3-Hg-B

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePressActual A	OrificePres Actual B	StackTem pA	StackTe mpB	Probe Temp A	Probe Temp B	TrapTemp A	TrapTemp B	Dry Gas A	Dry Gas B	Pump Vac A	Pump Vac B	Sample Rate A	Sample Rate B	Notes
	0	10	1:15:00 PM	9428.565	3136.734	n/a	0	0	323	323	300	300	300	300	72	73	1	1	0.7	0.7	
	10	20	1:25:00 PM	9435.291	3143.438	n/a	0	0	323	323	300	300	300	300	73	73	1	1	0.7	0.7	
	20	30	1:35:00 PM	9442.026	3150.140	n/a	0	0	323	323	300	300	300	300	73	74	1	1	0.7	0.7	
	30	40	1:45:00 PM	9448.757	3156.845	n/a	0	0	323	323	302	302	302	302	72	74	1	1	0.7	0.7	
	40	50	1:55:00 PM	9455.487	3163.550	n/a	0	0	323	323	302	302	302	302	72	73	1	1	0.7	0.7	
	50	60	2:05:00 PM	9462.218	3170.252	n/a	0	0	322	322	302	302	302	302	72	73	1	1	0.7	0.7	
	60		2:15:00 PM	9468.950	3176.956																

Run: 3-Hg-C 3-Hg-S

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePressA ctual C	OrificePres Actual D	StackTem pA	StackTe mpB	Probe Temp C	Probe Temp D	TrapTemp A	TrapTemp B	Dry Gas C	Dry Gas D	Pump Vac C	Pump Vac D	Sample Rate C	Sample Rate D	Notes
	0	10	1:15:00 PM	5035.724	3186.907	n/a	0	0	323	323	300	300	300	300	71	71	1	1	0.7	0.7	
	10	20	1:25:00 PM	5042.407	3193.625	n/a	0	0	323	323	300	300	300	300	72	72	1	1	0.7	0.7	
	20	30	1:35:00 PM	5049.091	3200.350	n/a	0	0	323	323	300	300	300	300	72	72	1	1	0.7	0.7	
	30	40	1:45:00 PM	5055.772	3207.080	n/a	0	0	323	323	302	302	302	302	72	72	1	1	0.7	0.7	
	40	50	1:55:00 PM	5062.560	3213.815	n/a	0	0	323	323	302	302	302	302	72	72	1	1	0.7	0.7	
	50	60	2:05:00 PM	5069.141	3220.555	n/a	0	0	322	322	302	302	302	302	72	72	1	1	0.7	0.7	
	60		2:15:00 PM	5075.824	3227.250																

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (MAQS) ASTM D7036-04 certification, MAQS is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. MAQS 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: MAQS has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: MAQS 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 MAQS QA efforts. The manual is revised upon periodic review and as MAQS 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. MAQS 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 MAQS 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 MAQS 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: MAQS maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: MAQS maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to MAQS source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to MAQS 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, will be 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)

The following safety measures will be 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

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 will be used that meet applicable regulatory agency requirements.

Appendix D.2
CARB, SCAQMD, and STAC Certifications

State of California

California Air Resources Board

Approved Independent Contractor

Montrose Air Quality Services, LLC

This is to certify that the company listed above has been approved by the California Air Resources Board to conduct compliance testing pursuant to California Code of Regulations, title 17, section 91207, through June 30, 2022, for those test methods listed below:

CARB Source Test Methods:
1, 2, 3, 205, 6, 8, 17, 20
100 (CO, CO_2, NO_x, O_2, SO_2, THC)

Catherine Dunwoody, Chief
Monitoring and Laboratory Division

State of California

California Air Resources Board

Approved Independent Contractor

Montrose Air Quality Services, LLC

This is to certify that the company listed above has been approved by the California Air Resources Board to conduct compliance testing pursuant to California Code of Regulations, title 17, section 91207, through June 30, 2022, for those test methods listed below:

U.S. EPA Source Test Methods 201A, 202 and 205
Visible Emissions Evaluation

Catherine Dunwoody, Chief
Monitoring and Laboratory Division

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 9, 2020

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2020, and ending September 30, 2021 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

Methods 1-4	Methods 5.1, 5.2, 5.3, 6.1
Methods 10.1 and 100.1	Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol
Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling	

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704

Laundry Building of VA Greater Los Angeles Healthcare System
508 Constitution Avenue
Los Angeles, CA 90049

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Glenn Kasai. He may be reached by telephone at (909) 396-2271, or via e-mail at gkasai@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:GK/gk
Attachment

200909 LapRenewalRev.doc

STAC STACK TESTING ACCREDITATION COUNCIL

A2LA 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 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

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

MONTROSE AIR QUALITY SERVICES

Appendix D.3
Individual QI Certifications

CERTIFICATE OF COMPLETION

John Peterson

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: 002-2017-177

Tate Strickler, Accreditation Director

DATE OF ISSUE: 2/23/17

DATE OF EXPIRATION: 2/23/22

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

John Peterson

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 2: EPA Manual Gaseous Pollutants Source Sampling Methods

Certificate Number: 002-2017-178

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/5/17

DATE OF EXPIRATION: 1/5/22

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

John Peterson

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 Methods

Certificate Number: 002-2017-179

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/5/17

DATE OF EXPIRATION: 1/5/22

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

John Peterson

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: 002-2019-27

Tate Strickler, Accreditation Director

DATE OF ISSUE: 9/20/19

DATE OF EXPIRATION: 9/20/24

MONTROSE
ENVIRONMENTAL

CERTIFICATE OF COMPLETION

John Peterson

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):

SCAQMD Methods 25.1, 25.3 & 307-91

Certificate Number: 002-2016-24

Tate Strickler, Accreditation Director

DATE OF ISSUE: 12/5/16

DATE OF EXPIRATION: 12/5/21

MONTROSE ENVIRONMENTAL

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. David Wonderly
Title: Client Project Manager
Region: West
Email: DWonderly@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