# **Alton Coal Development, LLC.**

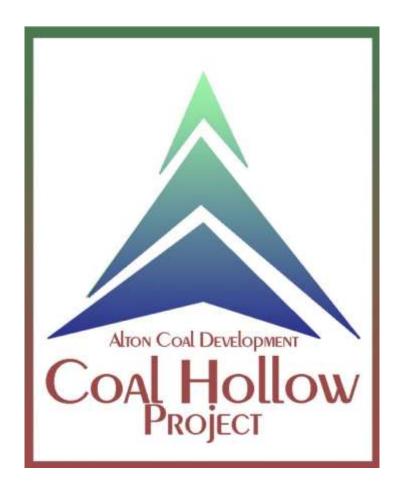
Summary of PM<sub>10</sub> Data Collected at Coal Hollow Mine, Utah During the Second Quarter, 2016

### Submitted to:

Utah Division of Environmental Quality Division of Air Quality 195 North 1950 West Salt Lake City, Utah Contact: Jon Black

### **Prepared by:**

Alton Coal Development, LLC. 463 N 100W, Suite1 Cedar City, Utah 84721 Contact: Kirk Nicholes 435.867.5331



### Contents

1.0	Intro	duction		2
2.0 Si	ite Loc	cation		2
3.0	AIR	QUALIT	Y DATA SUMMARIES	4
4.0	DAT	A RECO	VERY AND QUALITY ASSURANCE	7
	4.1	Data Re	covery	7
	4.2	Quality	Assurance	8
			Precision of PM <sub>10</sub> Measurements	
		4.2.2	Audit Results	9
		4.2.3	Zero and Single Point Flow Rate Checks	10

# List of Tables

Table I - Summary of Measured PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> )	5
Table II - Summary of Measured PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> )	5
Table III - Summary of Measured PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> )	6
Table IV - Summary of Measured PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> )	6
Table V - Summary of Measured PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> )	6
Table VI - Mean Quarterly and Monthly Wind Speed	7
Table VII - Summary of Data Recovery	8
Table VI III- Audit Summary	9

## List of Figures

Figure 1 - Site Location Map	. 3
Figure 2 - Satellite View of Monitoring Locations	.4

## **List of Appendices**

APPENDIX A Windrose APPENDIX B Listing of PM<sub>10</sub> Concentrations (Data sheets for monitor's on DVD) APPENDIX C Precision and Single-Point Flow Rate Checks APPENDIX D Field Data Sheets APPENDIX E Independent PM<sub>10</sub> Sampler Performance Audit Report

Alton Coal Development, Inc PM<sub>10</sub> Data, 2nd Quarter, 2016

# 1.0 INTRODUCTION

This report summarizes measurements of Particulate Matter less than 10 microns nominal aerodynamic diameter ( $PM_{10}$ ) collected and processed by Alton Coal Development, LLC, (ACD) from the five monitoring stations located at the Coal Hollow Mine Facility in Alton, Utah. Monitoring for  $PM_{10}$  is a condition of the mines operating permit.

 $PM_{10}$  monitoring at the site consists of five BGI PQ200  $PM_{10}$  monitors run by solar power. Figure 2 of this report shows the approximate locations of the monitoring locations. The BGI PQ200 monitors are EPA Reference Method monitors and are operated on the National Particulate 1-in-6 Monitoring Schedule. The data summarized herein covers the data collected during the second quarter of 2016.

# 2.0 SITE LOCATION

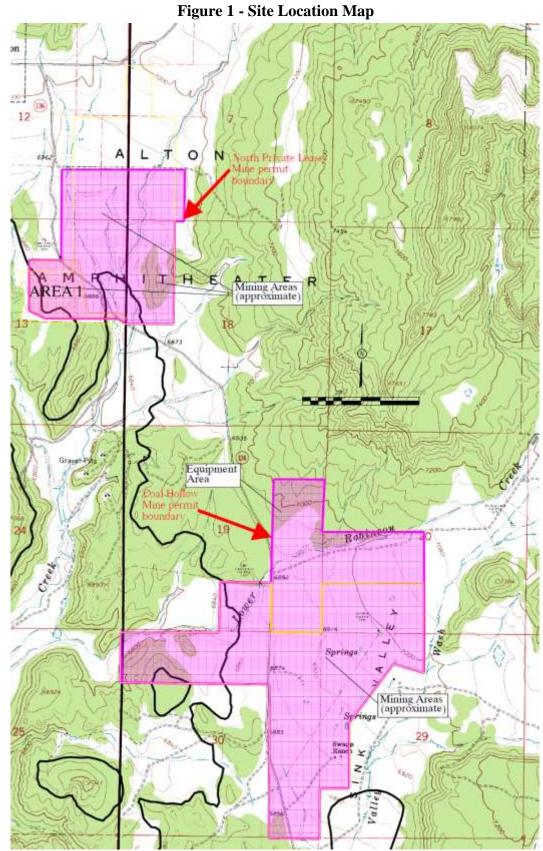
The Coal Hollow Mine is located in Kane County, Utah, approximately three miles southeast of the town of Alton, Utah. Figure I on the following page gives an overview of the site location. Specifically the Coal Hollow Mine is located in Sections 19, 20, 29, and 30 of Township 39S, Range 5W; with an approximate facility location of:

Northing: 41401699 meters

## Easting: 371534 meters

## Universal Transverse Mercator (UTM) Datum NAD27, Zone 12

The three monitoring locations as depicted in Figure 2, are located in positions to collect both background and maximum PM10 concentrations. The background monitor has a manufactures serial #962, therefore this monitor will be referred as monitor 962A. The compliance monitor for the Coal Hollow Mine (CHM) has a manufactures serial #963, therefore this monitor will be referred as monitor 963B. The co-located monitor has a manufactures serial #964, therefore this monitor will be referred as monitor 964C. The background monitor coordinates are Northing: 4140856, Easting 373119, (UTM) Datum NAD27, Zone 12. The CHM compliance monitor and the co-located monitor for the North Private Lease (NPL) has a manufactures serial #2366, therefore this monitor will be referred as monitor will be referred as monitor 2398E. The NPL compliance monitor and the co-located monitor will be referred as monitor 2398E. The NPL compliance monitor and the co-located monitor will be referred as monitor 2398E. The NPL compliance monitor and the co-located monitor will be referred as monitor 2398E. The NPL compliance monitor and the co-located monitor will be referred as monitor 2398E. The NPL compliance monitor and the co-located monitor coordinates are Northing: 4141570, Easting 370928, (UTM) Datum NAD27, Zone 12.



Alton Coal Development, Inc  $PM_{10}$  Data, 2nd Quarter, 2016

July 27, 2016 Page 3



Figure 2 - Satellite View of Monitoring Locations

### 3.0 AIR QUALITY DATA SUMMARIES

A listing of the measured PM<sub>10</sub> concentrations for the quarter are presented in Appendix B (individual data sheets are provided on the enclosed disk in the PDF version of Appendix B) and Field Data Sheets generated during the collection of each sample are presented in Appendix D. Measurements were collected during a 24-hour periods and represent the average PM<sub>10</sub> concentration during the midnight to midnight data collection cycle. As required by the operating permit For the CHM, duplicate measurements were made with Sampler #963B (designated as a compliance monitor) and Sampler #964C (designated as a co-located sampler) to the extent possible. The quarterly mean  $PM_{10}$  concentration and the comparison of measured concentrations to standards are based on measurements from the primary Sampler #963B. If a measurement from Sampler #963B was missing or invalid, the measurement from the secondary Sampler #964C would be used. Also, required by the operating permit For the NPL, duplicate measurements were made with Sampler #2366D (designated as a compliance monitor) and Sampler #2398E (designated as a co-located sampler) to the extent possible. The quarterly mean  $PM_{10}$  concentration and the comparison of measured concentrations to standards are based on measurements from the primary Sampler #2366D. If a measurement from Sampler #2366D was missing or invalid, the measurement from the secondary Sampler #2398E would be used.

Alton Coal Development, Inc PM<sub>10</sub> Data, 2nd Quarter, 2016 The highest 24-hour mean  $PM_{10}$  concentrations measured during the quarter from the three monitoring locations are summarized in Table I, Table II, Table III, Table IV and Table V. The three highest concentrations, # of valid samples, and the arithmetic mean concentrations from each of the sites are listed. All measured  $PM_{10}$  concentrations were below the 24-hour National Ambient Air Quality Standard (NAAQS) of 150 µg/m<sup>3</sup>.

Dackground Wonton - 702A					
RANK	DATE	PM <sub>10</sub> CONCENTRATION			
Highest	6/23/2016	16.5			
2 <sup>nd</sup> Highest	6/29/2016	12.0			
Monthly Mean	4/1/16-4/30/16	3.4			
Monthly Mean	5/1/16-5/31/16	6.7			
Monthly Mean	6/1/16-6/30/16	11.7			
Quarterly Mean	4/1/16-6/30/16 (13 valid samples)	7.4			

Table I - Summary of Measured PM<sub>10</sub> Concentrations (μg/m<sup>3</sup>) Background Monitor - 962A

Table II - Summary of Measured PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> )
<b>Compliance Monitor - 963B</b>

RANK	DATE	PM <sub>10</sub> CONCENTRATION
Highest	6/23/2016	62.9
2 <sup>nd</sup> Highest	6/29/2016	91.5
Monthly Mean	4/1/16-4/30/16	9.1
Monthly Mean	5/1/16-5/31/16	27.8
Monthly Mean	6/1/16-6/30/16	38.4
Quarterly Mean	4/1/16-6/30/16 (14 valid samples)	26.2

RANK	DATE	PM <sub>10</sub> CONCENTRATION	
Highest	5/12/2016	61.0	
2 <sup>nd</sup> Highest	6/17/2016	43.7	
Monthly Mean	4/1/16-4/30/16	8.3	
Monthly Mean	5/1/16-5/31/16	27.3	
Monthly Mean	6/1/16-6/30/16	28.6	
Quarterly Mean	4/1/16-6/30/16 (15 valid samples)	21.4	

Table III - Summary of Measured  $PM_{10}$  Concentrations ( $\mu g/m^3$ ) Collocated Monitor – 964C

Table IV - Summary of Measured  $PM_{10}$  Concentrations ( $\mu g/m^3$ ) Compliance Monitor – 2366D

RANK	DATE	PM <sub>10</sub> CONCENTRATION	
Highest	6/23/2016	122	
2 <sup>nd</sup> Highest	6/29/2016	78.6	
Monthly Mean	4/1/16-4/30/16 Not Installed		
Monthly Mean	5/1/16-5/31/16	7.0	
Monthly Mean	6/1/16-6/30/16	74.5	
Quarterly Mean	4/1/16-6/30/16 (13 valid samples)	36.6	

RANK	DATE	PM <sub>10</sub> CONCENTRATION	
Highest	6/23/2016	112.6	
2 <sup>nd</sup> Highest	6/17/2016	81.0	
Monthly Mean	4/1/16-4/30/16	7.6	
Monthly Mean	5/1/16-5/31/16	32.5	
Monthly Mean	6/1/16-6/30/16	56.8	
Quarterly Mean	4/1/16-6/30/16 (14 valid samples)	34.1	

Table V - Summary of Measured  $PM_{10}$  Concentrations ( $\mu g/m^3$ ) Collocated Monitor – 2398E

Table VI - Mean Quarterly and Monthly Wind Speed

	2nd Quarter 2016	Apr.	May	Jun.
Mean Wind Speed (m/s)	3.42	3.49	3.40	3.38

# 4.0 DATA RECOVERY AND QUALITY ASSURANCE

# 4.1 Data Recovery

## Monitor 962A

Monitor 962A collected 13 of the 15 samples during the quarter. The percent recovery for this quarter is 87%. For the sample date of May  $6^{th}$  a rodent had chewed threw the power supply cable to the monitor causing the monitor to not run the programed time. For the sample date of May  $24^{th}$  the power supply where the rodent had chewed threw lost connection and the monitor failed again.

## Monitor 963B

Monitor 963B collected 14 of the 15 samples during the quarter. The percent recovery for this quarter is 93%. For the sample date of April 25<sup>th</sup> the monitor over ran the programed time halted by the operator after 34:43 hours.

# Monitor 964C

Monitor 964C collected 15 of the 15 samples during the quarter. The percent recovery for this quarter is 100%.

# Monitor 2366D

Monitor 2366D collected 13 of the 15 samples during the quarter. The percent recovery for this quarter is 87%. For the sample date of May 18<sup>th</sup> the monitor over ran the programed time halted by the operator after 53:03 hours.

## Monitor 2398E

Monitor 2398E collected 14 of the 15 samples during the quarter. The percent recovery for this quarter is 93%. For the sample date of Apr. 24<sup>th</sup> the chamber to the monitor was found open at the time of filter collection, thus the sample was invalidated.

SAMPLER	POSSIBLE SAMPLES	VALID SAMPLES	PERCENT DATA RECOVERY
962A	15	13	87%
963B	15	14	93%
964C	15	15	100%
2366D	15	13	87%
2398E	15	14	93%

The  $PM_{10}$  data recoveries for the five monitoring stations are presented below:

 Table VIII - Summary of Data Recovery

# 4.2 Quality Assurance

Quality assurance procedures utilized to verify the integrity of the measured  $PM_{10}$  data included the following:

1. Review of  $PM_{10}$  precision measurements based upon duplicate, collocated measurements.

Alton Coal Development, Inc PM<sub>10</sub> Data, 2nd Quarter, 2016

- 2. Independent quarterly audits of the  $PM_{10}$  samplers.
- 3. Monthly zero and single point flow rate checks of the  $PM_{10}$  samplers.

# 4.2.1 Precision of PM<sub>10</sub> Measurements

The precision of the  $PM_{10}$  measurements was determined from the duplicate samples collected from the collocated BGI PQ200 Monitors 963B and 964C at the Coal Hollow Mine and 2366D and 2398E at the North Private Lease. As recommended in *40 CFR*, *Part 58*, Appendix A, Section 5.3.1,  $PM_{10}$  precision checks are reported for instances when the concentrations for duplicate samples both exceed 3  $\mu$ g/m<sup>3</sup>. Duplicate samples that did not meet this condition were omitted for the purposes of the precision checks. Appendix C, of this report summarizes precision calculations between the compliance monitor and the co-located monitor. Monthly flow rate verification data is also summarized in Appendix C.

Precision calculations at the Coal Hollow Mine were developed based on 13 valid pairs of colocated monitoring data during the quarter. Single point precision based on 40 CFR, Part 58, Appendix A Equation 2 results were -10.5% to 59.5%. The aggregate coefficient of variability (CV) calculated in accordance with 40 CFR, Part 58, Appendix A Equation 11 is 18.96%. This value is not within the 10% goal for aggregate CV.

Precision calculations at the North Private Lease were developed based on 11 valid pairs of co-located monitoring data during the quarter. Single point precision based on 40 CFR, Part 58, Appendix A Equation 2 results were -46.0% to 47.6%. The aggregate coefficient of variability (CV) calculated in accordance with 40 CFR, Part 58, Appendix A Equation 11 is 26.19%. This value is not within the 10% goal for aggregate CV.

# 4.2.2 Audit Results

The accuracy of the  $PM_{10}$  sampler flows was verified by a performance audit conducted by Air Resource Specialist on Feb. 22, 2016. A copy of the audit report is presented in Appendix E and is summarized in Table VI. The audit results indicate that the three samplers were operating properly.

SAMPLER	AUDIT % DIFFERENCE	LIMIT*	DESIGN % DIFFERENCE	LIMIT*
962A	-2.6	$\pm 4\%$	2.6	± 5%

Table VII III- Audit Summary

Alton Coal Development, Inc PM<sub>10</sub> Data, 2nd Quarter, 2016

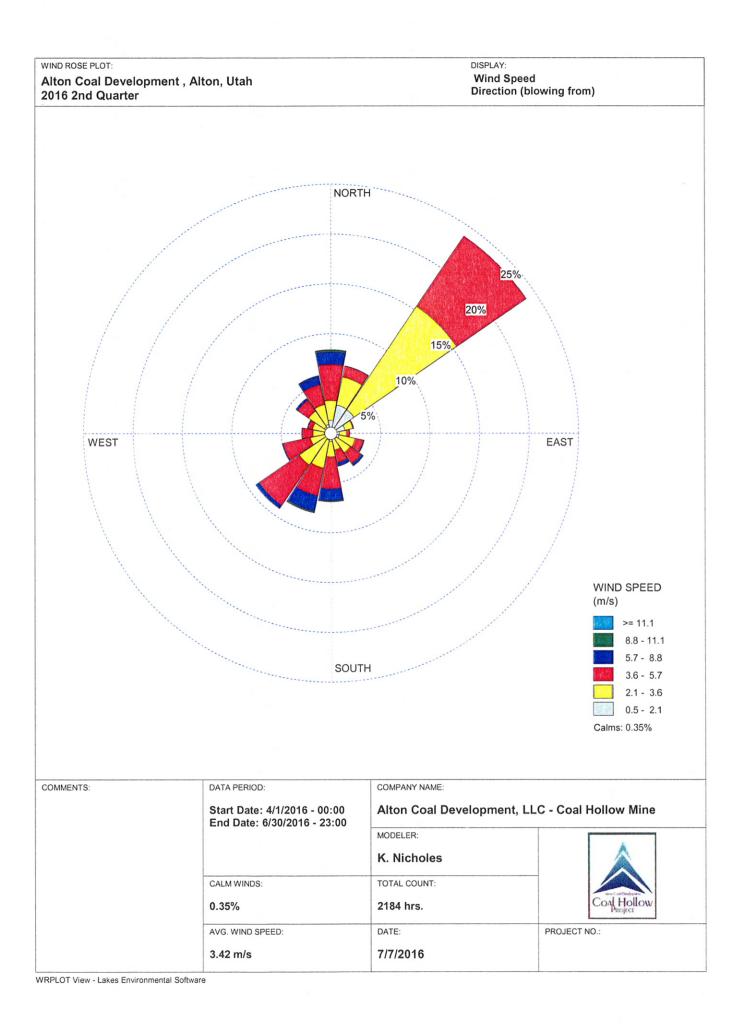
963B	-1.1	±4%	1.1	$\pm 5\%$
964C	-0.1	±4%	0.1	± 5%
2366D	-0.7	±4%	0.7	± 5%
2398E	-1.0	±4%	1.0	$\pm 5\%$
*Values between ±	$7\%$ and $\pm 10\%$ require	e recalibration but no da	ta are invalidated.	

# 4.2.3 Zero and Single Point Flow Rate Checks

Zero and single-point flow rate verifications are performed by a site technician on a monthly basis. The data was then input into a statistical calculator to calculate percent difference and bias between each of the monitors and the monthly single point flow rate measured by a NIST traceable calibration orifice. The calculator used is called the "Data Assessment Statistical Calculator" DASC Tool. DASC was developed for the data user community and can be found in the Precision and Accuracy Reporting System within the Quality Assurance section of EPA's Ambient Monitoring Technology Information System. This data is presented in Appendix C of this report.

# APPENDIX A

Windrose



### Frequency Distribution (Count)

### Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	29	43	79	27	4	1	183
11.25-33.75	63	63	24	1	0	0	151
33.75-56.25	62	274	185	0	0	0	521
56.25-78.75	32	18	2	0	0	0	52
78.75-101.25	19	15	8	0	0	0	42
101.25-123.75	19	36	18	2	0	0	75
123.75-146.25	15	37	29	6	0	0	87
146.25-168.75	11	27	28	8	0	0	74
168.75-191.25	18	34	70	26	2	0	150
191.25-213.75	15	63	62	35	3	0	178
213.75-236.25	12	72	107	9	0	0	200
236.25-258.75	10	36	61	2	0	0	109
258.75-281.25	15	24	24	1	0	0	64
281.25-303.75	12	29	10	2	0	0	53
303.75-326.25	17	42	29	5	0	0	93
326.25-348.75	20	44	45	19	0	1	129
Total	369	857	781	143	9	2	2184
Total	369	168	781	143	9	2	2164

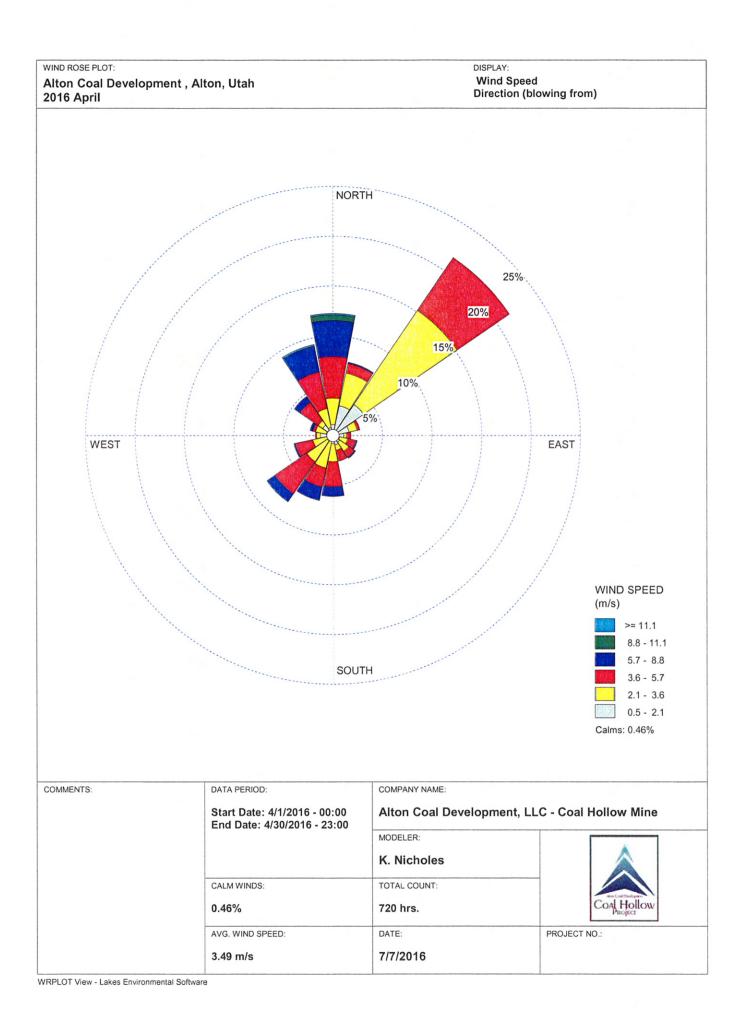
Frequency of Calm Winds: 23 Average Wind Speed: 3.42 m/s

# Frequency Distribution (Normalized)

### Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	0.013278	0.019689	0.036172	0.012363	0.001832	0.000458	0.083791
11.25-33.75	0.028846	0.028846	0.010989	0.000458	0.000000	0.000000	0.069139
33.75-56.25	0.028388	0.125458	0.084707	0.000000	0.000000	0.000000	0.238553
56.25-78.75	0.014652	0.008242	0.000916	0.000000	0.000000	0.000000	0.023810
78.75-101.25	0.008700	0.006868	0.003663	0.000000	0.000000	0.000000	0.019231
101.25-123.75	0.008700	0.016484	0.008242	0.000916	0.000000	0.000000	0.034341
123.75-146.25	0.006868	0.016941	0.013278	0.002747	0.000000	0.000000	0.039835
146.25-168.75	0.005037	0.012363	0.012821	0.003663	0.000000	0.000000	0.033883
168.75-191.25	0.008242	0.015568	0.032051	0.011905	0.000916	0.000000	0.068681
191.25-213.75	0.006868	0.028846	0.028388	0.016026	0.001374	0.000000	0.081502
213.75-236.25	0.005495	0.032967	0.048993	0.004121	0.000000	0.000000	0.091575
236.25-258.75	0.004579	0.016484	0.027930	0.000916	0.000000	0.000000	0.049908
258.75-281.25	0.006868	0.010989	0.010989	0.000458	0.000000	0.000000	0.029304
281.25-303.75	0.005495	0.013278	0.004579	0.000916	0.000000	0.000000	0.024267
303.75-326.25	0.007784	0.019231	0.013278	0.002289	0.000000	0.000000	0.042582
326.25-348.75	0.009158	0.020147	0.020604	0.008700	0.000000	0.000458	0.059066
Total	0.168956	0.392399	0.357601	0.065476	0.004121	0.000916	0.989469

Frequency of Calm Winds: 1.05% Average Wind Speed: 3.42 m/s



### Frequency Distribution (Count)

### Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	8	19	30	26	4	1	88
11.25-33.75	22	24	7	1	0	0	54
33.75-56.25	27	82	46	0	0	0	155
56.25-78.75	12	6	2	0	0	0	20
78.75-101.25	8	2	3	0	0	0	13
101.25-123.75	5	6	6	1	0	0	18
123.75-146.25	6	8	5	1	0	0	20
146.25-168.75	7	4	8	0	0	0	19
168.75-191.25	6	13	18	7	0	0	44
191.25-213.75	4	20	14	10	0	0	48
213.75-236.25	5	18	28	7	0	0	58
236.25-258.75	2	13	13	1	0	0	29
258.75-281.25	9	3	1	0	0	0	13
281.25-303.75	5	8	2	2	0	0	17
303.75-326.25	9	4	16	5	0	0	34
326.25-348.75	6	14	27	19	0	1	67
Total	141	244	226	80	4	2	720

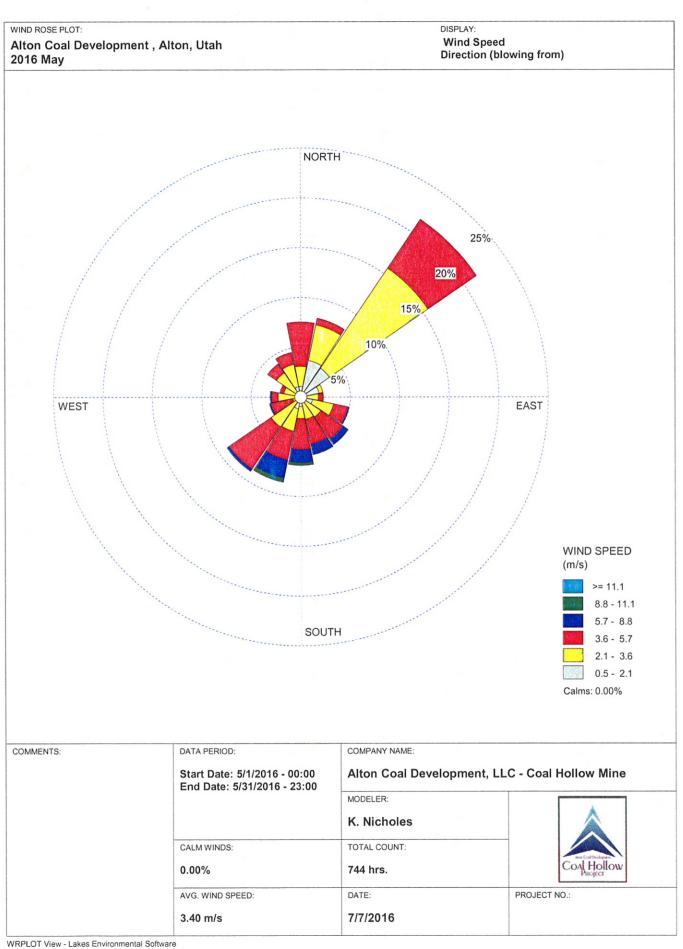
Frequency of Calm Winds: 23 Average Wind Speed: 3.49 m/s

### Frequency Distribution (Normalized)

### Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	0.011111	0.026389	0.041667	0.036111	0.005556	0.001389	0.122222
11.25-33.75	0.030556	0.033333	0.009722	0.001389	0.000000	0.000000	0.075000
33.75-56.25	0.037500	0.113889	0.063889	0.000000	0.000000	0.000000	0.215278
56.25-78.75	0.016667	0.008333	0.002778	0.000000	0.000000	0.000000	0.027778
78.75-101.25	0.011111	0.002778	0.004167	0.000000	0.000000	0.000000	0.018056
101.25-123.75	0.006944	0.008333	0.008333	0.001389	0.000000	0.000000	0.025000
123.75-146.25	0.008333	0.011111	0.006944	0.001389	0.000000	0.000000	0.027778
146.25-168.75	0.009722	0.005556	0.011111	0.000000	0.000000	0.000000	0.026389
168.75-191.25	0.008333	0.018056	0.025000	0.009722	0.000000	0.000000	0.061111
191.25-213.75	0.005556	0.027778	0.019444	0.013889	0.000000	0.000000	0.066667
213.75-236.25	0.006944	0.025000	0.038889	0.009722	0.000000	0.000000	0.080556
236.25-258.75	0.002778	0.018056	0.018056	0.001389	0.000000	0.000000	0.040278
258.75-281.25	0.012500	0.004167	0.001389	0.000000	0.000000	0.000000	0.018056
281.25-303.75	0.006944	0.011111	0.002778	0.002778	0.000000	0.000000	0.023611
303.75-326.25	0.012500	0.005556	0.022222	0.006944	0.000000	0.000000	0.047222
326.25-348.75	0.008333	0.019444	0.037500	0.026389	0.000000	0.001389	0.093056
Total	0.195833	0.338889	0.313889	0.111111	0.005556	0.002778	0.968056

Frequency of Calm Winds: 3.19% Average Wind Speed: 3.49 m/s



### Frequency Distribution (Count)

### Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	8	15	33	0	0	0	56
11.25-33.75	28	27	5	0	0	0	60
33.75-56.25	26	90	44	0	0	0	160
56.25-78.75	14	3	0	0	0	0	17
78.75-101.25	4	9	4	0	0	0	17
101.25-123.75	9	16	11	1	0	0	37
123.75-146.25	4	14	20	5	0	0	43
146.25-168.75	3	14	19	8	0	0	44
168.75-191.25	7	9	23	10	2	0	51
191.25-213.75	9	17	22	14	3	0	65
213.75-236.25	3	24	38	2	0	0	67
236.25-258.75	3	3	17	1	0	0	24
258.75-281.25	4	13	5	1	0	0	23
281.25-303.75	4	9	3	0	0	0	16
303.75-326.25	3	19	8	0	0	0	30
326.25-348.75	8	17	9	0	0	0	34
Total	137	299	261	42	5	0	744

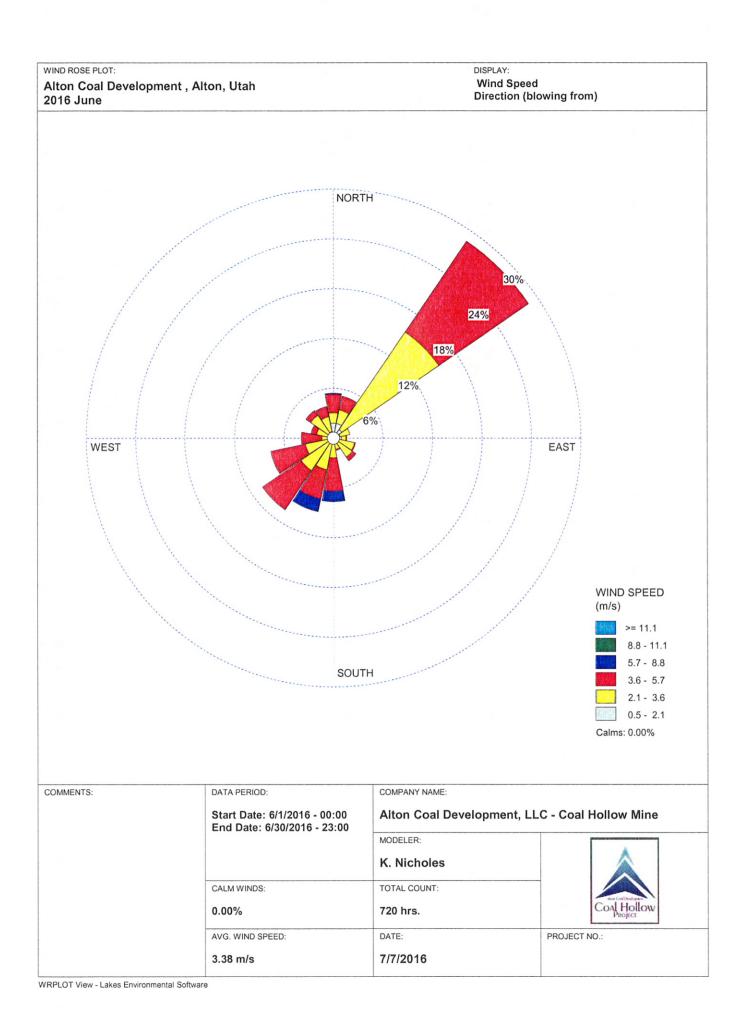
Frequency of Calm Winds: 0 Average Wind Speed: 3.40 m/s

### Frequency Distribution (Normalized)

### Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	0.010753	0.020161	0.044355	0.000000	0.000000	0.000000	0.075269
11.25-33.75	0.037634	0.036290	0.006720	0.000000	0.000000	0.000000	0.080645
33.75-56.25	0.034946	0.120968	0.059140	0.000000	0.000000	0.000000	0.215054
56.25-78.75	0.018817	0.004032	0.000000	0.000000	0.000000	0.000000	0.022849
78.75-101.25	0.005376	0.012097	0.005376	0.000000	0.000000	0.000000	0.022849
101.25-123.75	0.012097	0.021505	0.014785	0.001344	0.000000	0.000000	0.049731
123.75-146.25	0.005376	0.018817	0.026882	0.006720	0.000000	0.000000	0.057796
146.25-168.75	0.004032	0.018817	0.025538	0.010753	0.000000	0.000000	0.059140
168.75-191.25	0.009409	0.012097	0.030914	0.013441	0.002688	0.000000	0.068548
191.25-213.75	0.012097	0.022849	0.029570	0.018817	0.004032	0.000000	0.087366
213.75-236.25	0.004032	0.032258	0.051075	0.002688	0.000000	0.000000	0.090054
236.25-258.75	0.004032	0.004032	0.022849	0.001344	0.000000	0.000000	0.032258
258.75-281.25	0.005376	0.017473	0.006720	0.001344	0.000000	0.000000	0.030914
281.25-303.75	0.005376	0.012097	0.004032	0.000000	0.000000	0.000000	0.021505
303.75-326.25	0.004032	0.025538	0.010753	0.000000	0.000000	0.000000	0.040323
326.25-348.75	0.010753	0.022849	0.012097	0.000000	0.000000	0.000000	0.045699
Total	0.184140	0.401882	0.350806	0.056452	0.006720	0.000000	1.000000

Frequency of Calm Winds: 0.00% Average Wind Speed: 3.40 m/s



### Frequency Distribution (Count)

### Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	13	9	16	1	0	0	39
11.25-33.75	13	12	12	0	0	0	37
33.75-56.25	9	102	95	0	0	0	206
56.25-78.75	6	9	0	0	0	0	15
78.75-101.25	7	4	1	0	0	0	12
101.25-123.75	5	14	1	0	0	0	20
123.75-146.25	5	15	4	0	0	0	24
146.25-168.75	1	9	1	0	0	0	11
168.75-191.25	5	12	29	9	0	0	55
191.25-213.75	2	26	26	11	0	0	65
213.75-236.25	4	30	41	0	0	0	75
236.25-258.75	5	20	31	0	0	0	56
258.75-281.25	2	8	18	0	0	0	28
281.25-303.75	3	12	5	0	0	0	20
303.75-326.25	5	19	5	0	0	0	29
326.25-348.75	6	13	9	0	0	0	28
Total	91	314	294	21	0	0	720

Frequency of Calm Winds: 0 Average Wind Speed: 3.38 m/s

### Frequency Distribution (Normalized)

### Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	0.018056	0.012500	0.022222	0.001389	0.000000	0.000000	0.054167
11.25-33.75	0.018056	0.016667	0.016667	0.000000	0.000000	0.000000	0.051389
33.75-56.25	0.012500	0.141667	0.131944	0.000000	0.000000	0.000000	0.286111
56.25-78.75	0.008333	0.012500	0.000000	0.000000	0.000000	0.000000	0.020833
78.75-101.25	0.009722	0.005556	0.001389	0.000000	0.000000	0.000000	0.016667
101.25-123.75	0.006944	0.019444	0.001389	0.000000	0.000000	0.000000	0.027778
123.75-146.25	0.006944	0.020833	0.005556	0.000000	0.000000	0.000000	0.033333
146.25-168.75	0.001389	0.012500	0.001389	0.000000	0.000000	0.000000	0.015278
168.75-191.25	0.006944	0.016667	0.040278	0.012500	0.000000	0.000000	0.076389
191.25-213.75	0.002778	0.036111	0.036111	0.015278	0.000000	0.000000	0.090278
213.75-236.25	0.005556	0.041667	0.056944	0.000000	0.000000	0.000000	0.104167
236.25-258.75	0.006944	0.027778	0.043056	0.000000	0.000000	0.000000	0.077778
258.75-281.25	0.002778	0.011111	0.025000	0.000000	0.000000	0.000000	0.038889
281.25-303.75	0.004167	0.016667	0.006944	0.000000	0.000000	0.000000	0.027778
303.75-326.25	0.006944	0.026389	0.006944	0.000000	0.000000	0.000000	0.040278
326.25-348.75	0.008333	0.018056	0.012500	0.000000	0.000000	0.000000	0.038889
Total	0.126389	0.436111	0.408333	0.029167	0.000000	0.000000	1.000000

Frequency of Calm Winds: 0.00% Average Wind Speed: 3.38 m/s

# APPENDIX B

Listing of PM<sub>10</sub> Concentrations

Background Monitor 962A

# **PM<sub>10</sub> Sampler Summary**

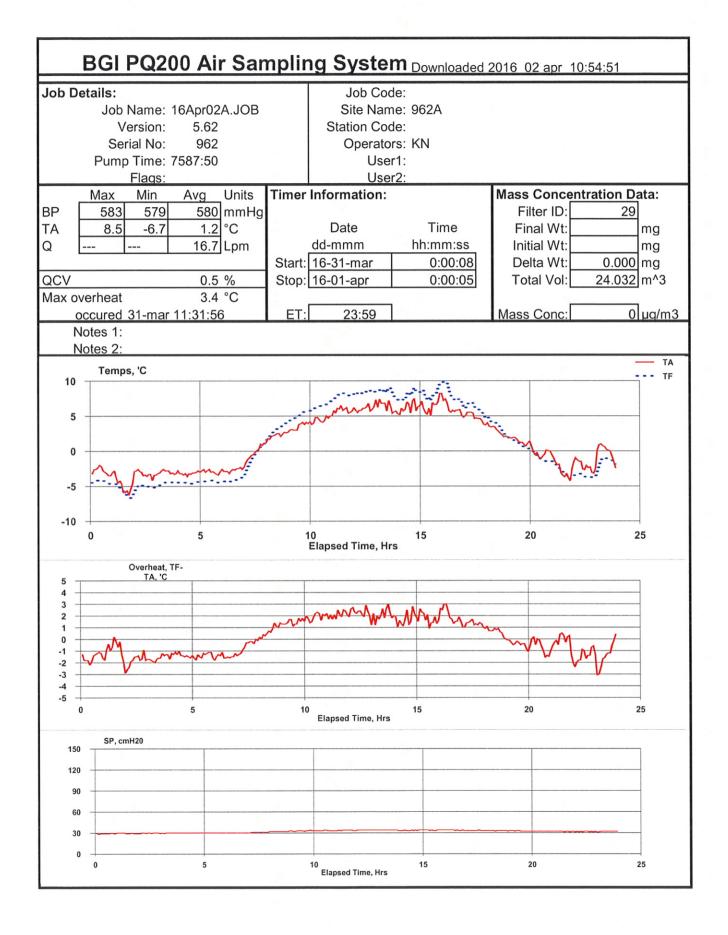
# April 1, 2016 - June 30, 2016

# Network: Alton Coal Development

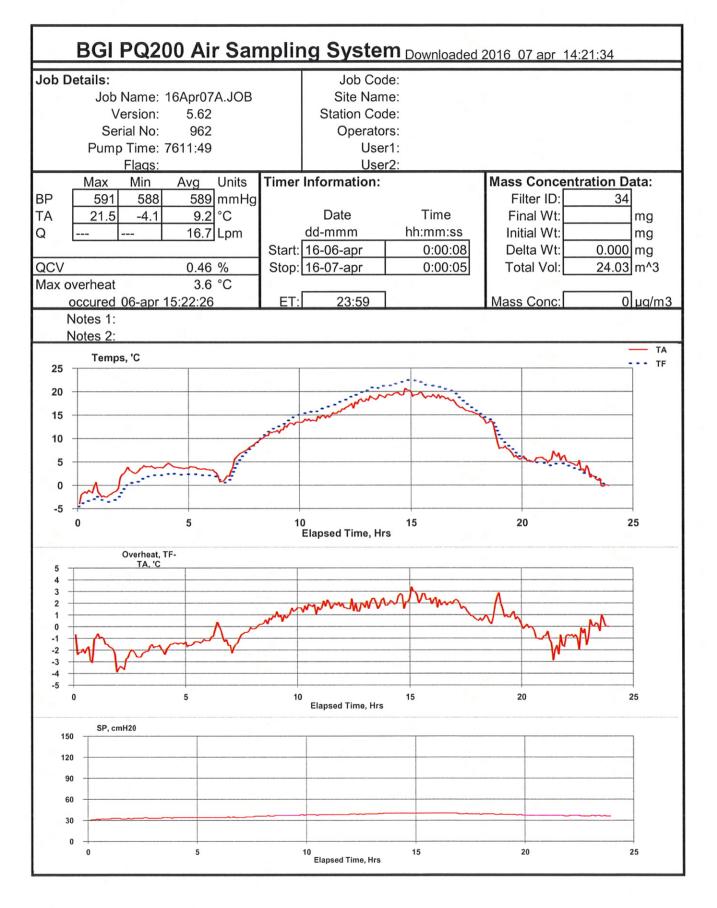
Site: Coal Hollow Sampler ID: Coal Hollow-A Sampler Type: BGI FRM Single

# AQS ID:

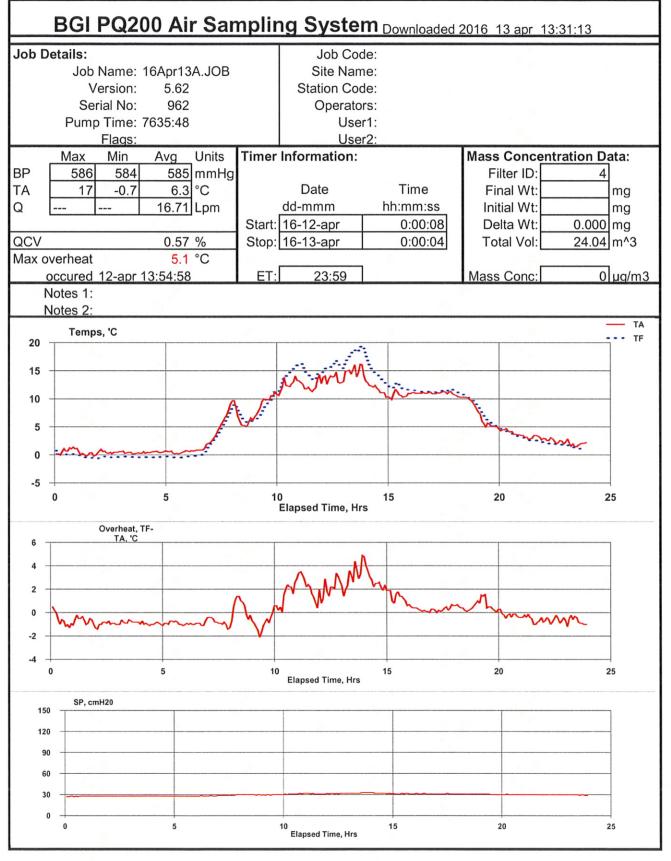
	Filter	Concentration (µg/m3)	Concentration (µg/m3)	Sample Period	Sample Volume	Std Volume		Mass (mg)			
Date	ID	LTP	STP	(hr:min)	(m3)	(m3)	Tare	Gross	Net	Flag	Comments
04/06/16	P2929002	3.9	4.7	23:59	24.0	19.7	381.351	381.445	0.094		
04/12/16	P2929223	1.9	2.3	23:59	24.0	19.7	371.091	371.138	0.047		
04/18/16	P2929228	2.4	2.9	23:59	24.0	19.9	397.910	397.969	0.059	HT	
04/24/16	P2929387	4.2	5.2	23:59	24.0	19.5	380.256	380.359	0.103		
04/30/16	P2929392	1.6	1.9	23:59	24.0	19.8	382.642	382.681	0.039	HT	
05/06/16	P2929397	Invalid - AG	Invalid - AG	1:48	1.8	1.5	382.474	382.515	0.041	SP,HT	
05/12/16	P2929630	5.3	6.6	24:00	24.0	19.5	369.393	369.522	0.129		
05/18/16	P2929815	3.3	4.0	23:59	24.0	19.6	367.546	367.626	0.080	PI,HT	
05/24/16	P2929820	Invalid - AG	Invalid - AG	8:56	9.0	7.3	367.378	367.462	0.084	SP	
05/30/16	P2929822	7.6	9.5	23:59	24.0	19.3	369.039	369.223	0.184	HT	
06/05/16	P2929635	7.9	10.1	23:59	24.0	18.7	379.482	379.672	0.190	XT	
06/11/16	P2930159	9.0	11.3	23:59	24.0	19.2	377.047	377.265	0.218	HT	
06/17/16	P2930165	7.0	8.8	23:59	24.0	19.2	383.646	383.815	0.169	TD,HT	
06/23/16	P2930501	12.9	16.5	23:59	24.0	18.8	372.958	373.269	0.311		
06/29/16	P2930507	9.4	12.0	23:59	24.0	18.8	377.817	378.043	0.226		
	# Valid	Recovery	Average	St. Dev.	Max	Min					
	13	87%	7.4	4.4	16.5	1.9					



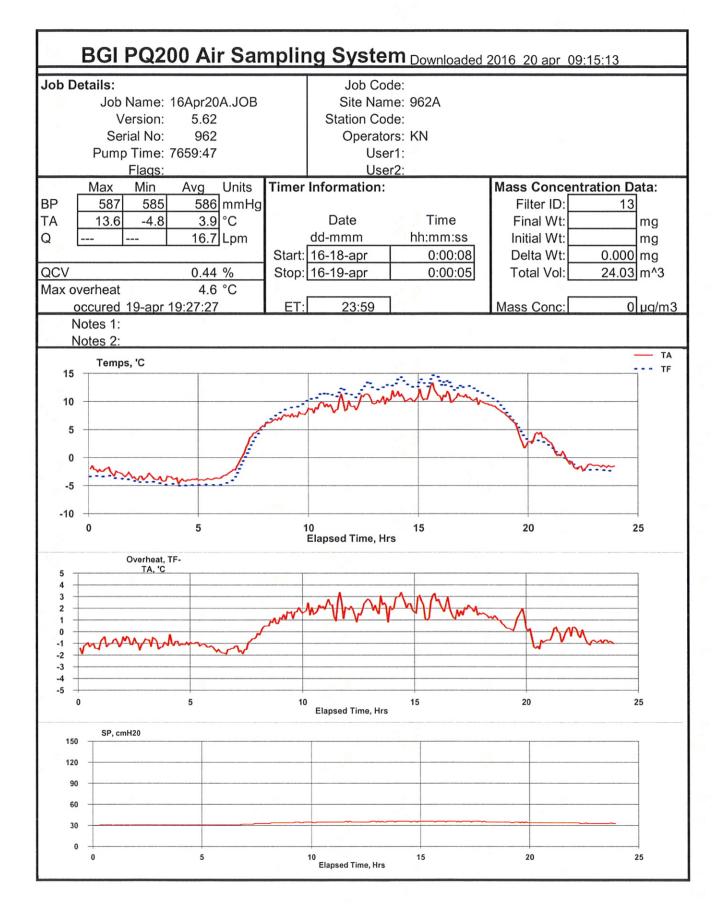
16-31-mar	0:05:08	580	-2.8	-4.4	-1.6	29	16.72
16-31-mar	1:05:08	580	-4.7	-5.7	-1.0	29	16.71
16-31-mar	2:05:08	580	-3.3	-5.0	-1.8	30	16.72
16-31-mar	3:05:08	580	-3.0	-4.6	-1.6	30	16.72
16-31-mar	4:05:08	580	-3.2	-4.5	-1.3	30	16.71
16-31-mar	5:05:08	580	-2.9	-4.3	-1.4	30	16.71
16-31-mar	6:05:08	580	-2.7	-4.1	-1.4	30	16.71
16-31-mar	7:05:08	580	0.0	-0.5	-0.5	31	16.70
16-31-mar	8:05:08	580	2.3	3.1	0.8	32	16.72
16-31-mar	9:05:08	580	3.6	5.1	1.5	33	16.72
16-31-mar	10:05:08	580	4.5	6.5	1.9	33	16.71
16-31-mar	11:05:08	581	5.9	7.9	2.1	34	16.70
16-31-mar	12:05:08	580	6.1	8.4	2.3	34	16.71
16-31-mar	13:05:08	580	6.3	8.4	2.1	34	16.69
16-31-mar	14:05:08	580	6.3	8.0	1.7	34	16.70
16-31-mar	15:05:08	580	6.5	8.3	1.7	34	16.71
16-31-mar	16:05:08	580	6.0	8.0	2.1	34	16.70
16-31-mar	17:05:08	580	4.8	6.1	1.3	33	16.72
16-31-mar	18:05:08	581	2.9	3.5	0.7	33	16.71
16-31-mar	19:05:08	581	1.4	1.0	-0.4	32	16.71
16-31-mar	20:05:08	581	-0.3	-1.0	-0.7	32	16.72
16-31-mar	21:05:08	582	-2.7	-3.0	-0.3	32	16.73
16-31-mar	22:05:08	582	-2.2	-3.6	-1.4	32	16.71
16-31-mar	23:05:08	582	-0.1	-1.5	-1.4	32	16.71



16-06-apr	0:05:08	591	-1.5	-3.4	-1.9	32	16.71
16-06-apr	1:05:08	591	-1.2	-3.0	-1.8	33	16.74
16-06-apr	2:05:08	590	3.2	0.5	-2.7	33	16.72
16-06-apr	3:05:08	590	3.9	2.0	-1.9	34	16.70
16-06-apr	4:05:08	590	3.9	2.3	-1.6	34	16.71
16-06-apr	5:05:08	590	3.6	2.2	-1.4	34	16.71
16-06-apr	6:05:08	591	2.1	1.3	-0.8	34	16.69
16-06-apr	7:05:08	591	7.3	6.4	-0.9	35	16.71
16-06-apr	8:05:08	591	10.6	11.0	0.4	37	16.71
16-06-apr	9:05:08	591	12.7	13.8	1.1	37	16.71
16-06-apr	10:05:08	591	14.0	15.6	1.6	38	16.70
16-06-apr	11:05:08	591	15.3	17.2	1.9	38	16.70
16-06-apr	12:05:08	590	17.5	19.2	1.7	39	16.70
16-06-apr	13:05:08	590	18.8	20.8	2.0	40	16.70
16-06-apr	14:05:08	589	19.7	21.9	2.2	40	16.71
16-06-apr	15:05:08	589	19.2	21.8	2.6	40	16.71
16-06-apr	16:05:08	589	18.5	20.6	2.1	40	16.71
16-06-apr	17:05:08	589	16.0	17.4	1.4	39	16.70
16-06-apr	18:05:08	588	12.7	13.7	1.1	39	16.71
16-06-apr	19:05:08	589	6.9	7.9	1.0	38	16.71
16-06-apr	20:05:08	589	5.5	5.0	-0.5	37	16.71
16-06-apr	21:05:08	589	5.9	4.4	-1.5	37	16.71
16-06-apr	22:05:08	589	4.1	3.3	-0.9	37	16.71
16-06-apr	23:05:08	588	0.8	1.0	0.2	36	16.69

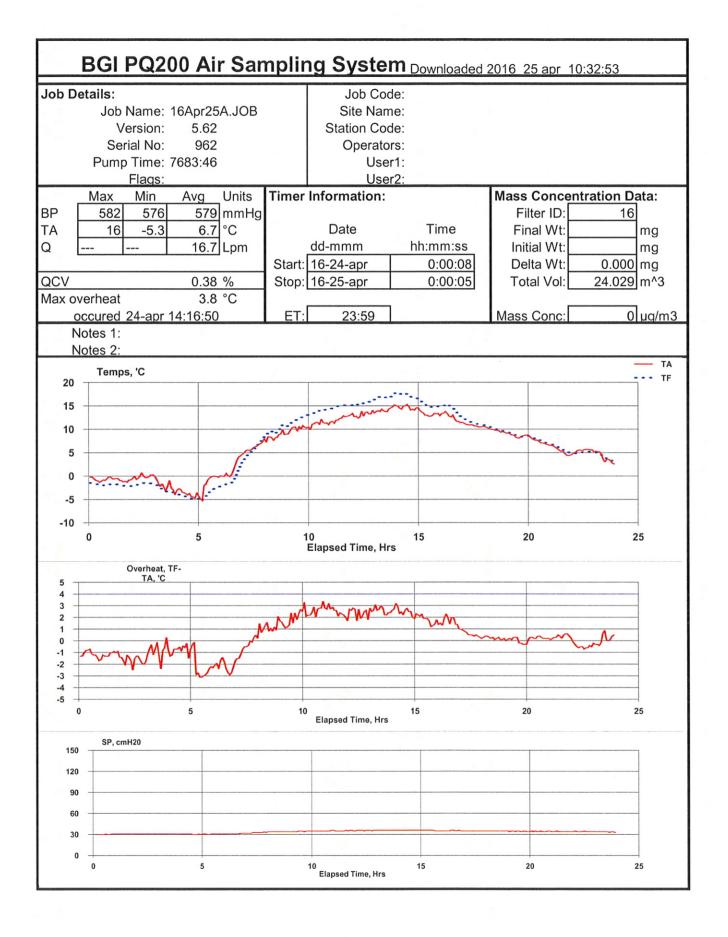


16-12-apr	0:05:08	585	0.8	0.2	-0.6	28	16.70
16-12-apr	1:05:08	585	0.2	-0.5	-0.7	28	16.72
16-12-apr	2:05:08	585	0.5	-0.4	-1.0	28	16.71
16-12-apr	3:05:08	585	0.4	-0.4	-0.8	28	16.71
16-12-apr	4:05:08	585	0.5	-0.4	-1.0	28	16.71
16-12-apr	5:05:08	585	0.5	-0.4	-0.9	28	16.71
16-12-apr	6:05:08	585	1.2	0.3	-0.9	28	16.71
16-12-apr	7:05:08	585	5.9	5.0	-0.9	29	16.72
16-12-apr	8:05:08	586	6.5	6.8	0.4	30	16.71
16-12-apr	9:05:08	586	9.6	8.8	-0.9	30	16.71
16-12-apr	10:05:08	586	12.6	14.2	1.6	31	16.71
16-12-apr	11:05:08	586	12.4	14.5	2.2	31	16.70
16-12-apr	12:05:08	585	13.6	15.7	2.2	32	16.71
16-12-apr	13:05:08	585	14.9	18.2	3.3	33	16.72
16-12-apr	14:05:08	585	11.6	14.3	2.6	32	16.72
16-12-apr	15:05:08	585	10.7	12.0	1.3	31	16.72
16-12-apr	16:05:08	585	11.0	11.3	0.2	31	16.72
16-12-apr	17:05:08	585	11.1	11.4	0.3	31	16.71
16-12-apr	18:05:08	585	9.9	10.3	0.4	31	16.71
16-12-apr	19:05:08	585	5.6	6.3	0.7	30	16.71
16-12-apr	20:05:08	586	4.1	3.9	-0.2	30	16.71
16-12-apr	21:05:08	586	3.2	2.6	-0.6	30	16.71
16-12-apr	22:05:08	586	2.5	1.9	-0.6	30	16.70
16-12-apr	23:05:08	586	2.0	1.3	-0.7	30	16.71

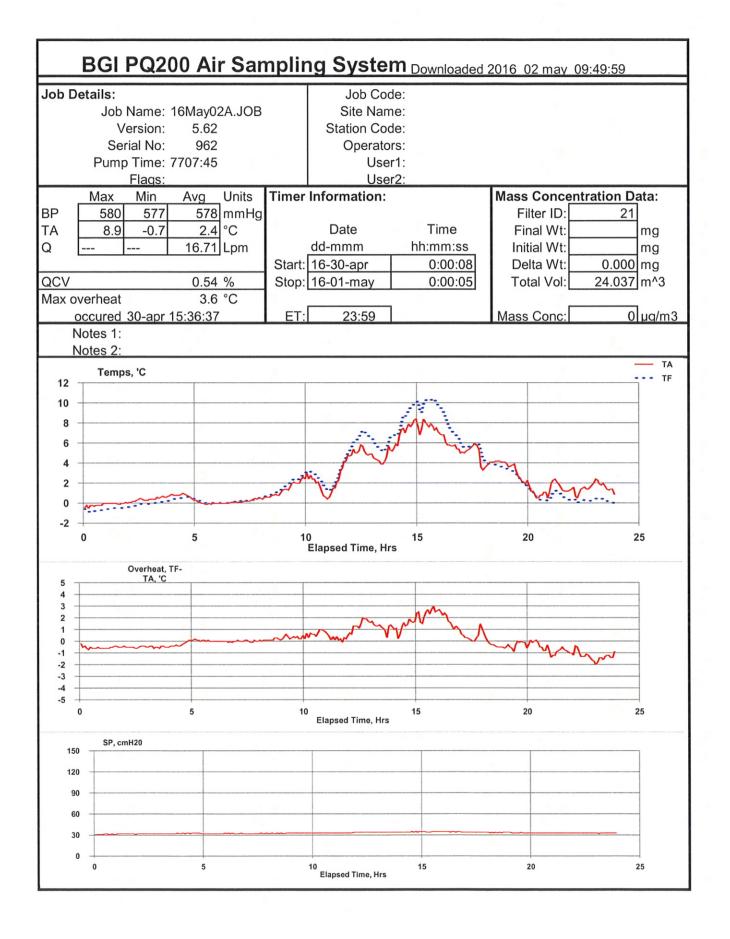


(C)

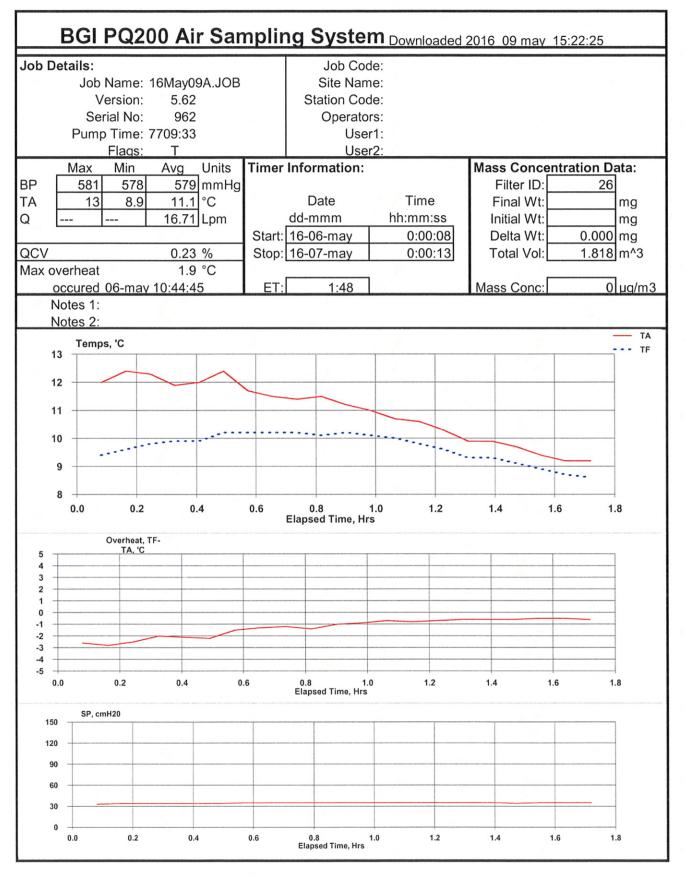
16-18-apr	0:05:08	586	-2.1	-3.3	-1.3	31	16.71
16-18-apr	1:05:08	586	-3.0	-3.8	-0.9	31	16.72
16-18-apr	2:05:08	586	-3.5	-4.4	-0.9	31	16.71
16-18-apr	3:05:08	586	-3.7	-4.7	-1.0	31	16.72
16-18-apr	4:05:08	586	-4.0	-5.0	-0.9	31	16.71
16-18-apr	5:05:08	586	-3.8	-4.9	-1.1	31	16.72
16-18-apr	6:05:08	586	-2.0	-3.6	-1.6	31	16.71
16-18-apr	7:05:08	586	4.0	2.9	-1.1	33	16.70
16-18-apr	8:05:08	586	6.8	7.4	0.6	34	16.71
16-18-apr	9:05:08	586	7.8	9.3	1.6	35	16.73
16-18-apr	10:05:08	586	9.1	11.0	1.9	35	16.70
16-18-apr	11:05:08	586	9.2	11.4	2.2	35	16.70
16-18-apr	12:05:08	586	10.2	12.2	2.0	35	16.70
16-18-apr	13:05:08	586	10.5	12.6	2.1	36	16.69
16-18-apr	14:05:08	586	10.6	13.1	2.5	36	16.70
16-18-apr	15:05:08	586	11.5	13.8	2.3	36	16.72
16-18-apr	16:05:08	586	10.8	12.8	1.9	36	16.71
16-18-apr	17:05:08	586	10.4	12.2	1.8	36	16.71
16-18-apr	18:05:08	586	8.8	10.0	1.2	35	16.70
16-18-apr	19:05:08	586	4.7	5.5	0.8	35	16.70
16-18-apr	20:05:08	586	3.6	2.8	-0.8	34	16.71
16-18-apr	21:05:08	586	0.5	0.3	-0.2	34	16.72
16-18-apr	22:05:08	586	-1.6	-2.0	-0.4	33	16.70
16-18-apr	23:05:08	586	-1.5	-2.3	-0.8	33	16.71



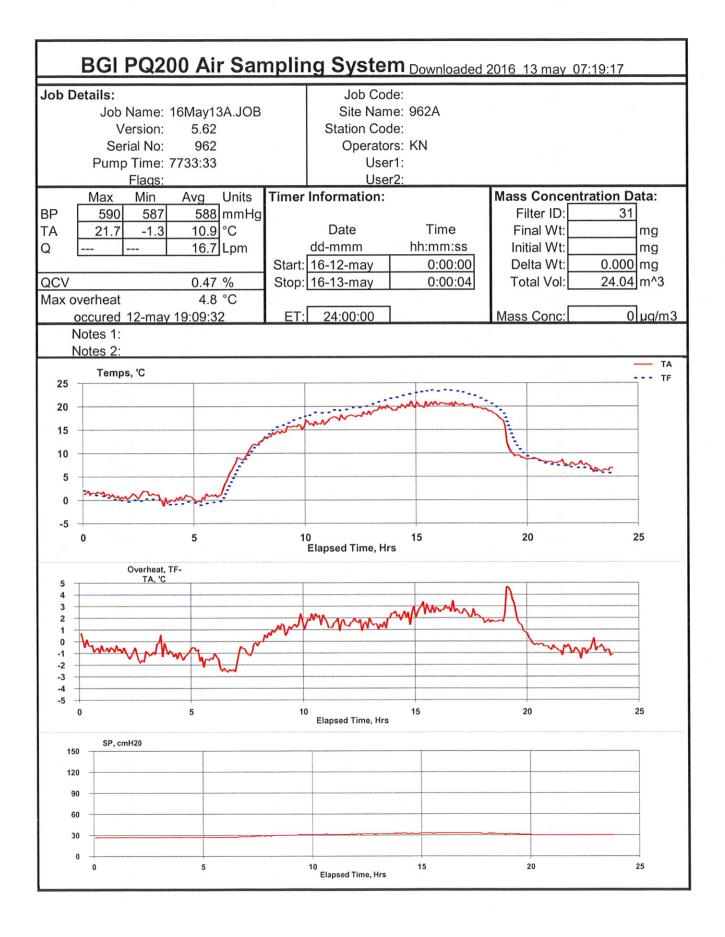
16-24-apr	0:05:08	581	-0.6	-1.8	-1.2	30	16.71
16-24-apr	1:05:08	581	-0.8	-2.0	-1.2	31	16.71
16-24-apr	2:05:08	581	0.0	-1.7	-1.7	31	16.71
16-24-apr	3:05:08	581	-2.3	-3.1	-0.8	31	16.71
16-24-apr	4:05:08	581	-3.8	-4.5	-0.8	31	16.70
16-24-apr	5:05:08	581	-1.3	-3.6	-2.3	31	16.71
16-24-apr	6:05:08	581	1.8	-0.4	-2.2	31	16.71
16-24-apr	7:05:08	581	6.3	5.8	-0.4	33	16.71
16-24-apr	8:05:08	581	8.5	9.7	1.2	34	16.71
16-24-apr	9:05:08	581	10.2	12.1	1.9	35	16.69
16-24-apr	10:05:08	581	11.3	13.9	2.6	35	16.70
16-24-apr	11:05:08	581	12.5	14.9	2.5	35	16.70
16-24-apr	12:05:08	581	13.2	15.6	2.4	36	16.71
16-24-apr	13:05:08	580	14.3	16.9	2.6	36	16.71
16-24-apr	14:05:08	580	14.6	17.1	2.5	36	16.71
16-24-apr	15:05:08	579	13.2	15.1	1.8	36	16.71
16-24-apr	16:05:08	579	12.6	14.2	1.6	35	16.70
16-24-apr	17:05:08	579	10.8	11.4	0.6	35	16.71
16-24-apr	18:05:08	579	9.8	10.1	0.2	35	16.70
16-24-apr	19:05:08	578	8.7	8.7	0.0	34	16.70
16-24-apr	20:05:08	579	7.4	7.6	0.3	34	16.70
16-24-apr	21:05:08	579	5.3	5.7	0.4	34	16.71
16-24-apr	22:05:08	578	5.5	5.0	-0.5	34	16.71
16-24-apr	23:05:08	577	3.9	4.0	0.1	34	16.70



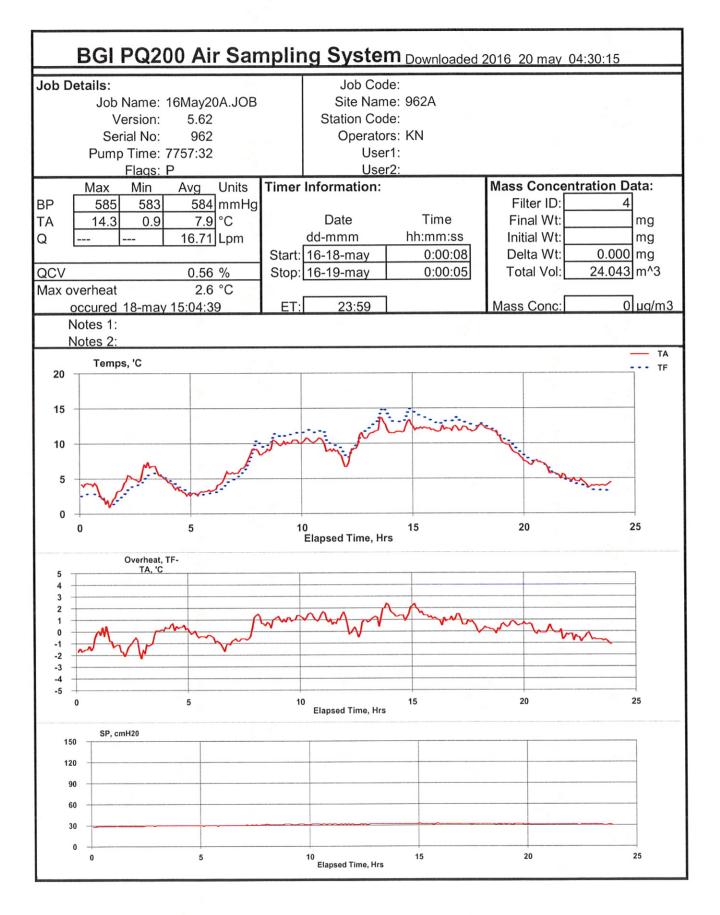
16-30-apr	0:05:08	579	-0.2	-0.8	-0.5	31	16.72
16-30-apr	1:05:08	578	0.0	-0.5	-0.5	32	16.71
16-30-apr	2:05:08	578	0.3	-0.2	-0.5	32	16.72
16-30-apr	3:05:08	578	0.6	0.1	-0.5	32	16.72
16-30-apr	4:05:08	578	0.7	0.5	-0.2	33	16.72
16-30-apr	5:05:08	578	0.0	0.1	0.1	32	16.71
16-30-apr	6:05:08	578	0.1	0.0	0.0	32	16.73
16-30-apr	7:05:08	578	0.3	0.3	0.0	32	16.73
16-30-apr	8:05:08	579	0.8	0.9	0.1	33	16.72
16-30-apr	9:05:08	579	1.9	2.3	0.3	33	16.72
16-30-apr	10:05:08	579	1.8	2.5	0.7	33	16.71
16-30-apr	11:05:08	579	2.8	3.1	0.3	33	16.72
16-30-apr	12:05:08	579	5.1	6.5	1.4	34	16.71
16-30-apr	13:05:08	579	4.6	5.9	1.2	34	16.71
16-30-apr	14:05:08	579	7.3	8.6	1.3	34	16.71
16-30-apr	15:05:08	579	7.6	10.0	2.4	35	16.71
16-30-apr	16:05:08	579	5.9	7.7	1.8	35	16.71
16-30-apr	17:05:08	579	5.1	5.6	0.5	34	16.71
16-30-apr	18:05:08	579	4.0	3.8	-0.2	34	16.71
16-30-apr	19:05:08	580	3.0	2.7	-0.3	33	16.71
16-30-apr	20:05:08	580	1.0	0.6	-0.3	33	16.71
16-30-apr	21:05:08	580	1.7	0.7	-0.9	33	16.72
16-30-apr	22:05:08	580	1.4	0.2	-1.2	33	16.73
16-30-apr	23:05:08	580	1.7	0.3	-1.4	33	16.71



16-06-may	0:05:08	580	11.8	10.0	-1.8	34	16.72
16-06-may	1:05:08	580	9.9	9.3	-0.6	35	16.71



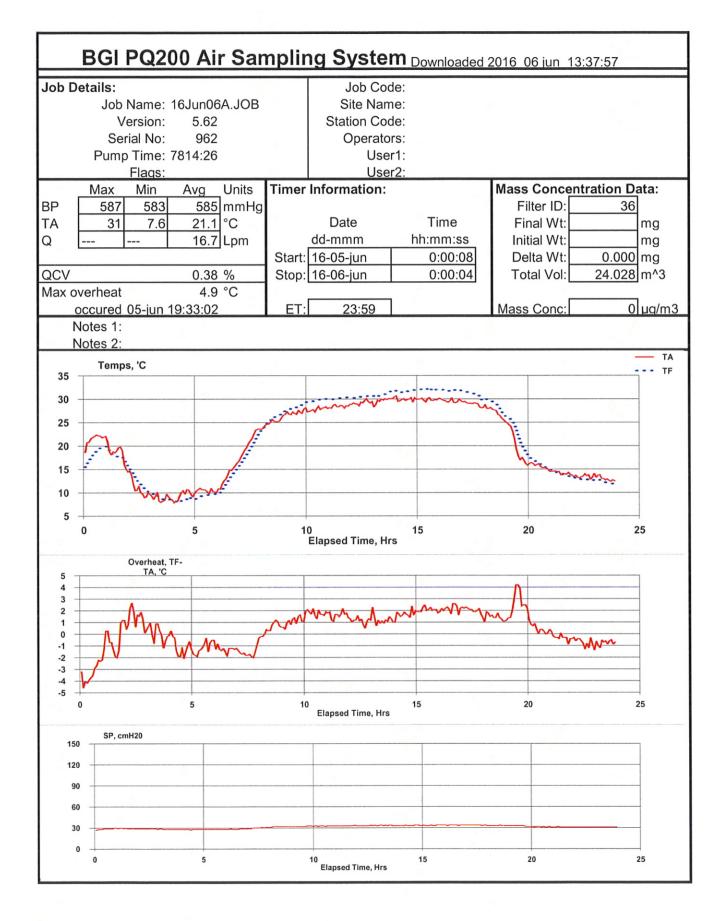
16-12-may	0:05:00	588	1.5	1.2	-0.3	27	16.71
16-12-may	1:05:00	588	0.7	0.1	-0.7	27	16.71
16-12-may	2:05:00	588	1.2	0.0	-1.2	27	16.70
16-12-may	3:05:00	588	0.4	-0.3	-0.7	27	16.71
16-12-may	4:05:00	588	0.5	-0.7	-1.1	27	16.71
16-12-may	5:05:00	588	0.5	-0.7	-1.3	27	16.71
16-12-may	6:05:00	589	4.6	2.4	-2.2	27	16.71
16-12-may	7:05:00	589	10.6	9.8	-0.8	29	16.72
16-12-may	8:05:00	589	13.9	14.5	0.6	30	16.71
16-12-may	9:05:00	589	15.6	16.9	1.4	31	16.71
16-12-may	10:05:00	589	16.5	18.4	1.9	31	16.72
16-12-may	11:05:00	589	17.6	19.1	1.5	31	16.71
16-12-may	12:05:00	589	18.3	19.9	1.6	32	16.72
16-12-may	13:05:00	589	19.5	21.1	1.6	32	16.72
16-12-may	14:05:00	588	20.0	22.3	2.3	32	16.70
16-12-may	15:05:00	588	20.5	23.2	2.7	33	16.72
16-12-may	16:05:00	588	20.5	23.3	2.8	33	16.70
16-12-may	17:05:00	588	20.1	22.5	2.4	33	16.71
16-12-may	18:05:00	588	18.5	20.2	1.8	32	16.72
16-12-may	19:05:00	588	10.4	13.0	2.6	31	16.70
16-12-may	20:05:00	588	8.6	8.5	-0.1	30	16.71
16-12-may	21:05:00	588	7.9	7.3	-0.6	30	16.70
16-12-may	22:05:00	588	7.6	6.8	-0.8	30	16.72
16-12-may	23:05:00	588	6.5	5.9	-0.7	30	16.70



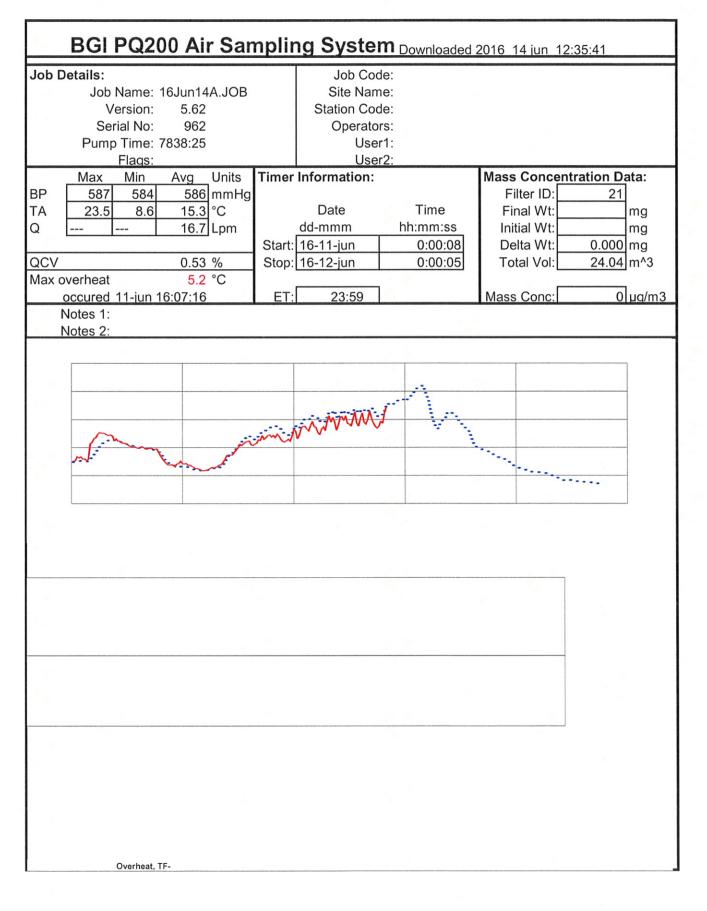
16-18-may	0:05:08	584	3.8	2.7	-1.2	29	16.71
16-18-may	1:05:08	584	2.5	1.9	-0.7	29	16.71
16-18-may	2:05:08	584	5.4	4.0	-1.4	30	16.71
16-18-may	3:05:08	584	5.9	5.5	-0.5	30	16.71
16-18-may	4:05:08	584	3.4	3.8	0.4	30	16.71
16-18-may	5:05:08	584	3.1	2.8	-0.3	30	16.71
16-18-may	6:05:08	585	4.9	3.9	-1.0	30	16.71
16-18-may	7:05:08	585	7.4	7.0	-0.4	31	16.72
16-18-may	8:05:08	585	9.3	10.2	0.9	31	16.71
16-18-may	9:05:08	585	10.1	11.2	1.1	31	16.71
16-18-may	10:05:08	585	10.5	11.7	1.3	32	16.71
16-18-may	11:05:08	585	8.7	9.8	1.1	32	16.71
16-18-may	12:05:08	585	9.8	10.2	0.4	31	16.72
16-18-may	13:05:08	584	12.2	13.7	1.5	32	16.72
16-18-may	14:05:08	584	12.1	13.6	1.5	32	16.75
16-18-may	15:05:08	584	12.1	13.6	1.6	32	16.74
16-18-may	16:05:08	584	12.1	13.1	1.0	32	16.71
16-18-may	17:05:08	584	12.1	12.8	0.7	32	16.72
16-18-may	18:05:08	584	11.8	12.0	0.2	32	16.72
16-18-may	19:05:08	584	8.9	9.6	0.6	32	16.72
16-18-may	20:05:08	584	7.2	7.4	0.2	31	16.72
16-18-may	21:05:08	585	5.5	5.5	-0.1	31	16.71
16-18-may	22:05:08	585	4.5	4.0	-0.4	31	16.71
16-18-may	23:05:08	584	4.0	3.3	-0.8	31	16.72



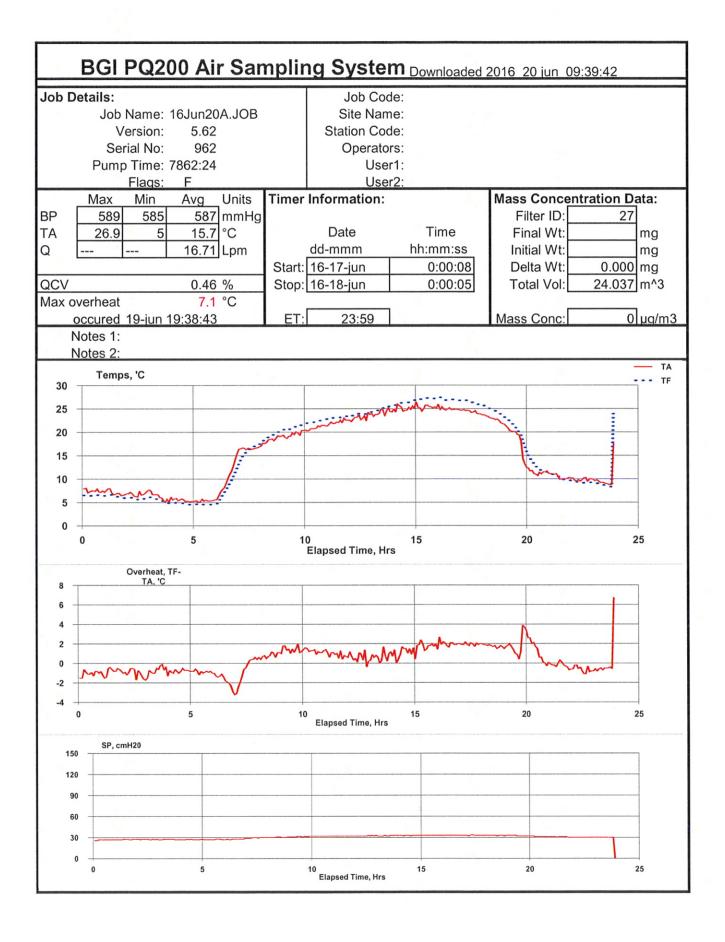
16-24-may	0:05:08	580	2.1	1.1	-1.0	27	16.71
16-24-may	1:05:08	580	1.2	0.5	-0.7	27	16.72
16-24-may	2:05:08	580	0.7	-0.1	-0.8	27	16.71
16-24-may	3:05:08	580	0.4	-0.5	-0.9	27	16.72
16-24-may	4:05:08	580	0.3	-0.8	-1.1	27	16.72
16-24-may	5:05:08	580	3.9	0.9	-2.9	27	16.73
16-24-may	6:05:08	580	8.5	6.9	-1.6	29	16.72
16-24-may	7:05:08	580	9.9	10.4	0.5	30	16.72
16-24-may	8:05:08	581	10.8	11.9	1.2	30	16.72
16-25-may	9:53:41	584	12.5	12.2	-0.3		0.00



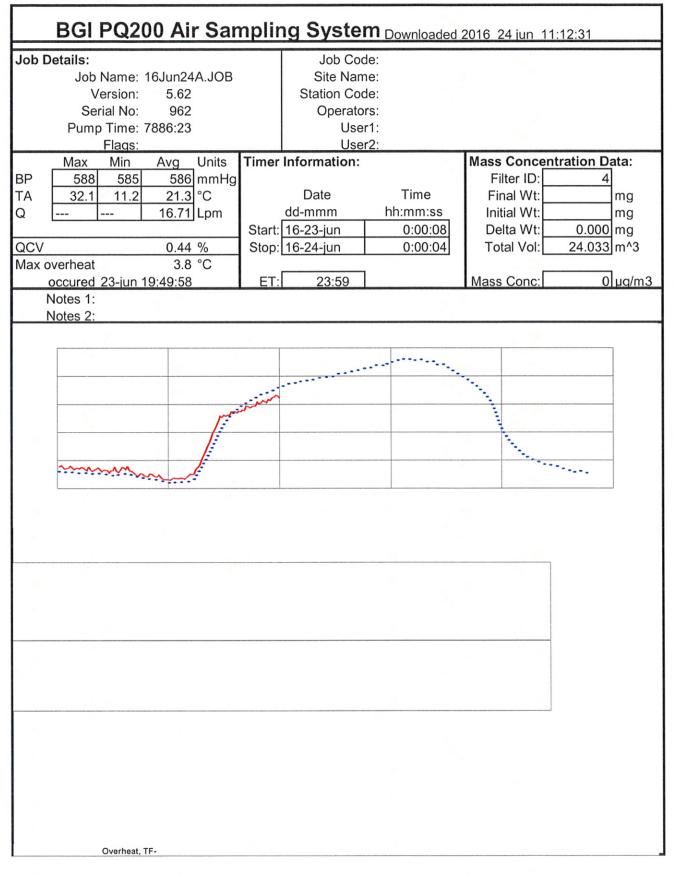
16-05-jun	0:05:08	587	21.6	18.3	-3.3	29	16.70
16-05-jun	1:05:08	587	18.2	17.8	-0.4	29	16.71
16-05-jun	2:05:08	587	10.9	12.2	1.3	29	16.72
16-05-jun	3:05:08	586	8.9	9.0	0.1	28	16.72
16-05-jun	4:05:08	586	9.5	8.4	-1.1	28	16.71
16-05-jun	5:05:08	587	10.5	9.4	-1.1	28	16.71
16-05-jun	6:05:08	587	13.9	12.6	-1.3	29	16.71
16-05-jun	7:05:08	587	21.2	19.7	-1.5	30	16.71
16-05-jun	8:05:08	587	25.2	25.7	0.5	32	16.71
16-05-jun	9:05:08	587	27.2	28.3	1.1	32	16.72
16-05-jun	10:05:08	587	27.9	29.7	1.8	33	16.70
16-05-jun	11:05:08	586	28.5	30.2	1.6	33	16.69
16-05-jun	12:05:08	586	29.3	30.4	1.1	33	16.69
16-05-jun	13:05:08	586	29.8	31.0	1.2	33	16.71
16-05-jun	14:05:08	585	29.9	31.6	1.7	33	16.71
16-05-jun	15:05:08	585	29.9	32.0	2.1	34	16.70
16-05-jun	16:05:08	584	29.7	31.8	2.2	34	16.69
16-05-jun	17:05:08	584	28.9	31.0	2.0	34	16.70
16-05-jun	18:05:08	584	27.2	28.6	1.4	33	16.70
16-05-jun	19:05:08	584	19.9	22.5	2.6	33	16.70
16-05-jun	20:05:08	584	15.7	16.1	0.5	32	16.71
16-05-jun	21:05:08	584	14.2	13.9	-0.3	31	16.72
16-05-jun	22:05:08	584	13.5	12.8	-0.8	31	16.71
16-05-jun	23:05:08	584	13.0	12.2	-0.7	31	16.71



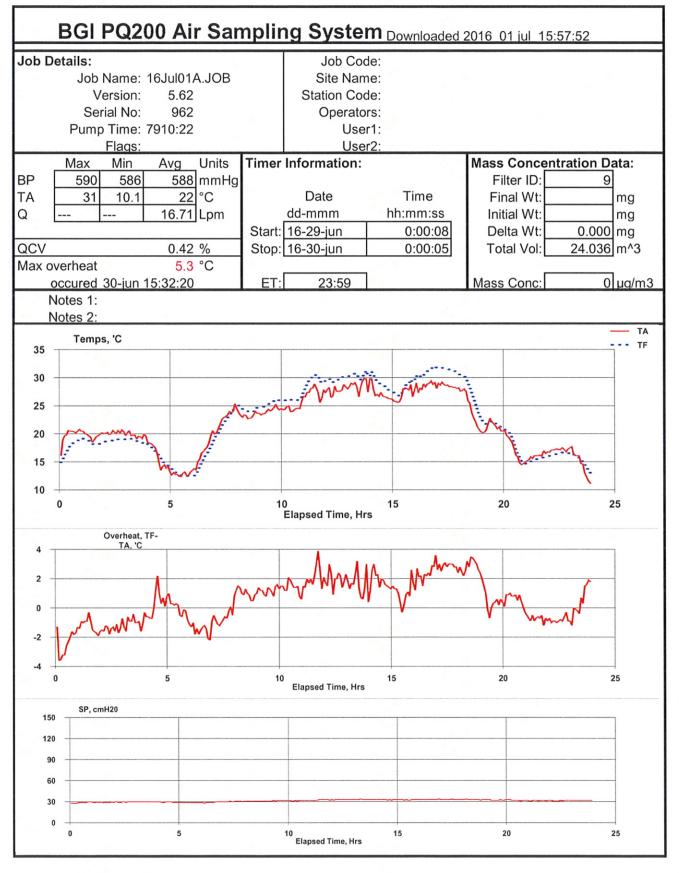
16-11-jun	0:05:08	586	13.8	12.7	-1.1	25	16.71
16-11-jun	1:05:08	586	17.2	15.7	-1.5	26	16.71
16-11-jun	2:05:08	586	15.5	15.6	0.1	26	16.71
16-11-jun	3:05:08	586	14.7	14.6	-0.1	26	16.71
16-11-jun	4:05:08	586	12.2	12.1	-0.1	26	16.71
16-11-jun	5:05:08	586	11.5	11.2	-0.3	26	16.71
16-11-jun	6:05:08	586	11.9	11.5	-0.4	26	16.71
16-11-jun	7:05:08	586	15.0	15.3	0.3	26	16.71
16-11-jun	8:05:08	586	16.4	17.5	1.1	27	16.71
16-11-jun	9:05:08	586	16.8	17.9	1.2	27	16.71
16-11-jun	10:05:08	587	18.4	19.7	1.4	27	16.71
16-11-jun	11:05:08	587	18.9	20.4	1.5	28	16.71
16-11-jun	12:05:08	586	19.9	21.2	1.3	28	16.71
16-11-jun	13:05:08	586	19.7	21.3	1.6	28	16.73
16-11-jun	14:05:08	586	21.4	22.8	1.5	28	16.71
16-11-jun	15:05:08	586	22.0	24.8	2.8	29	16.72
16-11-jun	16:05:08	586	17.7	20.2	2.5	28	16.71
16-11-jun	17:05:08	586	17.5	19.3	1.8	28	16.71
16-11-jun	18:05:08	586	13.9	14.6	0.7	27	16.71
16-11-jun	19:05:08	586	12.3	12.6	0.3	27	16.71
16-11-jun	20:05:08	586	11.0	10.9	-0.1	27	16.71
16-11-jun	21:05:08	586	10.2	10.1	-0.1	26	16.71
16-11-jun	22:05:08	586	9.4	9.1	-0.4	26	16.71
16-11-jun	23:05:08	586	9.2	8.7	-0.5	26	16.70



16-17-jun	0:05:08	587	7.5	6.5	-1.0	27	16.72
16-17-jun	1:05:08	586	7.1	6.2	-0.8	28	16.71
16-17-jun	2:05:08	586	6.9	5.9	-1.0	28	16.70
16-17-jun	3:05:08	587	6.2	5.4	-0.7	28	16.71
16-17-jun	4:05:08	587	5.5	4.7	-0.8	27	16.71
16-17-jun	5:05:08	587	5.4	4.5	-0.9	27	16.71
16-17-jun	6:05:08	587	10.0	8.2	-1.8	28	16.71
16-17-jun	7:05:08	588	16.6	15.9	-0.7	30	16.71
16-17-jun	8:05:08	588	18.4	19.2	0.8	30	16.71
16-17-jun	9:05:08	588	19.6	21.0	1.4	31	16.72
16-17-jun	10:05:08	588	21.0	22.2	1.3	32	16.73
16-17-jun	11:05:08	588	22.2	23.1	0.9	32	16.72
16-17-jun	12:05:08	588	23.1	23.7	0.6	32	16.70
16-17-jun	13:05:08	588	24.2	24.9	0.7	33	16.70
16-17-jun	14:05:08	588	25.1	26.2	1.1	33	16.73
16-17-jun	15:05:08	588	25.4	27.1	1.7	33	16.72
16-17-jun	16:05:08	588	25.0	27.0	2.0	33	16.70
16-17-jun	17:05:08	587	24.4	26.4	2.0	33	16.69
16-17-jun	18:05:08	588	22.9	24.7	1.8	33	16.72
16-17-jun	19:05:08	588	19.1	20.9	1.8	32	16.71
16-17-jun	20:05:08	588	11.5	12.9	1.4	31	16.71
16-17-jun	21:05:08	588	10.5	10.4	-0.2	31	16.73
16-17-jun	22:05:08	588	9.9	9.2	-0.6	30	16.71
16-17-jun	23:05:08	589	9.3	8.7	-0.6	30	16.71
16-19-jun	19:51:09	589	17.5	24.2	6.7		0.00



16-23-jun	0:05:08	587	13.7	12.9	-0.8	28	16.71
16-23-jun	1:05:08	587	13.4	12.7	-0.8	29	16.71
16-23-jun	2:05:08	587	13.3	12.5	-0.8	29	16.71
16-23-jun	3:05:08	587	12.8	12.2	-0.6	29	16.71
16-23-jun	4:05:08	587	12.1	11.4	-0.6	29	16.71
16-23-jun	5:05:08	587	11.9	11.1	-0.8	29	16.71
16-23-jun	6:05:08	587	15.7	14.2	-1.5	29	16.71
16-23-jun	7:05:08	588	22.7	21.3	-1.4	31	16.72
16-23-jun	8:05:08	588	24.3	25.2	0.9	32	16.72
16-23-jun	9:05:08	588	25.9	27.3	1.4	32	16.71
16-23-jun	10:05:08	588	27.2	28.6	1.5	33	16.72
16-23-jun	11:05:08	588	28.3	29.4	1.2	33	16.72
16-23-jun	12:05:08	588	29.3	30.2	0.9	33	16.71
16-23-jun	13:05:08	587	30.1	31.0	1.0	34	16.72
16-23-jun	14:05:08	587	30.3	31.9	1.6	34	16.71
16-23-jun	15:05:08	586	30.8	32.8	2.0	34	16.70
16-23-jun	16:05:08	586	30.3	32.7	2.4	34	16.69
16-23-jun	17:05:08	586	29.2	31.5	2.3	34	16.70
16-23-jun	18:05:08	586	27.2	29.1	1.9	34	16.69
16-23-jun	19:05:08	586	22.6	24.8	2.2	34	16.70
16-23-jun	20:05:08	586	16.6	17.8	1.2	33	16.72
16-23-jun	21:05:08	587	15.0	14.9	-0.1	32	16.72
16-23-jun	22:05:08	587	14.4	13.8	-0.6	32	16.72
16-23-jun	23:05:08	587	13.7	12.9	-0.8	32	16.71



16-29-jun	0:05:08	589	19.9	17.6	-2.3	29	16.71
16-29-jun	1:05:08	589	19.7	18.5	-1.2	29	16.71
16-29-jun	2:05:08	588	20.2	18.9	-1.4	30	16.71
16-29-jun	3:05:08	588	19.6	18.7	-1.0	30	16.71
16-29-jun	4:05:08	589	15.6	15.9	0.3	30	16.71
16-29-jun	5:05:08	589	12.9	12.8	-0.1	29	16.72
16-29-jun	6:05:08	589	17.1	15.6	-1.5	29	16.70
16-29-jun	7:05:08	589	23.1	22.5	-0.5	31	16.71
16-29-jun	8:05:08	589	23.3	24.3	1.0	31	16.71
16-29-jun	9:05:08	590	24.2	25.4	1.2	32	16.71
16-29-jun	10:05:08	590	24.7	26.1	1.4	32	16.72
16-29-jun	11:05:08	589	27.5	29.6	2.1	33	16.71
16-29-jun	12:05:08	589	27.8	29.8	2.0	33	16.71
16-29-jun	13:05:08	588	28.7	30.4	1.6	33	16.71
16-29-jun	14:05:08	588	27.0	28.9	1.9	33	16.70
16-29-jun	15:05:08	587	27.0	28.1	1.0	33	16.71
16-29-jun	16:05:08	587	28.6	30.9	2.3	33	16.70
16-29-jun	17:05:08	587	28.6	31.4	2.8	33	16.70
16-29-jun	18:05:08	587	24.5	27.3	2.8	33	16.70
16-29-jun	19:05:08	587	21.2	21.7	0.5	32	16.70
16-29-jun	20:05:08	588	17.1	17.7	0.6	32	16.71
16-29-jun	21:05:08	588	16.1	15.3	-0.7	32	16.71
16-29-jun	22:05:08	588	17.2	16.4	-0.8	32	16.70
16-29-jun	23:05:08	588	14.5	15.1	0.5	32	16.71

**Compliance Monitor 963B** 

# PM<sub>10</sub> Sampler Summary

# April 1, 2016 - June 30, 2016

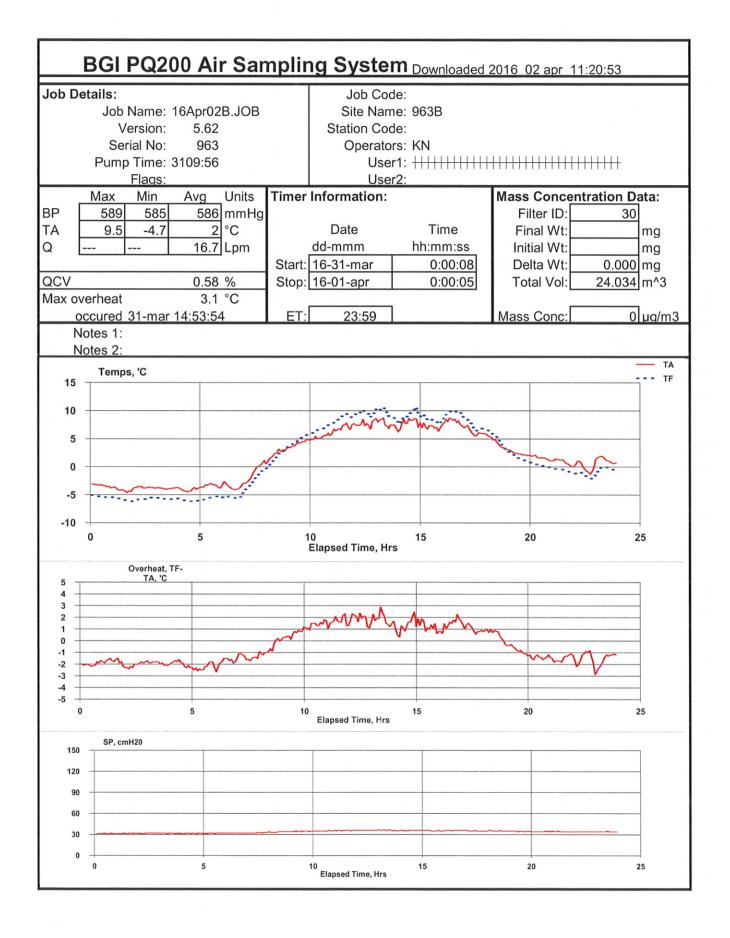
### Network: Alton Coal Development

Site: Coal Hollow Sampler ID: Coal Hollow-B

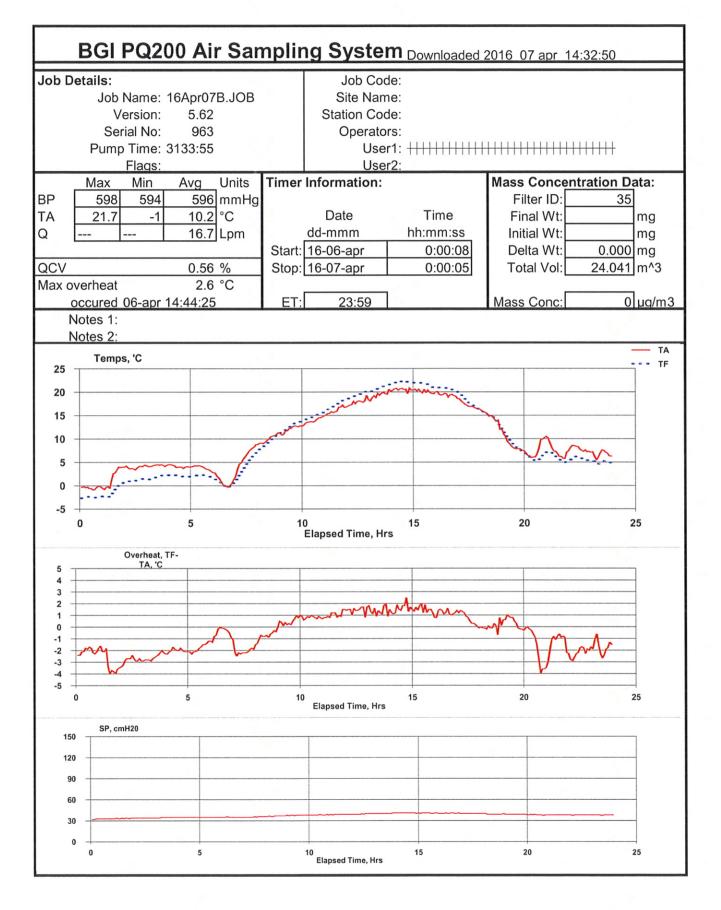
AQS ID:

Sampler Type: BGI FRM Single

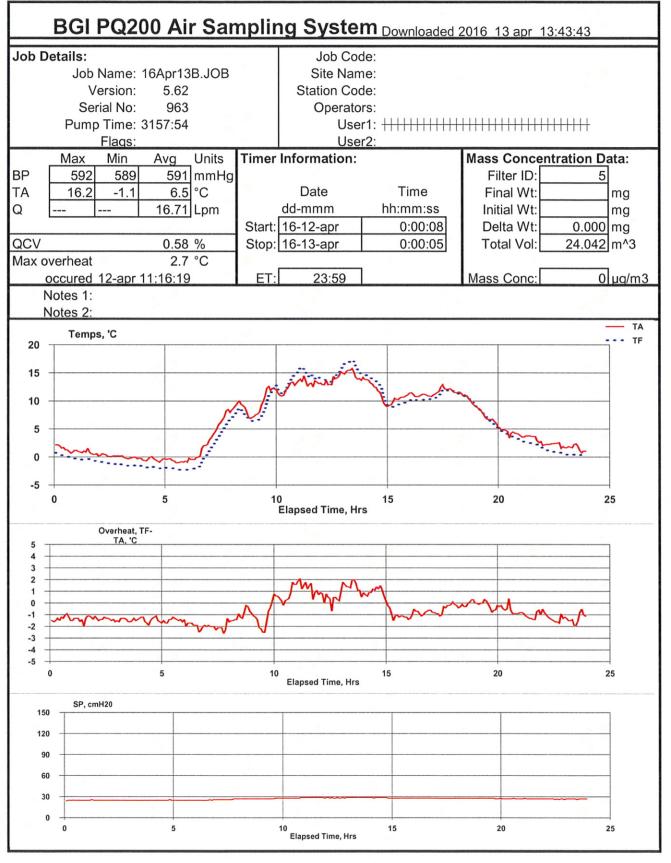
	Filter	Concentration (µg/m3)	Concentration (µg/m3)	Sample Period	Sample Volume	Std Volume		Mass (mg)			
Date	ID	LTP	STP	(hr:min)	(m3)	(m3)	Tare	Gross	Net	Flag	Comments
04/06/16	P2929003	6.6	8.0	23:59	24.0	19.8	357.603	357.762	0.159		
04/12/16	P2929224	5.9	7.2	23:59	24.0	19.9	372.252	372.396	0.144		
04/18/16	P2929229	15.2	18.2	23:59	24.0	20.1	372.995	373.361	0.366	HT	
04/24/16	P2929388	Invalid - AG	Invalid - AG	34:43	34.8	28.5	374.939	375.170	0.231	SP,CI	
04/30/16	P2929393	2.4	2.9	23:59	24.0	20.0	398.449	398.508	0.059	HT	
05/06/16	P2929398	14.4	17.7	23:59	24.0	19.6	394.796	395.144	0.348	HT	
05/12/16	P2929631	48.7	59.5	23:59	24.0	19.7	377.198	378.369	1.171		
05/18/16	P2929816	13.2	16.1	23:59	24.0	19.7	398.149	398.467	0.318	HT	
05/24/16	P2929821	29.8	36.5	23:59	24.0	19.6	369.454	370.171	0.717		
05/30/16	P2929824	7.4	9.2	23:59	24.0	19.4	369.348	369.527	0.179	HT	
06/05/16	P2929637	8.2	10.5	23:59	24.0	18.9	380.649	380.848	0.199	XT	
06/11/16	P2930160	9.8	12.2	23:59	24.0	19.3	371.393	371.630	0.237	HT	
06/17/16	P2930166	36.0	44.9	23:59	24.0	19.3	373.859	374.725	0.866	HT	
06/23/16	P2930502	49.5	62.9	23:59	24.0	18.9	394.793	395.983	1.190		
06/29/16	P2930508	48.6	61.5	23:59	24.0	19.0	371.232	372.400	1.168		Filter darker, smudge
05/31/16	P2929636		Field Bla	ank			376.063	376.101	0.038	XT,FBout	
06/06/16	P2930164		Field Bla	ank			369.551	369.631	0.080	FBout	Specks
	# Valid	Recovery	Average	St. Dev.	Max	Min					
	14	93%	26.2	22.1	62.9	2.9					



16-31-mar	0:05:08	587	-3.4	-5.4	-2.0	31	16.71
16-31-mar	1:05:08	587	-4.1	-5.9	-1.8	31	16.71
16-31-mar	2:05:08	587	-3.7	-5.7	-2.0	32	16.72
16-31-mar	3:05:08	587	-3.8	-5.8	-1.9	32	16.70
16-31-mar	4:05:08	586	-4.1	-6.1	-2.0	32	16.71
16-31-mar	5:05:08	587	-3.4	-5.6	-2.3	32	16.72
16-31-mar	6:05:08	587	-3.5	-5.3	-1.8	32	16.72
16-31-mar	7:05:08	586	-0.7	-2.0	-1.4	33	16.72
16-31-mar	8:05:08	587	2.5	1.9	-0.6	34	16.72
16-31-mar	9:05:08	587	4.2	4.8	0.6	35	16.74
16-31-mar	10:05:08	587	5.4	6.8	1.4	35	16.72
16-31-mar	11:05:08	587	7.1	8.7	1.7	36	16.71
16-31-mar	12:05:08	587	7.7	9.6	1.9	36	16.70
16-31-mar	13:05:08	587	7.6	9.4	1.9	36	16.73
16-31-mar	14:05:08	586	8.0	9.2	1.3	36	16.70
16-31-mar	15:05:08	586	7.1	8.4	1.3	35	16.71
16-31-mar	16:05:08	586	8.0	9.5	1.5	36	16.71
16-31-mar	17:05:08	587	6.2	7.2	1.0	35	16.71
16-31-mar	18:05:08	587	4.3	4.9	0.6	35	16.70
16-31-mar	19:05:08	587	2.4	1.6	-0.8	35	16.72
16-31-mar	20:05:08	588	1.6	0.2	-1.4	34	16.70
16-31-mar	21:05:08	588	0.8	-0.7	-1.5	34	16.71
16-31-mar	22:05:08	589	0.0	-1.5	-1.6	34	16.71
16-31-mar	23:05:08	589	1.2	-0.3	-1.6	34	16.71

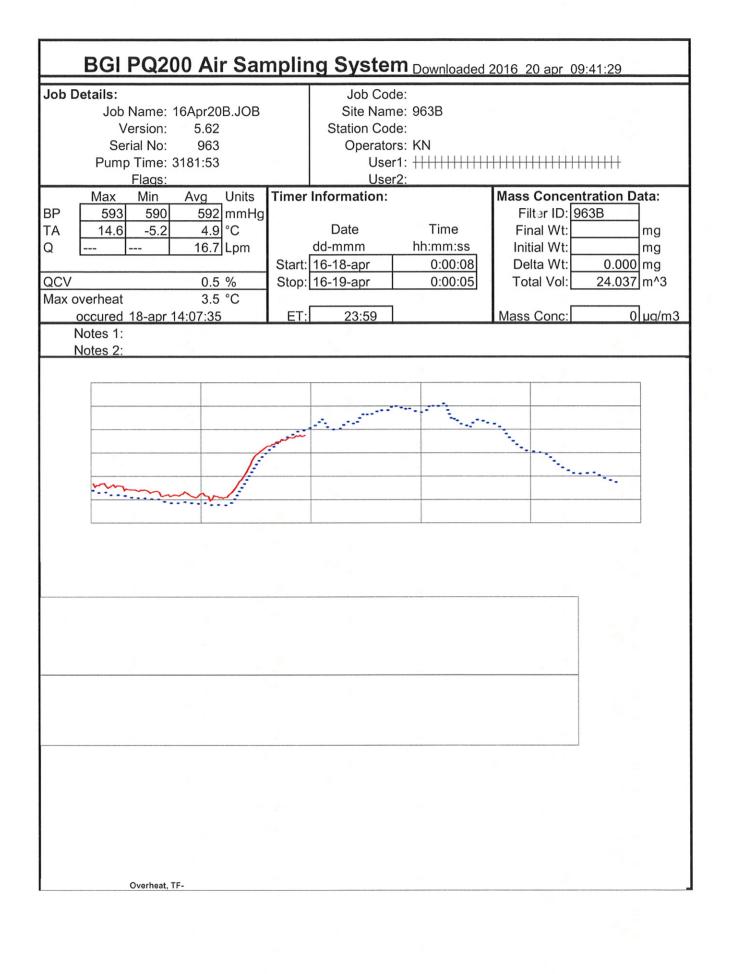


16-06-apr	0:05:08	597	-0.4	-2.5	-2.1	33	16.71
16-06-apr	1:05:08	597	2.0	-1.1	-3.1	34	16.71
16-06-apr	2:05:08	597	3.9	1.1	-2.8	34	16.70
16-06-apr	3:05:08	596	4.3	1.8	-2.5	35	16.71
16-06-apr	4:05:08	596	4.1	2.1	-2.0	35	16.70
16-06-apr	5:05:08	597	3.8	2.0	-1.7	35	16.71
16-06-apr	6:05:08	597	0.9	0.4	-0.5	35	16.71
16-06-apr	7:05:08	597	6.7	4.6	-2.1	36	16.71
16-06-apr	8:05:08	597	10.1	9.4	-0.7	37	16.71
16-06-apr	9:05:08	597	12.2	12.7	0.5	38	16.71
16-06-apr	10:05:08	597	14.0	14.8	0.8	38	16.71
16-06-apr	11:05:08	597	16.1	17.2	1.1	39	16.71
16-06-apr	12:05:08	597	17.9	19.3	1.4	40	16.71
16-06-apr	13:05:08	596	19.5	20.8	1.4	40	16.71
16-06-apr	14:05:08	596	20.5	22.1	1.6	41	16.69
16-06-apr	15:05:08	595	20.1	21.6	1.5	41	16.70
16-06-apr	16:05:08	595	19.4	20.6	1.2	40	16.70
16-06-apr	17:05:08	595	17.1	17.8	0.7	40	16.71
16-06-apr	18:05:08	595	14.4	14.5	0.0	39	16.71
16-06-apr	19:05:08	595	8.6	9.0	0.4	39	16.71
16-06-apr	20:05:08	595	7.8	6.0	-1.8	38	16.71
16-06-apr	21:05:08	595	7.3	5.9	-1.4	38	16.71
16-06-apr	22:05:08	595	7.8	5.6	-2.2	38	16.71
16-06-apr	23:05:08	595	6.7	5.0	-1.7	38	16.71

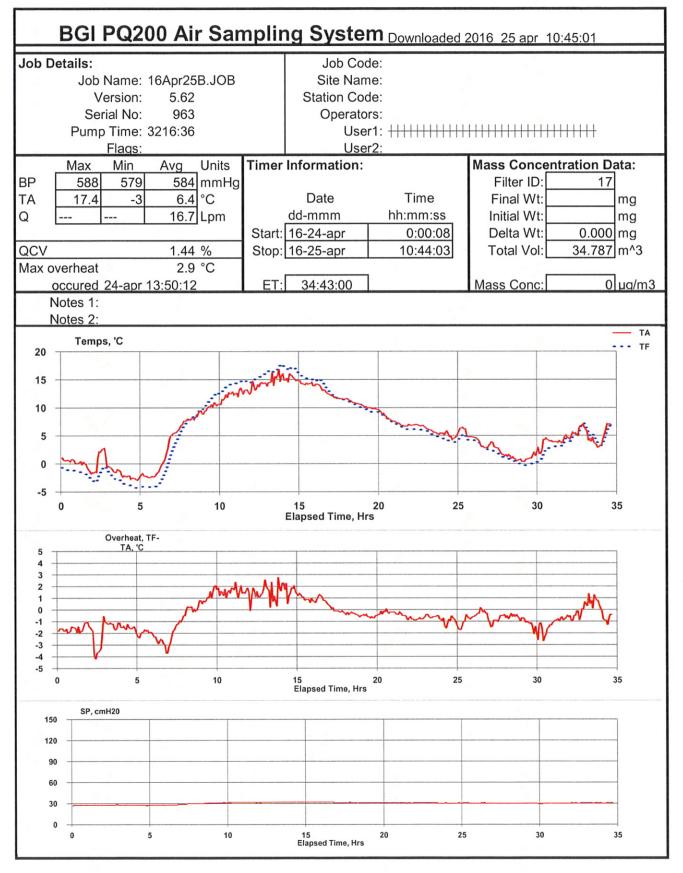


- 37

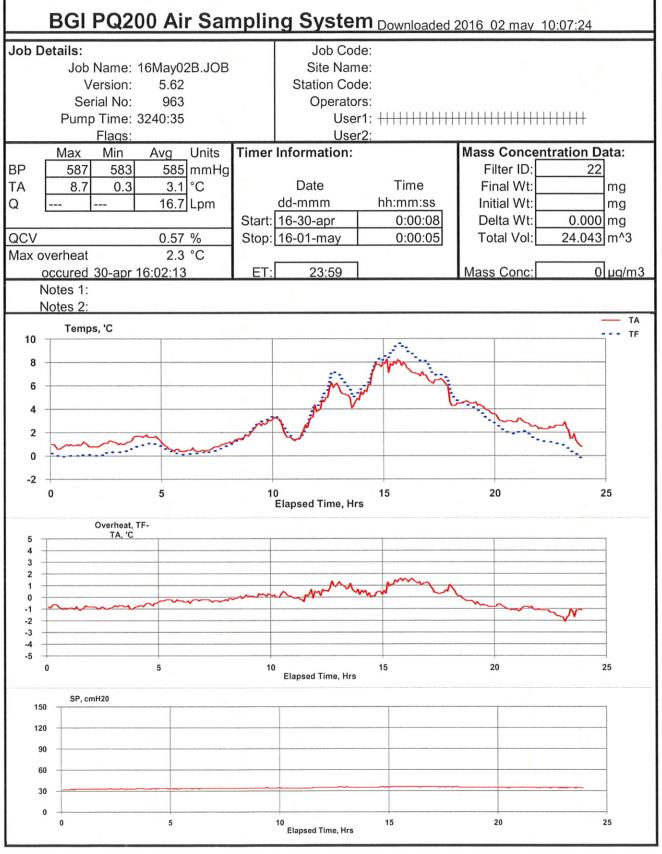
16-12-apr	0:05:08	591	1.4	0.1	-1.3	25	16.71
16-12-apr	1:05:08	591	0.8	-0.5	-1.3	25	16.71
16-12-apr	2:05:08	591	0.3	-1.1	-1.4	25	16.71
16-12-apr	3:05:08	591	-0.2	-1.6	-1.4	25	16.72
16-12-apr	4:05:08	591	-0.4	-1.9	-1.5	25	16.71
16-12-apr	5:05:08	591	-0.7	-2.2	-1.5	25	16.71
16-12-apr	6:05:08	591	0.8	-1.1	-2.0	25	16.71
16-12-apr	7:05:08	592	6.4	4.3	-2.0	26	16.71
16-12-apr	8:05:08	592	8.5	7.5	-1.0	27	16.71
16-12-apr	9:05:08	592	10.6	9.3	-1.2	27	16.71
16-12-apr	10:05:08	592	12.3	13.0	0.7	28	16.70
16-12-apr	11:05:08	592	13.3	14.7	1.3	29	16.70
16-12-apr	12:05:08	591	13.8	14.2	0.4	29	16.72
16-12-apr	13:05:08	591	14.7	16.1	1.4	29	16.70
16-12-apr	14:05:08	591	11.7	12.7	1.0	29	16.70
16-12-apr	15:05:08	591	10.4	9.4	-1.0	28	16.71
16-12-apr	16:05:08	591	11.0	10.2	-0.8	28	16.71
16-12-apr	17:05:08	591	11.9	11.4	-0.6	28	16.71
16-12-apr	18:05:08	591	10.6	10.5	-0.1	28	16.71
16-12-apr	19:05:08	591	7.1	6.9	-0.2	28	16.71
16-12-apr	20:05:08	592	4.4	3.9	-0.6	27	16.71
16-12-apr	21:05:08	592	3.3	2.3	-1.0	27	16.72
16-12-apr	22:05:08	592	2.2	0.9	-1.3	27	16.71
16-12-apr	23:05:08	592	1.6	0.3	-1.3	27	16.71



16-18-apr	0:05:08	593	-1.9	-3.6	-1.7	28	16.70
16-18-apr	1:05:08	593	-2.6	-4.3	-1.8	28	16.70
16-18-apr	2:05:08	593	-3.2	-4.8	-1.7	28	16.71
16-18-apr	3:05:08	592	-4.1	-5.6	-1.5	28	16.72
16-18-apr	4:05:08	592	-4.0	-5.8	-1.8	28	16.72
16-18-apr	5:05:08	592	-4.4	-6.0	-1.6	28	16.71
16-18-apr	6:05:08	593	-2.4	-4.5	-2.1	28	16.71
16-18-apr	7:05:08	593	4.3	2.4	-1.9	30	16.72
16-18-apr	8:05:08	593	7.4	7.1	-0.3	30	16.71
16-18-apr	9:05:08	593	8.6	9.5	0.9	31	16.71
16-18-apr	10:05:08	593	9.6	10.9	1.4	32	16.71
16-18-apr	11:05:08	593	9.6	10.8	1.2	32	16.71
16-18-apr	12:05:08	593	11.7	12.9	1.3	32	16.70
16-18-apr	13:05:08	592	12.2	14.4	2.2	32	16.71
16-18-apr	14:05:08	592	12.4	14.1	1.8	32	16.70
16-18-apr	15:05:08	592	13.0	14.7	1.6	32	16.70
16-18-apr	16:05:08	592	11.3	12.5	1.3	32	16.70
16-18-apr	17:05:08	592	10.9	11.4	0.5	32	16.71
16-18-apr	18:05:08	592	9.9	10.5	0.5	32	16.71
16-18-apr	19:05:08	592	7.0	6.4	-0.6	31	16.71
16-18-apr	20:05:08	592	6.0	4.8	-1.2	31	16.71
16-18-apr	21:05:08	593	2.3	1.7	-0.6	31	16.72
16-18-apr	22:05:08	593	2.4	0.6	-1.8	30	16.72
16-18-apr	23:05:08	592	0.2	-0.7	-0.8	30	16.71



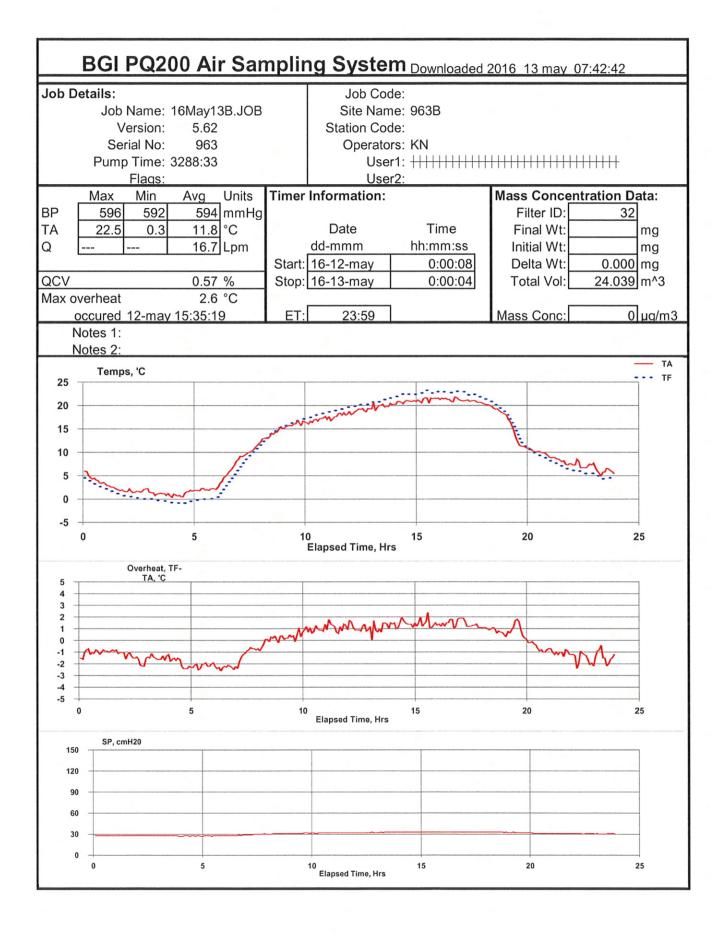
16-24-apr	0:05:08	588	0.6	-1.1	-1.7	28	16.71
16-24-apr	1:05:08	588	-0.4	-1.9	-1.5	28	16.70
16-24-apr	2:05:08	587	0.8	-1.8	-2.6	28	16.71
16-24-apr	3:05:08	587	-1.4	-2.7	-1.3	28	16.71
16-24-apr	4:05:08	587	-2.5	-4.0	-1.6	28	16.71
16-24-apr	5:05:08	587	-2.2	-4.1	-2.0	28	16.71
16-24-apr	6:05:08	587	1.4	-1.5	-2.9	28	16.71
16-24-apr	7:05:08	587	6.6	5.3	-1.3	30	16.71
16-24-apr	8:05:08	588	8.5	8.8	0.2	30	16.71
16-24-apr	9:05:08	588	10.3	11.5	1.2	31	16.70
16-24-apr	10:05:08	588	12.1	13.6	1.5	32	16.71
16-24-apr	11:05:08	587	12.9	14.5	1.6	32	16.71
16-24-apr	12:05:08	587	14.1	15.5	1.4	32	16.73
16-24-apr	13:05:08	586	15.3	16.8	1.4	32	16.69
16-24-apr	14:05:08	586	15.2	16.9	1.7	32	16.70
16-24-apr	15:05:08	586	14.3	15.3	1.0	32	16.71
16-24-apr	16:05:08	586	13.3	14.1	0.8	32	16.70
16-24-apr	17:05:08	585	11.7	11.7	-0.1	31	16.70
16-24-apr	18:05:08	585	10.9	10.5	-0.4	31	16.70
16-24-apr	19:05:08	585	9.9	9.4	-0.6	31	16.72
16-24-apr	20:05:08	585	8.4	8.2	-0.2	31	16.70
16-24-apr	21:05:08	585	7.0	6.5	-0.5	31	16.71
16-24-apr	22:05:08	584	6.8	6.0	-0.8	31	16.73
16-24-apr	23:05:08	583	5.7	5.1	-0.6	30	16.71
16-25-apr	0:05:08	583	5.1	4.1	-1.0	30	16.72
16-25-apr	1:05:08	583	5.5	4.5	-1.0	30	16.71
16-25-apr	2:05:08	582	3.6	3.3	-0.3	30	16.70
16-25-apr	3:05:08	581	2.6	1.8	-0.9	30	16.72
16-25-apr	4:05:08	581	1.0	0.4	-0.6	30	16.71
16-25-apr	5:05:08	581	1.1	-0.2	-1.2	30	16.71
16-25-apr	6:05:08	581	3.6	1.9	-1.7	30	16.71
16-25-apr	7:05:08	581	4.2	3.4	-0.8	30	16.70
16-25-apr	8:05:08	580	5.8	5.5	-0.4	31	16.71
16-25-apr	9:05:08	580	4.1	4.8	0.7	31	16.70
16-25-apr	10:05:08	580	5.9	5.2	-0.7	31	16.71



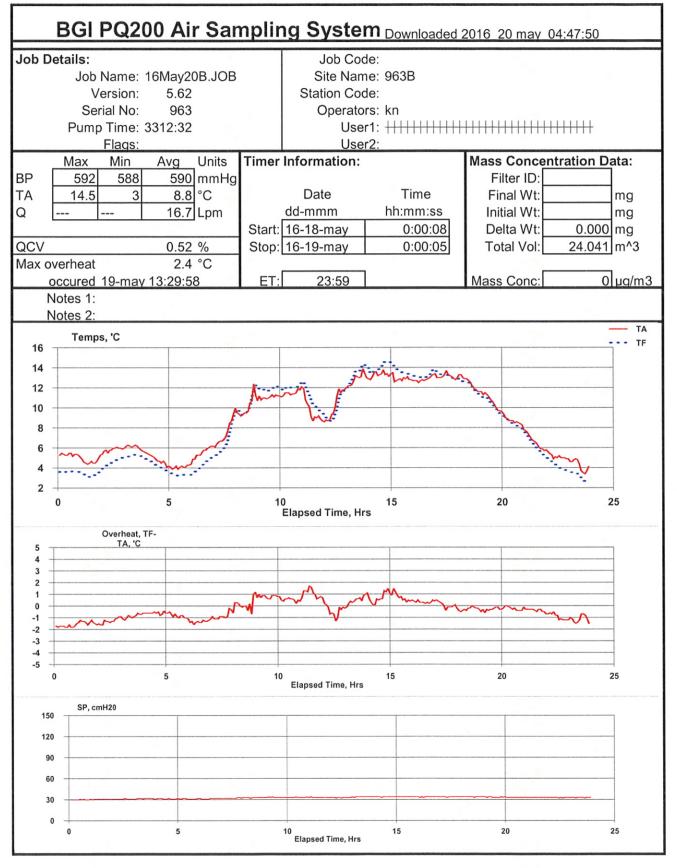
16-30-apr	0:05:08	585	0.9	0.0	-0.8	33	16.71
16-30-apr	1:05:08	585	0.9	0.0	-0.9	33	16.71
16-30-apr	2:05:08	584	1.1	0.2	-0.9	33	16.71
16-30-apr	3:05:08	584	1.3	0.5	-0.8	33	16.71
16-30-apr	4:05:08	584	1.6	1.0	-0.6	34	16.71
16-30-apr	5:05:08	584	0.6	0.3	-0.3	34	16.71
16-30-apr	6:05:08	585	0.5	0.2	-0.3	34	16.71
16-30-apr	7:05:08	585	0.8	0.5	-0.3	34	16.71
16-30-apr	8:05:08	585	1.5	1.4	-0.1	34	16.72
16-30-apr	9:05:08	585	2.7	2.9	0.2	34	16.71
16-30-apr	10:05:08	586	2.3	2.4	0.2	34	16.70
16-30-apr	11:05:08	585	2.6	2.7	0.1	35	16.71
16-30-apr	12:05:08	585	5.3	6.0	0.7	35	16.70
16-30-apr	13:05:08	585	5.0	5.8	0.8	35	16.71
16-30-apr	14:05:08	585	6.8	7.2	0.3	35	16.71
16-30-apr	15:05:08	585	7.9	9.1	1.2	36	16.70
16-30-apr	16:05:08	585	7.1	8.4	1.3	36	16.71
16-30-apr	17:05:08	585	6.2	6.8	0.6	36	16.71
16-30-apr	18:05:08	586	4.5	4.6	0.1	35	16.72
16-30-apr	19:05:08	586	4.1	3.4	-0.7	35	16.71
16-30-apr	20:05:08	586	3.0	2.1	-0.9	35	16.70
16-30-apr	21:05:08	586	2.8	1.8	-1.0	35	16.73
16-30-apr	22:05:08	586	2.4	1.1	-1.3	35	16.71
16-30-apr	23:05:08	586	1.7	0.3	-1.4	35	16.71

BGI PQ200 Air Sar	mplir	ng Systen	Downloaded	2016_09 may ~	5:37:52
<b>b Details:</b> Job Name: 16May09B.JOB		Job Code Site Name			
Version: 5.62		Station Code			
Serial No: 963		Operators			
Pump Time: 3264:34	24			+++++++++++++++++++++++++++++++++++++++	++++++
Flags:		User2			
Max Min Avg Units	Timer	Information:		Mass Concer	tration Data:
2 587 584 585 mmHg				Filter ID:	27
A 16.1 -0.8 7.8 °C	2	Date	Time	Final Wt:	mg
16.7 Lpm	-	dd-mmm	hh:mm:ss	Initial Wt:	mg
	Start:	16-06-may	0:00:08	Delta Wt:	0.000 mg
CV 0.58 %	Stop:	16-07-may	0:00:05	Total Vol:	24.041 m^3
ax overheat 3.4 °C					
occured 07-may 12:50:50	ET:	23:59		Mass Conc:	0 µg/m3
Notes 1:					
Notes 2:		-			
			12		
				2	
		w <sup>m</sup>	1.00 <sup>1</sup> .000		
	man				
when when we have a second sec		-			
			· · · ·	•••	· · ·
	18				••••••
				10°	
Overheat, TF-			00		
o voiniout, m					

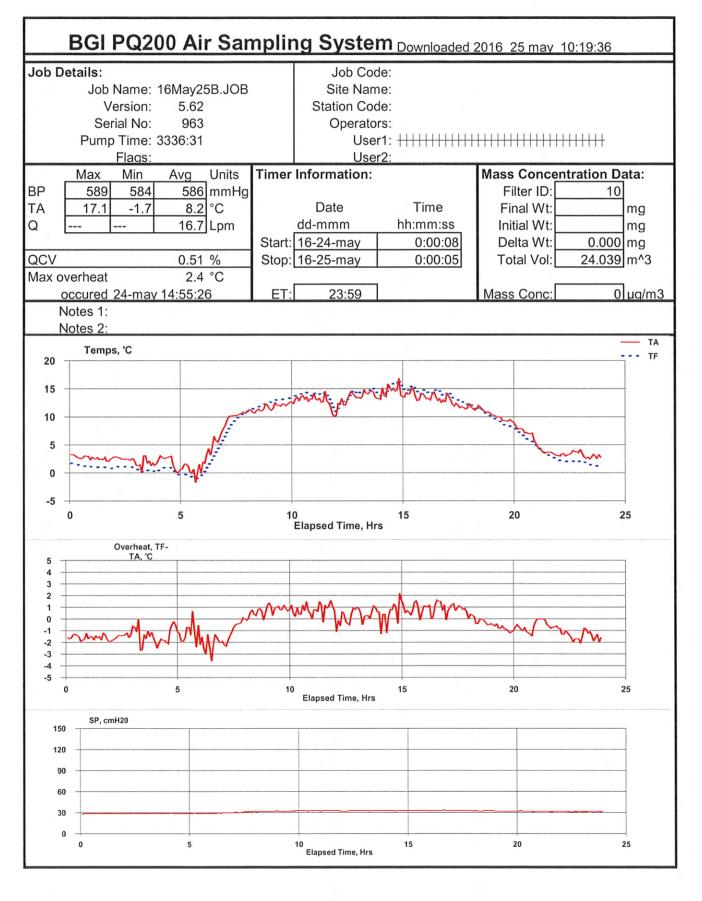
16-06-may	0:05:08	586	6.8	5.7	-1.1	34	16.70
16-06-may	1:05:08	586	8.0	6.2	-1.8	34	16.71
16-06-may	2:05:08	586	8.1	6.8	-1.3	35	16.71
16-06-may	3:05:08	586	8.1	6.8	-1.3	35	16.71
16-06-may	4:05:08	586	9.8	7.9	-1.9	35	16.70
16-06-may	5:05:08	586	8.9	7.6	-1.3	35	16.72
16-06-may	6:05:08	586	8.7	7.4	-1.3	35	16.71
16-06-may	7:05:08	586	9.8	8.9	-0.9	36	16.71
16-06-may	8:05:08	586	10.5	10.0	-0.5	36	16.71
16-06-may	9:05:08	586	12.0	12.2	0.2	37	16.71
16-06-may	10:05:08	586	13.5	14.4	0.8	37	16.71
16-06-may	11:05:08	585	14.2	15.3	1.1	38	16.70
16-06-may	12:05:08	585	12.1	13.0	0.9	37	16.71
16-06-may	13:05:08	585	11.0	11.4	0.4	37	16.71
16-06-may	14:05:08	585	9.9	9.0	-0.9	36	16.71
16-06-may	15:05:08	585	9.5	8.3	-1.2	36	16.70
16-06-may	16:05:08	584	9.5	8.7	-0.8	36	16.71
16-06-may	17:05:08	586	4.8	4.6	-0.2	36	16.71
16-06-may	18:05:08	586	4.2	3.4	-0.7	36	16.71
16-06-may	19:05:08	586	3.1	2.1	-1.0	36	16.71
16-06-may	20:05:08	586	2.6	1.2	-1.4	36	16.71
16-06-may	21:05:08	586	1.1	0.1	-1.0	35	16.70
16-06-may	22:05:08	586	0.2	-1.0	-1.2	35	16.71
16-06-may	23:05:08	586	-0.2	-1.7	-1.4	36	16.72



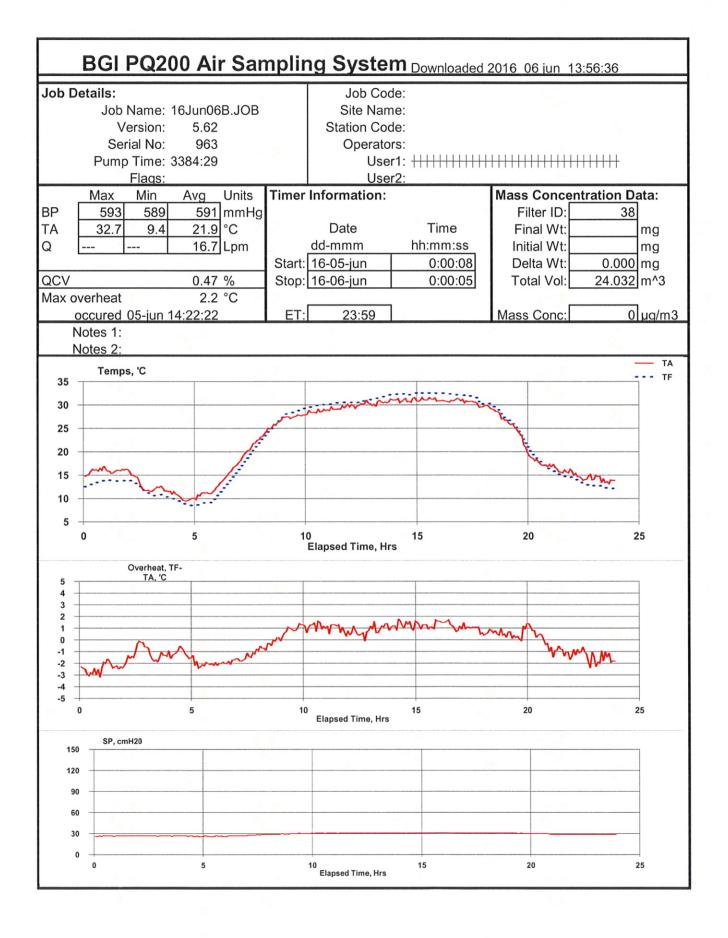
16-12-may	0:05:08	594	4.4	3.3	-1.1	28	16.71
16-12-may	1:05:08	594	2.2	1.3	-0.9	28	16.70
16-12-may	2:05:08	594	1.8	0.2	-1.6	28	16.73
16-12-may	3:05:08	594	1.1	-0.4	-1.4	28	16.71
16-12-may	4:05:08	594	1.2	-0.8	-2.0	28	16.71
16-12-may	5:05:08	595	2.1	-0.1	-2.1	28	16.71
16-12-may	6:05:08	595	5.6	3.3	-2.3	28	16.71
16-12-may	7:05:08	595	10.4	9.3	-1.1	30	16.71
16-12-may	8:05:08	596	14.0	13.9	0.0	31	16.73
16-12-may	9:05:08	596	16.0	16.4	0.4	31	16.71
16-12-may	10:05:08	596	16.9	17.9	1.0	32	16.70
16-12-may	11:05:08	596	17.9	19.1	1.1	32	16.69
16-12-may	12:05:08	595	19.0	20.1	1.1	32	16.70
16-12-may	13:05:08	595	20.0	21.1	1.1	33	16.71
16-12-may	14:05:08	595	20.8	22.3	1.4	33	16.71
16-12-may	15:05:08	594	21.3	22.8	1.5	33	16.71
16-12-may	16:05:08	594	21.3	22.8	1.5	33	16.71
16-12-may	17:05:08	594	20.9	22.3	1.4	33	16.71
16-12-may	18:05:08	594	19.4	20.3	0.9	33	16.70
16-12-may	19:05:08	594	13.6	14.5	0.9	32	16.70
16-12-may	20:05:08	594	10.0	9.5	-0.6	31	16.72
16-12-may	21:05:08	594	8.2	7.1	-1.1	31	16.71
16-12-may	22:05:08	594	7.3	5.7	-1.6	31	16.71
16-12-may	23:05:08	594	5.9	4.6	-1.4	30	16.72



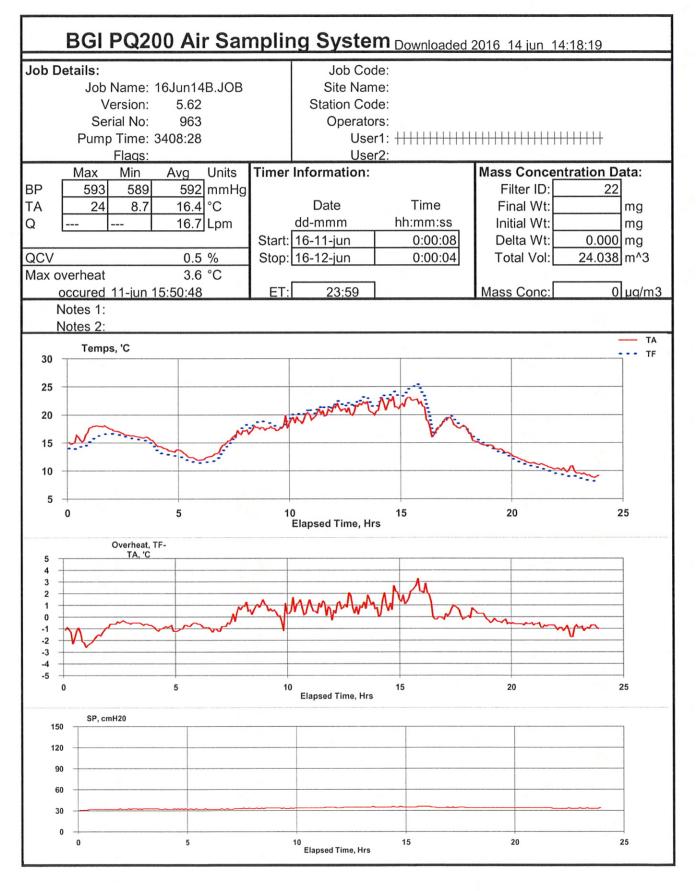
16-18-may	0:05:08	590	5.4	3.6	-1.7	30	16.71
16-18-may	1:05:08	590	4.8	3.4	-1.4	31	16.72
16-18-may	2:05:08	590	5.9	4.6	-1.2	31	16.71
16-18-may	3:05:08	590	6.0	5.2	-0.9	32	16.71
16-18-may	4:05:08	591	4.8	4.2	-0.6	31	16.72
16-18-may	5:05:08	591	4.1	3.3	-0.8	31	16.71
16-18-may	6:05:08	591	5.6	4.3	-1.3	32	16.71
16-18-may	7:05:08	591	7.6	6.8	-0.8	32	16.71
16-18-may	8:05:08	591	10.1	10.3	0.2	33	16.71
16-18-may	9:05:08	591	11.1	11.9	0.8	33	16.71
16-18-may	10:05:08	591	11.5	12.1	0.5	33	16.71
16-18-may	11:05:08	591	9.5	10.6	1.1	33	16.70
16-18-may	12:05:08	591	10.5	10.1	-0.4	33	16.71
16-18-may	13:05:08	591	12.9	13.5	0.5	34	16.70
16-18-may	14:05:08	591	13.3	14.0	0.7	34	16.71
16-18-may	15:05:08	590	12.9	13.6	0.7	34	16.71
16-18-may	16:05:08	590	12.9	13.2	0.3	34	16.71
16-18-may	17:05:08	590	13.1	13.2	0.0	34	16.71
16-18-may	18:05:08	590	12.5	12.2	-0.3	34	16.70
16-18-may	19:05:08	590	10.6	10.3	-0.3	33	16.71
16-18-may	20:05:08	591	8.6	8.4	-0.2	33	16.71
16-18-may	21:05:08	591	6.5	6.1	-0.4	33	16.71
16-18-may	22:05:08	591	5.1	4.2	-0.9	33	16.70
16-18-may	23:05:08	591	4.2	3.1	-1.1	33	16.70



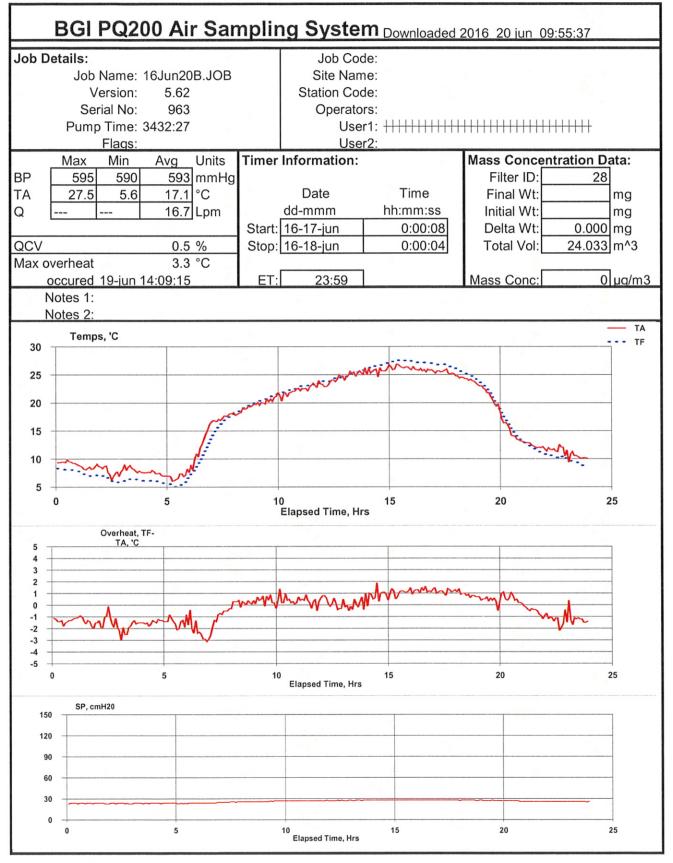
16-24-may	0:05:08	586	2.9	1.3	-1.6	29	16.71
16-24-may	1:05:08	586	2.5	0.9	-1.6	29	16.71
16-24-may	2:05:08	586	2.5	1.1	-1.4	29	16.71
16-24-may	3:05:08	586	1.8	0.4	-1.4	29	16.71
16-24-may	4:05:08	586	1.9	0.5	-1.4	29	16.72
16-24-may	5:05:08	586	0.7	-0.6	-1.2	29	16.70
16-24-may	6:05:08	586	5.4	3.3	-2.1	30	16.72
16-24-may	7:05:08	586	10.4	9.5	-0.9	31	16.71
16-24-may	8:05:08	587	11.3	11.8	0.5	32	16.70
16-24-may	9:05:08	587	12.1	13.1	0.9	32	16.71
16-24-may	10:05:08	587	13.3	14.0	0.7	33	16.70
16-24-may	11:05:08	587	12.3	13.2	0.9	33	16.70
16-24-may	12:05:08	587	13.2	13.3	0.1	33	16.71
16-24-may	13:05:08	587	13.9	14.4	0.5	33	16.71
16-24-may	14:05:08	587	14.8	15.3	0.5	33	16.71
16-24-may	15:05:08	587	14.0	14.8	0.8	33	16.71
16-24-may	16:05:08	587	13.3	14.3	0.9	33	16.71
16-24-may	17:05:08	587	12.1	13.0	0.9	33	16.70
16-24-may	18:05:08	587	11.2	11.1	-0.1	33	16.71
16-24-may	19:05:08	588	9.6	8.8	-0.8	32	16.71
16-24-may	20:05:08	588	7.2	6.3	-0.9	32	16.71
16-24-may	21:05:08	589	3.7	3.3	-0.4	32	16.70
16-24-may	22:05:08	589	3.5	2.0	-1.5	32	16.71
16-24-may	23:05:08	589	2.9	1.5	-1.4	32	16.70



16-05-jun	0:05:08	593	15.9	13.2	-2.7	27	16.71
16-05-jun	1:05:08	593	16.0	13.8	-2.1	27	16.70
16-05-jun	2:05:08	593	13.4	12.5	-0.9	27	16.71
16-05-jun	3:05:08	593	11.9	10.5	-1.4	27	16.70
16-05-jun	4:05:08	593	10.2	9.0	-1.2	27	16.71
16-05-jun	5:05:08	593	11.2	9.1	-2.0	26	16.71
16-05-jun	6:05:08	593	15.3	13.4	-1.9	27	16.71
16-05-jun	7:05:08	593	20.9	19.5	-1.4	29	16.72
16-05-jun	8:05:08	593	25.5	25.1	-0.3	29	16.70
16-05-jun	9:05:08	593	27.6	28.5	0.9	30	16.70
16-05-jun	10:05:08	593	28.6	29.8	1.2	31	16.72
16-05-jun	11:05:08	593	29.4	30.4	1.0	31	16.72
16-05-jun	12:05:08	592	30.1	30.8	0.6	31	16.71
16-05-jun	13:05:08	592	30.7	31.8	1.1	31	16.70
16-05-jun	14:05:08	591	31.0	32.3	1.3	31	16.69
16-05-jun	15:05:08	591	31.2	32.4	1.2	31	16.71
16-05-jun	16:05:08	590	31.0	32.3	1.3	31	16.70
16-05-jun	17:05:08	590	30.4	31.4	1.0	31	16.70
16-05-jun	18:05:08	589	28.6	29.2	0.6	31	16.71
16-05-jun	19:05:08	590	24.1	24.6	0.5	30	16.71
16-05-jun	20:05:08	590	17.8	18.1	0.3	30	16.70
16-05-jun	21:05:08	590	16.1	15.1	-1.0	29	16.70
16-05-jun	22:05:08	590	14.5	13.3	-1.2	29	16.72
16-05-jun	23:05:08	590	14.0	12.4	-1.6	29	16.72

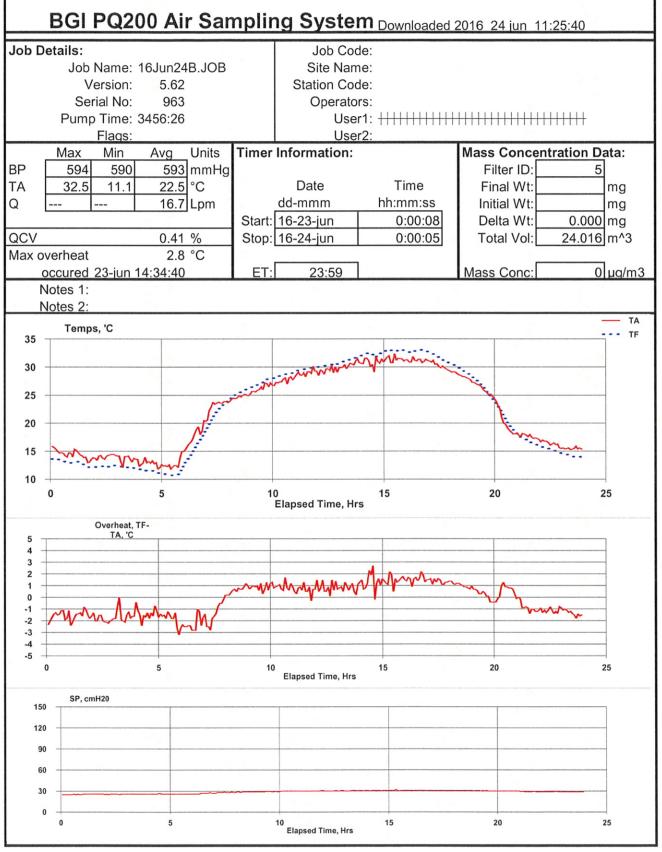


16-11-jun	0:05:08	592	15.8	14.2	-1.6	32	16.71
16-11-jun	1:05:08	592	17.9	16.2	-1.6	32	16.70
16-11-jun	2:05:08	592	16.7	16.2	-0.5	33	16.71
16-11-jun	3:05:08	592	15.8	15.2	-0.6	33	16.71
16-11-jun	4:05:08	592	13.9	12.9	-1.0	32	16.70
16-11-jun	5:05:08	592	12.6	11.8	-0.8	32	16.71
16-11-jun	6:05:08	592	12.9	12.0	-1.0	32	16.71
16-11-jun	7:05:08	592	16.1	16.0	-0.1	33	16.71
16-11-jun	8:05:08	592	17.5	18.4	0.9	34	16.71
16-11-jun	9:05:08	592	17.9	18.2	0.3	34	16.71
16-11-jun	10:05:08	593	19.4	20.2	0.9	34	16.71
16-11-jun	11:05:08	593	20.4	21.1	0.7	35	16.71
16-11-jun	12:05:08	593	20.9	21.9	1.0	35	16.70
16-11-jun	13:05:08	592	21.3	22.3	1.0	35	16.71
16-11-jun	14:05:08	593	22.0	23.3	1.3	35	16.71
16-11-jun	15:05:08	592	22.4	24.5	2.1	36	16.71
16-11-jun	16:05:08	592	18.2	19.0	0.8	35	16.72
16-11-jun	17:05:08	592	18.3	18.7	0.4	34	16.71
16-11-jun	18:05:08	592	15.2	15.4	0.2	34	16.70
16-11-jun	19:05:08	592	13.7	13.3	-0.4	34	16.70
16-11-jun	20:05:08	592	11.9	11.3	-0.6	34	16.71
16-11-jun	21:05:08	592	10.9	10.2	-0.7	34	16.71
16-11-jun	22:05:08	592	10.2	9.1	-1.1	33	16.70
16-11-jun	23:05:08	592	9.2	8.3	-0.9	33	16.71



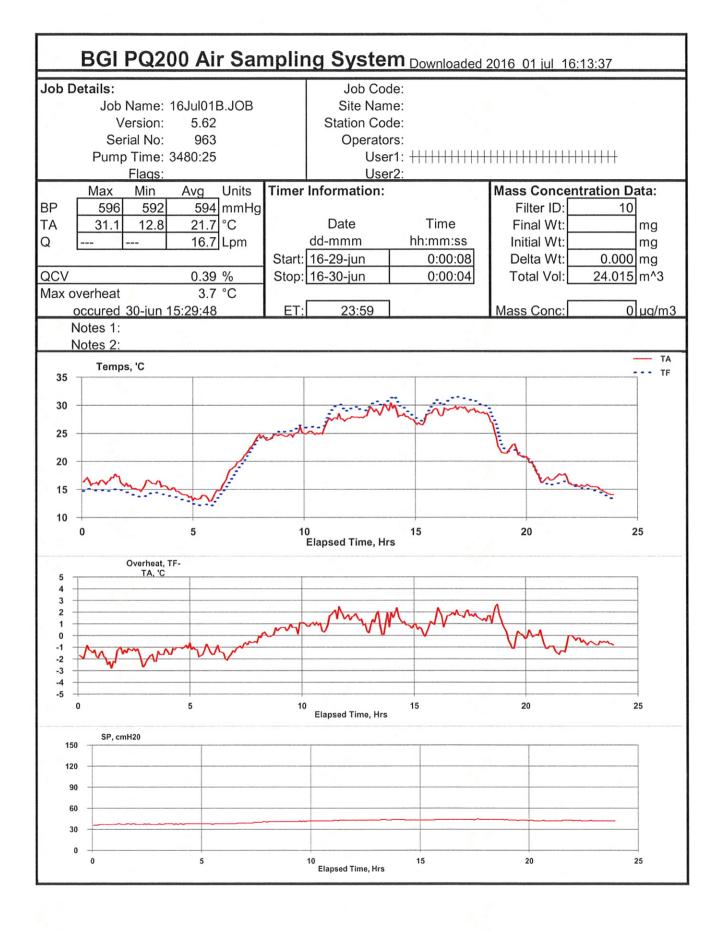
an <sup>100</sup>

16-17-jun	0:05:08	593	9.4	8.1	-1.3	24	16.70
16-17-jun	1:05:08	593	8.5	7.2	-1.4	24	16.70
16-17-jun	2:05:08	593	7.6	6.2	-1.4	24	16.71
16-17-jun	3:05:08	593	8.1	6.3	-1.9	24	16.70
16-17-jun	4:05:08	593	7.4	6.0	-1.5	24	16.71
16-17-jun	5:05:08	593	7.0	5.6	-1.4	24	16.71
16-17-jun	6:05:08	594	12.4	10.2	-2.2	24	16.70
16-17-jun	7:05:08	594	17.4	16.5	-1.0	26	16.70
16-17-jun	8:05:08	594	18.9	19.1	0.2	26	16.70
16-17-jun	9:05:08	595	20.5	20.9	0.4	27	16.73
16-17-jun	10:05:08	595	21.8	22.3	0.5	27	16.70
16-17-jun	11:05:08	595	23.0	23.3	0.3	27	16.70
16-17-jun	12:05:08	595	23.9	24.2	0.2	27	16.72
16-17-jun	13:05:08	594	25.3	25.4	0.1	28	16.71
16-17-jun	14:05:08	594	25.8	26.6	0.8	28	16.72
16-17-jun	15:05:08	594	26.3	27.4	1.1	28	16.70
16-17-jun	16:05:08	594	25.9	27.1	1.2	28	16.70
16-17-jun	17:05:08	594	25.4	26.6	1.2	28	16.71
16-17-jun	18:05:08	594	24.1	25.0	0.9	28	16.71
16-17-jun	19:05:08	594	21.1	21.5	0.4	27	16.71
16-17-jun	20:05:08	594	14.8	15.3	0.6	27	16.71
16-17-jun	21:05:08	594	12.4	11.8	-0.6	26	16.71
16-17-jun	22:05:08	595	11.7	10.4	-1.3	26	16.71
16-17-jun	23:05:08	595	10.4	9.2	-1.2	26	16.71



· \*

16-23-jun	0:05:08	593	14.8	13.3	-1.6	25	16.72
16-23-jun	1:05:08	593	14.1	12.6	-1.6	26	16.71
16-23-jun	2:05:08	593	14.1	12.3	-1.9	26	16.71
16-23-jun	3:05:08	593	13.5	12.1	-1.4	26	16.69
16-23-jun	4:05:08	593	12.9	11.4	-1.5	26	16.72
16-23-jun	5:05:08	593	12.9	11.0	-1.9	26	16.72
16-23-jun	6:05:08	594	18.0	15.7	-2.2	27	16.73
16-23-jun	7:05:08	594	23.3	21.9	-1.3	28	16.74
16-23-jun	8:05:08	594	24.7	25.4	0.7	29	16.65
16-23-jun	9:05:08	594	26.4	27.2	0.9	29	16.68
16-23-jun	10:05:08	594	27.6	28.6	1.0	30	16.69
16-23-jun	11:05:08	594	29.0	29.7	0.6	30	16.72
16-23-jun	12:05:08	594	29.4	30.3	0.9	30	16.71
16-23-jun	13:05:08	593	30.5	31.4	0.9	31	16.72
16-23-jun	14:05:08	593	30.9	32.3	1.4	31	16.72
16-23-jun	15:05:08	592	31.5	32.9	1.5	31	16.72
16-23-jun	16:05:08	592	31.2	32.8	1.6	31	16.69
16-23-jun	17:05:08	592	30.2	31.6	1.4	31	16.70
16-23-jun	18:05:08	592	28.4	29.5	1.0	31	16.73
16-23-jun	19:05:08	592	25.9	26.2	0.2	30	16.74
16-23-jun	20:05:08	592	20.1	20.6	0.5	30	16.73
16-23-jun	21:05:08	593	17.7	16.8	-0.9	29	16.71
16-23-jun	22:05:08	593	16.4	15.3	-1.1	29	16.71
16-23-jun	23:05:08	593	15.5	14.2	-1.4	29	16.71



-

16-29-jun	0:05:08	595	16.4	14.9	-1.5	37	16.70
16-29-jun	1:05:08	595	16.6	14.8	-1.8	38	16.70
16-29-jun	2:05:08	595	15.5	13.9	-1.5	37	16.71
16-29-jun	3:05:08	594	15.8	14.2	-1.7	38	16.71
16-29-jun	4:05:08	595	14.3	13.2	-1.1	38	16.71
16-29-jun	5:05:08	595	13.6	12.3	-1.3	38	16.71
16-29-jun	6:05:08	595	17.2	15.7	-1.5	38	16.71
16-29-jun	7:05:08	595	22.3	21.5	-0.7	40	16.72
16-29-jun	8:05:08	596	24.4	24.6	0.2	41	16.73
16-29-jun	9:05:08	596	25.0	25.7	0.7	41	16.71
16-29-jun	10:05:08	596	25.3	26.1	0.9	42	16.71
16-29-jun	11:05:08	595	27.6	29.3	1.7	43	16.72
16-29-jun	12:05:08	595	28.2	29.4	1.3	43	16.72
16-29-jun	13:05:08	594	29.3	30.5	1.2	44	16.72
16-29-jun	14:05:08	594	28.2	29.4	1.3	43	16.70
16-29-jun	15:05:08	593	27.9	28.7	0.7	43	16.71
16-29-jun	16:05:08	593	29.1	30.9	1.7	44	16.69
16-29-jun	17:05:08	593	29.2	30.9	1.7	44	16.68
16-29-jun	18:05:08	593	25.5	27.1	1.6	44	16.71
16-29-jun	19:05:08	593	21.7	21.5	-0.2	43	16.69
16-29-jun	20:05:08	594	18.1	18.0	-0.2	42	16.70
16-29-jun	21:05:08	594	17.1	16.1	-1.0	43	16.71
16-29-jun	22:05:08	594	15.7	15.3	-0.4	42	16.71
16-29-jun	23:05:08	594	14.7	14.1	-0.7	42	16.70

**Collocated Monitor 964C** 

# **PM<sub>10</sub> Sampler Summary**

## April 1, 2016 - June 30, 2016

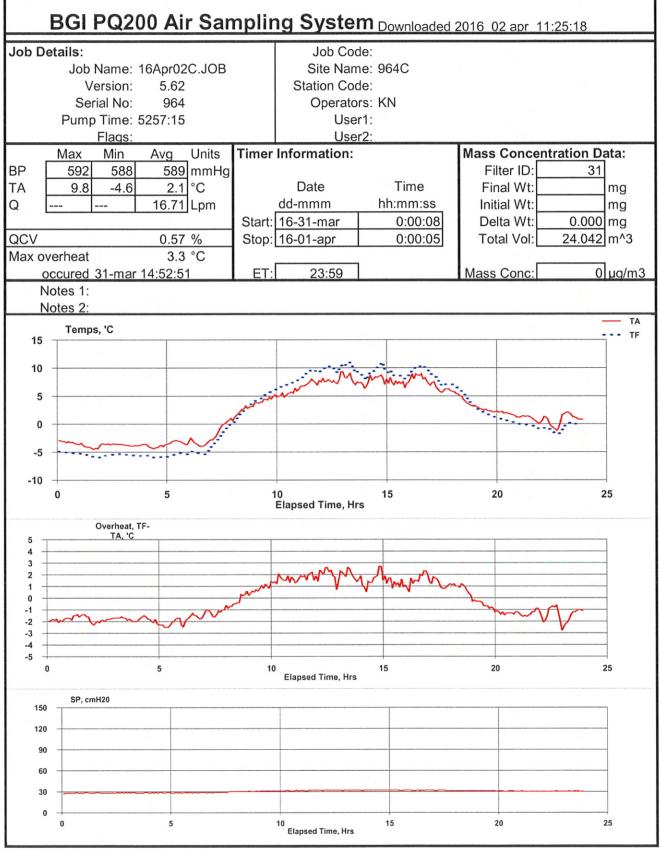
### Network: Alton Coal Development

Site: Coal Hollow

Sampler ID: Coal Hollow-C Sampler Type: BGI FRM Single

#### AQS ID:

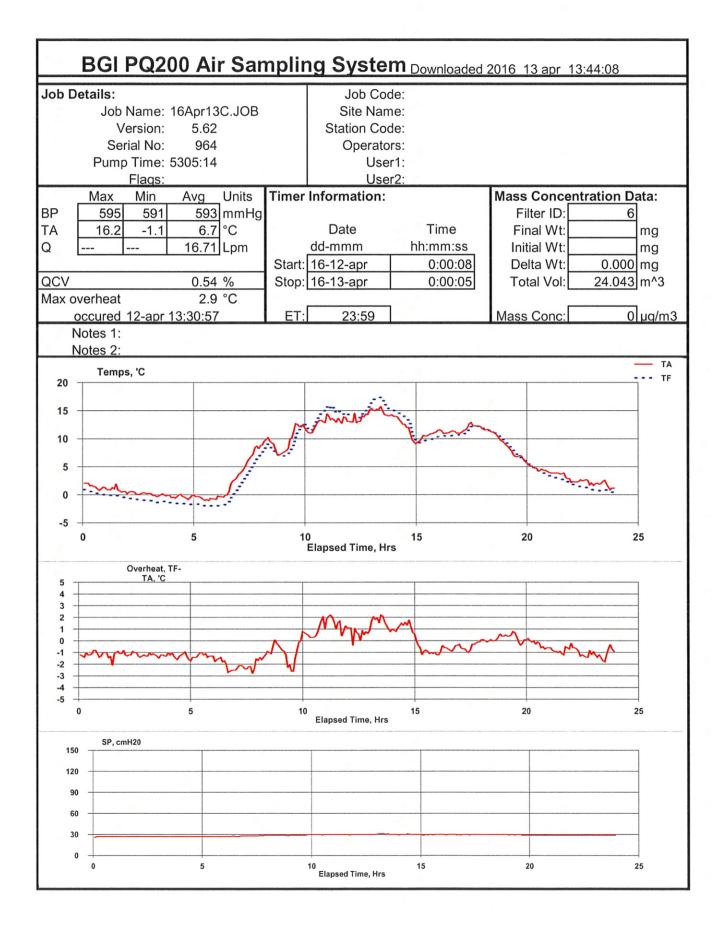
	Filter	Concentration (µg/m3)	Concentration (µg/m3)	Sample Period	Sample Volume	Std Volume		Mass (mg)			
Date	ID	LTP	STP	(hr:min)	(m3)	(m3)	Tare	Gross	Net	Flag	Comments
04/06/16	P2929004	5.9	7.1	24:00	24.0	19.9	375.367	375.510	0.143		
04/12/16	P2929225	6.6	8.0	23:59	24.0	20.0	368.712	368.873	0.161		
04/18/16	P2929230	16.4	19.6	23:59	24.0	20.1	384.429	384.825	0.396	ΗT	
04/24/16	P2929389	3.9	4.8	23:59	24.0	19.7	384.796	384.892	0.096		
04/30/16	P2929394	1.5	1.8	23:59	24.0	20.0	396.811	396.848	0.037	ΗT	
05/06/16	P2929399	13.6	16.6	23:59	24.0	19.7	380.084	380.412	0.328	ΗT	
05/12/16	P2929632	50.0	61.0	23:59	24.0	19.7	373.961	375.164	1.203		
05/18/16	P2929817	13.7	16.6	23:59	24.0	19.8	374.868	375.198	0.330	ΗT	
05/24/16	P2929628	27.3	33.2	23:59	24.0	19.7	373.635	374.292	0.657		
05/30/16	P2929825	7.4	9.1	23:59	24.0	19.5	396.588	396.767	0.179	ΗT	
06/05/16	P2930154	8.6	10.9	23:59	24.0	18.9	403.574	403.782	0.208		
06/11/16	P2930161	9.5	11.8	23:59	24.0	19.3	367.198	367.428	0.230	ΗT	
06/17/16	P2930167	35.1	43.7	23:59	24.0	19.3	381.373	382.218	0.845	ΗT	
06/23/16	P2930504	34.2	43.5	23:59	24.0	18.9	367.541	368.365	0.824		
06/29/16	P2930509	26.4	33.3	23:59	24.0	19.1	371.639	372.274	0.635		Filter darker, smudge
06/20/16	P2930513		Field Bla	ink			372.662	372.674	0.012		
	# Valid 15	Recovery 100%	Average 21.4	St. Dev. 17.5	Max 61.0	Min 1.8					



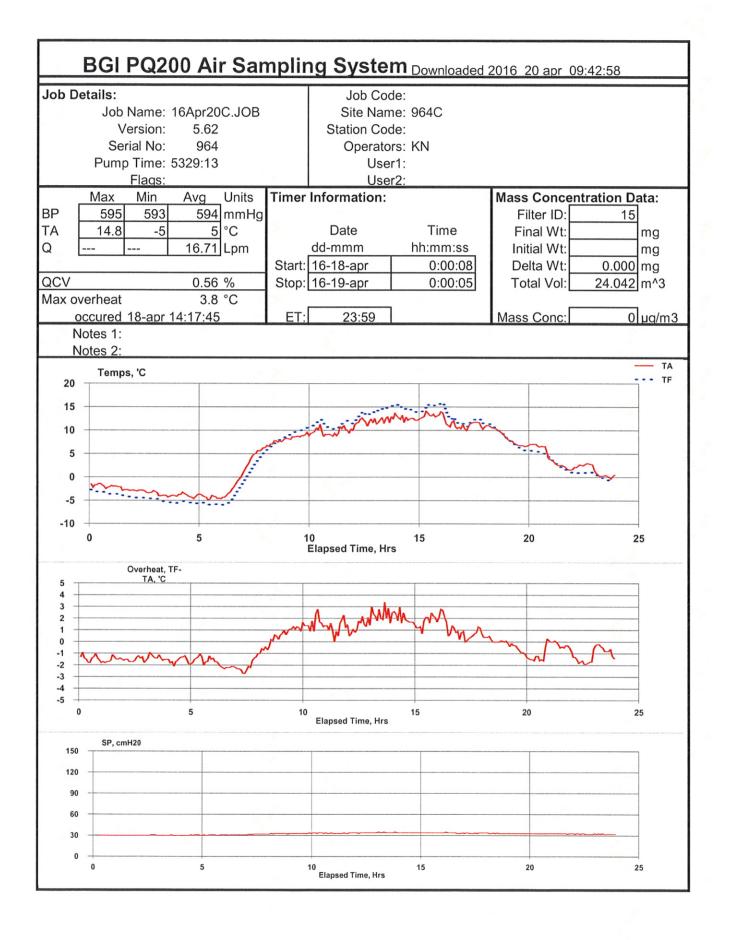
16-31-mar	0:05:08	589	-3.3	-5.1	-1.9	28	16.73
16-31-mar	1:05:08	589	-4.1	-5.7	-1.6	28	16.71
16-31-mar	2:05:08	589	-3.6	-5.5	-1.9	28	16.71
16-31-mar	3:05:08	589	-3.8	-5.6	-1.8	28	16.71
16-31-mar	4:05:08	589	-4.0	-5.9	-1.9	29	16.71
16-31-mar	5:05:08	589	-3.3	-5.4	-2.2	28	16.71
16-31-mar	6:05:08	589	-3.4	-5.1	-1.7	29	16.71
16-31-mar	7:05:08	589	-0.6	-1.8	-1.2	29	16.71
16-31-mar	8:05:08	589	2.6	2.4	-0.2	30	16.71
16-31-mar	9:05:08	589	4.4	5.2	0.8	31	16.72
16-31-mar	10:05:08	589	5.5	7.1	1.6	31	16.71
16-31-mar	11:05:08	589	7.3	9.0	1.8	32	16.71
16-31-mar	12:05:08	589	7.9	9.9	2.0	32	16.70
16-31-mar	13:05:08	589	7.7	9.6	2.0	32	16.72
16-31-mar	14:05:08	589	8.0	9.6	1.6	32	16.72
16-31-mar	15:05:08	589	7.3	8.6	1.3	32	16.71
16-31-mar	16:05:08	589	8.2	9.8	1.6	32	16.71
16-31-mar	17:05:08	589	6.3	7.5	1.2	31	16.71
16-31-mar	18:05:08	589	4.3	5.1	0.8	31	16.71
16-31-mar	19:05:08	590	2.5	1.9	-0.6	31	16.71
16-31-mar	20:05:08	590	1.8	0.5	-1.3	30	16.71
16-31-mar	21:05:08	591	0.9	-0.4	-1.3	30	16.71
16-31-mar	22:05:08	591	0.2	-1.2	-1.4	30	16.71
16-31-mar	23:05:08	591	1.4	-0.1	-1.5	30	16.72

BGI PQ200 Air Sar	inpin		ment Provident States and Street Street	2016 07 apr 12	1.33.33
b Details:		Job Code:			
Job Name: 16Apr07C.JOB		Site Name:			
Version: 5.62		Station Code:			
Serial No: 964		Operators:			
Pump Time: 5281:15		User1:			
Flags:		User2:			
Max Min Avg Units	Timer	Information:		Mass Concen	tration Data:
600 596 598 mmHg				Filter ID:	36
21.8 -0.9 10.4 °C	10	Date	Time	Final Wt:	mg
16.7 Lpm		dd-mmm	hh:mm:ss	Initial Wt:	mg
	Start.	16-06-apr	0:00:08	Delta Wt:	0.000 mg
CV 0.56 %		16-07-apr	0:00:05	Total Vol:	24.041 m^3
ax overheat 2.7 °C	Ctop.	10-07-001	0.00.00		24.041 11 0
	ET:	24:00:00		Mass Conc:	0 µg/m3
occured 06-apr 14:43:47		24.00.00		Wass Conc.	Uluq/m3
Notes 1:					
Notes 2:					
	100				
		- ANN	mm		
		and the second s		-	
	ستر.				
				· · · · · · ·	· · · · · · · · · · · · · · · · · · ·
min l					
~~~ V					
	19				
				2.5	
100 					

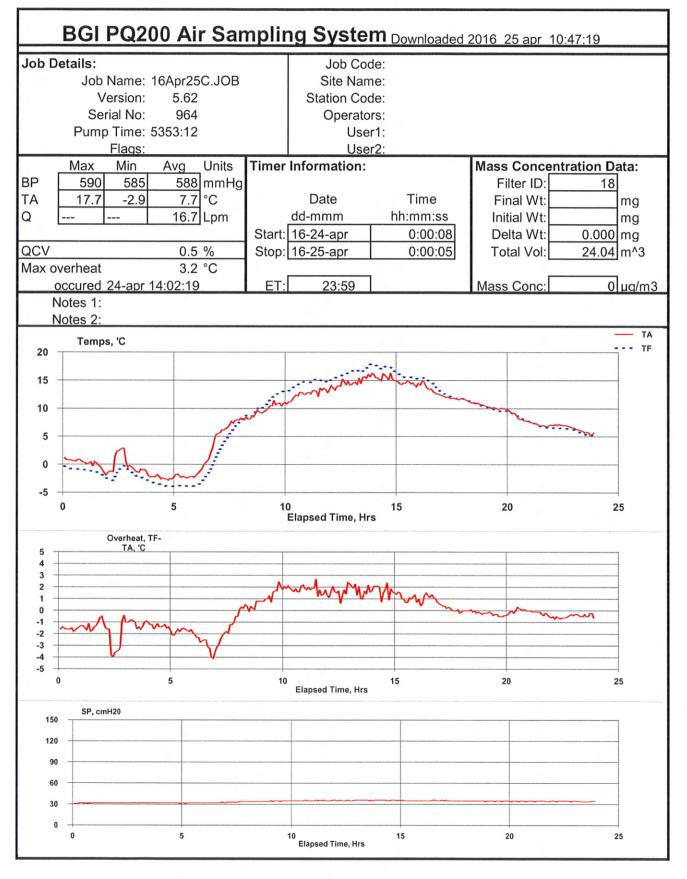
16-06-apr	0:05:18	599	-0.3	-2.1	-1.8	29	16.71
16-06-apr	1:05:18	599	2.2	-0.8	-3.0	29	16.71
16-06-apr	2:05:18	599	4.1	1.4	-2.7	30	16.71
16-06-apr	3:05:18	598	4.5	2.1	-2.4	30	16.71
16-06-apr	4:05:18	598	4.2	2.4	-1.8	30	16.71
16-06-apr	5:05:18	599	3.9	2.3	-1.6	30	16.71
16-06-apr	6:05:18	599	1.0	0.7	-0.3	30	16.71
16-06-apr	7:05:18	599	6.9	5.0	-1.9	31	16.72
16-06-apr	8:05:18	599	10.3	10.0	-0.3	32	16.71
16-06-apr	9:05:18	599	12.3	13.0	0.7	32	16.71
16-06-apr	10:05:18	599	14.2	15.1	1.0	33	16.71
16-06-apr	11:05:18	599	16.3	17.5	1.2	33	16.71
16-06-apr	12:05:18	599	18.1	19.6	1.5	34	16.72
16-06-apr	13:05:18	598	19.7	21.2	1.5	34	16.70
16-06-apr	14:05:18	597	20.7	22.4	1.7	35	16.71
16-06-apr	15:05:18	597	20.3	21.9	1.6	34	16.71
16-06-apr	16:05:18	597	19.5	20.9	1.4	34	16.71
16-06-apr	17:05:18	597	17.3	18.1	0.8	34	16.71
16-06-apr	18:05:18	597	14.5	14.7	0.3	33	16.71
16-06-apr	19:05:18	597	8.6	9.3	0.7	33	16.70
16-06-apr	20:05:18	597	8.0	6.5	-1.5	32	16.70
16-06-apr	21:05:18	597	7.4	6.3	-1.1	32	16.71
16-06-apr	22:05:18	597	7.9	5.9	-2.0	32	16.71
16-06-apr	23:05:18	597	6.8	5.2	-1.6	32	16.71



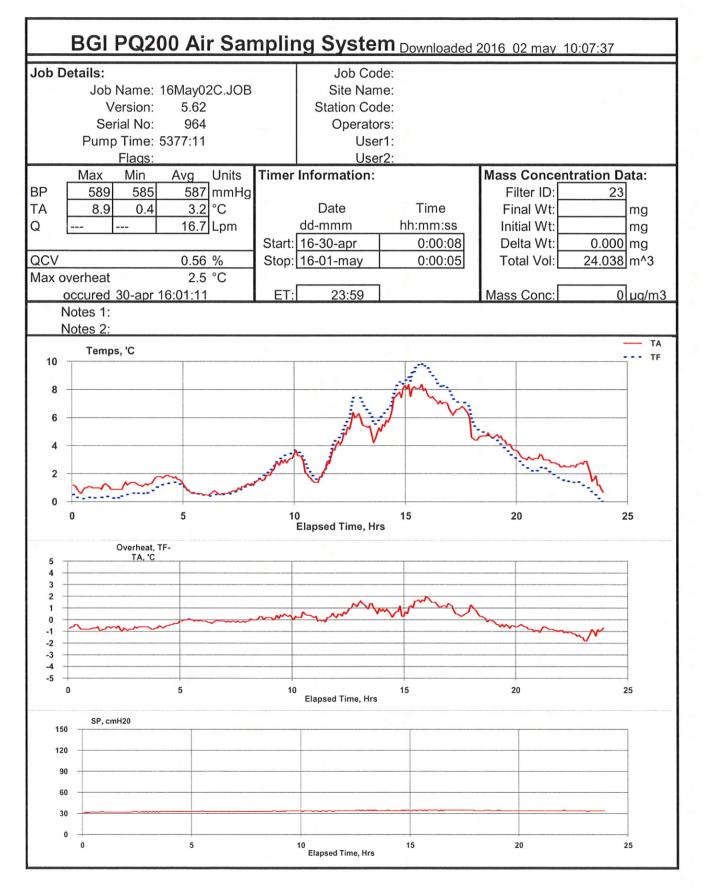
16-12-apr	0:05:08	594	1.5	0.4	-1.2	27	16.71
16-12-apr	1:05:08	594	0.9	-0.3	-1.2	27	16.71
16-12-apr	2:05:08	593	0.3	-0.9	-1.2	27	16.71
16-12-apr	3:05:08	593	-0.1	-1.3	-1.2	27	16.71
16-12-apr	4:05:08	593	-0.3	-1.6	-1.3	27	16.71
16-12-apr	5:05:08	593	-0.7	-1.9	-1.3	27	16.71
16-12-apr	6:05:08	594	1.1	-1.0	-2.1	27	16.71
16-12-apr	7:05:08	594	6.6	4.4	-2.2	28	16.71
16-12-apr	8:05:08	594	8.7	7.8	-0.9	29	16.71
16-12-apr	9:05:08	594	10.8	9.6	-1.2	29	16.72
16-12-apr	10:05:08	594	12.4	13.2	0.8	30	16.71
16-12-apr	11:05:08	594	13.4	14.9	1.5	30	16.72
16-12-apr	12:05:08	594	13.9	14.6	0.7	30	16.71
16-12-apr	13:05:08	593	14.7	16.3	1.6	30	16.71
16-12-apr	14:05:08	593	11.9	13.1	1.2	30	16.70
16-12-apr	15:05:08	593	10.6	9.7	-0.9	30	16.72
16-12-apr	16:05:08	593	11.2	10.5	-0.7	30	16.71
16-12-apr	17:05:08	593	12.1	11.6	-0.5	30	16.72
16-12-apr	18:05:08	593	10.7	10.9	0.2	30	16.70
16-12-apr	19:05:08	594	7.2	7.5	0.3	29	16.71
16-12-apr	20:05:08	594	4.6	4.3	-0.3	29	16.72
16-12-apr	21:05:08	594	3.5	2.7	-0.8	29	16.71
16-12-apr	22:05:08	594	2.3	1.3	-1.0	29	16.72
16-12-apr	23:05:08	594	1.8	0.7	-1.1	29	16.70



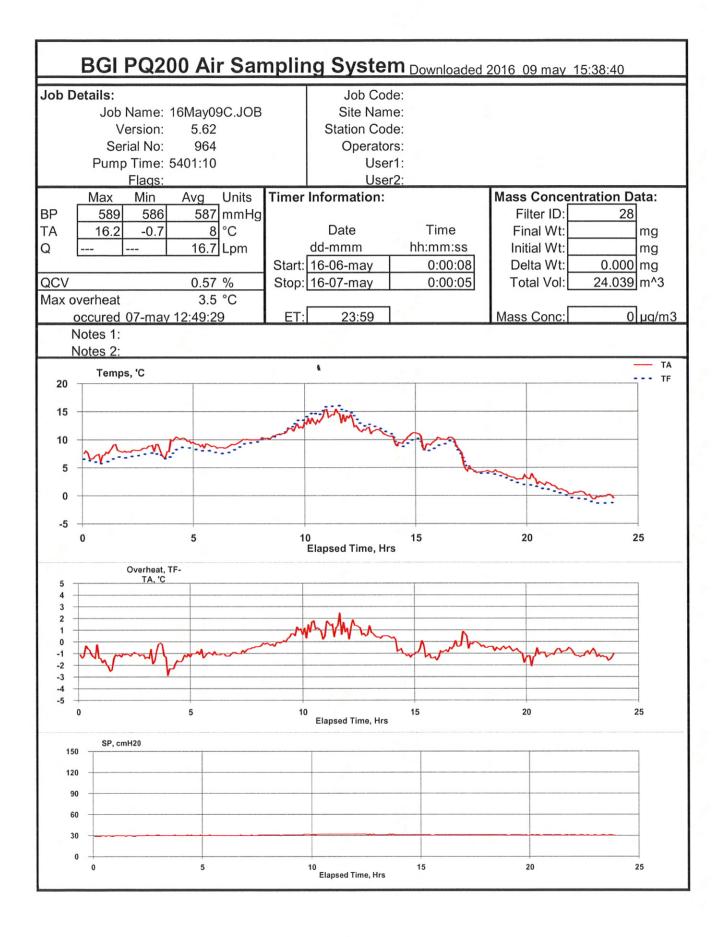
16-18-apr	0:05:08	595	-1.9	-3.3	-1.4	30	16.71
16-18-apr	1:05:08	595	-2.5	-4.0	-1.5	30	16.71
16-18-apr	2:05:08	595	-3.0	-4.6	-1.5	30	16.72
16-18-apr	3:05:08	595	-3.9	-5.3	-1.3	30	16.72
16-18-apr	4:05:08	595	-3.9	-5.5	-1.6	30	16.71
16-18-apr	5:05:08	595	-4.3	-5.8	-1.5	31	16.71
16-18-apr	6:05:08	595	-2.1	-4.2	-2.1	31	16.72
16-18-apr	7:05:08	595	4.6	2.5	-2.0	32	16.71
16-18-apr	8:05:08	595	7.6	7.4	-0.1	33	16.71
16-18-apr	9:05:08	595	8.8	9.8	1.1	33	16.71
16-18-apr	10:05:08	595	9.7	11.2	1.6	34	16.71
16-18-apr	11:05:08	595	9.9	11.2	1.2	33	16.70
16-18-apr	12:05:08	594	11.9	13.3	1.3	34	16.72
16-18-apr	13:05:08	594	12.4	14.8	2.4	34	16.71
16-18-apr	14:05:08	594	12.5	14.5	2.0	34	16.71
16-18-apr	15:05:08	594	13.3	15.0	1.7	34	16.72
16-18-apr	16:05:08	594	11.4	12.9	1.4	34	16.72
16-18-apr	17:05:08	594	11.1	11.7	0.6	34	16.72
16-18-apr	18:05:08	594	10.1	10.2	0.2	33	16.71
16-18-apr	19:05:08	594	7.1	6.6	-0.5	33	16.72
16-18-apr	20:05:08	594	6.2	5.1	-1.1	33	16.71
16-18-apr	21:05:08	595	2.4	2.1	-0.3	33	16.71
16-18-apr	22:05:08	595	2.5	1.0	-1.6	32	16.72
16-18-apr	23:05:08	595	0.3	-0.3	-0.7	32	16.71



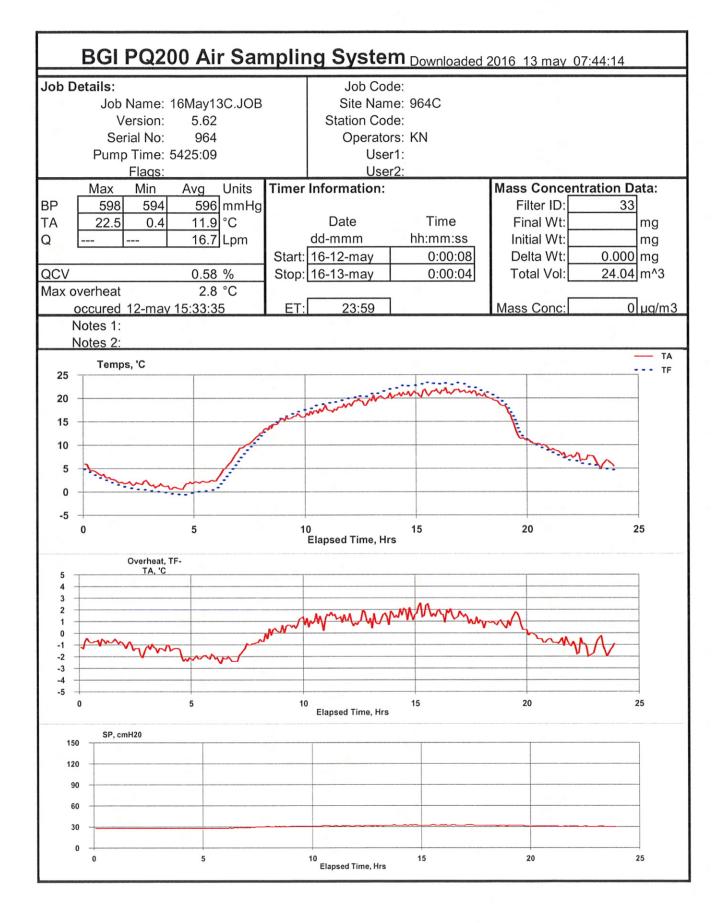
16-24-apr	0:05:08	590	0.7	-0.8	-1.5	32	16.71
16-24-apr	1:05:08	590	-0.4	-1.7	-1.3	32	16.71
16-24-apr	2:05:08	590	0.9	-1.5	-2.4	32	16.71
16-24-apr	3:05:08	590	-1.3	-2.4	-1.1	32	16.70
16-24-apr	4:05:08	590	-2.4	-3.7	-1.4	32	16.71
16-24-apr	5:05:08	589	-2.1	-3.9	-1.8	32	16.70
16-24-apr	6:05:08	590	1.6	-1.3	-2.9	32	16.71
16-24-apr	7:05:08	590	7.1	5.4	-1.7	33	16.71
16-24-apr	8:05:08	590	8.7	9.1	0.4	34	16.71
16-24-apr	9:05:08	590	10.6	12.0	1.4	35	16.72
16-24-apr	10:05:08	589	12.1	14.0	1.9	35	16.70
16-24-apr	11:05:08	589	13.1	14.9	1.7	35	16.70
16-24-apr	12:05:08	589	14.2	15.8	1.6	35	16.72
16-24-apr	13:05:08	588	15.4	17.0	1.7	36	16.70
16-24-apr	14:05:08	588	15.5	17.2	1.7	36	16.70
16-24-apr	15:05:08	588	14.5	15.6	1.1	35	16.71
16-24-apr	16:05:08	587	13.5	14.5	1.0	35	16.70
16-24-apr	17:05:08	587	11.9	12.1	0.1	35	16.71
16-24-apr	18:05:08	587	11.0	11.0	-0.1	35	16.71
16-24-apr	19:05:08	587	10.1	9.8	-0.3	35	16.71
16-24-apr	20:05:08	587	8.5	8.5	0.0	35	16.70
16-24-apr	21:05:08	587	7.1	6.9	-0.2	35	16.71
16-24-apr	22:05:08	586	7.0	6.4	-0.5	35	16.70
16-24-apr	23:05:08	585	5.9	5.5	-0.4	34	16.72



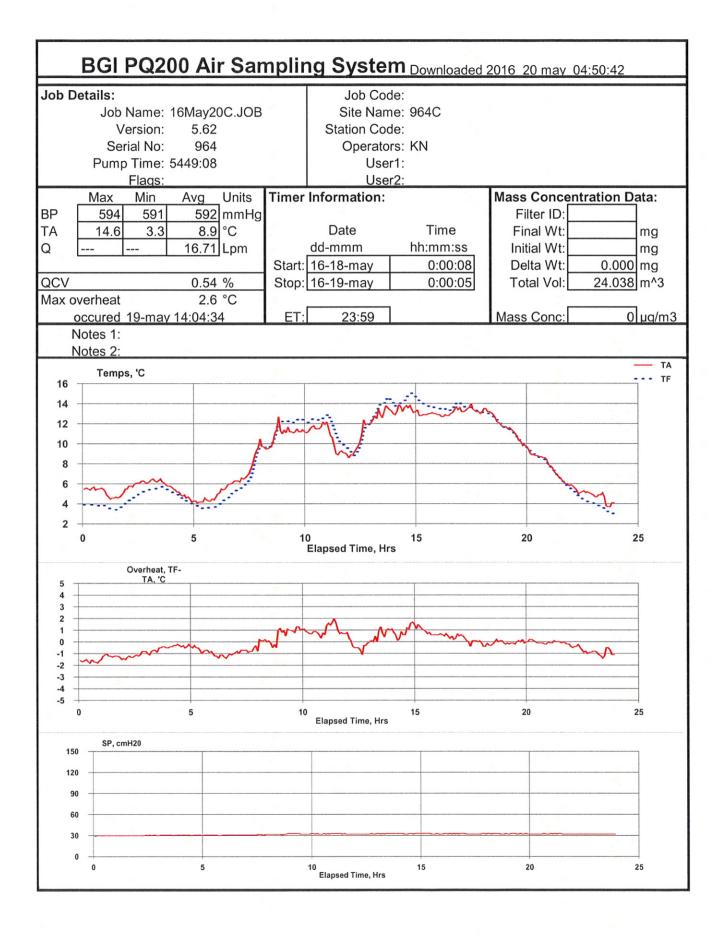
16-30-apr	0:05:08	587	1.0	0.3	-0.7	32	16.70
16-30-apr	1:05:08	587	1.0	0.3	-0.7	32	16.71
16-30-apr	2:05:08	587	1.2	0.5	-0.8	32	16.70
16-30-apr	3:05:08	587	1.4	0.8	-0.7	33	16.71
16-30-apr	4:05:08	587	1.7	1.3	-0.4	33	16.71
16-30-apr	5:05:08	587	0.7	0.7	0.0	33	16.69
16-30-apr	6:05:08	587	0.6	0.5	-0.1	33	16.72
16-30-apr	7:05:08	587	1.0	0.8	-0.2	33	16.71
16-30-apr	8:05:08	587	1.6	1.7	0.1	33	16.71
16-30-apr	9:05:08	587	2.9	3.2	0.3	34	16.74
16-30-apr	10:05:08	588	2.4	2.7	0.3	34	16.71
16-30-apr	11:05:08	588	2.8	3.0	0.1	34	16.71
16-30-apr	12:05:08	588	5.4	6.3	0.9	34	16.69
16-30-apr	13:05:08	588	5.1	6.2	1.1	34	16.68
16-30-apr	14:05:08	587	7.0	7.6	0.6	34	16.71
16-30-apr	15:05:08	587	8.1	9.4	1.4	35	16.71
16-30-apr	16:05:08	587	7.2	8.5	1.4	35	16.71
16-30-apr	17:05:08	588	6.3	7.0	0.7	35	16.72
16-30-apr	18:05:08	588	4.6	5.0	0.3	34	16.72
16-30-apr	19:05:08	588	4.3	3.8	-0.5	34	16.71
16-30-apr	20:05:08	589	3.2	2.5	-0.7	34	16.71
16-30-apr	21:05:08	589	2.9	2.1	-0.8	34	16.71
16-30-apr	22:05:08	589	2.6	1.4	-1.2	34	16.71
16-30-apr	23:05:08	588	1.8	0.6	-1.2	34	16.71



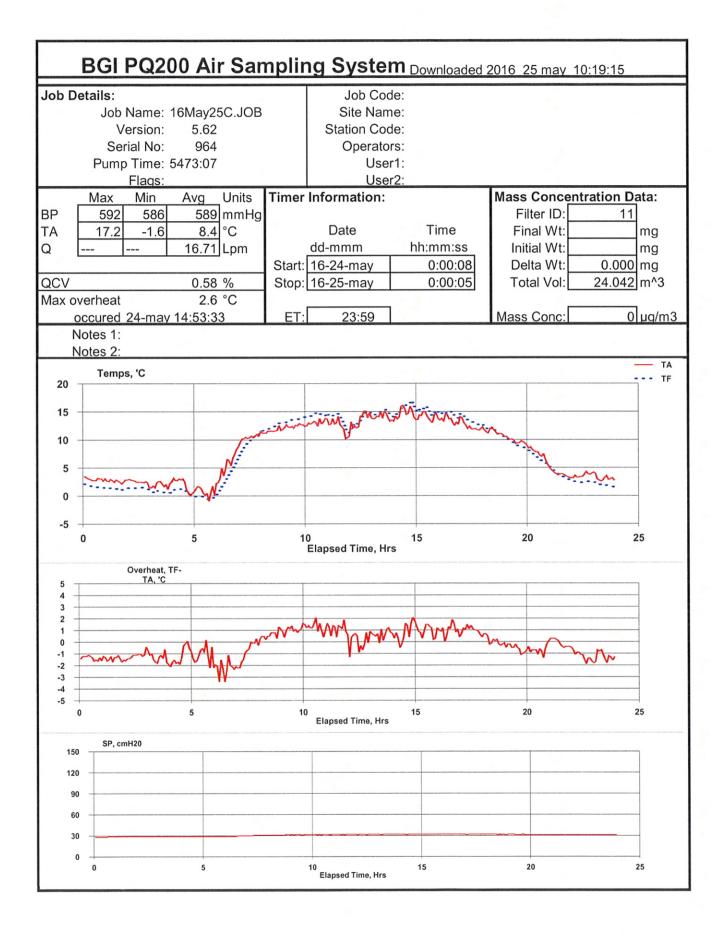
16-06-may	0:05:08	588	7.1	6.1	-1.0	29	16.71
16-06-may	1:05:08	589	8.2	6.6	-1.6	30	16.71
16-06-may	2:05:08	588	8.2	7.2	-1.1	30	16.71
16-06-may	3:05:08	588	8.3	7.2	-1.1	30	16.71
16-06-may	4:05:08	588	10.0	8.3	-1.7	30	16.72
16-06-may	5:05:08	588	9.0	8.0	-1.0	30	16.71
16-06-may	6:05:08	588	8.8	7.8	-1.0	30	16.72
16-06-may	7:05:08	588	10.0	9.3	-0.7	31	16.72
16-06-may	8:05:08	588	10.6	10.4	-0.2	31	16.71
16-06-may	9:05:08	588	12.0	12.6	0.6	31	16.71
16-06-may	10:05:08	588	13.7	14.7	1.0	32	16.71
16-06-may	11:05:08	587	14.2	15.6	1.3	32	16.69
16-06-may	12:05:08	587	12.2	13.3	1.0	32	16.70
16-06-may	13:05:08	587	11.2	11.7	0.5	31	16.72
16-06-may	14:05:08	587	10.1	9.3	-0.8	31	16.72
16-06-may	15:05:08	587	9.7	8.7	-1.0	31	16.70
16-06-may	16:05:08	587	9.7	9.1	-0.6	31	16.70
16-06-may	17:05:08	588	4.8	4.9	0.0	31	16.71
16-06-may	18:05:08	588	4.3	3.8	-0.5	31	16.72
16-06-may	19:05:08	588	3.3	2.4	-0.8	31	16.71
16-06-may	20:05:08	588	2.7	1.5	-1.2	31	16.72
16-06-may	21:05:08	588	1.2	0.4	-0.8	31	16.71
16-06-may	22:05:08	588	0.3	-0.7	-1.0	30	16.72
16-06-may	23:05:08	588	-0.1	-1.4	-1.2	30	16.71



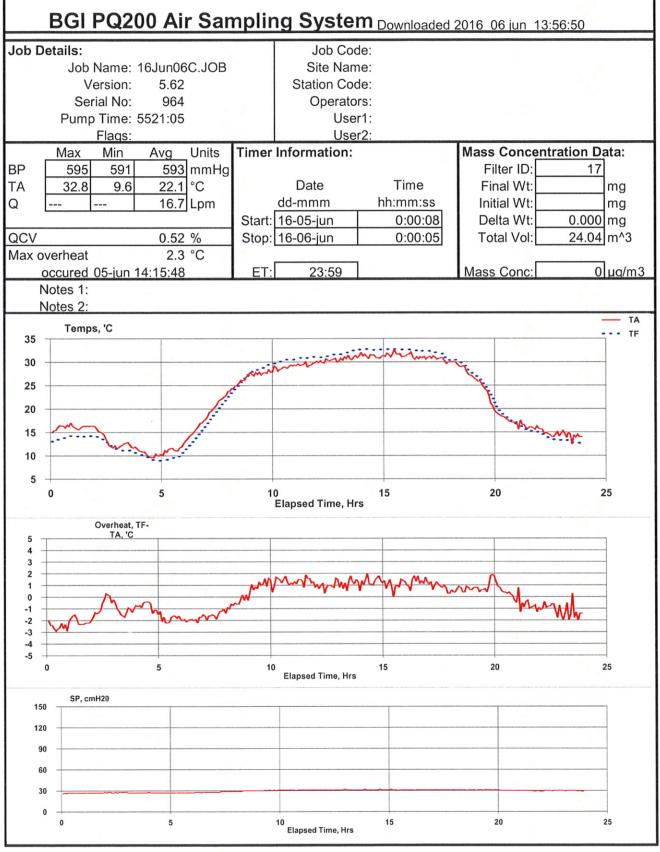
16-12-may	0:05:08	596	4.4	3.6	-0.8	28	16.71
16-12-may	1:05:08	596	2.3	1.6	-0.8	28	16.71
16-12-may	2:05:08	596	1.9	0.5	-1.3	28	16.71
16-12-may	3:05:08	597	1.2	-0.1	-1.3	28	16.71
16-12-may	4:05:08	597	1.3	-0.5	-1.8	28	16.71
16-12-may	5:05:08	597	2.2	0.2	-2.0	28	16.71
16-12-may	6:05:08	597	5.8	3.6	-2.3	29	16.73
16-12-may	7:05:08	598	10.7	9.4	-1.3	30	16.69
16-12-may	8:05:08	598	14.2	14.1	-0.1	30	16.74
16-12-may	9:05:08	598	16.0	16.8	0.7	31	16.72
16-12-may	10:05:08	598	17.3	18.3	1.0	31	16.71
16-12-may	11:05:08	598	18.0	19.4	1.4	31	16.69
16-12-may	12:05:08	597	19.2	20.4	1.2	32	16.71
16-12-may	13:05:08	597	20.2	21.5	1.2	32	16.71
16-12-may	14:05:08	597	20.9	22.6	1.6	32	16.70
16-12-may	15:05:08	596	21.2	23.1	1.9	32	16.71
16-12-may	16:05:08	596	21.5	23.1	1.6	32	16.71
16-12-may	17:05:08	596	21.2	22.3	1.2	32	16.71
16-12-may	18:05:08	596	19.5	20.4	0.9	32	16.71
16-12-may	19:05:08	596	13.6	14.5	0.9	32	16.71
16-12-may	20:05:08	596	10.2	9.8	-0.4	31	16.71
16-12-may	21:05:08	596	8.3	7.5	-0.8	31	16.71
16-12-may	22:05:08	596	7.4	6.1	-1.3	30	16.71
16-12-may	23:05:08	596	6.1	5.0	-1.1	30	16.71



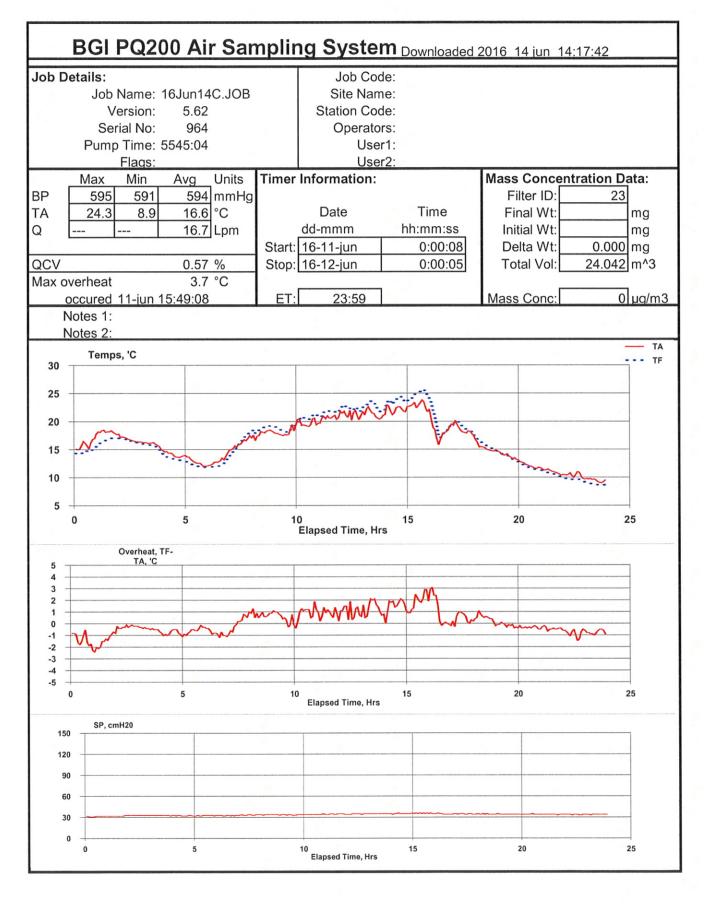
16-18-may	0:05:08	593	5.5	3.9	-1.6	30	16.70
16-18-may	1:05:08	593	4.9	3.6	-1.2	30	16.71
16-18-may	2:05:08	592	6.0	4.9	-1.1	30	16.74
16-18-may	3:05:08	593	6.1	5.5	-0.7	31	16.71
16-18-may	4:05:08	593	4.9	4.5	-0.3	31	16.72
16-18-may	5:05:08	593	4.4	3.7	-0.7	31	16.72
16-18-may	6:05:08	593	5.8	4.6	-1.2	31	16.71
16-18-may	7:05:08	593	7.8	7.1	-0.7	31	16.71
16-18-may	8:05:08	593	10.5	10.6	0.1	32	16.71
16-18-may	9:05:08	593	11.3	12.3	1.0	33	16.71
16-18-may	10:05:08	593	11.7	12.4	0.8	33	16.71
16-18-may	11:05:08	593	9.6	10.8	1.2	32	16.71
16-18-may	12:05:08	593	10.7	10.3	-0.3	32	16.71
16-18-may	13:05:08	593	13.1	13.8	0.7	33	16.70
16-18-may	14:05:08	593	13.5	14.4	0.9	33	16.69
16-18-may	15:05:08	592	13.0	13.9	0.9	33	16.70
16-18-may	16:05:08	592	13.1	13.6	0.5	33	16.72
16-18-may	17:05:08	592	13.3	13.5	0.1	32	16.71
16-18-may	18:05:08	592	12.6	12.5	-0.1	33	16.70
16-18-may	19:05:08	592	10.8	10.7	-0.1	32	16.72
16-18-may	20:05:08	593	8.7	8.7	0.0	32	16.71
16-18-may	21:05:08	593	6.6	6.5	-0.1	32	16.70
16-18-may	22:05:08	593	5.2	4.6	-0.7	32	16.71
16-18-may	23:05:08	593	4.4	3.4	-1.0	32	16.70



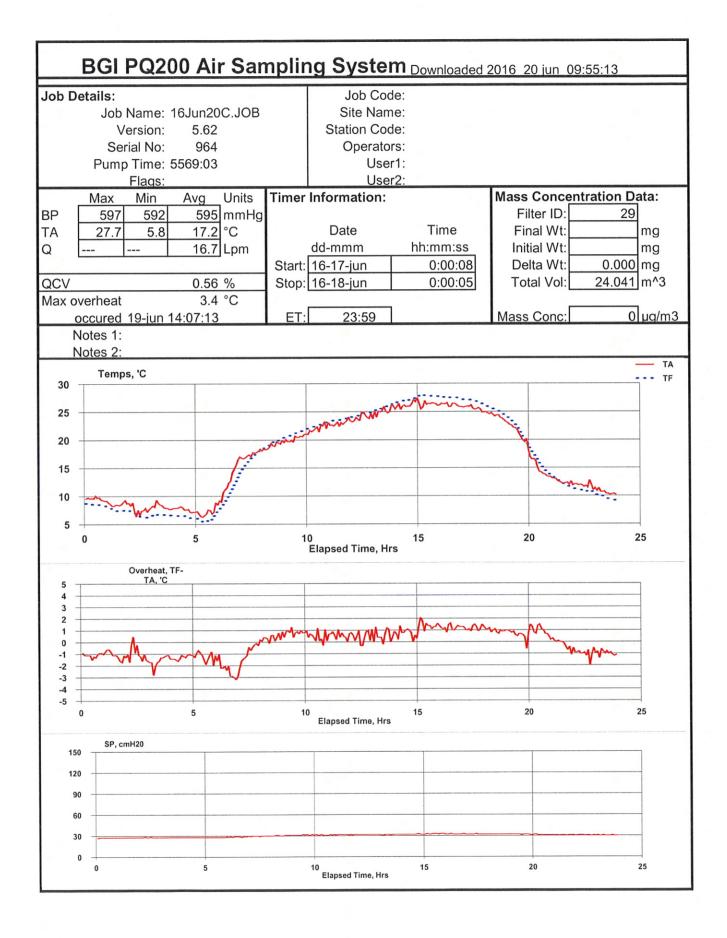
16-24-may	0:05:08	588	3.0	1.7	-1.4	28	16.72
16-24-may	1:05:08	588	2.7	1.3	-1.4	29	16.71
16-24-may	2:05:08	588	2.7	1.4	-1.1	29	16.71
the second second and the second s					-1.3		
16-24-may	3:05:08	588	2.0	0.7		29	16.71
16-24-may	4:05:08	588	2.0	0.8	-1.1	29	16.71
16-24-may	5:05:08	588	0.9	-0.2	-1.2	29	16.71
16-24-may	6:05:08	588	5.7	3.5	-2.2	30	16.71
16-24-may	7:05:08	589	10.5	9.7	-0.8	31	16.71
16-24-may	8:05:08	589	11.6	12.2	0.6	31	16.72
16-24-may	9:05:08	589	12.5	13.5	1.1	32	16.71
16-24-may	10:05:08	589	13.1	14.4	1.3	32	16.70
16-24-may	11:05:08	589	12.3	13.4	1.1	32	16.72
16-24-may	12:05:08	589	13.6	13.6	0.0	32	16.70
16-24-may	13:05:08	589	14.0	14.7	0.7	32	16.72
16-24-may	14:05:08	589	14.8	15.6	0.8	32	16.71
16-24-may	15:05:08	589	14.1	15.1	1.0	32	16.71
16-24-may	16:05:08	589	13.5	14.5	1.0	32	16.72
16-24-may	17:05:08	589	12.3	13.3	1.0	32	16.71
16-24-may	18:05:08	590	11.4	11.5	0.1	32	16.71
16-24-may	19:05:08	590	9.7	9.2	-0.6	31	16.71
16-24-may	20:05:08	590	7.3	6.7	-0.7	31	16.72
16-24-may	21:05:08	591	3.8	3.7	-0.1	31	16.72
16-24-may	22:05:08	591	3.7	2.4	-1.3	31	16.71
16-24-may	23:05:08	591	3.1	1.8	-1.2	31	16.71



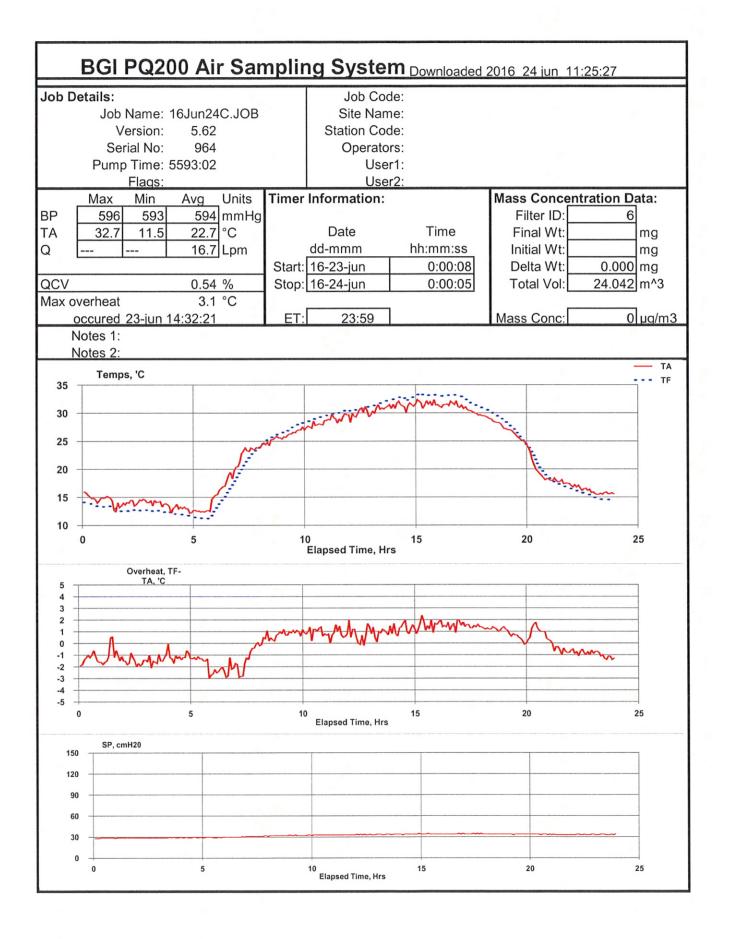
16-05-jun	0:05:08	595	16.1	13.7	-2.5	27	16.71
16-05-jun	1:05:08	595	16.2	14.1	-2.0	27	16.70
16-05-jun	2:05:08	595	13.5	12.8	-0.6	28	16.71
16-05-jun	3:05:08	595	12.1	10.9	-1.1	27	16.71
16-05-jun	4:05:08	595	10.2	9.4	-0.8	27	16.71
16-05-jun	5:05:08	595	11.4	9.5	-1.8	27	16.71
16-05-jun	6:05:08	595	15.6	13.7	-1.9	28	16.71
16-05-jun	7:05:08	595	21.2	19.7	-1.5	29	16.71
16-05-jun	8:05:08	595	25.7	25.3	-0.4	30	16.72
16-05-jun	9:05:08	595	27.7	28.8	1.1	31	16.70
16-05-jun	10:05:08	594	28.9	30.2	1.3	31	16.72
16-05-jun	11:05:08	594	29.6	30.9	1.3	31	16.71
16-05-jun	12:05:08	594	30.3	31.3	1.0	31	16.70
16-05-jun	13:05:08	593	31.0	32.2	1.1	31	16.69
16-05-jun	14:05:08	593	31.2	32.6	1.4	31	16.71
16-05-jun	15:05:08	592	31.6	32.6	1.0	31	16.72
16-05-jun	16:05:08	592	31.1	32.4	1.3	31	16.72
16-05-jun	17:05:08	591	30.6	31.5	0.9	31	16.71
16-05-jun	18:05:08	591	28.8	29.4	0.6	31	16.71
16-05-jun	19:05:08	591	24.0	24.9	1.0	31	16.71
16-05-jun	20:05:08	592	17.9	18.3	0.4	30	16.71
16-05-jun	21:05:08	592	16.2	15.5	-0.7	30	16.71
16-05-jun	22:05:08	592	14.7	13.8	-1.0	30	16.72
16-05-jun	23:05:08	592	14.2	12.9	-1.4	30	16.71



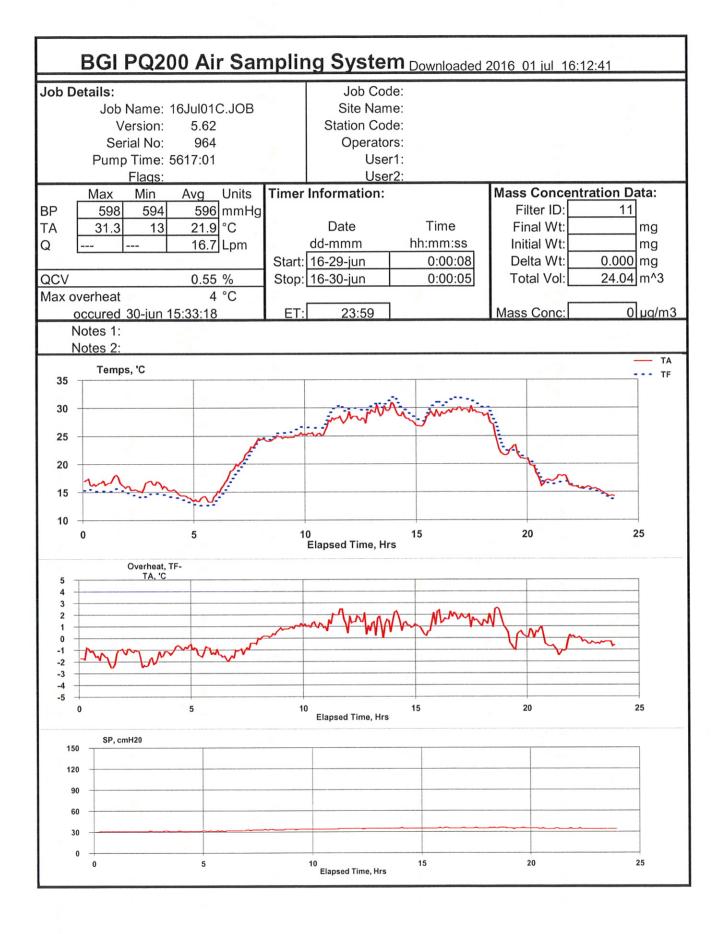
16-11-jun	0:05:08	593	16.0	14.7	-1.4	32	16.72
16-11-jun	1:05:08	594	18.1	16.7	-1.5	32	16.72
16-11-jun	2:05:08	594	16.8	16.6	-0.2	33	16.70
16-11-jun	3:05:08	594	15.9	15.5	-0.4	33	16.71
16-11-jun	4:05:08	594	14.1	13.3	-0.8	32	16.71
16-11-jun	5:05:08	594	12.7	12.2	-0.6	33	16.72
16-11-jun	6:05:08	594	13.2	12.4	-0.8	33	16.71
16-11-jun	7:05:08	594	16.2	16.3	0.1	34	16.71
16-11-jun	8:05:08	594	17.9	18.7	0.8	34	16.71
16-11-jun	9:05:08	594	18.1	18.6	0.5	34	16.71
16-11-jun	10:05:08	595	19.7	20.6	0.9	34	16.71
16-11-jun	11:05:08	594	20.7	21.6	0.8	35	16.71
16-11-jun	12:05:08	594	21.3	22.3	1.0	35	16.70
16-11-jun	13:05:08	594	21.3	22.6	1.3	35	16.71
16-11-jun	14:05:08	594	22.2	23.7	1.5	35	16.71
16-11-jun	15:05:08	594	22.8	24.7	1.9	35	16.71
16-11-jun	16:05:08	594	18.2	19.2	1.0	35	16.71
16-11-jun	17:05:08	594	18.5	18.9	0.4	35	16.71
16-11-jun	18:05:08	594	15.3	15.8	0.5	34	16.71
16-11-jun	19:05:08	594	13.8	13.7	-0.2	34	16.71
16-11-jun	20:05:08	594	12.1	11.7	-0.4	34	16.72
16-11-jun	21:05:08	594	11.0	10.6	-0.4	34	16.71
16-11-jun	22:05:08	594	10.4	9.5	-0.8	34	16.71
16-11-jun	23:05:08	594	9.5	8.7	-0.8	34	16.71



16-17-jun	0:05:08	595	9.6	8.5	-1.1	28	16.71
16-17-jun	1:05:08	595	8.7	7.6	-1.1	28	16.71
16-17-jun	2:05:08	595	7.6	6.6	-1.0	28	16.71
16-17-jun	3:05:08	595	8.2	6.6	-1.6	28	16.71
16-17-jun	4:05:08	595	7.6	6.4	-1.3	28	16.71
16-17-jun	5:05:08	595	7.2	6.0	-1.2	28	16.71
16-17-jun	6:05:08	596	12.9	10.6	-2.4	29	16.71
16-17-jun	7:05:08	596	17.5	16.7	-0.8	30	16.71
16-17-jun	8:05:08	596	19.1	19.5	0.4	31	16.71
16-17-jun	9:05:08	596	20.4	21.2	0.8	31	16.71
16-17-jun	10:05:08	596	22.1	22.6	0.5	31	16.72
16-17-jun	11:05:08	596	23.0	23.6	0.6	32	16.71
16-17-jun	12:05:08	596	24.0	24.5	0.5	32	16.71
16-17-jun	13:05:08	596	25.3	25.8	0.5	32	16.70
16-17-jun	14:05:08	596	26.3	27.0	0.7	32	16.71
16-17-jun	15:05:08	596	26.3	27.8	1.4	33	16.70
16-17-jun	16:05:08	595	26.2	27.5	1.2	32	16.71
16-17-jun	17:05:08	595	25.6	26.8	1.2	32	16.70
16-17-jun	18:05:08	595	24.3	25.2	1.0	32	16.71
16-17-jun	19:05:08	596	21.2	21.8	0.6	32	16.70
16-17-jun	20:05:08	596	14.8	15.8	0.9	31	16.71
16-17-jun	21:05:08	596	12.5	12.3	-0.2	31	16.70
16-17-jun	22:05:08	597	11.8	10.8	-1.0	31	16.71
16-17-jun	23:05:08	597	10.6	9.6	-1.0	30	16.71



16-23-jun	0:05:08	595	15.0	13.7	-1.3	29	16.71
16-23-jun	1:05:08	595	13.9	13.0	-1.0	29	16.72
16-23-jun	2:05:08	595	14.2	12.7	-1.6	29	16.71
16-23-jun	3:05:08	595	13.8	12.5	-1.3	29	16.71
16-23-jun	4:05:08	595	13.0	11.8	-1.2	29	16.71
16-23-jun	5:05:08	595	13.2	11.5	-1.7	30	16.71
16-23-jun	6:05:08	596	18.2	15.9	-2.2	30	16.71
16-23-jun	7:05:08	596	23.3	22.0	-1.3	31	16.70
16-23-jun	8:05:08	596	25.1	25.6	0.5	32	16.72
16-23-jun	9:05:08	596	26.6	27.5	0.9	32	16.72
16-23-jun	10:05:08	596	28.0	29.0	1.0	33	16.71
16-23-jun	11:05:08	596	29.2	30.0	0.8	33	16.71
16-23-jun	12:05:08	595	30.0	30.7	0.8	33	16.71
16-23-jun	13:05:08	595	30.9	31.8	0.9	34	16.71
16-23-jun	14:05:08	595	31.3	32.6	1.3	34	16.70
16-23-jun	15:05:08	594	31.7	33.2	1.5	34	16.72
16-23-jun	16:05:08	594	31.5	33.1	1.6	34	16.70
16-23-jun	17:05:08	594	30.3	31.8	1.5	34	16.71
16-23-jun	18:05:08	594	28.5	29.8	1.2	34	16.70
16-23-jun	19:05:08	594	26.0	26.5	0.6	34	16.71
16-23-jun	20:05:08	594	20.0	21.0	1.0	34	16.71
16-23-jun	21:05:08	594	17.7	17.2	-0.5	33	16.70
16-23-jun	22:05:08	595	16.5	15.7	-0.8	33	16.71
16-23-jun	23:05:08	595	15.6	14.6	-1.1	33	16.71



35. 8

16-29-jun	0:05:08	597	16.7	15.3	-1.4	31	16.71
16-29-jun	1:05:08	597	16.8	15.2	-1.6	31	16.71
16-29-jun	2:05:08	597	15.8	14.3	-1.5	31	16.71
16-29-jun	3:05:08	596	16.1	14.5	-1.6	31	16.72
16-29-jun	4:05:08	597	14.4	13.6	-0.8	31	16.71
16-29-jun	5:05:08	597	13.8	12.7	-1.1	31	16.72
16-29-jun	6:05:08	597	17.6	16.1	-1.5	32	16.71
16-29-jun	7:05:08	597	22.5	21.8	-0.7	33	16.71
16-29-jun	8:05:08	597	24.5	24.8	0.3	34	16.70
16-29-jun	9:05:08	597	25.0	26.0	0.9	34	16.70
16-29-jun	10:05:08	597	25.5	26.6	1.1	34	16.70
16-29-jun	11:05:08	597	28.1	29.7	1.6	35	16.72
16-29-jun	12:05:08	597	28.4	29.8	1.4	35	16.70
16-29-jun	13:05:08	596	29.7	30.9	1.2	35	16.73
16-29-jun	14:05:08	595	28.3	29.7	1.4	35	16.71
16-29-jun	15:05:08	595	28.1	29.1	1.0	35	16.70
16-29-jun	16:05:08	595	29.4	31.2	1.8	35	16.71
16-29-jun	17:05:08	594	29.5	31.1	1.6	35	16.71
16-29-jun	18:05:08	595	25.5	27.2	1.7	36	16.71
16-29-jun	19:05:08	595	21.9	21.9	0.0	35	16.71
16-29-jun	20:05:08	596	18.1	18.3	0.2	34	16.71
16-29-jun	21:05:08	596	17.3	16.6	-0.7	34	16.72
16-29-jun	22:05:08	596	15.8	15.6	-0.2	34	16.70
16-29-jun	23:05:08	596	14.8	14.4	-0.4	34	16.71

Compliance Monitor 2366D

# **PM<sub>10</sub> Sampler Summary**

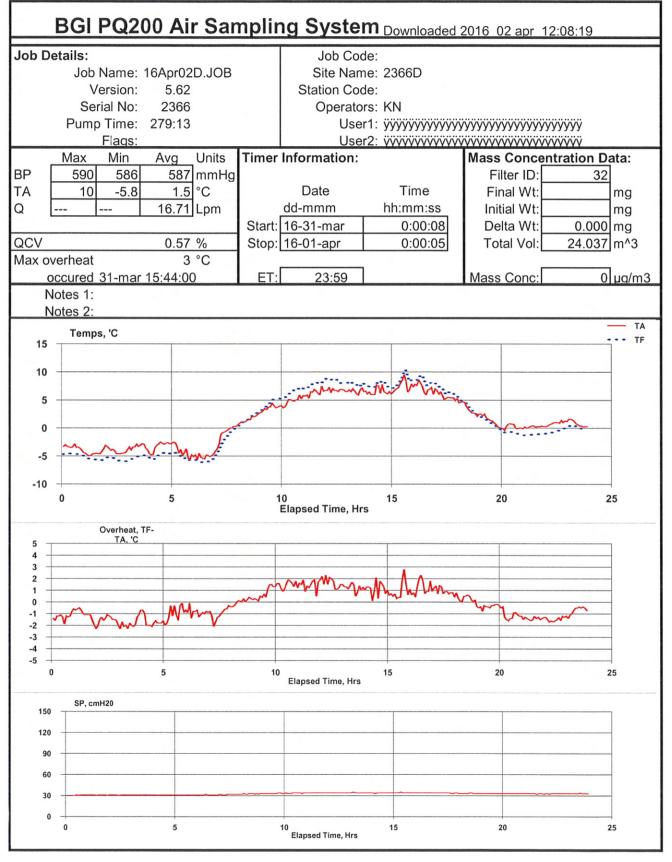
### April 1, 2016 - June 30, 2016

### Network: Alton Coal Development

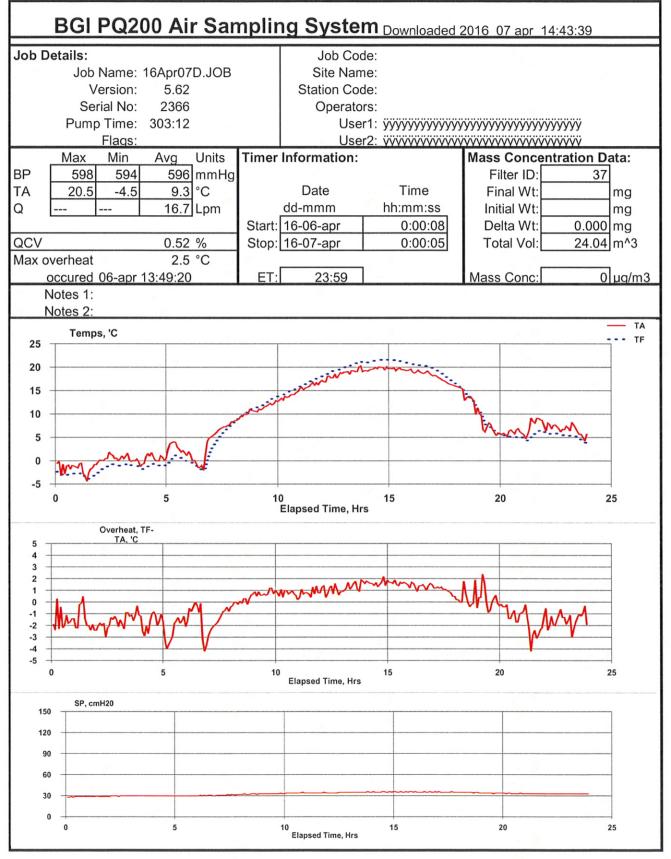
Site: Coal Hollow Sampler ID: Coal Hollow-D Sampler Type: BGI FRM Single

### AQS ID:

	Filter	Concentration (µg/m3)	Concentration (µg/m3)	Sample Period	Sample Volume	Std Volume		Mass (mg)			
Date	ID	LTP	STP	(hr:min)	(m3)	(m3)	Tare	Gross	Net	Flag	Comments
04/06/16	P2929005	7.0	8.4	23:59	24.0	19.9	374.089	374.258	0.169		
04/12/16	P2929226	6.4	7.7	23:59	24.0	19.9	364.393	364.547	0.154		
04/18/16	P2929231	9.0	10.7	23:59	24.0	20.1	371.365	371.582	0.217	HT	
04/24/16	P2929390	5.1	6.2	23:59	24.0	19.7	387.186	387.310	0.124		
04/30/16	P2929395	1.5	1.9	23:59	24.0	20.0	392.002	392.040	0.038	HT	
05/06/16	P2929400	28.2	34.4	23:59	24.0	19.7	395.729	396.409	0.680	HT	
05/12/16	P2929633	59.9	73.3	23:59	24.0	19.6	369.264	370.706	1.442		
05/18/16	P2929818	Invalid - AG	Invalid - AG	53:03	53.1	43.2	371.898	373.464	1.566	SP,CI,HT	
05/24/16	P2929629	20.3	24.8	23:59	24.0	19.7	366.491	366.980	0.489		
05/30/16	P2929638	8.5	10.5	23:59	24.0	19.5	375.664	375.870	0.206	XT,HT	
06/05/16	P2930156	Invalid - AG	Invalid - AG	38:25	38.5	30.3	373.362	374.717	1.355	SP,CI	
06/11/16	P2930162	19.8	24.7	23:59	24.0	19.3	369.721	370.197	0.476	HT	
06/17/16	P2930168	58.4	72.8	23:59	24.0	19.3	373.801	375.207	1.406	HT	
06/23/16	P2930505	96.0	122.0	23:59	24.0	18.9	367.137	369.444	2.307		
06/29/16	P2930510	62.2	78.6	23:59	24.0	19.0	371.981	373.477	1.496		Filter darker
05/31/16	P2930155		Field Bla	ink			373.813	373.829	0.016		
	# Valid	Recovery	Average	St. Dev.	Max	Min					
	13	87%	36.6	37.8	122.0	1.9					

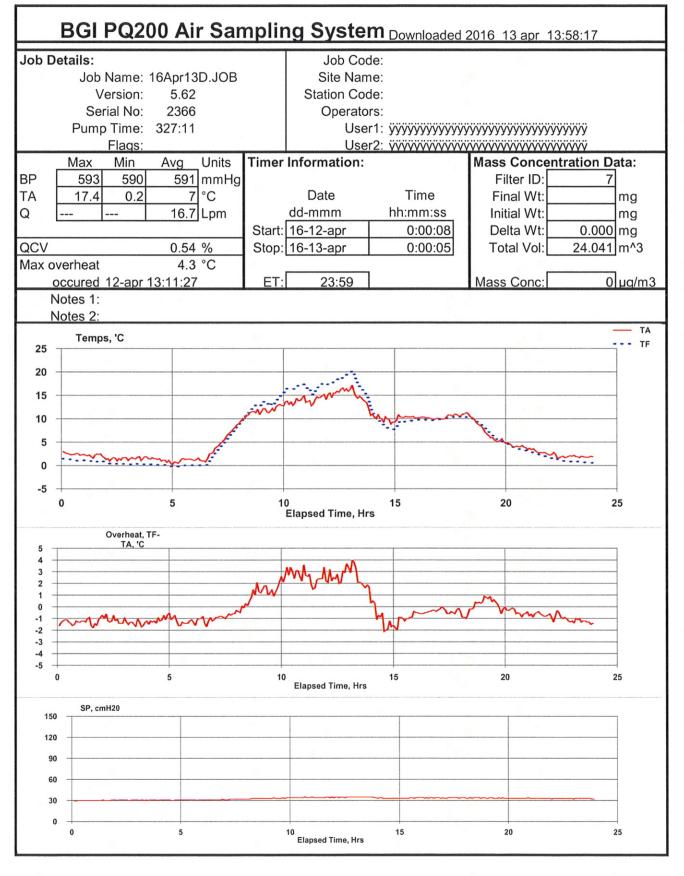


16-31-mar	0:05:08	588	-3.5	-4.7	-1.2	31	16.73
16-31-mar	1:05:08	588	-4.4	-5.6	-1.2	31	16.73
16-31-mar	2:05:08	588	-4.2	-5.7	-1.5	31	16.73
16-31-mar	3:05:08	587	-3.4	-5.2	-1.8	31	16.71
16-31-mar	4:05:08	587	-3.2	-4.9	-1.7	31	16.72
16-31-mar	5:05:08	587	-4.2	-5.2	-1.0	31	16.71
16-31-mar	6:05:08	587	-5.0	-5.9	-0.9	31	16.72
16-31-mar	7:05:08	587	-0.7	-1.7	-1.0	32	16.72
16-31-mar	8:05:08	587	1.6	1.7	0.1	33	16.72
16-31-mar	9:05:08	587	3.7	4.4	0.8	33	16.72
16-31-mar	10:05:08	587	4.9	6.4	1.5	34	16.71
16-31-mar	11:05:08	587	6.4	7.8	1.5	34	16.73
16-31-mar	12:05:08	587	6.7	8.4	1.7	34	16.71
16-31-mar	13:05:08	587	6.5	7.7	1.2	34	16.74
16-31-mar	14:05:08	587	6.6	7.7	1.1	34	16.72
16-31-mar	15:05:08	587	7.5	8.5	1.0	34	16.72
16-31-mar	16:05:08	587	7.1	8.3	1.2	34	16.71
16-31-mar	17:05:08	587	5.6	6.5	0.9	34	16.71
16-31-mar	18:05:08	587	3.4	3.7	0.3	33	16.73
16-31-mar	19:05:08	588	1.3	0.9	-0.4	33	16.71
16-31-mar	20:05:08	588	0.2	-0.9	-1.1	33	16.72
16-31-mar	21:05:08	589	0.3	-1.2	-1.4	33	16.71
16-31-mar	22:05:08	589	0.9	-0.5	-1.5	33	16.73
16-31-mar	23:05:08	589	0.8	0.1	-0.7	33	16.71

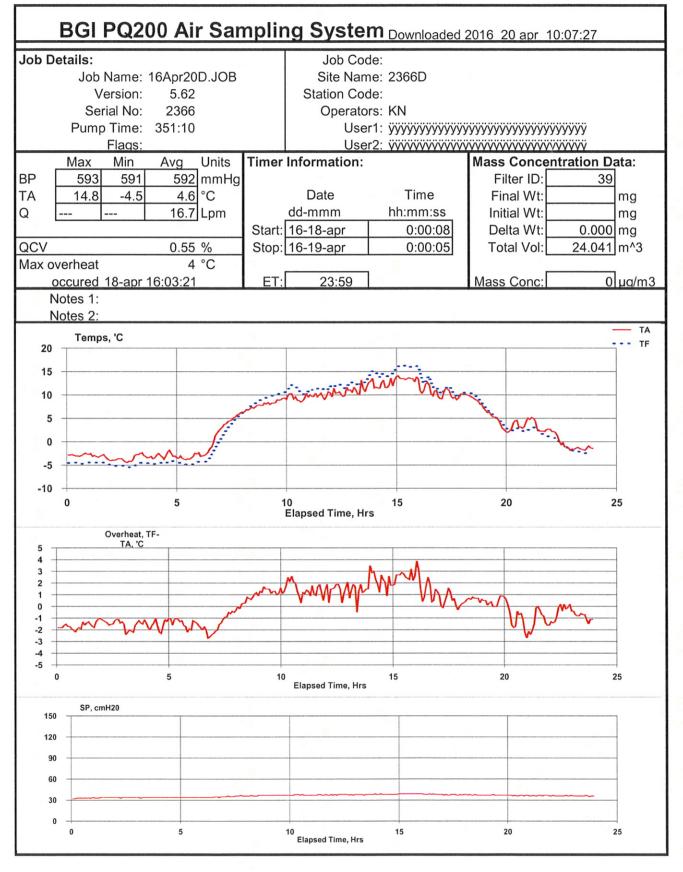


С.

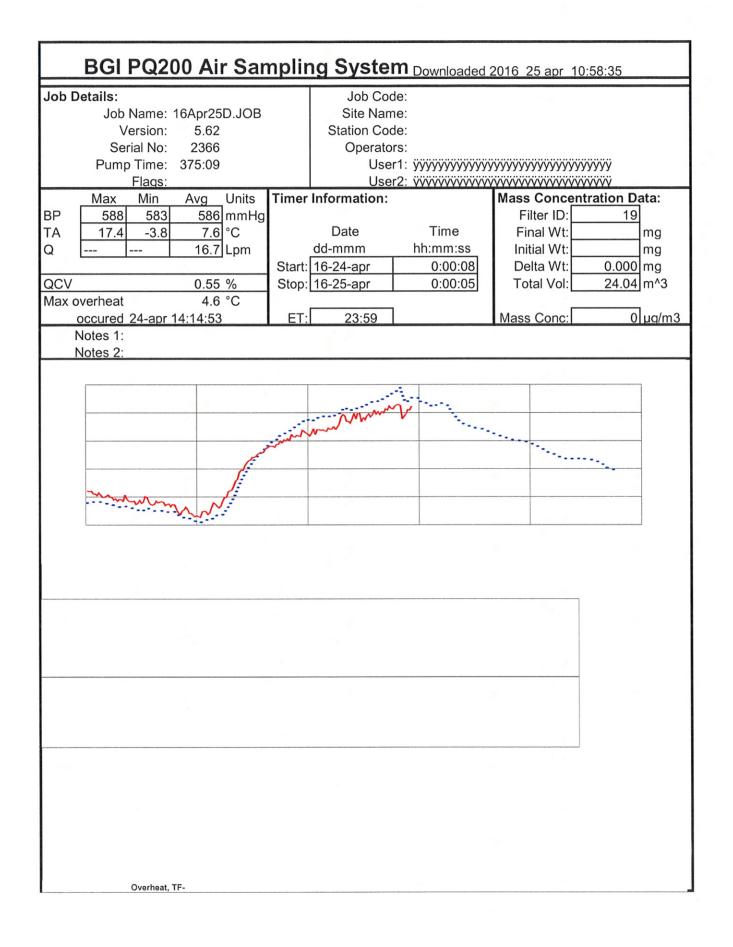
16-06-apr	0:05:08	598	-1.3	-2.9	-1.5	29	16.71
16-06-apr	1:05:08	597	-1.6	-3.1	-1.6	29	16.71
16-06-apr	2:05:08	597	0.7	-1.2	-1.9	30	16.71
16-06-apr	3:05:08	597	0.1	-1.2	-1.3	30	16.71
16-06-apr	4:05:08	597	0.7	-1.0	-1.7	30	16.70
16-06-apr	5:05:08	597	2.7	0.4	-2.4	30	16.71
16-06-apr	6:05:08	598	0.9	-0.7	-1.6	31	16.73
16-06-apr	7:05:08	598	7.0	5.7	-1.3	32	16.71
16-06-apr	8:05:08	597	9.9	10.0	0.1	33	16.71
16-06-apr	9:05:08	597	11.8	12.6	0.8	33	16.71
16-06-apr	10:05:08	597	14.0	14.7	0.7	34	16.71
16-06-apr	11:05:08	597	16.2	17.0	0.8	34	16.71
16-06-apr	12:05:08	596	18.1	19.1	1.0	35	16.71
16-06-apr	13:05:08	596	19.3	20.7	1.4	35	16.71
16-06-apr	14:05:08	595	19.8	21.4	1.7	35	16.71
16-06-apr	15:05:08	595	19.6	21.2	1.6	36	16.70
16-06-apr	16:05:08	594	18.9	20.2	1.4	35	16.70
16-06-apr	17:05:08	594	17.1	18.1	1.0	35	16.71
16-06-apr	18:05:08	594	13.7	14.0	0.3	35	16.71
16-06-apr	19:05:08	595	7.2	7.5	0.3	34	16.71
16-06-apr	20:05:08	595	6.1	5.2	-0.9	33	16.72
16-06-apr	21:05:08	595	7.6	5.5	-2.2	33	16.70
16-06-apr	22:05:08	595	7.1	5.7	-1.5	33	16.71
16-06-apr	23:05:08	595	6.3	4.8	-1.5	33	16.70



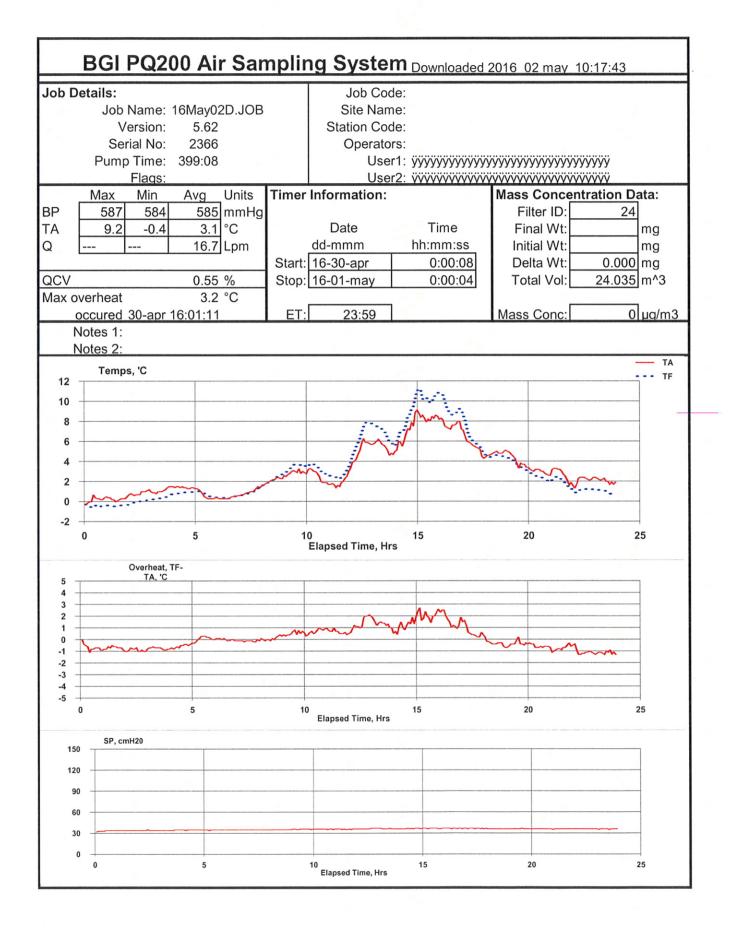
16-12-apr	0:05:08	592	2.5	1.2	-1.3	30	16.71
16-12-apr	1:05:08	592	2.1	0.8	-1.2	30	16.71
16-12-apr	2:05:08	592	1.4	0.3	-1.1	31	16.71
16-12-apr	3:05:08	592	1.6	0.2	-1.4	31	16.71
16-12-apr	4:05:08	591	1.1	0.1	-1.1	31	16.71
16-12-apr	5:05:08	591	1.1	-0.1	-1.2	31	16.70
16-12-apr	6:05:08	592	2.0	0.8	-1.2	31	16.71
16-12-apr	7:05:08	592	6.7	6.0	-0.7	32	16.71
16-12-apr	8:05:08	592	11.0	11.5	0.6	33	16.70
16-12-apr	9:05:08	592	12.2	13.8	1.5	33	16.71
16-12-apr	10:05:08	592	13.8	16.7	2.9	34	16.72
16-12-apr	11:05:08	591	14.2	16.6	2.4	34	16.71
16-12-apr	12:05:08	591	15.9	18.6	2.7	35	16.71
16-12-apr	13:05:08	591	13.9	16.2	2.3	35	16.71
16-12-apr	14:05:08	592	9.9	8.8	-1.1	33	16.71
16-12-apr	15:05:08	591	10.3	9.3	-1.0	34	16.71
16-12-apr	16:05:08	591	10.1	9.7	-0.5	34	16.71
16-12-apr	17:05:08	591	10.5	10.2	-0.3	34	16.71
16-12-apr	18:05:08	591	9.8	9.6	-0.2	34	16.71
16-12-apr	19:05:08	592	5.7	6.1	0.3	33	16.71
16-12-apr	20:05:08	592	4.1	3.7	-0.4	33	16.71
16-12-apr	21:05:08	592	2.9	2.3	-0.7	33	16.71
16-12-apr	22:05:08	592	2.0	1.1	-0.9	33	16.71
16-12-apr	23:05:08	592	1.9	0.7	-1.2	33	16.69



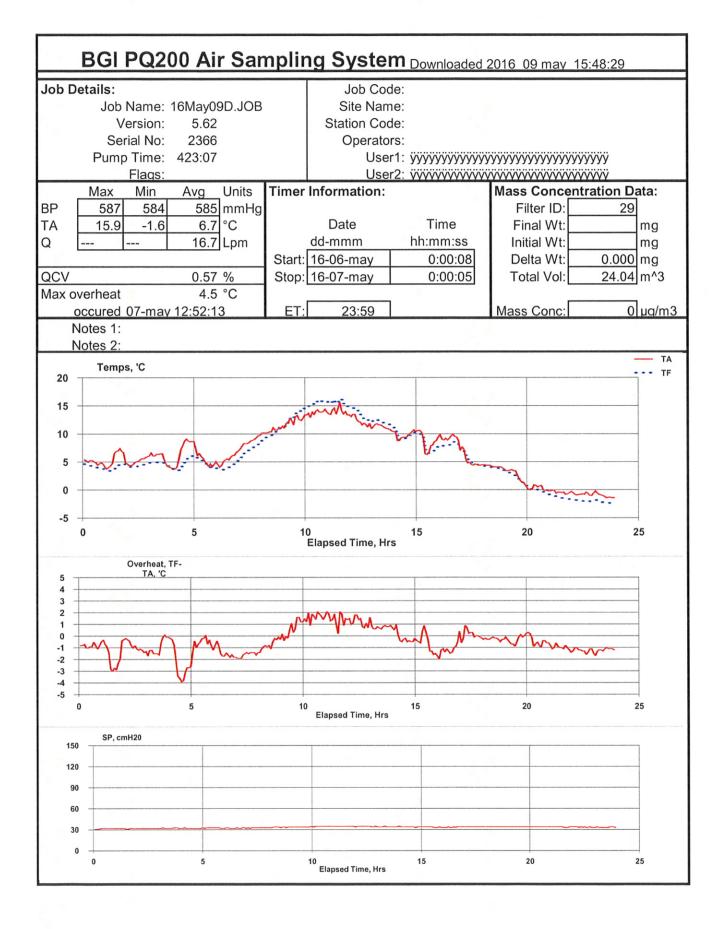
16-18-apr	0:05:08	593	-2.8	-4.6	-1.8	33	16.71
16-18-apr	1:05:08	593	-3.2	-4.6	-1.4	34	16.71
16-18-apr	2:05:08	593	-3.9	-5.3	-1.3	34	16.71
16-18-apr	3:05:08	593	-3.0	-4.7	-1.7	34	16.71
16-18-apr	4:05:08	593	-2.9	-4.4	-1.6	34	16.71
16-18-apr	5:05:08	593	-3.2	-4.7	-1.5	34	16.71
16-18-apr	6:05:08	593	-0.7	-2.6	-1.9	34	16.71
16-18-apr	7:05:08	593	5.0	3.9	-1.0	36	16.71
16-18-apr	8:05:08	593	7.4	8.0	0.6	37	16.72
16-18-apr	9:05:08	593	8.7	10.0	1.3	37	16.70
16-18-apr	10:05:08	593	9.5	11.1	1.6	37	16.71
16-18-apr	11:05:08	593	10.0	11.2	1.3	37	16.71
16-18-apr	12:05:08	592	10.6	12.0	1.4	38	16.71
16-18-apr	13:05:08	592	11.8	13.2	1.5	38	16.71
16-18-apr	14:05:08	592	12.4	14.5	2.1	38	16.71
16-18-apr	15:05:08	592	13.5	16.1	2.6	39	16.72
16-18-apr	16:05:08	592	10.8	12.5	1.6	38	16.72
16-18-apr	17:05:08	592	10.1	10.6	0.5	38	16.71
16-18-apr	18:05:08	592	9.1	9.6	0.5	37	16.71
16-18-apr	19:05:08	592	4.7	5.1	0.4	37	16.71
16-18-apr	20:05:08	592	3.5	2.5	-1.1	37	16.72
16-18-apr	21:05:08	593	3.3	2.1	-1.2	37	16.71
16-18-apr	22:05:08	593	0.0	-0.4	-0.5	36	16.71
16-18-apr	23:05:08	593	-1.4	-2.3	-0.9	36	16.70



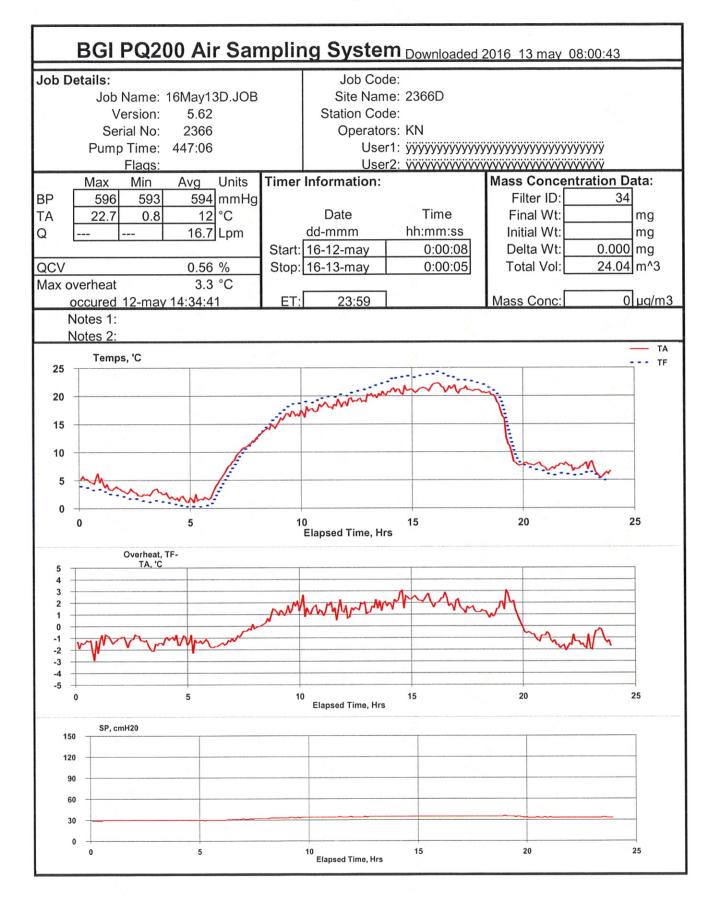
16-24-apr	0:05:08	588	0.5	-1.0	-1.6	38	16.71
16-24-apr	1:05:08	588	-0.4	-1.7	-1.3	39	16.71
16-24-apr	2:05:08	588	-0.8	-2.2	-1.4	39	16.71
16-24-apr	3:05:08	588	-1.2	-2.6	-1.4	39	16.71
16-24-apr	4:05:08	588	-2.7	-3.8	-1.0	39	16.71
16-24-apr	5:05:08	588	-2.4	-4.0	-1.6	39	16.71
16-24-apr	6:05:08	588	1.5	-0.7	-2.3	40	16.71
16-24-apr	7:05:08	588	6.9	6.1	-0.7	41	16.71
16-24-apr	8:05:08	588	9.3	10.2	0.8	42	16.71
16-24-apr	9:05:08	587	11.0	12.7	1.7	42	16.70
16-24-apr	10:05:08	587	11.8	14.0	2.2	43	16.72
16-24-apr	11:05:08	587	13.3	15.1	1.8	43	16.71
16-24-apr	12:05:08	586	14.5	16.3	1.8	44	16.71
16-24-apr	13:05:08	586	15.5	17.8	2.3	44	16.70
16-24-apr	14:05:08	585	15.4	17.8	2.4	44	16.72
16-24-apr	15:05:08	585	14.8	16.5	1.8	44	16.71
16-24-apr	16:05:08	585	13.5	14.9	1.4	43	16.70
16-24-apr	17:05:08	585	12.0	12.3	0.3	43	16.70
16-24-apr	18:05:08	585	11.0	11.0	0.0	43	16.72
16-24-apr	19:05:08	585	10.2	10.0	-0.3	43	16.71
16-24-apr	20:05:08	585	8.4	8.6	0.2	43	16.70
16-24-apr	21:05:08	585	7.1	7.0	-0.2	42	16.71
16-24-apr	22:05:08	584	7.0	6.6	-0.3	42	16.71
16-24-apr	23:05:08	583	5.6	5.3	-0.3	42	16.71



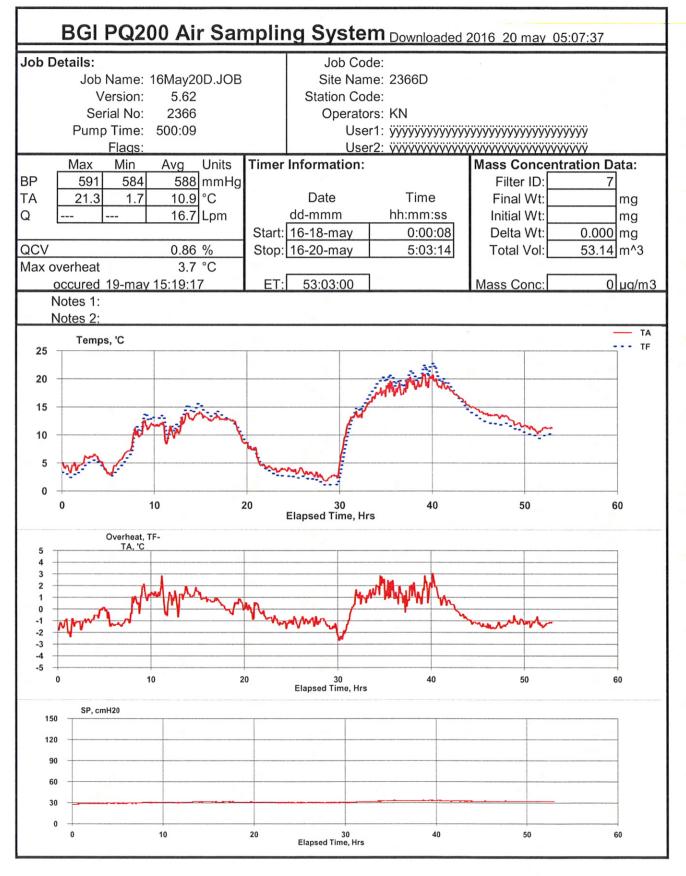
16-30-apr	0:05:08	585	0.2	-0.5	-0.7	34	16.71
16-30-apr	1:05:08	585	0.3	-0.4	-0.7	34	16.70
16-30-apr	2:05:08	585	0.9	0.0	-0.9	34	16.71
16-30-apr	3:05:08	585	1.2	0.4	-0.8	34	16.70
16-30-apr	4:05:08	585	1.4	0.9	-0.5	35	16.71
16-30-apr	5:05:08	585	0.6	0.7	0.1	35	16.71
16-30-apr	6:05:08	585	0.4	0.4	0.0	35	16.71
16-30-apr	7:05:08	585	1.1	1.0	-0.1	35	16.72
16-30-apr	8:05:08	585	2.2	2.3	0.1	35	16.71
16-30-apr	9:05:08	586	2.9	3.4	0.5	36	16.69
16-30-apr	10:05:08	586	2.5	3.2	0.7	36	16.75
16-30-apr	11:05:08	586	2.1	2.7	0.6	36	16.71
16-30-apr	12:05:08	585	5.3	6.7	1.4	36	16.72
16-30-apr	13:05:08	585	5.4	6.7	1.3	36	16.68
16-30-apr	14:05:08	585	6.9	8.2	1.2	37	16.69
16-30-apr	15:05:08	585	8.4	10.4	2.1	37	16.71
16-30-apr	16:05:08	585	7.7	9.3	1.7	37	16.70
16-30-apr	17:05:08	586	5.6	6.3	0.7	37	16.73
16-30-apr	18:05:08	586	4.8	4.5	-0.3	36	16.71
16-30-apr	19:05:08	586	4.0	3.7	-0.4	36	16.71
16-30-apr	20:05:08	587	3.0	2.4	-0.6	36	16.70
16-30-apr	21:05:08	587	2.6	1.9	-0.7	36	16.71
16-30-apr	22:05:08	587	2.2	1.1	-1.1	36	16.71
16-30-apr	23:05:08	586	2.0	0.9	-1.1	36	16.72



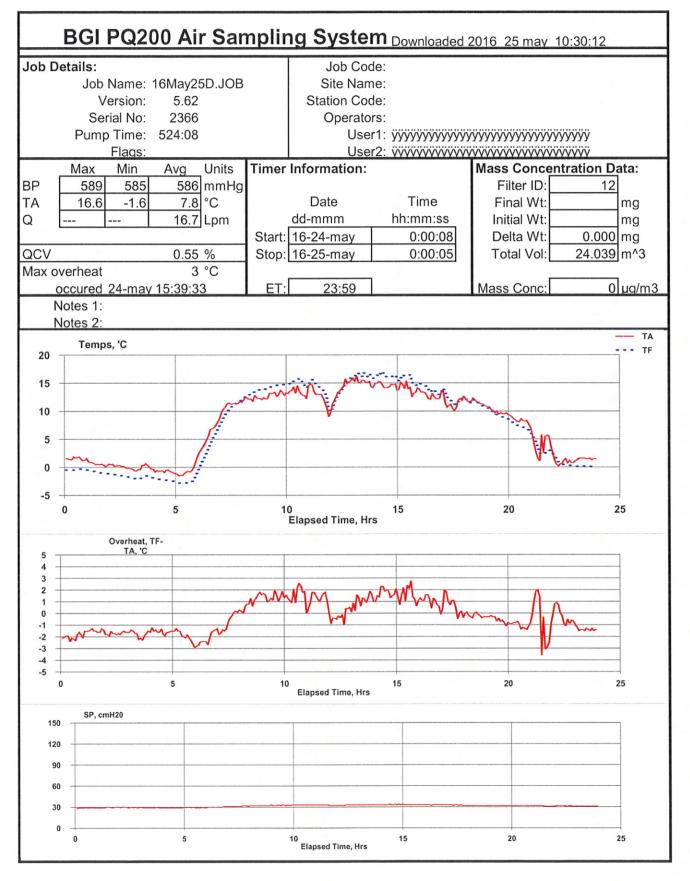
16-06-may	0:05:08	586	4.9	4.1	-0.8	32	16.71
16-06-may	1:05:08	586	5.7	4.0	-1.6	32	16.71
16-06-may	2:05:08	586	5.2	4.3	-0.9	32	16.70
16-06-may	3:05:08	586	5.6	4.7	-0.9	32	16.71
16-06-may	4:05:08	586	7.1	4.7	-2.4	32	16.71
16-06-may	5:05:08	586	5.4	4.8	-0.6	33	16.72
16-06-may	6:05:08	586	5.6	4.1	-1.4	32	16.71
16-06-may	7:05:08	586	8.7	7.1	-1.6	33	16.71
16-06-may	8:05:08	586	10.6	9.9	-0.7	34	16.71
16-06-may	9:05:08	586	12.4	13.1	0.6	34	16.71
16-06-may	10:05:08	585	13.8	15.4	1.6	35	16.71
16-06-may	11:05:08	585	14.0	15.5	1.5	35	16.69
16-06-may	12:05:08	585	12.2	13.4	1.3	35	16.72
16-06-may	13:05:08	585	11.2	11.9	0.7	34	16.71
16-06-may	14:05:08	585	9.7	9.6	-0.2	34	16.71
16-06-may	15:05:08	585	8.6	7.9	-0.6	34	16.71
16-06-may	16:05:08	584	9.1	8.0	-1.1	34	16.71
16-06-may	17:05:08	586	5.1	5.2	0.1	34	16.72
16-06-may	18:05:08	586	4.2	3.9	-0.3	34	16.71
16-06-may	19:05:08	586	2.5	2.2	-0.3	34	16.71
16-06-may	20:05:08	586	0.3	-0.2	-0.5	34	16.70
16-06-may	21:05:08	586	-0.4	-1.4	-1.0	34	16.71
16-06-may	22:05:08	586	-0.7	-2.0	-1.3	33	16.71
16-06-may	23:05:08	586	-1.0	-2.3	-1.2	33	16.72



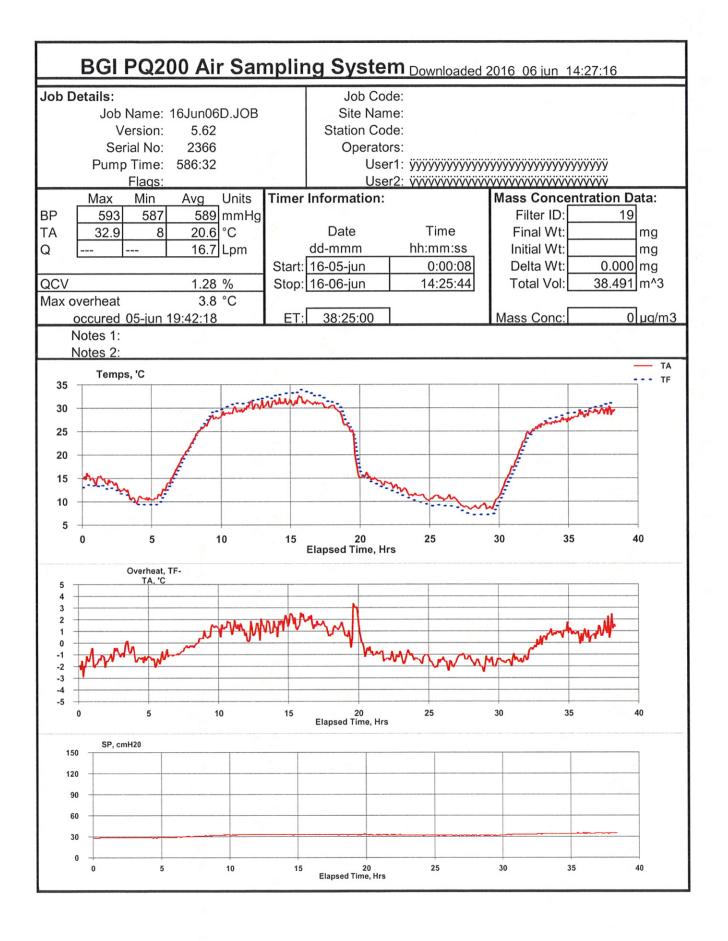
16-12-may	0:05:08	594	5.2	3.5	-1.6	30	16.71
16-12-may	1:05:08	594	3.6	2.5	-1.1	30	16.71
16-12-may	2:05:08	594	2.7	1.6	-1.1	30	16.71
16-12-may	3:05:08	595	2.8	1.2	-1.6	30	16.72
16-12-may	4:05:08	595	1.7	0.6	-1.1	30	16.71
16-12-may	5:05:08	595	1.8	0.4	-1.4	30	16.72
16-12-may	6:05:08	595	6.2	4.7	-1.5	31	16.72
16-12-may	7:05:08	595	11.0	10.5	-0.5	32	16.70
16-12-may	8:05:08	595	14.2	14.8	0.6	33	16.70
16-12-may	9:05:08	595	16.7	18.1	1.4	34	16.71
16-12-may	10:05:08	595	17.6	19.1	1.5	34	16.70
16-12-may	11:05:08	595	18.5	20.0	1.5	34	16.71
16-12-may	12:05:08	594	19.3	20.8	1.5	34	16.72
16-12-may	13:05:08	594	20.3	22.0	1.7	35	16.71
16-12-may	14:05:08	594	21.1	23.3	2.3	35	16.70
16-12-may	15:05:08	593	21.3	23.6	2.3	35	16.71
16-12-may	16:05:08	593	21.6	23.7	2.1	35	16.71
16-12-may	17:05:08	593	21.1	22.6	1.5	35	16.71
16-12-may	18:05:08	593	19.9	21.2	1.2	35	16.71
16-12-may	19:05:08	593	10.4	12.0	1.6	35	16.71
16-12-may	20:05:08	594	7.8	7.0	-0.8	33	16.71
16-12-may	21:05:08	594	7.4	6.0	-1.4	33	16.71
16-12-may	22:05:08	594	7.4	6.0	-1.4	33	16.71
16-12-may	23:05:08	594	6.4	5.4	-1.0	33	16.71



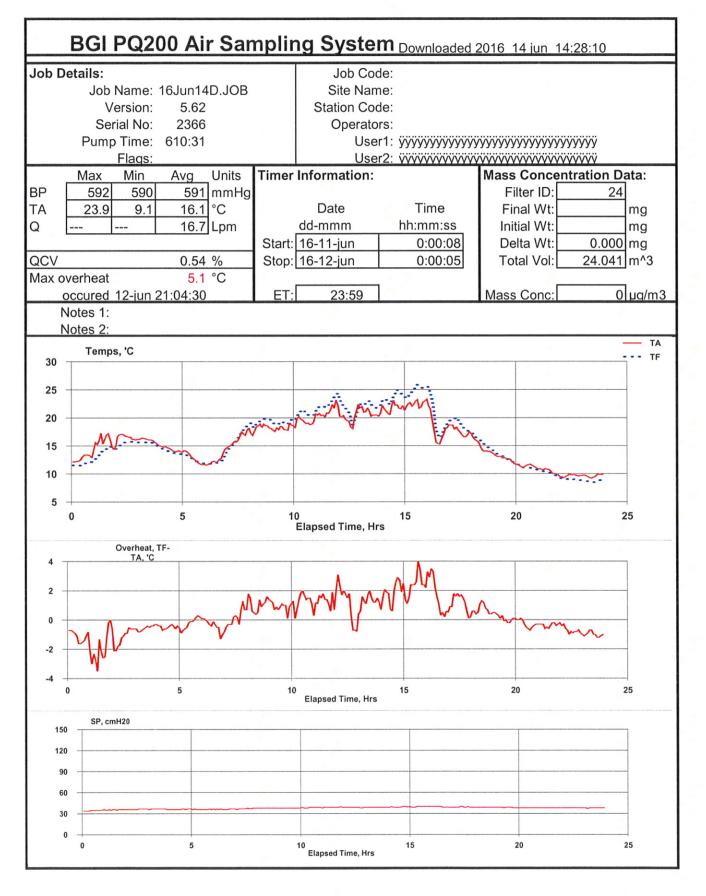
16-18-may	0:05:08	591	4.2	2.9	-1.3	28	16.71
16-18-may	1:05:08	591	4.5	3.0	-1.5	29	16.71
16-18-may	2:05:08	591	5.7	4.5	-1.2	29	16.72
16-18-may	3:05:08	590	6.2	5.3	-0.9	29	16.71
16-18-may	4:05:08	591	4.3	4.1	-0.2	30	16.70
16-18-may	5:05:08	591	3.9	3.0	-0.8	29	16.71
16-18-may	6:05:08	591	6.0	4.7	-1.3	30	16.71
16-18-may	7:05:08	591	8.6	7.9	-0.7	30	16.71
16-18-may	8:05:08	591	10.9	11.5	0.6	31	16.71
16-18-may	9:05:08	591	11.6	13.0	1.4	31	16.71
16-18-may	10:05:08	591	11.9	13.2	1.3	31	16.70
16-18-may	11:05:08	591	10.0	10.9	0.8	31	16.71
16-18-may	12:05:08	591	10.9	11.6	0.7	31	16.70
16-18-may	13:05:08	590	13.1	14.4	1.4	32	16.71
16-18-may	14:05:08	590	13.5	14.8	1.3	32	16.72
16-18-may	15:05:08	590	13.2	14.2	1.0	32	16.71
16-18-may	16:05:08	590	13.0	13.8	0.8	31	16.71
16-18-may	17:05:08	590	12.8	13.3	0.5	31	16.71
16-18-may	18:05:08	590	12.3	12.2	-0.1	31	16.72
16-18-may	19:05:08	590	9.3	9.8	0.5	31	16.71
16-18-may	20:05:08	590	7.7	7.7	-0.1	31	16.7
16-18-may	21:05:08	591	5.0	5.1	0.1	31	16.70
	the second s		4.1	3.4	-0.7	31	16.70
16-18-may	22:05:08	591		2.8	-1.0	31	
16-18-may	23:05:08	591	3.8	and a particular long and the size of the second	and the same house and the second state and the second state of th	the state of the local state in the state of the state of	16.7
16-19-may	0:05:08	591	3.9	2.7	-1.2	31	16.72
16-19-may	1:05:08	590	3.7	2.5	-1.2	31	16.71
16-19-may	2:05:08	590	3.2	2.3	-1.0	31	16.7
16-19-may	3:05:08	590	2.9	1.9	-1.0	31	16.71
16-19-may	4:05:08	590	2.2	1.1	-1.1	31	16.7
16-19-may	5:05:08	590	2.9	1.3	-1.6	31	16.7
16-19-may	6:05:08	590	9.2	7.0	-2.2	31	16.7
16-19-may	7:05:08	589	13.3	13.3	0.0	32	16.70
16-19-may	8:05:08	589	14.1	15.1	1.0	32	16.7
16-19-may	9:05:08	589	16.4	17.6	1.2	32	16.7
16-19-may	10:05:08	588	17.6	19.7	2.1	33	16.7
16-19-may	11:05:08	588	18.4	20.0	1.7	33	16.7
16-19-may	12:05:08	587	18.0	19.1	1.2	33	16.7
16-19-may	13:05:08	587	19.3	20.3	1.1	33	16.7
16-19-may	14:05:08	586	19.0	20.2	1.2	33	16.7
16-19-may	15:05:08	586	19.9	21.7	1.8	33	16.72
16-19-may	16:05:08	586	19.3	21.0	1.8	33	16.72
16-19-may	17:05:08	585	18.6	19.3	0.7	33	16.72
16-19-may	18:05:08	585	17.3	17.4	0.1	33	16.7
16-19-may	19:05:08	585	15.9	15.3	-0.6	33	16.7
16-19-may	20:05:08	585	14.9	13.8	-1.1	32	16.7
16-19-may	21:05:08	585	14.0	12.6	-1.4	32	16.70
16-19-may	22:05:08	585	13.6	12.0	-1.6	32	16.69
16-19-may	23:05:08	585	13.4	12.0	-1.4	32	16.7
16-20-may	0:05:08	585	12.7	11.6	-1.1	32	16.7
16-20-may	1:05:08	585	11.9	10.8	-1.1	32	16.7
16-20-may	2:05:08	585	11.4	10.2	-1.2	32	16.7
16-20-may	3:05:08	585	10.8	9.6	-1.2	32	16.7
16-20-may	4:05:08	584	11.3	9.0	-1.2	32	16.7



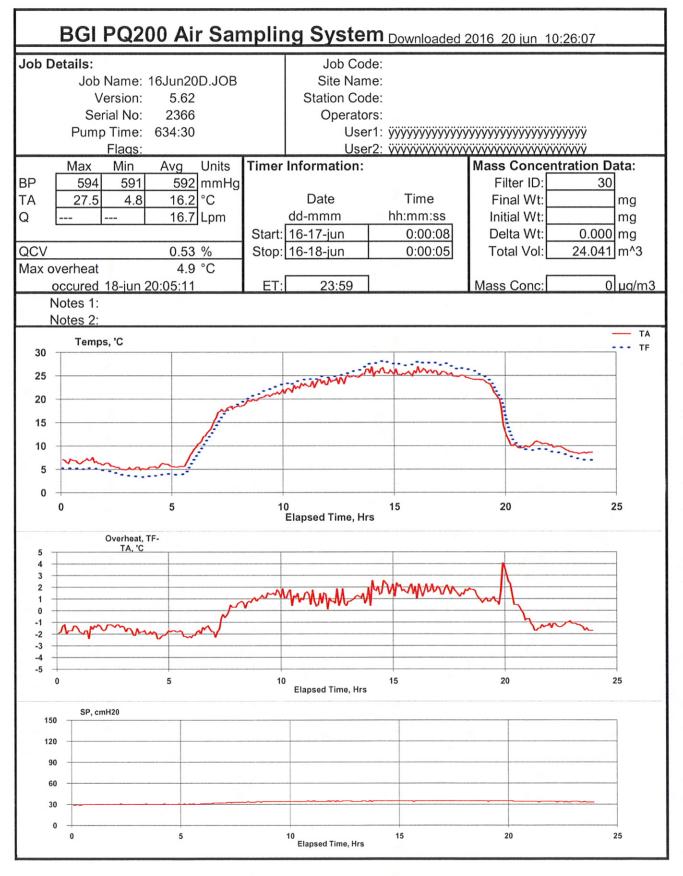
16-24-may	0:05:08	586	1.6	-0.5	-2.0	29	16.71
16-24-may	1:05:08	586	0.6	-0.9	-1.5	30	16.71
16-24-may	2:05:08	586	0.2	-1.5	-1.7	30	16.72
16-24-may	3:05:08	586	-0.1	-1.8	-1.8	29	16.72
16-24-may	4:05:08	586	-0.7	-2.3	-1.5	29	16.72
16-24-may	5:05:08	586	-0.5	-2.5	-2.0	29	16.72
16-24-may	6:05:08	586	5.8	3.7	-2.1	30	16.72
16-24-may	7:05:08	586	11.1	10.5	-0.7	31	16.71
16-24-may	8:05:08	587	12.3	13.3	1.0	32	16.71
16-24-may	9:05:08	586	13.0	14.4	1.4	33	16.70
16-24-may	10:05:08	586	13.5	15.0	1.6	33	16.71
16-24-may	11:05:08	587	12.4	13.6	1.2	33	16.71
16-24-may	12:05:08	587	14.1	13.8	-0.2	33	16.72
16-24-may	13:05:08	586	15.1	16.3	1.2	33	16.71
16-24-may	14:05:08	586	14.6	16.3	1.7	33	16.70
16-24-may	15:05:08	587	14.0	15.6	1.5	33	16.71
16-24-may	16:05:08	587	12.8	13.7	1.0	33	16.70
16-24-may	17:05:08	587	11.5	12.2	0.7	33	16.71
16-24-may	18:05:08	587	11.6	11.5	-0.2	32	16.70
16-24-may	19:05:08	588	9.9	9.4	-0.5	32	16.70
16-24-may	20:05:08	588	8.3	7.3	-1.0	32	16.72
16-24-may	21:05:08	589	3.9	3.3	-0.6	31	16.70
16-24-may	22:05:08	589	0.9	0.6	-0.3	32	16.70
16-24-may	23:05:08	589	1.5	0.1	-1.4	31	16.71



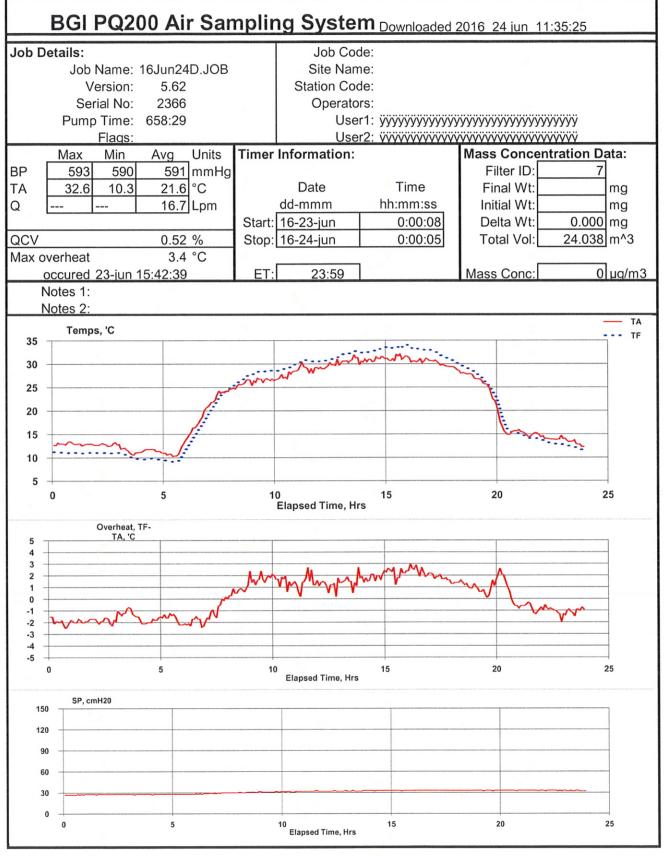
16-05-jun	0:05:08	593	14.9	13.4	-1.6	29	16.69
16-05-jun	1:05:08	592	14.7	13.1	-1.6	29	16.71
16-05-jun	2:05:08	592	13.3	12.2	-1.0	29	16.71
16-05-jun	3:05:08	592	11.0	10.5	-0.6	29	16.71
16-05-jun	4:05:08	592	10.8	9.4	-1.4	29	16.71
16-05-jun	5:05:08	592	11.4	10.0	-1.4	29	16.71
16-05-jun	6:05:08	593	15.6	14.6	-1.1	30	16.71
16-05-jun	7:05:08	592	20.9	20.3	-0.6	31	16.71
16-05-jun	8:05:08	592	25.3	25.4	0.1	32	16.71
16-05-jun	9:05:08	591	27.9	28.9	1.0	32	16.70
16-05-jun	10:05:08	591	29.1	30.4	1.3	33	16.70
16-05-jun	11:05:08	591	29.7	31.0	1.3	33	16.71
16-05-jun	12:05:08	590	30.7	31.6	0.9	33	16.70
16-05-jun	13:05:08	590	30.9	32.3	1.4	33	16.72
16-05-jun	14:05:08	589	31.3	32.9	1.6	33	16.72
16-05-jun	15:05:08	589	31.5	33.4	1.9	33	16.71
16-05-jun	16:05:08	589	31.2	33.1	1.9	33	16.71
16-05-jun	17:05:08	588	30.6	31.9	1.4	33	16.71
16-05-jun	18:05:08	588	28.8	30.0	1.3	33	16.71
16-05-jun	19:05:08	588	22.1	23.6	1.5	33	16.71
16-05-jun	20:05:08	589	15.3	15.0	-0.3	33	16.71
16-05-jun	21:05:08	589	14.3	13.3	-1.0	32	16.70
16-05-jun	22:05:08	590	13.3	12.1	-1.2	32	16.72
16-05-jun	23:05:08	590	11.9	10.7	-1.2	32	16.73
16-06-jun	0:05:08	590	11.0	9.7	-1.3	32	16.71
16-06-jun	1:05:08	589	10.9	9.2	-1.7	32	16.72
16-06-jun	2:05:08	589	10.7	8.9	-1.8	32	16.71
16-06-jun	3:05:08	589	9.0	7.9	-1.2	32	16.71
16-06-jun	4:05:08	589	8.9	7.1	-1.8	32	16.70
16-06-jun	5:05:08	589	9.3	7.7	-1.6	32	16.71
16-06-jun	6:05:08	589	14.2	12.7	-1.6	33	16.72
16-06-jun	7:05:08	589	20.6	19.2	-1.4	33	16.71
16-06-jun	8:05:08	589	25.3	24.8	-0.5	33	16.71
16-06-jun	9:05:08	589	26.6	27.2	0.6	34	16.71
16-06-jun	10:05:08	589	27.3	28.2	1.0	34	16.71
16-06-jun	11:05:08	589	28.2	29.0	0.8	34	16.71
16-06-jun	12:05:08	588	28.9	29.5	0.6	34	16.72
16-06-jun	13:05:08	588	29.3	30.4	1.1	35	16.70
16-06-jun	14:05:08	588	29.4	30.9	1.5	35	16.71



16-11-jun	0:05:08	591	13.0	11.8	-1.2	35	16.71
16-11-jun	1:05:08	592	15.9	14.0	-1.8	36	16.71
16-11-jun	2:05:08	591	16.6	15.4	-1.2	37	16.71
16-11-jun	3:05:08	591	15.9	15.4	-0.5	37	16.70
16-11-jun	4:05:08	591	14.4	13.9	-0.5	36	16.72
16-11-jun	5:05:08	592	12.8	12.6	-0.2	36	16.72
16-11-jun	6:05:08	591	12.7	12.3	-0.4	37	16.70
16-11-jun	7:05:08	591	16.4	16.6	0.2	37	16.70
16-11-jun	8:05:08	591	18.2	19.3	1.1	38	16.71
16-11-jun	9:05:08	591	18.2	19.1	0.9	38	16.71
16-11-jun	10:05:08	592	19.4	20.6	1.2	39	16.71
16-11-jun	11:05:08	592	21.3	22.6	1.4	39	16.71
16-11-jun	12:05:08	592	20.1	21.2	1.1	39	16.71
16-11-jun	13:05:08	591	21.0	22.3	1.3	39	16.71
16-11-jun	14:05:08	592	21.7	23.7	1.9	39	16.70
16-11-jun	15:05:08	591	22.6	24.9	2.4	40	16.71
16-11-jun	16:05:08	591	17.9	19.6	1.7	39	16.71
16-11-jun	17:05:08	591	17.6	18.7	1.2	39	16.72
16-11-jun	18:05:08	592	14.7	15.4	0.7	39	16.71
16-11-jun	19:05:08	592	12.7	12.8	0.1	39	16.71
16-11-jun	20:05:08	592	11.4	11.1	-0.3	38	16.70
16-11-jun	21:05:08	592	10.4	10.0	-0.4	38	16.71
16-11-jun	22:05:08	592	9.7	8.9	-0.7	38	16.71
16-11-jun	23:05:08	592	9.6	8.6	-1.0	38	16.71

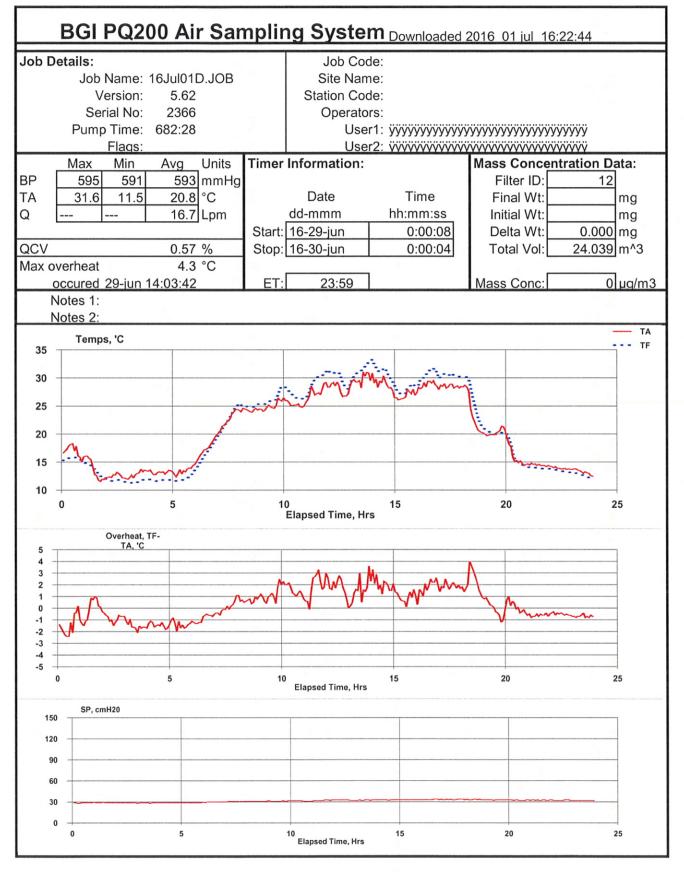


16-17-jun	0:05:08	592	6.7	5.1	-1.6	30	16.70
16-17-jun	1:05:08	592	6.7	5.0	-1.6	30	16.72
16-17-jun	2:05:08	592	5.5	4.1	-1.3	30	16.71
16-17-jun	3:05:08	593	5.2	3.4	-1.8	30	16.72
16-17-jun	4:05:08	593	5.8	3.8	-2.0	30	16.71
16-17-jun	5:05:08	593	6.6	4.6	-2.0	30	16.71
16-17-jun	6:05:08	593	12.6	10.9	-1.7	32	16.71
16-17-jun	7:05:08	593	17.9	17.4	-0.5	33	16.71
16-17-jun	8:05:08	593	19.5	20.2	0.8	34	16.70
16-17-jun	9:05:08	593	21.1	22.4	1.4	34	16.71
16-17-jun	10:05:08	593	22.4	23.6	1.2	34	16.71
16-17-jun	11:05:08	593	23.3	24.5	1.1	34	16.72
16-17-jun	12:05:08	593	24.2	25.1	0.9	35	16.70
16-17-jun	13:05:08	593	25.4	26.5	1.1	35	16.71
16-17-jun	14:05:08	593	25.8	27.8	2.0	35	16.71
16-17-jun	15:05:08	592	25.5	27.4	1.9	35	16.71
16-17-jun	16:05:08	592	26.0	27.8	1.8	35	16.71
16-17-jun	17:05:08	592	25.3	27.0	1.7	35	16.71
16-17-jun	18:05:08	592	24.4	25.9	1.5	35	16.71
16-17-jun	19:05:08	593	20.4	21.9	1.5	35	16.71
16-17-jun	20:05:08	593	10.2	10.9	0.8	34	16.71
16-17-jun	21:05:08	594	10.4	9.1	-1.3	34	16.70
16-17-jun	22:05:08	594	9.5	8.3	-1.2	34	16.71
16-17-jun	23:05:08	594	8.5	7.1	-1.4	33	16.71



•

16-23-jun	0:05:08	592	13.0	11.1	-2.0	27	16.71
16-23-jun	1:05:08	592	12.9	11.0	-1.9	28	16.72
16-23-jun	2:05:08	592	12.8	11.0	-1.9	28	16.71
16-23-jun	3:05:08	592	11.3	10.2	-1.2	28	16.71
16-23-jun	4:05:08	593	11.5	9.7	-1.9	28	16.71
16-23-jun	5:05:08	593	11.3	9.7	-1.7	28	16.71
16-23-jun	6:05:08	593	17.5	15.6	-2.0	29	16.71
16-23-jun	7:05:08	593	23.3	22.6	-0.8	30	16.71
16-23-jun	8:05:08	593	25.7	26.5	0.8	31	16.70
16-23-jun	9:05:08	593	26.6	28.3	1.7	31	16.71
16-23-jun	10:05:08	593	27.6	29.1	1.5	32	16.70
16-23-jun	11:05:08	592	29.1	30.5	1.5	32	16.72
16-23-jun	12:05:08	592	29.8	30.9	1.2	32	16.71
16-23-jun	13:05:08	592	30.8	32.3	1.6	32	16.71
16-23-jun	14:05:08	591	31.0	32.9	1.8	33	16.71
16-23-jun	15:05:08	591	31.3	33.5	2.2	33	16.71
16-23-jun	16:05:08	590	30.7	33.1	2.4	33	16.70
16-23-jun	17:05:08	590	30.0	31.8	1.8	33	16.70
16-23-jun	18:05:08	591	28.2	29.4	1.3	33	16.71
16-23-jun	19:05:08	591	24.9	25.7	0.8	33	16.71
16-23-jun	20:05:08	591	16.1	16.9	0.8	33	16.71
16-23-jun	21:05:08	592	15.0	14.2	-0.8	33	16.70
16-23-jun	22:05:08	592	14.1	13.0	-1.1	33	16.71
16-23-jun	23:05:08	592	13.1	12.1	-1.0	32	16.71



16-29-jun	0:05:08	594	17.0	15.5	-1.4	29	16.71
16-29-jun	1:05:08	594	13.5	13.4	-0.1	29	16.70
16-29-jun	2:05:08	594	12.5	11.6	-0.9	29	16.71
16-29-jun	3:05:08	594	13.1	11.6	-1.5	29	16.71
16-29-jun	4:05:08	594	13.2	11.8	-1.4	29	16.70
16-29-jun	5:05:08	594	13.5	12.2	-1.4	29	16.71
16-29-jun	6:05:08	594	17.5	16.7	-0.9	30	16.71
16-29-jun	7:05:08	594	22.7	22.7	0.0	31	16.71
16-29-jun	8:05:08	594	24.3	25.0	0.7	31	16.70
16-29-jun	9:05:08	594	25.2	26.4	1.2	31	16.71
16-29-jun	10:05:08	594	25.3	26.9	1.6	32	16.71
16-29-jun	11:05:08	594	27.7	29.6	1.9	32	16.71
16-29-jun	12:05:08	593	28.1	29.9	1.8	33	16.70
16-29-jun	13:05:08	592	29.9	31.5	1.6	33	16.71
16-29-jun	14:05:08	592	28.8	30.8	2.1	33	16.71
16-29-jun	15:05:08	592	26.9	27.9	1.0	33	16.71
16-29-jun	16:05:08	592	28.7	30.5	1.8	33	16.71
16-29-jun	17:05:08	591	28.5	30.4	1.9	34	16.70
16-29-jun	18:05:08	592	23.9	26.1	2.2	33	16.71
16-29-jun	19:05:08	592	20.3	20.2	-0.1	33	16.71
16-29-jun	20:05:08	594	15.8	15.9	0.1	33	16.70
16-29-jun	21:05:08	594	14.5	13.9	-0.6	33	16.72
16-29-jun	22:05:08	594	13.9	13.4	-0.5	32	16.71
16-29-jun	23:05:08	593	13.2	12.5	-0.7	32	16.71

Collocated Monitor 2398E

# **PM<sub>10</sub> Sampler Summary**

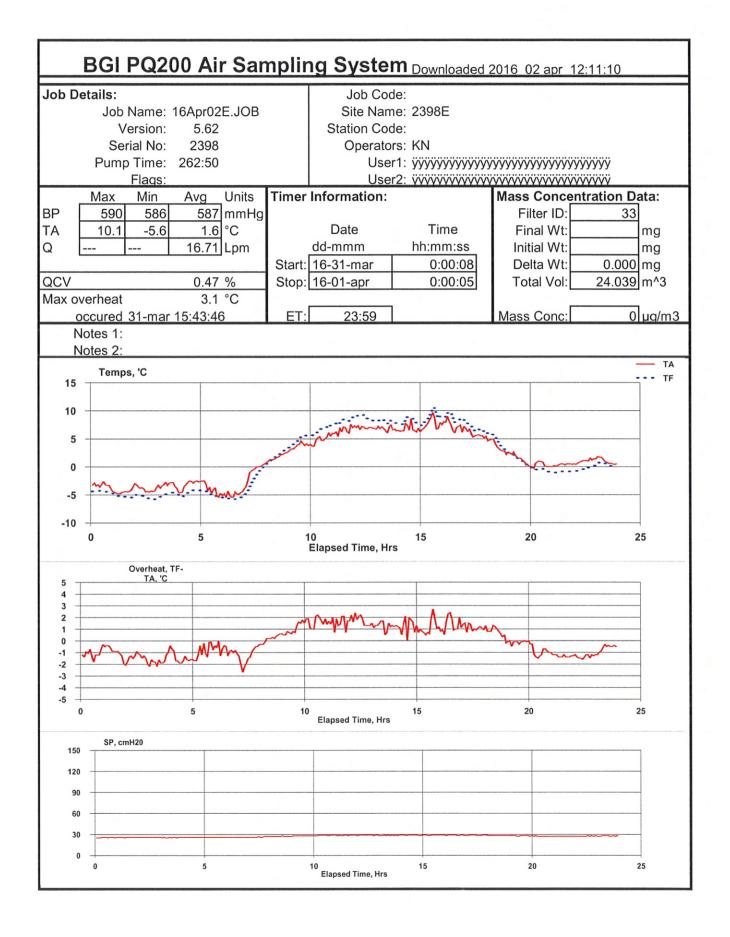
### April 1, 2016 - June 30, 2016

#### Network: Alton Coal Development

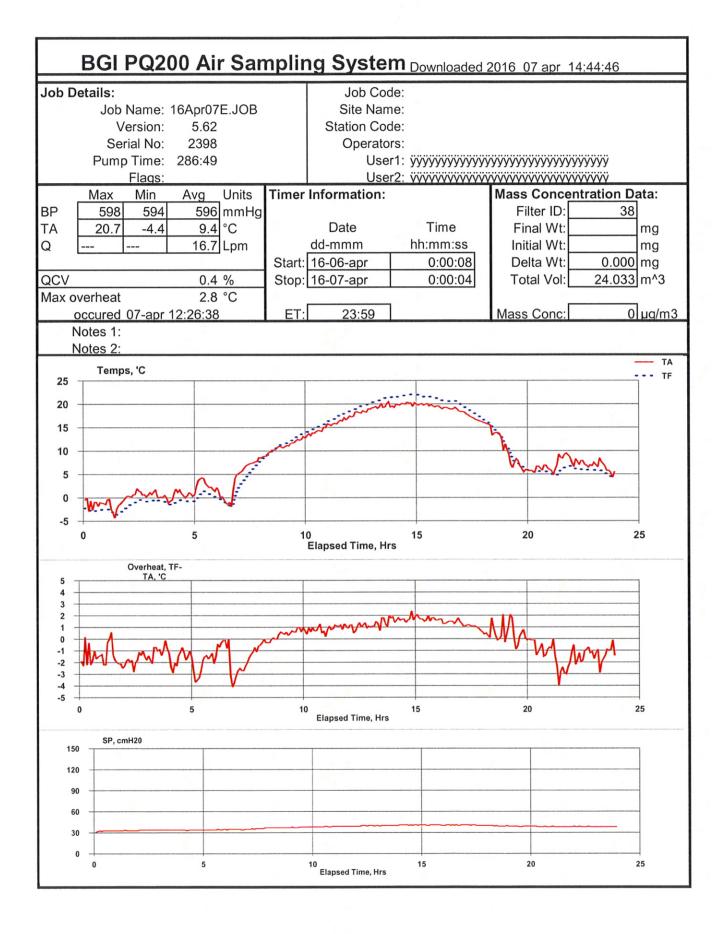
Site: Coal Hollow Sampler ID: Coal Hollow-E Sampler Type: BGI FRM Single

#### AQS ID:

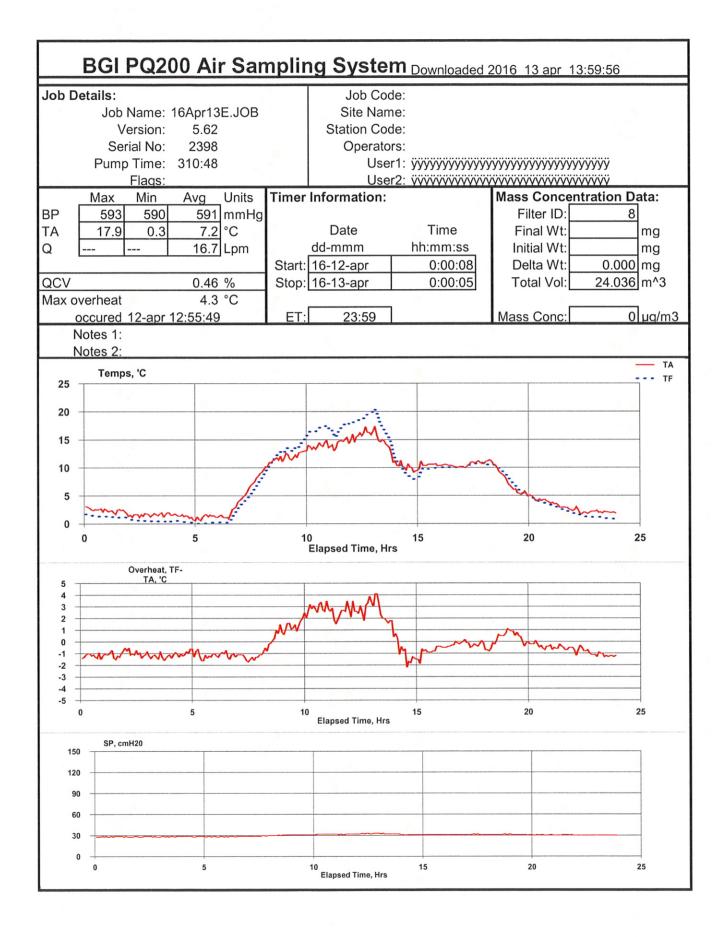
	Filter	Concentration (µg/m3)	Concentration (µg/m3)	Sample Period	Sample Volume	Std Volume		Mass (mg)			
Date	ID	LTP	STP	(hr:min)	(m3)	(m3)	Tare	Gross	Net	Flag	Comments
04/06/16	P2929006	6.2	7.5	23:59	24.0	19.9	391.337	391.487	0.150		
04/12/16	P2929227	10.1	12.3	23:59	24.0	19.9	369.995	370.240	0.245		
04/18/16	P2929232	6.9	8.3	23:59	24.0	20.1	372.800	372.967	0.167	HT	
04/24/16	P2929391	Invalid - AN	Invalid - AN	23:59	24.0	19.7	391.155	391.160	0.005		Chamber opened
04/30/16	P2929396	1.9	2.3	23:59	24.0	20.0	385.133	385.180	0.047	HT	
05/06/16	P2929401	28.6	34.9	23:59	24.0	19.7	372.573	373.261	0.688	HT	
05/12/16	P2929634	55.6	68.1	23:59	24.0	19.6	373.288	374.626	1.338		
05/18/16	P2929819	11.1	13.5	23:59	24.0	19.7	370.975	371.242	0.267	HT	
05/24/16	P2929823	28.5	34.9	23:59	24.0	19.7	364.982	365.669	0.687		
05/30/16	P2929639	9.1	11.3	23:59	24.0	19.5	370.808	371.029	0.221	XT,HT	
06/05/16	P2930157	11.5	14.7	23:59	24.0	18.9	366.319	366.597	0.278		
06/11/16	P2930163	22.0	27.4	23:59	24.0	19.3	368.626	369.155	0.529	HT	
06/17/16	P2930169	65.1	81.0	23:59	24.0	19.3	376.528	378.093	1.565	HT	
06/23/16	P2930506	88.7	112.6	23:59	24.0	18.9	366.122	368.254	2.132		
06/29/16	P2930511	38.4	48.4	23:59	24.0	19.0	365.404	366.327	0.923		Filter lighter
06/24/16	P2930512		Field Bla	ınk			369.393	369.416	0.023		
	# Valid	Recovery	Average	St. Dev.	Max	Min					
	14	93%	34.1	32.8	112.6	2.3					



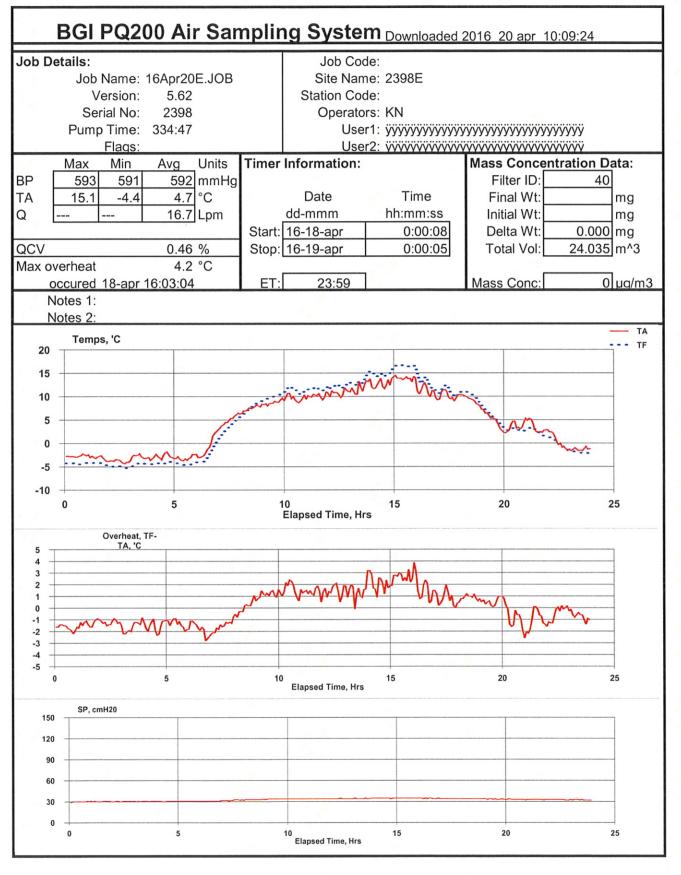
16-31-mar	0:05:08	587	-3.3	-4.4	-1.1	26	16.70
16-31-mar	1:05:08	587	-4.3	-5.3	-1.0	26	16.72
16-31-mar	2:05:08	587	-4.0	-5.4	-1.4	26	16.72
16-31-mar	3:05:08	587	-3.3	-5.0	-1.6	26	16.72
16-31-mar	4:05:08	587	-3.1	-4.6	-1.5	26	16.72
16-31-mar	5:05:08	587	-4.1	-4.9	-0.9	26	16.72
16-31-mar	6:05:08	587	-4.8	-5.6	-0.8	26	16.74
16-31-mar	7:05:08	587	-0.6	-1.9	-1.3	26	16.71
16-31-mar	8:05:08	587	1.8	2.0	0.2	27	16.70
16-31-mar	9:05:08	587	3.8	4.8	1.0	28	16.72
16-31-mar	10:05:08	587	5.0	6.6	1.6	29	16.72
16-31-mar	11:05:08	587	6.6	8.1	1.6	29	16.71
16-31-mar	12:05:08	587	6.9	8.7	1.7	29	16.71
16-31-mar	13:05:08	587	6.8	8.0	1.3	29	16.72
16-31-mar	14:05:08	587	6.8	8.1	1.3	29	16.71
16-31-mar	15:05:08	586	7.7	8.8	1.1	29	16.72
16-31-mar	16:05:08	586	7.3	8.7	1.4	29	16.72
16-31-mar	17:05:08	587	5.8	6.9	1.1	29	16.71
16-31-mar	18:05:08	587	3.6	4.4	0.8	28	16.71
16-31-mar	19:05:08	587	1.4	1.2	-0.1	28	16.70
16-31-mar	20:05:08	588	0.3	-0.6	-1.0	27	16.70
16-31-mar	21:05:08	588	0.4	-0.9	-1.3	27	16.71
16-31-mar	22:05:08	589	1.0	-0.3	-1.4	27	16.71
16-31-mar	23:05:08	589	1.0	0.4	-0.6	28	16.72



16-06-apr	0:05:08	597	-1.2	-2.7	-1.5	33	16.71
16-06-apr	1:05:08	597	-1.4	-2.9	-1.5	33	16.70
16-06-apr	2:05:08	597	0.8	-0.9	-1.7	34	16.70
16-06-apr	3:05:08	597	0.2	-0.9	-1.1	34	16.71
16-06-apr	4:05:08	596	0.9	-0.8	-1.7	34	16.71
16-06-apr	5:05:08	597	2.8	0.6	-2.3	34	16.71
16-06-apr	6:05:08	597	1.0	-0.5	-1.5	35	16.71
16-06-apr	7:05:08	598	7.2	5.4	-1.8	36	16.71
16-06-apr	8:05:08	597	10.0	10.0	0.0	37	16.70
16-06-apr	9:05:08	597	12.0	12.6	0.6	38	16.71
16-06-apr	10:05:08	598	14.3	15.0	0.7	38	16.71
16-06-apr	11:05:08	597	16.4	17.4	1.0	39	16.70
16-06-apr	12:05:08	597	18.3	19.4	1.1	40	16.70
16-06-apr	13:05:08	596	19.6	21.0	1.4	40	16.69
16-06-apr	14:05:08	596	20.1	21.8	1.7	41	16.70
16-06-apr	15:05:08	595	19.8	21.5	1.7	41	16.70
16-06-apr	16:05:08	595	19.0	20.5	1.5	41	16.71
16-06-apr	17:05:08	595	17.2	18.2	1.0	40	16.70
16-06-apr	18:05:08	595	13.8	14.3	0.5	39	16.70
16-06-apr	19:05:08	595	7.3	7.7	0.5	39	16.70
16-06-apr	20:05:08	595	6.2	5.5	-0.7	38	16.71
16-06-apr	21:05:08	595	7.8	5.7	-2.1	38	16.73
16-06-apr	22:05:08	595	7.3	5.9	-1.3	38	16.71
16-06-apr	23:05:08	595	6.4	5.1	-1.3	38	16.71

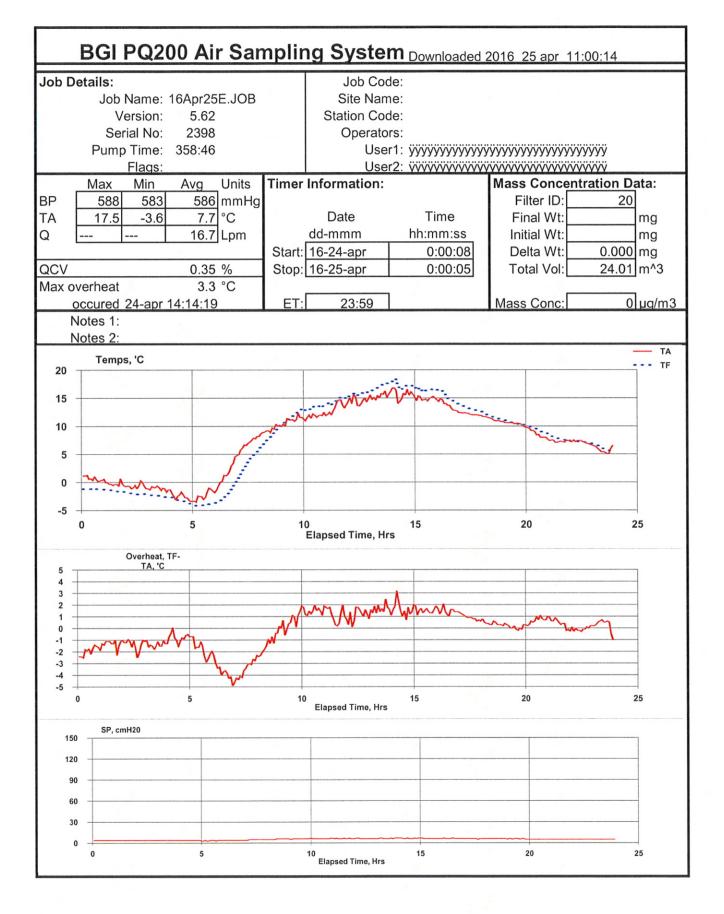


16-12-apr	0:05:08	591	2.6	1.4	-1.2	28	16.71
16-12-apr	1:05:08	591	2.2	1.1	-1.0	29	16.71
16-12-apr	2:05:08	591	1.6	0.6	-1.0	29	16.70
16-12-apr	3:05:08	591	1.7	0.5	-1.3	29	16.71
16-12-apr	4:05:08	591	1.3	0.3	-1.0	29	16.70
16-12-apr	5:05:08	591	1.3	0.1	-1.2	29	16.71
16-12-apr	6:05:08	591	2.1	1.0	-1.1	29	16.71
16-12-apr	7:05:08	592	6.9	5.6	-1.3	29	16.70
16-12-apr	8:05:08	592	11.1	11.1	0.1	31	16.70
16-12-apr	9:05:08	592	12.4	13.8	1.4	31	16.70
16-12-apr	10:05:08	592	13.9	16.8	2.9	32	16.70
16-12-apr	11:05:08	592	14.4	16.9	2.5	32	16.71
16-12-apr	12:05:08	592	16.0	18.9	2.9	33	16.72
16-12-apr	13:05:08	592	14.1	16.4	2.3	32	16.71
16-12-apr	14:05:08	592	10.1	9.1	-1.0	31	16.70
16-12-apr	15:05:08	591	10.5	9.6	-0.9	31	16.70
16-12-apr	16:05:08	591	10.3	10.0	-0.3	31	16.70
16-12-apr	17:05:08	591	10.7	10.5	-0.2	31	16.71
16-12-apr	18:05:08	591	10.0	10.0	0.0	31	16.71
16-12-apr	19:05:08	592	5.9	6.3	0.5	31	16.70
16-12-apr	20:05:08	592	4.3	4.0	-0.3	30	16.70
16-12-apr	21:05:08	592	3.0	2.5	-0.5	30	16.70
16-12-apr	22:05:08	592	2.2	1.3	-0.8	30	16.70
16-12-apr	23:05:08	592	2.1	0.9	-1.2	30	16.70

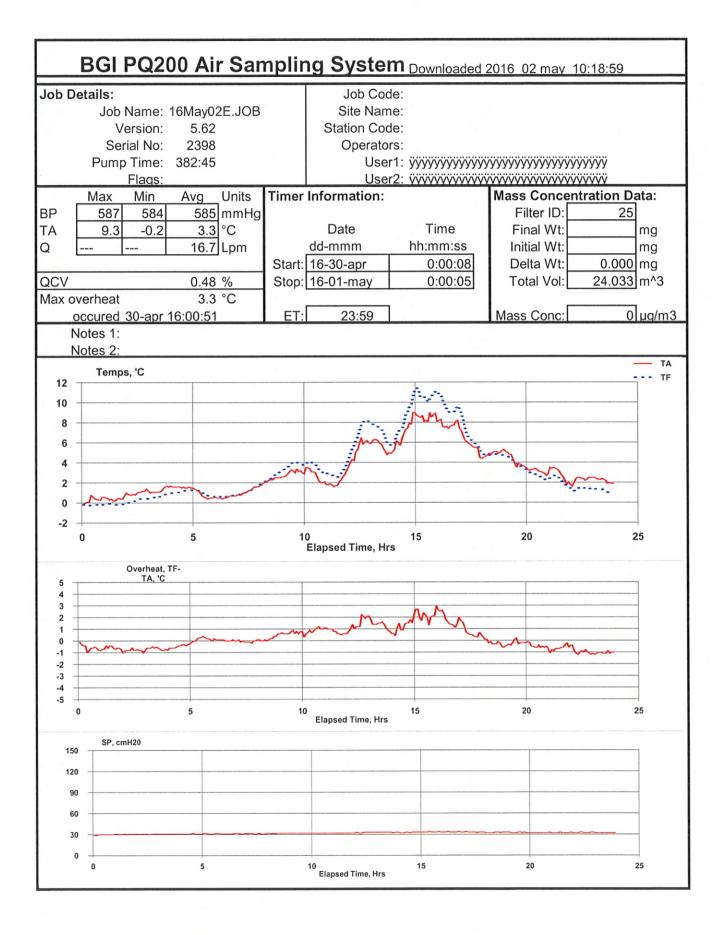


640<sup>0</sup> 201

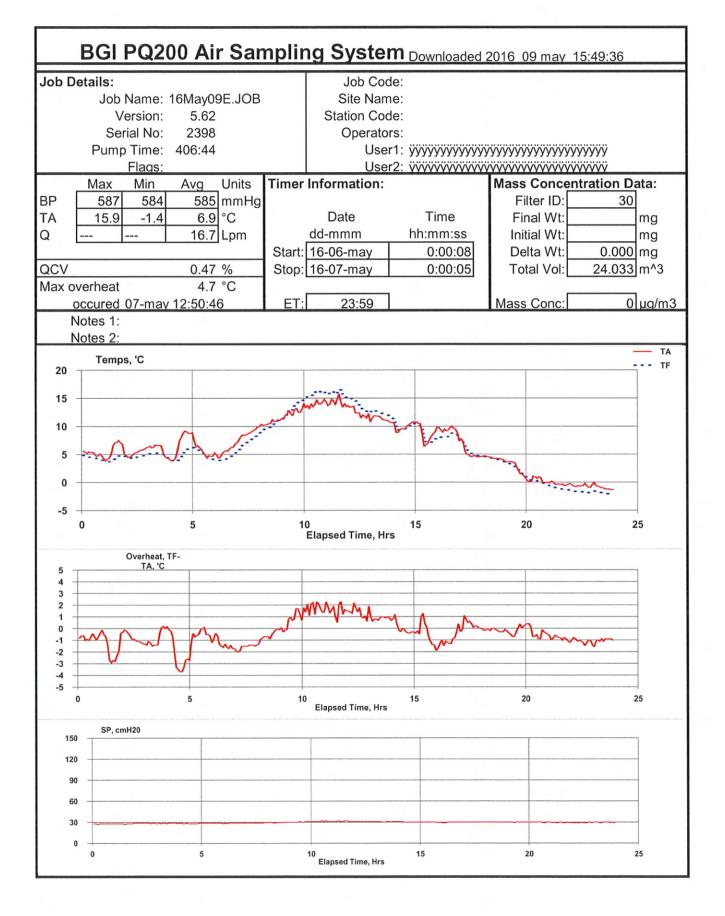
16-18-apr	0:05:08	593	-2.7	-4.4	-1.7	30	16.71
16-18-apr	1:05:08	593	-3.1	-4.3	-1.3	30	16.71
16-18-apr	2:05:08	593	-3.8	-5.1	-1.2	31	16.70
16-18-apr	3:05:08	592	-2.9	-4.5	-1.6	31	16.71
16-18-apr	4:05:08	593	-2.7	-4.2	-1.5	31	16.71
16-18-apr	5:05:08	592	-3.1	-4.5	-1.4	31	16.72
16-18-apr	6:05:08	593	-0.6	-2.4	-1.8	31	16.70
16-18-apr	7:05:08	593	5.1	3.6	-1.5	32	16.70
16-18-apr	8:05:08	593	7.5	7.6	0.1	33	16.71
16-18-apr	9:05:08	593	8.8	10.0	1.2	34	16.71
16-18-apr	10:05:08	593	9.7	11.3	1.6	34	16.70
16-18-apr	11:05:08	593	10.2	11.6	1.4	34	16.71
16-18-apr	12:05:08	593	10.8	12.3	1.5	34	16.70
16-18-apr	13:05:08	592	12.1	13.6	1.5	34	16.71
16-18-apr	14:05:08	592	12.8	14.8	2.1	35	16.69
16-18-apr	15:05:08	592	13.9	16.5	2.6	35	16.71
16-18-apr	16:05:08	592	11.0	12.8	1.7	35	16.71
16-18-apr	17:05:08	592	10.2	11.0	0.8	34	16.70
16-18-apr	18:05:08	592	9.2	10.1	0.9	34	16.71
16-18-apr	19:05:08	592	4.9	5.4	0.6	33	16.71
16-18-apr	20:05:08	592	3.7	2.8	-0.9	33	16.71
16-18-apr	21:05:08	593	3.4	2.3	-1.0	33	16.71
16-18-apr	22:05:08	593	0.2	-0.2	-0.4	33	16.71
16-18-apr	23:05:08	592	-1.3	-2.0	-0.7	32	16.71



16-24-apr	0:05:08	588	0.7	-1.2	-1.9	4	16.71
16-24-apr	1:05:08	588	-0.3	-1.6	-1.3	4	16.70
16-24-apr	2:05:08	588	-0.7	-2.1	-1.4	4	16.71
16-24-apr	3:05:08	587	-1.1	-2.5	-1.4	4	16.71
16-24-apr	4:05:08	587	-2.6	-3.4	-0.8	4	16.71
16-24-apr	5:05:08	587	-2.3	-4.0	-1.7	4	16.71
16-24-apr	6:05:08	587	1.7	-2.1	-3.8	4	16.69
16-24-apr	7:05:08	588	7.0	3.6	-3.4	5	16.71
16-24-apr	8:05:08	588	9.5	8.2	-1.2	6	16.72
16-24-apr	9:05:08	588	11.2	11.8	0.6	6	16.71
16-24-apr	10:05:08	588	11.8	13.3	1.5	6	16.69
16-24-apr	11:05:08	587	13.5	14.6	1.1	6	16.67
16-24-apr	12:05:08	587	14.7	15.8	1.1	6	16.70
16-24-apr	13:05:08	586	15.6	17.2	1.6	7	16.70
16-24-apr	14:05:08	586	15.6	17.3	1.7	7	16.71
16-24-apr	15:05:08	586	14.9	16.4	1.5	6	16.70
16-24-apr	16:05:08	586	13.6	15.1	1.5	6	16.69
16-24-apr	17:05:08	585	12.1	13.0	0.9	6	16.71
16-24-apr	18:05:08	585	11.2	11.6	0.4	6	16.70
16-24-apr	19:05:08	585	10.4	10.5	0.1	6	16.70
16-24-apr	20:05:08	585	8.6	9.3	0.7	5	16.72
16-24-apr	21:05:08	585	7.3	7.7	0.4	5	16.69
16-24-apr	22:05:08	584	7.1	7.1	0.0	5	16.71
16-24-apr	23:05:08	583	5.8	6.0	0.3	5	16.70

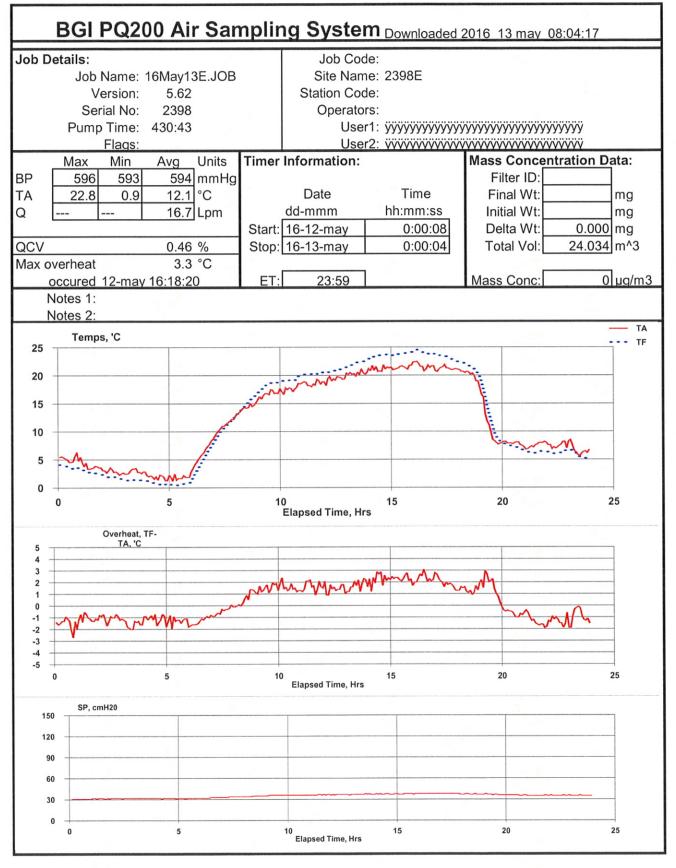


16-30-apr	0:05:08	585	0.3	-0.2	-0.6	30	16.71
16-30-apr	1:05:08	585	0.5	-0.2	-0.6	31	16.70
16-30-apr	2:05:08	585	1.0	0.2	-0.8	31	16.71
16-30-apr	3:05:08	585	1.3	0.7	-0.7	31	16.72
16-30-apr	4:05:08	585	1.6	1.1	-0.4	31	16.71
16-30-apr	5:05:08	585	0.8	0.9	0.2	31	16.70
16-30-apr	6:05:08	585	0.6	0.7	0.1	31	16.71
16-30-apr	7:05:08	585	1.3	1.2	0.0	31	16.71
16-30-apr	8:05:08	585	2.3	2.5	0.2	32	16.69
16-30-apr	9:05:08	585	3.0	3.7	0.7	32	16.71
16-30-apr	10:05:08	586	2.7	3.6	0.9	32	16.73
16-30-apr	11:05:08	586	2.3	3.0	0.8	32	16.73
16-30-apr	12:05:08	586	5.4	7.0	1.5	33	16.72
16-30-apr	13:05:08	586	5.6	6.9	1.3	33	16.69
16-30-apr	14:05:08	585	7.1	8.4	1.3	33	16.70
16-30-apr	15:05:08	585	8.5	10.7	2.2	33	16.72
16-30-apr	16:05:08	585	7.8	9.6	1.8	33	16.73
16-30-apr	17:05:08	586	5.7	6.5	0.8	33	16.71
16-30-apr	18:05:08	586	4.9	4.8	-0.2	33	16.71
16-30-apr	19:05:08	586	4.2	4.0	-0.2	32	16.71
16-30-apr	20:05:08	587	3.1	2.6	-0.5	32	16.70
16-30-apr	21:05:08	587	2.8	2.2	-0.6	32	16.70
16-30-apr	22:05:08	587	2.3	1.3	-1.0	32	16.70
16-30-apr	23:05:08	586	2.2	1.1	-1.1	32	16.71

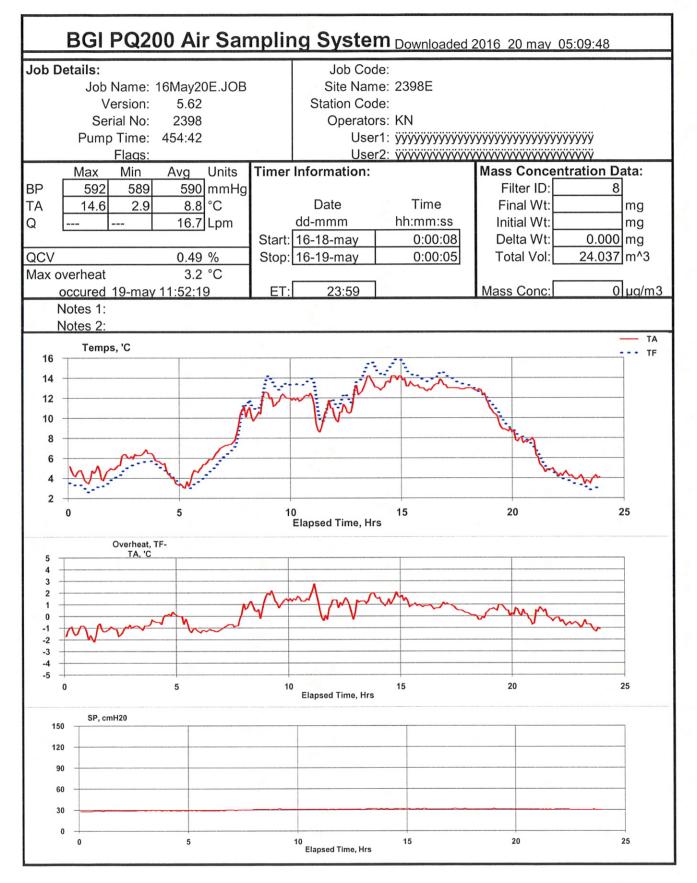


37°

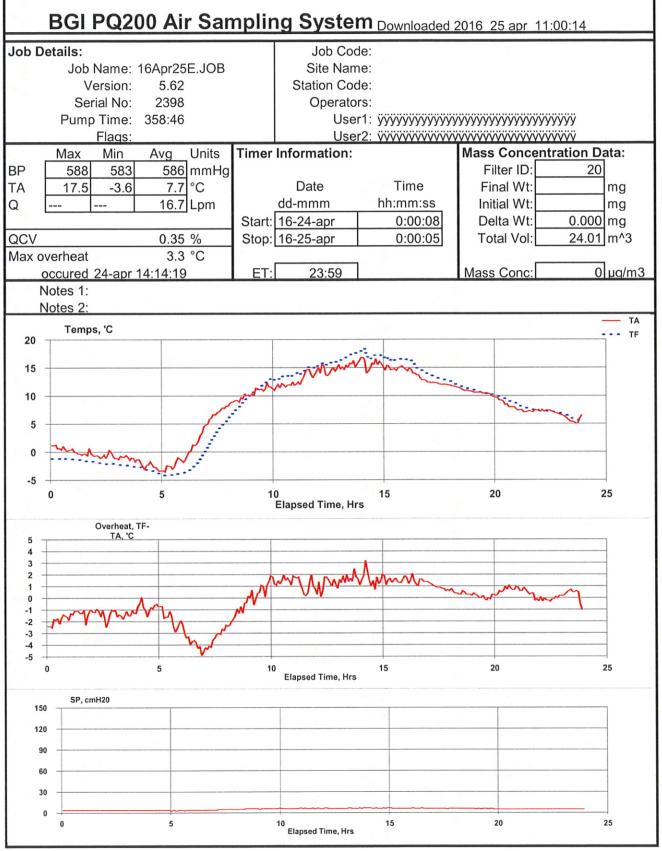
16-06-may	0:05:08	586	5.1	4.4	-0.7	28	16.71
16-06-may	1:05:08	586	5.8	4.3	-1.6	28	16.71
16-06-may	2:05:08	586	5.4	4.6	-0.8	29	16.70
16-06-may	3:05:08	586	5.7	4.9	-0.8	29	16.70
16-06-may	4:05:08	586	7.3	4.9	-2.4	28	16.70
16-06-may	5:05:08	586	5.6	5.0	-0.5	29	16.71
16-06-may	6:05:08	586	5.7	4.4	-1.3	29	16.71
16-06-may	7:05:08	586	8.9	7.3	-1.6	29	16.71
16-06-may	8:05:08	586	10.7	10.2	-0.6	30	16.71
16-06-may	9:05:08	586	12.6	13.3	0.7	30	16.70
16-06-may	10:05:08	586	14.0	15.7	1.7	31	16.70
16-06-may	11:05:08	586	14.2	15.8	1.6	31	16.70
16-06-may	12:05:08	586	12.3	13.7	1.4	31	16.69
16-06-may	13:05:08	585	11.3	12.2	0.9	31	16.70
16-06-may	14:05:08	585	9.9	9.9	0.0	30	16.71
16-06-may	15:05:08	585	8.7	8.3	-0.4	30	16.70
16-06-may	16:05:08	585	9.3	8.2	-1.0	30	16.70
16-06-may	17:05:08	586	5.2	5.5	0.3	30	16.70
16-06-may	18:05:08	586	4.4	4.2	-0.2	30	16.71
16-06-may	19:05:08	586	2.6	2.5	-0.2	30	16.71
16-06-may	20:05:08	586	0.4	0.1	-0.3	30	16.70
16-06-may	21:05:08	586	-0.3	-1.1	-0.9	29	16.70
16-06-may	22:05:08	586	-0.6	-1.7	-1.1	29	16.71
16-06-may	23:05:08	586	-0.9	-2.0	-1.0	30	16.70



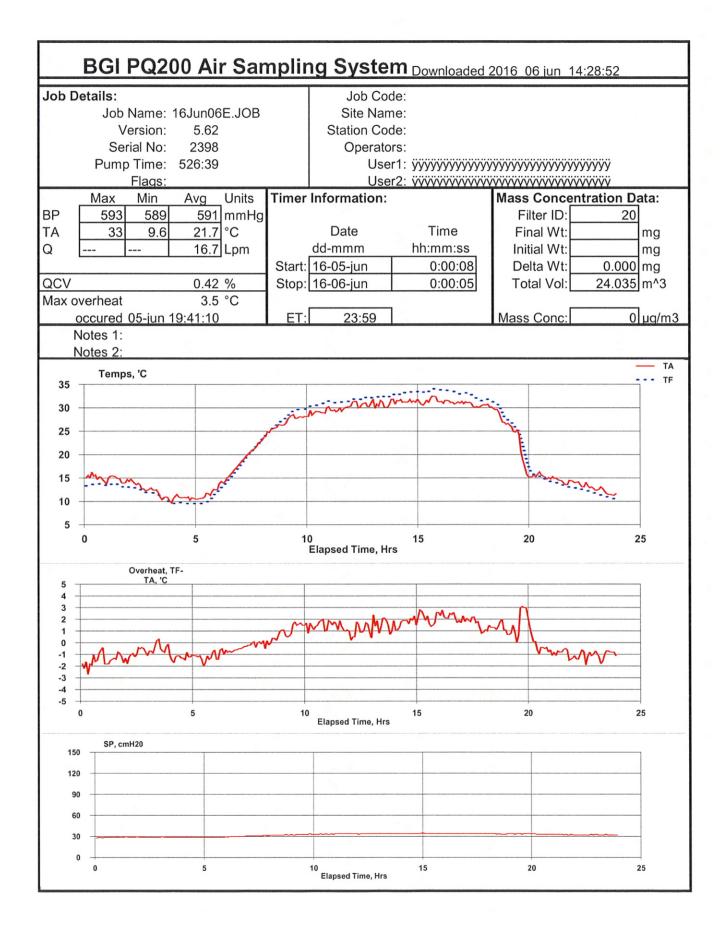
16-12-may	0:05:08	594	5.3	3.7	-1.5	31	16.71
16-12-may	1:05:08	594	3.7	2.7	-1.0	32	16.70
16-12-may	2:05:08	594	2.9	1.8	-1.1	32	16.70
16-12-may	3:05:08	594	2.9	1.4	-1.5	32	16.71
16-12-may	4:05:08	595	1.9	0.8	-1.1	32	16.70
16-12-may	5:05:08	595	1.9	0.6	-1.3	32	16.70
16-12-may	6:05:08	595	6.2	4.9	-1.3	33	16.70
16-12-may	7:05:08	596	11.2	10.7	-0.4	34	16.71
16-12-may	8:05:08	596	14.4	15.0	0.6	35	16.71
16-12-may	9:05:08	596	16.8	18.3	1.5	36	16.71
16-12-may	10:05:08	596	17.7	19.3	1.6	36	16.70
16-12-may	11:05:08	596	18.6	20.3	1.7	36	16.69
16-12-may	12:05:08	595	19.4	20.9	1.5	37	16.71
16-12-may	13:05:08	595	20.5	22.2	1.7	37	16.71
16-12-may	14:05:08	595	21.2	23.5	2.3	38	16.70
16-12-may	15:05:08	594	21.5	23.8	2.3	38	16.71
16-12-may	16:05:08	594	21.6	24.0	2.4	38	16.71
16-12-may	17:05:08	594	21.2	23.1	1.9	38	16.70
16-12-may	18:05:08	594	20.1	21.4	1.4	37	16.71
16-12-may	19:05:08	594	10.6	12.2	1.6	37	16.71
16-12-may	20:05:08	594	7.9	7.2	-0.7	36	16.70
16-12-may	21:05:08	594	7.6	6.2	-1.4	35	16.71
16-12-may	22:05:08	594	7.5	6.2	-1.3	35	16.71
16-12-may	23:05:08	594	6.6	5.7	-0.9	35	16.71



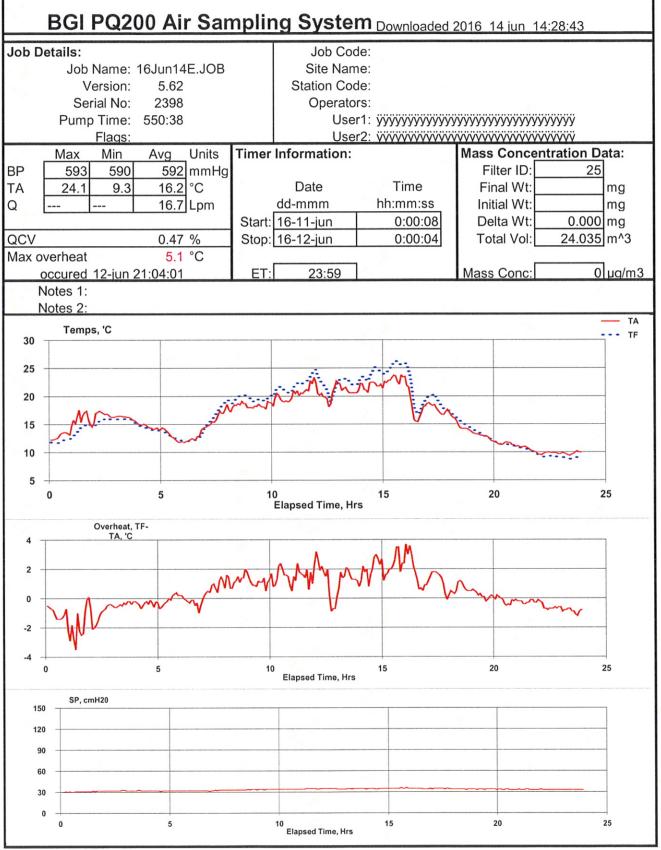
16-18-may	0:05:08	591	4.3	3.1	-1.2	28	16.71
16-18-may	1:05:08	591	4.6	3.2	-1.4	29	16.71
16-18-may	2:05:08	591	5.9	4.7	-1.1	29	16.70
16-18-may	3:05:08	591	6.3	5.6	-0.8	30	16.71
16-18-may	4:05:08	591	4.5	4.4	-0.1	29	16.71
16-18-may	5:05:08	591	4.1	3.3	-0.7	29	16.71
16-18-may	6:05:08	591	6.2	5.0	-1.2	29	16.71
16-18-may	7:05:08	591	8.8	8.2	-0.5	30	16.71
16-18-may	8:05:08	591	11.1	11.8	0.8	31	16.71
16-18-may	9:05:08	591	11.9	13.3	1.4	31	16.70
16-18-may	10:05:08	591	12.0	13.5	1.5	31	16.71
16-18-may	11:05:08	591	10.2	11.1	0.9	31	16.70
16-18-may	12:05:08	591	11.0	12.0	0.9	31	16.71
16-18-may	13:05:08	591	13.3	14.7	1.5	31	16.70
16-18-may	14:05:08	591	13.7	15.1	1.4	32	16.69
16-18-may	15:05:08	591	13.3	14.4	1.1	31	16.70
16-18-may	16:05:08	590	13.2	14.1	0.9	31	16.71
16-18-may	17:05:08	590	13.0	13.6	0.7	31	16.69
16-18-may	18:05:08	590	12.4	12.5	0.1	31	16.71
16-18-may	19:05:08	591	9.5	10.1	0.6	31	16.70
16-18-may	20:05:08	591	7.9	7.9	0.1	31	16.70
16-18-may	21:05:08	591	5.1	5.3	0.2	31	16.71
16-18-may	22:05:08	591	4.3	3.7	-0.6	30	16.71
16-18-may	23:05:08	591	3.9	3.0	-0.9	30	16.71



16-24-apr	0:05:08	588	0.7	-1.2	-1.9	4	16.71
16-24-apr	1:05:08	588	-0.3	-1.6	-1.3	4	16.70
16-24-apr	2:05:08	588	-0.7	-2.1	-1.4	4	16.71
16-24-apr	3:05:08	587	-1.1	-2.5	-1.4	4	16.71
16-24-apr	4:05:08	587	-2.6	-3.4	-0.8	4	16.71
16-24-apr	5:05:08	587	-2.3	-4.0	-1.7	4	16.71
16-24-apr	6:05:08	587	1.7	-2.1	-3.8	4	16.69
16-24-apr	7:05:08	588	7.0	3.6	-3.4	5	16.71
16-24-apr	8:05:08	588	9.5	8.2	-1.2	6	16.72
16-24-apr	9:05:08	588	11.2	11.8	0.6	6	16.71
16-24-apr	10:05:08	588	11.8	13.3	1.5	6	16.69
16-24-apr	11:05:08	587	13.5	14.6	1.1	6	16.67
16-24-apr	12:05:08	587	14.7	15.8	1.1	6	16.70
16-24-apr	13:05:08	586	15.6	17.2	1.6	7	16.70
16-24-apr	14:05:08	586	15.6	17.3	1.7	7	16.71
16-24-apr	15:05:08	586	14.9	16.4	1.5	6	16.70
16-24-apr	16:05:08	586	13.6	15.1	1.5	6	16.69
16-24-apr	17:05:08	585	12.1	13.0	0.9	6	16.71
16-24-apr	18:05:08	585	11.2	11.6	0.4	6	16.70
16-24-apr	19:05:08	585	10.4	10.5	0.1	6	16.70
16-24-apr	20:05:08	585	8.6	9.3	0.7	5	16.72
16-24-apr	21:05:08	585	7.3	7.7	0.4	5	16.69
16-24-apr	22:05:08	584	7.1	7.1	0.0	5	16.71
16-24-apr	23:05:08	583	5.8	6.0	0.3	5	16.70

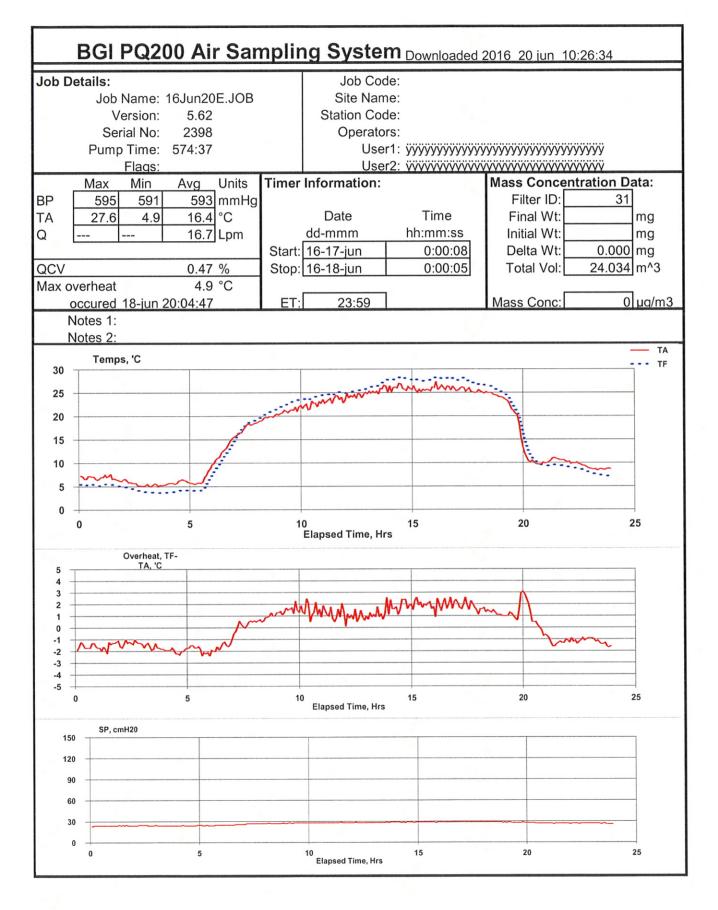


16-05-jun	0:05:08	593	15.1	13.6	-1.5	29	16.71
16-05-jun	1:05:08	593	14.8	13.4	-1.4	29	16.70
16-05-jun	2:05:08	593	13.3	12.4	-0.9	29	16.71
16-05-jun	3:05:08	593	11.1	10.7	-0.5	29	16.71
16-05-jun	4:05:08	593	10.9	9.6	-1.2	29	16.70
16-05-jun	5:05:08	593	11.5	10.3	-1.2	29	16.71
16-05-jun	6:05:08	593	15.7	14.9	-0.8	30	16.70
16-05-jun	7:05:08	593	20.9	20.7	-0.2	31	16.70
16-05-jun	8:05:08	593	25.5	25.8	0.3	32	16.70
16-05-jun	9:05:08	593	28.0	29.2	1.2	33	16.71
16-05-jun	10:05:08	593	29.2	30.6	1.5	33	16.70
16-05-jun	11:05:08	592	29.8	31.2	1.4	34	16.70
16-05-jun	12:05:08	592	30.9	31.9	1.0	34	16.71
16-05-jun	13:05:08	592	30.8	32.4	1.6	34	16.70
16-05-jun	14:05:08	591	31.5	33.2	1.7	34	16.70
16-05-jun	15:05:08	591	31.6	33.7	2.1	34	16.71
16-05-jun	16:05:08	590	31.2	33.4	2.2	34	16.71
16-05-jun	17:05:08	589	30.7	32.4	1.7	34	16.72
16-05-jun	18:05:08	589	29.0	30.4	1.3	34	16.70
16-05-jun	19:05:08	590	22.2	23.8	1.6	34	16.69
16-05-jun	20:05:08	590	15.4	15.2	-0.2	33	16.71
16-05-jun	21:05:08	590	14.4	13.5	-0.9	33	16.71
16-05-jun	22:05:08	590	13.4	12.3	-1.1	32	16.71
16-05-jun	23:05:08	590	12.0	11.0	-1.0	32	16.71



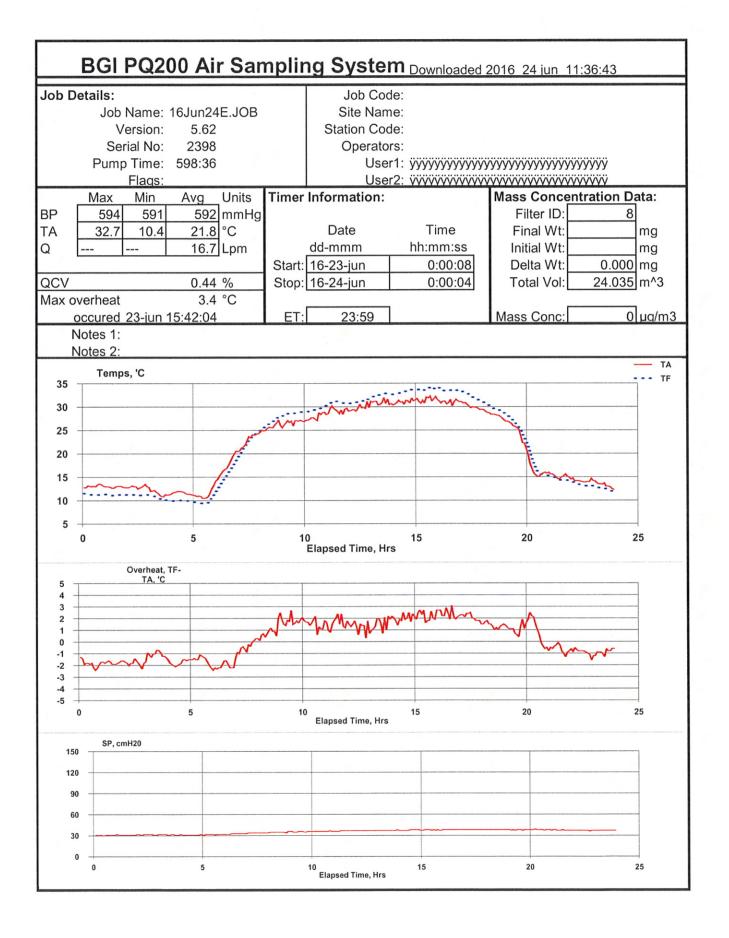
# - 11

16-11-jun	0:05:08	592	13.1	12.0	-1.1	31	16.70
16-11-jun	1:05:08	592	16.0	14.3	-1.7	32	16.70
16-11-jun	2:05:08	592	16.8	15.7	-1.1	32	16.71
16-11-jun	3:05:08	592	16.1	15.7	-0.4	32	16.70
16-11-jun	4:05:08	592	14.5	14.2	-0.4	32	16.70
16-11-jun	5:05:08	592	12.9	12.8	-0.1	32	16.70
16-11-jun	6:05:08	592	12.8	12.6	-0.3	32	16.70
16-11-jun	7:05:08	592	16.3	17.0	0.8	33	16.71
16-11-jun	8:05:08	592	18.3	19.6	1.3	33	16.71
16-11-jun	9:05:08	592	18.3	19.4	1.1	34	16.70
16-11-jun	10:05:08	593	19.5	21.0	1.5	34	16.71
16-11-jun	11:05:08	593	21.4	23.0	1.6	35	16.70
16-11-jun	12:05:08	593	20.4	21.5	1.1	35	16.70
16-11-jun	13:05:08	593	21.1	22.5	1.4	35	16.71
16-11-jun	14:05:08	593	21.8	23.9	2.1	35	16.71
16-11-jun	15:05:08	592	23.1	25.3	2.2	35	16.71
16-11-jun	16:05:08	592	18.0	19.9	1.9	35	16.70
16-11-jun	17:05:08	592	17.6	18.8	1.2	35	16.71
16-11-jun	18:05:08	592	14.8	15.5	0.7	34	16.71
16-11-jun	19:05:08	592	12.8	13.0	0.2	34	16.70
16-11-jun	20:05:08	592	11.5	11.3	-0.2	33	16.70
16-11-jun	21:05:08	593	10.5	10.3	-0.2	33	16.71
16-11-jun	22:05:08	592	9.8	9.2	-0.6	33	16.71
16-11-jun	23:05:08	592	9.8	8.9	-0.9	33	16.70



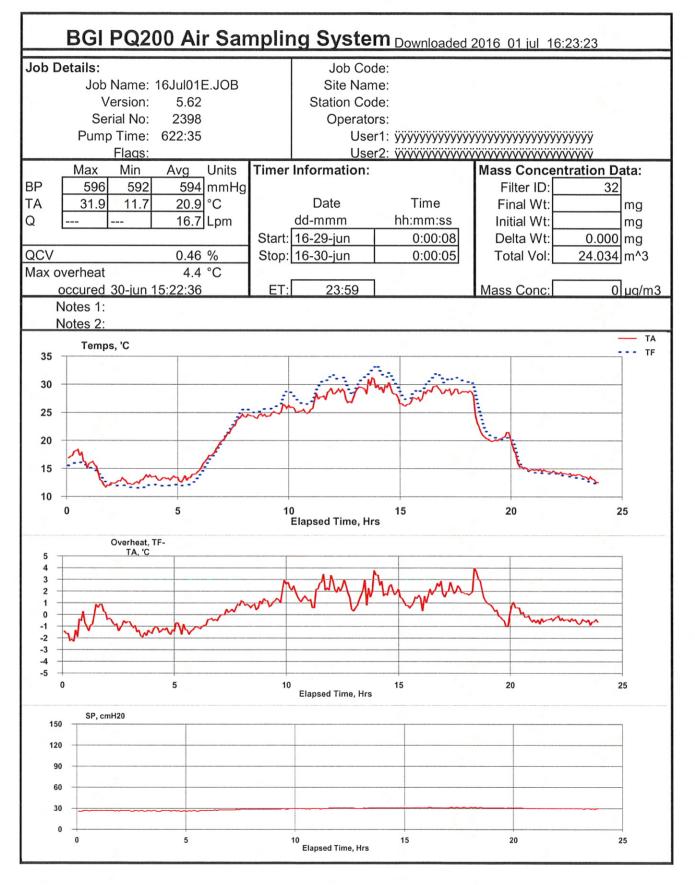
## Hourly

16-17-jun	0:05:08	593	6.9	5.3	-1.6	24	16.71
16-17-jun	1:05:08	592	6.8	5.3	-1.5	24	16.71
16-17-jun	2:05:08	592	5.6	4.3	-1.3	25	16.71
16-17-jun	3:05:08	593	5.3	3.7	-1.7	24	16.70
16-17-jun	4:05:08	593	6.0	4.0	-2.0	24	16.71
16-17-jun	5:05:08	593	6.8	4.9	-1.9	25	16.71
16-17-jun	6:05:08	594	12.8	11.2	-1.6	25	16.71
16-17-jun	7:05:08	594	17.5	17.7	0.2	27	16.71
16-17-jun	8:05:08	594	19.7	20.6	0.9	27	16.71
16-17-jun	9:05:08	594	21.3	22.8	1.5	28	16.70
16-17-jun	10:05:08	594	22.5	24.0	1.5	28	16.70
16-17-jun	11:05:08	594	23.5	24.8	1.3	28	16.70
16-17-jun	12:05:08	594	24.5	25.4	0.9	28	16.70
16-17-jun	13:05:08	594	25.6	26.8	1.2	28	16.71
16-17-jun	14:05:08	594	26.0	27.9	1.9	29	16.70
16-17-jun	15:05:08	594	25.7	27.7	2.0	29	16.71
16-17-jun	16:05:08	594	26.1	28.1	2.0	29	16.69
16-17-jun	17:05:08	593	25.6	27.4	1.8	29	16.71
16-17-jun	18:05:08	594	24.8	26.1	1.4	29	16.70
16-17-jun	19:05:08	594	20.6	22.0	1.4	28	16.70
16-17-jun	20:05:08	594	10.3	11.0	0.8	27	16.71
16-17-jun	21:05:08	594	10.6	9.3	-1.2	27	16.70
16-17-jun	22:05:08	594	9.6	8.5	-1.1	27	16.70
16-17-jun	23:05:08	594	8.6	7.3	-1.3	27	16.70



## Hourly

16-23-jun	0:05:08	593	13.1	11.3	-1.9	31	16.69
16-23-jun	1:05:08	593	12.9	11.2	-1.7	31	16.69
16-23-jun	2:05:08	593	13.0	11.2	-1.8	32	16.70
16-23-jun	3:05:08	593	11.5	10.4	-1.1	32	16.71
16-23-jun	4:05:08	593	11.7	9.9	-1.8	31	16.70
16-23-jun	5:05:08	593	11.5	9.9	-1.6	32	16.71
16-23-jun	6:05:08	594	17.7	15.7	-2.0	33	16.71
16-23-jun	7:05:08	594	23.1	22.7	-0.4	34	16.70
16-23-jun	8:05:08	594	25.8	26.7	1.0	35	16.70
16-23-jun	9:05:08	594	26.8	28.6	1.8	36	16.70
16-23-jun	10:05:08	594	27.9	29.4	1.5	36	16.71
16-23-jun	11:05:08	594	29.3	30.9	1.6	37	16.71
16-23-jun	12:05:08	594	29.9	31.2	1.3	37	16.71
16-23-jun	13:05:08	593	30.9	32.5	1.6	37	16.71
16-23-jun	14:05:08	593	31.1	33.2	2.0	38	16.70
16-23-jun	15:05:08	592	31.6	33.8	2.2	38	16.70
16-23-jun	16:05:08	592	31.1	33.5	2.4	38	16.71
16-23-jun	17:05:08	592	30.1	32.2	2.1	38	16.70
16-23-jun	18:05:08	592	28.4	29.8	1.4	38	16.70
16-23-jun	19:05:08	592	24.9	26.0	1.1	38	16.70
16-23-jun	20:05:08	592	16.2	17.0	0.8	38	16.70
16-23-jun	21:05:08	592	15.1	14.5	-0.6	37	16.70
16-23-jun	22:05:08	593	14.2	13.3	-0.9	37	16.71
16-23-jun	23:05:08	593	13.2	12.4	-0.9	37	16.70



## Hourly

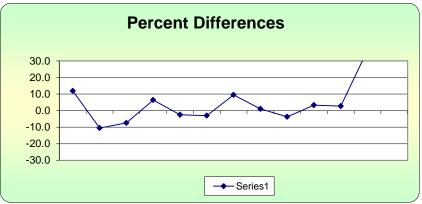
16-29-jun	0:05:08	595	17.1	15.8	-1.3	27	16.70
16-29-jun	1:05:08	595	13.7	13.6	-0.1	27	16.70
16-29-jun	2:05:08	595	12.6	11.9	-0.7	27	16.71
16-29-jun	3:05:08	594	13.3	11.8	-1.4	27	16.70
16-29-jun	4:05:08	594	13.3	12.0	-1.3	27	16.70
16-29-jun	5:05:08	595	13.6	12.4	-1.2	27	16.71
16-29-jun	6:05:08	595	17.7	17.0	-0.6	28	16.70
16-29-jun	7:05:08	595	22.6	23.1	0.4	29	16.70
16-29-jun	8:05:08	596	24.4	25.3	0.9	29	16.71
16-29-jun	9:05:08	596	25.3	26.8	1.5	30	16.70
16-29-jun	10:05:08	596	25.4	27.2	1.8	30	16.70
16-29-jun	11:05:08	595	27.9	30.1	2.2	30	16.70
16-29-jun	12:05:08	595	28.1	30.1	2.0	31	16.71
16-29-jun	13:05:08	594	29.8	31.7	1.9	31	16.71
16-29-jun	14:05:08	594	28.8	31.0	2.2	31	16.70
16-29-jun	15:05:08	593	27.0	28.2	1.2	31	16.70
16-29-jun	16:05:08	593	29.0	30.9	1.9	31	16.70
16-29-jun	17:05:08	593	28.8	30.9	2.1	31	16.70
16-29-jun	18:05:08	593	24.0	26.3	2.2	31	16.69
16-29-jun	19:05:08	593	20.5	20.4	0.0	31	16.71
16-29-jun	20:05:08	595	15.9	16.2	0.2	30	16.71
16-29-jun	21:05:08	594	14.6	14.2	-0.5	30	16.70
16-29-jun	22:05:08	594	14.1	13.7	-0.4	30	16.71
16-29-jun	23:05:08	594	13.3	12.8	-0.6	30	16.71

# APPENDIX C

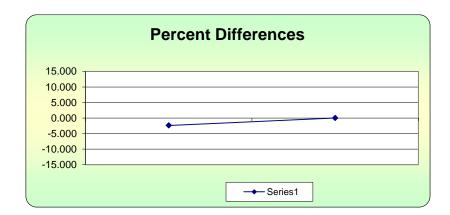
**Precision and Single-Point Flow Rate Checks** 

# Precision Estimate (From Collocated Samples)

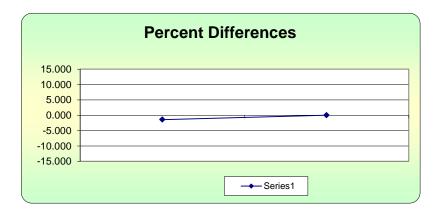
Monitors 963B &	964C	Pollutant typ	e:				CV <sub>ub</sub> (%)	
Meas Val (Y)	Audit Val (X)	d (Eqn 10)	25th Percentile	d <sup>2</sup>	d	d  <sup>2</sup>		
8	7.1	11.9	-3.058	142.099	11.921	142.099		
7.2	8	-10.5	75th Percentile	110.803	10.526	110.803	n ∑ d	∑ d ²
18.2	19.6	-7.4	9.469	54.870	7.407	54.870	13 158.118	
17.7	16.6	6.4		41.139	6.414	41.139	n-1 ∑d	∑d²
59.5	61	-2.5		6.198	2.490	6.198	12 103.679	5357.023
16.1	16.6	-3.1		9.352	3.058	9.352		
36.5	33.2	9.5		89.665	9.469	89.665		
9.2	9.1	1.1		1.194422	1.093	1.194		-
10.5	10.9	-3.7		13.975	3.738	13.975	CV (%) (Eqn 11)	
12.2	11.8	3.3		11.11111	3.333	11.111	18.96	
44.9	43.7	2.7		7.338	2.709	7.338		-
62.9	43.5			1329.781	36.466	1329.781		
61.5	33.3	59.5		3539.497	59.494	3539.497		



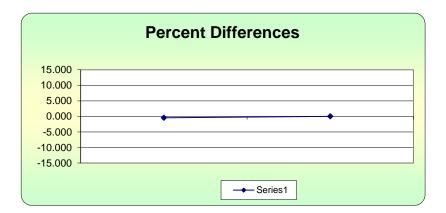
Site ID: Monitor	962A	Pollutant typ	be:				В	ias (%)	
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d²	d	d  <sup>2</sup>			-
16.7	16.84	-0.831	-2.005	0.691	0.831	0.691			
16.7	17.11	-2.396	75th Percentile	5.742	2.396	5.742	n	∑∣d∣	"AB" (Eqn 4)
			-1.223				2	3.228	1.614
							n-1	$\sum  \mathbf{d} ^2$	"AS" (Eqn 5)
							1	6.433	1.107
						_	E	3ias (%) (Egn 3)	Both Signs Positive
								6.55	
							S	igned Bias (%)	Both Signs Negative
							-6	6.55	TRUE



Site ID: M	lonitor 9	963B	Pollutant typ	e:				E	Bias (%)	
Meas Va	l <b>l (Y)</b> 16.7	Audit Val (X) 16.72	d (Eqn. 1) -0.120	25th Percentile -1.092	<b>d<sup>2</sup></b> 0.014	<b>d </b> 0.120	∣ <b>d ²</b> 0.014			
	16.7	16.94	-1.417	75th Percentile	2.007	1.417	2.007		<u>Σ</u>  d	"AB" (Eqn 4)
				-0.444				2 n-1	1.536 <b>∑∣d </b> ²	0.768 <b>"AS" (Eqn 5)</b>
								1	2.022	0.917
									<b>Bias (%) (Eqn 3)</b> 4.86	Both Signs Positive FALSE
									<b>6igned Bias (%)</b> 4.86	Both Signs Negative TRUE



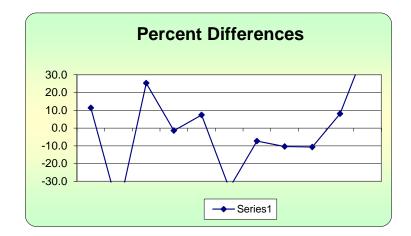
\$ Site ID: Monitor	· 964C	Pollutant typ	be:				B	ias (%)	
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d²	d	d  <sup>2</sup>			
16.7	16.26	2.706	0.319	7.323	2.706	7.323			
16.7	16.78	-0.477	75th Percentile	0.227	0.477	0.227	n	∑∣d∣	"AB" (Eqn 4)
			1.910				2	3.183	1.591
							n-1	$\Sigma  \mathbf{d} ^2$	"AS" (Eqn 5)
							1	7.550	1.576
						-			
							E	3ias (%) (Eqn 3)	Both Signs Positive
								8.63	TRUE
							Si	igned Bias (%)	Both Signs Negative
							+8	8.63	FALSE



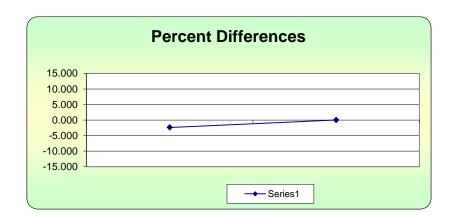
<b>Alton Coal Develo</b>	pment, LLC - Coal	Hollow Mine - NPL
--------------------------	-------------------	-------------------

# Precision Estimate (From Collocated Samples)

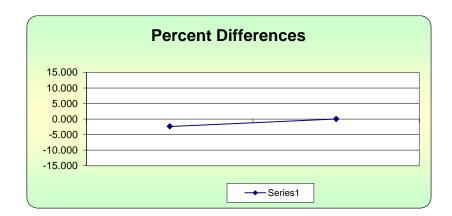
Monitors 963D &	964E	Pollutant type:					CV <sub>ub</sub> (%)	
Meas Val (Y)	Audit Val (X)	d (Eqn 10)	25th Percentile	ď	d	d  <sup>2</sup>		
8.4	7.5	11.3	-10.514	128.159	11.321	128.159		
7.7	12.3	-46.0	75th Percentile	2116.000	46.000	2116.000	n ∑ d	$\Sigma  \mathbf{d} ^2$
10.7	8.3	25.3	9.667	638.227	25.263	638.227	11 209.158	6684.510
34.4	34.9	-1.4		2.082	1.443	2.082 <b>n</b>	-1 ∑d	∑d²
73.3	68.1	7.4		54.096	7.355	54.096	10 -10.135	6684.510
24.8	34.9	-33.8		1144.864	33.836	1144.864		
10.5	11.3	-7.3		53.868	7.339	53.868		
24.7	27.4	-10.4		107.4267	10.365	107.427		
72.8	81	-10.7		113.704	10.663	113.704	CV (%) (Eqn 11)	
122	112.6	8.0		64.21843	8.014	64.218	26.19	
78.6	48.4	47.6		2261.864	47.559	2261.864		



S	Site ID:	Monitor	2366D	Pollutant typ	be:				B	sias (%)	
	Meas	Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d²	d	∣d ²			
		16.72	16.03	4.304	0.897	18.528	4.304	18.528			
		16.72	16.76	-0.239	75th Percentile	0.057	0.239	0.057	n	∑∣d∣	"AB" (Eqn 4)
					3.169				2	4.543	2.272
									n-1	$\Sigma  \mathbf{d} ^2$	"AS" (Eqn 5)
									1	18.585	2.875
									Г	Bias (%) (Egn 3)	Both Signs Positive
										15.11	
									S	igned Bias (%)	Both Signs Negative
									+	15.11	FALSE



Site ID	: Monitor	2398E	Pollutant typ	be:				В	ias (%)	
Meas	s Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d²	d	d  <sup>2</sup>			
	16.7	16.85	-0.890	-0.978	0.792	0.890	0.792			
	16.7	16.87	-1.008	75th Percentile	1.015	1.008	1.015	n	∑∣d∣	"AB" (Eqn 4)
				-0.920				2	1.898	0.949
								n-1	$\Sigma  \mathbf{d} ^2$	"AS" (Eqn 5)
								1	1.808	0.083
							-			
										Both Signs Positive
									1.32	FALSE
								S	igned Bias (%)	Both Signs Negative
								-1	.32	TRUE



# APPENDIX D

**Field Data Sheets** 

# Background Monitor 962A

	Liciyo	oth Day Sa	ampring		T		1 1		1
Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
		A. A.			1	1	a and a second	a the part	and the second
8				1.20	13				and a stream
4-20-16	10:17	04-20-16	F'17	13	16	M-M	9/24/16	KN	
4-25-16	1132	04-25-16	1030	16	21	M-M	04-30-16		
-02-16		05-02-16		21	26	M-M	05-06-16		a ton Shutdo
509-16	1023	05-09-16	1522	26	31	M-M	05-12-16	JKSR	
-13-16	08:22	05-13-16	6722	31	4	M-M	05-18-16	KN	Repaired 9/10 KN
-20-16	0532	05-20-16	0431	4	9	MIM	05-24/-16	KN	at shutdow
-25-16	1007	05-25-16	1006	9	13	M-M	15-30-16	JKSP-	TLOW Battery Shutdown Repaired cable ago
31-16	10.39	05-31-16		13	36	MA-MA	66-05-16	KN	my my concerned
6-06-16	1439	06-06-16	1338	36	1.1.2.2.1.1.2	M-M	06-11-16		
-14-16	1336	06-14-16	1235	21	27	M-M	06-17-16		
6-20-16	1041	06-20-16	0939	27	4	M-M	06-23-16		F-code
6-24-16		06-24-16		4	9	M-M	06-29-16		
7-01-16	1659	07-01-16	1558	1.9	13	M.M	07-05-16	JKSR	
10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1. Di 1. 19	. Breach				a frances		-	
				1000					
fander of the			and an and a set	and the part			· · · · · · · · · · · ·	in the second second	
	111	A second second	1	(Internet	0.5	and the second			

# Table I - Every 6th Day Sampling

# Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
04-19-16	9:40	99	99	Pass	KN	
04-19-16	14:42	98	58	Pass	KN	
	12.12			A		
Well Sheer	State Charles	to a star	同時の		Star Star	

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
09-29-16	9:45	16.70	584	585	18.6	18.6	17.34	16.84	-0.83	KN
05-31-16	10:48	16.70	585	586	19.5	19.7	13.45	17.11	-2.4	KN
an a						A December 2			li anti anti anti anti anti anti anti ant	

# Compliance Monitor 963B

Table I -	Every o	th Day 5	ampling						-
Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
				ill.	14				
04-20-16	10:47	04-20-16	9:46	14	17	M-M	09/24/16	KN	
04-25-16		04-25-16		17	22	M-M	04-30-16	JESR	still Running
05-02-16	1108	05-02-16		22	27	M-M	05-06-16	JKSR	
05-09-16	1639	05-09-16		27	32	M-M	05-12-16	JKSR	
05-13-16	0846	05-13-16	0745	J2	5	M-M	05-18-16	KN	
05-2:0-16		05-20-16		5	10	mm	0524-16	KN	
05-25-16	1120	09-25-16		10	15	M-M	05-30-16		
65-31-16	1102	05-31-16	1001	15	37	1103	Field	Alack KA	
05-31-16	1107	05-31-16	1006	37	38	M-Mn	06/05/16	KN	
06-06-16	1456	06-06-16	1356	38	26		06-06-16		Blank
06-06-16	1457	06-06-16	1357	2026	22	M·M	06-01-16	JKSR	
06-14-16	1519	06-14-16	1418	22	28	M-M	06-17-16	JKSR	
06-20-16	1055	06-20-16	10 955	28	5	M-M	06-23-16	JKSR	
06-24-16	1226	06-24-16	1125	5	10	M-M	06-29-15		
07-01-16	1714	07-01-16		10	14	M-M	07-05-16		- C
	×						-		

# Table I - Every 6th Day Sampling

# Table II - Monthly Leak Test

05-31-16	1111	1.14	110	Pass	KN	
64-29-16	10:10	110	108	Pass	KN	Wantenance
Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
04-29-16	10:15	16.70	591	592	20,7°C	20,8°C	1.3.22	16.72	-0,12	KN
5-31-16	1120	16:70	591	592	20,9	21.6	13.36	16,94	-1.47	KN

# **Co-located Monitor 964C**

Table I	- Every	6th	Day	Sampling
---------	---------	-----	-----	----------

			1 0						-
Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
	~				15				
04-20-16	10149	04-20+6	9148	15	18	AAAA	04-24-16	KAL	
04-25-16	1149	04-30-16		18	23	11-M	07-30-6	JKSR	
05.02-16	1109	05-02-16	1007	23	28	M-M	05-06-16	JKSR	
05-09-16	1640	05-09-16	1538	28	33	M-M	05-12-16	JKSR	
05-13-16	0850	05-13-16	6748	33	6	MA-M	05-18-16	KN	
05-20-16	*	05-20-16	0452	6	//	M-M	05-24-16		
05-25-16	1121	05-25-16		11	16	M.M.	05-30-16		<u>en en e</u>
5-31-16	1125	05-31-16	1023	16	17	m-m	06.05-16	KN	
06-06-16	1459	06-06-16	1357	17	23	M-M	06-11-16	JKSR	
06-14-16	1520	06-14-16	1417	23	29	MM.	06-17-16	UKSR	
06-20-16	1054	06-20-16	0951	29	Blause	1054	06-20-16	JKSR	BLank
06-20-16	1058	06-20-16		Blanks	10	M-M	06-23-16	JKSR	
06-24-16	1228	06-24-16		6	11	M-M	06-29-16	JESR	
07-01-16	1715	07-01-16	1612	11	15	M-M	07-05-16	JKSR	
					the second s				1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1

# Table II - Monthly Leak Test

· · ·		Initial SP	Final SP			
Date	Time	Value	Value	Pass/Fail	Initials	Maintenance
04-29-16	10:21	93	91	Pass	KN	
05-31-16	1128	114	111	Pars	ICAL	
	1					

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
04-29-16	10:26	16.20	594	593	20,60	20,800	1.3.02	16.76	2,7	KN
05-31-16	11:32		513	592	20.9	21,1	13.25	16.78	-0.5	KAL
		1								

# Compliance Monitor 2366D

Table I -		an Day o	ampring						
Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
					39				1
04-20-16	11:18	09-20-16	10:16	39		M- M	04-24-16	KN	1
04-25-16	1200	04-25-16		19	19 24	M-M	07-30-16		]
05-02-16		05-06-16		24	29	M.M.	05-06-16		
05-09-16		05-09-16	1548	29	34	M-M	05-12-16	JKSR	
05-13-16	0904	05-13-16	6801	34	7	M-m	05-18-16	KN	> shahantship same > Field Bank Still Running
0520-16	0607	05-20-16	0504	7	12		05-29-16	KN	-sharansing and
05-25-16	1133	05-25-16	1030	12	41	M-M	05-30-16	JKSR	11- 16
05-31-16	1249	05-31-16		41	18		05:1-16	KAI	> Field Bank
65-3-16	1253	05-31-16	11:50	18	19	M-M	08-05-16	KN	
06-06-16		06-06-16		19	24	M-M	06-11-16	JKSR	Stall Running
06-14-16		06-17-16		24	30	M-M	06-17-16	JESR	
06-20-16	1129	06-20-16	1026	30	7	N-M	06-23-16	JKSR	-
06-24-16		16-24-16	1135	7	12	M-M	06-29-16	JKSR	
17-01-16	1725	07-01-16		12	16	M-M	07-0516	JKSR	-
·									]
									]

# Table I - Every 6th Day Sampling

## Table II - Monthly Leak Test

		Initial SP	Final SP			
Date	Time	Value	Value	Pass/Fail	Initials	Maintenance
04-29-16	10:54	98	97	Pass	KN	
05-31-16	1255	99	97	Pars	KN	

# Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
64-29-16	11:00	16.72	589	590	21.2	21.8	13.02	16.26	4.3	KN
05-31-16	1300	16.72	589	571	23.1	24.0	13.08	16,76	-0.25	KAL

1

ţ

# **Co-located Monitor 2398E**

TableT	Litery of			Contraction of the local division of the loc					
Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
	[			[					
					40				
09-20-16	11:03	134-20-16	16:11	40	20	M-M	04/24/16	KN	Filtercharber open Ette
04-25-16		04-25-16	1100	20	25	M-M	04-30-16	JKSR	Filterchaur
05-02-16	1121	05-02-16	1019	25	30	M-M	05-06-16	01-21-	
05-09-16	1652	05-09-16	1548	30	35	M-M	05-12-16		
05-13-16		05-13-16		25	8	M · M	05-18-16		
05-20-16	0616	05-20-16		8	14	M-M	05-24-16	KAI	
05-25-16	1134	05-25-16	1030	14	42	M-M	05-30-46	JKSR	
05-25-16	1305	05-31-16	1204	14	42-		05-05-16	KN	
	<b>1305</b> 1532		1204					KN	
05-21-16	1305 1532 1532	05-31-16	1204	42	<b>20</b> 25 3(	MA - M	05-05-16	JKSP	
05-31-16 06-06-16 06-14-16 06-20-16	<b>1305</b> 1532 1532 1130	05-31-16	1204 1429 1428 1026	<b>4/2</b> 20	20 25 3( 8	м-м м-м М-м	06-11-16	JKSP JKSP JKSR	
05-21-16 06-06-16 06-14-16 06-20-16 06-24-16	1305 1532 1532 1130 1241	05-31-16 06-06-16 06-14-16 06-20-16 06-24-16	1204 1429 1428 1026 1135	<b>42</b> 20 25	<b>20</b> 25 3(	м-м м-м М-м	06-17-16 06-17-16 06-23-16 06-23-16	JKSP JKSP JKSR JKSR VKSR	Blank
05-21-16 06-06-16 06-14-16 06-20-16 06-24-16 06-24-16	1305 1532 1532 130 1241 1241	05-31-14 06-06-16 06-14-16 06-20-16 06-24-16 06-24-16	1204 1429 1428 1026 1135	<b>42</b> 20 25 31	20 25 3( 8	м-м м-м М-м	06-11-16 06-17-16 06-17-16 06-23-16 06-24-16 06-29-16	JKSP JKSP JKSR JKSR JKSR	
05-21-16 06-06-16 06-14-16 06-20-16 06-24-16	1305 1532 1532 130 1241 1241	05-31-16 06-06-16 06-14-16 06-20-16 06-24-16	1204 1429 1428 1026 1135	<b>¥2</b> 20 25 31 8	20 25 3( 8 33 <sup>Blank</sup>	м-м м-м М.М. #-Я	06-17-16 06-17-16 06-23-16 06-23-16	JKSP JKSP JKSR JKSR JKSR	
05-21-16 06-06-16 06-14-16 06-20-16 06-24-16 06-24-16	1305 1532 1532 130 1241 1241	05-31-14 06-06-16 06-14-16 06-20-16 06-24-16 06-24-16	1204 1429 1428 1026 1135 1135	<b>42</b> 20 25 31 8 33	<b>20</b> 25 3( 8: 33 <sup>Blank</sup> 32	м-М М-М М. М <u>М-М</u> М-М	06-11-16 06-17-16 06-17-16 06-23-16 06-24-16 06-29-16	JKSP JKSP JKSR JKSR JKSR	
05-21-16 06-06-16 06-14-16 06-20-16 06-24-16 06-24-16	1305 1532 1532 130 1241 1241	05-31-14 06-06-16 06-14-16 06-20-16 06-24-16 06-24-16	1204 1429 1428 1026 1135 1135	<b>42</b> 20 25 31 8 33	<b>20</b> 25 3( 8: 33 <sup>Blank</sup> 32	м-М М-М М. М <u>М-М</u> М-М	06-11-16 06-17-16 06-17-16 06-23-16 06-24-16 06-29-16	JKSP JKSP JKSR JKSR JKSR	
05-21-16 06-06-16 06-20-16 06-24-16 06-24-16	1305 1532 1532 130 1241 1241	05-31-14 06-06-16 06-14-16 06-20-16 06-24-16 06-24-16	1204 1429 1428 1026 1135 1135	<b>42</b> 20 25 31 8 33	<b>20</b> 25 3( 8: 33 <sup>Blank</sup> 32	м-М М-М М. М <u>М-М</u> М-М	06-11-16 06-17-16 06-17-16 06-23-16 06-24-16 06-29-16	JKSP JKSP JKSR JKSR JKSR	

# Table I - Every 6th Day Sampling

ŧ

「町」、海上の「」

# Table II - Monthly Leak Test

		Initial SP	Final SP			
Date	Time	Value	Value	Pass/Fail	Initials	Maintenance
04-29-16	11:06	99	97	Pass	KN	
65-31/16	1306	96	94	PASS	KN	
- /			. 1			
	· · · ·					

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)		Delta Cal Flow (Qa)	Accuracy	Initials
04-29-16	11:11	16.7	591	591	21.3	21.8	13.19	16.85	-0,89	KN
05-21-16		16.7	591	591	225	22.9	13.22	16.87	- 401	KĄ

# APPENDIX E

Independent PM<sub>10</sub> Sampler Performance Audit Report

#### AUDIT REPORT FOR

#### ALTON COAL DEVELOPMENT, LLC COAL HOLLOW MINE ALTON, UTAH SECOND QUARTER 2016

Prepared for

Kirk Nicholes Alton Coal Development, LLC 463 N 100 W Cedar City, Utah, 84721

Prepared by



1901 Sharp Point Dr. Suite E Fort Collins, CO 80525 970-484-7941

Site Audited: April 20, 2016



TABLE OF CON	TENTS
--------------	-------

Section	Page
1.0 INTRODUCTION	1-1
<b>2.0 AUDIT METHODS AND EQUIPMENT</b> 2.1 Particulate Samplers	<b>2-1</b> 2-1
3.0 AUDIT RESULTS	3-1
APPENDIX A Audit Data Forms	A-1
APPENDIX B Audit Standards Certifications	B-1

# LIST OF TABLES

## Table

Page

1-1	Site Location Information	1-1
1-2	Summary of Particulate Audit Results	1-1
2-1	Particulate Samplers, Audit Methods and Acceptance Criteria	2-1
2-2	Particulate Samplers, Audit Equipment	2-2

#### **1.0 INTRODUCTION**

Air Resource Specialists, Inc. (ARS) conducted a performance audit of Alton Coal Development, LLC ambient air quality monitoring systems on April 20, 2016. The monitoring sites are located at the Coal Hollow Mine near Alton, Utah.

#### Table 1-1

#### Site Location Information

	Primary CHM	Background	Primary NPL	Meteorological
Latitude	37° 24' 5.0" N	37° 24' 20.9" N	37° 24' 43" N	37° 23' 53.2" N
Longitude	112° 27' 21.0" W	112° 26' 1.1" W	112° 27' 30.6" W	112° 26' 43.1" W
UTM	12S 371147	128 373119	12S 370928	12S 372073
	4140396	4140856	4141570	4140018
Elevation	6,890 feet MSL	7,158 feet MSL	6,959 feet MSL	7,007 feet MSL

Audit results for the particulate samplers are summarized in Table 1-2. Detailed discussions of performance audit findings and other findings can be found in Section 3.0.

#### Table 1-2

#### Summary of Particulate Sampler Audit Results

	Parameter	Instrument	Within Accuracy Goal
Primary CHM	$PM_{10}$	BGI PQ200S	Yes
	PM <sub>10</sub> (collocated)	BGI PQ200S	Yes
Background #1	$PM_{10}$	BGI PQ200S	Yes
Primary NPL	$PM_{10}$	BGI PQ200	Yes
	$PM_{10}$ (collocated)	BGI PQ200	Yes

Details of the audit are presented in the following sections:

Section 2.0	Audit Methods and Equipment
Section 3.0	Audit Results
Appendix A	Audit Data Forms
Appendix B	Audit Standards Certifications

Any questions related to this audit or audit report should be addressed to:

Christian A. Kirk Quality Assurance Officer / Lead Auditor **Air Resource Specialists, Inc.** 1901 Sharp Point Drive, Suite E Fort Collins, Colorado 80525 Telephone: 970-484-7941 Fax: 970-484-3423 E-mail: <u>ckirk@air-resource.com</u>

#### 2.0 AUDIT METHODS

Audit procedures, audit challenge ranges, and acceptance criteria are described below. These ranges and limits conform to EPA's PSD guidelines. Audit results were verbally communicated to the site operator prior to departure from the site. A follow-up e-mail summarizing audit findings was also sent to Alton Coal Development, LLC personnel. Audit details are provided in Appendix A.

Guidance from the following EPA documents was used to establish the audit procedures:

- 40 CFR 58, Appendix A. Quality Assurance Requirements for SLAMS, SPMs, and PSD Air Monitoring
- EPA Quality Assurance Handbook for Air Pollution Measurement Systems:
  - Volume I. A Field Guide to Environmental Quality Assurance
  - Volume II. Ambient Air Quality Monitoring Program
  - Volume IV. Meteorological Measurements
- EPA Meteorological Monitoring Guidance for Regulatory Modeling Applications
- EPA Transfer Standards for Calibration of Air Monitoring Analyzers for Ozone

#### 2.1 PARTICULATE SAMPLERS (FRM PM<sub>10</sub>)

The filter-based FRM  $PM_{10}$  particulate samplers are audited in their normal operating mode. ARS audits the samplers with a BGI DeltaCal audit standard which measures flow, temperature, and barometric pressure. Prior to conducting the flow audit, a system leak check is performed in accordance with the manufacturer's specifications. The observed volumetric operational flow and design flow of the sampler are compared to the audit flows measured by the audit standard. Differences between the operational sampler flow and audit flow that are greater than  $\pm 10\%$  are considered out of tolerance. Differences between the designated design flow and the audit flow greater than  $\pm 10\%$  are considered out of tolerance. In addition to the flow audits, observed ambient temperature, filter temperature, and barometric pressure measurements of the particulate samplers are also audited by comparison to the audit standard. A temperature difference greater than  $\pm 2^{\circ}C$  and a barometric pressure difference greater than  $\pm 10mm$  Hg are considered out of tolerance. Audit methods and acceptable criteria for the particulate samplers are summarized in Table 2-1.

#### Table 2-1

## Particulate Samplers Audit Acceptance Criteria

Parameter	Audit Method	Acceptance Criteria
FRM PM <sub>10</sub>	Leak Check	Manufacturer specs
	Audit flow to actual sampler flow	<u>≤</u> ±10%
	Design criteria flow to audit flow	<u>≤</u> ±10%
	Audit temperature to sampler temperature	$\leq \pm 2 ^{\circ} C$
	Audit temperature to sampler filter temperature	$\leq \pm 2 ^{\circ} C$
	Audit barometric pressure to sampler pressure	$\leq \pm 10 \text{ mm Hg}$

## Table 2-2

# Particulate Samplers Audit Equipment

References	Manufacturer	Model Number	Serial Number	Expiration Date
FRM Flow	BGI	DeltaCal	1237	1/26/2017

## **3.0 AUDIT RESULTS**

Audit findings and recommendations are discussed below. Detailed audit results are provided in Appendix A.

Performance Audit Results

There were no performance audit issues or other findings to discuss.

## **APPENDIX A**

## AUDIT DATA FORMS



 Date and Time correct?

 Yes
 No

 If no, time off by:

 -1 min

ABBR.	N/A	CLIENT	Alton	AUDITOR	C.Kirk	DATE	4/20/2016
SITE	SITE NAME Coal Hollow						
Netwo	ork type	Alton Coal-	Coal Hollov				

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltacal	1237	1/26/2017
PM Temperature Standard #1	BGI	deltacal	1237	1/26/2017
PM Barometric Pressure Standard #1	BGI	deltacal	1237	1/26/2017

-0.4

PASS

MANUFACTURER	BGI		
MODEL	PQ200S		
SERIAL NUMBER	N962A		

SETTINGS					
Total Flow	16.70				

Automated LEAK CHECK			
Vacuum Loss Rate	Pass/Fail		
4 cm H2O	PASS		

	FLOW VERIFICATION				
	Reference Instrument Actual Diff Design Diff				
Total Flow	17.14	16.70	-2.6%	2.6%	PASS

15.3

 17.11	10.10	2.070	2.070	17400	
AMBIENT TEMPERATURE SENSOR (°C)					
Referenc	e Instru	ument	Diffe	rence	

14.9

FILTER TEMPERATURE SENSOR (°C)				
Reference	Instrument	Difference		
15.1	14.7	-0.4	PASS	

PRESS			
Reference	Instrument	Difference	
585.5	585.0	-0.5	PASS

AUDIT CRITERIA (<=)					
Temperature Difference (°C) 2					

AUDIT CRITERIA (<=)

Actual Flow % Diff Design Flow % Diff 10%

10%

AUDIT CRITERIA (<=)		
Temperature Difference (°C)	2	

AUDIT CRITERIA (<=)	
Pressure Difference (mmHg)	10



Date and Time correct? ✓ Yes No If no, time off by: 0 min

ABBR.	N/A	CLIENT	Alton	AUDITOR	C.Kirk	DATE	4/20/2016
SITE	NAME	Coal Hollow					
Netwo	Network type Alton Coal- Coal Hollov						

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltacal	1237	1/26/2017
PM Temperature Standard #1	BGI	deltacal	1237	1/26/2017
PM Barometric Pressure Standard #1	BGI	deltacal	1237	1/26/2017

MANUFACTURER	BGI
MODEL	PQ200S
SERIAL NUMBER	N963B

SETTINGS			
Total Flow	16.70		

Automated LEAK CHECK			
Vacuum Loss Rate Pass/Fail			
3 cm H2O	PASS		

	FLOW VERIFICATION				
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	16.88	16.70	-1.1%	1.1%	PASS

AMBIENT TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
16.2	16.1	-0.1	PASS

FILTER TEMPERATURE SENSOR (°C)			
 Reference Instrument Difference			
16.3	15.8	-0.5	PASS

PRESSURE SENSOR (mmHg)			
Reference	Instrument	Difference	
591.0	591.0	0.0	PASS

Actual Flow % Diff	10%
Design Flow % Diff	10%

AUDIT CRITERIA (<=)

	AUDIT CRITERIA (<=)	
PASS	Temperature Difference (°C)	2

AUDIT CRITERIA (<=)	
Temperature Difference (°C)	2

AUDIT CRITERIA (<=)	
Pressure Difference (mmHg)	10



ABB	R. N/A	CLIENT	Alton	AUDITOR	C.Kirk	DATE	4/20/2016
	SITE NAME	Coal I	Hollow				
N	etwork type	Alton Coal-	Coal Hollov				

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltacal	1237	1/26/2017
PM Temperature Standard #1	BGI	deltacal	1237	1/26/2017
PM Barometric Pressure Standard #1	BGI	deltacal	1237	1/26/2017

MANUFACTURER	BGI
MODEL	PQ200S
SERIAL NUMBER	N964C

SETTINGS				
Total Flow	16.70			

Automated LEAK CHECK		
Vacuum Loss Rate	Pass/Fail	
2 cm H2O	PASS	

	FLOW VERIFICATION				
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	16.71	16.70	-0.1%	0.1%	PASS

AMBIENT TE	EMPERATURE S	SENSOR (°C)	
Reference	Instrument	Difference	
16.7	16.8	0.1	PASS

FILTER TEMPERATURE SENSOR (°C)			
 Reference	Instrument	Difference	
16.1	16.5	0.4	PASS

PRESSURE SENSOR (mmHg)			
Reference	Instrument	Difference	
591.0	593.0	2.0	PASS

If no, time off by:
-2 min

Date and Time correct? Yes 🗸 No

- 1

AUDIT CRITERIA (<=)		
Actual Flow % Diff	10%	
Design Flow % Diff	10%	

	AUDIT CRITERIA (<=)		
PASS	Temperature Difference (°C)	2	

AUDIT CRITERIA (<=)		
Temperature Difference (°C)	2	

AUDIT CRITERIA (<=)	
Pressure Difference (mmHg)	10



Date and Time correct? Yes No If no, time off by: -2 min

ABB	R. N/A	CLIENT	Alton	AUDITOR	C.Kirk	DATE	4/20/2016
	SITE NAME	Coal I	Hollow				
N	etwork type	Alton Coal-	Coal Hollov				

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltacal	1237	1/26/2017
PM Temperature Standard #1	BGI	deltacal	1237	1/26/2017
PM Barometric Pressure Standard #1	BGI	deltacal	1237	1/26/2017

MANUFACTURER	BGI
MODEL	PQ200
SERIAL NUMBER	2366D

SETTINGS				
Total Flow	16.70			

Automated LEAK CHECK		
Vacuum Loss Rate Pass/Fail		
2 cm H2O	PASS	

	FLOW VERIFICATION				
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	16.82	16.70	-0.7%	0.7%	PASS

AMBIENT TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
17.0	17.1	0.1	PASS

FILTER TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
18.2	18.4	0.2	PASS

PRESS			
Reference			
590.5	590.0	-0.5	PASS

Design Flow % Diff	10%

10%

AUDIT CRITERIA (<=)

	AUDIT CRITERIA (<=)			
PASS	Temperature Difference (°C)	2		

Actual Flow % Diff

AUDIT CRITERIA (<=)		
Temperature Difference (°C)	2	

AUDIT CRITERIA (<=)	
Pressure Difference (mmHg)	10



 Date and Time correct?

 Yes
 No

 If no, time off by:

 -2 min

ABBR.	N/A	CLIENT	Alton	AUDITOR	C.Kirk	DATE	4/20/2016
SITE NAME		Coal F	lollow				
Netwo	rk type	Alton Coal-	Coal Hollov				

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltacal	1237	1/26/2017
PM Temperature Standard #1	BGI	deltacal	1237	1/26/2017
PM Barometric Pressure Standard #1	BGI	deltacal	1237	1/26/2017

MANUFACTURER	BGI
MODEL	PQ200
SERIAL NUMBER	2398E

SETTINGS						
Total Flow	16.70					

	Automated LEAK CHECK Vacuum Loss Rate Pass/Fail			
	4 cm H2O	PASS		

	FLOW VERIFICATION				
	Reference Instrument Actual Diff Design Diff				
Total Flow	16.87	16.70	-1.0%	1.0%	PASS

AMBIENT TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
18.0	17.8	-0.2	PASS

FILTER TEMPERATURE SENSOR (°C)					
Reference Instrument Difference					
18.0	18.1	0.1	PASS		

PRESSURE SENSOR (mmHg)				
Reference	Instrument	Difference		
590.5	591.0	0.5	PASS	

Design Flow % Diff	10%
AUDIT CRITERIA (<=)	

10%

2

AUDIT CRITERIA (<=)

Actual Flow % Diff

Temperature Difference (°C)

AUDIT CRITERIA (<=)				
Temperature Difference (°C)	2			

AUDIT CRITERIA (<=)	
Pressure Difference (mmHg)	10



## SITE INFORMATION

ABBR.	N/A	CLIENT	Alton	AUDIT	OR	C.Kirk	D	DATE	4/20/2016
SITE	NAME	Coal H	lollow						
NETWO	RK TYPE	Alton Coal-	Coal Hollow						
						-			I
			Deg	Min	Sec			Decimal	
	TUDE	North				CALCI	JLATE->		
LONG	SITUDE	West				0,1201			
			Decimal			Deg	Min	Sec	l
			Decimal			Deg	IVIIII	000	
				CALCI	JLATE->				
			L						
		Meters	CALCU	JI ATF->	Feet				
ELEV	ATION		0/ 1200						
		Feet			Mataua	-			
		Feet	CALCU	JLATE->	Meters	-			

Please verify site standards used by the site operator

SITE STANDARDS	MANUFACTURER	MODEL	SERIAL #	Calibration Expiration Date
PM Flow Reference				

# Air Resource calibration and verification standards

ABBR.	N/A	CLIENT	Alton	AUDITOR	C.Kirk	DATE	4/20/2016
SITE	NAME	Coal Hollow					
Netwo	Network type Alton Coal- Coal Holl		Coal Hollov				

		MANUFACTURER	MODEL	SERIAL #	Calibration Expiration Date
Ozone Transfer Sta	andard				
Gas Dilution Transfer	Standard				
MFC High Flow Ref	erence				
MFC Low Flow Ref	erence				
Temperature Refe	rence				
AT/RH Sensor Ref	erence				
Barometric Pressure	Reference				
Wind Speed Reference	Wind Speed Reference (high rpm)				
Wind Speed Reference	Wind Speed Reference (low rpm)				
Wind Speed Torque	Wind Speed Torque Gauge				
Wind Direction Alignme	nt Reference				
Wind Direction Linearity	y Reference				
Wind Direction Torqu	Wind Direction Torque Gauge				
Solar Radiation Re	ference				
Multiplier	W/m2 / mV				
UV Radiation Refe	UV Radiation Reference				
Multiplier	W/m2 / mV				
Precipitation Refe	Precipitation Reference				
Volume	mL				

PM Flow Standard #1	BGI	deltacal	1237	1/26/2017
PM Flow Standard #2				
PM Flow Standard #3				
PM Flow Standard #4				

PM Temperature Standard #1	BGI	deltacal	1237	1/26/2017
PM Temperature Standard #2				
PM Temperature Standard #3				
PM Temperature Standard #4				

PM Barometric Pressure Standard #1	BGI	deltacal	1237	1/26/2017
PM Barometric Pressure Standard #2				
PM Barometric Pressure Standard #3				
PM Barometric Pressure Standard #4				

TEOM MTV Standard		
HiVol Direct Flow Reference		
Orifice		
∆P orifice manometer		

## **APPENDIX B**

# AUDIT STANDARDS CERTIFICATIONS

Mesa Labs 10 Park Place Butler, NJ 07405

NIST Traceable Calibration Facility, ISO 9001:2008 Registered



# **CERTIFICATE OF CALIBRATION - NIST TRACEABILITY**

(Refer to instruction manual for further details of calibration)

deltaCal Serial Number: 1237

DATE: 15-Jan-2016

Calibration Operator: P.Pitty

**Critical Venturi Flow Meter:** Max Uncertainity = 0.346% Serial Number: 1A CEESI NVLAP NIST Data File 07BGI-0001 Serial Number: 2A CEESI NVLAP NIST Data File 07BGI-0003 Serial Number: 5C COX Nist Data File CCAL33222 - 5 C Serial Number: 4A CEESI NVLAP NIST Data File 07BGI-0002 Serial Number: 3A CEESI NVLAP NIST Data File 07BGI-0004

Room Temperature: Uncertainity=0.071%			Room Temperature:	24.8 °C			
Brand: Accu-Safe	Serial Nu	mber: 254881					
NIST Traceability No. 516837							
deltaCal:							
Ambient Temperature (set):		24.8 °C					
Aux (filter) Temperature (set): 24.8 °C							
Barometric Pressure ans Absolute Pressure							

VaisalaModel PTB330(50-1100)DigitalAccuracy: 0.03371%S/N DH0850001NIST Traceable (Princo Primary Standard Model 453 S/N W12537)Certificate No. P-7485deltaCal:Barometric pressure (set):746 mm of Hg

## **Results of Venturi Calibration**

Flow Rate (Q) vs. Pressure Drop ( $\Delta P$ ).

Overall Uncertainty: 0.35%

Q= 3.88294 ΔP ^ 0.52106 Q= 3.78777 ΔP ^ 0.54863

Overall Uncertainty: 0.35% Overall Uncertainty: 0.35%

Where: Q=Lpm,  $\Delta P$ = Cm of H2O

Date Placed In Service	1/26/16				
(To be filled in by operator upon	n receipt)				
Recommended Recalibra					
(12 months from date placed in	service)	_		23	122

Revised: September 2015 Cal102-01T2 Rev D

To Check a deltaCal			15-Jan-16	P.Pitty			
	1.5-19.5		<b>VER 4.00P</b>				
	Maximum	llouroble error	at any flow rate is 750/		BP=	746	mm of Hg
	Maximum a	Serial No.	at any flow rate is .75%.				
	Reading		CV				
	Abs. P		Qa	Qa			
	Crit. Vent.	Room	Flow	deltaCal			
	mm of Hg	Temp	Lpm	Indicated		% Error	
			- <b>F</b>				
# 2	145.17	24.75	1.658	1.651		-0.42	
	188.07	24.75	2.162	2.155		-0.34	
	318.63	24.75	3.697	3.710		0.34	
	402.50	24.75	4.684	4.700		0.35	
	473.53	24.75	5.519	5.550		0.57	
#1	150.00	24.90	6.008	6.000		-0.13	
	259.53	24.90	10.507	10.463		-0.42	
	337.29	24.90	13.702	13.671		-0.22	
	398.26	24.90	16.207	16.180		-0.16	
	476.34	24.90	19.414	19.454		0.21	

Average %

-0.02

To Check a deltaCal				15-Jan-16 Pre-Recert			
	1.5-19.5 Maximum a	llowable err	VER 3.41P or at any flow rate is .75%.	BP=	746	mm of Hg	
		Serial No.	1237				
	Reading		CV				
	Abs. P		Qa	Qa			
	Crit. Vent.	Room	Flow	deltaCal			
	mm of Hg	Temp	Lpm	Indicated		% Error	
# 5	151.5	24.7	4.99	5.01		0.42	
	258.5	24.7	8.67	8.60		-0.80	
	343.1	24.7	11.58	11.49		-0.77	
	455.5	24.7	15.45	15.14		-1.98	
	566.3	24.7	19.26	18.94		-1.64	

Average % -0.95