Sunday, Jan. 6th, 2013

Visible Emissions Evaluation

Facility Name	ECC Floyd Bennett Field
AVOGADRO Project No.	12-9191
Location (city, state)	Brooklyn, NY
Type of Facility	Debris Removal
Control Equipment / Emission Source	ACB
Date of Observation	01/06/2013
Start Time	0020
Stop Time	0328
Distance from observer (ft)	300'
Direction from observer	NNW
Stack height (fr. observer's elev.) (ft)	9'
Stack Diameter (in)	27" x 9'
Description of plume:	
continuous? fugitive? intermittent?	Cont.
color	White
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	1-3 conex lengths
target?	Sky
describe background to plume	Sky
unique features of plume or stack	—
Weather:	@ 0020
ambient temperature (F)	35°
relative humidity	66%
wind direction	E
wind speed	1-3 mph
barometric pressure	30.22 in Hg
rain? fog? snow? haze?	Clear
Glasses worn:	
corrective? (Y/N)	Y
sunglasses? (Y/N)	—

Observer's name	Joshua Wagner
Observer certification date	Night - 12/20/2012
Certifying agency	Whitlow
Observer affiliation	Avogadro Env.

note: opacity seems to rise up to ~15% during stoking, after which returns to ~5% consistently.

Run Number(s) and Description: (Morning) Night Runs 1-8

sec	0	15	30	45
min	Run 1 Time: 0020			
1	5	5	10	5
2	10	10	5	10
3	5	5	10	5
4	5	10	10	5
5	10	10	5	5
6	10	10	5	10
6-minute Average: 7.5				
Source Conditions:				
Sun Angle (degrees): —				

sec	0	15	30	45
min	Run 5 Time: 0204			
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	0	0	5	5
6	5	5	5	5
6-minute Average: 4.6				
Source Conditions:				
Sun Angle (degrees): —				

	Run 2 Time: 0046			
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	15	15	15	10
6	10	10	10	10
6-minute Average: 10.6				
Source Conditions:				
Sun Angle (degrees): —				

	Run 6 Time: 0230			
1	5	5	0	5
2	5	5	5	5
3	0	5	0	5
4	0	5	0	5
5	5	0	0	5
6	0	5	5	5
6-minute Average: 3.3				
Source Conditions:				
Sun Angle (degrees): —				

	Run 3 Time: 0112			
1	10	5	10	5
2	10	5	10	5
3	10	10	15	15
4	15	15	10	10
5	10	5	5	10
6	15	15	15	10
6-minute Average: 10.2				
Source Conditions:				
Sun Angle (degrees): —				

	Run 7 Time: 0256			
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
6	0	5	0	5
6-minute Average: 4.6				
Source Conditions:				
Sun Angle (degrees): —				

	Run 4 Time: 0138			
1	10	5	10	5
2	10	5	10	5
3	5	10	5	10
4	5	5	10	10
5	10	10	10	10
6	10	10	10	10
6-minute Average: 8.3				
Source Conditions:				
Sun Angle (degrees): —				

	Run 8 Time: 0322			
1	5	5	5	5
2	5	5	5	5
3	0	0	5	5
4	5	5	5	0
5	0	0	5	5
6	0	5	5	5
6-minute Average: 3.8				
Source Conditions:				
Sun Angle (degrees): —				

Range of opacity readings: low 0 high 15

Number of readings above 10 % were 10

Observer's Signature

Visible Emissions Evaluation

Monday, Jan 6th, 2013

Run Number(s) and Description: Morning Runs 9-12

Facility Name	ECC Floyd Bennett Field
AVOGADRO Project No.	12-9191
Location (city, state)	Brooklyn, NY
Type of Facility	Debris Removal
Control Equipment / Emission Source	ACB
Date of Observation	01/06/2013
Start Time	0404
Stop Time	0538
Distance from observer (ft)	300'
Direction from observer	NNW
Stack height (fr. observer's elev.) (ft)	9'
Stack Diameter (in)	27'X9'
Description of plume:	
continuous? fugitive? intermittent?	Cont
color	white
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	1-3 conex lengths
target?	Sky
describe background to plume	Sky, Snow
unique features of plume or stack	—
Weather:	0404
ambient temperature (F)	36°
relative humidity	67%
wind direction	E
wind speed	8-9mph
barometric pressure	30.18 in Hg
rain? fog? snow? haze?	Snow
Glasses worn:	
corrective? (Y/N)	Y
sunglasses? (Y/N)	—

Observer's name	Joshua Wagner
Observer certification date	Night 12/20/2012
Certifying agency	Whitlow
Observer affiliation	Avogadro Env.

sec	0	15	30	45
min	Run 9	Time: 0404		
1	5	10	5	10
2	5	5	10	5
3	5	10	5	5
4	10	10	5	5
5	10	5	5	5
6	10	10	10	10
6-minute Average: 7.3				
Source Conditions:				
Sun Angle (degrees): —				

Run 10	Time: 0430			
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	0	0	5	5
5	0	0	5	5
6	5	5	5	5
6-minute Average: 4.2				
Source Conditions:				
Sun Angle (degrees): —				

Run 11	Time: 0456			
1	5	5	5	10
2	5	0	5	5
3	0	5	5	5
4	5	0	0	5
5	5	5	5	5
6	0	5	5	5
6-minute Average: 4.2				
Source Conditions:				
Sun Angle (degrees): —				

Run 12	Time: 0530			
1	5	5	10	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
6	5	5	5	5
6-minute Average: 5.2				
Source Conditions:				
Sun Angle (degrees): —				

sec	0	15	30	45
min	Run	Time:		
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Run	Time:			
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Run	Time:			
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings: low 0 high 10

Number of readings above 10 % were 0

Observer's Signature

Visible Emissions Evaluation

Facility Name	ECC FBF
AVOGADRO Project No.	12-9191
Location (city, state)	Brooklyn, NY
Type of Facility	
Control Equipment / Emission Source	ACB
Date of Observation	1-6-13
Start Time	0720
Stop Time	0945
Distance from observer (ft)	~~400'~~ 150'
Direction from observer	N
Stack height (fr. observer's elev.) (ft)	101'
Stack Diameter (in)	27.17 x 8.42

Description of plume:

continuous? fugitive? intermittent?	CONT
color	WHITE
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	10' Downwind
target?	
describe background to plume	Containers
unique features of plume or stack	

Weather:

ambient temperature (F)	35°F
relative humidity	50%
wind direction	ENE
wind speed	5-10
barometric pressure	29.37
rain? fog? snow? haze?	OVERCAST / RAIN
	clearing @ 920

Glasses worn:

corrective? (Y/N)	Y
sunglasses? (Y/N)	N

Observer's name	MARK TI READY
Observer certification date	10-22-12
Certifying agency	KOONTZ
Observer affiliation	AVOGADRO / DA

Run Number(s) and Description 1-6-13

sec	0	15	30	45
min	Run 1 Time:	0720		
1	10	5	10	15
2	10	10	10	10
3	15	10	10	10
4	10	10	10	5
5	5	10	10	5
6	5	5	5	10
6-minute Average:	9.0			
Source Conditions:				
Sun Angle (degrees):	50			

sec	0	15	30	45
min	Run 2 Time:	840		
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	10	10
6	10	10	10	10
6-minute Average:	10			
Source Conditions:				
Sun Angle (degrees):	40			

	Run 3 Time:	0740		
1	10	10	10	5
2	5	10	10	10
3	10	15	15	10
4	10	10	10	10
5	10	5	5	10
6	10	10	10	10
6-minute Average:	9.6			
Source Conditions:				
Sun Angle (degrees):	45			

	Run 4 Time:	900		
1	15	10	10	10
2	10	10	10	10
3	10	10	15	10
4	10	15	10	10
5	10	10	10	10
6	10	10	10	10
6-minute Average:	10.6			
Source Conditions:				
Sun Angle (degrees):	~~40~~ 30			

	Run 5 Time:	~~45~~ 800		
1	15	15	15	10
2	10	15	15	15
3	10	15	10	10
4	10	15	10	10
5	10	10	10	10
6	10	10	10	10
6-minute Average:	11.7			
Source Conditions:				
Sun Angle (degrees):	40			

	Run 6 Time:	920		
1	5	5	5	5
2	10	5	10	5
3	5	5	5	5
4	5	10	5	5
5	10	5	5	5
6	10	5	5	5
6-minute Average:	6.0			
Source Conditions:				
Sun Angle (degrees):	25			

	Run 7 Time:	820		
1	5	10	5	10
2	5	5	5	5
3	10	5	5	5
4	5	5	5	5
5	5	5	5	5
6	5	5	5	5
6-minute Average:	5.6			
Source Conditions:				
Sun Angle (degrees):	40			

	Run 8 Time:	940		
1	10	5	5	0
2	5	5	5	5
3	5	5	5	5
4	5	10	5	5
5	5	5	5	10
6	5	5	10	5
6-minute Average:	5.6			
Source Conditions:				
Sun Angle (degrees):	25			

Range of opacity readings:
low 5 high 15

Number of readings above 10 % were 14

Observer's Signature

Visible Emissions Evaluation

Facility Name	ECC FBF
AVOGADRO Project No.	12-9191
Location (city, state)	BROOKLYN, NY
Type of Facility	
Control Equipment / Emission Source	ACB
Date of Observation	1-6-13
Start Time	1000
Stop Time	1225
Distance from observer (ft)	150'
Direction from observer	N
Stack height (fr. observer's elev.) (ft)	10'
Stack Diameter (in)	27.17 x 8.42

Description of plume:

continuous? fugitive? intermittent?	Cont.
color	white
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	10' Downwind
target?	
describe background to plume	Containers
unique features of plume or stack	

Weather:

ambient temperature (F)	37°F
relative humidity	60%
wind direction	E-NE
wind speed	5-10
barometric pressure	29.37
rain? fog? snow? haze?	mostly cloudy

1040 - Mostly Sunny

Glasses worn:

corrective? (Y/N)	Y
sunglasses? (Y/N)	N

Observer's name	MARK T. READY
Observer certification date	10-22-12
Certifying agency	KOONTZ
Observer affiliation	AVOGADRO / DA

Run Number(s) and Description — PAGE 2 1-6-13

sec	0	15	30	45
min	Run 9 Time: 1000			
1	10	5	10	5
2	5	5	10	5
3	5	10	10	5
4	5	5	10	15
5	10	10	10	10
6	10	10	10	10
6-minute Average:			8.3	
Source Conditions:				
Sun Angle (degrees):			25	
min	Run 10 Time: 1020			
1	5	5	10	5
2	5	10	5	10
3	5	5	5	10
4	10	10	10	5
5	5	5	15	15
6	10	5	5	15
6-minute Average:			7.9	
Source Conditions:				
Sun Angle (degrees):			15	
min	Run 11 Time: 1040			
1	5	10	10	10
2	5	5	10	10
3	5	5	5	5
4	5	5	5	5
5	10	5	5	5
6	5	5	5	5
6-minute Average:			6.3	
Source Conditions:				
Sun Angle (degrees):			10	
min	Run 12 Time: 1100			
1	5	10	10	5
2	10	5	10	5
3	10	5	5	10
4	5	5	5	10
5	5	5	5	5
6	10	10	5	5
6-minute Average:			6.9	
Source Conditions:				
Sun Angle (degrees):			10	

sec	0	15	30	45
min	Run 13 Time: 1120			
1	10	10	5	10
2	5	5	10	5
3	10	5	10	5
4	10	5	5	10
5	10	10	10	10
6	5	10	10	10
6-minute Average:			8.1	
Source Conditions:				
Sun Angle (degrees):			5	
min	Run 14 Time: 1140			
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	5	10	10	5
6	5	10	10	5
6-minute Average:			9.2	
Source Conditions:				
Sun Angle (degrees):			0	
min	Run 15 Time: 1200			
1	5	5	10	10
2	5	10	5	5
3	5	5	5	5
4	10	5	5	5
5	10	5	10	5
6	5	10	10	10
6-minute Average:			6.9	
Source Conditions:				
Sun Angle (degrees):			5	
min	Run 16 Time: 1220			
1	5	10	10	5
2	5	5	5	5
3	5	10	5	5
4	10	5	5	5
5	10	10	5	10
6	5	5	10	10
6-minute Average:			6.9	
Source Conditions:				
Sun Angle (degrees):			15	

Range of opacity readings: low 5 high 15

Number of readings above 19 % were 4

Observer's Signature

Visible Emissions Evaluation

Facility Name	ECC FBF
AVOGADRO Project No.	12-9191
Location (city, state)	BROOKLYN, MI
Type of Facility	
Control Equipment / Emission Source	ACB
Date of Observation	1-6-13
Start Time	1240
Stop Time	1505
Distance from observer (ft)	150'
Direction from observer	NE
Stack height (fr. observer's elev.) (ft)	10'
Stack Diameter (in)	27.17 x 8.42

Description of plume:

continuous? fugitive? intermittent?	CONT.
color	WHITE
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	10' Downwind
target?	
describe background to plume	CONTAINERS
unique features of plume or stack	

Weather:

ambient temperature (F)	48°F
relative humidity	45%
wind direction	E
wind speed	5-10
barometric pressure	29.37
rain? fog? snow? haze?	Clear

Glasses worn:

corrective? (Y/N)	Y
sunglasses? (Y/N)	N

Observer's name	MARK TIRPAK
Observer certification date	10-22-12
Certifying agency	KOONTZ
Observer affiliation	AVOGADRO/DA

Run Number(s) and Description — PAGE 3 1-6-13

sec	0	15	30	45
min	Run 17 Time: 1240			
1	0	5	5	5
2	5	5	5	5
3	5	5	5	10
4	5	5	5	5
5	10	5	5	5
6	5	10	5	5
6-minute Average:			5.4	
Source Conditions:				
Sun Angle (degrees):			15	
min	Run 18 Time: 1300			
1	10	5	5	10
2	5	5	5	10
3	10	10	10	10
4	10	10	5	10
5	10	10	15	10
6	15	15	15	10
6-minute Average:			9.6	
Source Conditions:				
Sun Angle (degrees):			15	
min	Run 19 Time: 1320			
1	10	10	5	5
2	5	5	5	5
3	10	10	10	5
4	5	10	10	5
5	10	5	5	10
6	10	10	10	5
6-minute Average:			7.5	
Source Conditions:				
Sun Angle (degrees):			10	
min	Run 20 Time: 1340			
1	10	5	5	10
2	5	5	5	5
3	10	10	5	10
4	5	5	10	5
5	10	10	10	10
6	5	10	5	5
6-minute Average:			7.3	
Source Conditions:				
Sun Angle (degrees):			10	

sec	0	15	30	45
min	Run 21 Time: 1400			
1	15	15	5	10
2	10	5	10	10
3	5	15	15	10
4	5	5	5	5
5	5	10	5	10
6	10	10	5	10
6-minute Average:			9.0	
Source Conditions:				
Sun Angle (degrees):			15	
min	Run 22 Time: 1420			
1	5	5	5	5
2	5	5	5	5
3	5	10	5	5
4	5	10	10	10
5	5	5	5	5
6	5	10	5	5
6-minute Average:			6.0	
Source Conditions:				
Sun Angle (degrees):			15	
min	Run 23 Time: 1440			
1	10	10	10	5
2	10	10	15	15
3	15	15	15	15
4	15	15	15	10
5	5	10	10	10
6	10	10	10	10
6-minute Average:			11.5	
Source Conditions:				
Sun Angle (degrees):			20	
min	Run 24 Time: 1500			
1	0	0	0	0
2	0	0	0	0
3	0	5	0	0
4	0	5	0	5
5	5	0	0	0
6	0	5	5	0
6-minute Average:			1.3	
Source Conditions:				
Sun Angle (degrees):			25	

Range of opacity readings: low 0 high 15

Number of readings above 10 % were 17

Observer's Signature

Visible Emissions Evaluation

Facility Name	ECC FBF
AVOGADRO Project No.	12 9191
Location (city, state)	BROOKLYN NY
Type of Facility	
Control Equipment / Emission Source	ACB
Date of Observation	1-6-13
Start Time	1520
Stop Time	
Distance from observer (ft)	150'
Direction from observer	NE
Stack height (fr. observer's elev.) (ft)	10'
Stack Diameter (in)	27.17 x 8.42

Description of plume:

continuous? fugitive? intermittent?	CONT.
color	WHITE
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	10' Downwind
target?	
describe background to plume	Containers
unique features of plume or stack	

Weather:

ambient temperature (F)	50°F
relative humidity	45%
wind direction	E
wind speed	5-10
barometric pressure	29.37
rain? fog? snow? haze?	clear

Glasses worn:

corrective? (Y/N)	Y
sunglasses? (Y/N)	N

Observer's name	MARK T. REARDY
Observer certification date	10-22-12
Certifying agency	KOONTZ
Observer affiliation	AVOGADRO/DA

Run Number(s) and Description — PAGE 4 1-6-13

sec	0	15	30	45	sec	0	15	30	45
min	Run 25 Time: 1520				min	Run Time:			
1	15	15	10	10	1				
2	5	5	5	5	2				
3	10	10	5	15	3				
4	5	5	5	10	4				
5	5	10	10	10	5				
6	10	10	10	15	6				
6-minute Average:	9.0				6-minute Average:				
Source Conditions:					Source Conditions:				
Sun Angle (degrees):	20				Sun Angle (degrees):				
	Run 26 Time: 1540					Run Time:			
1	10	5	5	5	1				
2	10	5	5	5	2				
3	5	5	5	10	3				
4	5	10	5	5	4				
5	10	10	5	10	5				
6	5	5	5	5	6				
6-minute Average:	6.5				6-minute Average:				
Source Conditions:					Source Conditions:				
Sun Angle (degrees):	20				Sun Angle (degrees):				
	Run 27 Time: 1600					Run Time:			
1	5	10	10	5	1				
2	5	5	5	5	2				
3	5	5	5	10	3				
4	5	5	5	5	4				
5	5	5	5	15	5				
6	40	20	15	15	6				
6-minute Average:	9.0				6-minute Average:				
Source Conditions:					Source Conditions:				
Sun Angle (degrees):	20				Sun Angle (degrees):				
	Run 28 Time: 1620					Run Time:			
1	5	5	5	5	1				
2	5	10	5	5	2				
3	15	15	15	15	3				
4	15	15	10	10	4				
5	15	15	15	15	5				
6	15	15	15	15	6				
6-minute Average:	11.5				6-minute Average:				
Source Conditions:					Source Conditions:				
Sun Angle (degrees):	25				Sun Angle (degrees):				

Range of opacity readings:
low 5 high 40 *

Number of readings above 10 % were 23

* OPERATOR WAS STIRRING THE FIREBOX @ 1605

Observer's Signature

Visible Emissions Evaluation

Sunday Jan 6th, 2013

Facility Name	ECC Floyd Bennett Field
AVOGADRO Project No.	12-9191
Location (city, state)	Brooklyn, NY
Type of Facility	Debris Removal
Control Equipment / Emission Source	ACB
Date of Observation	01/06/2013
Start Time	1900
Stop Time	2210
Distance from observer (ft)	300'
Direction from observer	NNW
Stack height (fr. observer's elev.) (ft)	9'
Stack Diameter (in)	27' x 9'
Description of plume:	
continuous? fugitive? intermittent?	Cont
color	White
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	1-3 conex lengths
target?	Sky
describe background to plume	Sky
unique features of plume or stack	—
Weather:	@ 1900
ambient temperature (F)	41°
relative humidity	62%
wind direction	E
wind speed	4-7 mph
barometric pressure	30.01 in Hg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	Y
sunglasses? (Y/N)	—

Observer's name	Joshua Wagner
Observer certification date	Night 12/20/2012
Certifying agency	WhiTHow
Observer affiliation	Avogadro Env.

Run Number(s) and Description: Night Runs 1-8

sec	0	15	30	45
min	Run 1	Time: 1900		
1	10	15	10	15
2	15	15	15	15
3	15	15	15	15
4	15	15	20	15
5	15	15	15	15
6	15	15	15	15
6-minute Average: 14.2				
Source Conditions: heating up plant				
~~Sun Angle (degrees)~~: ash removal				

sec	0	15	30	45
min	Run 2	Time: 1926		
1	15	15	15	15
2	15	15	15	15
3	20	20	15	15
4	15	15	15	15
5	15	15	15	10
6	10	15	15	10
6-minute Average: 14.8				
Source Conditions: heating up plant				
~~Sun Angle (degrees)~~: ash removal				

sec	0	15	30	45
min	Run 3	Time: 1952		
1	0	0	0	0
2	0	0	0	0
3	5	5	5	0
4	0	0	5	5
5	5	0	0	5
6	0	0	5	5
6-minute Average: 1.9				
Source Conditions:				
Sun Angle (degrees): —				

sec	0	15	30	45
min	Run 4	Time: 2020		
1	5	5	10	5
2	5	10	5	5
3	5	5	5	5
4	10	10	10	5
5	5	10	5	10
6	10	5	5	10
6-minute Average: 6.5				
Source Conditions:				
Sun Angle (degrees): —				

sec	0	15	30	45
min	Run 5	Time: 2046		
1	5	10	5	10
2	5	5	10	5
3	10	10	5	10
4	5	5	10	10
5	15	15	15	10
6	5	5	5	5
6-minute Average: 8.1				
Source Conditions:				
Sun Angle (degrees): —				

sec	0	15	30	45
min	Run 6	Time: 2112		
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	0	5	0	5
5	0	5	0	5
6	0	5	0	5
6-minute Average: 3.8				
Source Conditions:				
Sun Angle (degrees): —				

sec	0	15	30	45
min	Run 7	Time: 2138		
1	10	5	10	10
2	5	10	10	10
3	5	10	5	10
4	5	5	10	5
5	5	10	5	5
6	10	10	10	10
6-minute Average: 7.9				
Source Conditions:				
Sun Angle (degrees): —				

sec	0	15	30	45
min	Run 8	Time: 2204		
1	5	10	5	10
2	10	10	5	10
3	10	10	10	5
4	5	10	10	5
5	10	10	10	10
6	5	10	10	5
6-minute Average: 8.3				
Source Conditions:				
Sun Angle (degrees): —				

Range of opacity readings: low 0 high 20

Number of readings above 10 % were 46

Observer's Signature

Visible Emissions Evaluation

Sunday, Jan 6th, 2013

Run Number(s) and Description: Night Runs 9-12

Facility Name	ECC Floyd Bennett Field
AVOGADRO Project No.	12-9191
Location (city, state)	Brooklyn, NY
Type of Facility	Debris Removal
Control Equipment / Emission Source	ACB
Date of Observation	01/06/2013
Start Time	2230
Stop Time	2354
Distance from observer (ft)	300'
Direction from observer	NNW
Stack height (fr. observer's elev.) (ft)	9'
Stack Diameter (in)	27' x 9'
Description of plume:	
continuous? fugitive? intermittent?	Cont
color	White
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	1-3 conex lengths
target?	Sky
describe background to plume	"
unique features of plume or stack	—
Weather:	—
ambient temperature (F)	41°
relative humidity	62%
wind direction	E
wind speed	0-5mph
barometric pressure	30.01in Hg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	Y
sunglasses? (Y/N)	—

Observer's name	Joshua Wagner
Observer certification date	Night 12/20/2012
Certifying agency	Whitflow
Observer affiliation	Avogadro Env.

sec	0	15	30	45
min	Run 9 Time: 2230			
1	10	10	10	10
2	10	10	10	10
3	10	15	15	10
4	15	10	15	10
5	15	10	10	15
6	10	15	10	10
6-minute Average:	11.5			
Source Conditions:	loading subpan — fuel			
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 10 Time: 2256			
1	5	5	5	5
2	10	5	10	5
3	5	5	5	5
4	0	0	0	5
5	5	5	5	5
6	5	5	5	5
6-minute Average:	4.8			
Source Conditions:				
Sun Angle (degrees):	—			

sec	0	15	30	45
min	Run 11 Time: 2322			
1	10	10	10	10
2	5	10	10	10
3	5	10	10	5
4	10	10	5	10
5	10	10	10	5
6	10	10	10	5
6-minute Average:	8.8			
Source Conditions:				
Sun Angle (degrees):	—			

sec	0	15	30	45
min	Run 12 Time: 2348			
1	5	10	5	5
2	10	10	10	5
3	10	10	10	10
4	10	10	10	15
5	15	15	15	10
6	10	10	15	15
6-minute Average:	10.4			
Source Conditions:				
Sun Angle (degrees):	—			

sec	0	15	30	45
min	Run Time:			
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run Time:			
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings: low 0 high 15

Number of readings above 10 % were 13

Observer's Signature