Aat. Early Morning, January 26th, 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 1
Date of Observation	01/26/2013
Start Time	0036
Stop Time	0348
Distance from observer (ft)	150'
Direction from observer	E
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
unique features of plume or stack	—
Weather:	@0030
ambient temperature (F)	19°
relative humidity	70%
wind direction	SE
wind speed	2-6 mph
barometric pressure	30.08 in Hg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	yes
sunglasses? (Y/N)	—

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

Run Number(s) and Description

ACB 1 Runs 1-8

sec	0	15	30	45
min	Run 1 Time: 0036			
1	0	0	5	5
2	0	5	0	5
3	5	5	0	0
4	0	0	5	0
5	5	5	0	0
6	5	0	5	0
6-minute Average:	2.3			
Source Conditions:				
Sun Angle (degrees):				
	Run 2 Time: 0102			
1	0	0	0	5
2	5	0	0	0
3	0	5	0	0
4	0	0	5	0
5	0	0	0	0
6	0	5	0	0
6-minute Average:	1.0			
Source Conditions:				
Sun Angle (degrees):				
	Run 3 Time: 0128			
1	5	5	5	5
2	5	0	5	5
3	0	5	5	5
4	5	0	5	5
5	0	5	5	5
6	5	5	5	5
6-minute Average:	4.2			
Source Conditions:				
Sun Angle (degrees):				
	Run 4 Time: 0154			
1	10	10	10	10
2	5	10	10	10
3	10	5	10	5
4	10	10	5	10
5	5	10	10	10
6	5	10	5	10
6-minute Average:	8.5			
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 5 Time: 0220			
1	5	5	5	5
2	5	0	5	5
3	0	0	0	0
4	0	0	0	0
5	5	0	0	0
6	0	5	0	0
6-minute Average:	1.8			
Source Conditions:				
Sun Angle (degrees):				
	Run 6 Time: 0246			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 7 Time: 0312			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	5	0	0	5
6	0	0	5	0
6-minute Average:	0.6			
Source Conditions:				
Sun Angle (degrees):				
	Run 8 Time: 0342			
1	0	0	0	5
2	0	0	0	5
4 3	5	5	0	0
5 4	0	0	5	10
5	10	10	15	15
6	15	15	10	10
6-minute Average:	5.6			
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings:
low 0 high 15

Number of readings above 10 % were 4

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

Visible Emissions Evaluation

A.M. Early Morning, January 26th, 2013

Run Number(s) and Description: ACB 1 Runs 9-13

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 1
Date of Observation	01/26/2013
Start Time	0408
Stop Time	0548
Distance from observer (ft)	150'
Direction from observer	E
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 exit lengths
target?	sky
describe background to plume	sky
unique features of plume or stack	—
Weather:	@ 408
ambient temperature (F)	18°
relative humidity	71%
wind direction	SE
wind speed	2-4 mph
barometric pressure	30.06 in Hg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	yes
sunglasses? (Y/N)	—

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

sec	0	15	30	45
min	Run 9 Time: 0408			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				
	Run 10 Time: 0434			
1	0	0	0	5
2	0	0	0	5
3	5	0	0	0
4	5	0	0	0
5	0	5	0	0
6	0	5	0	5
6-minute Average: 1.5				
Source Conditions:				
Sun Angle (degrees):				
	Run 11 Time: 0500			
1	0	0	0	0
2	0	0	0	0
2 3	0	0	0	0
4	5	5	5	5
4 5	5	5	5	5
6	5	5	5	0
6-minute Average: 2.3				
Source Conditions:				
Sun Angle (degrees): 105.26				
	Run 12 Time: [illegible]			
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	5	5	5	5
6-minute Average: 5				
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 13 Time: 0542			
1	5	5	5	10
2	5	5	10	10
4 3	10	10	10	10
4	10	10	10	15
5	10	10	10	10
6	5	5	5	5
6-minute Average: 8.3				
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 15

Number of readings above 10 % were 1

Observer's Signature

SATURDAY MORNING - JANUARY 26, 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 1
Date of Observation	1/26/2013
Start Time	0700
Stop Time	1008
Distance from observer (ft)	150'
Direction from observer	N
Stack height (fr. observer's elev.) (ft)	9'
Stack Diameter (in)	27' x 9'
Description of plume:	
continuous? fugitive? intermittent?	CONTINUOUS
color	WHITE
water drops present? (Y/N)	No
attached steam plume? (Y/N)	No
detached steam plume? (Y/N)	No
secondary plume? (Y/N)	No
point where opacity read	1-3 CONEX LENGTHS
target?	SKY
describe background to plume	SKY
unique features of plume or stack	—
Weather:	
ambient temperature (F)	17 °F
relative humidity	57 %
wind direction	NW
wind speed	0-10 mph
barometric pressure	30.12 in
rain? fog? snow? haze?	partly cloudy & clear
Glasses worn:	
corrective? (Y/N)	No
sunglasses? (Y/N)	No

Observer's name	AARON T. JOHNSON
Observer certification date	1/6/2013
Certifying agency	WHITLOW ENTERPRISES
Observer affiliation	AVOGADRO ENV. CORP.

* ADDED A LOT OF DEBRIS @ 700

Run Number(s) and Description

ACB 1 - RUNS # 15 - 22

sec	0	15	30	45
min	Run 15 Time: 0700			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 16 Time: 0718			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 17 Time: 0736			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 18 Time: 0754			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 19 Time: 0812			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 20 Time: 0830			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 21 Time: 0848			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

	Run 22 Time: 0906			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings:

low 0 high 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

SATURDAY AFTERNOON - JANUARY 26, 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 1
Date of Observation	1/26/2013
Start Time	1028
Stop Time	1336
Distance from observer (ft)	150'
Direction from observer	NE
Stack height (fr. observer's elev.) (ft)	9'
Stack Diameter (in)	27" x 9'
Description of plume:	
continuous? fugitive? intermittent?	CONTINUOUS
color	WHITE
water drops present? (Y/N)	No
attached steam plume? (Y/N)	No
detached steam plume? (Y/N)	No
secondary plume? (Y/N)	No
point where opacity read	1-3 CONEX LENGTHS
target?	SKY
describe background to plume	SKY
unique features of plume or stack	—
Weather:	
ambient temperature (F)	21 °F
relative humidity	55 %
wind direction	NW
wind speed	5-10 mph
barometric pressure	30.16 in
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	No
sunglasses? (Y/N)	No

Observer's name	AARON T. JOHNSON
Observer certification date	1/6/2013
Certifying agency	WHITLOW ENTERPRISES
Observer affiliation	AVOGADRO ENV. CORP.

* CLEAR AFTERNOON & LOW OPACITY READINGS (0-10%)

Run Number(s) and Description

ACB 1 - RUNS # 23 - 30

sec	0	15	30	45
min	Run 23 Time: 1028			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				
	Run 24 Time: 1134			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 25 Time: 1212			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 26 Time: 1304			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 27 Time: 1054			
1	10	10	5	5
2	10	5	5	10
3	10	5	5	5
4	5	5	10	10
5	5	10	10	5
6	5	5	5	5
6-minute Average:	6.88			
Source Conditions:				
Sun Angle (degrees):				
	Run 28 Time: 1116			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 29 Time: 1238			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 30 Time: 1330			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings: low 0 high 10

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

SATURDAY EVENING - JANUARY 26, 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 1
Date of Observation	1/26/2013
Start Time	1356
Stop Time	1704
Distance from observer (ft)	150'
Direction from observer	E
Stack height (fr. observer's elev.) (ft)	9'
Stack Diameter (in)	27'x9'
Description of plume:	
continuous? fugitive? intermittent?	CONTINUOUS
color	WHITE
water drops present? (Y/N)	No
attached steam plume? (Y/N)	No
detached steam plume? (Y/N)	No
secondary plume? (Y/N)	No
point where opacity read	1-3 CONEX LENGTHS
target?	SKY
describe background to plume	SKY
unique features of plume or stack	—
Weather:	
ambient temperature (F)	27 °F
relative humidity	43 %
wind direction	NW
wind speed	5-10 mph
barometric pressure	30.14 in
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	No
sunglasses? (Y/N)	No

Observer's name	AARON T. JOHNSON
Observer certification date	1/6/2013
Certifying agency	WHITLOW ENTERPRISES
Observer affiliation	AVOGADRO ENV. CORP.

* ADDED DEBRIS TO ACB 1 @ 1400 CAUSING A SPIKE IN OPACITY READINGS (10-15 % consistantly)

Run Number(s) and Description

ACB 1 - RUNS # 31 - ~~32~~ 37

sec	0	15	30	45
min	Run 31 Time: 1356			
1	10	10	5	10
2	5	10	10	5
3	5	5	10	10
4	10	15	15	10
5	10	15	15	10
6	10	10	10	10
6-minute Average:	9.79			
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 32 Time: 1442			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

	Run 33 Time: 1448			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

	Run 34 Time: 1454			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

	Run 35 Time: 1540			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 36 Time: 1600			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 37 Time: 1636			
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	5	5	5	5
6-minute Average:	5			
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 15

Number of readings above 10 % were 4

Observer's Signature

Sat. Night, January 26th, 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 1
Date of Observation	01/26/2013
Start Time	1910
Stop Time	2236
Distance from observer (ft)	150'
Direction from observer	E
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 exit lengths
target?	sky
describe background to plume	sky
unique features of plume or stack	—
Weather:	@1910
ambient temperature (F)	22°
relative humidity	45%
wind direction	SE
wind speed	7-9mph
barometric pressure	30.29in Hg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	yes
sunglasses? (Y/N)	—

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

note: ash cleaned out tonight. strong correlation between ash & opacity directly.

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

sec	0	15	30	45
min	Run 1 Time: 1910			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				
	Run 2 Time: 1936			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				
	Run 3 Time: 1950 - 2000			
1	0	0	0	0
2	0	0	0	0
3	0	5	0	5
4	0	0	0	0
5	5	0	0	0
6	0	0	0	0
6-minute Average: 0.6				
Source Conditions:				
Sun Angle (degrees):				
	Run 4 Time: 2016			
1	5	5	5	5
2	5	5	0	5
3	5	0	0	5
4	5	0	5	5
5	5	5	0	0
6	5	5	0	5
6-minute Average: 3.5				
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 5 Time: 2112			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	5	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0.2				
Source Conditions:				
Sun Angle (degrees):				
	Run 6 Time: 2138			
1	0	0	0	0
2	5	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	5	0	0
6	0	0	0	0
6-minute Average: 0.4				
Source Conditions:				
Sun Angle (degrees):				
	Run 7 Time: 2204			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				
	Run 8 Time: 2230			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	5	5	5	5
6-minute Average: 0.8				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings: low 0 high 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

Visible Emissions Evaluation

Aft. Night, January 26th, 2013

Run Number(s) and Description: ACB1 Runs 9-11

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 1
Date of Observation	01/26/2013
Start Time	2256
Stop Time	2354
Distance from observer (ft)	150'
Direction from observer	E
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
unique features of plume or stack	—
Weather: @2250	
ambient temperature (F)	21°
relative humidity	49%
wind direction	SE
wind speed	8-15 mph
barometric pressure	30.35 in Hg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	yes
sunglasses? (Y/N)	—

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

sec	0	15	30	45
min	Run 9	Time:	2256	
1	0	0	5	0
2	0	5	0	0
3	0	0	0	5
4	5	5	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	1.0			
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 10	Time:	2322	
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

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

	Run 11	Time:	2348	
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
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 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

Visible Emissions Evaluation

Act. Early Morning, January 26th, 2013

Run Number(s) and Description: ACB 2 Runs 1-8

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 2
Date of Observation	01/26/2013
Start Time	0036
Stop Time	0348
Distance from observer (ft)	150'
Direction from observer	E
Stack height (fr. observer's elev.) (ft)	8'
Stack Diameter (in)	20' x 8'
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:	@0030
ambient temperature (F)	19°
relative humidity	70%
wind direction	SE
wind speed	2-6 mph
barometric pressure	30.08 in Hg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	yes
sunglasses? (Y/N)	—

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

sec	0	15	30	45
min	Run 1 Time: 0036			
1	0	0	5	0
2	5	5	0	0
3	0	5	0	0
4	5	0	0	5
5	5	0	5	0
6	0	0	5	0
6-minute Average: 1.9				
Source Conditions:				
Sun Angle (degrees):				
	Run 2 Time: 0102			
1	0	0	0	0
2	0	0	5	0
3	5	0	0	5
4	0	0	0	5
5	0	0	0	0
6	5	0	0	0
6-minute Average: 1.0				
Source Conditions:				
Sun Angle (degrees):				
	Run 3 Time: 0128			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				
	Run 4 Time: 0154			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	5	0	0	0
6-minute Average: 0.2				
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 5 Time: 0220			
1	5	5	5	5
2	5	5	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 1.2				
Source Conditions:				
Sun Angle (degrees):				
	Run 6 Time: 0246			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				
	Run 7 Time: 0312			
1	5	5	5	5
2	0	5	5	5
3	0	0	5	5
4	5	0	0	5
5	5	5	0	0
6	0	0	0	0
6-minute Average: 2.7				
Source Conditions:				
Sun Angle (degrees):				
	Run 8 Time: 0342			
1	0	0	0	5
2	5	5	0	0
3	5	0	5	0
4	5	0	0	5
5	5	5	0	0
6	5	0	5	5
6-minute Average: 2.5				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings: low 0 high 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

Visible Emissions Evaluation

Act. Early Morning, January 26th, 2013

Run Number(s) and Description: ACB 2 Runs 9-13

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 2
Date of Observation	01/26/2013
Start Time	0408
Stop Time	0548
Distance from observer (ft)	150'
Direction from observer	E
Stack height (fr. observer's elev.) (ft)	8'
Stack Diameter (in)	20' x 8'
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:	@408
ambient temperature (F)	18°
relative humidity	71%
wind direction	SE
wind speed	2-4mph
barometric pressure	30.06inHg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	yes
sunglasses? (Y/N)	—

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

sec	0	15	30	45
min	Run 9 Time: 0408			
1	5	5	5	5
2	0	0	0	0
3	0	5	0	0
4	0	5	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 1.0				
Source Conditions:				
Sun Angle (degrees):				
	Run 10 Time: 0434			
1	0	0	0	0
2	0	5	0	0
3	0	0	0	0
4	0	0	0	0
5	0	5	0	0
6	0	0	0	0
6-minute Average: 0.4				
Source Conditions:				
Sun Angle (degrees):				
	Run 11 Time: 0500			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	5	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0.2				
Source Conditions:				
Sun Angle (degrees): SW				
	Run 12 Time: 0526 0542			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 13 Time: 0542			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	5	0	0
5	0	0	0	0
6	0	0	0	5
6-minute Average: 0.4				
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):				
	Run Time:			
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings: low 0 high 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

SATURDAY MORNING - JANUARY 26, 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 2
Date of Observation	1/26/2013
Start Time	0700
Stop Time	1008
Distance from observer (ft)	150'
Direction from observer	N
Stack height (fr. observer's elev.) (ft)	8'
Stack Diameter (in)	20' x 8'
Description of plume:	
continuous? fugitive? intermittent?	CONTINUOUS
color	WHITE
water drops present? (Y/N)	No
attached steam plume? (Y/N)	No
detached steam plume? (Y/N)	No
secondary plume? (Y/N)	No
point where opacity read	1-3 CONEX LENGTHS
target?	SKY
describe background to plume	SKY
unique features of plume or stack	—
Weather:	
ambient temperature (F)	17 °F
relative humidity	57 %
wind direction	NW
wind speed	0-10 mph
barometric pressure	30.18 in
rain? fog? snow? haze?	partly cloudy & clear
Glasses worn:	
corrective? (Y/N)	No
sunglasses? (Y/N)	No

Observer's name	AARON T. JOHNSON
Observer certification date	1/6/2013
Certifying agency	WHITLOW ENTERPRISES
Observer affiliation	AVOGADRO ENV. CORP.

* ADDED A LOT OF DEBRIS @ 700

Run Number(s) and Description

ACB 2 - RUNS # 15 - 22

sec	0	15	30	45
min	Run 15 Time: 0700			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 16 Time: 0736			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 17 Time: 0756			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 18 Time: 0816			
1	0	0	5	0
2	5	0	0	5
3	0	5	5	0
4	5	0	5	0
5	0	5	5	5
6	0	5	0	0
6-minute Average:	2.29			
Source Conditions:				
Sun Angle (degrees):				

	Run 19 Time: 0836			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

	Run 20 Time: 0916			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

	Run 21 Time: 0936			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

	Run 22 Time: 1003			
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	5	5	5	5
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings:

low 0 high 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

SATURDAY AFTERNOON - JANUARY 26, 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 2
Date of Observation	1/26/2013
Start Time	1028
Stop Time	1336
Distance from observer (ft)	150'
Direction from observer	NE
Stack height (fr. observer's elev.) (ft)	8'
Stack Diameter (in)	20' x 8'
Description of plume:	
continuous? fugitive? intermittent?	CONTINUOUS
color	WHITE
water drops present? (Y/N)	No
attached steam plume? (Y/N)	No
detached steam plume? (Y/N)	No
secondary plume? (Y/N)	No
point where opacity read	1-3 CONEX LENGTHS
target?	SKY
describe background to plume	SKY
unique features of plume or stack	—
Weather:	
ambient temperature (F)	21 °F
relative humidity	55 %
wind direction	NW
wind speed	5-10 mph
barometric pressure	30.16 in
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	No
sunglasses? (Y/N)	No

Observer's name	AARON T. JOHNSON
Observer certification date	1/6/2013
Certifying agency	WHITLOW ENTERPRISES
Observer affiliation	AVOGADRO ENV. CORP.

* CLEAR AFTERNOON & LOW OPACITY READINGS (0-5%)

Run Number(s) and Description

ACB 2 - RUNS # 23 - 30

sec	0	15	30	45
min	Run 23 Time: 1028			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 24 Time: 1046			
1	0	5	0	5
2	0	5	0	5
3	5	0	5	0
4	0	5	0	5
5	5	0	5	0
6	0	5	5	0
6-minute Average:	2.5			
Source Conditions:				
Sun Angle (degrees):				
	Run 25 Time: 1104			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 26 Time: 1304			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 27 Time: 1054			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 28 Time: 1146			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 29 Time: 1238			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 30 Time: 1330			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings: low 0 high 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

SATURDAY EVENING - JANUARY 26, 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 2
Date of Observation	1/26/2013
Start Time	1356
Stop Time	1704
Distance from observer (ft)	150'
Direction from observer	E
Stack height (fr. observer's elev.) (ft)	8'
Stack Diameter (in)	20' x 8'
Description of plume:	
continuous? fugitive? intermittent?	CONTINUOUS
color	WHITE
water drops present? (Y/N)	No
attached steam plume? (Y/N)	No
detached steam plume? (Y/N)	No
secondary plume? (Y/N)	No
point where opacity read	1-3 CONEX LENGTHS
target?	SKY
describe background to plume	SKY
unique features of plume or stack	—
Weather:	
ambient temperature (F)	27 °F
relative humidity	43 %
wind direction	NW
wind speed	5-10 mph
barometric pressure	30.14 in
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	No
sunglasses? (Y/N)	No

Observer's name	AARON T. JOHNSON
Observer certification date	1/6/2013
Certifying agency	WHITLOW ENTERPRISES
Observer affiliation	AVOGADRO ENV. CORP.

Run Number(s) and Description

ACB 2 - RUNS # 31 - 37

sec	0	15	30	45
min	Run 31 Time: 1356			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 32 Time: 1411			
1	5	5	0	0
2	0	5	5	0
3	0	5	0	0
4	0	5	5	5
5	5	0	5	0
6	0	0	5	5
6-minute Average:	2.5			
Source Conditions:				
Sun Angle (degrees):				
	Run 33 Time: 1426			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 34 Time: 1536			
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	5	5	5	5
6-minute Average:	5			
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 35 Time: 1543			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 36 Time: 1614			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				
	Run 37 Time: 1630			
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings:

low 0 high 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

Aat. Night, January 26th, 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 2
Date of Observation	01/26/2013
Start Time	1910
Stop Time	2236
Distance from observer (ft)	150'
Direction from observer	E
Stack height (fr. observer's elev.) (ft)	8'
Stack Diameter (in)	20' x 8'
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:	@ 1910
ambient temperature (F)	22°
relative humidity	45%
wind direction	SE
wind speed	7-9 mph
barometric pressure	30.29 in Hg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	yes
sunglasses? (Y/N)	—

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

Run Number(s) and Description: ACB 2 Runs 1-8

sec	0	15	30	45
min	Run 1 Time: 1910			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				
	Run 2 Time: 1936			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				
	Run 3 Time: 2020			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	5	0	0	0
5	0	5	0	0
6	0	0	0	0
6-minute Average: 0.4				
Source Conditions:				
Sun Angle (degrees):				
	Run 4 Time: 2046			
1	0	0	5	0
2	0	0	0	0
3	0	5	0	0
4	0	0	5	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0.6				
Source Conditions:				
Sun Angle (degrees):				

sec	0	15	30	45
min	Run 5 Time: 2112			
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	5	5	5	5
6-minute Average: 5				
Source Conditions:				
Sun Angle (degrees):				
	Run 6 Time:			
1	0	0	0	0
2	0	0	5	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0.2				
Source Conditions:				
Sun Angle (degrees):				
	Run 7 Time: 2204			
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average: 0				
Source Conditions:				
Sun Angle (degrees):				
	Run 8 Time: 2230			
1	0	0	0	0
2	0	0	0	5
3	0	0	0	0
4	0	0	0	5
5	0	0	0	0
6	0	0	0	5
6-minute Average: 0.6				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings: low 0 high 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa

Sat. Night, January 26th, 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 2
Date of Observation	01/26/2013
Start Time	2256
Stop Time	2354
Distance from observer (ft)	150'
Direction from observer	E
Stack height (fr. observer's elev.) (ft)	8'
Stack Diameter (in)	20' x 8'
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:	@2250
ambient temperature (F)	21°
relative humidity	49%
wind direction	SE
wind speed	8-15mph
barometric pressure	30.35inHg
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	yes
sunglasses? (Y/N)	—

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

Run Number(s) and Description: ACB 2 Runs 9-11

sec	0	15	30	45
min	Run 9 Time: 2256			
1	0	0	5	0
2	0	5	0	0
3	5	0	0	0
4	5	0	5	0
5	0	0	5	5
6	0	0	0	0
6-minute Average:	1.5			
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 10 Time: 2322				
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
Source Conditions:				
Sun Angle (degrees):				

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

Run 11 Time: 2348				
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
6-minute Average:	0			
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 5

Number of readings above 10 % were 0

Observer's Signature

AVOGADRO ENVIRONMENTAL CORPORATION, Easton Pa