Visible Emission Test Report

Completed for:

Gainesville Renewable Energy Center Woody Biomass Power Plant Biomass Fuel Handling System (EU-001) Ash Handling System (EU-003) Alkaline Sorbent Storage Silo (EU-007)

Test Report Number: 20-11542-010307-001

Testing Completed: March 21 - 24, 2017



Visible Emission Test Report

Gainesville Renewable Energy Center
Woody Biomass Power Plant
Biomass Fuel Handling System (EU-001)
Ash Handling System (EU-003)
Alkaline Sorbent Storage Silo (EU-007)

Gainesville, Florida

C.E.M. Solutions Project No. 11542

Testing Conducted: March 21 – 24, 2017

C.E.M. Solutions, Inc Report Number: 20-11542-010307-001

C.E.M. Solutions, Inc. 1183 E. Overdrive Circle Hernando, Florida 34442 Phone: 352-489-4337

Declaration of Conformance to ASTM D 7036-04: Standard Practice for Competence of Air Emission Testing Bodies

C.E.M. Solutions operates in conformance with the requirements of ASTM D 7036-04: Standard Practice for Competence of Air Emission Testing Bodies through the use of a quality system which incorporates a quality manual, internal audit system, systematic training of personnel and rigorous review of test methods and operating procedures. C.E.M. Solutions Inc. collects performance data related to the quality system and this data is available upon request.

Voe Conti

Quality Assurance Manager,

C/E.M. Solutions, Inc.

Statement of Validity

I hereby certify the information and data provided in this emissions test report for tests performed at the Gainesville Renewable Energy Center's Woody Biomass Power Plant (Emission Units 001, 003, and 007), conducted March 21 through March 24, 2017, are complete and accurate to the best of my knowledge.

Jole Conti

Quality Assurance Manager,

C.E.M. Solutions, Inc.

Project Background

Name of Source Owner: Gainesville Renewable Energy Center

Address of Owner: 11201 NW Hwy 441

Gainesville, FL 32653

Source Identification: Facility ID: 0010131

Biomass Fuel Delivery Preparation, Storage

and Handling (EU-001)

Ash Handling, Storage and Shipment (EU-003)

Alkaline Sorbent Storage Silo (EU-007)

Location of Source: Alachua County, Florida

Type of Operation: SIC Code: 4911

Tests Performed: Method 9 – Determination of Visible Emission

Test Technicians Charles Horton (VE Certified): Matthew Brock

Date(s) Tests Conducted: March 21, 2017: Alkaline Sorbent Storage Silo Bin Vent

Screen/Hog Building Baghouse

Fuel Day Bin Vent

Fly Ash Silo Dust Collector B

March 22, 2017: Fly Ash Silo Dust Collector A

March 24, 2017: Fly Ash Silo

Site Test Coordinator: Ali Leaphart, GREC

State Regulatory Observers: Marc Lovallo, FDEP

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1.0 Introduction

Gainesville Renewable Energy Center (GREC) retained C.E.M. Solutions, Inc. to perform visible emissions monitoring on the Gainesville Renewable Energy Center's Woody Biomass Power Plant. Visible emissions were conducted on the Biomass Fuel Delivery System (EU-001), the Ash Handling System (EU-003) and the Alkaline Sorbent Storage Silo (EU-007) to show compliance with FDEP permit number 0010131-006-AV.

All Leaphart of GREC coordinated plant operations throughout the monitoring program. All testing was conducted in accordance with test methods promulgated by the USEPA.

Table 1 summarizes the results of the test program.

Table 1: Summary of Test Results Woody Biomass Power Plant Emission Units -001, -003 and -007

Sample Location	Emission Unit ID	VE %ª	Emission Limit	Status (Pass/Fail)
Screen/Hog Building Baghouse	001	0.0 %	5% VE	PASS
BFB Boiler Fuel Day Bin Vent Filter	001	0.0 %	5% VE	PASS
Fly Ash Silo Baghouse	003	0.0 %	5% VE	PASS
Fly Ash Silo Dust Collector A	003	0.4 %	10% VE	PASS
Fly Ash Silo Dust Collector B	003	5.4 %	10% VE	PASS
Alkaline Sorbent Storage Bin Vent Filter	007	0.0 %	5% VE	PASS

a = highest 6 minute block average

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Last Updated: 4/20/2017

2.0 Facility Description

The Gainesville Renewable Energy Center's Woody Biomass Power Plant consists of a Biomass Fuel Delivery, Preparation, Storage and Handling system, a Woody Biomass-fueled BFB Boiler, and an Ash Handling, Storage and Shipment system.

2.1 Biomass Fuel Delivery, Preparation Storage and Handling (EU 001)

The biomass fuel delivery, preparation, storage and handling system consists of: three truck dumpers; two sets of screens and hogs (i.e., machines used to size wood chips); and automatic and manual stacker/reclaimers to maintain on average a 15 to 20 day supply of biomass fuel for the BFB boiler based on full load operation and average biomass fuel moisture content. The GREC biomass fuels are initially chipped/ground and processed at offsite locations and then transported to the site by truck. Between 130 and 150 fuel truck deliveries per day are expected based on the maximum BFB boiler biomass fuel consumption rate/average moisture content and a 6-day-per-week delivery schedule. During peak delivery periods, the delivery facilities are capable of unloading 24 truckloads of biomass fuel per hour. The GREC biomass fuel handling system includes scales to weigh each truck entering and departing the facility to determine the delivered fuel weight. The maximum designed hourly biomass processing rate is 600 tons per hour (TPH) with a maximum designed yearly rate of 1,395,030 tons per year (TPY).

2.2 Boiling fluidized bed (BFB) boiler (EU 002)

The boiler is a woody biomass fueled bubbling fluidized bed (BFB) boiler wherein wood is combusted within a bed of hot sand. Heat from the exhaust is recovered to generate superheated steam to generate 100 MW (net) of electricity in a steam turbine generator. Primary fuel will be clean woody biomass. Natural gas is used as a startup fuel. The maximum steam production rate is 930,000 pounds per hour while firing woody biomass. Flue gas exhausts will exit a 230 feet tall, 12 ft. outer diameter stack at approximately 310°F and a volumetric flow rate of 520,600 actual cubic feet per minute (acfm).

An alkaline sorbent storage silo (EU-007) is used to store sodium bicarbonate for the IDSIS emission control system. The storage silo has a bin vent installed to control PM emissions while the silo is loaded with sorbent from a truck.

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2.3 Ash Handling, Storage and Shipment (EU 003)

Approximately two thirds of ash created by the combustion of biomass fuel exits the BFB boiler as fly ash with the remaining third leaving as bottom ash. The design maximum process throughput rates are 27,594 TPY of fly ash and 13,140 TPY of bottom ash.

Fly ash from the boiler convective pass and fabric filter baghouse hoppers is collected dry and transported pneumatically to a single fly ash storage silo by means of two vacuum blowers. The transferred fly ash first passes through a receiver/collector that separates the fly ash from the conveying air stream. The separated fly ash then flowd through an air lock valve into the storage silo, which will be vented through a baghouse for control of PM emissions. From the silo, the fly ash is either stabilized using water in a pug mill or loaded dry into a receiving truck. For the fly ash stabilization case, fly ash and water are mixed in a pug mill and then transferred via a chute into covered trucks and then hauled offsite for reuse or disposal. During the dry transfer of fly ash, an enclosed process is utilized to transfer ash from the silo through a chute into sealed trucks.

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3.0 Test Program/Operating Conditions

Monitoring was conducted while the systems were operating at maximum capacity to the extent practicable. During the visible emission observations, the truck hoppers operated at approximately 242.97. The Alkaline storage tank was filled at a pressure of 10 psi. The depth of the sorbent in the silo was documented during the filling operation.

Plant operating data were provided by Gainesville Renewable Energy Center, Inc. and are located in Appendix A.

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4.0 Test Methods

All testing was performed in accordance with methods approved by the USEPA and FDEP. The following discusses the methods, as well as quality assurance and sample handling procedures.

Table 2 summarizes the EPA test methods utilized to complete the test program.

Table 2: Summary of EPA Reference Methods Woody Biomass Power Plant Emission Units -001, -003 and -007

EPA Method	Description
9	Opacity (Visible Emissions)

4.1 Visible Emission Determination

USEPA Method 9 was utilized to determine visible emissions.

Visible emissions observations were performed by a FDEP certified visible emissions reader. Readings were taken at 15 second intervals and reduced into six minute averages as required by the applicable EPA standard. One, sixty (60) or thirty (30) minute visible emissions test run was performed on each of the point sources while the system was operating at or near maximum capacity, to the extent practical.

Method 9 data summary, field data and VE reader's certification are located in Appendix B and C.

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5.0 Emission Monitoring Results

The following section presents the results of the monitoring program. Table 3 summarizes the test program results. Supporting RM field data are presented in Appendix B.

Table 3: Visible Emissions Summary Woody Biomass Power Plant Emission Units -001, -003 and -007

Sample Location	Date	Start Time (EST)	End Time (EST)	VE %ª	Emission Limit
Screen/Hog Building Baghouse	3/21/2017	13:10	13:40	0.0%	5% VE
BFB Boiler Fuel Day Bin Vent Filter	3/21/2017	14:45	15:15	0.0%	5% VE
Fly Ash Silo Baghouse	3/24/2017	8:00	8:30	0.0%	5% VE
Fly Ash Silo Dust Collector A	3/22/2017	16:05	17:05	0.4%	10% VE
Fly Ash Silo Dust Collector B	3/21/2017	16:02	17:02	5.4%	10% VE
Alkaline Sorbent Storage Bin Vent Filter	3/21/2017	11:55	12:25	0.0%	5% VE

a = highest 6 minute block average

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Last Updated: 4/20/2017

Appendix A: Facility Operating Data

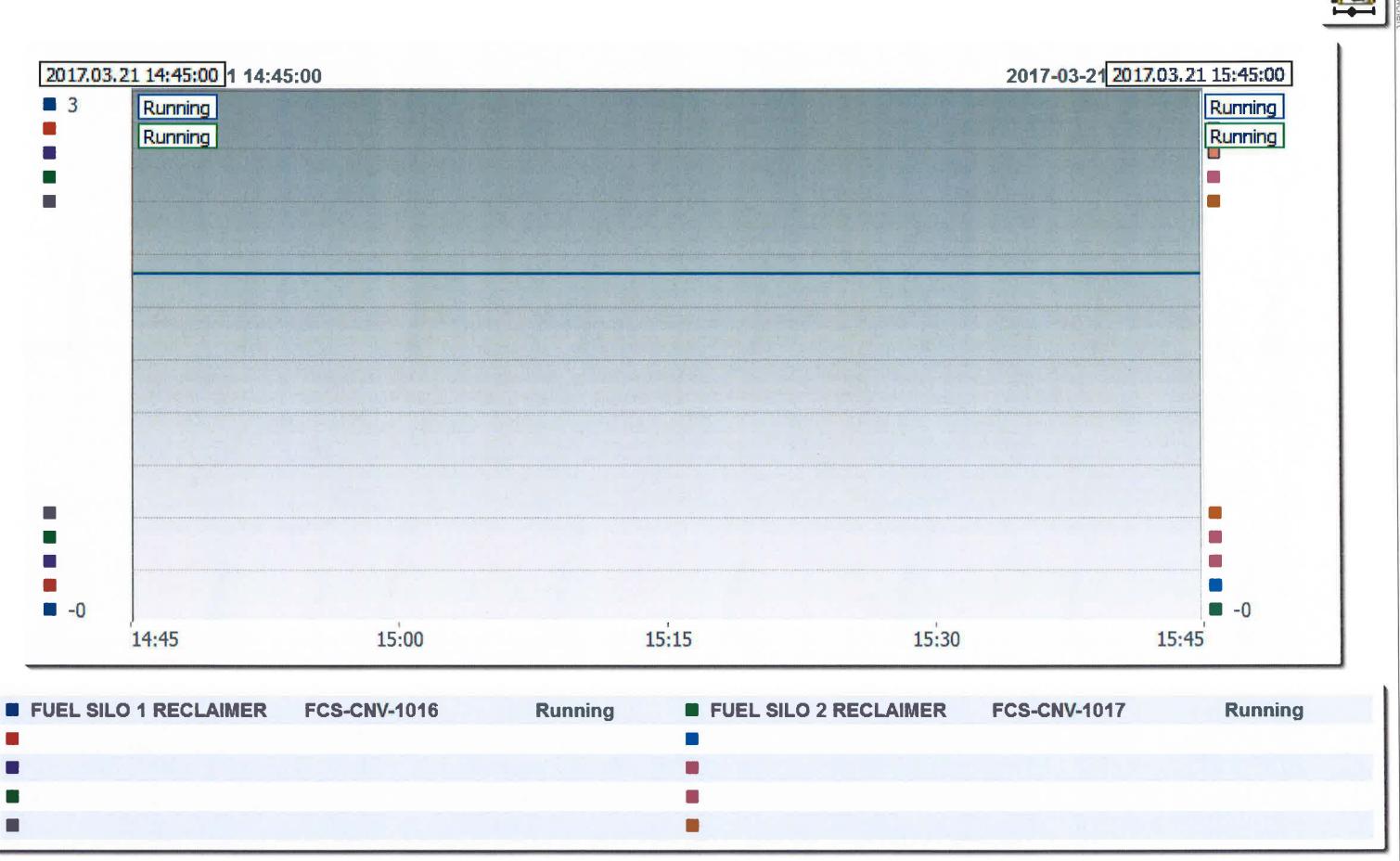


DNAuseTrend 2017.03.21 12:55:00

TicketDate	TicketNumber	Net tons	Remarks	DumpTime
03/21/2017	61407	26.22	VE#	3/21/17 13:11
03/21/2017	61409	33.78	VE start#	3/21/17 13:15
03/21/2017	61410	26.79	#	3/21/17 13:13
03/21/2017	61411	32.21	#	3/21/17 13:37
03/21/2017	61412	29.9	#	3/21/17 13:24
03/21/2017	61413	26.24	#	3/21/17 13:27
03/21/2017	61414	30.9	#	3/21/17 13:35
03/21/2017	61416	36.93	#	3/21/17 13:39

242.97





DNAuseTrend 2017.03.21 15:45:00





2017.03.21 17:02:00

Date/Time	DED1. STACK ELOW SCELL DZE (SCELL) Down Volum
3/22/2017 14:10	BFB1: STACK_FLOW_SCFH_P75 (SCFH) Raw Value
3/22/2017 14:10	18,240,000
3/22/2017 14:11	18,318,000
	18,048,000
3/22/2017 14:13	17,706,000
3/22/2017 14:14	17,886,000
3/22/2017 14:15	17,904,000
3/22/2017 14:16	17,634,000
3/22/2017 14:17	17,682,000
3/22/2017 14:18	17,898,000
3/22/2017 14:19	18,036,000
3/22/2017 14:20	17,988,000
3/22/2017 14:21	18,078,000
3/22/2017 14:22	17,634,000
3/22/2017 14:23	17,940,000
3/22/2017 14:24	18,000,000
3/22/2017 14:25	17,916,000
3/22/2017 14:26	18,042,000
3/22/2017 14:27	18,462,000
3/22/2017 14:28	18,408,000
3/22/2017 14:29	18,396,000
3/22/2017 14:30	18,564,000
3/22/2017 14:31	18,492,000
3/22/2017 14:32	18,132,000
3/22/2017 14:33	18,366,000
3/22/2017 14:34	18,198,000
3/22/2017 14:35	18,096,000
3/22/2017 14:36	17,628,000
3/22/2017 14:37	17,964,000
3/22/2017 14:38	17,754,000
3/22/2017 14:39	17,250,000
3/22/2017 14:40	17,850,000
3/22/2017 14:41	17,790,000
3/22/2017 14:42	18,198,000
3/22/2017 14:43	18,066,000
3/22/2017 14:44	18,096,000
3/22/2017 14:45	18,492,000
3/22/2017 14:46	18,018,000
3/22/2017 14:47	18,504,000
3/22/2017 14:48	18,258,000
3/22/2017 14:49	18,132,000
3/22/2017 14:50	18,090,000
3/22/2017 14:51	18,114,000
3/22/2017 14:51	18,258,000
3/22/2017 14:52	17,808,000
3/22/2017 14:53	17,364,000
3/22/2017 14:55	17,354,000
J/22/2017 14.33	17,032,000

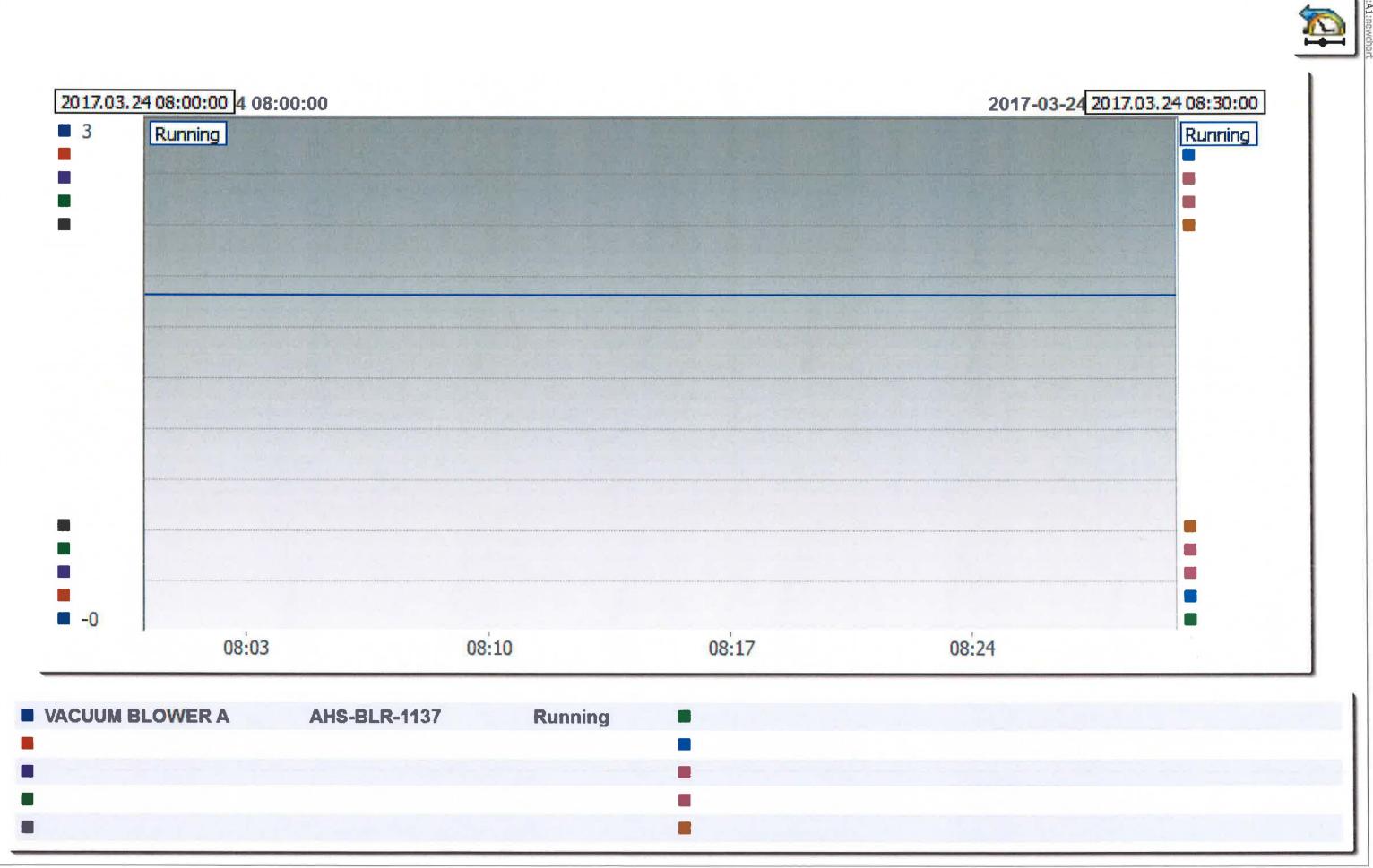
Date/Time	BFB1: STACK_FLOW_SCFH_P75 (SCFH) Raw Value
3/22/2017 14:56	17,736,000
3/22/2017 14:57	17,592,000
3/22/2017 14:58	17,268,000
3/22/2017 14:59	17,856,000
3/22/2017 15:00	17,826,000
3/22/2017 15:01	17,766,000
3/22/2017 15:02	18,414,000
3/22/2017 15:03	18,186,000
3/22/2017 15:04	18,546,000
3/22/2017 15:05	18,390,000
3/22/2017 15:06	18,600,000
3/22/2017 15:07	18,546,000
3/22/2017 15:08	17,982,000
3/22/2017 15:09	18,024,000
3/22/2017 15:10	17,706,000

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2



DNAuseTrend 2017.03.22 17:05:00



DNAuseTrend 2017.03.24 08:30:00

Appendix B: Method 9 Support Data

VE Field Documentation



	FORMATION	Δ.	Date			OB	SER	VATION	ON R	ECO	RD	
Facility Name:		((i) ~ 1)	3/2/	17		Sta	ck A			Sta	ck B	
61) IC	12	(EU-001)	Hour	Minute	0	15	30	45	0	15	30	45
Source Name:	Permit Number: 00/0/5/-	00/-11/	1310	0	(.)	0	0	Ô				
Facility Name: GREC Source Name: SYREN/Acg Building Location Address:	00/0131-	Ur to THV		1	0	0	A	Q				
	Vers 441			2	2	0	9	0				_
11201 NW US 1	State:	Tec.		3	Q	0	0	Š				
	State:	3265 3		4	0	0	(1)	Ø				<u> </u>
Unit Load:	Operating Mode:	22600		5	0	9	Ŏ	0				
ISE SE	Normal			6	8	S	Ĩζ,	0	_			_
Fuel Type:	Permitted Rate:			7	9	00	2	0				-
N/A				9	0	(2)	8	8				
Control Equipment:			1320	10	0.	0	X	X			-	\vdash
Baghovse			12.10	11	12	K	8	X				_
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PLUME INFORMATION	START	FND /		14	8	6	8	1				
Describe Emissions (Smoke, Dust, Heat Trace, etc.)	Dust	DUST		15	6	8	0	(Ö)				_
Height of Emission Point (ft)	~20 ft	2 /0		16	0	0	(6)	8				
Height Relative to Observer (ft)	N14 F.t	100 A		17	0	0	10	10			_	+-
Distance from Observer (ft)	N 100 FT	NIONA		18	6	1.6	K	0		_		+-
Direction to Source	WSW	WSW		19	8	8	18	0			_	1
Plume Type (Continuous, Intermittent, Fugitive, etc.)	Continuous	Continuous	1330	20	15	K	8	6			-	-
Plume Color	Clear	Clear	1709	21	(4)	N	n	10			_	-
Water Droplets Present?	NO	NO	_	22	0	1	18	a			_	\vdash
Plume Attached or Detached?	100	14 20		23	6	3	0	13				
Angle of Inclination (°)	6	5	_	24	d	0	18	6			_	_
Description of Background (Sky, Trees, Building, etc.)	Sky	5121		25	6	9	0	18			-	_
Color of Background (Sky, Flees, Building, etc.)	Bise	Bive		26	ल	0	0	174		-	 	+
	Clear	CIEM	_	27	लै	3	Ö	0			_	+
Condition of Sky (Clear, Scattered, Broken, Overcast)	4	4		28	10,	0	16				_	_
Wind Speed (mph) Wind Direction (From)	W	W		29	Ö	0	10	0			_	+
Ambient Temp (°F)	77	79	1340	30	Ť		40	1		-	_	_
North Direction ///			6210	31	1							_
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KEY: SUN 35 WIND	PLUMI			39								
Comments		***		40		1						
				41								
				42								
1				43								
				44		1						
				45								
				46								
Range of Opacity Readings (%)	Minimum			47								
Range of Opacity Readings (%)	Maximum			48			1					
Average Opacity for Read	ings =	9	6	49			1					
Observer's Name (print)		Date		50			1					
Mother Brocks		102/21/17		51								
Observer's Signature	COLD OF A DE PROPERTY OF THE PARTY OF THE PA	/		52			1					
				53			1					
Organization C E M So	lutions, Inc.	- Parantha and a second		54								
C.E.IVI. SO	iudons, inc.			55				1				
Certified By	lien			56				1			T	
ETA 44	4523			57				1				
Certification Date				58				1				
02/01/17				59				1				



SOURCE IN	SOURCE INFORMATION					OB	SER	VATI	ION RECORD					
Facility Name:		10	3/21	1/17		Stac					k B			
GREC Source Name:		(FCV-001)	Hour	Minute	0	15	30	45	0	15	30	45		
	Permit Number:	-006-AV	1445	0	9	0	0	9						
Bin vent Filter Location Address:		-006-Nr	-	2	8	2	8	8	_					
11201 NW US	HLY 441			3	0	0	0	0						
City:	State:	Zip:		4	9	0	0	D						
Unit Load:	Operating Mode:	32853		5	2	2	0	0	<u> </u>					
Base	Normal			7	()	9	8	8	-					
Fuel Type:	Permitted Rate:			8	8	0	0	0			1			
N/A				9	Ö	9	9	0						
Control Equipment:		-	1455	10	8	0	D	9	_					
Describe Emission Point:				11	0	0	0	0	_	-		-		
Grey vertical exhaust at +	op of conver	10 (13	0	0	0	0						
PLUME INFORMATION	START	END		14	0	0	0	0						
Describe Emissions (Smoke, Dust, Heat Trace, etc.)	DUST.	DUST		15	0	9	0	0						
Height of Emission Point (ft)	N100 ft	N100 ft		16	Ď	0	0	8						
Height Relative to Observer (ft)	~ (p ++	264	-	17	0	0	8	0	-	-		-		
Distance from Observer (ft)	~ 40 ft	~ 40 ft	_	18	8	8	R	8	\vdash	-		\vdash		
Direction to Source Plume Type (Continuous, Intermittent, Fugitive, etc.)	Continuous	Continuous	(505	20	0	0	0	10	 					
Plume Type (Continuous, Intermittent, Fugitive, etc.) Plume Color	Clear	Clear	1.7492	21	0	8	O	0				\vdash		
Water Droplets Present?	NO	NO		22	9	9	0	0						
Plume Attached or Detached?	_	_		23	0	0	0	Q						
Angle of Inclination (°)	8	8		24	0	2	2	0	-	-				
Description of Background (Sky, Trees, Building, etc.)	5124	Sky	 	25	8	0	18	8	-	-		+-		
Color of Background Condition of Sky (Clear, Scattered, Broken, Overcast)	Scottered	Scottered	1	26 27	8	Õ	K	R				+		
Wind Speed (mph)	7	2		28	0	Ö	0	0			1	_		
Wind Direction (From)	WSW	WSW		29	0	O	O	0						
Ambient Temp (°F)	1,80	80	1515	30	1									
North Direction COLVEYO	of	741 0		31	1				_					
	Emission Point	7th floor		32					\vdash	-		+		
		in to the same		34					\vdash	_		_		
*		Elevator		35										
140	Observer's Positi	on		36										
1 Sun to	480 outlet			37										
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Comments			-	39	+	1		-	-	-		+		
o di iniciali				40	1			-	+	1		+		
				42								1		
				43										
				44										
				45	-		1	-	-					
	Minter		4-	46	\vdash		1	+	+	+	-	+-		
Range of Opacity Readings (%)	Minimum Maximum	8		47	+		1	-	-	-		+		
Average Opacity for Read	lings =		%	49		1	1		1	+	1	1		
Observer's Name (print)		Date		50										
Motthew Brock		93/21/17		51				1				N .		
Observer's Signature				52	-		-	1	-			-		
Organization			-	53	-	+	-	1	-	+	-	+		
C.E.M. So	lutions, Inc.		_	54 55	+	+	+	1	+	+-	-	+-		
Certified By	~ 0		-	56	1			1				1		
ETA 444S	23			57										
Certification Date				58										
92/01/17				59					1					



	FORMATION	,	Date			-		VATI	ON R		-	
Facility Name:	/	CII m	3/2	1		Stac					ck B	
OKEL		C U-W3)	Hour	Minute	0	15	30	45	,0	15	30	45
Source Name:	Permit Number:	1 111	8:00	0	0	O	0	0				
Flu ASH Silo	00/013/-	-00P-4 N	0:01	1	0	0	0	0	1			
Location Address:	· = 11	441	0:02	2	0	0	0	O				
11901 NM 1	15 Hing	19/	შ:03	3	0	(3	0	0				W.
City:	State:	Zip:	0:04	4	(3)	0	0	0	D _ N			II.
Carreylle	4-6	32653	0:05	5	0	(2)	(3)	0	1			
Unit Load:	Operating Mode:	1	8:06	6	O	0	0	(25)				
Besc	Nac	mak	0:07	7	0	0	0	ON				
Fuel Type:	Permitted Rate:	0/9	6:08	8	1	0	0	0		1		+
N/A			8:09	9	0	O	0	0		1		+
Control Equipment:			0:09 0:10	10	ŏ	0	0	0		1		+
,			0:10	11	0		- Nagar	0		1		-
Describe Emission Point:			0:11		0	0	0	0		1		+
west side vent o	n Fly Ash S	Cl. Karbonal		12	-	(2)	(2)	400	-	1		+
		site sagrenan	0:13	13	0	0	0	Q.	_	1		₩
PLUME INFORMATION	START	END	0:14	14	0	ථ	0	9		1		-
Describe Emissions (Smoke, Dust, Heat Trace, etc.)	None	SAME	0:15	15	0	0	0	0		1		
Height of Emission Point (ft)	- 70 th	;1	ਹੈ:16	16	0	0	0	0				
Height Relative to Observer (ft)	~ 65 4	11	ð:17	17	0	0	0	0				
Distance from Observer (ft)	- 70.64	11	ි:18	18	0	0	0	0				
Direction to Source	NW) 1	წ:19	19	0	0	0	0				\top
Plume Type (Continuous, Intermittent, Fugitive, etc.)	CONTINUOUS	111	0:10	20	O	8	0	0				1
	N/A	11	8:21	21	0	0	0	0			11	+-
Plume Color	NO	+	0:21		159	8	0	6		-	-	+
Water Droplets Present?)		22	-	5	_	191		-	11	+
Plume Attached or Detached?	NIA		0:23	23	0		0	0	_		- 11	-
Angle of Inclination (°)	- 60 (31/2 Ve	(1)	o:24	24	0	0	0	0	_			┿
Description of Background (Sky, Trees, Building, etc.)	<i>Elouds</i>	11	0:25	25	0	0	0	0				
Color of Background	white	11	0:26	26	0	0	0	CO			1	
Condition of Sky (Clear, Scattered, Broken, Overcast)	Covered	11	0:27	27	0	0	0	0			A	
Wind Speed (mph)	my y much	/1	7 :28	28	0	0	0	0			111	
Wind Direction (From)	NNE	11	0:29	29	0	0	0	63			111	
Ambient Temp (°F)	5600	58°P	0:30	30	4.							
		70	0:31	31	1						111	
(3)	Emission Point	1001	0:32	32	1			1			1	_
	Emission Point	44	0:33	33	1		_	1	1	+	111	+
	2003			34	+	1	_	1		_		1
1		100 11	0:34		-	1	-	1/	-	+	-	1
	Observer's Positio		0:35	35	+		-	1/	_	_	11	17
140		10410	0:36	36	-	1		-	_	1	1	1/
\$un Loos	dion		0:37	37		1		4		1	i	Ä.
KEY: SUN - WIND I	=> PLUME		0:38	38						1	1	1
KET: 30H XX WIND E	- TEOME		0:39	39		1				1		/1
Comments			0:40	40			1				\mathbf{M}	TI
			0:41	41			1				11 /	1
			0:42	42			M				1.1	
			0:43	43			V				11/1	+
			0:44	44	+		1/3		+	_	11	+
			0:45	45	_		/	+-		1	11	+
				46	+-	_		+	-	-	11	+
			0:46	_	+-		1	+	-	-	11	+-
Range of Opacity Readings (%)	Minimum		0:47	47	-	1	-	-	-		Ш_	1
	Maximum		0:48	48	\vdash				-			1
Average Opacity for Readi	ngs =		% 0:49	49		1				1 1		1
Observer's Name (print)	- 1	Date 3/14/17	0:50	50						1	1	1
Charles HOR	TON	2/49/14	0:51	51		1				11		1
Observer's Signature	11_		0:52	52		7				11		1
141 134)		0:53	53		1				11		\Box
Organization	The same of the sa		0:54	54	1	1		1	1	11		+
C.E.M. Sol	utions, Inc.		0:55	55	+-			-	-	111	+	+
	/ .	. /	_		-		-	-	-	111	+	+
Certified By Eastern Tech	10/2 / A.	sociates	0:56	56	1		-	+-	-	11	+	+
ansvera reco	ruce /15	500100	0:57	57	-	-	-	+	-	11	-	-
Certification Date	2 SHULL	C22A	0:58	58	-	-		-		1		
a / / / / / / /	1.	JUNE 1	0:59	59			1					
4/1/00//		VALV										



(CL) AD2) SIGER A SIGER B		FORMATION		Date 3/	4/17		ОВ	SER	VATI	ON F	RECO	RD	
Source March Source So	Facility Name:	1-	201 200		,		Stac	k A			Sta	ck-B	·*****
Committee Control Co	GOLEC.	16	(C-003)		Minute	_	15	30	45	0	15	30	45
	Source Name: All STID DUST	Permit Number:	1 11	1605	0	0	0	0	0				
	Callector A	00/0/51-	006-4V		1		0	0	0)				
The Control Service Control		11 1211	1		2	(2)	0	0	0				
State Stat	11201 NW 03	HW3 99	1		3	0	0	0	0				
Date		19 .	Zip:		4	0	0	C	0	1			1
Anti-color	Colver 12 No	for home	31153	1610		0	Viano.	3-10-		1			1
Number Particular Particu	Unit Load:	Operating Mode:	10	800						1			+
Perinter Rose Perinter Ros	15. 4	Normal											+
Secretar Engineeric 16	Fuel Type:									_		-	+
	- American									_		_	+
11	Control Equipment			for andrew				40-			1		1
	Solitor Equipment.			1613		-	-			_	#	1	-
Sey						6.5	Carrier .	1000			1		
PLUME INFORMATION START END	17 1	D 1 0 11	1 1		12	0	0	0	0				
Description (Similar, Dust, Heal Trace, etc.) Mont. Service	Serbhnest vent e-	DVSO Colle	Aer		13		0	0	0			1	
Telegric of Emission Paint (1)	PLUME INFORMATION	START	END		14	0	0	0				1	T
Height Relative to Closerver (ft)	Describe Emissions (Smoke, Dust, Heat Trace, etc.)	None.	Smaker	1620	15	0	0	0	0				
Telepit Relative to Observer (ft)							10.00	0	0		TT	1	
Distance from Observer (1) Di							- 100		-			1	+
Pume Type						-	-			\vdash	+	1	+-
Plane Type (Continuous, Intermittent, Fugitive, etc.) Plane Color Plane Color Plane Color Plane Color Plane Color Plane Start (1) 20 20 20 20 20 20 20 20 20 2	and the second s					_	-400			\vdash	1	++-	+
Water Dropists Present?		NE		1/55		_	Nag-at-			-	+ 1	+	+
Water Originals Present? 10 23 0 0 0 0 0 0 0 0 0		Centurious		1625		_	- Comp		Time!		11	11	1
Plume Attached or Detached?	Plume Color					0		-740-				11	-
Angle of Incination (*) Peacription of Background (Sky, Trees, Building, etc.) Peacription of Peacription of Sky, Etc. Peacription of Pe	Water Droplets Present?	NO	Same		22	0	0	0					
Description of Background (Sky, Trees, Building, etc.)	Plume Attached or Detached?	NA	11		23	0	0	0	0)			11	
Control of Sky (Clear, Scattered, Broken, Overcast) 1	Angle of Inclination (*)	n 10	11		24	0	0	0	0			11	
Control of Sky (Clear, Scattered, Broken, Overcast) 1	Description of Background (Sky Trees Building etc.)	P. 00	11	1630	25	3	0	0	0	1	1 1	11	
Condition of Sky (Clear, Scattered, Broken, Overcast) 1			11	1 Wall		_					1	11	+
Wind Speed (mph)	The state of the s					4.50	1.	-21-		-	+	H .	+-
Wind Direction (From)				-		11.5	100	-	-	\vdash	+	VIII	+-
Ambient Temp (°F) North Direction 31						- Marie	0		-	\vdash	-	W T	+
North Direction				O d amount			0			-	-		-
32	Ambient Temp (°F)	1 89 E	847	1655			0			<u> </u>		1	-
Section Sect	North Direction	10/0/			31	0	1	-		_		1	
Signature Sign		Emission Point			32	0	0	0	0				
ST C C C C C C C C C			4		33	0	0	cs	05			11	
ST C C C C C C C C C	(eg,)	/^	and		34	0	0	0	0			1	
ST C C C C C C C C C	English 5	1		11.40	35	0	0	0	0				
37	W/80	Observer's Positio	30		36	0	0	0	0			11	
Server's Signature Signatu	140	Grand			37			0	0	\vdash		1 1	
339	dyn Loc	ation				-	-				1	1 1	+
	KEY: SUN 30 WIND I	PLUME			-	1,000	_	-		_	-	1 1	+
41	Comments			111111			_			-	+	#	+
42	Comments			1645		_			-	+	-		+
A3							1 400			-	+		+
A4					_		_			1			1
Range of Opacity Readings (%) Minimum Maximum Ma					43	100	_						
As						10			0				
A6				1650	45	0	0	(3)	2000				
Range of Opacity Readings (%) Minimum				1		0	0	(2)	0		1	Ti	
Maximum		Minimum	0 ,		_			_			1/	1	
Average Opacity for 2 Readings = 2 A S A S A S A S A S A S A S A S A S A	Range of Opacity Readings (%)		1 1	1						1	/	1	1
Observer's Name (print) Date 1/55 50 0 <th< td=""><td>Average Opacity for 24 Poods</td><td></td><td>The author</td><td></td><td></td><td></td><td></td><td>100</td><td>179</td><td>+</td><td>1</td><td>+</td><td>-</td></th<>	Average Opacity for 24 Poods		The author					100	179	+	1	+	-
Observer's Signature 51 0 0 0 0 Organization 52 0		ings -	The same of the sa			_	-/40"	_		+-	1	+/	+
Observer's Signature 52 0 0 0 53 0	0/ / 6/	FIM I	2/11/19	1 655		_				+	/-	1	+
Organization C.E.M. Solutions, Inc.		SUUS	1/00///				_			-	/	1	-
Organization C.E.M. Solutions, Inc.	Observer's Signature	all a second	,		52			0				1	
C.E.W. Solutions, Inc.	Chit II				53	6)	0	0				. 2	
C.E.W. Solutions, Inc.	Organization	utiono Inc			54	10	0	0	10	5	e= 0.	4	
Certified By Eastern Technology Associates 57 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C.E.W. 50			1700			0	0	0	11			
Certification Date 2/1/2017 444542 57 0 0 0 0 0 0	Certified By	/ /	1 1	1		0	-	- 40-	0	1/			
Certification Date 2/1/2017 444542 58 0 0 0 0	to A	ash Al	Asea 1 to			_	-	-	_	1/		-	+
2/1/2017 444542 1704 59 0 0 0		cerven Call	SOCIA ICS		-				_	-	+	+	+
1/704 59 0 0 0 0		11445	42	1		- 45		-		+-	+	-	+
	0//10//	-1110	· 60"	1704	59	10	0	0	0	4			



	SOURCE INFORMATION					RD	₹D					
Facility Name:	/	Cu man				Stac	kΑ			Sta	ck B	
(2NE (()	$\epsilon(0-003)$	Hour	Minute	Q	15	30	45	0	15	30	45
Source Name: FTY ASM 5(10)	Permit Number:	7 . 7 .	1602	0	\bigcirc	0	0	0				
dust collector B	6010131	006 -AV		1	(0)	0	X	0				
ocation Address:	. 1 F	111		2	0	\sim	0	X				
1/201 NW US	Hun 4	4/		3	\sim	\bigcirc	0	X				
City:	State:	Zip:			\sim	(-	8	_			_
P 1 11.	FI	32653		4	4	()	8	-	_			_
() sines with	1	3000)		5	(.)	(D)	(1)	(4)				
Unit Load:	Operating Mode:	17		6	0	B	(1)	(4)				
1Se se	Norm	4		7	\Box	3	\bigcirc	0				
Fuel Times	Permitted Rate:			8	7	X	(9)	0				
None None				9	(7)	0	0	1				_
Control Equipment:			1.10		8	8	×	X				
			612	10	T	()	8	18	_			
				11	7	0	Q	×				
Describe Emission Point:				12		()	(U				
NOITHERNMOST GOWER	hor zarte	Exhaust vent	t	13	10	9	0	()				
PLUME INFORMATION	START	END '		14	0	0	5	9				
	DUST	DUST		15	0)	0	0	0				
Describe Emissions (Smoke, Dust, Heat Trace, etc.)	~8€+	N84+			500			12				
Height of Emission Point (ft)	7801		-	16	Ω Ω	W	0	12	-			-
Height Relative to Observer (ft)	へんらさ	N2 ft		17	Q	(i)	0	(2)				
Distance from Observer (ft)	~ no ft	~20 ft		18	(3)	0	0	10				
Direction to Source	N	N		19	0	Ø	(3)	()				
Plume Type (Continuous, Intermittent, Fugitive, etc.)	CONTINUOUS	Freemittent	1622	20	Ö	(2)	0	K				
	Clear		160	. 21	ŏ	0	5	12	×	5,4		-
Plume Color	CIENT	Grey	-					5	X	3,4	-	
Water Droplets Present?	40	<i>N</i> 9′		22	10	(0	10	10	_			_
Plume Attached or Detached?			L	23	10	(0)	9100	110				L
Angle of Inclination (°)	3	3		24	110	(0"	1510	15				
Description of Background (Sky, Trees, Building, etc.)	500	Silo	I.	25	0	Q	0	02				
	White.	WHITP		26	0	5	0	0	—	<u> </u>		
Color of Background			1			0	Ŏ		—	_		+
Condition of Sky (Clear, Scattered, Broken, Overcast)	Scolecies	Scottered	-	27	0	-	-	0	-	-		-
Wind Speed (mph)	2	1)		28	0	0	0	0		-		
Wind Direction (From)	5W	SW		29	0	()	5	0	×	2.9		
Ambient Temp (°F)	80	180	1632	30	0	0	0	0	1			
North Direction 905 5057		7	1	31	15	15	10	10				
700 700	Blower B			32	5	5	5	0	1			+
	Emission Point		_				-		1	+	-	-
- / / -	1 BIDINET A			33	0	0	Q	0	-	-	-	-
[maga 6]	July Cu ASh	SILO		34	(C)	0	0	10				
	VELIA 17	Ollo		35	0	0.	(0)	(0)				
180	Blower A Fly ASh	on		36	0	0	0	0				
140				37	65	0	Ö	0				
Sun Loc				38	7	5	10		10	44	_	+
KEY: SUN 3 WIND 1	PLUMI	E			15	1		10	X	17	-	-
				39	10	5	5	5	-	-		
Comments (1.0 of Structo) (· Amel	NEED DESCRIPTION	1602	40	0	0	0	N)				
comments Sun obstructed by	1 surveyore	to west		41	5	10	10	5				
				42	5	5	5	5				
				43	()	Ö	(1)	0	1		1	1
			-	-	18	0	77	_	1	+	+	+
				44		0	10	0		-	-	-
1101 200 01 100 0	1.600 10.22	21-1000.10		45	10	(1)	(4)	(2)	-	-		
Max average observe	CTION 16:23:	20-6:27:17		46	6	(LC) (v)				
l V	Minimum	0		47	9	0	0	0				
Range of Opacity Readings (%)	Maximum	15	1	48	Ŏ	0	9	0				
Average Opacity for 2.4 Read	ings =	5.4 %	6	49	5	1	60	O		1		1
Average Opacity for 2.4 Read Observer's Name (print)	1193	Date		-	18	17	100	1	+	1	+	+
Marting / Dr- m		03/21/17	1652	50	124	1		10	-	-	+	-
Matthew Block	Name of Street, Street	1094111		51	10	4	0	3	-	-	-	1
Observer's Signature				52	0	0	0	(2)		1		
		alabo difference of the strate as in.		53	5	5	NO	10				
Organization	ISMESSE ISS		T	54	TO	0	0	Q,	T			T
	lutions, Inc.		-	55	0	10	2	0	+	1	+	+
C.E.M. Sol			+			101	X		+	-	+	+
C.E.M. Sol				56	10	0	14)	.0				-
C.E.M. Sol	(CN3					1	1	7				
C.E.M. Sol	1523			57	O	Q	0	0				
C.E.M. Sol	1523					8	8	5	-	-	-	
C.E.M. Sol	1523			57	Q	20	8					+





SOURCE IN	FORMATION		Date			ОВ	SER	VATIO	ON R	ECO	RD	
Facility Name:		Car (a)	03/21	117		Stac	_				k B	
Facility Name: GREC Source Name: AIKANING SOS BENT Starage SILO Location Address:		(EU-207)	Hour	Minute	0	15	30	45	0	15	30	45
Source Name: AIRNING SOIBENT	Permit Number:	mal 111	Hour 1/55	0	0	9	0	0				
5tarage 5110	0010131	-006-AV	1155		0	Ð	0	0				
11201 NW US Hwy 4	141			2	Ŏ	2	0	Ŏ				
11201 NW US Hwy 4	State:	Zin:		3	0	0	0	8	_			
Gainesville	F	^{zip:} 32653		5	0	8	0	0				
Unit Load:	Operating Mode:	2003		6	8	Ö	0	8				_
Ala	Norma			7	3	6	6	0				
Fuel Type:	Permitted Rate:	7		8	T	Ö	6	Õ				
· N/A	_			9	a	Ö	0	5				
Control Equipment:			12-05	10	Ü	O	O	0				
Describe Emission Point:			*	11	0	()	0	()				
Describe Emission Point:				12	0	0	0	0				
PLUME INFORMATION	at top			13	0	0	0	0				
PLUME INFORMATION	START	END		14	0	O	0	0				
Describe Emissions (Smoke, Dust, Heat Trace, etc.)	DUST	DUSK		15	0	0	0	0				
Height of Emission Point (ft)	rsoft	N50+4		16	0	0	()	Q				
Height Relative to Observer (ft)	444 41	124 Ft		17	0	0	()	2				
Distance from Observer (ft)	w100 ft	N100 ft		18	0	0	()	(0)				
Direction to Source	SW	5W	1/1/12	19	2	0	8	8	_			-
Plume Type (Continuous, Intermittent, Fugitive, etc.)	continuous	continuous	1213	20	0	2	X	8	-		-	
Plume Color	CIPO			21	0	O	2	-				-
Water Droplets Present?	NO	NO		22	8	8	1	8	-	-		
Plume Attached or Detached? Angle of Inclination (°)	7	101		24	10	0	8	0	-			_
Description of Background (Sky, Trees, Building, etc.)	BLOWER BOX	BIGNEY BOX	-	25	d	M	Ö	1.0	_		-	_
Color of Background (Sky, Trees, Building, etc.)	Grey	Grey		26	8	8	0	Ö				
Condition of Sky (Clear, Scattered, Broken, Overcast)	clear	Clehr		27	Ŏ	Ŏ	Ö	Q	_			
Wind Speed (mph)	4	3		28	0	0	Ö	1				
Wind Direction (From)	W.	WSW		29	n	O	0	Ò				
Ambient Temp (°F)	7	74	1225	30	,							
North Direction				31	1							
	Emission Point			32								
10				33	1							
6 1:03	OSTONIE			34						_	_	
TOOLING SOME	Observer's Posit	ion		35	_	1	-	-	-	-	_	_
140			-	36	-	1	-	-	-	-	-	-
Sun Loc				37	1	1	-	-	-	-	-	-
KEY: SUN WIND		IE =======		38	+-	1	1	1	1	+		+
Comments	VIII.			40		1	 	-	+-	+	1	+
				41		\vdash	1	-			1	
				42			1		T			
				43			1				1	
				44			1					
				45								
				46			1					
Range of Opacity Readings (%)	Minimum			47								
	Maximum			48			1					
	ings =	9	6	49				-	-		-	-
Observer's Name (print)		03/11/17		50	-	-		V	-	-	-	-
Matthen Brack Observer's Signature	- moreovery	11/21/10/11	-	51	+	-	-	1	-	-	+	-
Ouserver's Signature	The state of the s	and the same of th		52	-	-	+-	1	-	+	-	
Organization		Para Santa	-	53 54	-	+	+	1	+-	+	+	+
C.E.M. Sol	lutions, Inc.			55	+	-	+	1	+	+	+	+
Certified By			1	56	+-		+	++	+	1	1	+-
EIA				57	+		1	1	+	+	+	
Certification Date				58				1	\top			
02/01/17				59				1				
			-	-	-	opinion and the same	-		-	_	_	_

Appendix C:	Accreditations	and Certifications	



Accredited Air Emission Testing Body

A2LA has accredited

C.E.M. SOLUTIONS, INC.

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this organization is accredited to perform testing activities in compliance with ASTM D7036 - Standard Practice for Competence of Air Emission Testing Bodies.



Presented this 24th day of November 2015.

President & CEO

Certificate Number 3820.01 Valid to December 31, 2017

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.



VISIBLE EMISSIONS EVALUATOR

Matthew Brock

This is to certify that the above named observer has met the specifications of Federal Reference Method 9 and is qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates, Inc. of Raleigh, N.C. This certificate is valid for six months from date of issue.

444523

Certificate #

2/1/2017

Date of Certification

8/3/2017

Certification Expiration Date

BRO493112

Student ID Number

Orlando, FL

Location

2/10/2015

Last Lecture

Marty Hughes

Director of Training



VISIBLE EMISSIONS EVALUATOR

Charles Horton

This is to certify that the above named observer has met the specifications of Federal Reference Method 9 and is qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates, Inc. of Raleigh, N.C. This certificate is valid for six months from date of issue.

444542

Certificate #

2/1/2017

Date of Certification

8/3/2017

Certification Expiration Date

HOR964452

Student ID Number

Orlando, FL

Location

TMPF12

Last Lecture

Marty Hughes

Director of Training