

Constellation Power Generation (CPG) is providing this coal combustion byproducts (CCBs) information in accordance with COMAR 26.04.10.08 for the H.A. Wagner Electric Generation Station located at the Constellation Power Fort Smallwood Complex in northeastern Anne Arundel County, Maryland.

A. Contact information (26.04.10.08 A.(1)):

Facility Name: <u>H.A. Wagner Ele</u>	ectric Generation Station	
Name of Permit Holder: <u>Constella</u>	tion Power Source Generation	
Facility Address: <u>3000 Brandon S</u>	Shores Road Street	
Facility Address: Baltimore	Marvland State	21226 Zip
County: <u>Anne Arundel</u>		
Facility Telephone No.: <u>410.787.5</u>	017 Facility Fax No.: 4	0.787.6960
Contact Information (Person filing re Contact Name: John F. Murosko	eport or Environmental Manager) P G	
Contact Title: Decement Manager	1.01	
Contact Address: <u>1005 Brandon Sh</u>	tores Road	
Contact Address: Baltimore City	Maryland State	21226 Zip
Contact Email:john.murosko@cc	onstellation.com	
Contact Telephone No.: 410.787.5	Contact Fax No.: 41 RECEIVE MAR 1 3 2009 Solid Waste Pro	0.787.6637
March 12, 2009		Page 1 of 6

CCB Report HAW final1.doc

B. Description of the CCBs generation process (26.04.10.08 A.(2)):

H.A. Wagner (HAW): H.A. Wagner consists of 2 coal-fired units (Units 2 and 3), one #6 oilfired unit (Unit 4) and one unit (Unit 1) that can burn either natural gas or #6 oil. The plant has a combined nominal generating capacity of 1,020 MW. Unit 2 began operations in 1959 using a Babcock and Wilcox (B&W) natural circulation boiler, and Unit 3 began operations in 1966 using a B&W once-through supercritical boiler. Coal is supplied by barge and stored in a coal pile adjacent to the plant. Coal is fed from the coal pile to the plant storage bunkers via conveyor belts, after which the coal is pulverized and blown into the furnaces. Units 2 and 3 are currently equipped with ESPs for control of PM emissions. Unit 3 has been retrofitted with a SCR system for control of NOx emissions, and Unit 2 utilizes a selective non-catalytic reduction (SNCR) system for the same purpose. Ash is collected from the ESP hoppers and conveyed pneumatically to storage silos from where it is loaded into trucks for final disposition.

Coals burned in 2008 at the H.A. Wagner Plant from Central Appalachian and Powder River Basin sources, and are summarized below:

Mine Location	Tons	
Webster Co. WV	650,875	
Knott Co. KY	181,297	
Powder River Basin WY	65,339	
Total	897,511	

C. Annual report of CCBs generated during the last 5 calendar years (26.04.10.08 A.(3)):

CCBs produced at the H.A. Wagner electric generation station during this reporting period consist of fly ash and bottom ash, and are summarized below.

TIONS TRUNCING		
Year	Fly Ash (tons)	Bottom Ash (tons)
2008	136,334	7,509
2007	250,623	9,174
2006	206,893	9,831
2005	237,584	10,325
2004	141,607	8,041

Table 1: CCBs	Produced In	ı Past	Five Years
H.A. Wagner E	lectric Gene	ration	Station

D. Descriptions of modeling or risk assessments conducted in the previous year (26.04.10.08 A.(4)):

Prior to September, 2007, Constellation placed CCBs generated at the Brandon Shores and H.A. Wagner facilities and not used for other beneficial uses, at the BBSS facility in Gambrills, MD. Constellation conducted certain modeling or risk assessments in 2008 related to the CCBs placed at the BBSS location. More specifically, it performed modeling of the groundwater flow and CCB-related constituent movement for use in evaluating prospective remedial options at the BBSS site. The modeling results were used to support the "Alternatives Analysis and Proposed Remediation Report," dated May 5, 2008 and submitted to the Director of the Water Management Administration, MDE on May 7, 2008. Additional modeling or risk assessments that may have been in progress in connection with asserted or threatened private claims (not involving MDE as a party) are privileged and confidential, were incomplete or preliminary, and may not even be related specifically to CCBs.

E. Copies of all laboratory reports of all chemical characterizations of the CCBs (26.04.10.08 A.(5)):

The following analytical results for CCBs sampled in 2008 are attached to this report:

- Fly Ash PRB Injection, TCLP Metals, Phase Separation Science, Inc., March 21, 2008
- Fly Ash, Wagner 3, TCLP Metals, Phase Separation Science, Inc., May 27, 2008
- Bottom Ash, Wagner 3, TCLP Metals, Phase Separation Science, Inc., May 27, 2008
- Fly Ash, WAG#2 w/o Trona, TCLP Metals, Phase Separation Science, Inc., November 18, 2008

Fly Ash, WAG#2 w/ Trona, TCLP Metals, Phase Separation Science, Inc., November 18, 2008

Fly Ash, Wagner #2 Trona Test, TCLP Metals, Phase Separation Science, Inc., November 25, 2008

Fly Ash, Wagner #2 TRONA, TCLP Metals, Phase Separation Science, Inc., December 10, 2008

Bottom Ash, Total Oxides, Standard Laboratories, Inc., August 15, 2008

Fly Ash, Wagner Silos, Total Oxides, Standard Laboratories, Inc., August 15, 2008

Fly Ash, Wagner, Oxides/Alkalies, CTL/Thompson Materials Engineers, Inc., August 25, 2008

F. Descriptions of how CCBs were used and/or disposed (26.04.10.08 A.(6)):

The following table documents the types and volumes of the CCBs used or disposed of in the last 5 calendar years.

CCBs delivered to BBSS in Gambrills, MD were used for surface mine restoration.

- CCBs delivered to Waste Management were used for daily cover municipal solid waste (MSW) landfills located in Charles City and King George, VA.
- CCBs delivered to Mountainview Landfill in Allegany County, MD were used for daily cover in that MSW landfill, as authorized by MDE.
- CCBs delivered to Lehigh Cement in Union Bridge, MD were used in concrete production.
- CCBs delivered to Bonsal in White Marsh, MD were used as flowable fill in area projects.
- STI processed fly ash from H.A. Wagner, distributing their product to concrete plants throughout the mid-Atlantic region.
- From time to time within this reporting period, small amounts of CCBs (from 5 gallons to less than 20 tons) were delivered to various entities for testing and evaluation of various uses, including metals extraction, grout mixtures and concrete mixtures.

Year	CCB Receiver	Fly Ash (tons)	Bottom Ash (tons)	CCBs Use
2008	Lehigh	20,962		concrete
	Waste Mgmt, VA	112,305	7,509	landfill, daily cover
	Mountainview LF, MD	3,067		landfill, daily cover
2007	Lehigh	77,711	87	concrete
	Bonsal	4,444		flowable fill
	BBSS	153,079	8,811	mine reclamation
	Waste Mgmt, VA	15,390	249	landfill, daily cover
2006	Lehigh	81,992		concrete
	BBSS	115,879	9,831	mine reclamation
2005	STI	1,193		concrete
	Lehigh	45,589		concrete
	Bonsal	5,708		flowable fill
	BBSS	185,094	10,325	mine reclamation
2004	Lehigh	23,477	3,256	concrete
1	Bonsal	2,030		flowable fill
	BBSS	116,099	4,785	mine reclamation

Table 2: CCBs Used/Disposed in Past Five Years H.A. Wagner Electric Generation Station

G. Projections for CCBs use or disposal for the next 5 years (26.04.10.08 A.(7)):

The estimates provided in this section represent the best information that CPSG has available at this time. CPSG's goal is to maximize beneficial reuse over disposal and is continually seeking new markets which, if successful, could alter the projections provided in Table 3 on the following page.

- CCBs delivered to Waste Management of Virginia will be used for daily cover in MSW landfills located in Charles City and King George, VA.
- CCBs delivered to Mountainview Landfill in Allegany County, MD, will be used for daily cover in that MSW landfill, as authorized by MDE.
- CCBs delivered to STI will be used in concrete plants throughout the mid-Atlantic region.
- CCBs delivered to Lehigh Cement in Union Bridge, MD will be used in concrete production.

CPSG is currently pursuing purchase of a permitted industrial waste landfill in Baltimore City. If the purchase and re-permitting is successful, CCBs not used for beneficial purposes will be placed in this landfill at the projected tonnages beginning in late 2010 rather than the landfills indicated in Table 3 below.

Year	Fly Ash	Tons Used	Tons	Bottom Ash	Tons Used	Tons
2009	Waste Mot - VA	Tono odou	47 309	Waste Mot - VA	10113 0300	6 961
	Lehigh	84,955	11,000			0,001
	Total	84,955	47,309	Total		6,961
2010	Waste Mgt - VA		19,205	Waste Mgt - VA		6,125
	Lehigh	97,174				
	Total	97,174	19,205	Total		6,125
2011	Waste Mgt - VA		37,543	Waste Mgt - VA		7,029
	Lehigh	96,000				
	Total	96,000	37,543	Total		7,029
2012	Waste Mgt - VA		35,480	Waste Mgt - VA		6,920
	Lehigh	96,000				
	Total	96,000	35,480	Total		6,920
2013	Waste Mgt - VA		32,021	Waste Mgt - VA		6,738
	Lehigh	96,000				
	Total	96,000	32,021	Total		6,738

Table 3: CCBs Use/Disposal Projections for the Next Five Years H.A. Wagner Electric Generation Station

March 12, 2009 CCB Report HAW final1.doc Constellation Facility: H.A. Wagner

H. Signature and Certification (26.04.10.08 B):

This is to certify that, to the bes any attached documents are true	t of my knowledge, the information contained in t e, accurate, and complete.	his report and
S.C. Mari	Quinn Morrison, Director-Asset Operations 410.787.5399	3/13/09
Signature	Quinn.Morrison@constellation.com Email Address	Date

March 12, 2009 CCB Report HAW final1.doc

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OFFICES: 6630 BALTIMORE NATIONAL PIKE ROUTE 40 WEST BALTIMORE, MD 21228 410-747-8770 800-932-9047 FAX 410-788-8723





CERTIFICATE OF ANALYSIS No: 8052702 Constellation Energy Group, Baltimore, MD June 3, 2008

Project Name: Typical Coal Samples Project Location: Various

Sample ID: Wagner 3 Fly Ash domes Matrix: SOLID	Date/Time Date/Time	Sample Receive	ed: 05/27/200 ed: 05/27/200	08 09:00 08 10:05	PSS Samp	le ID: 805270	2-001
TCLP Metals Anal	ytical Method: S	W846 60	20A	Prep	paration Meth	nod: SW846 301	10A
	Result	Units	TCLP Limit	Flag Dil	Prepared	Analyzed	Analyst
Arsenic	ND	mg/L	5.0	1	05/30/08	05/30/08 13:57	1034
Barium	ND	mg/L	100	1	05/30/08	05/30/08 13:57	1034
Cadmium	ND	mg/L	1.0	1	05/30/08	05/30/08 13:57	1034
Chromium	ND	mg/L	5.0	1	05/30/08	05/30/08 13:57	1034
Lead	ND	mg/L	5.0	1	05/30/08	05/30/08 13:57	1034
Mercury	ND	mg/L	0.200	1	05/30/08	05/30/08 13:57	1034
Selenium	ND	mg/L	1.0	1	05/30/08	05/30/08 13:57	1034
Silver	ND	mg/L	5.0	1	05/30/08	05/30/08 13:57	1034
Sample ID: Brandon 1 Fly Ash domes Matrix: SOLID	Date/Time Date/Time	Receive	ed: 05/27/20 ed: 05/27/20	08 09:00 08 10:05	PSS Samp	ole ID: 80527(02-002
TCLP Metals Ana	lytical Method: S	SW846 60)20A	Prej	paration Met	hod: SW846 30	10A
	Result	Units	TCLP Limit	FlagDi	Prepared	Analyzed	Analys
Arsenic	ND	mg/L	5.0	া	05/30/08	05/30/08 14:27	7 1034
Barium	ND	mg/L	100	1	05/30/08	05/30/08 14:27	7 1034
Cadmium	ND	mg/L	1.0		05/30/08	05/30/08 14:27	7 1034
Chromium	ND	mg/L	5.0	ł	05/30/08	05/30/08 14:27	7 1034
Lead	ND	mg/L	5.0		05/30/08	05/30/08 14:27	7 1034
Mercury	ND	mg/L	0.200	-	05/30/08	05/30/08 14:27	7 1034
Selenium	ND	mg/L	1.0		05/30/08	05/30/08 14:27	7 1034
Silver	ND	mg/L	5.0	1	05/30/08	05/30/08 14:27	7 1034

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CERTIFICATE OF ANALYSIS No: 8052702 Constellation Energy Group, Baltimore, MD June 3, 2008

Project Name: Typical Coal Samples Project Location: Various

Sample ID: Brandon 2 Fly Ash domes Matrix: SOLID	Date/Time Date/Time	Sample Receive	ed: 05/27/20 ed: 05/27/20	08 09:00	PSS Samp	le ID: 8052 70	2-003
TCLP Metals Analytic	cal Method: S	W846 60	20A	Prep	aration Meth	nod: SW846 301	10A
	Result	Units	TCLP Limit	Flag Dil	Prepared	Analyzed	Analyst
Arsenic	ND	mg/L	5.0	1	05/30/08	05/30/08 14:33	1034
Barium	ND	mg/L	100	1	05/30/08	05/30/08 14:33	1034
Cadmium	ND	mg/L	1.0	1	05/30/08	05/30/08 14:33	1034
Chromium	ND	mg/L	5.0	1	05/30/08	05/30/08 14:33	1034
Lead	ND	mg/L	5.0	1	05/30/08	05/30/08 14:33	1034
Mercury	ND	mg/L	0.200	1	05/30/08	05/30/08 14:33	1034
Selenium	ND	mg/L	1.0	1	05/30/08	05/30/08 14:33	1034
Silver	ND	mg/L	5.0	1	05/30/08	05/30/08 14:33	1034
Sample ID: Wagner 3 Bottom Ash domes Matrix: SOLID	Date/Time Date/Time	Sampi Receiv	ed: 05/27/20 ed: 05/27/20	08 09:00 08 10:05	PSS Samp	ole 1D: 80 527 0	02-084
TCLP Metals Analyti	cal Method: S	W846 60	020A	Prep	paration Met	hod: SW846 30	10A
	Result	Units	TCLP Limit	Flag Di	Prepared	Analyzed	Analyst
Arsenic	ND	mg/L	5.0	1	05/30/08	05/30/08 14:39	1034
Barium	ND	mg/L	100	1	05/30/08	05/30/08 14:39	1034
Cadmium	ND	mg/L	1.0	1	05/30/08	05/30/08 14:39	1034
Chromium	ND	mg/L	5.0	1	05/30/08	05/30/08 14:39	3 1034
Lead	ND	mg/L	5.0	1	05/30/08	05/30/08 14:39	9 1034
Mercury	ND	mg/L	0.200	1	05/30/08	05/30/08 14:39	9 1034
Selenium	ND	mg/L	1.0	1	05/30/08	05/30/08 14:39	9 1034
Silver	ND	mg/L	5.0	1	05/30/08	05/30/08 14:39	9 1034

Analytical Report for

Constellation Energy Group Certificate of Analysis No.: 8032018

> Project Manager: John Basciano Project Name : PRB Injection, Flyash Project Location : Wabner



March 21, 2008 Phase Separation Science, Inc. 6630 Baltimore National Pike Baltimore, MD 21228 Phone: (410) 747-8770 Fax: (410) 788-8723

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March 21, 2008

John Basciano Constellation Energy Group 1015 Brandon Shores Rd. Baltimore, MD 21226

Reference: PSS Work Order No: 8032018 Project Name : PRB Injection, Flyash Project Location: Wabner

Dear John Basciano :

The attached Analytical and QC Summary lists the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order numbered **8032018**.

All work reported herein has been performed in accordance with referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on April 24, 2008. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 10 years, after which time it will be disposed without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

John Richardson Laboratory Director

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PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 8032018 Constellation Energy Group, Baltimore, MD March 21, 2008

Project Name: PRB Injection, Flyash Project Location: Wabner

Sample ID: PRB 50/50 Injection Matrix: SOLID TCLP Metals Date/Time Sampled: 03/20/2008 15:00 PSS Sample ID: 8032018-001 Date/Time Received: 03/20/2008 16:03

Analytical Method: SW846 6020A

Preparation Method: SW846 3010A

	Result	Units	TCLP Limit_Flag	_Dil	Prepared	Analyzed	Analyst
Arsenic	ND	mg/L	5.0	1	03/21/08	03/21/08 13:41	1034
Barium	ND	mg/L	100	1	03/21/08	03/21/08 13:41	1034
Cadmium	ND	mg/L	1.0	1	03/21/08	03/21/08 13:41	1034
Chromium	ND	mg/L	5.0	1	03/21/08	03/21/08 13:41	1034
Lead	ND	mg/L	5.0	1	03/21/08	03/21/08 13:41	1034
Mercury	ND	mg/L	0.200	1	03/21/08	03/21/08 13:41	1034
Selenium	0.249	mg/L	1.0	1	03/21/08	03/21/08 13:41	1034
Silver	ND	mg/L	5.0	1	03/21/08	03/21/08 13:41	1034

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Phase Separation Science, Inc

Sample Receipt Checklist

8032018		F	eceived By	Rachel	Davis	
Constella	tion Energy Group	E	ate Received	03/20/2	2008 04:03:	00 PM
PRB Inje	ction, Flyash	E	elivered By	Client		
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ainer(s)						
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Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling.

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Samples Inspected/Checklist Completed By:	3/20/8
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PM Review and Approval:	ate: 3/20/00
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Analytical Report for

Constellation Energy Group Certificate of Analysis No.: 8111809

Project Manager: John Basciano Project Name : Wagner Test Project Location: Wagner



November 20, 2008 Phase Separation Science, Inc. 6630 Baltimore National Pike Baltimore, MD 21228 Phone: (410) 747-8770 Fax: (410) 788-8723

Page 1 of 6

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November 20, 2008

John Basciano Constellation Energy Group 1005 Brandon Shores Rd. Baltimore, MD 21226

Reference: PSS Work Order No: 8111809 Project Name : Wagner Test Project Location: Wagner

Dear John Basciano :

The attached Analytical and QC Summary lists the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order numbered **8111809**.

All work reported herein has been performed in accordance with referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 23, 2008. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

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We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Dan Prucnal

Laboratory Manager



Case Narrative Summary Client Name: Constellation Energy Group Project Name: Wagner Test

Project ID: N/A

Work Order Number: 8111809

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/18/2008 at 11:12 am

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
8111809-001	WAG#2 W Trona	FLY ASH CINDER	11/18/2008 09:00 am
8111809-002	WAG#2 W/O Trona	FLY ASH CINDER	11/18/2008 09:00 am

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in the Sample Receipt Checklist.

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Notes:

- 1. The presence of common laboratory contaminants such as acetone, methylene chloride and phthalates, may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
- 2. The following analytical results are never reported on a dry weight basis: pH, flashpoint, moisture and paint filter test.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- J The target analyte was positively identified below the reporting limit but greater than one-half of the
- reporting limit.
- ND Not Detected at or above the reporting limit.
- RL Reporting Limit.
- U Not detected.

OFFICES: 6630 BALTIMORE NATIONAL PIKE **ROUTE 40 WEST** BALTIMORE, MD 21228 410-747-8770 800-932-9047 FAX 410-788-8723

PHASE **SEPARATION** SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 8111809 Constellation Energy Group, Baltimore, MD November 20, 2008

Project Name: Wagner Test Project Location: Wagner

Sample ID: WAG#2 W Trona Matrix: FLY ASH CINDER	Date/Time Date/Time	Receiv	ed: 11/18/20 ed: 11/18/20	008 09:00 008 11:12	F	PSS Samp	ble ID: 81118	09-001
TCLP Metals	Analytical Method: S	SW846 60)20A	F	Prep	aration Met	hod: SW846 30	10A
	Result	Units	TCLP Limit	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	ND	mg/L	5.0)	1	11/19/08	11/19/08 15:43	1034
Barium	ND	mg/L	100)	1	11/19/08	11/19/08 15:43	3 1034
Cadmium	ND	mg/L	1.0)	1	11/19/08	11/19/08 15:43	3 1034
Chromium	ND	mg/L	5.0)	1	11/19/08	11/19/08 15:43	3 1034
Lead	ND	mg/L	5.0)	1	11/19/08	11/19/08 15:43	3 1034
Mercury	ND	mg/L	0.200)	1	11/19/08	11/19/08 15:43	3 1034
Selenium	0.519	mg/L	1.0)	1	11/19/08	11/19/08 15:43	3 1034
Silver	ND	mg/L	5.0)	1	11/19/08	11/19/08 15:43	3 1034
Sample ID: WAG#2 W/O Trona Matrix: FLY ASH CINDER	Date/Time Date/Time	e Sampl Receiv	ed: 11/18/20 ed: 11/18/20	008 09:00 008 11:12	I	PSS Samp	ole ID: 81118	09-002
TCLP Metals	Analytical Method: S	SW846 60	020A	F	rep	aration Met	hod: SW846 30	10A

Preparation Method: SW846 3010A

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PHASE	SEPAR	ATION	I SCIEN	VCE, I	NC.				en	ww nail: info	w.pha @pha	seonline.	com
OCLIENT: CONSTRUE ATION End	CAN OFFICI	2.001 E	AL 4AK	0	PSS Work C	rder#: s	8118	209		PAGE	1	0F /	1
PROJECT MGRJDHU BASCIAN	PHONE	:NO.: (4/	0) 917 32	20	Matrix Codes: SW=Surtace V	tr DW=Drinking Wr	t GW=Ground	Wir WW=Wa	ste Wr 0=01 S	Soil WL=Was	te Liquid WS	-Waste Solid W=	Wfpe
JEHUIM. RASCIÁNO O CONTRICAT	TON COM	(4/4) ::(181 10	hths	No. C SAM	Preservatives					-		Т
PROJECT NAME: LUA 6 WER 7	EST	PRO	JECT NO .:			E Method	100	/	/	/	/	/	
SITE LOCATION: LUASNER		P.O.1	NO.:		A -	3 / O de	_	/	/	_	/	/	and the second
SAMPLERS:					E N GRG	B / S	/	_			_		and and a
LAB-NO SAMPLE IDENTIFICA	NOL	DATE	TIME	MATRIX (See Codes)	ac oo	14	//	//	//	//	/ /	REMARKS	
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Failinguished By: (2)	/parke	Time	(Bloomled B)	2	Deel	Data Deliv	erables Rec	juired:		ce Present: Shipping Car	PLBS T THORE (L	11EN1	01
Relinquished By: (3)	Date	Time	Received B)	0		Special Ins	PC.I/MAG	7 7255	T HAD	ELEV	RTED		
Relinquished By: (4)	Date	Time	Received By	Ľ		SELENI	uik ce	11 11 18	. 4000				
6630 Baltimore National Pike • Ro The client (Client Name), by signing, or the Service Brochure or PSS-provided q	ute 40 Wes having client uotation incl	st • Baltimo 's agent sign uding any a	ore, Marylar n, this "Samp nd all attorne	nd 21228 le Chain of y's or other	• (410) 74 Custody/Ac	7-8770 • (800 reement Form ^a trees if collectio	0) 932-90 , agrees to on become:	47 • Fax pay tor the a necessar	(410) 78 8 e above req y.	8723 uested sen	/ices per t	he latest vers	ton of

Page 5 of 6



Phase Separation Science, Inc

Sample Receipt Checklist

Wo Number	8111809	9	Received By	Rachel Davis
Client Name	Constell	ation Energy Group	Date Received	11/18/2008 11:12:00 AM
Project Name	Wagner	Test	Delivered By	Client
Project Number	N/A		Tracking No	Not Applicable
rioject Number	14/14		Hacking NO	Not Applicable
			Logged in By	Rachel Davis
Shipping Conta	ainer(s)			
No. of Co Custody S Seal Cond	olers Seals dition	0 Absent None	lce Temp (deg C) Temp Blank F	Absent 23 Present No
Documentation COC agre Chain of C	a ees with s Custody (G ner	ample labels? X Yes COC) X Yes	s or No s or No	
Appropiat Intact? Labeled a Total No.	e for Spean and Labels of Sample	cifled Analysis? Yes X	No Custody Seal(s Custody Seal(s Seal(s) Signed Total No. of Co	s) Intact?X / DatedX ontainers Received 2
Preservation			Voc	No N/A
Metals Cyanides Sulfide TOC, CO TOX, TK VOC, BT Do VOA	D, Pheno N, NH3, T EX (VOA ' vials have	ls otal Phos Vials Rcvd Preserved) zero headspace?	(pH<2)	

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling.

	$\land \land$		
Samples Inspected/Checklist Completed By: PM Review and Approval:	Repuis	Date: Date:	11/18/8 11/18/08

Page 2 of 2 Page 6 of 6

Analytical Report for

Constellation Energy Group Certificate of Analysis No.: 8112602

Project Manager: John Basciano Project Name : Wagner #2 Trona Test Project Location: Wagner



December 1, 2008 Phase Separation Science, Inc. 6630 Baltimore National Pike Baltimore, MD 21228 Phone: (410) 747-8770 Fax: (410) 788-8723

Page 1 of 6

OFFICES: 6630 BALTIMORE NATIONAL PIKE ROUTE 40 WEST BALTIMORE, MD 21228 410-747-8770 800-932-9047 PHASE SEPARATION SCIENCE, INC.



December 1, 2008

John Basciano Constellation Energy Group 1005 Brandon Shores Rd. Baltimore, MD 21226

Reference: PSS Work Order No: **8112602** Project Name : Wagner #2 Trona Test Project Location: Wagner

Dear John Basciano :

The attached Analytical and QC Summary lists the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order numbered **8112602**.

All work reported herein has been performed in accordance with referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 31, 2008. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 10 years, after which time it will be disposed without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

John Richardson Laboratory Director



Case Narrative Summary Client Name: Constellation Energy Group Project Name: Wagner #2 Trona Test

Project ID: N/A

Work Order Number: 8112602

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/26/2008 at 09:25 am

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
8112602-001	Wagner #2 Trona Test	SOLID	11/25/2008 08:00 am

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in the Sample Receipt Checklist.

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Notes:

- 1. The presence of common laboratory contaminants such as acetone, methylene chloride and phthalates, may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
- 2. The following analytical results are never reported on a dry weight basis: pH, flashpoint, moisture and paint filter test.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- J The target analyte was positively identified below the reporting limit but greater than one-half of the reporting limit.
- ND Not Detected at or above the reporting limit.
- RL Reporting Limit.
- U Not detected.

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PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 8112602 Constellation Energy Group, Baltimore, MD December 1, 2008

Project Name: Wagner #2 Trona Test Project Location: Wagner

Date/Time Date/Time	e Sample Receive	ed: 11/25/20 ed: 11/26/20	08 08:00 08 09:25	PS	SS Samp	ole ID: 811260	02-001
Analytical Method: S	SW846 60)20A	P	repar	ation Met	hod: SW846 30	10A
Result	Units	TCLP Limit	Flag	Dil P	repared	Analyzed	Analyst
ND	mg/L	5.0		1	12/01/08	12/01/08 14:49	1034
ND	mg/L	100		1	12/01/08	12/01/08 14:49	1034
ND	mg/L	1.0		1	12/01/08	12/01/08 14:49	1034
ND	mg/L	5.0		1	12/01/08	12/01/08 14:49	1034
ND	mg/L	5.0		1	12/01/08	12/01/08 14:49	1034
ND	mg/L	0.200		1	12/01/08	12/01/08 14:49	1034
0.282	mg/L	1.0		1	12/01/08	12/01/08 14:49	1034
ND	mg/L	5.0		1	12/01/08	12/01/08 14:49	1034
	Date/Time Date/Time Analytical Method: S <u>Result</u> ND ND ND ND ND ND ND ND ND ND ND ND ND	Date/Time Sample Date/Time Receive Analytical Method: SW846 60 Result Units ND mg/L ND mg/L	Date/Time Sampled: 11/25/20 Date/Time Received: 11/26/20 Date/Time Received: 11/26/20 Analytical Method: SW846 6020A Result Units TCLP Limit ND mg/L 5.0 ND mg/L 100 ND mg/L 1.0 ND mg/L 5.0 ND mg/L 5.0	Date/Time Sampled: 11/25/2008 08:00 Date/Time Received: 11/26/2008 09:25 Analytical Method: SW846 6020A P Result Units TCLP Limit Flag ND mg/L 5.0 P ND mg/L 100 ND mg/L 1.0 ND mg/L 5.0 ND mg/L 5.0 ND mg/L 0.200 0.282 mg/L 1.0 ND mg/L 5.0 1.0 ND mg/L 5.0	Date/Time Sampled: 11/25/2008 08:00 PS Date/Time Received: 11/26/2008 09:25 Prepar Analytical Method: SW846 6020A Prepar	Date/Time Sampled: 11/25/2008 08:00 PSS Sampled: Date/Time Received: 11/26/2008 09:25 Analytical Method: SW846 6020A Preparation Method: Result Units TCLP Limit Flag Dil Prepared ND mg/L 5.0 1 12/01/08 ND mg/L 100 1 12/01/08 ND mg/L 5.0 1 12/01/08	Date/Time Sampled: 11/25/2008 08:00 PSS Sample ID: 811260 Date/Time Received: 11/26/2008 09:25 Preparation Method: SW846 6020A Preparation Method: SW846 30 Result Units TCLP Limit Flag Dil Prepared Analyzed ND mg/L 5.0 1 12/01/08 12/01/08 14:49 ND mg/L 100 1 12/01/08 12/01/08 14:49 ND mg/L 5.0 1 12/01/08 12/01/08 14:49 ND mg/L 0.200 1 12/01/08 12/01/08 14:49 ND mg/L 1.0 1 12/01/08 12/01/08 14:49 ND mg/L 5.0 1 12/01/08 12/01/08 14:49 ND mg/L

ANNAL CONVERSION

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.com email · infn@nhaseonline.com

HOWNENTAL SOFT PHASE	SEPAR	ATION	SCIE	NCE, I	NC.					ema	ail: info@	phaseonline.co
Oclient: Constellation Energy	OFFICI	E LOC. COA	Yard		PSS Work (Order #:	811	210	02		PAGE	OF 1
PROJECT MGR: John Basciano	PHONE	NO.: 410-	787-3202	01	Matrix Codes: SW=Surface V	Vir DW=Drin	king Wrt GW-	Ground Wir	WW-Waste V	VIr D=01 S=5	oil WL-Waste L	quid WS=Waste Solid W= Wip
TOHN M. BASCHAND O'CONSTELLA EMAIL:	FIOU , COM	D.: 410-7	87-5424		No. SAM	PLE				-		
PROJECT NAME: Wagner # 2 Tri	ona Test	PRON	ECT NO.:) Z	Sls)						\downarrow
SITE LOCATION: Wagner		P.O. N	10.:		- > ⁰	" ^d						Analysis/ Method
SAMPLERS:					N H	- B						Required
LAB NO. SAMPLE IDENTIFICA	ATION	DATE	TIME	MATRIX (See Codes)	œ ഗ	C						REMARKS
Wagner # 2 Trons	a Test	11/25/08	8am	G	1	>						Click to enter Remark
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Relinquished By: (1)	Date	Time	Received I	By:		þ	Reque	sted Turna	round Tim	e #	f. Coolens:	0
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Relinquished By: (3)	Date	Time	Received	By:		Spe	cial Instruo	tions: ovide te	st resul	ts ASA	P. If the e	mergency turn
Relinquished By: (4)	Date	Time	Received	3y:		arc	si puno	faster, p	olease r	un sam	ple that v	vay.
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6630 Baltimore National Pike • Rc The client (Client Name), by signing, or the Service Brochure or PSS-provided c	Dute 40 Wex having client quotation inc	st • Baltimo t's agent sigr tuding any ar	ire, Maryli , this "Sam nd all attorn	and 21228 ple Chain o ley's or othe	 (410) 74 Custody/A reasonable 	17-8770 greement s tees If or	 (800) 9 Form[*], ag ollection bit 	32-9047 rees to pa ecomes ne	 Fax (4) tor the a cessary. 	bove requ	rr23 ested servic	s per the latest version



Phase Separation Science, Inc

Sample Receipt Checklist

Wo Number	8112602		Received By	Rachel Davis
Client Name	Constellat	ion Energy Group	Date Received	11/26/2008 09:25:00 AM
Project Name	Wanner#	2 Trona Test	Delivered By	Client
Fioject Name	tragiloi#2		Benvered by	
Project Number	N/A		Tracking No	Not Applicable
Disposal Date:	12/31/200	8	Logged In By	Rachel Davis
Shipping Conta	iner(s)			
No. of Coo	lers	0	Ice	Absent
Custody S	eals	Absent	Temp (dea C)	20
Seal Cond	ition	None	Temp Blank Pre	esent No
Sample Contair Appropiate Intact? Labeled ar Total No. o	ner e for Speci nd Labels I of Samples	fied Analysis? Yes / I	No Custody Seal(s) Custody Seal(s) Seal(s) Signed / Total No of Con	YesNoX Intact? Dated Intainers Received 1
Preservation			Yes	No N/A
Metals Cyanides Sulfide TOC, COI TOX, TKN VOC, BTE Do VOA vi	D, Phenols I, NH3, To X (VOA V ials have z	tal Phos ials Rcvd Preserved) tero headspace?	(pH<2)	

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling.

. 00	
Samples Inspected/CheckIIst Completed By: Date: Date: Date:	11/26/8 11/26/08

Page 2 of 2 Page 6 of 6

Analytical Report for

Constellation Energy Group Certificate of Analysis No.: 8121001

> Project Manager: John Basciano Project Name : Wagner #3 TRONA Project Location: Wagner Station



December 11, 2008 Phase Separation Science, Inc. 6630 Baltimore National Pike Baltimore, MD 21228 Phone: (410) 747-8770 Fax: (410) 788-8723 OFFICES: 6630 BALTIMORE NATIONAL PIKE ROUTE 40 WEST BALTIMORE, MD 21228 410-747-8770 800-932-9047 PHASE SEPARATION SCIENCE, INC.



December 11, 2008

John Basciano Constellation Energy Group 1005 Brandon Shores Rd. Baltimore, MD 21226

Reference: PSS Work Order No: **8121001** Project Name : Wagner #3 TRONA Project Location: Wagner Station

Dear John Basciano :

The attached Analytical and QC Summary lists the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order numbered **8121001**.

All work reported herein has been performed in accordance with referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 14, 2009. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 10 years, after which time it will be disposed without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Dan Prucnal

Laboratory Manager



Case Narrative Summary Client Name: Constellation Energy Group Project Name: Wagner #3 TRONA

Project ID: N/A

Work Order Number: 8121001

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/10/2008 at 08:15 am

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
8121001-001	Wagner #3 TRONA	FLY ASH CINDER	12/10/2008 07:00 am

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in the Sample Receipt Checklist.

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Notes:

- 1. The presence of common laboratory contaminants such as acetone, methylene chloride and phthalates, may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
- 2. The following analytical results are never reported on a dry weight basis: pH, flashpoint, moisture and paint filter test.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- J The target analyte was positively identified below the reporting limit but greater than one-half of the reporting limit.
- ND Not Detected at or above the reporting limit.
- RL Reporting Limit.
- U Not detected.

OFFICES: 6630 BALTIMORE NATIONAL PIKE ROUTE 40 WEST BALTIMORE, MD 21228 410-747-8770 800-932-9047 FAX 410-788-8723





CERTIFICATE OF ANALYSIS

No: 8121001 Constellation Energy Group, Baltimore, MD December 11, 2008

Project Name: Wagner #3 TRONA Project Location: Wagner Station

Date/Time Date/Time	e Sample Receive	ed: 12/10/2008 07 ed: 12/10/2008 08	:00 :15	PSS Samp	ole ID: 81210	01-001
Analytical Method: S	SW846 60)20A	Prep	aration Met	hod: SW846 30	10A
Result	Units	TCLP Limit Flag	Dil	Prepared	Analyzed	Analysi
ND	mg/L	5.0	1	12/11/08	12/11/08 12:41	1034
ND	mg/L	100	1	12/11/08	12/11/08 12:41	1034
ND	mg/L	1.0	1	12/11/08	12/11/08 12:41	1034
ND	mg/L	5.0	1	12/11/08	12/11/08 12:41	1034
ND	mg/L	5.0	1	12/11/08	12/11/08 12:41	1034
ND	mg/L	0.200	1	12/11/08	12/11/08 12:41	1 1034
0.232	mg/L	1.0	1	12/11/08	12/11/08 12:4	1 1034
ND	mg/L	5.0	1	12/11/08	12/11/08 12:4	1034
	Date/Time Date/Time Analytical Method: S 	Date/Time Sample Date/Time Receive Analytical Method: SW846 60 Result Units ND mg/L ND mg/L	Date/Time Sampled: 12/10/2008 07 Date/Time Received: 12/10/2008 08 Analytical Method: SW846 6020A Result Units TCLP Limit Flag ND mg/L 5.0 ND mg/L 100 ND mg/L 1.0 ND mg/L 5.0 ND mg/L 5.0 ND mg/L 5.0 ND mg/L 5.0 ND mg/L 1.0 ND mg/L 5.0 ND mg/L 1.0 ND mg/L 5.0 ND mg/L 5.0 ND mg/L 5.0	Date/Time Sampled: 12/10/2008 07:00 Date/Time Received: 12/10/2008 08:15 Analytical Method: SW846 6020A Prep Result Units TCLP Limit Flag Dil ND mg/L 5.0 1 ND mg/L 100 1 ND mg/L 1.0 1 ND mg/L 5.0 1 ND mg/L 0.200 1 ND mg/L 1.0 1 ND mg/L 5.0 1 ND mg/L 5.0 1	Date/Time Sampled: 12/10/2008 07:00 PSS Sampled: 12/10/2008 08:15 Analytical Method: SW846 6020A Preparation Method: Result Units TCLP Limit Flag Dil Prepared ND mg/L 5.0 1 12/11/08 ND mg/L 100 1 12/11/08 ND mg/L 1.0 1 12/11/08 ND mg/L 5.0 1 12/11/08 ND mg/L 1.0 1 12/11/08 ND mg/L 5.0 1 12/11/08 ND mg/L 5.0 1 12/11/08 ND mg/L 5.0 1 12/11/08 ND mg/L 0.200 1 12/11/08 ND mg/L 1.0 1 12/11/08 ND mg/L 5.0 1 12/11/08 ND mg/L 5.0 1 12/11/08	Date/Time Sampled: 12/10/2008 07:00 PSS Sample ID: 81210 Date/Time Received: 12/10/2008 08:15 Preparation Method: SW846 6020A Preparation Method: SW846 30 Result Units TCLP Limit Flag Dil Prepared Analyzed ND mg/L 5.0 1 12/11/08

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CLIENT: CON STELLENTION EN	EREY OFFIC	ELOC.Co.	L YAK	Q	PSS Work O	ider #: 6	812	100		P	AGE	OF	+
PROJECT MGR. JAHU RASCIA	Lan PHON	ENO.: 4/1	25 616	203	Matrix Codes: SW=Surtace W	tr DW=Drinking	Wrt GW=Grour	od Whr WWE-M	laste Wrr 0=0	S=Soil WL-V	Waste Liquic	d WS=Wast	Solid W= Wipe
John, m. Bascinus D constelling	Tru- Con	0: 4110	727.54	10	No. C								Preservative
PROJECT NAME: 1. A C. E.C. A	7. TPm	PRO	JECT NO.:		0 N	sisyle	576						J
SITE LOCATION: 1 AV. 5 A	a rate				A CON	۲ Ans	11-10						Analysis/
ALL FOOMION CONSTRUCT S	VAILAN			Ι	- 2	ejue							Required
SAMPLERS:					E GRA	01:	72						
LABNO SAMPLE IDENTIFIC	NOLION	DATE	TIME	MATRIX (See Codes)	e s	Click	זכי					REN	IARKS ()
1 WAGNER#3TI	ROUA	12/10/08	Heal	HY ASH	16	X						Click to	anter Remarks
											-		
					100			1			-		
							1						
											-		
											-		
				1									
Relinquished By: (1)	Date	Time	Repuiled	SV. AV	11	2	Requested 1	urnaround	Time	# of Coole	18.	0	
Other Rescand	12/10/08	ANA A		Ame	WOW	5-Day	ay R	Day nergency	2-Day	Custody S	eal: A	JONU	
Relinfuushed By: (2)	(bate	Time	iffedelved	X		Pm O	iverables Re	oquired:		Ice Preser Shipping (nt: NO	Temp: DI 19	22.00
Relinquished By: (3)	Date	Time	Received	By:	2	Special II	b Fire	11 84	ESULTS	2	(Nà	R 7.	a~
Relinquished By: (4)	Date	Time	Received I	By:		Den RR	NON	12-fiel	08				
6630 Baltimore National Pike • Rt The client (Cilent Name), by signing, or the Service Brochure or PSS-provided	oute 40 We r having clien quotation inc	st • Baltimo t's agent sign luding any au	ore, Maryls n, this "Sam nd all attorn	and 21228 ple Chain of iey's or other	 (410) 747 Custody/Agr reasonable 	-8770 • (80 eement Form fees if collect	00) 932-96 n", agrees 1 tion become	047 • Fax to pay for these pairs of the pay for the part of the pa	(410) 78 he above re ury.	8-8723 squested s	ervices p	ber the lat	est version of

Page 5 of 6



Phase Separation Science, Inc

Sample Receipt Checklist

Wo Number	8121001		Received B	Amy F	riedlander
	0121001			, , , , , , , , , , , , , , , , , , , ,	0000 00.45.00 414
Client Name	Constella	ation Energy Group	Date Receiv	red 12/10/	2008 08:15:00 AM
Project Name	Wagner	#3 TRONA	Delivered B	y Client	
Project Number	N/A	н. -	Tracking No	Not A	pplicable
Disposal Date:	01/14/20	09	Logged In E	By Rache	al Davis
Shipping Conta	alner(s)				
No. of Coo Custody S Seal Cond	blers Seals lition	0 Absent None	Ice Temp (de Temp Bla	A eg C) 2: ank Present N	bsent 2 o
Documentation COC agre Chain of C	i es with sa Custody (C	ample labels? X Yes	s or No s or No		
Sample Contai	ner				
Appropiat Intact? Labeled a Total No.	e for Spec nd Labels of Sample	ified Analysis? Yes X Legible X es Received 1	No Custody S Custody S Seal(s) Signature Total No.	eal(s) eal(s) Intact? gned / Dated of Containers	YesNoXX X Received 1
Preservation			Y	es No	N/A
Metals Cyanides Sulfide TOC, CO TOX, TKN VOC, BTE Do VOA v	D, Phenols V, NH3, To EX (VOA V rials have	s otal Phos /ials Rcvd Preserved) zero headspace?	(pH<2) (pH>12) (pH>9) (pH<2) (pH<2) (pH<2)		
				100	

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling.

Date:	12/10/8
Date:	12/10/08
	11
	Date: Date:

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CONSTELLATION POWER SOURCE GENERATION INC. 2025 BRANDON SHORES ROAD BALTIMORE, MD 21226

SAMPLE ID: WAGNER BOTTOM ASH

OPERATING CO. : SAMPLED BY: CUSTOMER PROVIDED MINE: LOCATION:

DATE SAMPLED: 8/15/08 WEATHER: GROSS WEIGHT:

DATE RECEIVED: 8/15/08

OTHER ID:

CERTIFICATE OF ANALYSIS

SCREEN TES	т	CUMULAT DOWN	UP
+325m 325m x Ø	83.30%	83.30%	100.00%
320m A 0	100.00%	1001000	
2.0	ASTM METHOD	AS RECEIVED	DRY BASIS
MOISTURE	D2961 D3302 D3173	42.38%	
LOSS ON IGNITION		18.81%	32.63%

LOSS ON IGNITION

ASH MINERAL D2795 D3682

SILICON DIOXIDE ALUMINUM OXIDE FERRIC OXIDE CALCIUM OXIDE SODIUM OXIDE POTASSIUM OXIDE SULFUR TRIOXIDE

Available Alkalies (as Na20)

0.67 % 1.06 %

31.90 % 13.52 %

3,98 %

0.52 %

0.30%

1.32 %

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BLACK SEAL ANALYSIS

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DATE: 8-29-2008 SAMPLE NO. 972557

CONSTELLATION POWER SOURCE GENERATION INC. 2025 BRANDON SHORES ROAD SAMPLE I BALTIMORE, MD 21226

SAMPLE ID: WAGNER SILOS

OPERATING CO.: SAMPLED BY: CUSTOMER PROVIDED MINE: LOCATION:

DATE SAMPLED: 8/15/08 WEATHER: GROSS WEIGHT: DATE RECEIVED: 8/15/08

OTHER ID:

CERTIFICATE OF ANALYSIS

	SCREEN	TEST				D	CUMULA.	UP		
	+325m				37.30%	37	. 30%	100.00%	1	
	325m x	0		_	62.70% 100.00%	100	.00%	62.70%		
			ASTM	METHOD		AS	RECEIVED		DRY	BASIS
MOISTURE			D2961	D3302	D3173		0.16%			
LOSS ON I	GNITION						20.57%		:	20.61%

ASH MINERAL D2795 D3682

SILICON DIOXIDE ALUMINUM OXIDE FERRIC OXIDE CALCIUM OXIDE SODIUM OXIDE POTASSIUM OXIDE SULFUR TRIOXIDE

Available Alkalies(as Na20)

1.71 % 0.62 % 1.27 %

46.06 %

21.33%

4.82%

0.99%

0.28%

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and a second second

Chemical and Physical Analysis of Fly Ash

Developed For: Standard Laboratories, Inc.

P.O. Box 214

Ticket: 8334	Wagner		Sample Da	te Range:	
Job: 14671 Report Date: 10/20/2008	Sample ID: Docket:	972557 -		Date	to: Received: 08/25/2004
				ASTM C 618-02	Specifications
Chemical Con	nposition (%)			Class F	Class C
Total Silica	Aluminum, iron:			70.0 Min	50.0 Min
	Silicon Dioxide:				
	Aluminum Oxide:				
	Iron Oxide:				
	Sulfur Trioxide:			5.0 Max	5.0 Max
	Calcium Oxide:				
	Molsture Content:			3.0 Max	3.0 Max
	Losa on Ignition:			6.0 Max	6.0 Max
				AASHTO M 295-00) Specifications
Available A	Ukalies (as Na ₂ O):	0.6		1.5 Max	1.5 Max
	Sodium Oxide:		0.13		
	Potassium Oxide:		0.65		
Physical	Test Pesults			ASTM C 618-03	Specifications
Fliysical	Test nesults			Class F	Class C
Fineness, Retained	on #325 Sleve (%):	40.6		34 Max	34 Max
Strength	Activity Index (%)				
Ratio to	Control @ 7 Days:	66.2			
Ratio to C	ontrol @ 28 Days:	76.0		75 Min	75 Min
Water Requirem	ent, % of Control:	103.3		105 Max	105 Max
Soundness, Autocla	ve Expansion (%):	-0.02		0.8 Max	0.8 Max
Drying Shrinkage, Increa	se @ 28 Days (%):	0.00		0.03 Max	0.03 Max
	Density Mg/m ³ :	2.11			DD REGT
commenta: At the client's requ	est chemical analy	ysis not per	tormed.	S	A R HEELE
	CTL Thompso	on Materia	als Engi	ineers, Inc.	14540
	1 11	1	-	181	10-20-08
	Chin A J	no	in	- 3	Street Bland

Orville R. Werner II, P.E.

22 Lipan Street | Denver, Colorado 80223 | Telephone: 303-825-0777 Fax: 303-893-1568 This test report relates only to the items tested and shall not be reproduced, except in full, without written approval of CTL Thompson, Inc.