CINERGY®
Solutions of Rock Hill, L.L.C.

December 23, 2004

Hetal Patel
SC Dept. of Health & Environmental
Bureau of Air Quality
2600 Bull Street
Columbia, SC 29201-1708

AIR PLANNING BRANCH
RECEIVED
JAN 06 2005
EPA-REGION #4
ATLANTA, GA.

U.S. EPA Region 4, APTMD
Operating Source Section
61 Forsyth Street, SW
Atlanta, GA 30303-8930

Subject: Part 70 Title V Permit # TV-2440-0171 Renewal Application

Dear Ms. Patel

On March 29, 2004, Cinergy Solutions of Rock Hill (CSRH) submitted a Part 70 Title V Permit renewal application. In this application, CSRH added two new tanks to Section R, Exempt Equipment or Processes. The proposed equipment descriptions are a 250 gal. Unleaded Fuel Storage Tank and a 550 gal. Diesel Fuel Storage tank, Equipment ID #s 3UFST001S1 and 3DFST001S1, respectively.

Recently, CSRH has reconsidered the need for these tanks, and therefore, formally requests that these tanks be removed from the renewal application. These tanks have not been used and have been physically removed from the site.

Attached, please find a copy of the Section R which pertains to the aforementioned tanks. If you have any questions or concerns with this request, please feel free to contact me at 540.809. 8027.

Sincerely,

R. Cowley

Robert J. Cowley
Health, Safety & Environmental Specialist
Cinergy Solutions of Rock Hill, L.L.C.

Cc: Jerry Anderson
Environmental Central File

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section R: Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
UM UNLEADED FUEL STORAGE TANK	-- 3UFST001S1	-- 250	-- gal	-- 3UFST001E1

6. Type of Exemption (check one)
- ☐ Insignificant Activity Based On Size
- ☒ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☐ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC DEFINTION OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 - 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
PARTICULATE MATTER	--	13.2	10,000	lb/yr

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units

Section R: Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
U/M #2 DIESEL FUEL TANK	-- 3DFST001S1	-- 550	-- gal	-- 3DFST001e1

6. Type of Exemption (check one)
- ☐ Insignificant Activity Based On Size
- ☒ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☐ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC DEFINTION OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 - 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
PARTICULATE MATTER	--	0.1	10,000	lb/yr

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units

NA = Not Applicable

AIR PLANNING BRANCH
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U.S. EPA Region 4, APTMD
Operating Source Section
61 Forsyth Street, SW
Atlanta, GA 30303-8930

Subject: Part 70 Title V Permit # TV-2440-0171 Renewal Application R

Dear Ms. Patel

Thank you for your recent phone massage, which pointed out that there were certain sections of our recently submitted Title V Renewal Application that were unsigned and un-initialed. The omission of these signatory requirements is regretful and not intended. In an attempt to minimize any lost time pursuant with the VA DEQ review process, attached are replacement copies of the effected sections of the permit containing the appropriate signatures and/or initials of the "Responsible Official". Please replace the effected sections with the attached sections. Also, please feel free to contact me 540.921.6723 if there are any questions.

Sincerely,

Robert J. Cowley

Robert J. Cowley
Health, Safety & Environmental Specialist
Cinergy Solutions of Rock Hill, L.L.C.

Cc: Jerry Anderson
Environmental Central File
Eric Hilton

South Carolina
DHEC
Department of Health and Environmental Control

BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION
****INCOMPLETE APPLICATIONS WILL BE RETURNED FOR ADDITIONAL INFORMATION****

Section A: Facility Profile

1. Facility Name: Cinergy Solutions Rock Hill, LLC.

2. Address: Interstate 2850 Cherry Road

3. City: Rock Hill	4. State: SC	5. Zip Code: 27930	6. Telephone: 540-809-8027	7. Ext.:

8. Owner Name: Cinergy Solutions Rock Hill, LLC.

9. Address: 2850 Cherry Road

10. City: Rock Hill	11. State: SC	12. Zip Code: 27930	13. Telephone: 540-809-8027	14. Ext.:

15. Billing Name: Cinergy Solutions Rock Hill, LLC.

16. Address: 2850 Cherry Road

17. City: Rock Hill	18. State: SC	19. Zip Code: 27930	20. Telephone: 540-809-8027	21. Ext.:

Application Certification

I certify, to the best of my knowledge and belief, that no undesirable levels of air pollutants will be created and no applicable standards and/or regulations will be contravened or violated. I certify that any application form, report, or compliance certification submitted in this permit application is true, accurate, and complete based on information and belief formed after reasonable inquiry. I understand that any statements and/or descriptions which are found to be incorrect may result in the immediate revocation of any permit issued for this application.

22. Responsible Facility Official: Jerry W. Anderson	**23. Title/Position:** Plant Manager, Vice President of Operations
Signature:	**24. Date:** 4-8-04

Note: If the preparer of this application is requesting a copy of the final permit, complete 25 - 30.

25. Name (Individual or Firm): CH2M HILL

26. Mailing Address: 4824 Parkway Plaza Boulevard

27. City: Charlotte	28. State: NC	29. Zip Code : 28217-1968	30. Telephone No.: 704-329-0073

31. Permit Type (Specify One): " **Permit Renewal** "

32a. State Air Permit No.: 2440-0171	32b. EPA Facility Identification No. Applied For:	
33. Physical Location of Facility: 2850 Cherry Road	34. City: Rock Hill	35. County: York
36. Environmental Contact: Robert Cowley	37. Telephone No.: 540-809-8027	38. FAX No. 803-325-6451
39. No. of Employees 36:	40. Total Land Area: 8-10 acres	41. Latitude: 34°59'3.5" N	42. Longitude: 80°59'14.2" W
43. UTM Zone: 17	44. UTM Vertical: 500962	45. UTM Horizontal: 3871306	46. Method: USGS Topographic Map
47. Reference: U.S. Geological Survey	48. Accuracy: Not Available	49. Is the facility portable in nature? " No	

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section A : Facility Profile (Continued)

50. Major Raw Materials	Quantity[1]	51. Major Products	SIC Code	Production
Coal	95,064 lb/hour	Steam	4939	950,000 lb/hour

Note: [1]Quantity of Coal inludes the boiler efficiency of approximately 81%

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section B : Summary of Application Contents		Yes	No
1.	Does the application include a table of Contents?	X	
2.	Does the application include a list of all items for which a permit is being sought?	X	
3a.	Does the application include a plot or map?	X	
3b.	Does the application include a detailed drawing of the layout of the source showing exhaust points and dimensions of each structure, including height, width, and length?		X
4a.	Does the application include a source-wide process flow diagram showing the relationship between each intermediate process at the source?		X
4b.	Does the application include a process diagram for each intermediate or individual process at the source?	X	
4c.	Does the application include a roof plan for each intermediate or individual process at the source?		X
5a.	Does the application include a detailed source-wide process description?		X
5b.	Does the application include a detailed process description for each intermediate or individual process at the source?	X	
6a.	Does the application include completed appropriate forms for all individual emission units and air pollution control equipment, listing all applicable requirements and proposed exemptions from otherwise applicable requirements?	X	
6b.	Does the application address all reasonably anticipated operating scenarios?	X	
7.	Does the application include a completed fugitive emission form? *Note: Data for the plant's fugitive emission sources are provided in the appropriate sections*		X
8.	Does the application include detailed calculations showing: (1) Uncontrolled emissions; (2) Control equipment efficiency; (3) Actual emissions in pounds per hour, tons per year and other applicable units, e. g., pounds per day, pounds per month, ppm or grains per cubic foot, if necessary, etc.; and (4) allowable emissions, in the same terms as above?	X	
9.	Does the application include a completed compliance plan/schedule of compliance form?		X
10.	Does the application include a completed compliance certification form?		X
11.	Does the application include a completed compliance plan/schedule of compliance addendum for each non-complying emission units for which issuance of a Part 70 permit is requested?		X
12a.	Does the application contain confidential information?		X
12b.	If yes, has such information been properly marked and claimed, and copies of the application suitable for public inspection been submitted, in accordance with applicable regulations?	X	
12c.	Is a copy of the application being sent directly to U.S. EPA Region IV?	X	
13.	Does the application include an early reduction demonstration for hazardous air pollutants pursuant to section 112(i)(5) of the Clean Air Act Amendments of 1990? (if applicable)		X
14.	Does the application include a proposed determination of maximum achievable control technology (MACT) for hazardous air pollutants pursuant to sections 112(g) and 112(j) of the Clean Air Act Amendments of 1990, if applicable?		X
16.	Does the applicant request to utilize the operational flexibility provisions and include the information required for such use? (if applicable)	X	
17.	Does the application include a request for a permit shield?	X	
18.	Does the application include a completed listing of insignificant emission units, if applicable?	X	

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section B : Summary of Application Contents (Continued)

19a. Why is the applicant applying for a Part 70 permit (Check all that apply)?

The "potential to emit" of the source is 100 tons/year or more for an individual pollutant.

		YES	NO
19b.	Are all actual emissions of the source below the applicability levels for Part 70 permit?		X
19c.	Does the application propose limitations that will constrain the operation of the source such that potential emissions of the source will fall below applicability levels for Part 70 permits?		X
19d.	Does the applicant hereby request a federally enforceable state operating permit constraining operation of the source such that potential emissions would fall below applicability levels and thereby exclude the source from requirements to have a Part 70 permit?		X
23.	Does the application identify all applicable requirements including section 111 (NSPS) and/or Section 112 (NESHAP) of the Clean Air Act?	X	

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section K: Compliance Plan/Schedule for Emission Units

1. Emission Unit	2. Exhaust Point No.	3. Applicable Rule	4.Compliance Statement	5.Compliance Date	6. Reporting Frequency	7. First Submittal
--	---	---	---	---	---	---
This complex is in compliance with all applicable requirements.						

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

SECTION P: Compliance Certification

1. Facility Name: Cinergy Solutions Rock Hill, LLC

Schedule for Submission of Compliance Certifications During the Term of the Permit

2. Frequency of Submittal: Annually	3. Beginning: As required in the Par 70 Pernit

Statement of Compliance with Enhanced Monitoring and Compliance Certification Requirements

4. Are any Emission Units identified in this application subject to 40 CFR Part 64, *Enhanced Monitoring requirements*? (IF YES, COMPLETE SECTION Q FOR EACH SUBJECT EMISSION UNIT)	NO

Statement of Methods Used for Determining Compliance

5. State methods used for determining compliance, including a description of monitoring, record keeping, reporting requirements, and test methods.

(Responsible Official must initial any attachments)

Storage Tanks: NaOH Tank 1, NaOH Tank 2, NaOH Tank 3, NaOH Tank 4, 93% Sulfuric Acid Tank, Cortrol Is3000 Tank (Former Sulfite Tank), Steamate Na0660 Tank (Former Opti-Meen Tank), Optisperse Ap0500 Tank (Former Balance Polymer Tank), #2 Fuel Oil Tank 1, #2 Fuel Oil Tank 2, and #2 Fuel Oil Tank 3 -under 62.5 Std. No.4 Sec Ix Visible emissions (where not specified elsewhere) opacity the specified limit is 40%. No periodic monitoring for opacity should be required since the emission point emits non-particulate colorless pollutants (i.e., VOCs) and no reporting or record keeping is required. JWA

Flyash Silo Baghouse 62.5 under Std. No.4 Sec Ix Visible emissions (where not specified elsewhere) opacity the specified limit is 40%, However, the uncontrolled Potential to Emit Emission of particulate matter emissions are < 5 tons per year so monitoring is required and no reporting or record keeping should be required. Semi-Annual reports of all deviations shall be submitted to the Manager of the Technical Management Section, Bureau of Air Quality postmarked no later than 30 days after the end of the reporting period. JWA

Facility Wide: VOCs must be limited to 110 tons per year. Record keeping is required onsite. No monitoring frequency is required and reporting is not required. Semi-Annual reports of all deviations shall be submitted to the Manager of the Technical Management Section, Bureau of Air Quality postmarked no later than 30 days after the end of the reporting period. JWA

Boilers #1 through #5: Primary voltage meters and primary current meters must be recorded at least once each shift and records maintained on site for a period of at least five years from the date generated. The readings shall be maintained in logs, along with any corrective action taken when deviations occur. Operational ranges for monitored parameters derived from stack test data, vendor certification, operational history, and visual inspections, which demonstrate the proper operation of the equipment in compliance. These ranges, with supporting documentation shall be submitted to SC DHEC within 180 days of the issuance of the permit. Semi-Annual reports of all deviations shall be submitted to the Manager of the Technical Management Section, Bureau of Air Quality postmarked no later than 30 days after the end of the reporting period.

ESP monitoring data shall be maintained on site for a period of at least 5 years. Any alternative method for monitoring ESO performance must be reported and approved by the Bureau. JWA

Boilers #1 through #5: Compliance with the Opacity limit shall be demonstrated in accordance with EPA Reference Test Method 9 and shall be done concurrently with required PM emissions testing. If visibility or other conditions prevent the opacity observations from being conducted concurrently with required PM emissions testing, they will be completed within 30 days of the PM emission testing. To the extent possible the visible observations will be conducted under the same unit operating conditions as existed during the PM emissions testing. All source test reports shall be submitted to the Manager of the Source Evaluation Section of the Bureau of Air Quality no later than 30 days after the completion of the on-site testing. JWA

Boilers #1 through #5: These units are permitted to burn coal as the primary fuel and will use coal with a sulfur content of less than or equal to 2.0% by weight. On-Site, as received confirmatory sample shall be performed for each coal vendor once per month. Supplier certification shall be obtained for each shipment of coal and fuel oil received and stored on site. Records of coal and fuel oil consumption and certifications as well as results from the confirmatory analysis shall be maintained on site for a period of at least 5 years. Quarterly reports including all deviations and analytical results shall be submitted to the Manager of the Technical Management Section, postmarked no later than 30 calendar days after the end of the reporting period. JWA

R12 and R22 Process Refrigerators: The monthly and 12 month rolling sum of the amount of refrigerant added to each process refrigeration unit should be calculated. If the loss of refrigerant from an individual process refrigeration unit is greater than 35% of the total charge during any 12 month period, a leak has occurred and it should be repaired in an appropriate manner within 30 days. Alternatively, a one year retrofit or retirement plan for the unit should be developed. On-site records should be maintained indicating the date and type of service for each unit, quantity of refrigerant added, and refrigerant purchased and monthly calculation of the amount of refrigerant added to each unit over the previous 12 month period of five years. JWA

THIS CERTIFICATION MUST BE SIGNED BY A RESPONSIBLE FACILITY OFFICIAL

Applications without a signed certification will be returned as incomplete.

Except for requirements identified in Section K for which compliance is not achieved, I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

6. Facility Name: **Cinergy Solutions Rock Hill, LLC**

7. Street Address: **2850 Cherry Road**

8. Signature : (Title) Jerry W. Anderson **(Plant Manager & Vice President of Operations)**	9. Date: 4-8-04

10. Name (type or print): **Jerry W. Anderson**

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section 1: Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	4. Applicable Rule	5. Rule Description	6. Specified Limit	
APPLICABLE REQUIREMENTS	--	--	--	--	--	
	--	--	--	--	--	
Applies to entire U/M Complex with the exception of the boilers. See Section D for affected equipment Also applies to the K2/K3 Methanol Brine Storage Tanks and Utility Tanks, as well as Calcium Chloride Surge Tank, Calcium Chloride Head Tank, and Calcium Chloride Mix Tank.	See Section D	See Section D	See Below	See Below	--	
"	"	"	62.5 Std. No. 4, Sec. VIII	Other Manufacturing	Particulate Matter	42.5 lb/hr
"	"	"	62.5 Std. No. 4, Sec. IX	Visible Emissions (Where not Specified Elsewhere)	Opacity	40%
"	"	"	62.5 Std. No. 8	Toxic Air Pollutants		
"	"	"	"	Methanol	Methanol	13.9 lb/day
"	"	"	"	Naphthalene	Naphthalene	<0.1 lb/day
"	"	"	"	Sodium Hydroxide	Sodium Hydroxide	<0.1 lb/day
"	"	"	"	Sulfuric Acid	Sulfuric Acid	<0.1 lb/day
SOURCE SPECIFIC REQUIREMENTS		--	--	--	--	
POWER HOUSE	--	--	--	--	--	
COAL COMBUSTION BOILER #1	CE	3PHBOL01E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%
"	CE	3PHBOL01E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	124.6 lb/hr
"	CE	3PHBOL01E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	727.0 lb/hr
"	CE	3PHBOL01E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	
	CE	3PHBOL01E1	40 CFR CAM	Continuous Assurance Monitoring Plan for Opacity and Particulate Matter from Coal Fired Boilers with Electrostatic Precipitators	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section J- Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	7. In Compliance? (Y/N)	8. Compliance Statement (See Instructions)	9. Verification Method (See Instructions)
	--	--	--	--	--
	--	--	--	--	--
APPLICABLE REQUIREMENTS					
Applies to entire U/M Complex with the exception of the boilers. See Section D for affected equipment Also applies to the K2/K3 Methanol Brine Storage Tanks and Utility Tanks, as well as Calcium Chloride Surge Tank, Calcium Chloride Head Tank, and Calcium Chloride Mix Tank.	See Section D	See Section D	--	--	--
"	"	"	Yes		M, RPT
"	"	"	Yes		M, RPT
			Yes		"
"	"	"	Yes		"
"	"	"	Yes		"
"	"	"	Yes		"
"	"	"	--	--	--
SOURCE SPECIFIC REQUIREMENTS		--	--	--	--
POWER HOUSE	--	--	Yes	--	M, RK, RPT
COAL COMBUSTION BOILER #1	CE	3PHBOL01E1	Yes	--	RTM, RK, RPT
"	CE	3PHBOL01E1	Yes	--	M, RPT
"	CE	3PHBOL01E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	--	M, RK, RPT
"	CE	3PHBOL01E1	This regulation was just recently signed. The Facility will comply with this regulation as appropriate. A Contiouous Assuarance Monitoring Plan for the facility has been prepared.		M, RK, RPT
	CE	3PHBOL01E1			

Note: [1] As Described In SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section 1 - Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	4. Applicable Rule	5. Rule Description	6. Specified Limit		
COAL COMBUSTION BOILER #2	CE	3PHBOL02E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%	
"	CE	3PHBOL02E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	124.6	lb/hr
"	CE	3PHBOL02E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	727.0	lb/hr
"	CE	3PHBOL02E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
			40 CFR CAM	Continuous Assurance Monitoring Plan for Opacity and Particulate Matter from Coal Fired Boilers with Electrostatic Precipitators	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
COAL COMBUSTION BOILER #3	CE	3PHBOL03E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%	
"	CE	3PHBOL03E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	124.6	lb/hr
"	CE	3PHBOL03E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	727.0	lb/hr
"	CE	3PHBOL03E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
			40 CFR CAM	Continuous Assurance Monitoring Plan for Opacity and Particulate Matter from Coal Fired Boilers with Electrostatic Precipitators	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section 3: Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	7. In Compliance? (Y/N)	8. Compliance Statement (See Instructions)	9. Verification Method (See Instructions)
COAL COMBUSTION BOILER #2	CE	3PHBOL02E1	Yes	--	M, RK, RPT
"	CE	3PHBOL02E1	Yes	--	RTM, RK, RPT
"	CE	3PHBOL02E1	Yes	--	M, RPT
"	CE	3PHBOL02E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	--	M, RK, RPT
			This regulation was just recently signed. The Facility will comply with this regulation as appropriate. A Contiouous Assuarance Monitoring Plan for the facility has been prepared.		M, RK, RPT
COAL COMBUSTION BOILER #3	CE	3PHBOL03E1	Yes	--	M, RK, RPT
"	CE	3PHBOL03E1	Yes	--	RTM, RK, RPT
"	CE	3PHBOL03E1	Yes	--	M, RPT
"	CE	3PHBOL03E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	--	M, RK, RPT
			This regulation was just recently signed. The Facility will comply with this regulation as appropriate. A Contiouous Assuarance Monitoring Plan for the facility has been prepared.		M, RK, RPT

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section 1 - Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	4. Applicable Rule	5. Rule Description	6. Specified Limit		
COAL COMBUSTION BOILER #4	CE	3PHBOL04E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%	
"	CE	3PHBOL04E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	146.6	lb/hr
"	CE	3PHBOL04E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	855.4	lb/hr
"	CE	3PHBOL04E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
COAL COMBUSTION BOILER #5	CE	3PHBOL05E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%	
"	CE	3PHBOL05E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	146.6	lb/hr
"	CE	3PHBOL05E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	855.4	lb/hr
"	CE	3PHBOL05E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
			40 CFR CAM	Continuous Assurance Monitoring Plan for Opacity and Particulate Matter from Coal Fired Boilers with Electrostatic Precipitators	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
MISCELLANEOUS SOURCES	--	--	--	--	--		
FREON	--	--	--	--	--		
Process Refreigerators Freon R12 and R22 Fugitives	F	3MSFREONE1	40 CFR 82	Stratospheric Ozone Protection	DICHLORODIFLUOROMETHANE (R12)		N/A
--	--	--	--	--	DICHLORODIFLUOROMETHANE (R22)		N/A

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section J Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	7. In Compliance? (Y/N)	8. Compliance Statement (See Instructions)	9. Verification Method (See Instructions)
COAL COMBUSTION BOILER #4	CE	3PHBOL04E1	Yes	--	M, RK, RPT
"	CE	3PHBOL04E1	Yes	--	RTM, RK, RPT
"	CE	3PHBOL04E1	Yes	--	M, RPT
"	CE	3PHBOL04E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	--	M, RK, RPT
COAL COMBUSTION BOILER #5	CE	3PHBOL05E1	Yes	--	M, RK, RPT
"	CE	3PHBOL05E1	Yes	--	RTM, RK, RPT
"	CE	3PHBOL05E1	Yes	--	M,RPT
"	CE	3PHBOL05E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	--	M, RK, RPT
			This regulation was just recently signed. The Facility will comply with this regulation as appropriate. A Contiouous Assuarance Monitoring Plan for the facility has been prepared.		M, RK, RPT
MISCELLANEOUS SOURCES	--	--	--	--	--
FREON	--	--	--	--	--
Process Refreigerators Freon R12 and R22 Fugitives	F	3MSFREONE1	Yes	--	RK, RPT
--	--	--	Yes	--	RK, RPT

Note: [1] As Described In SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

Title V Operational Flexibility Notifications

AIR PLANNING BRANCH
RECEIVED
APR 0 2 2004
EPA REGION 4
ATLANTA, GA

TO: Engineering Services Division, Bureau of Air Quality Control
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

TO: U.S. EPA Region 4, APTMD
Operating Source Section
61 Forsyth Street, SW, Atlanta, GA 30303

Re: Permit number **TV-2440-0171**, Reference County: **York** – Company: **Cinergy Solutions of Rock Hill, LLC. - Emission Point: 3UFST001E1 and 3DFST001E1**

The facility plans to make the following change on **April 8, 2004** pursuant to South Carolina Regulation 61-62.70.7(e)(5):

1. **Cinergy Solutions of Rock Hill, LLC. is planning on installing and using two temporary storage tanks. One tank will be used to store unleaded fuel with an expected annual usage of 1,200 gallons. The second tank will store #2 diesel fuel and use 5,600 gallons per year.**
2. **The addition of the #2 diesel fuel storage tank is expected to increase volatile organic compounds (VOCs) by 13.16 pounds of VOCs per year. The unleaded fuel storage tank emissions are estimated to be 0.05 pounds per year. These emissions are considered insignificant based on the definition of insignificant activities (i.e., emissions are less than 5 tons per year for VOCs). The emissions from the two temporary storage tanks were estimated using EPA AP-42 TANKS Version 4.0. These emission estimates are attached.**
3. **No permit terms or conditions have changed as a result of the addition of the two temporary storage tanks.**

This change does not exceed the allowable emission rate for **volatile organic compounds (VOCs)** and does not constitute a title I modification. This change does not violate applicable requirements or contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting or compliance certification requirements.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

Sincerely,

Robert J. Cowley

Robert J. Cowley,
Health, Safety & Environmental Engineer

Responsible official for title V

PLEASE NOTE THAT ALL THE BOLD AND UNDERLINED VARIABLES IN THE CERTIFICATION ABOVE ARE TO BE FILLED IN BY THE TITLE V SOURCE.
[If this notification is to be provided to the permitting authority (and the EPA) in response to a construction permit then it must be submitted at least fifteen days in advance of the proposed change. If no new construction permit has been issued, then at least seven days in advance.]

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification	
User Identification:	3UFST001S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Horizontal Tank
Description:	UNLEADED FUEL STORAGE TANK
Tank Dimensions	
Shell Length (ft):	5.08
Diameter (ft):	3.00
Volume (gallons):	250.00
Turnovers:	4.80
Net Throughput (gal/yr):	1,200.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N
Paint Characteristics	
Shell Color/Shade:	Red/Primer
Shell Condition:	Good
Breather Vent Settings	
Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

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TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Unleaded Fuel	All	72.39	59.90	84.88	64.41	0.7394	0.6120	0.8667	100.0000			100.00	Option 1: VP70 = .715 VP80 = .817

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	11.0506
Vapor Space Volume (cu ft):	22.8851
Vapor Density (lb/cu ft):	0.0129
Vapor Space Expansion Factor:	0.1082
Vented Vapor Saturation Factor:	0.9445
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	22.8851
Tank Diameter (ft):	3.0000
Effective Diameter (ft):	4.4074
Vapor Space Outage (ft):	1.5000
Tank Shell Length (ft):	5.0830
Vapor Density	
Vapor Density (lb/cu ft):	0.0129
Vapor Molecular Weight (lb/lb-mole):	100.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7394
Daily Avg. Liquid Surface Temp. (deg. R):	532.0602
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	524.0808
Tank Paint Solar Absorptance (Shell):	0.8900
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1082
Daily Vapor Temperature Range (deg. R):	49.9476
Daily Vapor Pressure Range (psia):	0.2547
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7394
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.6120
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.8667
Daily Avg. Liquid Surface Temp. (deg R):	532.0602
Daily Min. Liquid Surface Temp. (deg R):	519.5733
Daily Max. Liquid Surface Temp. (deg R):	544.5471
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9445
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7394
Vapor Space Outage (ft):	1.5000
Working Losses (lb):	2.1125
Vapor Molecular Weight (lb/lb-mole):	100.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7394
Annual Net Throughput (gal/yr.):	1,200,0000
Annual Turnovers:	4.8000
Turnover Factor:	1.0000
Tank Diameter (ft):	3.0000

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Unleaded Fuel	2.11	11.05	13.16

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification	
User Identification:	3DFST001S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Horizontal Tank
Description:	#2 DIESEL FUEL TANK
Tank Dimensions	
Shell Length (ft):	5.33
Diameter (ft):	4.33
Volume (gallons):	550.00
Turnovers:	10.18
Net Throughput (gal/yr):	5,600.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N
Paint Characteristics	
Shell Color/Shade:	Gray/Medium
Shell Condition:	Good
Breather Vent Settings	
Vacuum Settings (psig):	0.00
Pressure Settings (psig):	0.00

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

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TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

ROCK HILL, ... zontal Tank
... CAROLINA

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
No. 2 Diesel Fuel	All	69.35	58.93	79.77	63.15	0.0006	0.0005	0.0007	198.0400			198.04	Option 1: VP60 = .0005 VP70 = .0006

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	0.0298
Vapor Space Volume (cu ft):	49.9912
Vapor Density (lb/cu ft):	0.0000
Vapor Space Expansion Factor:	0.0788
Vented Vapor Saturation Factor:	0.9999
Tank Vapor Space Volume	49.9912
Vapor Space Volume (cu ft):	4.3300
Tank Diameter (ft):	5.4222
Effective Diameter (ft):	2.1650
Vapor Space Outage (ft):	5.3300
Tank Shell Length (ft):	
Vapor Density	0.0000
Vapor Density (lb/cu ft):	198.0400
Vapor Molecular Weight (lb/lb-mole):	
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0006
Daily Avg. Liquid Surface Temp. (deg. R):	529.0213
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	522.8208
Tank Paint Solar Absorptance (Shell):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	0.0788
Vapor Space Expansion Factor:	41.6775
Daily Vapor Temperature Range (deg. R):	0.0002
Daily Vapor Pressure Range (psia):	0.0000
Breather Vent Press. Setting Range(psia):	
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0006
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0005
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0007
Daily Avg. Liquid Surface Temp. (deg R):	529.0213
Daily Min. Liquid Surface Temp. (deg R):	518.6019
Daily Max. Liquid Surface Temp. (deg R):	539.4406
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	0.9999
Vented Vapor Saturation Factor:	
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0006
Vapor Space Outage (ft):	2.1650
Working Losses (lb):	0.0157
Vapor Molecular Weight (lb/lb-mole):	198.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0006
Annual Net Throughput (gal/yr.):	5,600.0000
Annual Turnovers:	10.1818
Turnover Factor:	1.0000
Tank Diameter (ft):	4.3300

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TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Loss Product Factor:	1.0000
Total Losses (lb):	0.0454

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
No. 2 Diesel Fuel	0.02	0.03	0.05

Title V Operating Permit Renewal Application

Prepared for:

Cinergy Solutions Rock Hill LLC

Rock Hill, South Carolina

Prepared by:

CH2MHILL

March 2004

March 29, 2004

Ms. Hetal Patel
SC Department of Health & Environmental Control
Bureau of Air Quality
2600 Bull Street
Columbia, SC 29201

Re: Cinergy Solutions, Rock Hill Title V Operating Permit Renewal Application

Dear Ms. Patel,

Per the requirements of South Carolina Department of Health and Environmental Control (SCDHEC) Regulation 61-62.70 "Title V Operating Permit Program", please find attached the permit renewal application package for Cinergy Solutions Rock Hill, LLC (CSRH). CSRH owns and operates utilities assets at the Celanese Acetate, Celriver facility in Rock Hill South Carolina under Title V permit # TV-2440-0171. This permit expires September 30, 2004. Regulation 61-62.70.5, (a) (1) (iii) requires this renewal package to be submitted by March 30, 2004.

This application contains the standard application forms required by SCDHEC, along with all supporting documentation required by SCDHEC Regulation 61-62.70.5. This documentation includes 3 copies of the following:

- Site map
- Process description
- Process flow diagrams
- Forms A through S
- Emission calculations
- List of insignificant activities
- Compliance Assurance Monitoring Plan per 40 CFR 64
- Regulatory review of the CSRH operation

Permit shield

Preparation of this Title V permit renewal application included conducting a regulatory applicability review of all new, changed, and proposed federal and state air regulations. Summaries of the federal and state air regulations and a determination of their applicability at the plant level are provided. This information is believed to be sufficient for SCDHEC to concur with CSRH's determination.

CSRH requests that a permit shield be included in the CSRH Title V permit. The permit shield should include a provision stating that if the plant is in compliance with the conditions of the Title V permit, then the plant is in compliance with all applicable requirements as of the date of the Title V permit issuance.

Risk Management Plan

Due to operational changes, CSRH no longer falls under Regulation 61-62.68 Chemical Accident Prevention Provisions requiring a Risk Management Plan. The only applicable regulated toxic substance as determined by 68.115 was chlorine. The amount in process now on the site is below the 2,500 lb. threshold listed in Section 68.130.

Compliance Assurance Monitoring Plan

CSRH operates 5 coal fired boilers to provide steam and electricity exclusively to Celriver's operation. Each boiler is subject to the 40 CFR 64 Compliance Assurance Monitoring (CAM) requirements since uncontrolled Particulate Matter emissions would be greater than 100 tons/year. As required, a CAM plan is included in this application.

Standard 2, NAAQS

Changes were made from the original Title V permit application affecting emissions calculations of particulate and SO2. Historical coal ash content data showed that current maximum ash content has increased from the 9.85% in the original application to 10.0% in this application. Emissions in pounds per hour increased approximately 10 lb/hour for all boilers combined, a 2.3% increase. We deemed this amount too small to impact the modeling from the original permit application, and consider our PM emissions to meet the NAAQS.

Supplemental Forms

Per your conversation with Eric Hilton of CH2M HILL on March 12, the supplemental forms available on the DHEC website are not included in this package. It is understood that these forms may be requested if deemed it necessary to complete the renewal process.

Additional Tanks

As part of this renewal, two new temporary tanks, each qualifying as insignificant sources, have been included. A request for exemption is being sent to you separately, but the tank emissions calculations are included in this renewal package to assist you in including them in the operating permit.

Lime Hoppers

Due to process changes, three sources were removed from this renewal application which appeared in the permit split. Sources 3FPLHOPNS1- Filter Plant: North Lime Hopper,

3FPLOPSS1 - Filter Plant: South Lime Hopper and 3FPLHOPWS1 - Filter Plant: West Lime Hopper have been removed. CSRH now receives lime in a slurry form which generates no particulate emissions during handling.

Please direct any questions you may have on this package to me at (540) 921-6267.

Respectfully Yours,

Robert J. Cowley,

Health, Safety & Environmental Engineer
Cinergy Solutions Rock Hill, LLC

Jerry Anderson

Plant Manager, VP of Operations
Cinergy Solutions Rock Hill LLC

Attachments

Contents

Cinergy Solutions
Rock Hill, South Carolina
Title V Permit Application

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1.0 Process Descriptions

Cinergy Solutions Rock Hill, LLC (CSRH) owns the K2/K3 Methanol Brine Storage Tank and K2/K3 Methanol Brine Utility Storage tank located in the Anhydride Manufacturing division. The K2/K3 Methanol Brine Storage Tank and Utility Tank are equipped with a brine condenser control device. CSRH does not own any other equipment in the Anhydride Manufacturing division. A process flow diagram for the Anhydride Manufacturing division is not included in this application.

The Calcium Chloride Surge Tank, the Calcium Chloride Head Tank, and the Calcium Chloride Mix Tank located in Department 8 of the Cellulose Manufacturing division are also owned by CSRH. CSRH does not own any other equipment in the Cellulose Manufacturing division. A process flow diagram for the Cellulose Manufacturing division is not included in this application. The Cellulose Manufacturing operation is covered by Celanese Acetate's operating permit.

CSRH also owns equipment in the Utilities/Maintenance (U/M) division. U/M is divided into four functional areass: Powerhouse, Filtered Water Plant, Waste Water Treatment Plant (WWTP), and Maintenance. Maintenance includes Air Conditioning (AC), Monofill, Compressed Air, and Central Shops. Process descriptions for the functional areas in U/M are presented below. Process flow diagrams for selected functional areas are provided in the Process Flow Diagram section.

Powerhouse

The Powerhouse provides steam and energy exclusively for Celanese Acetate's processes by combusting coal in built-up stationary boiler systems. Coal is received by railcar and truck and is stockpiled behind the Powerhouse. Prevailing winds may blow small quantities of fugitive dust from the coal pile. The coal is conveyed from the coal pile, pulverized, and fed into five boilers. Fuel oil is used to heat the boilers during startup. Combustion of the coal produces flyash, carbon monoxide, nitrous oxides, and sulfur oxides, which are emitted from the stacks to the atmosphere.

Most of the flyash is captured in electrostatic precipitators, collected with a flyash handling system and placed in an ash monofill located on site. Each boiler has an electrostatic precipitator which captures the flyash from combustion. Combustion exhaust is discharged from each boiler through individual stacks located atop the power house.

A small percentage of the fly ash is emitted to the atmosphere as a fugitive emission during handling. Ash piping transports flyash from the boilers into a silo. A fabric filter (baghouse) controls emissions from the silo. Vacuum is produced using mechanical exhausters. Receiving equipment mounted above the silo, upstream of the exhausters, filter the flyash from the air stream and allow the flyash to drop into the silo. The incoming flyash enters a cyclone type separator, which drops out the heavier particles. The remaining fine flyash particles enter a bag filter where particles are trapped. The filter separator collectors are process equipment that prevents abrasive material from damaging the mechanical exhausters. The mechanical exhausters cannot operate unless the air stream has

been filtered. A pulse jet system is used to dislodge the flyash and allow it to drop into the hopper section. Flyash is sluiced to the on-site ash ponds in cases of emergency and/or plant upset. Bottom ash from all boilers is sluiced to the ash pond as part of routine operation.

The boilers produce steam by reboiling condensate returned from the steam users. Filtered water makeup is treated in softeners and desilicizers to protect boiler internal components. Condensate return and makeup water are also treated with inert chemicals. Boiler water blowdown discharges to the chemical sewer for treatment in the WWTP.

The Powerhouse has a small laboratory used for boiler water quality checks which is categorically exempt from air regulations.

Filtered Water Plant

The Filtered Water Plant uses river water to produce filtered water and distributes service water, fire water, and once-through cooling water throughout the plant. The filtered water plant also includes a small analytical laboratory which is categorically exempt from air regulations.

Diesel Pump #4

Process and sanitary wastewater from throughout the plant is conveyed via the chemical sewers to the WWTP owned and operated by Celanese Acetate. The only equipment CSRH owns near the wastewater treatment plant is the Diesel Pump #4.

Cooling Towers

CSRH operates nine cooling tower systems, which service several areas of the plant. The system distributes water in a closed loop; makeup water (service and filtered) is added as required with periodic blowdown discharged to the chemical sewer. Various biocides and water treatment chemicals are added to the cooling water to inhibit biological growth and corrosion.

Air Conditioning

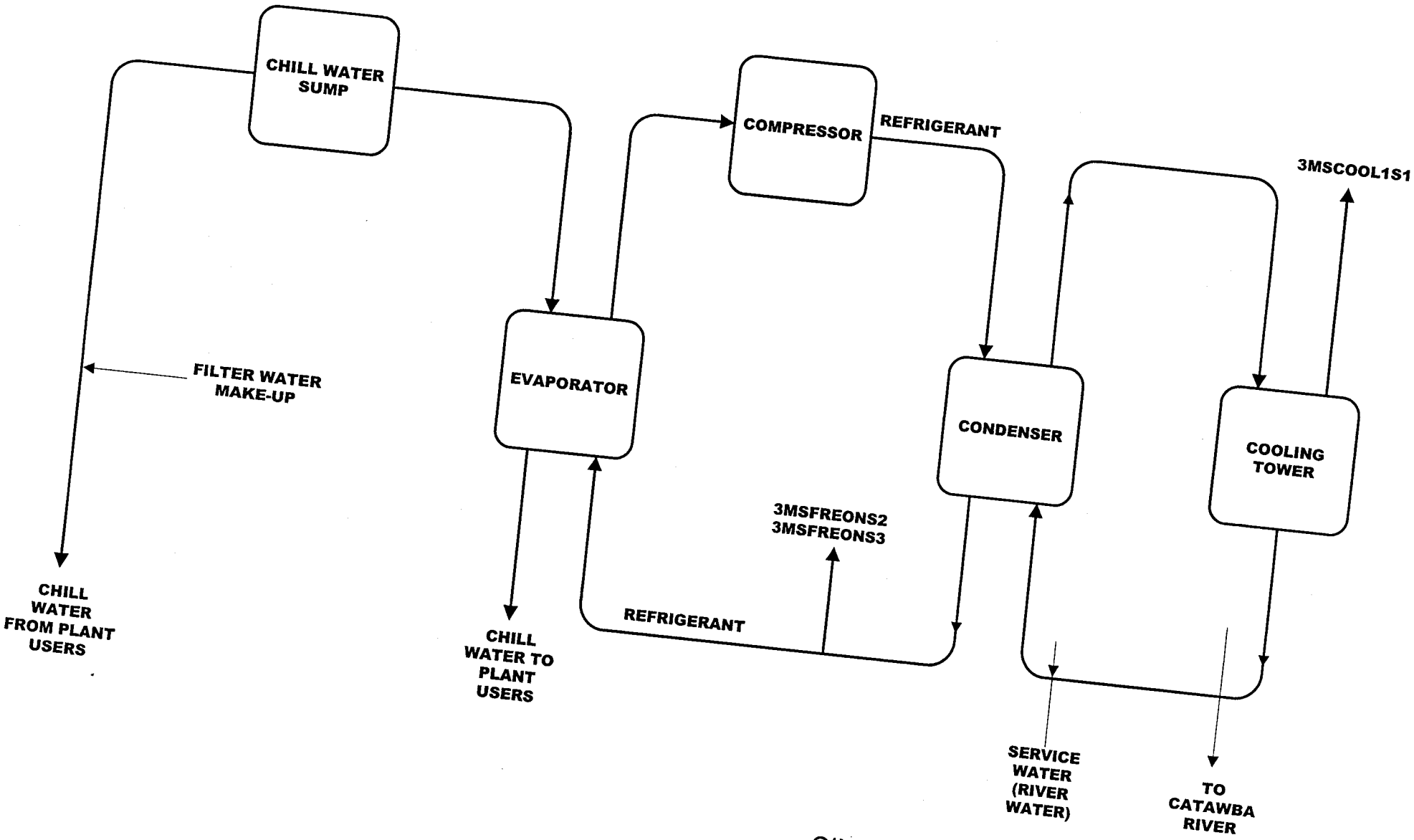
U/M operates several AC systems plant wide and CSRH is responsible for tracking R12 and R22 fugitive emissions. Freon refrigerants are used in a closed loop. Makeup freon is added if there is loss of freon from leaks and maintenance.

Monofill

CSRH operates the on-site flyash landfill (the monofill). Fugitive dust emissions result from flyash handling operations and wind erosion of the monofill. Material in the monofill is wetted as necessary to reduce particulate emissions.

Emissions Estimating Summary

For the Powerhouse, Filtered Water Plant, Air Conditioning, Monofill , Cooling Tower, storage tank emission units, EPA approved AP-42 emission factors and TANKS 4.0 were used to estimate point source and fugitive emissions.



CINERGY SOLUTIONS ROCK HILL, LLC
2850 CHERRY ROAD
ROCK HILL, SOUTH CAROLINA
PPFD-3: COOLING TOWER AND
AIR CONDITIONING SYSTEMS

Federal Regulations

Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 50.5-50.12	NAAQS: Criteria Pollutants		X	X				X	Requirements apply to state air programs.
40 CFR 51 and 52, 52.24, 52.10 Subpart A	NAAQS: Nonattainment Program		X					X	The Facility is currently located in an attainment area for all criteria pollutants. On 15 April 2004, the EPA will designate areas as attainment/nonattainment for 8-hr ozone standard. York County may be included in the Charlotte-Gastonia-Rock Hill 8-hr ozone nonattainment area.
40 CFR 51 Subpart D 51.40 Subpart D	Requirements and Procedures for State Implementation Plans							X	Requirements apply to state air programs.
40 CFR 51.166 & 51.21 Subpart I	NAAQS: Prevention of Significant Deterioration		X	X		PSD regulations are potentially applicable to any facility that is constructed or any facility to which physical changes are made since August 7, 1977. The State of South Carolina has received EPA's approval to administer the PSD program.	X		PSD applicability analyses must be conducted for new construction or modification of an existing source. If subject to PSD regulations, a PSD construction permit must be obtained from SCDHEC.
40 CFR 52, Subpart A 52.01 - 52.31	General Provisions for State Implementation Plan Actions by EPA							X	Requirements apply to state air programs.
40 CFR 52 Subpart A 52.24	Statutory Restrictions on New Sources (NSR)							X	The Facility is currently located in an attainment area for all criteria pollutants and has not constructed or modified any sources under this regulation. If/when York County is designated nonattainment, this regulation may be applicable.

Federal Regulations

Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 52 Subpart PP 52.2120-52.2132	South Carolina		X	X		Part 52 contains a chronological listing of EPA's approval actions of a state's implementation plan. The SIP is an agreement between EPA and a state air pollution control agency on how a state will control air pollution for seven criteria pollutants (lead, ozone, nitrogen oxides, sulfur dioxide, particulate matter with diameter less than 10 micrometers (PM-10), volatile organic compounds (VOC), and carbon monoxide (CO) so as to attain and maintain National Ambient Air Quality Standards (NAAQS). Those regulations approved into this section have been approved and by definition are Federally-enforceable. For specific regulation, refer to the state-specific regulations.	X		The Facility is located in this state.
40 CFR 52 Subpart EEE 52.2850-52.2920	Approval and Promulgation of Plans		X					X	The Facility is not located in a State with obligations in this section.
40 CFR 55 55.1-55.15	Outer Continental Shelf	X						X	The Facility is not an OCS platform.
40 CFR 60 Subpart A, Subpart B	NSPS: General Provisions		X	X		Applies to sources subject to relevant NSPS Subpart	X		
40 CFR 60 Subpart C	NSPS: Emission Guidelines and Compliance Times		X					X	The Facility does not operate any sources that are subject to the requirements in this Subpart.

Federal Regulations

Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 60 Subpart Cb	NSPS Emissions Guidelines and Compliance Times for Municipal Waste Combustors (MWC)		X	X				X	The Facility is not a MWC.
40 CFR 60 Subpart Cc	NSPS: Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills		X	X				X	The Facility is not a Municipal Solid Waste Landfill.
40 CFR 60 Subpart Cd	NSPS: Emission Guidelines and Compliance Times for Sulfuric Acid Production Units		X	X				X	The Facility is not a sulfuric acid production unit.
40 CFR 60 Subpart D	NSPS: Fossil Fuel Fired Steam Generators		X	X		Wood-residue and fossil fuel fired boilers with fossil fuel heat input capacities of at least 250 MM Btu/hr. Note: Recovery boilers whose fossil fuel heat input capacity is at least 250 MM Btu/hr and which use fossil fuel for 10% or more of their annual heat input are subject to this rule when they are burning fossil fuel. Steam generators whose construction, reconstruction or modification commenced after August 17, 1971 or, if lignite fired, December 22, 1976, must comply.		X	None of the boilers meet the definition of a construction, modification, or reconstruction after the effective date of this regulation. Additionally, Boilers 1 - 5 are <250 MM Btu/hr.

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Date Printed:

Completed By:

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 60 Subpart Da	NSPS: Electric Utility Steam Generating Units		X	X		The affected facility to which this subpart applies is each electric utility steam generating unit that is capable of combusting more than 73 megawatts (250 million Btu/hour) heat input of fossil fuel (either alone or in combination with any other fuel); and for which construction or modification is commenced after September 18, 1978.		X	None of the boilers meet the definition of a construction or modification after the effective date of this regulation. Additionally, Boilers 1 - 5 are <250 MM Btu/hr.
40 CFR 60 Subpart Db	NSPS: Standards of Performance for Industrial Commercial Institutional Steam Generating Units		X	X		The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hour).		X	This regulation does not apply to Boilers 1 - 5 because none of them were constructed, modified, or reconstructed after the effective date of this regulation.
40 CFR 60 Subpart Dc starting at 60, 40c	NSPS: Small Industrial Commercial Institutional Steam Generating Units		X	X		The affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).		X	This regulation does not apply to Boilers 1 - 5 because none of them were constructed, modified, or reconstructed after the effective date of this regulation. Additionally, Boilers 1 - 5 are >100 MM Btu/hr.
40 CFR 60 Subpart E	NSPS: Incinerators		X	X				X	The Facility does not burn solid waste.
40 CFR 60 Subpart Ea	NSPS: Municipal Waste Combustors		X	X				X	The Facility does not combust MSW.
40 CFR 60 Subpart Eb	NSPS: Large Municipal Waste Combustors		X	X				X	The Facility does not combust MSW.

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40 CFR 60 Subpart Ec	NSPS: Hospital/Medical/Infectious Waste Incinerators		X	X				X	The Facility does not incinerate hospital, medical, or infectious waste.
40 CFR 60 Subpart F	NSPS: Portland Cement Plants		X	X				X	The Facility does not manufacture portland cement.
40 CFR 60 Subpart G	NSPS: Nitric Acid Plants		X	X				X	The Facility does not produce nitric acid.
40 CFR 60 Subpart H	NSPS: Sulfuric Acid Plants		X	X				X	The Facility does not produce sulfuric acid.
40 CFR 60 Subpart I	NSPS: Asphalt Concrete Plants		X	X				X	The Facility does not produce hot mix asphalt.
40 CFR 60 Subpart J	NSPS: Petroleum Refineries		X	X				X	The Facility does not refine petroleum.
40 CFR 60 Subpart K	NSPS: Storage Vessel for Petroleum Liquids		X	X		The affected facility to which this subpart applies is each storage vessel for petroleum liquids which has a storage capacity greater than 151,412 liters (40,000 gallons). Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Nos. 2 through 6 fuel oils.		X	The Facility only stores No. 2 fuel oil which is exempt.
40 CFR 60 Subpart Ka	NSPS: Storage Vessel for Petroleum Liquids		X	X		The affected facility to which this subpart applies is each storage vessel with a storage capacity greater than 151,416 liters (40,000 gallons) that is used to store petroleum liquids for which construction is commenced after May 18, 1978.		X	The No. 2 Fuel Oil Tanks were installed before May 1978.
40 CFR 60 Subpart Kb	NSPS: Volatile Organic Liquid Storage Vessels		X	X				X	The Facility does store any volatile organic liquids.
40 CFR 60 Subpart L	NSPS: Secondary Lead Smelters		X	X				X	The Facility does not smelt lead.

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40 CFR 60 Subpart M	NSPS: Secondary Brass and Bronze Production Plants		X	X				X	The Facility does not produce brass or bronze.
40 CFR 60 Subpart N	NSPS: Primary Emissions from Basic Oxygen Furnaces		X	X				X	The Facility does not produce iron or steel.
40 CFR 60 Subpart Na	NSPS: Iron and steel plants (primary emissions from basic oxygen furnaces constructed after January 20, 1983.)		X	X				X	The Facility does not produce iron or steel.
40 CFR 60 Subpart O	NSPS: Sewage Treatment Plants		X	X				X	The Facility does not combust sewage sludge.
40 CFR 60 Subpart P	NSPS: Primary Copper Smelters		X	X				X	The Facility does not smelt copper.
40 CFR 60 Subpart Q	NSPS: Primary Zinc Smelters		X	X				X	The Facility does not smelt zinc.
40 CFR 60 Subpart R	NSPS: Primary Lead Smelters		X	X				X	The Facility does not smelt lead.
40 CFR 60 Subpart S	NSPS: Primary Aluminum Reduction Plants		X	X				X	The Facility does not perform aluminum reduction.
40 CFR 60 Subpart T	NSPS: Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants		X	X				X	The Facility does not produce phosphate fertilizer.
40 CFR 60 Subpart U	NSPS: Phosphate Fertilizer Industry: Superphosphoric Acid Plants		X	X				X	The Facility does not produce phosphate fertilizer.
40 CFR 60 Subpart V	NSPS: Diammonium Phosphate Plants		X	X				X	The Facility does not produce diammonium phosphate.
40 CFR 60 Subpart W	NSPS: Triple superphosphate plants		X	X				X	The Facility does not produce triple superphosphate.

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40 CFR 60 Subpart X	NSPS: Granular Triple Superphosphate Storage Facilities		X	X				X	The Facility does not store granular superphosphate.
40 CFR 60 Subpart Y	NSPS: Coal Preparation Plants		X	X				X	The coal handling system is >200 tons/day but there have been no physical/operational changes that meet the definition of a construction, reconstruction, or modification.
40 CFR 60 Subpart Z	NSPS: Ferroalloy Production Facilities	X		X				X	The Facility does not produce ferroalloys
40 CFR 60 Subpart AA and AAa	NSPS: Electric Arc Furnaces	X		X				X	The Facility does not use electric arc furnaces.
40 CFR 60 Subpart BB	NSPS: Kraft Pulp Mills	X		X				X	The Facility does not operate a kraft pulp mill.
40 CFR 60 Subpart CC	NSPS: Glass Manufacturing	X		X				X	The Facility does not manufacture glass.
40 CFR 60 Subpart DD	NSPS: Grain Elevators	X		X				X	The Facility does not operate grain elevators.
40 CFR 60 Subpart EE	NSPS: Surface Coating of Metal Furniture	X		X				X	The Facility does not perform surface coating of metal furniture.
40 CFR 60 Subpart GG	NSPS: Stationary Gas Turbines	X		X				X	The Facility does not operate stationary gas turbines.
40 CFR 60 Subpart HH	NSPS: Lime Manufacturing Plants	X		X				X	The Facility does not manufacture lime.
40 CFR 60 Subpart KK	NSPS: Lead Acid Battery Manufacturing Plants	X		X				X	The Facility does not manufacture lead acid batteries.
40 CFR 60 Subpart LL	NSPS: Metallic Mineral Processing Plants	X		X				X	The Facility does not process metallic minerals.

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40 CFR 60 Subpart MM	NSPS: Automobile and Light Duty Truck Surface Coating Operations		X	X				X	The Facility does not manufacture automobiles or light duty trucks.
40 CFR 60 Subpart NN	NSPS: Phosphate rock plants		X	X				X	The Facility does not produce phosphate rock.
40 CFR 60 Subpart PP	NSPS: Ammonium Sulfate Manufacture Plants		X	X				X	The Facility does not manufacture ammonium sulfate.
40 CFR 60 Subpart QQ	NSPS: Graphic Arts Industry: Publication Rotogravure Printing		X	X				X	The Facility is not in the graphic arts industry.
40 CFR 60 Subpart RR	NSPS: Pressure Sensitive Tape and Label Surface Coating Operations.		X	X				X	The Facility does not manufacture pressure sensitive tape or perform label surface coating operations.
40 CFR 60 Subpart SS	NSPS: Industrial Surface Coating: Large Appliances		X	X				X	The Facility does not surface coat large appliances.
40 CFR 60 Subpart TT	NSPS: Metal Coil Surface Coating		X	X				X	The Facility does not perform metal coil surface coating.
40 CFR 60 Subpart UU	NSPS: Asphalt Processing and Asphalt Roofing and Manufacture		X	X				X	The Facility does not process or manufacture asphalt.

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40 CFR 60 Subpart VV	NSPS: Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry		X	X		Standards control leakage from equipment that contains or contacts a process fluid that is at least 10% VOC by weight. Applies to pumps, compressors, agitators, pressure relief devices, sampling connection systems, accumulation vessels, control devices, and open-ended valves or lines. Applies to a facility for which construction or modification commenced after 1/5/81 and which produces, as an intermediate or final product, one or more of the chemicals listed in Section 60.489. A facility is exempt if it produces <1000 Mg/yr of one or more of the listed chemicals, produces heavy liquid chemicals only from feed or raw materials, or has no equipment which contains or contacts a process fluid >=10% VOC by wt.	X		The Facility owns and operates equipment that belongs to a SOCMI process unit.
40 CFR 60 Subpart WW	NSPS: Beverage Can Surface Coating Industry	X	X					X	The Facility does not perform beverage can surface coating.
40 CFR 60 Subpart XX	NSPS: Bulk Gasoline Terminals	X	X					X	The Facility is not a bulk gasoline terminal.
40 CFR 60 Subpart AAA	NSPS: New Residential Wood Heaters	X	X					X	The Facility does not manufacture residential wood heaters.
40 CFR 60 Subpart BBB	Rubber Tire Manufacturing Industry	X	X					X	The Facility does not manufacture rubber tires.
40 CFR 60 Subpart DDD	NSPS: Polymer Manufacturing Industry	X	X					X	The Facility does not produce any of the specified compounds.
40 CFR 60 Subpart FFF	NSPS: Flexible Vinyl and Urethane Coating and Printing	X	X					X	The Facility does not perform flexible vinyl and urethane coating or printing.

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40 CFR 60 Subpart GGG	NSPS: Equipment Leaks of VOC in Petroleum Refiners		X	X				X	The Facility is not a petroleum refinery.
40 CFR 60 Subpart HHH	NSPS: Synthetic Fiber Production Facilities		X	X				X	The Facility does not produce synthetic fibers.
40 CFR 60 Subpart III	NSPS: VOC Emissions From Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes		X	X				X	The Facility does not manufacture synthetic organic chemicals.
40 CFR 60 Subpart JJJ	NSPS: Petroleum Dry Cleaners		X	X				X	The Facility does not perform petroleum dry cleaning.
40 CFR 60 Subpart KKK	NSPS: Onshore Natural Gas Processing Plants		X	X				X	The Facility does not process natural gas.
40 CFR 60 Subpart LLL	NSPS: Onshore Natural Gas Processing: SO2 Emissions		X	X				X	The Facility does not process natural gas.
40 CFR 60 Subpart NNN	NSPS: Synthetic Organic Chemical Manufacturing Industry Distillation Operations		X	X				X	The Facility does not manufacture synthetic organic chemicals.
40 CFR 60 Subpart OOO	NSPS: Nonmetallic Mineral Processing Plants		X	X				X	The Facility does not perform metallic minerals processing.
40 CFR 60 Subpart PPP	NSPS: Wool Fiberglass Insulation Manufacturing Plants		X	X				X	The Facility does not manufacture wool fiberglass insulation.

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40 CFR 60 Subpart QQQ	NSPS: Petroleum Refinery Wastewater System VOC Emissions		X	X				X	The Facility is not a petroleum refinery.
40 CFR 60 Subpart RRR	NSPS: Synthetic Organic Chemical Manufacturing Industry Reactor Processes		X	X				X	The Facility does not manufacture synthetic organic chemicals.
40 CFR 60 Subpart SSS	NSPS: Magnetic Tape Coating Facilities		X	X				X	The Facility does not perform magnetic tape coating.
40 CFR 60 Subpart TTT	NSPS: Industrial Surface Coating: Plastic Parts for Business Machines		X	X				X	The Facility does not perform surface coating of plastic parts.
40 CFR 60 Subpart UUU	NSPS: Calciners and Dryers in Minerals Industries		X	X				X	The Facility is not in the mineral industry.
40 CFR 60 Subpart VVV	NSPS: Polymeric Coating of Supporting Substrates Facilities.		X	X				X	The Facility does not perform polymeric coating of supporting substrates.
40 CFR 60 Subpart WWW	NSPS: Municipal Solid Waste Landfills		X	X				X	The Facility is not a Municipal Solid Waste Landfill.
40 CFR 60 Subpart YYY	NSPS: Synthetic Organic Chemical Manufacturing Industry Wastewater	X						X	The Facility does not manufacture synthetic organic chemicals.
40 CFR 60 Subpart AAAA	NSPS: Small Municipal Waste Combustion Units		X	X				X	There are no Municipal Waste Combustion Units at the facility.
40 CFR 60 Subpart BBBB	NSPS: Small Municipal Waste Combustion Units		X					X	There are no Municipal Waste Combustion Units at the facility.
40 CFR 60 Subpart CCCC	NSPS: Commercial and Industrial Solid Waste Incineration Units		X	X				X	There are no solid waste incineration units at the facility.

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40 CFR 60 Subpart DDDD	NSPS: Commercial and Industrial Solid Waste Incineration Units		X	X				X	There are no solid waste incineration units at the facility.
40 CFR 61 Subpart B	NESHAP: Radon Emissions from Underground Uranium Mines		X					X	The Facility does not mine uranium.
40 CFR 61 Subpart C	NESHAP: Beryllium		X					X	The Facility does not process beryllium
40 CFR 61 Subpart D	NESHAP: Beryllium Rocket Motor Firing		X					X	The Facility does not perform rocket motor testing.
40 CFR 61 Subpart E	NESHAP: Mercury		X					X	The Facility does not process mercury or use mercury chlor-alkali cells
40 CFR 61 Subpart F	NESHAP: Vinyl Chloride		X					X	The Facility does not produce ethylene dichloride, vinyl chloride or polyvinyl chlorides.
40 CFR 61 Subpart H	NESHAP: Emissions of Radionuclides Other than Radon from Department of Energy (DOE) Facilities		X					X	The Facility is not a DOE facility.
40 CFR 61 Subpart I	NESHAP: Radionuclide Emission from Facilities Licensed by the Nuclear Regulatory Commission (NRC) and Federal Facilities not Covered by Subpart H.		X					X	The Facility is not a licensed NRC facility.
40 CFR 61 Subpart J	NESHAP: Equipment Leaks of Benzene		X					X	There is no equipment at the Facility in benzene service.

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40 CFR 61 Subpart K	NESHAP: Radionuclide Emissions from Elemental Phosphorus Plants		X					X	The Facility is not an elemental phosphorous plant.
40 CFR 61 Subpart L	NESHAP: Benzene Emissions from Coke By Product Recovery Plants		X					X	The Facility does not process coke by-products.
40 CFR 61 Subpart M	NESHAP: Asbestos		X			Applies to facilities demolishing or renovating areas containing asbestos.	X		Applies to the Facility for areas with asbestos. The Facility has applicable requirements when demolishing or renovating areas containing asbestos.
40 CFR 61 Subpart N	NESHAP: Inorganic Arsenic Emissions from Glass Manufacturing Plants		X					X	The Facility is not a glass manufacturing plant.
40 CFR 61 Subpart O	NESHAP: Inorganic Arsenic Emissions from Primary Copper Smelts		X					X	The Facility does not perform copper smelting.
40 CFR 61 Subpart P	NESHAP: Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities		X					X	The Facility does not produce arsenic.
40 CFR 61 Subpart Q	NESHAP: Radon Emissions from Department of Energy (DOE) Facilities		X					X	The Facility is not a DOE facility.

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40 CFR 61 Subpart R	NESHAP: Radon Emissions from Phosphogypsum Stacks		X					X	The Facility does not process phosphogypsum.
40 CFR 61 Subpart T	NESHAP: Radon Emissions from the Disposal of Uranium Mill Tailings]		X					X	The Facility is not an uranium mill.
40 CFR 61 Subpart V	NESHAP: Equipment Leaks (Fugitive Emission Sources)		X					X	Benzene is neither stored nor used in the process at the Facility.
40 CFR 61 Subpart W	NESHAP: Radon Emissions from Operating Mill Tailings		X					X	The Facility does not manage uranium by-products
40 CFR 61 Subpart Y	NESHAP: Benzene Emissions from Benzene Storage Vessels.		X					X	Benzene is not stored at the Facility.
40 CFR 61 Subpart BB	NESHAP: Benzene Emissions from Benzene Transfer Operations		X					X	The Facility does not perform benzene transfer operations.
40 CFR 61 Subpart FF	NESHAP: Benzene Waste Operations.		X					X	The Facility does not perform benzene waste operations.

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40 CFR 63 Subpart A	NESHAP: General Provisions Title III		X			Applies to both major or area sources of HAP. A major source is any stationary source or group of stationary sources within a contiguous area and under common control that emits or has potential considering controls, in the aggregate, 10 tpy or more of any HAP or 25 tpy or more of any combination of HAP, unless specific regulations or the regulatory authority establish a lesser quantity. An area source is a stationary source that is not major. Any stationary major or area source that emits or has the potential to emit any amount of one or more HAP is subject to the requirement to make an applicability determination. This determination must be made and kept on file even if the facility is not subject to any other requirement and must contain enough data for the permitting agency to make a finding about the source's applicability status. New sources that have initial startup dates before or after effective relevant standard date of March 16, 1994 have the responsibility to notify EPA that the source is subject to the standard no later than 120 days after effective date (for existing sources) or 120 days after initial startup (for new sources).	X		Applies to sources subject to NESHAP standards. The facility is currently revieing applicability NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters. This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation within three (3) years from publication in the Federal Register.
40 CFR 63 Subpart B	NESHAP: Requirements for Control Technology Determinations for Major Sources	X	X				X		Applies to any owner or operator who constructs or reconstructs a major source of hazardous air pollutants after the effective date of Section 112(g)(2)(B) of the Clean Air Act and the effective date of South Carolina's Title V permit program.

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40 CFR 63 Subpart C	NESHAP: List of Hazardous Pollutants, Petitions Process, Lesser Quantities Designations, Source Category List		X					X	Applies to entire plant only if the Facility elects to participate in the program.
40 CFR 63 Subpart D	Early Reduction Program Modified		X					X	Rule does not require action by individual facilities.
40 CFR 63 Subpart E	Approval Criteria for state NESHAP programs		X					X	The Facility does not manufacture synthetic organic chemicals.
40 CFR 63 Subpart F	NESHAP: Organic Hazardous Air Pollutants from SOCMI		X	X		Applicability criteria for SOCMI sources, definitions, general recordkeeping, and general reporting requirements. The process unit: 1) must be used to manufacture as a primary product one or more o the 385 SOCMI chemicals, 2) located at a site that is a major source (PTE 10tpy any single HAP, 25 tpy total HAPs), 3) as defined in §112(a) use one or more of the 112 OHAPs as a reactant or manufacture one or more of the OHAPs as a product, by-product, or co-product.			

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40 CFR 63 Subpart G	NESHAP: Hazardous Organic Standards for Major Emission Points		X	X		Applies to HAP emission points associated with OHAP-emitting SOCMI processes at new and existing sources. Emission points include process vents from reactor processes, air oxidation processes, and distillation operations; Group I process vents must have a flow rate of 0.18 scfm or greater, a total OHAP concentration 50 ppmv or greater and a TRE value less than or equal to 1.0. Process vents which fall into one or more of the Group 2 process vents are considered Group 2 vents. New is defined as any system which commenced construction on or after December 31, 1992.		X	The Facility does not manufacture synthetic organic chemicals.
40 CFR 63 Subpart H	NESHAP: Hazardous Organic Standards for Equipment Leaks		X	X		Applies to new and existing process units associated with a SOCMI production process at a major source and makes or used an OHAP reactant, or any of the six non-SOCMI processes. Applies to pumps, valves, compressors, agitators, pressure relief devices, sampling connection systems, open-ended lines, connectors, surge control vessels, bottoms receivers, instrumentation system and closed-vent systems, and control devices. Equipment must be in OHAP service and in contact with 5 wt% or more total OHAPs for 300 or more hours per year.		X	The Facility does not manufacture synthetic organic chemicals.

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40 CFR 63 Subpart I	NESHAP: Processes Subject to Negotiated Regulation for Equipment Leaks		X	X				X	The Facility does not have any of the specified processes.
40 CFR 63 Subpart J	NESHAP: Polyvinyl Chloride and Copolymers Production		X					X	The Facility does not produce polyvinyl chloride or copolymers.
40 CFR 63 Subpart L	NESHAP: Coke Oven Batteries		X	X				X	The Facility is not a coke plant with coke oven batteries.
40 CFR 63 Subpart M	NESHAP: Perchloroethylene Air Standard for Dry Cleaning		X	X				X	The Facility does not perform dry cleaning operations.
40 CFR 63 Subpart N	NESHAP: Chromium Electroplating		X	X				X	The Facility does not perform chromium electroplating.
40 CFR 63 Subpart O	NESHAP: Ethylene Oxide from Commercial Sterilization		X	X				X	The Facility does not operate ethylene oxide sterilizers.
40 CFR 63 Subpart Q	NESHAP: Chromium Industrial Cooling Towers		X	X				X	Chromated-based water treatment programs are not used at the cooling towers at the Facility.
40 CFR 63 Subpart R	NESHAP: Stage 1 Gasoline Distribution Facilities		X	X				X	The Facility does not perform bulk gasoline distribution.
40 CFR 63 Subpart S	NESHAP: Pulp and Paper		X	X				X	The Facility is not a pulp and paper mill.
40 CFR 63 Subpart T	NESHAP: Halogenated Solvent Cleaning		X	X				X	None of the parts cleaners at the facility use halogenated solvents as cleaning solutions.
40 CFR 63 Subpart U	NESHAP: Group 1 Polymers and Resins		X	X				X	The Facility does not produce any of the listed materials.
40 CFR 63 Subpart W	NESHAP: Epoxy Resins and Non-nylon Polyamides		X	X				X	The Facility does not produce any of the listed materials.

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40 CFR 63 Subpart X	NESHAP: Secondary Lead Smelters		X	X				X	The Facility does not smelt lead.
40 CFR 63 Subpart Y	NESHAP: Marine Tank Vessel Loading Operations		X	X				X	The Facility does not load or unload marine vessels.
40 CFR 63 Subpart AA	NESHAP: Phosphoric Acid Manufacturing Plants		X	X				X	The Facility does not manufacture phosphoric acid.
40 CFR 63 Subpart BB	NESHAP: Phosphate Fertilizers Production Plants		X	X				X	The Facility does not produce phosphate fertilizers.
40 CFR 63 Subpart CC	NESHAP: Petroleum Refineries		X	X				X	The Facility is not a petroleum refinery.
40 CFR 63 Subpart DD	Offsite Waste and Recovery Operations		X	X				X	The Facility is not a waste and recovery operation.
40 CFR 63 Subpart EE	NESHAP: Magnetic Tape Manufacturing Industry		X	X				X	The Facility does not manufacture magnetic tape.
40 CFR 63 Subpart GG	NESHAP: Aerospace Industry		X	X				X	The Facility does not manufacture or rework aircraft.
40 CFR 63 Subpart HH	NESHAP: Oil and Natural Gas Production Facilities		X	X				X	The Facility is not an oil or natural gas production facility.
40 CFR 63 Subpart II	NESHAP: Ship Building and Ship Repair (Surface Coating)		X	X				X	The Facility does not build or repair ships.
40 CFR 63 Subpart JJ	NESHAP for Wood Furniture Manufacturing		X	X				X	The Facility does not manufacture wood furniture.
40 CFR 63 Subpart KK	Printing and Publishing			X				X	The Facility does not have printing and publishing operations.
40 CFR 63 Subpart LL	NESHAP: Primary Aluminum Reduction Plants		X	X				X	The Facility is not an aluminum reduction plant.

Federal Regulations

Applicability / Non Applicability Analysis for Permit Shield

Date Printed:

Completed By:

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 63 Subpart MM	NESHAP: Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semi-Chemical Pulp Mills		X					X	The Facility does not fall into any of these categories.
40 CFR 63 Subpart OO	NESHAP: Tanks -- Level 1		X					X	The Facility does not have any applicable processes .
40 CFR 63 Subpart PP	NESHAP: Containers		X	X				X	The Facility does not have any applicable processes .
40 CFR 63 Subpart QQ	NESHAP: Surface Impoundments		X	X				X	The Facility does not have any applicable processes .
40 CFR 63 Subpart RR	NESHAP: Individual Drain Systems		X	X				X	The Facility does not have any applicable processes .
40 CFR 63 Subpart SS	NESHAP: Closed Vent Systems, Control Devices, Recovery Devices, and Routing to a Fuel Gas System or a Process		X	X				X	The Facility does not have any applicable processes .
40 CFR 63 Subpart TT	NESHAP: Equipment Leaks-Control Level 1		X	X				X	The Facility does not have any applicable processes .
40 CFR 63 Subpart UU	NESHAP: Equipment Leaks-Control Level 2		X	X				X	The Facility does not have any applicable processes .
40 CFR 63 Subpart VV	NESHAP: Oil-Water Separators and Organic-Water Separators		X	X				X	The Facility does not have any applicable processes .
40 CFR 63 Subpart WW	NESHAP: Storage Vessels (Tanks)-- Control Level 2		X	X				X	The Facility does not have any applicable processes .

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Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

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Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 63 Subpart XX	NESHAP: Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations		X	X				X	The Facility is not an ethylene production unit.
40 CFR 63 Subpart YY	NESHAP: Source Categories: Generic Maximum Achievable Control Technology Standards		X	X				X	The Facility does not belong to any of the affected source categories contained in this rule.
40 CFR 63 Subpart CCC	NESHAP: Steel Pickling - HCl Process Facilities and Hydrochloric Acid Regeneration Plants		X	X				X	The Facility does not perform steel pickling operations.
40 CFR 63 Subpart DDD	NESHAP: Mineral Wool Production		X	X				X	The Facility does not produce mineral wool.
40 CFR 63 Subpart EEE	NESHAP: Hazardous Waste Combustors		X	X				X	The Facility does not combust hazardous waste.
40 CFR 63 Subpart GGG	NESHAP: Pharmaceuticals Production		X	X				X	The Facility does not produce pharmaceuticals.
40 CFR 63 Subpart HHH	NESHAP: Natural Gas Transmission and Storage Facilities		X	X				X	The Facility is neither an owner nor an operator of a natural gas transmission and storage facility.
40 CFR 63 Subpart III	NESHAP: Flexible Polyurethane Foam Production		X	X				X	The Facility does not produce flexible polyurethane foam.
40 CFR 63 Subpart JJJ	NESHAP: Group IV Polymers Resin		X	X				X	The Facility does not produce any of the listed materials.
40 CFR 63 Subpart LLL	NESHAP: Portland Cement Manufacturing Industry		X	X				X	The Facility does not manufacture portland cement.

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Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 63 Subpart MMM	NESHAP: Pesticide Active Ingredient Production		X	X				X	The Facility does not produce active ingredients for pesticides.
40 CFR 63 Subpart NNN	NESHAP: Wool and Fiberglass Manufacturing		X	X				X	The Facility does not manufacture wool or fiberglass.
40 CFR 63 Subpart OOO	NESHAP: Manufacture of Amino/Phenolic Resins		X					X	The Facility does not manufacture amino/phenolic resins.
40 CFR 63 Subpart PPP	NESHAP: Polyether Polyols Production		X	X				X	The Facility does not produce polyether polyols.
40 CFR 63 Subpart QQQ	NESHAP: Primary Copper Smelting		X	X				X	The Facility does not smelt copper.
40 CFR 63 Subpart RRR	NESHAP: Secondary Aluminum Production		X	X				X	The Facility does not produce aluminum.
40 CFR 63 Subpart TTT	NESHAP: Primary Lead Smelting		X	X				X	The Facility does not smelt lead.
40 CFR 63 Subpart UUU	NESHAP: Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units		X	X				X	The Facility is not a petroleum refinery.
40 CFR 63 Subpart VVV	NESHAP: Publicly Owned Treatment Works		X	X				X	The Facility is not a publicly owned treatment works.
40 CFR 63 Subpart XXX	NESHAP: Ferroalloys Production: Ferromanganese and Silicomanganese		X	X				X	The Facility does not produce ferroalloys.
40 CFR 63 Subpart AAAA	NESHAP: Municipal Solid Waste Landfills		X					X	The Facility is not a municipal solid waste landfill.
40 CFR 63 Subpart CCCC	NESHAP: Manufacturing of Nutritional Yeast		X					X	The Facility does not manufacture nutritional yeast.
40 CFR 63 Subpart EEEEE	NESHAP: Organic Liquids Distribution		X					X	The Facility does distribute organic liquids.

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Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 63 Subpart FFFF	NESHAP: Miscellaneous Organic Chemical Manufacturing		X					X	The Facility does not manufacture organic chemicals.
40 CFR 63 Subpart GGGG	NESHAP: Solvent Extraction for Vegetable Oil Production		X					X	The Facility does not produce vegetable oil.
40 CFR 63 Subpart HHHH	NESHAP: Wet-Formed Fiberglass Mat Production		X					X	The Facility does not produce mats.
40 CFR 63 Subpart JJJJ	NESHAP: Paper and Other Web Coating		X					X	The Facility does not perform web coating.
40 CFR 63 Subpart KKKK	NESHAP: Surface Coating of Metal Cans		X					X	The Facility does not coat metal cans.
40 CFR 63 Subpart MMMM	NESHAP: Surface Coating of Miscellaneous Metal Parts and Production		X					X	The Facility does not coat metal parts.
40 CFR 63 Subpart NNNN	NESHAP: Surface Coating of Large Appliances		X					X	The Facility does not coat large appliances.
40 CFR 63 Subpart OOOO	NESHAP: Printing, Coating, and Dyeing of Fabrics and Other Textiles		X					X	The Facility does not print, coat, or dye textiles.
40 CFR 63 Subpart PPPPP	NESHAP: Surface Coating of Plastic Parts and Products	X						X	The Facility does not coat plastic parts.
40 CFR 63 Subpart QQQQ	NESHAP: Surface Coating of Wood Building Products		X					X	The Facility does not coat wood building products.
40 CFR 63 Subpart RRRR	NESHAP: Surface Coating of Metal Furniture		X					X	The Facility does not coat metal furniture.
40 CFR 63 Subpart SSSS	NESHAP: Surface Coating of Metal Coil		X					X	The Facility does not coat metal coils.
40 CFR 63 Subpart TTTT	NESHAP: Leather Finishing Operations		X					X	The Facility does not perform leather finishing operations.

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Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 63 Subpart UUUU	NESHAP: Cellulose Products Manufacturing		X					X	The Facility does not produce Cellulose products.
40 CFR 63 Subpart VVVV	NESHAP: Boat Manufacturing		X					X	The Facility does not manufacture boats.
40 CFR 63 Subpart WWWW	NESHAP: Reinforced Plastic Composites Production		X					X	The Facility does not produce reinforced plastic composites.
40 CFR 63 Subpart XXXX	NESHAP: Rubber Tire Manufacturing		X					X	The Facility does not manufacture rubber tires.
40 CFR 63 Subpart YYYY	NESHAP: Stationary Combustion Turbines	X						X	The Facility does not operate stationary combustion turbines.
40 CFR 63 Subpart ZZZZ	NESHAP: Reciprocating Internal Combustion Engines	X				Applies to stationary (permanent) units that are greater than 500 HP and operate more than 50 hrs per year.		X	The facility does not operate stationary units that are greater than 500 HP
40 CFR 63 Subpart AAAAA	NESHAP: Lime Manufacturing Plants		X					X	The Facility is not a lime manufacturing plant.
40 CFR 63 Subpart BBBBB	NESHAP: Semiconductor Manufacturing		X					X	The Facility does not manufacture semiconductors.
40 CFR 63 Subpart CCCCC	NESHAP: Coke Ovens: Pushing, Quenching, and Battery Stacks		X					X	The Facility does not have coke ovens.
40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	X	X			This subpart applies to new, reconstructed, or exiting industrial, commercial, and institutional boilers and process heaters located at a major source of HAPs.	X		This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation within three (3) years from publication in the Federal Register.
40 CFR 63 Subpart EEEEE	NESHAP: Iron and Steel Foundries		X					X	The Facility is not an iron or steel foundry.

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Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 63 Subpart FFFFF	NESHAP: Integrated Iron and Steel Manufacturing Facilities		X					X	The Facility does not manufacture iron or steel.
40 CFR 63 Subpart GGGGG	NESHAP: Site Remediation		X					X	The Facility is not conducting site remediation.
40 CFR 63 Subpart HHHHH	NESHAP: Miscellaneous Coating Manufacturing		X					X	The Facility does not perform miscellaneous coating manufacturing.
40 CFR 63 Subpart IIIII	NESHAP: Mercury Emissions from Mercury Cell Chlor-Alkali Plants		X					X	The Facility is not a mercury cell plant.
40 CFR 63 Subpart JJJJJ	NESHAP: Brick and Structural Clay Products Manufacturing		X					X	The Facility does not manufacture brick or clay products.
40 CFR 63 Subpart KKKKK	NESHAP: Clay Ceramics Manufacturing		X					X	The Facility does not manufacture clay ceramics.
40 CFR 63 Subpart LLLLL	NESHAP: Asphalt Processing and Asphalt Roofing Manufacturing		X					X	The Facility does not manufacture asphalt.
40 CFR 63 Subpart MMMMM	NESHAP: Flexible Polyurethane Foam Fabrication Operations		X					X	The Facility does not work with polyurethane foam.
40 CFR 63 Subpart NNNNN	NESHAP: Hydrochloric Acid Production		X					X	The Facility does not produce hydrochloric acid.
40 CFR 63 Subpart PPPPP	NESHAP: Engine Test Cells/Stands		X					X	The Facility does not operate an engine test cell or stand.
40 CFR 63 Subpart QQQQQ	NESHAP: Friction Materials Manufacturing Facilities		X					X	The Facility does not manufacture friction materials.
40 CFR 63 Subpart RRRRR	NESHAP: Taconite Iron Ore Processing		X					X	The Facility does not process iron ore.
40 CFR 63 Subpart SSSSS	NESHAP: Refractory Products Manufacturing		X					X	The Facility does not manufacture refractory products.

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Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 63 Subpart TTTTT	NESHAP: Primary Magnesium Refining		X					X	The Facility does not refine magnesium.
40 CFR 64	Compliance Assurance Monitoring (CAM)		X			Applies to all units at major sources requiring Part 70 or 71 permits if all of the following apply: the unit is subject to an emission limit or standard for the applicable regulated pollutant; the unit uses a control device to achieve compliance with the limit or standard; and the unit's precontrolled emissions of the applicable regulated air pollutant would classify the unit as a major source. Not applicable to limits or standards proposed after November 15, 1990 pursuant to section 111 or 112 of the Clean Air Act; to stratospheric ozone protection requirements; to acid rain program requirements; to emission limitation or standards applicable solely under an emissions trading program; to emission caps; and backup utility power generation units.	X		Boilers 1 - 5 have precontrolled PM emissions greater than the major source threshold and have a control device that is used to achieve compliance with a standard.
40 CFR 68 Subpart B	Risk Management Program Requirements		X	X		Requires owner or operator of stationary sources at which a regulated substance is present in more than a threshold quantity to prepare and implement a risk management plan. Facilities that manage unlisted extremely hazardous substance or less than a threshold qty of a listed substance must also comply with these requirements but in a less formal way.		X	The Facility does not maintain regulated substances above threshold quantities.

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Date Printed:
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Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 68 Subpart C	Chemical Accident Prevention Provisions Regulated Substances for Accidental Release Prevention		X			Provides a list of regulated substances and their threshold quantities.		X	The Facility does not maintain regulated substances above threshold quantities
40 CFR 70.1	Operating Permit State Programs		X	X		Requires operating permits for all sources regulated under the CAA and imposes a fee system to pay for permitting costs. A state program must provide for permitting of at least major sources, affected source, sources subject to standards under Section 111 and 112 of the Act, and sources in a source category designed by the Administrator pursuant to this section.	X		The Facility is a major source and must comply.
40 CRR 80.22	Fuel Dispensing Regulations	X				Requires evey retailer and wholesale purchaser-consumer handling over 10,000 gallons (37,854 liters) of fuel per month to limit each nozzle from which gasoline or methanol is introduced into motor vehicles to a maximum fuel flow rate not to exceed 10 gallons per minute (37.9 liters per minute). The flow rate may be controlled through any means in the pump/dispenser system, provided the nozzle flow rate does not exceed 10 gallons per minute (37.9 liters per minute).	X		Nozzle fuel flow rate is less than 10 gallons per minute.
40 CFR 72 & 77 Subpart A	Acid Rain Program	X						X	Boilers 1 - 5 do not serve a generator that has a nameplate capacity greater than 25 MWe.
40 CFR 72 & 73 Subpart C	Acid Rain Program: Permits and Allowance System.	X						X	Boilers 1 - 5 do not serve a generator that has a nameplate capacity greater than 25 MWe.

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Facility Name: Cinergy Celriver Plant

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Citation	Description	Proposed	Enforcement: Federal	Enforcement: State	Enforcement: Local	Applicability	Applicable: Yes	Applicable: No	Comments
40 CFR 82 Subpart A	Stratospheric Ozone Protection		X			This regulation imposes limits on the production and consumption of certain ozone-depleting substances, according to specified schedules.	X		The Facility uses CFC's and HCFC's.
40 CFR 82 Subpart A	Stratospheric Ozone Protection: Methyl bromide and HBFC production and consumption allowances		X					X	No methyl bromide and HBFC used at the Facility.
40 CFR 82 Subpart A	Stratospheric Ozone Protection: Production and Consumption Controls		X					X	The Facility does not produce or import class I or class II ODSs.
40 CFR 82 Subpart B	Servicing of Motor Vehicles Air Conditioners		X					X	The Facility does not service motor vehicles.
40 CFR 82 Subpart B	Stratospheric Ozone Protection Program: Safe Disposal of Class I and II Substances		X				X		Applies to air conditioning and refrigeration equipment when serviced.
40 CFR 82 (82.30-82.42) Subpart B	Protection of Stratospheric Ozone; Motor Vehicle Servicing and Sale of Small Containers of CFCs		X					X	The Facility does not perform for profit air conditioning services.
	Protection of Stratospheric Ozone; Ban on Nonessential CFC Containing Products		X					X	The Facility does not distribute nonessential CFC-containing product.
40 CFR 82 Subpart C	Protection of Stratospheric Ozone: Labeling		X					X	The Facility does not distribute ozone-depleting substances.
40 CFR 82 Subpart E			X						

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40 CFR 82 Subpart F	Protection of Stratospheric Ozone: Recycling and emission Reduction		X			Facilities which use equipment fitting into one of the major categories (see comments). Also, facilities that use refrigerants which are classified as class I or class II substances must comply. Also includes any person servicing, maintaining, repairing, or disposing of appliances. Categories include, household refrigeration, and other refrigerated appliance, residential A/C, transport refrigeration, cold storage warehouse, commercial comfort A/C, industrial process refrigeration, motor vehicle A/C, comfort cooling in other vehicles.	X		The Facility must comply when servicing air conditioning and refrigeration units.
40 CFR 82 Subpart H	Halon Emissions Reduction		X			EPA has issued regulations to reduce the emissions of halon.	X		The Facility must comply when testing, maintaining, servicing, repairing, or disposing of halon-containing equipment..

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Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.1 Sec. II	Permit Requirements	See Subsections II-A, II-B, II-C.	X		See Subsection explanations II-A, II-B, II-C.
.1 Sec. II - A	Construction Permit Requirements	A construction permit must be obtained to construct, alter or add to a source of air contaminants, or install control device.	X		Facility may periodically add or modify emissions sources.
.1 Sec. II - B	State Operating Permit Requirements	Operating permit must be requested 15 days prior to commencing operation of new/altered equipment. Renewal is based on compliance history.	X		Facility may periodically brings new emissions sources online.
.1 Sec. II - C	Standard Operating Conditions	Sources report malfunctions within 24 hrs. if emissions are over 1 hr. and over permit allowances.	X		The Facility will make notification when required.
.1 Sec. III	Emissions Inventory	Emissions inventory for all major plants must be submitted biennially by 3/31 of even numbered years for the previous years emissions.	X		Facility is a major plant and is required submit an emission inventory.
.1 Sec. IV	Source Test Tests	Site-Specific Test Plan must be submitted and approved by DHEC prior to conducting a source test.	X		The Facility is required to submit a site-specific test plan prior to conducting source test required by DHEC.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

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Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.1 Sec. V	Credible Evidence	Clarifies the statutory authority whereby non-reference test data and various kinds of information may be used to demonstrate compliance or noncompliance with emission standards.	X		
.2	Prohibition of Open Burning	Open burning may be conducted in certain situations if no undesirable levels of pollutants are created. Advance notification to DHEC is required if the facility is burning anything other than (1) construction wastes, or (2) for the purpose of land clearing or right-of-way maintenance.	X		Facility periodically performs open burning. Fire training school has a letter of approval from DHEC so advance notification is not required.
.3 Sec. I	Air Pollution Episodes - Source Curtailment Criteria	During air pollution episodes sources of pollutants may be required to reduce or eliminate emissions for the duration of the episode. Tables 1, 2, and 3 of 62.3 detail emission reduction actions during watch, alert, and emergency levels of episodes.	X		Episodes are declared for entire regions and are not specifically tied to the facility.
.3 Sec. II	Emission Reduction Requirements-Plants Emitting 100 TPY or More	Operators of plants emitting 100 tpy or more of a single air pollutant and located in a nonattainment county or a county w/a nonattainment area must submit plans for meeting required reductions for which the county is in nonattainment.		X	Facility is located in an attainment area for all criteria pollutants. On 15 April 2004, the EPA will designate areas as attainment/nonattainment for 8-hr ozone standard. York County may be included in the Charlotte-Gastonia-Rock Hill 8-hr ozone nonattainment area.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

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Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.4	Hazardous Air Pollution Conditions.	Owner or operator of any source shall take steps necessary to minimize releases of air contaminants which produce hazardous conditions and traffic hazards. If a release occurs, the owner shall notify the department, the South Carolina Disaster Preparedness Agency, and law enforcement officials in the event the releases of material cause hazardous levels.	X		Facility emits air pollutants which could lead to hazardous air pollution conditions.
.5 Std. No. 1	Emissions from Fuel Burning Operations	See Subsections I-A, I-B, II-A, II-B.	X		Facility conducts fuel burning operations.
.5 Std. No. 1, Sec I-A	Visible Emissions Existing Sources	Opacity: 40% for existing sources constructed prior to 2/11/71, may be exceeded for soot blowing for 6 minutes/hr or 24 minutes/24 hrs period but not greater than 60%.	X		Applies to Boilers Nos. 1 - 5 because these units may produce particulate matter emissions.
.5 Std. No. 1, Sec I-B	Visible Emissions New Sources	Opacity: 20% for sources constructed on or after 2/11/71, may be exceeded for soot blowing for 6 minutes/hr or 24 minutes/24 hrs period but not greater than 60%.		X	
.5 Std. No. 1, Sec I-D	Visible Methods Emissions Test	EPA Reference Method 9 40 CFR 60 Appendix A, as revised July 1, 1986, alt. Methods acceptable is approved in advance by EPA and SCDHEC.	X		Applies to Boilers Nos. 1 - 5 because these units produce particulate matter emissions.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

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Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 1, Sec II-A	Particulate Matter Emissions	See Figure 1 p 5/1-2 for particulate emission limits for heat input.	X		Applies Boilers Nos. 1 - 5 because these units produce particulate matter emissions.
.5 Std. No. 1, Sec II-B	Special Provisions	PM: 0.8 lb/MM Btu per heat input for fuel burning operations of <10 MM Btu/hr heat input and constructed prior to 2/11/71.		X	No facility boilers meet applicability criteria.
.5 Std. No. 1, Sec. III	Sulfur Dioxide Emissions	See Subsections A, B, C, D.	X		See Subsection explanations A, B, C, D.
.5 Std. No. 1, Sec. III-A	General	Max. allowable discharge of SO2 from fuel burning operation shall comply classifications outlined in 62.5 Std. 1 Sec. III-B	X		Facility boilers meet applicability criteria.
.5 Std. No. 1 Sec. III-B	Classifications	Maximum allowable discharge of SO2 from fuel burning operations is determined by county classification. Classification is determined by atmospheric diffusion models. Class I- Charleston County; Class II-Aiken & Anderson County; Class III- all others.	X		Facility is located in York County and is considered to be in a Class III area.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

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Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 1, Sec. III-C	Allowable Discharges	Class I: up to and including 10 MM Btu/hr - 3.5 lb SO2/MM Btu input; > 10 MM Btu/hr - 2.3 lb/SO2/MM Btu input Class II: up to 1000 MM Btu/hr - 3.5 lb SO2/MM Btu input; 1000 Btu/hr and greater - 2.31/SO2/MM Btu input; Class III: all sizes - 3.5 lb SO2/MM Btu input.	X		The Class III limit is 3.5 lb SO2/MMBtu for all fuel burning sources.
.5 Std No. 1, Sec. III-D	Special Provisions	Higher sulfur dioxide limits may be achieved if the source can demonstrate that ambient air standards will not be contravened.		X	
.5 Std. No. 1, Sec. IV	Opacity Monitoring Requirements	See Subsections A, B, C, D, E, F.		X	The Facility is not required to have continuous opacity monitors.
.5 Std. No. 1 Sec. IV-A	Applicable Sources	Fossil fuel boilers >250 MM Btu/hr heat input shall install CEMs for opacity measurement by 6/14/78.		X	The Facility is not required to have continuous opacity monitors since all boiler are less than 250 MMbtu/hr heat input.
.5 Std. No. 1 Sec. IV-B	Continuous Opacity Monitor Reporting Requirements	Must submit written continuous opacity monitoring report quarterly postmarked by 30th day following the end of each calendar quarter. Facilities must maintain all information submitted in the quarterly reports for five years from the date of submission.		X	The Facility has no continuous opacity monitors.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

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Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 1 Sec. IV-C	Exemption from Reporting Requirements	Temporary exempt from reporting during periods of monitoring equipment malfunction.		X	The Facility has no continuous opacity monitors.
.5 Std. No. 1 Sec. IV-D	Equipment Performance Specifications for Continuous Opacity Monitoring Systems	Shall conform with 40CFR60 Appendix B, Performance Specification 1 as revised July 1, 1986 and shall complete a minimum of one cycle of operation for each successive 100-sec period, have an instrument span of 80% opacity.		X	The Facility has no continuous opacity monitors.
.5 Std. No. 1 Sec. IV-E	Monitor Location	When two boilers of similar design discharge through a common stack, the monitor shall be located on the common stack. When two dissimilar boilers discharge through a common stack, or one boiler has several discharges, the operator shall apply for an alternate monitoring locations.		X	All fuel burning source discharge through dedicated stacks. The Facility has no CEMS.
.5 Std. No. 1 Sec. IV-F	Exemption from Monitoring Requirements	Exemptions from maybe requested in writing if boiler operates <30 days/yr, physical plant limitations, or extreme economic burden.		X	The Facility has no continuous opacity monitors.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

State Regulations

Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 1, Sec. V	Exemptions	Residence of four families or less and ocean-going vessels actually engaged in physical process of national or international trade or defense.		X	Facility is not a residence or an ocean-going vessel.
.5 Std. No. 1, Sec. VI	Periodic Testing	Source tests are required every 2 yrs. or as required by permit conditions for the following sources: oil-fired boilers >250 MM Btu/hr rated input; Coal-fired boilers >50 MM Btu/hr rated input; Woodwaste or combination woodwaste boilers > 20 MM Btu/hr rated input.	X		Boilers Nos. 1 - 5 must comply with this regulation.
.5 Std. No. 2	Ambient Air Quality Standards	Applies to geographic areas in SC.		X	
.5 Std. No. 3	Waste Combustion and Reduction	Applies to any source which burns any waste other than virgin fuel.		X	Facility does not burn any fuel other than virgin fuel.
.5 Std. No. 3.1	Medical Waste Incineration	Applies to any incinerator which burns medical waste.		X	Facility does not perform this activity.
.5 Std. No. 4, Sec. I	General	The method which is approved by the Department for determining compliance with opacity limitations is EPA Reference Method 9	X		
.5 Std. No. 4, Sec. II	Sulfuric Acid Manufacturing	Applies to facilities which manufacture sulfuric acid.		X	Facility does not perform this activity.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

State Regulations

Applicability / Non Applicability Analysis for Permit Shield

Date Printed:

Completed By:

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 4, Sec. III	Kraft Pulp and Paper Manufacturing	Applies to facilities which produce pulp and paper using the Kraft process.		X	Facility does not perform this activity.
.5 Std. No. 4, Sec. IV	Portland Cement Manufacturing	Applies to facilities which manufacture portland cement.		X	Facility does not perform this activity.
.5 Std. No. 4, Sec. V	Cotton Gins	Applies to facilities which gin cotton.		X	Facility does not perform this activity.
.5 Std. No. 4, Sec. VI	Hot Mix Asphalt Manufacturing	Applies to facilities which manufacture hot mix asphalt.		X	Facility does not perform this activity.
.5 Std. No. 4, Sec. VII	Metal Refining	Applies to facilities which perform metals refining operations.		X	Facility does not perform this activity.
.5 Std. No. 4, Sec. VIII	Emission from Other Manufacturing Particulate Matter	Particulate matter emissions not covered by any other regulations shall have allowable emissions per specified formulas.	X		Applies to particulate emissions from this Facility that are not covered by any other regulation.
.5 Std. No. 4, Sec. IX	Visible Emissions (Where Not Specified Elsewhere)	40% Opacity for construction or modification on or before 12/31/85; 20% for construction after 12/31/85.	X		Applies to visible emissions (Where Not Specified Elsewhere).

* For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62

State Regulations

Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 4, Sec. X	Emissions from Non-Enclosed Operation	A minimum of particulate shall become airborne. Ambient air quality stds. Shall not be exceeded at or beyond the property line. Dust control shall be maintained for all roads on the facility.	X		Construction activities and other miscellaneous operations at facility are covered.
.5 Std. No. 4, Sec. XI	Total Reduced Sulfur Emissions of Kraft Pulp Mills	Applies to facilities which perform paper milling operations using the Kraft process.		X	Facility does not perform this activity.
.5 Std. No. 4, Sec. XII	Periodic Testing	Scheduled tests for particulate matter and sulfur dioxide are required of certain listed sources, and could be required of any sources deemed necessary. Scheduled tests for total reduced sulfur are required for sources subject to Section XI.		X	Facility does not perform any of the listed activities. To date, none of the facility's activities have been deemed necessary for these tests. Facility is not required to comply with Section XII.
.5 Std. No. 5, Sec. I, Part B	Volatile Organic Compound Emissions >100 tpy	Applies to existing processes statewide except for Anderson, Bamberg, Barnwell, Chesterfield, Darlington, and Hampton counties.	X		General provisions apply to facility.
.5 Std. No. 5, Sec. I, Part C	Alternatives & Exceptions to control requirements	If a source is normally subject to regulation under 62.5, Standard 5, Section II demonstrates that compliance with Sec. II is not feasible, then the source may apply for an alternative emission standard or exemption.		X	Case-by-case exemptions and standards.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

State Regulations

Applicability / Non Applicability Analysis for Permit Shield

Date Printed:

Completed By:

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 5, Sec. I, Part D	Compliance Schedules	See Schedules 1, 2, or 3.		X	Applies to individual parts of Section II of 62.5, Standard 5.
.5 Std. No. 5, Sec. I, Part E	VOC Compliance testing	Sources required to comply with Sec. II must conduct tests unless compliance status can be monitored under Part F of Standard No. 5.		X	Facility does not perform any activity that requires VOC compliance testing.
.5 Std. No. 5, Sec. I, Part F	VOC: Recordkeeping, Reporting, Monitoring	Owners or operators of VOC sources as defined in 62.5, Standard 5, Section II must retain daily records if they are located in an ozone nonattainment area or if they are a VOC noncompliance source; otherwise, the facility must retain monthly VOC emission records; records for both categories must be maintained for 2 years.		X	Facility is not required to maintain a VOC compliance schedule, monitoring records, or usage records.
.5 Std. No. 5, Sec. II - A	Surface Coating of Cans	Applies to facilities which perform surface coating operations on beverage and/or food cans.		X	Facility does not perform this activity.
.5 Std. No. 5, Sec. II - B	Surface Coating of Coils	Applies to facilities which perform surface coating operations on coils.		X	Facility does not perform this activity.
.5 Std. No. 5, Sec. II - C	Surface Coating of Paper, Vinyl, and Fabric	Applies to facilities which perform surface coating operations on paper, vinyl, or fabric.		X	Facility does not perform this activity.

* For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62

State Regulations

Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 5, Sec. II - D	Surface Coating of Metal Furniture and Large Appliances	Applies to facilities which perform surface coating operations on metal furniture and large appliances.		X	Facility does not perform this activity.
.5 Std. No. 5, Sec. II - E	Surface Coating of Magnet Wire	Applies to facilities which perform surface coating operations on magnet wire.		X	Facility does not perform this activity.
.5 Std. No. 5, Sec. II - F	Surface Coating of Miscellaneous Metal Part and Products	Applies to facilities which perform surface coating operations on metal parts and products.		X	Facility does not perform this activity.
.5 Std. No. 5, Sec. II - G	Surface Coating of Flat Wood Paneling	Applies to facilities which perform surface operations on flat wood paneling.		X	Facility does not perform this activity.
.5 Std. No. 5, Sec. II - H	Graphic Arts - Rotogravure and Flexography	Applies to all packaging rotogravure, publication rotogravure, and flexographic printing operations.		X	Facility does not perform this activity.
.5 Std. No. 5, Sec. II - N	Solvent Metal Cleaning	Applies to cold cleaning, open top vapor degreasing and conveyorized degreasing if located in a non-designated county and uses > 100 tons per yr of solvents plantwide. Open top degreases w/an open area <1 sq. meter (10.8 ft2) and conveyorized degreasers with an air/vapor interface <2 m2 (21.6 ft2) are exempt.		X	Facility does not use greater than 100 tons per year of solvent.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

State Regulations

Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 5, Sec. II - O	Petroleum Liquid Storage in Fixed Roof Tanks	Applies to all fixed roof storage vessels with capacities of 40,000 gallons or more which store volatile petroleum liquids with a vapor pressure >1.52 psia.		X	The Facility stores No. 2 fuel in fixed roof tanks with volumes greater 40,000 gallons, but vapor pressure is <1.52 psia.
.5 Std. No. 5, Sec. II - P	Petroleum Liquid Storage in External Floating Roof Tanks	Applies to petroleum storage vessels w/external floating roofs and capacities >39,000 gallons		X	Facility does not use floating roof tanks for the storage of petroleum liquids.
.5 Std. No. 5, Sec. II - Q	Manufacture of Synthesized Pharmaceutical Products	Applies to facilities which manufacture synthesized pharmaceuticals.		X	Facility does not perform this activity.
.5 Std. No. 5, Sec. II - R	Manufacture of Pneumatic Rubber Tires	Applies to facilities which manufacture pneumatic rubber tires.		X	Facility does not perform this activity.
.5 Std. No. 5, Sec. II - T	Bulk Gasoline Terminals and Vapor Collection Systems	Applies to bulk gasoline transfer terminals and their associated vapor collection systems.		X	Facility does not perform this activity.
.5 Std. No. 5.1, Sec. II	Lowest Achievable Emission Rate Applicable to VOC Emission Increases Greater than 100 TPY	Applies to new, modified, or altered sources which increase emissions of VOCs. LAER is applied to new construction or modifications when net VOC emissions increase exceeds 100 tpy.		X	Facility has not been modified or altered.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

State Regulations

Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 5.1, Sec. III	LAER: VOC compliance testing	Test every 4 yrs. for sources using solvent recovery emission control devices or flame incineration; every 2 yrs. for catalytic incineration/destruction.		X	Not applicable to this Facility. Facility is not required to conduct VOC compliance testing.
.5 Std. No. 5.1, Sec. IV	LAER: Recordkeeping, reporting, monitoring	Owners or operators of any VOC emissions source must maintain records of all compliance testing and monitoring under Sec. II for 2 years.		X	Facility is not required to conduct VOC compliance testing or monitoring.
.5 Std. No. 6	Alternative Emission Limitation Option ("Bubble")	Allows existing plants to be excused from installing pollution controls at one or more emission sources in exchange for increases in control at other emission sources.		X	Facility does not plan to implement "bubble" option.
.5 Std. No. 6, Sec. II	Conditions for "bubble" approval	Facility initiates a proposal that ensures NAAQS attainment and maintenance.		X	Facility does not plan to implement "bubble" option.
.5 Std. No. 6, Sec. III	Public participation procedures	All "bubble" proposals are subject to public notification.		X	Facility does not plan to implement "bubble" option.
.5 Std. No. 6, Sec. IV	Additional Conditions and Procedural Requirements for Approval	"Bubble" proposals must meet any additional conditions as specified in this section.		X	Facility does not plan to implement "bubble" option.
.5 Std. No. 7	Prevention of Significant Deterioration	PSD applicability analysis must be conducted for construction of a new or modification of a major existing source, if emissions result in a significant net increase.	X		PSD applicability analysis must be conducted for new construction or modification of an existing source.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

State Regulations

Applicability / Non Applicability Analysis for Permit Shield

Date Printed:

Completed By:

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.5 Std. No. 7 - (c)	PSD Ambient Air Increments	Limits in pollution concentration over the baseline concentration for areas designated as Class I, II, or III. See regulation for list if ambient air increments/maximum allowable increases.	X		Facility is located in York County which is designated as a Class II area.
.5 Std. No. 8, Sec. II	Toxic Air Pollutant Impact Evaluation	Ambient air concentrations of toxic air pollutants are limited by maximum allowable concentrations listed in the regulation for 257 air toxics. Air dispersion modeling is required to determine ambient air concentrations at or beyond the plant property line using 24-hr averaging.	X		Facility emits toxic air pollutants found in regulatory tables and is subject to this rule.
.5 Std. No. 8, Section III	Toxic Air Pollutant Control Requirements	If modeling indicates that max. allowable concentrations are exceeded, emissions must be reduced by installing controls, altering the process, or limiting production.		X	The Facility's emissions have been demonstrated not to exceed the thresholds in Standard No. 8.
.5 Std. No. 8, Section IV	Toxic Air Pollutants Source Test Requirements	Tests on sources of toxic air pollutants shall be conducted as required by DHEC to verify emission rate.	X		No source testing has been required by DHEC.
.5 Std. No. 8, Section V	Toxic Air Pollutants Recordkeeping	Copies of all records and reports required shall be kept for 3 years and available for inspection.	X		Facility must maintain records as required.
.6 Sec. I	Control of Fugitive Particulate Matter in Non-Attainment Areas	Fugitive particulate matter in non-attainment areas must be controlled using necessary precautions and guidelines outlined in this section.		X	Facility is not in a non-attainment area.

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

State Regulations

Applicability / Non Applicability Analysis for Permit Shield

Facility Name: Cinergy Celriver Plant

Facility Location: Rock Hill, SC

County: York

Date Printed:

Completed By:

Citation (SCDHEC APCRS 62)	Title	Requirement / Standard	Applicable Yes	Applicable No	Explanation
.6 Sec. II	Control of Fugitive Particulate Matter in Problem Areas	Fugitive particulate matter in problem areas (as defined in the section) are to reasonably control emissions using guidelines in this section.		X	Facility is not in a problem area.
.6 Sec. III	Control of Fugitive Particulate Matter	Fugitive emissions shall be controlled to prevent from creating undesirable levels of pollution.	X		Facility emits fugitive particulate matter.
.7	Good Engineered Practice Stack Height Requirements	Applies to all stacks excluding flares which were not in existence before December 31, 1970 and to stack heights or dispersion techniques at sources which were reconstructed or under major modification after December 31, 1970.	X		Facility has stacks subject to GEP standards.
.70	Title V Operation Permit Program	Applies to major sources of regulated air pollutants.	X		Facility is required to obtain a Title V operating permit because it is a major source.
.70.1	Program Overview	Provides overview for program.	X		Facility is required to obtain a Title V operating permit because it is a major source.
.70.2	Definitions		X		Facility is required to obtain a Title V operating permit because it is a major source.
.70.3	Applicability	Applies to major sources of regulated air pollutants.	X		Facility is required to obtain a Title V operating permit because it is a major source.
.70.4	State program submittals and transition.	RESERVED		X	RESERVED

*** For more detailed requirements refer to SCDHEC Regulation 61-62, 5.62**

South Carolina
DHEC
Department of Health and Environmental Control

BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION
****INCOMPLETE APPLICATIONS WILL BE RETURNED FOR ADDITIONAL INFORMATION****

Section A: Facility Profile

1. Facility Name: Cinergy Solutions Rock Hill, LLC.

2. Address: Interstate 2850 Cherry Road

3. City: Rock Hill	4. State: SC	5. Zip Code: 27930	6. Telephone: 540-809-8027	7. Ext.:

8. Owner Name: Cinergy Solutions Rock Hill, LLC.

9. Address: 2850 Cherry Road

10. City: Rock Hill	11. State: SC	12. Zip Code: 27930	13. Telephone: 540-809-8027	14. Ext.:

15. Billing Name: Cinergy Solutions Rock Hill, LLC.

16. Address: 2850 Cherry Road

17. City: Rock Hill	18. State: SC	19. Zip Code: 27930	20. Telephone: 540-809-8027	21. Ext.:

Application Certification

I certify, to the best of my knowledge and belief, that no undesirable levels of air pollutants will be created and no applicable standards and/or regulations will be contravened or violated. I certify that any application form, report, or compliance certification submitted in this permit application is true, accurate, and complete based on information and belief formed after reasonable inquiry. I understand that any statements and/or descriptions which are found to be incorrect may result in the immediate revocation of any permit issued for this application.

22. Responsible Facility Official: Robert Cowley	**23. Title/Position:** Health Safety and Environmental Engineer
Signature:	**24. Date:**

Note: If the preparer of this application is requesting a copy of the final permit, complete 25 - 30.

25. Name (Individual or Firm): CH2M HILL

26. Mailing Address: 4824 Parkway Plaza Boulevard

27. City: Charlotte	28. State: NC	29. Zip Code : 28217-1968	30. Telephone No.: 704-329-0073

31. Permit Type (Specify One): " **Permit Renewal** "

32a. State Air Permit No.: 2440-0171	32b. EPA Facility Identification No. Applied For:
33. Physical Location of Facility: 2850 Cherry Road	34. City: Rock Hill / 35. County: York
36. Environmental Contact: Robert Cowley	37. Telephone No.: 540-809-8027 / 38. FAX No. 803-325-6451
39. No. of Employees 36: / 40. Total Land Area: 8-10 acres	41. Latitude: 34°59'3.5" N / 42. Longitude: 80°59'14.2" W
43. UTM Zone: 17 / 44. UTM Vertical: 500962	45. UTM Horizontal: 3871306 / 46. Method: USGS Topographic Map
47. Reference: U.S. Geological Survey / 48. Accuracy: Not Available	49. Is the facility portable in nature? " No

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section A : Facility Profile (Continued)

50. Major Raw Materials	Quantity[1]	51. Major Products	SIC Code	Production
Coal	95,064 lb/hour	Steam	4939	950,000 lb/hour

Note: [1]Quantity of Coal inludes the boiler efficiency of approximately 81%

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section B : Summary of Application Contents		Yes	No
1.	Does the application include a table of Contents?	X	
2.	Does the application include a list of all items for which a permit is being sought?	X	
3a.	Does the application include a plot or map?	X	
3b.	Does the application include a detailed drawing of the layout of the source showing exhaust points and dimensions of each structure, including height, width, and length?		X
4a.	Does the application include a source-wide process flow diagram showing the relationship between each intermediate process at the source?		X
4b.	Does the application include a process diagram for each intermediate or individual process at the source?	X	
4c.	Does the application include a roof plan for each intermediate or individual process at the source?		X
5a.	Does the application include a detailed source-wide process description?		X
5b.	Does the application include a detailed process description for each intermediate or individual process at the source?	X	
6a.	Does the application include completed appropriate forms for all individual emission units and air pollution control equipment, listing all applicable requirements and proposed exemptions from otherwise applicable requirements?	X	
6b.	Does the application address all reasonably anticipated operating scenarios?	X	
7.	Does the application include a completed fugitive emission form? *Note: Data for the plant's fugitive emission sources are provided in the appropriate sections*		X
8.	Does the application include detailed calculations showing: (1) Uncontrolled emissions; (2) Control equipment efficiency; (3) Actual emissions in pounds per hour, tons per year and other applicable units, e. g., pounds per day, pounds per month, ppm or grains per cubic foot, if necessary, etc.; and (4) allowable emissions, in the same terms as above?	X	
9.	Does the application include a completed compliance plan/schedule of compliance form?		X
10.	Does the application include a completed compliance certification form?		X
11.	Does the application include a completed compliance plan/schedule of compliance addendum for each non-complying emission units for which issuance of a Part 70 permit is requested?		X
12a.	Does the application contain confidential information?		X
12b.	If yes, has such information been properly marked and claimed, and copies of the application suitable for public inspection been submitted, in accordance with applicable regulations?	X	
12c.	Is a copy of the application being sent directly to U.S. EPA Region IV?	X	
13.	Does the application include an early reduction demonstration for hazardous air pollutants pursuant to section 112(i)(5) of the Clean Air Act Amendments of 1990? (if applicable)		X
14.	Does the application include a proposed determination of maximum achievable control technology (MACT) for hazardous air pollutants pursuant to sections 112(g) and 112(j) of the Clean Air Act Amendments of 1990, if applicable?		X
16.	Does the applicant request to utilize the operational flexibility provisions and include the information required for such use? (if applicable)	X	
17.	Does the application include a request for a permit shield?	X	
18.	Does the application include a completed listing of insignificant emission units, if applicable?	X	

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section B : Summary of Application Contents (Continued)

19a. Why is the applicant applying for a Part 70 permit (Check all that apply)?

.. **The "potential to emit" of the source is 100 tons/year or more for an individual pollutant.**

		YES	NO
19b.	Are all actual emissions of the source below the applicability levels for Part 70 permit?		X
19c.	Does the application propose limitations that will constrain the operation of the source such that potential emissions of the source will fall below applicability levels for Part 70 permits?		X
19d.	Does the applicant hereby request a federally enforceable state operating permit constraining operation of the source such that potential emissions would fall below applicability levels and thereby exclude the source from requirements to have a Part 70 permit?		X
23.	Does the application identify all applicable requirements including section 111 (NSPS) and/or Section 112 (NESHAP) of the Clean Air Act?	X	

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section C: Emission Equipment Inventory

1. Equipment	2. Equipment ID Number	3. Purpose	4. Design Capacity	5. Install Date	6. Modify Date	7. In Service? (Y/N)	8.Exempt? (Y/N)
POWER HOUSE	--	Produces steam for the Plant.	0.95 MM lb/hr	--	--	--	--
COAL SYSTEM	--	--	--	--	--	--	--
COAL PILE STORAGE AND HANDLING	3PHCH001S1	--	45,000 tons	1948	--	Y	N
BOILERS	--	--	--	--	--	--	--
COAL COMBUSTION BOILER #1	3PHBOL01S1	--	176.4 MM BTU/hr	1948	--	Y	N
COAL COMBUSTION BOILER #2	3PHBOL02S1	--	176.4 MM BTU/hr	1948	--	Y	N
COAL COMBUSTION BOILER #3	3PHBOL03S1	--	176.4 MM BTU/hr	1948	--	Y	N
COAL COMBUSTION BOILER #4	3PHBOL04S1	--	221.9 MM BTU/hr	1951	--	Y	N
COAL COMBUSTION BOILER #5	3PHBOL05S1	--	221.9 MM BTU/hr	1952	--	Y	N
ASH SYSTEM	--	--	50.3 MM lb/yr	--	--	--	--
BOTTOM ASH HOPPER 1-5 FUGITIVES	3PHBA001S1	--	--	1948-1965	--	Y	N
ASH PIT FUGITIVES	3PHBA002S1	--	--	1948-1965	--	Y	N
FLY ASH SYSTEM MECHANICAL EXHAUSTER 1	3PHFA004S1	--	--	1997	--	Y	N
FLY ASH SYSTEM MECHANICAL EXHAUSTER 2	3PHFA007S1	--	--	1997	--	Y	N
FLY ASH STORAGE SILO	3PHFA005S1	--	500 ton	1997	--	Y	N
FLY ASH SYSTEM ASH UNLOADER	3PHFA006S1	--	--	1997	--	Y	N
MONOFILL	--	--	--	--	--	--	--
FLY ASH MONOFILL	3MSMFL01S1	Dispose of Ash	Not Applicable	1998	--	Y	N

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION
Section C: Emission Equipment Inventory

1. Equipment	2. Equipment ID Number	3. Purpose	4. Design Capacity	5. Install Date	6. Modify Date	7. In Service? (Y/N)	8.Exempt? (Y/N)
TANKS	--	--	--	--	--	--	--
NAOH TANK 1	3PHTK002S1	4% Weak caustic tank - regenerate desilicizers	2,000 gal	<1971	--	Y	N
NAOH TANK 2	3PHTK003S1	50% caustic tank - regenerate desilicizers	264 gal	<1971	--	Y	N
NAOH TANK 3	3PHTK004S1	4% Weak caustic tank - regenerate desilicizers	2,000 gal	<1971	--	Y	N
NAOH TANK 4	3PHTK005S1	50% caustic tank - regenerate desilicizers	12,390 gal	<1971	--	Y	N
93% SULFURIC ACID TANK	3PHTK006S1	Sulfuric Acid for water pH control	5,250 gal	1989	--	Y	N
CORTROL IS3000 TANK (FORMER SULFITE TANK)	3PHTK007S1	Oxygen scavenger	2,500 gal	1992	--	Y	N
STEAMATE NA0660 TANK (FORMER OPTI-MEEN TANK)	3PHTK008S1	Treatment chemical (rust inhibitor)	1,500 gal	1992	--	Y	N
OPTISPERSE AP0500 TANK (FORMER BALANCE POLYMER TANK)	3PHTK009S1	Treatment chemical (suspended solid control)	1,500 gal	1983	--	Y	N
#2 FUEL OIL TANK 1	3PHTK010S1	#2 Fuel oil	100,000 gal	1975	--	Future	N
#2 FUEL OIL TANK 2	3PHTK011S1	#2 Fuel oil	270,000 gal	1975	--	Future	N
#2 FUEL OIL TANK 3	3PHTK012S1	#2 Fuel oil	211,000 gal	<1971	--	Y	N
FILTER PLANT	--	Produces potable water	7 MM gallons/day	--	--	--	--
HOPPERS	--	--	--	--	--	--	--
PHOSPHATE HOPPER FUGITIVE EMISSIONS	3FPPHHOPS1	--	--	1965	--	Y	Y
TANKS	--	--	--	--	--	--	--
LIME SLURRY TANK	3FPLSLURS1	--	16,000 gal	2000	--	Y	[illegible]
KLARAID IC-1171 TANK (FORMER SODIUM ALUMINATE TANK)	3FPTKNALS1	--	4000 gal	1994	--	Y	Y
ALUMINUM SULFATE STORAGE TANK	3FPTK001S1	--	12,000 gal	1978	--	Y	Y
ALUMINUM SULFATE DAY STORAGE TANK	3FPTK001S2	--	342 gal	1978	--	Y	Y
CHLORINE TANK FUGITIVE EMISSIONS	3FPTKCL2S1	--	2000 lb	---	--	Y	Y

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
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Section C: Emission Equipment Inventory

1. Equipment	2. Equipment ID Number	3. Purpose	4. Design Capacity	5. Install Date	6. Modify Date	7. In Service? (Y/N)	8.Exempt? (Y/N)
WASTEWATER TREATMENT PLANT	- -	---	---	---	- -	- -	- -
DIESEL PUMP 4	3WWWWDP4S1	- -	< 200 hp	As-needed	- -	As-needed	Y
COOLING TOWER	- -	Provides plant cooling water.	- -	- -	- -	- -	- -
COOLING TOWER	3MSCOOL1S1	- -			---	Y	Y
ANHYDRIDE MANUFACTURING	---	---	---	---	---	---	---
TANKS	---	---	---	---	---	---	---
K2/K3 METHANOL BRINE STORAGE TANK	1AMTKK2BS1	---	5320 gal	1993	---	Y	N
K2/K3 METHANOL BRINE UTILITY TANK	1AMTKK2BS2	---	271 gal	1993	--	Y	N
CELLULOSE ACETATE MFG: DEPT. 8A/8	---	---	---	---	---	---	---
TANKS	---	---	---	---	---	---	---
CALCIUM CHLORIDE SURGE TANK	1D8TKCA1S1	---		1969	---	Y	N
CALCIUM CHLORIDE HEAD TANK	1D8TKCA2S1	---		1990	1994	Y	N
CALCIUM CHLORIDE MIX TANK	1D8TKCA3S1	---		1990	1994	Y	N
MISCELLANEOUS SOURCES	- -	- -	- -	- -	- -	- -	- -
FREON	- -	- -	- -	- -	- -	- -	- -
FREON R12 FUGITIVES FROM PROCESS REFRIGERATORS	3MSFREONS2	---	Not Applicable	---	---	Y	N
FREON R22 FUGITIVES FROM PROCESS REFRIGERATORS	3MSFREONS3	---	Not Applicable	---	---	Y	N

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Section D: Relationship Between Non-Exempt Emission Units and Emission Points

1. Emission Unit	2. Equipment	3. Equipment ID Number	4. Exhaust Type	5. Exhaust Point Number	6.Alternate Scenarios? (Y/N)	7. Emission Unit Description
POWER HOUSE	--	--	--	--	--	--
COAL SYSTEM	--	--	--	--	--	
	COAL PILE STORAGE AND HANDLING	3PHCH001S1	F	3PHCH001E1	N	Produces Steam for the Plant
BOILERS	--	--	---	--	--	--
	COAL COMBUSTION BOILER #1	3PHBOL01S1	CE	3PHBOL01E1	Y	--
	COAL COMBUSTION BOILER #2	3PHBOL02S1	CE	3PHBOL02E1	Y	--
	COAL COMBUSTION BOILER #3	3PHBOL03S1	CE	3PHBOL03E1	Y	--
	COAL COMBUSTION BOILER #4	3PHBOL04S1	CE	3PHBOL04E1	Y	--
	COAL COMBUSTION BOILER #5	3PHBOL05S1	CE	3PHBOL05E1	Y	--
ASH SYSTEM	--	--	--	--	---	--
	BOTTOM ASH HOPPER 1-5 FUGITIVES	3PHBA001S1	F	3PHBA001E1	N	--
	ASH PIT FUGITIVES	3PHBA002S1	F	3PHBA002E1	N	--
	FLY ASH SYSTEM MECHANICAL EXHAUSTER 1	3PHFA004S1	S	3PHFA004E1	N	--
	FLY ASH SYSTEM MECHANICAL EXHAUSTER 2	3PHFA007S1	S	3PHFA007E1	N	--
	FLY ASH STORAGE SILO	3PHFA005S1	CE	3PHFA005E1	N	--
	FLY ASH SYSTEM ASH UNLOADER	3PHFA006S1	S	3PHFA006E1	N	--
MONOFILL	--	--	--	--	--	--
	FLY ASH MONOFILL	3MSMFL01S1	F	3MSMFLFGE1	N	--

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Section D: Relationship Between Non-Exempt Emission Units and Emission Points

1. Emission Unit	2. Equipment	3. Equipment ID Number	4. Exhaust Type	5. Exhaust Point Number	6.Alternate Scenarios? (Y/N)	7. Emission Unit Description
TANKS	--	--	--	--	---	--
	NAOH TANK 1	3PHTK002S1	V	3PHTK002E1	N	--
	NAOH TANK 2	3PHTK003S1	V	3PHTK003E1	N	--
	NAOH TANK 3	3PHTK004S1	V	3PHTK004E1	N	--
	NAOH TANK 4	3PHTK005S1	V	3PHTK005E1	N	--
	93% SULFURIC ACID TANK	3PHTK006S1	V	3PHTK006E1	N	--
	CORTROL IS3000 TANK (FORMER SULFITE TANK)	3PHTK007S1	V	3PHTK007E1	N	--
	STEAMATE NA0660 TANK (FORMER OPTI-MEEN TANK)	3PHTK008S1	V	3PHTK008E1	N	--
	OPTISPERSE AP0500 TANK (FORMER BALANCE POLYMER TANK)	3PHTK009S1	V	3PHTK009E1	N	--
	#2 FUEL OIL TANK 1	3PHTK010S1	V	3PHTK010E1	N	--
	#2 FUEL OIL TANK 2	3PHTK011S1	V	3PHTK011E1	N	--
	#2 FUEL OIL TANK 3	3PHTK012S1	V	3PHTK012E1	N	--
ANHYDRIDE MANUFACTURING		---	--	--	--	--
TANKS	--	---	--	--	--	--
	K2/K3 METHANOL BRINE STORAGE TANK	1AMTKK2BS1	V	1AMTKK2BE1	N	--
	K2/K3 METHANOL BRINE UTILITY TANK	1AMTKK2BS2	V	1AMTKK2BE2	N	--
CELLULOSE ACETATE MFG: DEPT. 8A/8		---	---	---	---	---
	TANKS	---	---	---	---	---
	CALCIUM CHLORIDE SURGE TANK	1D8TKCA1S1	S	1D8PRCA1E1	N	---
	CALCIUM CHLORIDE HEAD TANK	1D8TKCA2S1	S	1D8PRCA1E1	N	---
	CALCIUM CHLORIDE MIX TANK	1D8TKCA3S1	F	1D8VTFUGE1	N	---

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Section D: Relationship Between Non-Exempt Emission Units and Emission Points

1. Emission Unit	2. Equipment	3. Equipment ID Number	4. Exhaust Type	5. Exhaust Point Number	6.Alternate Scenarios? (Y/N)	7. Emission Unit Description
MISCELLANEOUS SOURCES		- -	--	--	--	Miscellaneous Utility Activities
FREON	--	- -	- -	--	- -	- -
	FREON R12 FUGITIVES FROM PROCESS REFRIGERATORS	3MSFREONS2	F	3MSFREONE1	N	- -
	FREON R22 FUGITIVES FROM PROCESS REFRIGERATORS	3MSFREONS3	F	3MSFREONE1	N	- -

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
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Section E: General Information - Emission Units

1. Equipment	2. Equipment ID Number	3. Exhaust Point Number	4. Major Raw Material	5. Quantity Used (units)	6. Major Product
POWER HOUSE	--	--	Coal	350,000 tons	Steam
MISCELLANEOUS SOURCES	--	--	Not Applicable	Not Applicable	Not Applicable
ANHYDRIDE MANUFACTORING	--	--	Methanol Brine	Not Applicable	Used in Celanese Process, Cinergy Only Owns Storage Tanks
CELLULOSE ACETATE MANFACTURING	--	--	Calcium Chloride	Not Applicable	Used in Celanese Process, Cinergy Only Owns Storage Tanks

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Section E: General Information - Emission Units (Continued)

1. Equipment	7. Production Rate				8. Operating Schedule			9. Seasonal Variation (%)				10. SCHWM Act or RCRA Subtitle C? (Y/N)
	Qty/hr	Qty/wk	Qty/yr	Units	Hrs/day	Days/wk	Hrs/yr	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
POWER HOUSE	--	--	420,000	tons/yr	24	7	8760	25	25	25	25	No
MISCELLANEOUS SOURCES	--	--	--	--	24	7	8760	25	25	25	25	No
ANHYDRIDE MANUFACTORING	--	--	--	--	24	7	8760	25	25	25	25	No
CELLULOSE ACETATE MANFACTURING	--	--	--	--	24	7	8760	25	25	25	25	No

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Section F: Relationship Between Non-Exempt Emission Units and Stacks/Vents

1. Emission Unit	2. Exhaust Point Number	3. Stack Height (ft)	4. Stack Diameter (ft)	5. Stack Gas Exit Temp. (oF)	6. Stack Gas Exhaust Vel. (ft/sec)	7. Non-Vertical Discharge (H) or Rain Cap(R)?	8. Vertical Component of Stack Exhaust Velocity (ft/sec)
	--	--	--	--	--	--	--
POWER HOUSE	--	--	--	--	--	--	--
COAL SYSTEM							
COAL PILE STORAGE AND HANDLING	3PHCH001E1	Not Applicable	Not Applicable	60	0.03	No	0.03
BOILERS	--	--	--	--	--	--	--
COAL COMBUSTION BOILER #1	3PHBOL01E1	166	6	419	56.4	No	56.4
COAL COMBUSTION BOILER #2	3PHBOL02E1	166	6	421	56.4	No	56.4
COAL COMBUSTION BOILER #3	3PHBOL03E1	166	6	419	56.1	No	56.1
COAL COMBUSTION BOILER #4	3PHBOL04E1	166	7	416	56.9	No	56.9
COAL COMBUSTION BOILER #5	3PHBOL05E1	166	7	407	56.6	No	56.6
ASH SYSTEM	--	--	--	--	--	No	--
BOTTOM ASH HOPPER 1-5 FUGITIVES	3PHBA001E1	Not Applicable	Not Applicable	60	0.03	No	0.03
ASH PIT FUGITIVES	3PHBA002E1	Not Applicable	Not Applicable	60	0.03	No	0.03
FLY ASH SYSTEM MECHANICAL EXHAUSTER 1	3PHFA004E1	9	0.833	229	50.24	No	50.24
FLY ASH SYSTEM MECHANICAL EXHAUSTER 2	3PHFA007E1	9	0.833	229	50.24	No	50.24
FLY ASH STORAGE SILO	3PHFA005E1	83.5	3.76	100	36	No	0.03
FLY ASH SYSTEM ASH UNLOADER	3PHFA006E1	21	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
MONOFILL	--	--	--	--	--	--	--
FLY ASH MONOFILL	3MSMFLFGE1	Not Applicable	Not Applicable	60	0.03	No	0.03

(a) Required information not provided because air toxic modeling is not expected to be needed to be performed.

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Section F: Relationship Between Non-Exempt Emission Units and Stacks/Vents

1. Emission Unit	2. Exhaust Point Number	9. UTM East	10. UTM North	11. Distance to Plant Boundary (ft)	12. Dimensions of Plume Obstructing Structure (ft)[a]			
					Height	Length	Width	Projection
POWER HOUSE	--	--	--	--	--	--	--	--
COAL SYSTEM	--	--	--	--	--	--	--	--
COAL PILE STORAGE AND HANDLING	3PHCH001E1	502330	3870360	250	(a)	(a)	(a)	(a)
BOILERS	--	--	--	--	--	--	--	--
COAL COMBUSTION BOILER #1	3PHBOL01E1	502117	3870366	625	(a)	(a)	(a)	(a)
COAL COMBUSTION BOILER #2	3PHBOL02E1	502124	3870375	625	(a)	(a)	(a)	(a)
COAL COMBUSTION BOILER #3	3PHBOL03E1	502131	3870384	625	(a)	(a)	(a)	(a)
COAL COMBUSTION BOILER #4	3PHBOL04E1	502138	3870394	625	(a)	(a)	(a)	(a)
COAL COMBUSTION BOILER #5	3PHBOL05E1	502145	3870405	625	(a)	(a)	(a)	(a)
ASH SYSTEM	--	--	--	--	--	--	--	--
BOTTOM ASH HOPPER 1-5 FUGITIVES	3PHBA001E1	502130	3870390	625	(a)	(a)	(a)	(a)
ASH PIT FUGITIVES	3PHBA002E1	502130	3870390	625	(a)	(a)	(a)	(a)
FLY ASH SYSTEM MECHANICAL EXHAUSTER 1	3PHFA004E1	502185	3870390	625	(a)	(a)	(a)	(a)
FLY ASH SYSTEM MECHANICAL EXHAUSTER 2	3PHFA007E1	502185	3870390	625	(a)	(a)	(a)	(a)
FLY ASH STORAGE SILO	3PHFA005E1	502180	3870375	625	(a)	(a)	(a)	(a)
FLY ASH SYSTEM ASH UNLOADER	3PHFA006E1	502180	3870375	625	(a)	(a)	(a)	(a)
MONOFILL	--	--	--	--	--	--	--	--
FLY ASH MONOFILL	3MSMFLFGE1	--	--	--	(a)	(a)	(a)	(a)

(a) Required information not provided because air toxic modeling is not expected to be needed to be performed.

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Section F: Relationship Between Non-Exempt Emission Units and Stacks/Vents

1. Emission Unit	2. Exhaust Point Number	3. Stack Height (ft)	4. Stack Diameter (ft)	5. Stack Gas Exit Temp. (oF)	6. Stack Gas Exhaust Vel. (ft/sec)	7. Non-Vertical Discharge (H) or Rain Cap(R)?	8. Vertical Component of Stack Exhaust Velocity (ft/sec)
TANKS	--	--	--	--	--	--	--
NAOH TANK 1	3PHTK002E1	9.6	0.25	60	0.03	No	0.03
NAOH TANK 2	3PHTK003E1	5.2	0.17	60	0.03	No	0.03
NAOH TANK 3	3PHTK004E1	9.6	0.25	60	0.03	No	0.03
NAOH TANK 4	3PHTK005E1	26	0.083	60	0.03	No	0.03
93% SULFURIC ACID TANK	3PHTK006E1	15.33	Not Applicable	60	0.03	No	0.03
CORTROL IS3000 TANK (FORMER SULFITE TANK)	3PHTK007E1	10	0.21	60	0.03	No	0.03
STEAMATE NA0660 TANK (FORMER OPTI-MEEN TANK)	3PHTK008E1	10.2	0.17	60	0.03	No	0.03
OPTISPERSE AP0500 TANK (FORMER BALANCE POLYMER TANK)	3PHTK009E1	13	0.5	60	0.03	No	0.03
#2 FUEL OIL TANK 1	3PHTK010E1	34	0.7	60	0.03	R	0.03
#2 FUEL OIL TANK 2	3PHTK011E1	41.5	0.5	60	0.03	R	0.03
#2 FUEL OIL TANK 3	3PHTK012E1	37.5	0.5	60	0.03	R	0.03

(a) Required information not provided because air toxic modeling is not expected to be needed to be performed.

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Section F: Relationship Between Non-Exempt Emission Units and Stacks/Vents

1. Emission Unit	2. Exhaust Point Number	9. UTM East	10. UTM North	11. Distance to Plant Boundary (ft)	12. Dimensions of Plume Obstructing Structure (ft)[a]			
					Height	Length	Width	Projection
TANKS	--	--	--	--	--	--	--	--
NAOH TANK 1	3PHTK002E1	502150	3870360	625	(a)	(a)	(a)	(a)
NAOH TANK 2	3PHTK003E1	502150	3870360	625	(a)	(a)	(a)	(a)
NAOH TANK 3	3PHTK004E1	502150	3870360	625	(a)	(a)	(a)	(a)
NAOH TANK 4	3PHTK005E1	502150	3870360	625	(a)	(a)	(a)	(a)
93% SULFURIC ACID TANK	3PHTK006E1	502150	3870360	625	(a)	(a)	(a)	(a)
CORTROL IS3000 TANK (FORMER SULFITE TANK)	3PHTK007E1	502150	3870360	625	(a)	(a)	(a)	(a)
STEAMATE NA0660 TANK (FORMER OPTI-MEEN TANK)	3PHTK008E1	502150	3870360	625	(a)	(a)	(a)	(a)
OPTISPERSE AP0500 TANK (FORMER BALANCE POLYMER TANK)	3PHTK009E1	502150	3870360	625	(a)	(a)	(a)	(a)
#2 FUEL OIL TANK 1	3PHTK010E1	502321	3870476	625	(a)	(a)	(a)	(a)
#2 FUEL OIL TANK 2	3PHTK011E1	502335	3870474	625	(a)	(a)	(a)	(a)
#2 FUEL OIL TANK 3	3PHTK012E1	502327	3870414	625	(a)	(a)	(a)	(a)

(a) Required information not provided because air toxic modeling is not expected to be needed to be performed.

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Section F: Relationship Between Non-Exempt Emission Units and Stacks/Vents

1. Emission Unit	2. Exhaust Point Number	3. Stack Height (ft)	4. Stack Diameter (ft)	5. Stack Gas Exit Temp. (oF)	6. Stack Gas Exhaust Vel. (ft/sec)	7. Non-Vertical Discharge (H) or Rain Cap(R)?	8. Vertical Component of Stack Exhaust Velocity (ft/sec)
ANHYDRIDE MANUFACTURING	--	--	--	--	--	--	--
TANKS	--	--	--	--	--	--	--
K2/K3 METHANOL BRINE STORAGE TANK	1AMTKK2BE1	88.3	0.7	80	0.03	R	0.03
K2/K3 METHANOL BRINE UTILITY TANK	1AMTKK2BE2	88.3	0.7	80	0.03	R	0.03
CELLULOSE ACETATE MFG: DEPT. 8A/8							
TANKS							
CALCIUM CHLORIDE SURGE TANK	1D8PRCA1E1	42.0	0.1	60	0.03	Down	-0.03
CALCIUM CHLORIDE HEAD TANK	1D8PRCA1E1	42.0	0.1	60	0.03	Down	-0.03
CALCIUM CHLORIDE MIX TANK	1D8VTFUGE1	80.0	12.0	80	0.03	---	0.03
MISCELLANEOUS SOURCES	--	--	--	--	--	--	--
FREON	--	--	--	--	--	--	--
FREON R12 FUGITIVES FROM PROCESS REFRIGERATORS	3MSFREONE1	Not Applicable	Not Applicable	60	0.03	No	0.03
FREON R22 FUGITIVES FROM PROCESS REFRIGERATORS	3MSFREONE1	Not Applicable	Not Applicable	60	0.03	No	0.03

(a) Required information not provided because air toxic modeling is not expected to be needed to be performed.

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
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Section F: Relationship Between Non-Exempt Emission Units and Stacks/Vents

1. Emission Unit	2. Exhaust Point Number	9. UTM East	10. UTM North	11. Distance to Plant Boundary (ft)	12. Dimensions of Plume Obstructing Structure (ft)[a]			
					Height	Length	Width	Projection
ANHYDRIDE MANUFACTURING								
TANKS	--	--	--	--				
K2/K3 METHANOL BRINE STORAGE TANK	--	--	--	--				
K2/K3 METHANOL BRINE UTILITY TANK	1AMTKK2BE1	5020541	3870541	783	(a)	(a)	(a)	(a)
CELLULOSE ACETATE MFG: DEPT. 8A/8	1AMTKK2BE2	5020541	3870541	783	(a)	(a)	(a)	(a)
TANKS								
CALCIUM CHLORIDE SURGE TANK								
CALCIUM CHLORIDE HEAD TANK	1D8PRCA1E1	501951	3870484	501918	(a)	(a)	(a)	(a)
CALCIUM CHLORIDE MIX TANK	1D8PRCA1E1	501951	3870484	501919	(a)	(a)	(a)	(a)
MISCELLANEOUS SOURCES	1D8VTFUGE1	501975	3870520	700	(a)	(a)	(a)	(a)
FREON	--	--	--	--	--	--	--	--
FREON R12 FUGITIVES FROM PROCESS REFRIGERATORS	--	--	--	--	--	--	--	--
FREON R22 FUGITIVES FROM PROCESS REFRIGERATORS	3MSFREONE1	--	--	--	(a)	(a)	(a)	(a)
	3MSFREONE1	--	--	--	(a)	(a)	(a)	(a)

(a) Required information not provided because air toxic modeling is not expected to be needed to be performed.

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Section G: Relationship Between Control Equipment and Non-Exempt Emission Units

1. Control Equipment Designation	2. Control Equipment Description	3. Equipment	4. Equipment ID Number	5. Exhaust Point Number	6. Capture %		7. Destruction %	
3PHBOL01C1	BOILER #1 ESP	COAL COMBUSTION BOILER #1	3PHBOL01S1	3PHBOL01E1	PARTICULATE MATTER	94.0	--	--
3PHBOL02C1	BOILER #2 ESP	COAL COMBUSTION BOILER #2	3PHBOL02S1	3PHBOL02E1	PARTICULATE MATTER	94.0	--	--
3PHBOL03C1	BOILER #3 ESP	COAL COMBUSTION BOILER #3	3PHBOL03S1	3PHBOL03E1	PARTICULATE MATTER	94.0	--	--
3PHBOL04C1	BOILER #4 ESP	COAL COMBUSTION BOILER #4	3PHBOL04S1	3PHBOL04E1	PARTICULATE MATTER	94.0	--	--
3PHBOL05C1	BOILER #5 ESP	COAL COMBUSTION BOILER #5	3PHBOL05S1	3PHBOL05E1	PARTICULATE MATTER	94.0	--	--
3PHFA005C1	FLYASH SILO BAGHOUSE	FLY ASH STORAGE SILO	3PHTK005S1	3PHTK005E1	PARTICULATE MATTER	99.0	--	--

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Section G: Relationship Between Control Equipment and Non-Exempt Emission Units (Continued)

1. Control Equipment Designation	2. Control Equipment Description	8. Efficiency Methodology	9. Manufacturer Name, Model #, or Similar Manufacturer Designation of Control Equipment	10. Initial Installation Date of Control Equipment	11. Date Control Equipment was Last Modified
3PHBOL01C1	BOILER #1 ESP	Estimate	Research-Cotrell, Inc (RC)	1950	1998
3PHBOL02C1	BOILER #2 ESP	Estimate	Research-Cotrell, Inc (RC)	1950	--
3PHBOL03C1	BOILER #3 ESP	Estimate	Research-Cotrell, Inc (RC)	1950	1998
3PHBOL04C1	BOILER #4 ESP	Estimate	Buell	1951	--
3PHBOL05C1	BOILER #5 ESP	Estimate	Buell	1952	--
3PHFA005C1	FLYASH SILO BAGHOUSE	Estimate	Ultra Industry	1997	--

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Section H: Emission Data for NAAQS Pollutants and Regulated Pollutants not Listed in Section I

2. Emission Unit:	3. Exhaust Type:	4. Exhaust Point Number:
POWER HOUSE		
Tanks		
Fuel Oil Tank 1	V	3PHTK010E1
Fuel Oil Tank 2	V	3PHTK011E1
Fuel Oil Tank 3	V	3PHTK012E1
CORTROL IS3000 TANK (FORMER SULFITE TANK)	V	3PHTK007S1
OPTISPERSE AP0500 TANK (FORMER BALANCE POLYMER TANK)	V	3PHTK009E1
STEAMATE NA0660 TANK (FORMER OPTI-MEEN TANK)	V	3PHTK008S1

5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
VOC's	--		--	0.7	NA	tpy	EPA AP-42 TANKS Version 4.0

2. Emission Unit:	3. Exhaust Type:	4. Exhaust Point Number:
POWER HOUSE		
Ash System		
BOTTOM ASH HOPPER 1-5 FUGITIVES	CE	3PHBA001E1
ASH PIT FUGITIVES	S	3PHBA002E1
FLY ASH SYSTEM MECHANICAL EXHAUSTER 1	S	3PHFA004E1
FLY ASH SYSTEM MECHANICAL EXHAUSTER 2	CE	3PHFA007E1
FLY ASH STORAGE SILO	S	3PHFA005E1
FLY ASH SYSTEM ASH UNLOADER	F	3PHFA006E1
COAL COMBUSTION BOILER #1	S	3PHBOL01E1
COAL PILE STORAGE AND HANDLING	F	3PHCH001E1
FLY ASH MONOFILL	F	3MSMFLFGE1

5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
PARTICULATE MATTER	--	--	--	0.1	42.5	lb/hr	Engineering Calculations and AP-42 Emission Factor
PARTICULATE MATTER 10 (PM10)	--	--	--	0.2	--	lb/hr	Engineering Calculations and AP-42 Emission Factor

2. Emission Unit:	3. Exhaust Type:	4. Exhaust Point Number:
POWER HOUSE		
BOILERS	CE	3PHBOL01E1
Coal Combustion Boiler #1	CE	

5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
SULFUR DIOXIDE (SO2)	--	--	--	552.7	727.0	lb/hr	Calculated AP-42 Emission Factor
TOTAL SUSPENDED PARTICULATES	--	--	--	81.7	124.6	lb/hr	Engineering Calculations and AP-42 Emission Factor
PARTICULATE MATTER 10 (PM10)	--	--	--	18.8	--	lb/hr	Engineering Calculations and AP-42 Emission Factor
CARBON MONOXIDE (CO)	--	--	--	18.6	--	tpy	Calculated AP-42 Emission Factor
NITROGEN OXIDE (NOx)	--	--	--	819.6	--	tpy	Calculated AP-42 Emission Factor
LEAD	--	--	--	0.02	--	tpy	Calculated AP-42 Emission Factor
VOCs	--	--	--	2.2	--	tpy	Calculated AP-42 Emission Factor

Note: Maximum allowable limits are based on SC DHEC Standard No. 1. For Sulfur Dioxide Maximum Allowable = 3.5 x the Max Short Term Boiler Capacity. For Particulate Matter, the Maximum Allowable = 0.6 x the Max Short Term Boiler Capacity. The Maximum Short Term Capacity for Boiler #1 = 207.7 mmBtu/hr

2. Emission Unit:	3. Exhaust Type:	4. Exhaust Point Number:
POWER HOUSE		
BOILERS	CE	3PHBOL02E1
Coal Combustion Boiler #2	CE	

5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
SULFUR DIOXIDE (SO2)	--	--	--	552.7	727.0	lb/hr	Calculated AP-42 Emission Factor
TOTAL SUSPENDED PARTICULATES	--	--	--	81.7	124.6	lb/hr	Engineering Calculations and AP-42 Emission Factor
PARTICULATE MATTER 10 (PM10)	--	--	--	18.8	--	lb/hr	Engineering Calculations and AP-42 Emission Factor
CARBON MONOXIDE (CO)	--	--	--	18.6	--	tpy	Calculated AP-42 Emission Factor
NITROGEN OXIDE (NOx)	--	--	--	819.6	--	tpy	Calculated AP-42 Emission Factor
LEAD	--	--	--	0.02	--	tpy	Calculated AP-42 Emission Factor
VOCs	--	--	--	2.2	--	tpy	Calculated AP-42 Emission Factor

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Section H: Emission Data for NAAQS Pollutants and Regulated Pollutants not Listed in Section I

Note: Maximum allowable limits are based on SC DHEC Standard No. 1. For Sulfur Dioxide Maximum Allowable = 3.5 x the Max Short Term Boiler Capacity. For Particulate Matter, the Maximum Allowable = 0.6 x the Max Short Term Boiler Capacity. The Maximum Short Term Capacity for Boiler #2 = 207.7 mmBtu/hr

2. Emission Unit:	POWER HOUSE *BOILERS* Coal Combustion Boiler #3			3. Exhaust Type: CE CE		4. Exhaust Point Number: 3PHBOL03E1	
5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
SULFUR DIOXIDE (SO2)	--	--	--	552.7	727.0	lb/hr	Calculated AP-42 Emission Factor
TOTAL SUSPENDED PARTICULATES	--	--	--	81.7	124.6	lb/hr	Engineering Calculations and AP-42 Emission Factor
PARTICULATE MATTER 10 (PM10)	--	--	--	18.8	--	lb/hr	Engineering Calculations and AP-42 Emission Factor
CARBON MONOXIDE (CO)	--	--	--	18.6	--	tpy	Calculated AP-42 Emission Factor
NITROGEN OXIDE (NOx)	--	--	--	819.6	--	tpy	Calculated AP-42 Emission Factor
LEAD	--	--	--	0.02	--	tpy	Calculated AP-42 Emission Factor
VOCs	--	--	--	2.2	--	tpy	Calculated AP-42 Emission Factor

Note: Maximum allowable limits are based on SC DHEC Standard No. 1. For Sulfur Dioxide Maximum Allowable = 3.5 x the Max Short Term Boiler Capacity. For Particulate Matter, the Maximum Allowable = 0.6 x the Max Short Term Boiler Capacity. The Maximum Short Term Capacity for Boiler #3 = 207.7 mmBtu/hr

2. Emission Unit:	POWER HOUSE *BOILERS* Coal Combustion Boiler #4			3. Exhaust Type: CE CE		4. Exhaust Point Number: 3PHBOL04E1	
5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
SULFUR DIOXIDE (SO2)	--	--	--	650.2	855.4	lb/hr	Calculated AP-42 Emission Factor
TOTAL SUSPENDED PARTICULATES	--	--	--	96.1	146.6	lb/hr	Engineering Calculations and AP-42 Emission Factor
PARTICULATE MATTER 10 (PM10)	--	--	--	22.1	--	lb/hr	Engineering Calculations and AP-42 Emission Factor
CARBON MONOXIDE (CO)	--	--	--	21.9	--	tpy	Calculated AP-42 Emission Factor
NITROGEN OXIDE (NOx)	--	--	--	964.3	--	tpy	Calculated AP-42 Emission Factor
LEAD	--	--	--	0.02	--	tpy	Calculated AP-42 Emission Factor
VOCs	--	--	--	2.6	--	tpy	Calculated AP-42 Emission Factor

Note: Maximum allowable limits are based on SC DHEC Standard No. 1. For Sulfur Dioxide Maximum Allowable = 3.5 x the Max Short Term Boiler Capacity. For Particulate Matter, the Maximum Allowable = 0.6 x the Max Short Term Boiler Capacity. The Maximum Short Term Capacity for Boiler #4 = 244.4 mmBtu/hr

2. Emission Unit:	POWER HOUSE *BOILERS* Coal Combustion Boiler #5			3. Exhaust Type: CE CE		4. Exhaust Point Number: 3PHBOL05E1	
5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
SULFUR DIOXIDE (SO2)	--	--	--	650.2	855.4	lb/hr	Calculated AP-42 Emission Factor
TOTAL SUSPENDED PARTICULATES	--	--	--	96.1	146.6	lb/hr	Engineering Calculations and AP-42 Emission Factor
PARTICULATE MATTER 10 (PM10)	--	--	--	22.1	--	lb/hr	Engineering Calculations and AP-42 Emission Factor
CARBON MONOXIDE (CO)	--	--	--	21.9	--	tpy	Calculated AP-42 Emission Factor
NITROGEN OXIDE (NOx)	--	--	--	964.3	--	tpy	Calculated AP-42 Emission Factor
LEAD	--	--	--	0.02	--	tpy	Calculated AP-42 Emission Factor

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Section H: Emission Data for NAAQS Pollutants and Regulated Pollutants not Listed in Section I

VOCs	--	--	--	2.6	--	tpy	Calculated AP-42 Emission Factor

Note: Maximum allowable limits are based on SC DHEC Standard No. 1. For Sulfur Dioxide Maximum Allowable = 3.5 x the Max Short Term Boiler Capacity. For Particulate Matter, the Maximum Allowable = 0.6 x the Max Short Term Boiler Capacity. The Maximum Short Term Capacity for Boiler #5 = 244.4 mmBtu/hr

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Section I: Emission Data for Air Toxics, Hazardous Air Pollutants (HAPS)

1. Facility Name: Celanese Acetate LLC
Rock Hill, SC Plant

2. Emission Unit: POWER HOUSE
TANKS
#2 FUEL OIL TANK 1
#2 FUEL OIL TANK 2
#2 FUEL OIL TANK 3

3. Exhaust Type: V V V

4. Exhaust Point Number: 3PHTK010E1 3PHTK011E1 3PHTK012E1

5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
NAPHTHALENE	91-20-3	- -	Trace	Trace	<0.1	lb/day	Engineering Calculations and EPA TANKS Version 4.0

2. Emission Unit: POWER HOUSE
93% Sulfuric Acid Tank

3. Exhaust Type: V

4. Exhaust Point Number: 3PHTK006E1

5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
SULFURIC ACID	07664-93-9	- -	Trace	Trace	<0.1	lb/day	EPA AP-42 TANKS Version 4.0

2. Emission Unit: POWER HOUSE
TANKS
NaOH Tank 1
NaOH Tank 2
NaOH Tank 3
NaOH Tank 4

3. Exhaust Type: V V V V

4. Exhaust Point Number: 3PHTK002E1 3PHTK003E1 3PHTK004E1 3PHTK005E1

5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
SODIUM HYDROXIDE	1310-73-2	- -	Trace	Trace	<0.1	lb/day	EPA AP-42 TANKS Version 4.0

2. Emission Unit: Anhydride Manufacturing
K2/K3 METHANOL BRINE STORAGE TANK
K2/K3 METHANOL BRINE UTILITY TANK

3. Exhaust Type: V V

4. Exhaust Point Number: 1AMTKK2BE1 1AMTKK2BE2

5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
Methanol	67-56-1	- -	9.52	3.8	13.90	lb/day	Engineering Calculations and EPA AP-42 TANKS Version 4.0

2. Emission Unit: Power House Coal Combustion Boiler #1				3. Exhaust Type: CE		4. Exhaust Point Number: 3PHBOL01E1	
5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
Acetaldehyde	75-07-0	--	2.1E-02	2.1E-02	NA	tpy	AP-42 Emission Factor
Acetophenone	98-86-2	--	5.6E-04	5.6E-04	NA	tpy	AP-42 Emission Factor
Acrolein	107-02-8	--	1.1E-02	1.1E-02	NA	tpy	AP-42 Emission Factor
Benzene	71-43-2	--	4.8E-02	4.8E-02	NA	tpy	AP-42 Emission Factor
Benzyl Chloride	100-44-7	--	2.6E-02	2.6E-02	NA	tpy	AP-42 Emission Factor
Bis (2-ethylhexyl) pthalate (DEHP)	117-81-7	--	2.7E-03	2.7E-03	NA	tpy	AP-42 Emission Factor
Bromoform	75-25-2	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Carbon Disulfide	75-15-0	--	4.8E-03	4.8E-03	NA	tpy	AP-42 Emission Factor
2-Chloroacetophenone	532-27-4	--	2.6E-04	2.6E-04	NA	tpy	AP-42 Emission Factor
Chlorobenzene	108-90-7	--	8.2E-04	8.2E-04	NA	tpy	AP-42 Emission Factor
Chloroform	67-66-3	--	2.2E-03	2.2E-03	NA	tpy	AP-42 Emission Factor
Cumene	98-82-8	--	2.0E-04	2.0E-04	NA	tpy	AP-42 Emission Factor
Cyanide	57-12-5	--	9.3E-02	9.3E-02	NA	tpy	AP-42 Emission Factor
2,4-Dinitrotoluene	121-14-2	--	1.0E-05	1.0E-05	NA	tpy	AP-42 Emission Factor
Dimethyl Sulfate	77-78-1	--	1.8E-03	1.8E-03	NA	tpy	AP-42 Emission Factor
Ethyl Benzene	100-41-4	--	3.5E-03	3.5E-03	NA	tpy	AP-42 Emission Factor
Ethyl Chloride	75-00-3	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dichloride	107-06-2	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dibromide	106-93-4	--	4.5E-05	4.5E-05	NA	tpy	AP-42 Emission Factor
Formaldehyde	50-00-0	--	8.9E-03	8.9E-03	NA	tpy	AP-42 Emission Factor
Hexane	110-54-3	--	2.5E-03	2.5E-03	NA	tpy	AP-42 Emission Factor
Isophorone	78-59-1	--	2.2E-03	2.2E-03	NA	tpy	AP-42 Emission Factor
Methyl Bromide	74-83-9	--	6.0E-03	6.0E-03	NA	tpy	AP-42 Emission Factor
Methyl Chloride	74-87-3	--	2.0E-02	2.0E-02	NA	tpy	AP-42 Emission Factor
Methyl Ethyl Ketone	78-93-3	--	1.5E-02	1.5E-02	NA	tpy	AP-42 Emission Factor
Methyl Hydrazine	60-34-4	--	6.3E-03	6.3E-03	NA	tpy	AP-42 Emission Factor
Methyl Methacrylate	80-62-6	--	7.5E-04	7.5E-04	NA	tpy	AP-42 Emission Factor
Methyl Tert Butyl Ether	1634-04-4	--	1.3E-03	1.3E-03	NA	tpy	AP-42 Emission Factor
Methylene Chloride	45-09-2	--	1.1E-02	1.1E-02	NA	tpy	AP-42 Emission Factor
Phenol	108-95-2	--	6.0E-04	6.0E-04	NA	tpy	AP-42 Emission Factor
Propionaldehyde	123-38-6	--	1.4E-02	1.4E-02	NA	tpy	AP-42 Emission Factor
Toluene	108-88-3	--	8.9E-04	8.9E-04	NA	tpy	AP-42 Emission Factor
1,1,1-Trichloroethane (Methyl Chloroform)	71-55-6	--	7.5E-04	7.5E-04	NA	tpy	AP-42 Emission Factor
Styrene	100-42-5	--	9.3E-04	9.3E-04	NA	tpy	AP-42 Emission Factor
Xylene	1330-20-7	--	1.4E-03	1.4E-03	NA	tpy	AP-42 Emission Factor
Vinyl Acetate	108-05-4	--	2.8E-04	2.8E-04	NA	tpy	AP-42 Emission Factor
Hydrogen Chloride (Hydrochloric Acid)	7647-01-0	--	44.7	44.7	NA	tpy	AP-42 Emission Factor
Hydrogen Fluoride (Hydrofluoric Acid)	7664-39-3	--	5.6	5.6	NA	tpy	AP-42 Emission Factor
Antimony	7440-36-0	--	6.7E-04	6.7E-04	NA	tpy	AP-42 Emission Factor
Arsenic	7440-38-2	--	1.5E-02	1.5E-02	NA	tpy	AP-42 Emission Factor
Beryllium	7440-41-7	--	7.8E-04	7.8E-04	NA	tpy	AP-42 Emission Factor
Cadmium	7440-43-9	--	1.9E-03	1.9E-03	NA	tpy	AP-42 Emission Factor
Chromium (Total)	7440-47-3	--	1.3E-02	1.3E-02	NA	tpy	AP-42 Emission Factor
Cobalt	7440-48-4	--	3.7E-03	3.7E-03	NA	tpy	AP-42 Emission Factor
Manganese	7439-96-5	--	1.8E-02	1.8E-02	NA	tpy	AP-42 Emission Factor
Mercury	7439-97-6	--	3.1E-03	3.1E-03	NA	tpy	AP-42 Emission Factor
Nickel	7440-02-0	--	1.0E-02	1.0E-02	NA	tpy	AP-42 Emission Factor
Selenium	7782-49-2	--	4.8E-02	4.8E-02	NA	tpy	AP-42 Emission Factor

Note: The above compounds are exempt from South Carolina Regulations, but are listed because they Applicable to Federal Regulations.

2. Emission Unit: Power House Coal Combustion Boiler #2				3. Exhaust Type: CE		4. Exhaust Point Number: 3PHBOL02E1	
5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
Acetaldehyde	75-07-0	--	2.1E-02	2.1E-02	NA	tpy	AP-42 Emission Factor
Acetophenone	98-86-2	--	5.6E-04	5.6E-04	NA	tpy	AP-42 Emission Factor
Acrolein	107-02-8	--	1.1E-02	1.1E-02	NA	tpy	AP-42 Emission Factor
Benzene	71-43-2	--	4.8E-02	4.8E-02	NA	tpy	AP-42 Emission Factor
Benzyl Chloride	100-44-7	--	2.6E-02	2.6E-02	NA	tpy	AP-42 Emission Factor
Bis (2-ethylhexyl) pthalate (DEHP)	117-81-7	--	2.7E-03	2.7E-03	NA	tpy	AP-42 Emission Factor
Bromoform	75-25-2	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Carbon Disulfide	75-15-0	--	4.8E-03	4.8E-03	NA	tpy	AP-42 Emission Factor
2-Chloroacetophenone	532-27-4	--	2.6E-04	2.6E-04	NA	tpy	AP-42 Emission Factor
Chlorobenzene	108-90-7	--	8.2E-04	8.2E-04	NA	tpy	AP-42 Emission Factor
Chloroform	67-66-3	--	2.2E-03	2.2E-03	NA	tpy	AP-42 Emission Factor
Cumene	98-82-8	--	2.0E-04	2.0E-04	NA	tpy	AP-42 Emission Factor
Cyanide	57-12-5	--	9.3E-02	9.3E-02	NA	tpy	AP-42 Emission Factor
2,4-Dinitrotoluene	121-14-2	--	1.0E-05	1.0E-05	NA	tpy	AP-42 Emission Factor
Dimethyl Sulfate	77-78-1	--	1.8E-03	1.8E-03	NA	tpy	AP-42 Emission Factor
Ethyl Benzene	100-41-4	--	3.5E-03	3.5E-03	NA	tpy	AP-42 Emission Factor
Ethyl Chloride	75-00-3	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dichloride	107-06-2	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dibromide	106-93-4	--	4.5E-05	4.5E-05	NA	tpy	AP-42 Emission Factor
Formaldehyde	50-00-0	--	8.9E-03	8.9E-03	NA	tpy	AP-42 Emission Factor
Hexane	110-54-3	--	2.5E-03	2.5E-03	NA	tpy	AP-42 Emission Factor
Isophorone	78-59-1	--	2.2E-03	2.2E-03	NA	tpy	AP-42 Emission Factor
Methyl Bromide	74-83-9	--	6.0E-03	6.0E-03	NA	tpy	AP-42 Emission Factor
Methyl Chloride	74-87-3	--	2.0E-02	2.0E-02	NA	tpy	AP-42 Emission Factor
Methyl Ethyl Ketone	78-93-3	--	1.5E-02	1.5E-02	NA	tpy	AP-42 Emission Factor
Methyl Hydrazine	60-34-4	--	6.3E-03	6.3E-03	NA	tpy	AP-42 Emission Factor
Methyl Methacrylate	80-62-6	--	7.5E-04	7.5E-04	NA	tpy	AP-42 Emission Factor
Methyl Tert Butyl Ether	1634-04-4	--	1.3E-03	1.3E-03	NA	tpy	AP-42 Emission Factor
Methylene Chloride	45-09-2	--	1.1E-02	1.1E-02	NA	tpy	AP-42 Emission Factor
Phenol	108-95-2	--	6.0E-04	6.0E-04	NA	tpy	AP-42 Emission Factor
Propionaldehyde	123-38-6	--	1.4E-02	1.4E-02	NA	tpy	AP-42 Emission Factor
Toluene	108-88-3	--	8.9E-04	8.9E-04	NA	tpy	AP-42 Emission Factor
1,1,1-Trichloroethane (Methyl Chloroform)	71-55-6	--	7.5E-04	7.5E-04	NA	tpy	AP-42 Emission Factor
Styrene	100-42-5	--	9.3E-04	9.3E-04	NA	tpy	AP-42 Emission Factor
Xylene	1330-20-7	--	1.4E-03	1.4E-03	NA	tpy	AP-42 Emission Factor
Vinyl Acetate	108-05-4	--	2.8E-04	2.8E-04	NA	tpy	AP-42 Emission Factor
Hydrogen Chloride (Hydrochloric Acid)	7647-01-0	--	44.7	44.7	NA	tpy	AP-42 Emission Factor
Hydrogen Fluoride (Hydrofluoric Acid)	7664-39-3	--	5.6	5.6	NA	tpy	AP-42 Emission Factor
Antimony	7440-36-0	--	6.7E-04	6.7E-04	NA	tpy	AP-42 Emission Factor
Arsenic	7440-38-2	--	1.5E-02	1.5E-02	NA	tpy	AP-42 Emission Factor
Beryllium	7440-41-7	--	7.8E-04	7.8E-04	NA	tpy	AP-42 Emission Factor
Cadmium	7440-43-9	--	1.9E-03	1.9E-03	NA	tpy	AP-42 Emission Factor
Chromium (Total)	7440-47-3	--	1.3E-02	1.3E-02	NA	tpy	AP-42 Emission Factor
Cobalt	7440-48-4	--	3.7E-03	3.7E-03	NA	tpy	AP-42 Emission Factor
Manganese	7439-96-5	--	1.8E-02	1.8E-02	NA	tpy	AP-42 Emission Factor
Mercury	7439-97-6	--	3.1E-03	3.1E-03	NA	tpy	AP-42 Emission Factor
Nickel	7440-02-0	--	1.0E-02	1.0E-02	NA	tpy	AP-42 Emission Factor
Selenium	7782-49-2	--	4.8E-02	4.8E-02	NA	tpy	AP-42 Emission Factor

Note: The above compounds are exempt from South Carolina Regulations, but are listed because they Applicable to Federal Regulations.

2. Emission Unit: Power House Coal Combustion Boiler #3				3. Exhaust Type: CE		4. Exhaust Point Number: 3PHBOL03E1	
5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
Acetaldehyde	75-07-0	--	2.1E-02	2.1E-02	NA	tpy	AP-42 Emission Factor
Acetophenone	98-86-2	--	5.6E-04	5.6E-04	NA	tpy	AP-42 Emission Factor
Acrolein	107-02-8	--	1.1E-02	1.1E-02	NA	tpy	AP-42 Emission Factor
Benzene	71-43-2	--	4.8E-02	4.8E-02	NA	tpy	AP-42 Emission Factor
Benzyl Chloride	100-44-7	--	2.6E-02	2.6E-02	NA	tpy	AP-42 Emission Factor
Bis (2-ethylhexyl) pthalate (DEHP)	117-81-7	--	2.7E-03	2.7E-03	NA	tpy	AP-42 Emission Factor
Bromoform	75-25-2	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Carbon Disulfide	75-15-0	--	4.8E-03	4.8E-03	NA	tpy	AP-42 Emission Factor
2-Chloroacetophenone	532-27-4	--	2.6E-04	2.6E-04	NA	tpy	AP-42 Emission Factor
Chlorobenzene	108-90-7	--	8.2E-04	8.2E-04	NA	tpy	AP-42 Emission Factor
Chloroform	67-66-3	--	2.2E-03	2.2E-03	NA	tpy	AP-42 Emission Factor
Cumene	98-82-8	--	2.0E-04	2.0E-04	NA	tpy	AP-42 Emission Factor
Cyanide	57-12-5	--	9.3E-02	9.3E-02	NA	tpy	AP-42 Emission Factor
2,4-Dinitrotoluene	121-14-2	--	1.0E-05	1.0E-05	NA	tpy	AP-42 Emission Factor
Dimethyl Sulfate	77-78-1	--	1.8E-03	1.8E-03	NA	tpy	AP-42 Emission Factor
Ethyl Benzene	100-41-4	--	3.5E-03	3.5E-03	NA	tpy	AP-42 Emission Factor
Ethyl Chloride	75-00-3	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dichloride	107-06-2	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dibromide	106-93-4	--	4.5E-05	4.5E-05	NA	tpy	AP-42 Emission Factor
Formaldehyde	50-00-0	--	8.9E-03	8.9E-03	NA	tpy	AP-42 Emission Factor
Hexane	110-54-3	--	2.5E-03	2.5E-03	NA	tpy	AP-42 Emission Factor
Isophorone	78-59-1	--	2.2E-03	2.2E-03	NA	tpy	AP-42 Emission Factor
Methyl Bromide	74-83-9	--	6.0E-03	6.0E-03	NA	tpy	AP-42 Emission Factor
Methyl Chloride	74-87-3	--	2.0E-02	2.0E-02	NA	tpy	AP-42 Emission Factor
Methyl Ethyl Ketone	78-93-3	--	1.5E-02	1.5E-02	NA	tpy	AP-42 Emission Factor
Methyl Hydrazine	60-34-4	--	6.3E-03	6.3E-03	NA	tpy	AP-42 Emission Factor
Methyl Methacrylate	80-62-6	--	7.5E-04	7.5E-04	NA	tpy	AP-42 Emission Factor
Methyl Tert Butyl Ether	1634-04-4	--	1.3E-03	1.3E-03	NA	tpy	AP-42 Emission Factor
Methylene Chloride	45-09-2	--	1.1E-02	1.1E-02	NA	tpy	AP-42 Emission Factor
Phenol	108-95-2	--	6.0E-04	6.0E-04	NA	tpy	AP-42 Emission Factor
Propionaldehyde	123-38-6	--	1.4E-02	1.4E-02	NA	tpy	AP-42 Emission Factor
Toluene	108-88-3	--	8.9E-04	8.9E-04	NA	tpy	AP-42 Emission Factor
1,1,1-Trichloroethane (Methyl Chloroform)	71-55-6	--	7.5E-04	7.5E-04	NA	tpy	AP-42 Emission Factor
Styrene	100-42-5	--	9.3E-04	9.3E-04	NA	tpy	AP-42 Emission Factor
Xylene	1330-20-7	--	1.4E-03	1.4E-03	NA	tpy	AP-42 Emission Factor
Vinyl Acetate	108-05-4	--	2.8E-04	2.8E-04	NA	tpy	AP-42 Emission Factor
Hydrogen Chloride (Hydrochloric Acid)	7647-01-0	--	44.7	44.7	NA	tpy	AP-42 Emission Factor
Hydrogen Fluoride (Hydrofluoric Acid)	7664-39-3	--	5.6	5.6	NA	tpy	AP-42 Emission Factor
Antimony	7440-36-0	--	6.7E-04	6.7E-04	NA	tpy	AP-42 Emission Factor
Arsenic	7440-38-2	--	1.5E-02	1.5E-02	NA	tpy	AP-42 Emission Factor
Beryllium	7440-41-7	--	7.8E-04	7.8E-04	NA	tpy	AP-42 Emission Factor
Cadmium	7440-43-9	--	1.9E-03	1.9E-03	NA	tpy	AP-42 Emission Factor
Chromium (Total)	7440-47-3	--	1.3E-02	1.3E-02	NA	tpy	AP-42 Emission Factor
Cobalt	7440-48-4	--	3.7E-03	3.7E-03	NA	tpy	AP-42 Emission Factor
Manganese	7439-96-5	--	1.8E-02	1.8E-02	NA	tpy	AP-42 Emission Factor
Mercury	7439-97-6	--	3.1E-03	3.1E-03	NA	tpy	AP-42 Emission Factor
Nickel	7440-02-0	--	1.0E-02	1.0E-02	NA	tpy	AP-42 Emission Factor
Selenium	7782-49-2	--	4.8E-02	4.8E-02	NA	tpy	AP-42 Emission Factor

Note: The above compounds are exempt from South Carolina Regulations, but are listed because they Applicable to Federal Regulations.

2. Emission Unit: Power House Coal Combustion Boiler #4				3. Exhaust Type: CE		4. Exhaust Point Number: 3PHBOL04E1	
5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
Acetaldehyde	75-07-0	--	2.5E-02	2.5E-02	NA	tpy	AP-42 Emission Factor
Acetophenone	98-86-2	--	6.6E-04	6.6E-04	NA	tpy	AP-42 Emission Factor
Acrolein	107-02-8	--	1.3E-02	1.3E-02	NA	tpy	AP-42 Emission Factor
Benzene	71-43-2	--	5.7E-02	5.7E-02	NA	tpy	AP-42 Emission Factor
Benzyl Chloride	100-44-7	--	3.1E-02	3.1E-02	NA	tpy	AP-42 Emission Factor
Bis (2-ethylhexyl) pthalate (DEHP)	117-81-7	--	3.2E-03	3.2E-03	NA	tpy	AP-42 Emission Factor
Bromoform	75-25-2	--	1.7E-03	1.7E-03	NA	tpy	AP-42 Emission Factor
Carbon Disulfide	75-15-0	--	5.7E-03	5.7E-03	NA	tpy	AP-42 Emission Factor
2-Chloroacetophenone	532-27-4	--	3.1E-04	3.1E-04	NA	tpy	AP-42 Emission Factor
Chlorobenzene	108-90-7	--	9.6E-04	9.6E-04	NA	tpy	AP-42 Emission Factor
Chloroform	67-66-3	--	2.6E-03	2.6E-03	NA	tpy	AP-42 Emission Factor
Cumene	98-82-8	--	2.3E-04	2.3E-04	NA	tpy	AP-42 Emission Factor
Cyanide	57-12-5	--	1.1E-01	1.1E-01	NA	tpy	AP-42 Emission Factor
2,4-Dinitrotoluene	121-14-2	--	1.2E-05	1.2E-05	NA	tpy	AP-42 Emission Factor
Dimethyl Sulfate	77-78-1	--	2.1E-03	2.1E-03	NA	tpy	AP-42 Emission Factor
Ethyl Benzene	100-41-4	--	4.1E-03	4.1E-03	NA	tpy	AP-42 Emission Factor
Ethyl Chloride	75-00-3	--	1.8E-03	1.8E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dichloride	107-06-2	--	1.8E-03	1.8E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dibromide	106-93-4	--	5.3E-05	5.3E-05	NA	tpy	AP-42 Emission Factor
Formaldehyde	50-00-0	--	1.1E-02	1.1E-02	NA	tpy	AP-42 Emission Factor
Hexane	110-54-3	--	2.9E-03	2.9E-03	NA	tpy	AP-42 Emission Factor
Isophorone	78-59-1	--	2.5E-02	2.5E-02	NA	tpy	AP-42 Emission Factor
Methyl Bromide	74-83-9	--	7.0E+03	7.0E+03	NA	tpy	AP-42 Emission Factor
Methyl Chloride	74-87-3	--	2.3E-02	2.3E-02	NA	tpy	AP-42 Emission Factor
Methyl Ethyl Ketone	78-93-3	--	1.7E-02	1.7E-02	NA	tpy	AP-42 Emission Factor
Methyl Hydrazine	60-34-4	--	7.5E-03	7.5E-03	NA	tpy	AP-42 Emission Factor
Methyl Methacrylate	80-62-6	--	8.8E-04	8.8E-04	NA	tpy	AP-42 Emission Factor
Methyl Tert Butyl Ether	1634-04-4	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Methylene Chloride	45-09-2	--	1.3E-02	1.3E-02	NA	tpy	AP-42 Emission Factor
Phenol	108-95-2	--	7.0E-02	7.0E-02	NA	tpy	AP-42 Emission Factor
Propionaldehyde	123-38-6	--	1.7E-02	1.7E-02	NA	tpy	AP-42 Emission Factor
Toluene	108-88-3	--	1.1E-03	1.1E-03	NA	tpy	AP-42 Emission Factor
1,1,1-Trichloroethane (Methyl Chloroform)	71-55-6	--	8.8E-04	8.8E-04	NA	tpy	AP-42 Emission Factor
Styrene	100-42-5	--	1.1E-03	1.1E-03	NA	tpy	AP-42 Emission Factor
Xylene	1330-20-7	--	1.6E-03	1.6E-03	NA	tpy	AP-42 Emission Factor
Vinyl Acetate	108-05-4	--	3.3E-04	3.3E-04	NA	tpy	AP-42 Emission Factor
Hydrogen Chloride (Hydrochloric Acid)	7647-01-0	--	52.6	52.6	NA	tpy	AP-42 Emission Factor
Hydrogen Fluoride (Hydrofluoric Acid)	7664-39-3	--	6.6	6.6	NA	tpy	AP-42 Emission Factor
Antimony	7440-36-0	--	7.9E-04	7.9E-04	NA	tpy	AP-42 Emission Factor
Arsenic	7440-38-2	--	1.8E-02	1.8E-02	NA	tpy	AP-42 Emission Factor
Beryllium	7440-41-7	--	9.2E-04	9.2E-04	NA	tpy	AP-42 Emission Factor
Cadmium	7440-43-9	--	2.2E-03	2.2E-03	NA	tpy	AP-42 Emission Factor
Chromium (Total)	7440-47-3	--	1.5E-02	1.5E-02	NA	tpy	AP-42 Emission Factor
Cobalt	7440-48-4	--	4.4E-03	4.4E-03	NA	tpy	AP-42 Emission Factor
Manganese	7439-96-5	--	2.1E-02	2.1E-02	NA	tpy	AP-42 Emission Factor
Mercury	7439-97-6	--	3.6E-03	3.6E-03	NA	tpy	AP-42 Emission Factor
Nickel	7440-02-0	--	1.2E-02	1.2E-02	NA	tpy	AP-42 Emission Factor
Selenium	7782-49-2	--	5.7E-02	5.7E-02	NA	tpy	AP-42 Emission Factor

Note: The above compounds are exempt from South Carolina Regulations, but are listed because they Applicable to Federal Regulations.

2. Emission Unit: Power House Coal Combustion Boiler #5				3. Exhaust Type: CE		4. Exhaust Point Number: 3PHBOL05E1	
5. Pollutants (See Appendix)	6. CAS Number	7. Actual Emission	8. Maximum Uncontrolled	9. Maximum Controlled	10. Maximum Allowable	11. Units	12. Estimation Method
Acetaldehyde	75-07-0	--	2.5E-02	2.5E-02	NA	tpy	AP-42 Emission Factor
Acetophenone	98-86-2	--	6.6E-04	6.6E-04	NA	tpy	AP-42 Emission Factor
Acrolein	107-02-8	--	1.3E-02	1.3E-02	NA	tpy	AP-42 Emission Factor
Benzene	71-43-2	--	5.7E-02	5.7E-02	NA	tpy	AP-42 Emission Factor
Benzyl Chloride	100-44-7	--	3.1E-02	3.1E-02	NA	tpy	AP-42 Emission Factor
Bis (2-ethylhexyl) pthalate (DEHP)	117-81-7	--	3.2E-03	3.2E-03	NA	tpy	AP-42 Emission Factor
Bromoform	75-25-2	--	1.7E-03	1.7E-03	NA	tpy	AP-42 Emission Factor
Carbon Disulfide	75-15-0	--	5.7E-03	5.7E-03	NA	tpy	AP-42 Emission Factor
2-Chloroacetophenone	532-27-4	--	3.1E-04	3.1E-04	NA	tpy	AP-42 Emission Factor
Chlorobenzene	108-90-7	--	9.6E-04	9.6E-04	NA	tpy	AP-42 Emission Factor
Chloroform	67-66-3	--	2.6E-03	2.6E-03	NA	tpy	AP-42 Emission Factor
Cumene	98-82-8	--	2.3E-04	2.3E-04	NA	tpy	AP-42 Emission Factor
Cyanide	57-12-5	--	1.1E-01	1.1E-01	NA	tpy	AP-42 Emission Factor
2,4-Dinitrotoluene	121-14-2	--	1.2E-05	1.2E-05	NA	tpy	AP-42 Emission Factor
Dimethyl Sulfate	77-78-1	--	2.1E-03	2.1E-03	NA	tpy	AP-42 Emission Factor
Ethyl Benzene	100-41-4	--	4.1E-03	4.1E-03	NA	tpy	AP-42 Emission Factor
Ethyl Chloride	75-00-3	--	1.8E-03	1.8E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dichloride	107-06-2	--	1.8E-03	1.8E-03	NA	tpy	AP-42 Emission Factor
Ethylene Dibromide	106-93-4	--	5.3E-05	5.3E-05	NA	tpy	AP-42 Emission Factor
Formaldehyde	50-00-0	--	1.1E-02	1.1E-02	NA	tpy	AP-42 Emission Factor
Hexane	110-54-3	--	2.9E-03	2.9E-03	NA	tpy	AP-42 Emission Factor
Isophorone	78-59-1	--	2.5E-02	2.5E-02	NA	tpy	AP-42 Emission Factor
Methyl Bromide	74-83-9	--	7.0E+03	7.0E+03	NA	tpy	AP-42 Emission Factor
Methyl Chloride	74-87-3	--	2.3E-02	2.3E-02	NA	tpy	AP-42 Emission Factor
Methyl Ethyl Ketone	78-93-3	--	1.7E-02	1.7E-02	NA	tpy	AP-42 Emission Factor
Methyl Hydrazine	60-34-4	--	7.5E-03	7.5E-03	NA	tpy	AP-42 Emission Factor
Methyl Methacrylate	80-62-6	--	8.8E-04	8.8E-04	NA	tpy	AP-42 Emission Factor
Methyl Tert Butyl Ether	1634-04-4	--	1.5E-03	1.5E-03	NA	tpy	AP-42 Emission Factor
Methylene Chloride	45-09-2	--	1.3E-02	1.3E-02	NA	tpy	AP-42 Emission Factor
Phenol	108-95-2	--	7.0E-02	7.0E-02	NA	tpy	AP-42 Emission Factor
Propionaldehyde	123-38-6	--	1.7E-02	1.7E-02	NA	tpy	AP-42 Emission Factor
Toluene	108-88-3	--	1.1E-03	1.1E-03	NA	tpy	AP-42 Emission Factor
1,1,1-Trichloroethane (Methyl Chloroform)	71-55-6	--	8.8E-04	8.8E-04	NA	tpy	AP-42 Emission Factor
Styrene	100-42-5	--	1.1E-03	1.1E-03	NA	tpy	AP-42 Emission Factor
Xylene	1330-20-7	--	1.6E-03	1.6E-03	NA	tpy	AP-42 Emission Factor
Vinyl Acetate	108-05-4	--	3.3E-04	3.3E-04	NA	tpy	AP-42 Emission Factor
Hydrogen Chloride (Hydrochloric Acid)	7647-01-0	--	52.6	52.6	NA	tpy	AP-42 Emission Factor
Hydrogen Fluoride (Hydrofluoric Acid)	7664-39-3	--	6.6	6.6	NA	tpy	AP-42 Emission Factor
Antimony	7440-36-0	--	7.9E-04	7.9E-04	NA	tpy	AP-42 Emission Factor
Arsenic	7440-38-2	--	1.8E-02	1.8E-02	NA	tpy	AP-42 Emission Factor
Beryllium	7440-41-7	--	9.2E-04	9.2E-04	NA	tpy	AP-42 Emission Factor
Cadmium	7440-43-9	--	2.2E-03	2.2E-03	NA	tpy	AP-42 Emission Factor
Chromium (Total)	7440-47-3	--	1.5E-02	1.5E-02	NA	tpy	AP-42 Emission Factor
Cobalt	7440-48-4	--	4.4E-03	4.4E-03	NA	tpy	AP-42 Emission Factor
Manganese	7439-96-5	--	2.1E-02	2.1E-02	NA	tpy	AP-42 Emission Factor
Mercury	7439-97-6	--	3.6E-03	3.6E-03	NA	tpy	AP-42 Emission Factor
Nickel	7440-02-0	--	1.2E-02	1.2E-02	NA	tpy	AP-42 Emission Factor
Selenium	7782-49-2	--	5.7E-02	5.7E-02	NA	tpy	AP-42 Emission Factor

Note: The above compounds are exempt from South Carolina Regulations, but are listed because they Applicable to Federal Regulations.

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section J: Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	4. Applicable Rule	5. Rule Description	6. Specified Limit		
	--	--	--	--	--		
APPLICABLE REQUIREMENTS	--	--	--	--	--		
Applies to entire U/M Complex with the exception of the boilers. See Section D for affected equipment Also applies to the K2/K3 Methanol Brine Storage Tanks and Utility Tanks, as well as Calcium Chloride Surge Tank, Calcium Chloride Head Tank, and Calcium Chloride Mix Tank.	See Section D	See Section D	See Below	See Below	--		
"	"	"	62.5 Std. No. 4, Sec. VIII	Other Manufacturing	Particulate Matter	42.5	lb/hr
"	"	"	62.5 Std. No. 4, Sec. IX	Visible Emissions (Where not Specified Elsewhere)	Opacity	40%	
"	"	"	62.5 Std. No. 8	Toxic Air Pollutants			
"	"	"	"	Methanol	Methanol	13.9	lb/day
"	"	"	"	Naphthalene	Naphthalene	<0.1	lb/day
"	"	"	"	Sodium Hydroxide	Sodium Hydroxide	<0.1	lb/day
"	"	"	"	Sulfuric Acid	Sulfuric Acid	<0.1	lb/day
SOURCE SPECIFIC REQUIREMENTS		--	--	--	--		
POWER HOUSE	--	--	--	--	--		
COAL COMBUSTION BOILER #1	CE	3PHBOL01E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%	
"	CE	3PHBOL01E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	124.6	lb/hr
"	CE	3PHBOL01E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	727.0	lb/hr
"	CE	3PHBOL01E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
	CE	3PHBOL01E1	40 CFR CAM	Continuous Assurance Monitoring Plan for Opacity and Particulate Matter from Coal Fired Boilers with Electrostatic Precipitators	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section J: Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	7. In Compliance? (Y/N)	8. Compliance Statement (See Instructions)	9. Verification Method (See Instructions)
	--	--	--	--	--
	--	--	--	--	--
APPLICABLE REQUIREMENTS					
Applies to entire U/M Complex with the exception of the boilers. See Section D for affected equipment Also applies to the K2/K3 Methanol Brine Storage Tanks and Utility Tanks, as well as Calcium Chloride Surge Tank, Calcium Chloride Head Tank, and Calcium Chloride Mix Tank.	See Section D	See Section D	--	--	--
"	"	"	Yes		M, RPT
"	"	"	Yes		M, RPT
"	"	"	Yes		"
"	"	"	Yes		"
"	"	"	Yes		"
"	"	"	Yes		"
SOURCE SPECIFIC REQUIREMENTS		--	--	--	--
POWER HOUSE	--	--	--	--	--
COAL COMBUSTION BOILER #1	CE	3PHBOL01E1	Yes	--	M, RK, RPT
"	CE	3PHBOL01E1	Yes	--	RTM, RK, RPT
"	CE	3PHBOL01E1	Yes	--	M, RPT
"	CE	3PHBOL01E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	--	M, RK, RPT
	CE	3PHBOL01E1	This regulation was just recently signed. The Facility will comply with this regulation as appropriate. A Contiouous Assuarance Monitoring Plan for the facility has been prepared.		M, RK, RPT

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section J: Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	4. Applicable Rule	5. Rule Description	6. Specified Limit		
COAL COMBUSTION BOILER #2	CE	3PHBOL02E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%	
"	CE	3PHBOL02E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	124.6	lb/hr
"	CE	3PHBOL02E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	727.0	lb/hr
"	CE	3PHBOL02E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
			40 CFR CAM	Continuous Assurance Monitoring Plan for Opacity and Particulate Matter from Coal Fired Boilers with Electrostatic Precipitators	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
COAL COMBUSTION BOILER #3	CE	3PHBOL03E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%	
"	CE	3PHBOL03E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	124.6	lb/hr
"	CE	3PHBOL03E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	727.0	lb/hr
"	CE	3PHBOL03E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
			40 CFR CAM	Continuous Assurance Monitoring Plan for Opacity and Particulate Matter from Coal Fired Boilers with Electrostatic Precipitators	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

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Section J: Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	7. In Compliance? (Y/N)	8. Compliance Statement (See Instructions)	9. Verification Method (See Instructions)
COAL COMBUSTION BOILER #2	CE	3PHBOL02E1	Yes	- -	M, RK, RPT
"	CE	3PHBOL02E1	Yes	- -	RTM, RK, RPT
"	CE	3PHBOL02E1	Yes	- -	M, RPT
"	CE	3PHBOL02E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	- -	M, RK, RPT
			This regulation was just recently signed. The Facility will comply with this regulation as appropriate. A Contiouous Assuarance Monitoring Plan for the facility has been prepared.		M, RK, RPT
COAL COMBUSTION BOILER #3	CE	3PHBOL03E1	Yes	- -	M, RK, RPT
"	CE	3PHBOL03E1	Yes	- -	RTM, RK, RPT
"	CE	3PHBOL03E1	Yes	- -	M, RPT
"	CE	3PHBOL03E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	- -	M, RK, RPT
			This regulation was just recently signed. The Facility will comply with this regulation as appropriate. A Contiouous Assuarance Monitoring Plan for the facility has been prepared.		M, RK, RPT

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
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Section J: Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	4. Applicable Rule	5. Rule Description	6. Specified Limit		
COAL COMBUSTION BOILER #4	CE	3PHBOL04E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%	
"	CE	3PHBOL04E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	146.6	lb/hr
"	CE	3PHBOL04E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	855.4	lb/hr
"	CE	3PHBOL04E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
COAL COMBUSTION BOILER #5	CE	3PHBOL05E1	62.5 Std. No. 1, Sec. I-A	Emissions from Fuel Burning Operations-Visible Emissions	Opacity[1]	40% / 60%	
"	CE	3PHBOL05E1	62.5 Std. No. 1, Sec. II - A	Emissions from Fuel Burning Operations-Particulate Matter	Particulate Matter	146.6	lb/hr
"	CE	3PHBOL05E1	62.5 Std. No. 1, Sec. III - C.	Emissions from Fuel Burning Operations-Sulfur Dioxide	Sulfur Dioxide	855.4	lb/hr
"	CE	3PHBOL05E1	40 CFR 63 Subpart DDDDD	NESHAP: Industrial/Commercial/ Institutional Boilers and Process Heaters	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
			40 CFR CAM	Continuous Assurance Monitoring Plan for Opacity and Particulate Matter from Coal Fired Boilers with Electrostatic Precipitators	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.		
MISCELLANEOUS SOURCES	--	--	--	--	--		
FREON	--	--	--	--	--		
Process Refreigerators Freon R12 and R22 Fugitives	F	3MSFREONE1	40 CFR 82	Stratospheric Ozone Protection	DICHLORODIFLUOROMETHANE (R12)		N/A
--	--	--	--	--	DICHLORODIFLUOROMETHANE (R22)		N/A

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

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Section J: Relationship Between Non-Exempt Emission Units and Applicable Rules

1. Emission Unit	2. Exhaust Type	3. Exhaust Point No.	7. In Compliance? (Y/N)	8. Compliance Statement (See Instructions)	9. Verification Method (See Instructions)
COAL COMBUSTION BOILER #4	CE	3PHBOL04E1	Yes	--	M, RK, RPT
"	CE	3PHBOL04E1	Yes	--	RTM, RK, RPT
"	CE	3PHBOL04E1	Yes	--	M, RPT
"	CE	3PHBOL04E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	--	M, RK, RPT
COAL COMBUSTION BOILER #5	CE	3PHBOL05E1	Yes	--	M, RK, RPT
"	CE	3PHBOL05E1	Yes	--	RTM, RK, RPT
"	CE	3PHBOL05E1	Yes	--	M,RPT
"	CE	3PHBOL05E1	This regulation was just recently signed. The Facility may have requirements under this standard that apply to Boilers 1 - 5. The Facility will comply with this regulation as appropriate.	--	M, RK, RPT
			This regulation was just recently signed. The Facility will comply with this regulation as appropriate. A Contiouous Assuarance Monitoring Plan for the facility has been prepared.		M, RK, RPT
MISCELLANEOUS SOURCES	--	--	--	--	--
FREON	--	--	--	--	--
Process Refreigerators Freon R12 and R22 Fugitives	F	3MSFREONE1	Yes	--	RK, RPT
--	--	--	Yes	--	RK, RPT

Note: [1] As Described in SC DHEC Regulation 62.5 Std. No. 1, Sec 1-A

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Section K: Compliance Plan/Schedule for Emission Units

1. Emission Unit	2. Exhaust Point No.	3. Applicable Rule	4.Compliance Statement	5.Compliance Date	6. Reporting Frequency	7. First Submittal
--	---	---	---	---	---	---
This complex is in compliance with all applicable requirements.						

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Section L: Emission Monitor Information

1. Equipment	2. Exhaust Point No.	3. Monitoring Device Type	4. Air Pollutant or Parameter Monitored
	--	--	--
	--	--	--
APPLICABLE REQUIREMENTS			
Applies to entire U/M Complex with the exception of the boilers. See Section D for affected equipment Also applies to the K2/K3 Methanol Brine Storage Tanks and Utility Tanks, as well as Calcium Chloride Surge Tank, Calcium Chloride Head Tank, and Calcium Chloride Mix Tank.	See Section J	Facility will follow standard operating procedures (SOPs) for operations and maintenance	Opacity and Particulate Matter
SOURCE SPECIFIC REQUIREMENTS	--	--	--
POWER HOUSE	--	--	--
BOILERS	--	--	--
Coal Combustion Boilers No 1 thru 5	See Section J	Facility will follow standard operating procedures (SOPs) for operations and maintenance	Opacity and Sulfur Dioxide
Coal Combustion Boiler #1	3PHBOL02E1	ESP primary voltage and current meters, per Monitoring Plan	Primary Voltage and Current
Coal Combustion Boiler #3	3PHBOL04E1	ESP primary voltage and current meters, per Monitoring Plan	Primary Voltage and Current
MISCELLANEOUS SOURCES	--	--	--
FREON	--	--	--
Process Regrigerators Freon R12 and R22 Fugitives	1AMTKK2BE1	Calculate monthly amount (12 month rolling sum) of refrigerant added to each unit. If the loss of refrigerant from an individual process refrigerant unit is >35% of the total charge during any 12 month period, a leak has occurred and will be repaired (or a one year retrofit or retirement plan will be developed) within thirty (30) days.	Freon

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Section L: Emission Monitor Information

1. Equipment	2. Exhaust Point No.	5. Sampling Frequency	6. Sampling Duration	7. Description of Monitor Location
	--	--	--	--
APPLICABLE REQUIREMENTS	--	--	--	--
Applies to entire U/M Complex with the exception of the boilers. See Section D for affected equipment Also applies to the K2/K3 Methanol Brine Storage Tanks and Utility Tanks, as well as Calcium Chloride Surge Tank, Calcium Chloride Head Tank, and Calcium Chloride Mix Tank.	See Section J	In accordance with SOPs	In accordance with SOPs	In accordance with SOPs
SOURCE SPECIFIC REQUIREMENTS	--	--	--	--
POWER HOUSE	--	--	--	--
BOILERS	--	--	--	--
Coal Combustion Boilers No 1 thru 5	See Section J	In accordance with SOPs	In accordance with SOPs	In accordance with SOPs
Coal Combustion Boiler #1	3PHBOL02E1	Three times per 24 hours	--	Easily accessible location
Coal Combustion Boiler #3	3PHBOL04E1	Three times per 24 hours	--	Easily accessible location
MISCELLANEOUS SOURCES	--	--	--	--
FREON	--	--	--	--
Process Regrigerators Freon R12 and R22 Fugitives	1AMTKK2BE1	Monthly	NA	NA

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Section M: Record Keeping Information

1. Emission Unit	2. Exhaust Point No.	3. Parameter Being Recorded	4. Recording Frequency
	--	--	--
POWER HOUSE	--	--	--
	--	--	--
COAL COMBUSTION BOILER #1	3PHBOL01E1	Keep records of startups, shutdowns, and malfunctions.	Upon boiler startup, shutdown, or malfunction
"	"	Record particulate matter emission test results.	Retain records for five (5) years.
"	"	Record primary voltage and current readings	Once per shift, retain records for five (5) years
COAL COMBUSTION BOILER #2	3PHBOL02E1	Keep records of startups, shutdowns, and malfunctions.	Upon boiler startup, shutdown, or malfunction
"	"	Record particulate matter emission test results.	Retain records for five (5) years.
COAL COMBUSTION BOILER #3	3PHBOL03E1	Keep records of startups, shutdowns, and malfunctions.	Upon boiler startup, shutdown, or malfunction
"	"	Record particulate matter emission test results.	Retain records for five (5) years.
"	"	Record primary voltage and current readings	Once per shift, retain records for five (5) years
COAL COMBUSTION BOILER #4	3PHBOL04E1	Keep records of startups, shutdowns, and malfunctions.	Upon boiler startup, shutdown, or malfunction
"	"	Record particulate matter emission test results.	Retain records for five (5) years.
COAL COMBUSTION BOILER #5	3PHBOL05E1	Keep records of startups, shutdowns, and malfunctions.	Upon boiler startup, shutdown, or malfunction
"	"	Record particulate matter emission test results.	Retain records for five (5) years.
NAOH TANK 1	3PHTK002E1	Retain records of air toxics compliance demonstrations and reports.	Retain records for five (5) years.
NAOH TANK 2	3PHTK003E1	Retain records of air toxics compliance demonstrations and reports.	Retain records for five (5) years.
NAOH TANK 3	3PHTK004E1	Retain records of air toxics compliance demonstrations and reports.	Retain records for five (5) years.
NAOH TANK 4	3PHTK005E1	Retain records of air toxics compliance demonstrations and reports.	Retain records for five (5) years.
93% SULFURIC ACID TANK	3PHTK006E1	Retain records of air toxics compliance demonstrations and reports.	Retain records for five (5) years.
MISCELLANEOUS SOURCES	--	--	--
FREON	--	--	--
PROCESS REFRIGERATORS FREON R12 AND R22 FUGITIVES	3MSFREONE1	Retain records of dates and type of service, quantities of Freon added, and refrigerant purchased.	Retain records for five (5) years.

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Section N: Reference Test Method

1. Emission Unit	2. Exhaust Point No.	3. Reference Test Method Citation	4. Reference Test Method Description
POWER HOUSE	- -	- -	- -
BOILERS	- -	- -	- -
COAL COMBUSTION BOILER #1	3PHBOL01S1	EPA Method No. 5	Particulate matter test method.
COAL COMBUSTION BOILER #2	3PHBOL02E1	EPA Method No. 5	Particulate matter test method.
COAL COMBUSTION BOILER #3	3PHBOL03E1	EPA Method No. 5	Particulate matter test method.
COAL COMBUSTION BOILER #4	3PHBOL04E1	EPA Method No. 5	Particulate matter test method.
COAL COMBUSTION BOILER #5	3PHBOL05S1	EPA Method No. 5	Particulate matter test method.

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Section O : Reporting

1. Emission Unit	2. Exhaust Point No.	3. Beginning Date of Reporting	4. Frequency of Reporting	5. Describe what is reported
APPLICABLE REQUIREMENTS	- -	- -	- -	- -
Applies to entire U/M Complex with the exception of the boilers. See Section D for affected equipment Also applies to the K2/K3 Methanol Brine Storage Tanks and Utility Tanks, as well as Calcium Chloride Surge Tank, Calcium Chloride Head Tank, and Calcium Chloride Mix Tank.	See Section J	- -	- -	- -
"	"	Six months after Title V permit is issued, unless otherwise required by an applicable regulation	Facility will submit semi-annual report in accordance with Title V operating program requirements.	Opacity Exceedances, Particulate Matter Exceedances
SOURCE SPECIFIC REQUIREMENTS		- -	- -	- -
POWER HOUSE	- -	- -	- -	- -
BOILERS	- -	- -	- -	- -
Coal Combustion Boilers No 1 thru 5	See Section J	Six months after Title V permit is issued, unless otherwise required by an applicable regulation	Facility will submit semi-annual report in accordance with Title V operating program requirements.	Opacity and Sulfur Dioxide Limit Exceedances
	See Section J	Six months after Title V permit is issued, unless otherwise required by an applicable regulation	Every two (2) years	Particulate matter emission test results.

Section Q: Enhanced Monitoring and Compliance Certification Requirement

1. Emission Unit	2. Exhaust Point No.	3. Identify any Applicable Requirements	4. Method of Compliance	5. Compliance Date Expected
Coal Fired 176.4 MM Btu/hr Boiler	3PHBOL01E1	SC Reg. 61-62.5, Std. 1, Sec I for Opacity SC Reg. 61-62.5, Std. 1, Sec II for Particulate Matter	Operate, and maintain Primary Voltage Meters, Primary Current Meters for each field of ESPs. Each parameter shall be recorded at least once each shift and maintained on site for a period of at least 5 years	180 days
Coal Fired 176.4 MM Btu/hr Boiler	3PHBOL02E1	SC Reg. 61-62.5, Std. 1, Sec I for Opacity SC Reg. 61-62.5, Std. 1, Sec II for Particulate Matter	Operate, and maintain Primary Voltage Meters, Primary Current Meters for each field of ESPs. Each parameter shall be recorded at least once each shift and maintained on site for a period of at least 5 years	180 days
Coal Fired 176.4 MM Btu/hr Boiler	3PHBOL03E1	SC Reg. 61-62.5, Std. 1, Sec I for Opacity SC Reg. 61-62.5, Std. 1, Sec II for Particulate Matter	Operate, and maintain Primary Voltage Meters, Primary Current Meters for each field of ESPs. Each parameter shall be recorded at least once each shift and maintained on site for a period of at least 5 years	180 days
Coal Fired 221.9 MM Btu/hr Boiler	3PHBOL04E1	SC Reg. 61-62.5, Std. 1, Sec I for Opacity SC Reg. 61-62.5, Std. 1, Sec II for Particulate Matter	Operate, and maintain Primary Voltage Meters, Primary Current Meters for each field of ESPs. Each parameter shall be recorded at least once each shift and maintained on site for a period of at least 5 years	180 days
Coal Fired 221.9 MM Btu/hr Boiler	3PHBOL05E1	SC Reg. 61-62.5, Std. 1, Sec I for Opacity SC Reg. 61-62.5, Std. 1, Sec II for Particulate Matter	Operate, and maintain Primary Voltage Meters, Primary Current Meters for each field of ESPs. Each parameter shall be recorded at least once each shift and maintained on site for a period of at least 5 years	180 days

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Section R: Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
U/M, FP- FILTER PLANT	--	--	--	--
Phosphate Hopper Fugitive Emissions	3FPPHHOPS1	NA	NA	3FPPHHOPE1
New Lime Slurry Tank	3FPLSLURS1	NA	NA	3FPLSLURE1

6. Type of Exemption (check one)
- ☐ Insignificant Activity Based On Size
- ☒ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☐ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC DEFINTION OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 - 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
PARTICULATE MATTER	--	Trace	10,000	lb/yr

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units

Section R: Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
U/M, MS-MISC. SOURCES	--	--	--	--
Celriver Cooling Tower	3MSCOOL1S1	NA	NA	3MSCOOL1E1

6. Type of Exemption (check one)
- ☐ Insignificant Activity Based On Size
- ☒ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☐ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC DEFINTION OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 - 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
BETZ 2025	--	Trace	Trace	lb/hr
BETZ 26K26215	--	Trace	Trace	lb/hr
BETZ 445	--	Trace	Trace	lb/hr
BETZ BIOTROL 88P	--	Trace	Trace	lb/hr
BETZ FOAM-TROL 300	--	Trace	Trace	lb/hr
BETZ SLIMICIDE C-31	--	Trace	Trace	lb/hr

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units

Section R : Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
U/M, Wastewater Treatment Plant	--	--	--	--
Diesel Pump #4	3WWWDP4S1	<200	hp	3WWWDP4E1

6. Type of Exemption (check one)
- ☒ Insignificant Activity Based On Size
- ☐ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☒ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC LIST OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 & 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
--	--	--	--	--

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units
<200 hp	<200 hp	hp

Section R: Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
U/M, F-P FILTER PLANT				
CHLORINE TANK	3FPTKCL2S1	1400	lb	3FPTKCL2E1

6. Type of Exemption (check one)
- ☐ Insignificant Activity Based On Size
- ☒ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☐ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC DEFINTION OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 - 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
CHLORINE	07782-50-5	0.2	1,000	lb/year

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units

NA = Not Applicable

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Section R: Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
U/M, F-P FILTER PLANT	--	--	--	--
ALUMINUM SULFATE STORAGE TANK	3FPTK001S1	12,000	gal	3FPTK001E1
ALUMINUM SULFATE DAY STORAGE TANK	3FPTK001S2	342	gal	3FPTK001E2

6. Type of Exemption (check one)
- ☐ Insignificant Activity Based On Size
- ☒ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☐ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC DEFINTION OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 - 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
VOCs	10043-01-3	0.0	10,000	lb/year

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units

Section R: Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
UM	--	--	--	--
UNLEADED FUEL STORAGE TANK	3UFST001S1	250	gal	3UFST001E1

6. Type of Exemption (check one)
- ☐ Insignificant Activity Based On Size
- ☒ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☐ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC DEFINTION OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 - 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
PARTICULATE MATTER	--	13.2	10,000	lb/yr

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units

Section R: Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
U/M	--	--	--	--
#2 DIESEL FUEL TANK	3DFST001S1	550	gal	3DFST001e1

6. Type of Exemption (check one)
- ☐ Insignificant Activity Based On Size
- ☒ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☐ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC DEFINTION OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 - 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
PARTICULATE MATTER	--	0.1	10,000	lb/yr

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units

Section R: Exempt Equipment or Processes

1. Equipment or Process Description	2. Equipment ID Number	3. Capacity (Size)	4. Units	5. Exhaust Point No.
U/M	--	--	--	--
Calcium Chloride Storage Tank	1D8TKCA1S1	26,500	gallons	1D8PRCA1E1
Calcium Chloride Head Tank	1D8TKCA2S1	10,000	gallons	1D8PRCA1E1
Calcium Chloride Mix Tank	1D8TKCA3S1	1000	gallons	1D8VTFUGE1

6. Type of Exemption (check one)
- ☐ Insignificant Activity Based On Size
- ☒ Insignificant Activity Based On Emission Levels
- ☐ Insignificant Activity Based On Production Levels
- ☐ Insignificant Activity By Virtue of South Carolina List

7. Cite Basis for Exemption (Applicable Rules)
SC DEFINTION OF INSIGNIFICANT ACTIVITIES

IF EXEMPTION IS DUE TO INSIGNIFICANT EMISSION LEVELS, COMPLETE ITEMS 8 - 12 FOR EACH POLLUTANT

8. Regulated Pollutants Emitted	9. CAS Number	10. Emission Rate	11. De Minimis Rate	12. Units
PARTICULATE MATTER	--	0.0	10,000	lb/yr

IF EXEMPTION IS DUE TO INSIGNIFICANT SIZE OR PRODUCTION RATES, COMPLETE ITEMS 13-15

13. Size or Production Rate	14. De Minimis Size or Production Rate	15. Units

NA = Not Applicable

OUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTRO]
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section S: Operational Flexibility

1. Facility Name:
Cinergy Solutions of Rock Hill, LLC.

2. Emission Unit:	3. Alternate Process Name:	4. Estimated Annual Percentage:
3WWWWDP4S1	487 hp Diesel Firewater Pump #4	See Item No. 5 Below.

5. Description of Alternate Operating Scenario:
Cinery owns one diesel fueled fire water pump for use in emergency.
The fire water pump is expected to operate less than 250 hours per year under routine operations.
Operation could exceed 250 hours per year under emergency situations. Emissions from the 487 hp fire water pump are estimated to be:

0.031 lb/hr NOx
0.007 lb/hr CO
0.002 lb/hr SOx
0.002 lb/hr PM

Trace amounts of acetaldehyde, acrolein, benzene, benzo(a)pyrene, 1,3-Butadiene, formaldehyde, napthalene, propylene, toluene, and xylene.

6. Alternate Equipment ID	7. Alternate Exhaust Pt.	8. Products	9. SIC
N/A	N/A	N/A	N/A

Alternate Compliance Method:

10. Compliance method type:
N/A

11. What is the compliance method based upon? (Check one): N/A ☐ **Applicable Requirement** ☐ **GAP-Filling Requirement**

Alternate Applicable Requirements:

12. Describe the applicable requirement:
N/A

13. Cite the applicable requirement:
N/A

14. Describe the compliance terms required by the applicable rule:
N/A

15. Application Emission Standard:	16. Units
N/A	

OUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROI
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section S: Operational Flexibility

1. Facility Name:
Cinergy Solutions of Rock Hill, LLC.

2. Emission Unit:	3. Alternate Process Name:	4. Estimated Annual Percentage:
3PHBOL01E1-3PHBOL03E1	Boilers using #2 Fuel Oil	See Item No. 5 Below.

5. Description of Alternate Operating Scenario:
Operation of Boilers using #2 Fuel Oil for the Maximum of 7 days without coal.
Fuel oil usage is expected to be less than 7 days per year under routine operations.
Operation could exceed 7 days per year under emergency situations. Emissions from each Boiler #1 - Boi ler #3

0.58 lb/hr NOx
0.121 lb/hr CO
1.76 lb/hr SOx
0.005 lb/hr PM
0.03 lb/hr PM10
0.05 lb/hr VOC

Trace amounts of arsenic, benzene, berylium, cadium, chromium, ethylbenzene, fluorides, formaldehyde, lead, manganese, mercury, methyl chloroform, napthalene, nickle, selenium, toluene, and xylene.

6. Alternate Equipment ID	7. Alternate Exhaust Pt.	8. Products	9. SIC
N/A	N/A	N/A	N/A

Alternate Compliance Method:

10. Compliance method type:
N/A

11. What is the compliance method based upon? (Check one): N/A ☐ Applicable Requirement ☐ GAP-Filling Requirement

Alternate Applicable Requirements:

12. Describe the applicable requirement:
N/A

13. Cite the applicable requirement:
N/A

14. Describe the compliance terms required by the applicable rule:
N/A

15. Application Emission Standard:	16. Units
N/A	

OUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROI
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section S: Operational Flexibility

1. Facility Name:
Cinergy Solutions of Rock Hill, LLC.

2. Emission Unit:	3. Alternate Process Name:	4. Estimated Annual Percentage:
3PHBOL04E1-3PHBOL05E1	Boilers using #2 Fuel Oil	See Item No. 5 Below.

5. Description of Alternate Operating Scenario:
Operation of Boilers using #2 Fuel Oil for the Maximum of 7 days without coal.
Fuel oil usage is expected to be less than 7 days per year under routine operations.
Operation could exceed 7 days per year under emergency situations. Emissions from each Boiler #4 - Boi ler #5

0.73 lb/hr NOx
0.152 lb/hr CO
2.158 lb/hr SOx
0.006 lb/hr PM
0.004 lb/hr PM10
3.83E-05 lb/hr VOC

Trace amounts of arsenic, benzene, berylium, cadium, chromium, ethylbenzene, fluorides, formaldehyde, lead, manganese, mercury, methyl chloroform, napthalene, nickle, selenium, toluene, and xylene.

6. Alternate Equipment ID	7. Alternate Exhaust Pt.	8. Products	9. SIC
N/A	N/A	N/A	N/A

Alternate Compliance Method:

10. Compliance method type:
N/A

11. What is the compliance method based upon? (Check one): N/A ☐ Applicable Requirement ☐ GAP-Filling Requirement

Alternate Applicable Requirements:

12. Describe the applicable requirement:
N/A

13. Cite the applicable requirement:
N/A

14. Describe the compliance terms required by the applicable rule:
N/A

15. Application Emission Standard:	16. Units
N/A	

OUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROI
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section S: Operational Flexibility

1. Facility Name:
Cinergy Solutions of Rock Hill, LLC.

2. Emission Unit:	3. Alternate Process Name:	4. Estimated Annual Percentage:
3UFST001S1	Unleaded Fuel Storage Tank	1,200 gal/year

5. Description of Alternate Operating Scenario:
The use of the unleaded fuel tank is temporary
Unleaded fuel usage is expected to be 1,200 gal/year
Emissions from the unleaded fuel tank were estimated using EPA TANKS
0.036 VOCs lb/day

6. Alternate Equipment ID	7. Alternate Exhaust Pt.	8. Products	9. SIC
N/A	N/A	N/A	N/A

Alternate Compliance Method:

10. Compliance method type:
N/A

11. What is the compliance method based upon? (Check one): N/A ☐ **Applicable Requirement** ☐ **GAP-Filling Requirement**

Alternate Applicable Requirements:

12. Describe the applicable requirement:
N/A

13. Cite the applicable requirement:
N/A

14. Describe the compliance terms required by the applicable rule:
N/A

15. Application Emission Standard:	16. Units
N/A	

OUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROI
BUREAU OF AIR QUALITY - PART 70 OPERATING PERMIT APPLICATION

Section S: Operational Flexibility

1. Facility Name:
Cinergy Solutions of Rock Hill, LLC.

2. Emission Unit:	3. Alternate Process Name:	4. Estimated Annual Percentage:
3DST001S1	#2 Diesel Storage Tank	5,600 gal/year

5. Description of Alternate Operating Scenario:
The use of the #2 diesel tank is temporary
#2 diesel usage is expected to be 1,200 gal/year
Emissions from the #2 diesel tank were estimated using EPA TANKS
0.000 VOCs lb/day

6. Alternate Equipment ID	7. Alternate Exhaust Pt.	8. Products	9. SIC
N/A	N/A	N/A	N/A

Alternate Compliance Method:

10. Compliance method type:
N/A

11. What is the compliance method based upon? (Check one): N/A ☐ **Applicable Requirement** ☐ **GAP-Filling Requirement**

Alternate Applicable Requirements:

12. Describe the applicable requirement:
N/A

13. Cite the applicable requirement:
N/A

14. Describe the compliance terms required by the applicable rule:
N/A

15. Application Emission Standard:	16. Units
N/A	

Cinergy Solutions of Rock Hill, LLC Solutions of Rock Hill, LLC
Boiler Emission Factors

The coal combustion boilers burn bituminouus coal to produce steam for use in plant activities and for generating power in the power house turbines.

As per the permit number TV 2440 0010, the owner/operators of the units have voluntarily elected to use coal with sulfur content of less than or equal to 2.0% by weight. To be conservative, the sulfur value of 2.0% is used. There is no specification on maximum ash content of coal. Therefore, the historical maximum values of Ash content is used to determine the Maximum Potential Emissions (MPE).

S (Sulfur Content): 1.71 %
A (Ash Content): 10.00 %

Emissions from the boilers are determined by using EPA AP-42 Section 1.1 emission factors for the combustion of pulverized bituminous coal in a dry bottom, wall fire boiler. The emission factors are as follows:

Constituent	AP-42 Emission Factor (lb/ton coal)	Emission Factor MPE (lb/ton coal)	Emission Factor MPE (lb/lb coal)
Criteria Pollutants			
Sox[1]	38	64.98	0.03249
NOx:	22	22	0.01100
CO:	0.5	0.5	0.00025
TSP[2]	10	100.00	0.05000
PM10[2]	2.3	23.00	0.01150
Total BMOC (Used to estimate VOC)	0.06	0.06	3.0E-05
Lead	4.20E-04	4.2E-04	2.1E-07
TAP / HAP			
Acetaldehyde	5.70E-04	5.7E-04	2.9E-07
Acetophenone	1.50E-05	1.5E-05	7.5E-09
Acrolein	2.90E-04	2.9E-04	1.5E-07
Benzene	1.30E-03	1.3E-03	6.5E-07
Benzyl Chloride	7.00E-04	7.0E-04	3.5E-07
Bis(2-ethylhexyl)pthalate (DEHP)	7.30E-05	7.3E-05	3.7E-08
Bromoform	3.90E-05	3.9E-05	2.0E-08
Carbon disulfide	1.30E-04	1.3E-04	6.5E-08
2-Chloroacetophenone	7.00E-06	7.0E-06	3.5E-09
Chlorobenzene	2.20E-05	2.2E-05	1.1E-08
Chloroform	5.90E-05	5.9E-05	3.0E-08
Cumene	5.30E-06	5.3E-06	2.7E-09
Cyanide	2.50E-03	2.5E-03	1.3E-06
2,4-Dinitrotoluene	2.80E-07	2.8E-07	1.4E-10
Dimethyl sulfate	4.80E-05	4.8E-05	2.4E-08
Ethyl benzene	9.40E-05	9.4E-05	4.7E-08
Ethyl chloride	4.20E-05	4.2E-05	2.1E-08
Ethylene dichloride	4.00E-05	4.0E-05	2.0E-08

Cinergy Solutions of Rock Hill, LLC Solutions of Rock Hill, LLC
Boiler Emission Factors

Constituent	AP-42 Emission Factor (lb/ton coal)	Emission Factor MPE (lb/ton coal)	Emission Factor MPE (lb/lb coal)
Ethylene dibromide	1.20E-06	1.2E-06	6.0E-10
Formaldehyde	2.40E-04	2.4E-04	1.2E-07
Hexane	6.70E-05	6.7E-05	3.4E-08
Isophorone	5.80E-04	5.8E-04	2.9E-07
Methyl bromide	1.60E-04	1.6E-04	8.0E-08
Methyl chloride	5.30E-04	5.3E-04	2.7E-07
Methyl ethyl ketone	3.90E-04	3.9E-04	2.0E-07
Methyl hydrazine	1.70E-04	1.7E-04	8.5E-08
Methyl methacrylate	2.00E-05	2.0E-05	1.0E-08
Methyl tert butyl ether	3.50E-05	3.5E-05	1.8E-08
Methylene chloride	2.90E-04	2.9E-04	1.5E-07
Phenol	1.60E-05	1.6E-05	8.0E-09
Propionaldehyde	3.80E-04	3.8E-04	1.9E-07
Tetrachlorethylene	4.30E-05	4.3E-05	2.2E-08
Toluene	2.40E-05	2.4E-05	1.2E-08
1,1,1-Trichloroethane (Methyl chloroform)	2.00E-05	2.0E-05	1.0E-08
Styrene	2.50E-05	2.5E-05	1.3E-08
Xylenes	3.70E-05	3.7E-05	1.9E-08
Vinyl acetate	7.60E-06	7.6E-06	3.8E-09
Hydrogen Chloride (Hydrochloric Acid)	1.2	1.2	6.0E-04
Hydrogen Fluoride	0.15	0.15	7.5E-05
Antimony	1.80E-05	1.8E-05	9.0E-09
Arsenic	4.10E-04	4.1E-04	2.1E-07
Beryllium	2.10E-05	2.1E-05	1.1E-08
Cadmium	5.10E-05	5.1E-05	2.6E-08
Chromium	2.60E-04	2.6E-04	1.3E-07
Chromium (IV)	7.90E-05	7.9E-05	4.0E-08
Cobalt	1.00E-04	1.0E-04	5.0E-08
Magnesium	1.10E-02	1.1E-02	5.5E-06
Manganese	4.90E-04	4.9E-04	2.5E-07
Mercury	8.30E-05	8.3E-05	4.2E-08
Nickel	2.80E-04	2.8E-04	1.4E-07
Selenium	1.30E-03	1.3E-03	6.5E-07

Note:
[1]Sox Emission Factor = AP-42 Emission Factor x the Sulfur Content
[2]TSP and PM10 Emission Factors = AP-42 Emission Factor x the Ash Content

However, the AP-42 Emission Factors for particulate matter (both TSP and PM10) are not based on a rigorous mass balance. It was determined that a mass balance around the ash fed to the boiler would yield more accurate emission results. This approach results in higher emissions than predicted by AP-42, so it is considered conservative. Therefore, this approach was used to determine the emission factor. The mass balance assumes all ash fed to the boilers comes out as either fly ash or bottom ash. It is assumed that 80% of the ash generated in the boiler is flyash and 20% is bottom ash. The flyash TSP emission factor was then derived as follows:

MPE Operation TSP = MPE Ash Content (%) x 0.8 =	0.08000	lb flyash/lb coal burned
MPE TSP in lb/ton coal =	160.00000	lb/ton coal

It is assumed that PM10 comprises 23 % of the total ash (as given in AP-42 Table 1.1.6)

MPE Operation PM10 = MPE Ash Content (%) x 0.8 x 0.23 =	0.01840	lb flyash/lb coal burned
MPE PM10 in lb/ton coal =	37	lb/ton coal

Cinergy Solutions of Rock Hill, LLC Solutions of Rock Hill, LLC does not track coal combustion rates for individual boilers, but instead tracks steam production. By applying a conversion factor for the amount of coal needed to produce a given amount of steam, steam production can be used to track the emissions from each of the boilers. The conversion factor for relating lbs of steam produced to amount of coal burned was obtained from the average of historical data dating back to 1993. The conversion factor is:

This results in the following relation: 0.0926 lbs of coal burned/lb of steam produced

$$ER = 0.0926 * EF * PR$$

Where:

EF = AP-42 Emission Factor (lb/lb coal)
ER = Emission rate of pollutants (lb/hr)
PR = Production rate of steam (lb/hr)
0.0926 = Conversion factor (lb coal burned/lb steam produced)

For the maximum potential to emit calculation for the boilers, two additional assumptions were made: (1) That the lowest heating value coal was being burned and (2) That the maximum sulfur and ash content of the coal was used in calculating the emission factors. The long term average heating value of the coal is 13,400 Btu/lb and the lowest specification for coal purchase is 13,000 Btu/lb. However, coal has been received with a heating value as low as 12,400 Btu/lb. To be conservative, this heating value was used for the MPE conditions. This alters the steam to coal conversion factor given above by the following relation:

CF = ratio of average to low heating value x average coal to steam ratio

CF = (13,400/12,400) x 0.0926 = 0.100 lbs of coal burned/lb of steam produced

Cinergy Solutions of Rock Hill, LLC

Title V Coal Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:	Particulate:	94%	Criteria:	0%
	SARA 313:	0%	HAP:	0%
	VOC:	0%	SC Air Toxic:	0%

Boiler #1 Equipment ID 3PHBOL01S1	
Rated Capacity	176.4
Max. Short-term Capacity	207.7
Max. Steam (lb/hr)	170,000
Max. Coal Burned (lb/hr)	17,012
=max steam lb/hr x CF	

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #1 Equipment ID 3PHBOL01S1 Stack ID 3PHBOL01E1			
		Uncontrolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Criteria Pollutants					
Sox:	64.98	552.70	2420.84	552.70	2420.84
Nox:	22	187.13	819.61	187.13	819.61
CO:	0.5	4.25	18.63	4.25	18.63
TSP (most conservative)	160	1,360.92	5,960.84	81.66	357.65
PM10 (most conservative)	37	313.01	1370.99	18.78	82.26
Total NMOC (Used to estimate VOC)	0.06	0.51	2.24	0.51	2.24
Lead	4.2E-04	3.6E-03	1.6E-02	3.6E-03	1.6E-02
TAPs / HAPs					
Acetaldehyde	5.7E-04	4.8E-03	2.1E-02	4.8E-03	2.1E-02
Actophenone	1.5E-05	1.3E-04	5.6E-04	1.3E-04	5.6E-04
Acrolein	2.9E-04	2.5E-03	1.1E-02	2.5E-03	1.1E-02
Benzene	1.3E-03	1.1E-02	4.8E-02	1.1E-02	4.8E-02
Benzyl Chloride	7.0E-04	6.0E-03	2.6E-02	6.0E-03	2.6E-02
Bis(2-ethylhexyl)pthalate (DEHP)	7.3E-05	6.2E-04	2.7E-03	6.2E-04	2.7E-03
Bromoform	3.9E-05	3.3E-04	1.5E-03	3.3E-04	1.5E-03
Carbon disulfide	1.3E-04	1.1E-03	4.8E-03	1.1E-03	4.8E-03
2-Chloroacetophonone	7.0E-06	6.0E-05	2.6E-04	6.0E-05	2.6E-04
Chlorobenzene	2.2E-05	1.9E-04	8.2E-04	1.9E-04	8.2E-04
Chloroform	5.9E-05	5.0E-04	2.2E-03	5.0E-04	2.2E-03
Cumene	5.3E-06	4.5E-05	2.0E-04	4.5E-05	2.0E-04
Cyanide	2.5E-03	2.1E-02	9.3E-02	2.1E-02	9.3E-02
2,4-Dinitrotoluene	2.8E-07	2.4E-06	1.0E-05	2.4E-06	1.0E-05
Dimethyl sulfate	4.8E-05	4.1E-04	1.8E-03	4.1E-04	1.8E-03
Ethyl benzene	9.4E-05	8.0E-04	3.5E-03	8.0E-04	3.5E-03
Ethyl chloride	4.2E-05	3.6E-04	1.6E-03	3.6E-04	1.6E-03
Ethylene dichloride	4.0E-05	3.4E-04	1.5E-03	3.4E-04	1.5E-03
Ethylene dibromide	1.2E-06	1.0E-05	4.5E-05	1.0E-05	4.5E-05

Title V Coal Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:				
	Particulate:	94%		
	SARA 313:	0%	Criteria:	0%
	VOC:	0%	HAP:	0%
			SC Air Toxic:	0%

Boiler #1 Equipment ID 3PHBOL01S1

Rated Capacity	176.4
Max. Short-term Capacity	207.7
Max. Steam (lb/hr)	170,000
Max. Coal Burned (lb/hr)	17,012
=max steam lb/hr x CF	

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #1 Equipment ID 3PHBOL01S1 Stack ID 3PHBOL01E1			
		Uncontrolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Formaldehyde	2.4E-04	2.0E-03	8.9E-03	2.0E-03	8.9E-03
Hexane	6.7E-05	5.7E-04	2.5E-03	5.7E-04	2.5E-03
Isophorone	5.8E-04	4.9E-03	2.2E-02	4.9E-03	2.2E-02
Methyl bromide	1.6E-04	1.4E-03	6.0E-03	1.4E-03	6.0E-03
Methyl chloride	5.3E-04	4.5E-03	2.0E-02	4.5E-03	2.0E-02
Methyl ethyl ketone	3.9E-04	3.3E-03	1.5E-02	3.3E-03	1.5E-02
Methyl hydrazine	1.7E-04	1.4E-03	6.3E-03	1.4E-03	6.3E-03
Methyl methacrylate	2.0E-05	1.7E-04	7.5E-04	1.7E-04	7.5E-04
Methyl tert butyl ether	3.5E-05	3.0E-04	1.3E-03	3.0E-04	1.3E-03
Methylene chloride	2.9E-04	2.5E-03	1.1E-02	2.5E-03	1.1E-02
Phenol	1.6E-05	1.4E-04	6.0E-04	1.4E-04	6.0E-04
Propionaldehyde	3.8E-04	3.2E-03	1.4E-02	3.2E-03	1.4E-02
Tetrachlorethylene	4.3E-05	3.7E-04	1.6E-03	3.7E-04	1.6E-03
Toluene	2.4E-05	2.0E-04	8.9E-04	2.0E-04	8.9E-04
1,1,1-Trichloroethane	2.0E-05	1.7E-04	7.5E-04	1.7E-04	7.5E-04
Styrene	2.5E-05	2.1E-04	9.3E-04	2.1E-04	9.3E-04
Xylenes	3.7E-05	3.1E-04	1.4E-03	3.1E-04	1.4E-03
Vinyl acetate	7.6E-06	6.5E-05	2.8E-04	6.5E-05	2.8E-04
Hydrogen Chloride	1.2	10.21	44.71	10.21	44.71
Hydrogen Fluoride	0.15	1.28	5.59	1.28	5.59
Antimony	1.8E-05	1.5E-04	6.7E-04	1.5E-04	6.7E-04
Arsenic	4.1E-04	3.5E-03	1.5E-02	3.5E-03	1.5E-02
Beryllium	2.1E-05	1.8E-04	7.8E-04	1.8E-04	7.8E-04
Cadmium	5.1E-05	4.3E-04	1.9E-03	4.3E-04	1.9E-03
Chromium	2.6E-04	2.2E-03	9.7E-03	2.2E-03	9.7E-03
Chromium (IV)	7.9E-05	6.7E-04	2.9E-03	6.7E-04	2.9E-03
Cobalt	1.0E-04	8.5E-04	3.7E-03	8.5E-04	3.7E-03
Magnesium	0.01	9.4E-02	4.1E-01	9.4E-02	4.1E-01
Manganese	4.9E-04	4.2E-03	1.8E-02	4.2E-03	1.8E-02
Mercury	8.3E-05	7.1E-04	3.1E-03	7.1E-04	3.1E-03
Nickel	2.8E-04	2.4E-03	1.0E-02	2.4E-03	1.0E-02
Selenium	1.3E-03	1.1E-02	4.8E-02	1.1E-02	4.8E-02

Cinergy Solutions of Rock Hill, LLC

Title V Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:				
	Particulate:	94%	Criteria:	0%
	SARA 313:	0%	HAP	0%
	VOC:	0%	SC Air Tox	0%

Boiler #2 3PHBOL02S1	
Rated Capacity	176.4
Max. Short-term Capacity	207.7
Max. Steam (lb/hr)	170,000
Max. Coal Burned (lb/hr)	17,012
=max steam lb/hr x CF	

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #2 Equipment ID 3PHBOL02S1 Stack ID 2PHBOL02E1			
		Uncontrolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Criteria Pollutants					
Sox:	64.98	552.70	2420.84	552.70	2420.84
Nox:	22	187.13	819.61	187.13	819.61
CO:	0.5	4.25	18.63	4.25	18.63
TSP (most conservative)	160	1,360.92	5,960.84	81.66	357.65
PM10 (most conservative)	37	313.01	1370.99	18.78	82.26
Total NMOC (Used to estimate VOC)	0.06	0.51	2.24	0.51	2.24
Lead	4.2E-04	3.6E-03	1.6E-02	3.6E-03	1.6E-02
TAPs / HAPs					
Acetaldehyde	5.7E-04	4.8E-03	2.1E-02	4.8E-03	2.1E-02
Actophenone	1.5E-05	1.3E-04	5.6E-04	1.3E-04	5.6E-04
Acrolein	2.9E-04	2.5E-03	1.1E-02	2.5E-03	1.1E-02
Benzene	1.3E-03	1.1E-02	4.8E-02	1.1E-02	4.8E-02
Benzyl Chloride	7.0E-04	6.0E-03	2.6E-02	6.0E-03	2.6E-02
Bis(2-ethylhexyl)pthalate (DEHP)	7.3E-05	6.2E-04	2.7E-03	6.2E-04	2.7E-03
Bromoform	3.9E-05	3.3E-04	1.5E-03	3.3E-04	1.5E-03
Carbon disulfide	1.3E-04	1.1E-03	4.8E-03	1.1E-03	4.8E-03
2-Chloroacetophonone	7.0E-06	6.0E-05	2.6E-04	6.0E-05	2.6E-04
Chlorobenzene	2.2E-05	1.9E-04	8.2E-04	1.9E-04	8.2E-04
Chloroform	5.9E-05	5.0E-04	2.2E-03	5.0E-04	2.2E-03
Cumene	5.3E-06	4.5E-05	2.0E-04	4.5E-05	2.0E-04
Cyanide	2.5E-03	2.1E-02	9.3E-02	2.1E-02	9.3E-02
2,4-Dinitrotoluene	2.8E-07	2.4E-06	1.0E-05	2.4E-06	1.0E-05
Dimethyl sulfate	4.8E-05	4.1E-04	1.8E-03	4.1E-04	1.8E-03
Ethyl benzene	9.4E-05	8.0E-04	3.5E-03	8.0E-04	3.5E-03
Ethyl chloride	4.2E-05	3.6E-04	1.6E-03	3.6E-04	1.6E-03
Ethylene dichloride	4.0E-05	3.4E-04	1.5E-03	3.4E-04	1.5E-03
Ethylene dibromide	1.2E-06	1.0E-05	4.5E-05	1.0E-05	4.5E-05

Title V Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:				
	Particulate:	94%	Criteria:	0%
	SARA 313:	0%	HAP	0%
	VOC:	0%	SC Air Tox	0%

Boiler #2 3PHBOL02S1	
Rated Capacity	176.4
Max. Short-term Capacity	207.7
Max. Steam (lb/hr)	170,000
Max. Coal Burned (lb/hr) =max steam lb/hr x CF	17,012

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #2 Equipment ID 3PHBOL02S1 Stack ID 2PHBOL02E1			
		Uncontrolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Formaldehyde	2.4E-04	2.0E-03	8.9E-03	2.0E-03	8.9E-03
Hexane	6.7E-05	5.7E-04	2.5E-03	5.7E-04	2.5E-03
Isophorone	5.8E-04	4.9E-03	2.2E-02	4.9E-03	2.2E-02
Methyl bromide	1.6E-04	1.4E-03	6.0E-03	1.4E-03	6.0E-03
Methyl chloride	5.3E-04	4.5E-03	2.0E-02	4.5E-03	2.0E-02
Methyl ethyl ketone	3.9E-04	3.3E-03	1.5E-02	3.3E-03	1.5E-02
Methyl hydrazine	1.7E-04	1.4E-03	6.3E-03	1.4E-03	6.3E-03
Methyl methacrylate	2.0E-05	1.7E-04	7.5E-04	1.7E-04	7.5E-04
Methyl tert butyl ether	3.5E-05	3.0E-04	1.3E-03	3.0E-04	1.3E-03
Methylene chloride	2.9E-04	2.5E-03	1.1E-02	2.5E-03	1.1E-02
Phenol	1.6E-05	1.4E-04	6.0E-04	1.4E-04	6.0E-04
Propionaldehyde	3.8E-04	3.2E-03	1.4E-02	3.2E-03	1.4E-02
Tetrachlorethylene	4.3E-05	3.7E-04	1.6E-03	3.7E-04	1.6E-03
Toluene	2.4E-05	2.0E-04	8.9E-04	2.0E-04	8.9E-04
1,1,1-Trichloroethane	2.0E-05	1.7E-04	7.5E-04	1.7E-04	7.5E-04
Styrene	2.5E-05	2.1E-04	9.3E-04	2.1E-04	9.3E-04
Xylenes	3.7E-05	3.1E-04	1.4E-03	3.1E-04	1.4E-03
Vinyl acetate	7.6E-06	6.5E-05	2.8E-04	6.5E-05	2.8E-04
Hydrogen Chloride	1.2	10.21	44.71	10.21	44.71
Hydrogen Fluoride	0.15	1.28	5.59	1.28	5.59
Antimony	1.8E-05	1.5E-04	6.7E-04	1.5E-04	6.7E-04
Arsenic	4.1E-04	3.5E-03	1.5E-02	3.5E-03	1.5E-02
Beryllium	2.1E-05	1.8E-04	7.8E-04	1.8E-04	7.8E-04
Cadmium	5.1E-05	4.3E-04	1.9E-03	4.3E-04	1.9E-03
Chromium	2.6E-04	2.2E-03	9.7E-03	2.2E-03	9.7E-03
Chromium (IV)	7.9E-05	6.7E-04	2.9E-03	6.7E-04	2.9E-03
Cobalt	1.0E-04	8.5E-04	3.7E-03	8.5E-04	3.7E-03
Magnesium	0.01	9.4E-02	4.1E-01	9.4E-02	4.1E-01
Manganese	4.9E-04	4.2E-03	1.8E-02	4.2E-03	1.8E-02
Mercury	8.3E-05	7.1E-04	3.1E-03	7.1E-04	3.1E-03
Nickel	2.8E-04	2.4E-03	1.0E-02	2.4E-03	1.0E-02
Selenium	1.3E-03	1.1E-02	4.8E-02	1.1E-02	4.8E-02

Cinergy Solutions of Rock Hill, LLC

Title V Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:	Particulate:	94%	Criteria:	0%
	SARA 313:	0%	HAP	0%
	VOC:	0%	SC Air Tox	0%

Boiler #3 Equipment ID 3PHBOL03S1

Rated Capacity	176.4
Max. Short-term Capacity	207.7
Max. Steam (lb/hr)	170,000
Max. Coal Burned (lb/hr) =max steam lb/hr x CF	17,012

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #3 Equipment ID 3PHBOL03S1 Stack ID 3PHBOL03E1			
		Uncontrolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Criteria Pollutants					
Sox:	64.98	552.70	2,420.84	552.70	2,420.84
Nox:	22	187.13	819.61	187.13	819.61
CO:	0.5	4.25	18.63	4.25	18.63
TSP (most conservative)	160	1,360.92	5,960.84	81.66	357.65
PM10 (most conservative)	37	313.01	1,370.99	18.78	82.26
Total NMOC (Used to estimate VOC)	0.06	0.51	2.24	0.51	2.24
Lead	4.2E-04	3.6E-03	1.6E-02	3.6E-03	1.6E-02
TAPs/HAPs					
Acetaldehyde	5.7E-04	4.8E-03	2.1E-02	4.8E-03	2.1E-02
Actophenone	1.5E-05	1.3E-04	5.6E-04	1.3E-04	5.6E-04
Acrolein	2.9E-04	2.5E-03	1.1E-02	2.5E-03	1.1E-02
Benzene	1.3E-03	1.1E-02	4.8E-02	1.1E-02	4.8E-02
Benzyl Chloride	7.0E-04	6.0E-03	2.6E-02	6.0E-03	2.6E-02
Bis(2-ethylhexyl)pthalate (DEHP)	7.3E-05	6.2E-04	2.7E-03	6.2E-04	2.7E-03
Bromoform	3.9E-05	3.3E-04	1.5E-03	3.3E-04	1.5E-03
Carbon disulfide	1.3E-04	1.1E-03	4.8E-03	1.1E-03	4.8E-03
2-Chloroacetophonone	7.0E-06	6.0E-05	2.6E-04	6.0E-05	2.6E-04
Chlorobenzene	2.2E-05	1.9E-04	8.2E-04	1.9E-04	8.2E-04
Chloroform	5.9E-05	5.0E-04	2.2E-03	5.0E-04	2.2E-03
Cumene	5.3E-06	4.5E-05	2.0E-04	4.5E-05	2.0E-04
Cyanide	2.5E-03	2.1E-02	9.3E-02	2.1E-02	9.3E-02
2,4-Dinitrotoluene	2.8E-07	2.4E-06	1.0E-05	2.4E-06	1.0E-05
Dimethyl sulfate	4.8E-05	4.1E-04	1.8E-03	4.1E-04	1.8E-03
Ethyl benzene	9.4E-05	8.0E-04	3.5E-03	8.0E-04	3.5E-03
Ethyl chloride	4.2E-05	3.6E-04	1.6E-03	3.6E-04	1.6E-03
Ethylene dichloride	4.0E-05	3.4E-04	1.5E-03	3.4E-04	1.5E-03
Ethylene dibromide	1.2E-06	1.0E-05	4.5E-05	1.0E-05	4.5E-05

Title V Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:	Particulate:	94%	Criteria:	0%
	SARA 313:	0%	HAP	0%
	VOC:	0%	SC Air Tox	0%

Boiler #3 Equipment ID 3PHBOL03S1

Rated Capacity	176.4
Max. Short-term Capacity	207.7
Max. Steam (lb/hr)	170,000
Max. Coal Burned (lb/hr) =max steam lb/hr x CF	17,012

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #3 Equipment ID 3PHBOL03S1 Stack ID 3PHBOL03E1			
		Uncontrolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Formaldehyde	2.4E-04	2.0E-03	8.9E-03	2.0E-03	8.9E-03
Hexane	6.7E-05	5.7E-04	2.5E-03	5.7E-04	2.5E-03
Isophorone	5.8E-04	4.9E-03	2.2E-02	4.9E-03	2.2E-02
Methyl bromide	1.6E-04	1.4E-03	6.0E-03	1.4E-03	6.0E-03
Methyl chloride	5.3E-04	4.5E-03	2.0E-02	4.5E-03	2.0E-02
Methyl ethyl ketone	3.9E-04	3.3E-03	1.5E-02	3.3E-03	1.5E-02
Methyl hydrazine	1.7E-04	1.4E-03	6.3E-03	1.4E-03	6.3E-03
Methyl methacrylate	2.0E-05	1.7E-04	7.5E-04	1.7E-04	7.5E-04
Methyl tert butyl ether	3.5E-05	3.0E-04	1.3E-03	3.0E-04	1.3E-03
Methylene chloride	2.9E-04	2.5E-03	1.1E-02	2.5E-03	1.1E-02
Phenol	1.6E-05	1.4E-04	6.0E-04	1.4E-04	6.0E-04
Propionaldehyde	3.8E-04	3.2E-03	1.4E-02	3.2E-03	1.4E-02
Tetrachlorethylene	4.3E-05	3.7E-04	1.6E-03	3.7E-04	1.6E-03
Toluene	2.4E-05	2.0E-04	8.9E-04	2.0E-04	8.9E-04
1,1,1-Trichloroethane	2.0E-05	1.7E-04	7.5E-04	1.7E-04	7.5E-04
Styrene	2.5E-05	2.1E-04	9.3E-04	2.1E-04	9.3E-04
Xylenes	3.7E-05	3.1E-04	1.4E-03	3.1E-04	1.4E-03
Vinyl acetate	7.6E-06	6.5E-05	2.8E-04	6.5E-05	2.8E-04
Hydrogen Chloride	1.2	10.21	44.71	10.21	44.71
Hydrogen Fluoride	0.15	1.28	5.59	1.28	5.59
Antimony	1.8E-05	1.5E-04	6.7E-04	1.5E-04	6.7E-04
Arsenic	4.1E-04	3.5E-03	1.5E-02	3.5E-03	1.5E-02
Beryllium	2.1E-05	1.8E-04	7.8E-04	1.8E-04	7.8E-04
Cadmium	5.1E-05	4.3E-04	1.9E-03	4.3E-04	1.9E-03
Chromium	2.6E-04	2.2E-03	9.7E-03	2.2E-03	9.7E-03
Chromium (IV)	7.9E-05	6.7E-04	2.9E-03	6.7E-04	2.9E-03
Cobalt	1.0E-04	8.5E-04	3.7E-03	8.5E-04	3.7E-03
Magnesium	0.01	9.4E-02	4.1E-01	9.4E-02	4.1E-01
Manganese	4.9E-04	4.2E-03	1.8E-02	4.2E-03	1.8E-02
Mercury	8.3E-05	7.1E-04	3.1E-03	7.1E-04	3.1E-03
Nickel	2.8E-04	2.4E-03	1.0E-02	2.4E-03	1.0E-02
Selenium	1.3E-03	1.1E-02	4.8E-02	1.1E-02	4.8E-02

Cinergy Solutions of Rock Hill, LLC

Title V Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:	Particulate:	94%	Criteria:	0%
	SARA 313:	0%	HAP	0%
	VOC:	0%	SC Air Toxi	0%

Boiler #4 Equipment ID 3PHBOL04S1

Rated Capacity	221.9
Max. Long-term Capacity	244.4
Max. Steam (lb/hr)	200,000
Max. Coal Burned (lb/hr) = max steam lb/hr x CF	20,014

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #4 Equipment ID 3PHBOL04S1 Stack ID 3PHBOL04E1			
		Uncontrolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Criteria Pollutants					
Sox:	64.98	650.24	2,848.05	650.24	2,848.05
Nox:	22	220.15	964.25	220.15	964.25
CO:	0.5	5.00	21.91	5.00	21.91
TSP (most conservative)	160	1,601.08	7,012.75	96.07	420.76
PM10 (most conservative)	37	368.25	1,612.93	22.09	96.78
Total NMOC (Used to estimate VOC)	0.06	0.60	2.63	0.60	2.63
Lead	4.2E-04	4.2E-03	1.8E-02	4.2E-03	1.8E-02
TAPs / HAPs					
Acetaldehyde	5.7E-04	5.7E-03	2.5E-02	5.7E-03	2.5E-02
Actophenone	1.5E-05	1.5E-04	6.6E-04	1.5E-04	6.6E-04
Acrolein	2.9E-04	2.9E-03	1.3E-02	2.9E-03	1.3E-02
Benzene	1.3E-03	1.3E-02	5.7E-02	1.3E-02	5.7E-02
Benzyl Chloride	7.0E-04	7.0E-03	3.1E-02	7.0E-03	3.1E-02
Bis(2-ethylhexyl)pthalate (DEHP)	7.3E-05	7.3E-04	3.2E-03	7.3E-04	3.2E-03
Bromoform	3.9E-05	3.9E-04	1.7E-03	3.9E-04	1.7E-03
Carbon disulfide	1.3E-04	1.3E-03	5.7E-03	1.3E-03	5.7E-03
2-Chloroacetophonone	7.0E-06	7.0E-05	3.1E-04	7.0E-05	3.1E-04
Chlorobenzene	2.2E-05	2.2E-04	9.6E-04	2.2E-04	9.6E-04
Chloroform	5.9E-05	5.9E-04	2.6E-03	5.9E-04	2.6E-03
Cumene	5.3E-06	5.3E-05	2.3E-04	5.3E-05	2.3E-04
Cyanide	2.5E-03	2.5E-02	1.1E-01	2.5E-02	1.1E-01
2,4-Dinitrotoluene	2.8E-07	2.8E-06	1.2E-05	2.8E-06	1.2E-05
Dimethyl sulfate	4.8E-05	4.8E-04	2.1E-03	4.8E-04	2.1E-03
Ethyl benzene	9.4E-05	9.4E-04	4.1E-03	9.4E-04	4.1E-03
Ethyl chloride	4.2E-05	4.2E-04	1.8E-03	4.2E-04	1.8E-03
Ethylene dichloride	4.0E-05	4.0E-04	1.8E-03	4.0E-04	1.8E-03
Ethylene dibromide	1.2E-06	1.2E-05	5.3E-05	1.2E-05	5.3E-05

Title V Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:	Particulate:	94%	Criteria:	0%
	SARA 313:	0%	HAP	0%
	VOC:	0%	SC Air Toxi	0%

Boiler #4 Equipment ID 3PHBOL04S1

Rated Capacity	221.9
Max. Long-term Capacity	244.4
Max. Steam (lb/hr)	200,000
Max. Coal Burned (lb/hr) = max steam lb/hr x CF	20,014

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #4 Equipment ID 3PHBOL04S1 Stack ID 3PHBOL04E1			
		Uncontrolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Formaldehyde	2.4E-04	2.4E-03	1.1E-02	2.4E-03	1.1E-02
Hexane	6.7E-05	6.7E-04	2.9E-03	6.7E-04	2.9E-03
Isophorone	5.8E-04	5.8E-03	2.5E-02	5.8E-03	2.5E-02
Methyl bromide	1.6E-04	1.6E-03	7.0E-03	1.6E-03	7.0E-03
Methyl chloride	5.3E-04	5.3E-03	2.3E-02	5.3E-03	2.3E-02
Methyl ethyl ketone	3.9E-04	3.9E-03	1.7E-02	3.9E-03	1.7E-02
Methyl hydrazine	1.7E-04	1.7E-03	7.5E-03	1.7E-03	7.5E-03
Methyl methacrylate	2.0E-05	2.0E-04	8.8E-04	2.0E-04	8.8E-04
Methyl tert butyl ether	3.5E-05	3.5E-04	1.5E-03	3.5E-04	1.5E-03
Methylene chloride	2.9E-04	2.9E-03	1.3E-02	2.9E-03	1.3E-02
Phenol	1.6E-05	1.6E-04	7.0E-04	1.6E-04	7.0E-04
Propionaldehyde	3.8E-04	3.8E-03	1.7E-02	3.8E-03	1.7E-02
Tetrachlorethylene	4.3E-05	4.3E-04	1.9E-03	4.3E-04	1.9E-03
Toluene	2.4E-05	2.4E-04	1.1E-03	2.4E-04	1.1E-03
1,1,1-Trichloroethane	2.0E-05	2.0E-04	8.8E-04	2.0E-04	8.8E-04
Styrene	2.5E-05	2.5E-04	1.1E-03	2.5E-04	1.1E-03
Xylenes	3.7E-05	3.7E-04	1.6E-03	3.7E-04	1.6E-03
Vinyl acetate	7.6E-06	7.6E-05	3.3E-04	7.6E-05	3.3E-04
Hydrogen Chloride	1.2	12.01	52.60	12.01	52.60
Hydrogen Fluoride	0.15	1.50	6.57	1.50	6.57
Antimony	1.8E-05	1.8E-04	7.9E-04	1.8E-04	7.9E-04
Arsenic	4.1E-04	4.1E-03	1.8E-02	4.1E-03	1.8E-02
Beryllium	2.1E-05	2.1E-04	9.2E-04	2.1E-04	9.2E-04
Cadmium	5.1E-05	5.1E-04	2.2E-03	5.1E-04	2.2E-03
Chromium	2.6E-04	2.6E-03	1.1E-02	2.6E-03	1.1E-02
Chromium (IV)	7.9E-05	7.9E-04	3.5E-03	7.9E-04	3.5E-03
Cobalt	1.0E-04	1.0E-03	4.4E-03	1.0E-03	4.4E-03
Magnesium	0.01	1.1E-01	4.8E-01	1.1E-01	4.8E-01
Manganese	4.9E-04	4.9E-03	2.1E-02	4.9E-03	2.1E-02
Mercury	8.3E-05	8.3E-04	3.6E-03	8.3E-04	3.6E-03
Nickel	2.8E-04	2.8E-03	1.2E-02	2.8E-03	1.2E-02
Selenium	1.3E-03	1.3E-02	5.7E-02	1.3E-02	5.7E-02

Cinergy Solutions of Rock Hill, LLC

Title V Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:	Particulate:	94%	Criteria:	0%
	SARA 313:	0%	HAP:	0%
	VOC:	0%	SC Air Toxic:	0%

Boiler #5 Equipment ID 3PHBOL05S1

Rated Capacity	221.9
Max. Long term Capacity	244.4
Max. Steam (lb/hr)	200,000
Max. Coal Burned (lb/hr) = max steam lb/hr x CF	20,014

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #5 Equipment ID 3PHBOL05S1 Stack ID 3PHBOL05E1			
		Uncontolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Criteria Pollutants					
Sox:	64.98	650.24	2,848.05	650.24	2,848.05
Nox:	22	220.15	964.25	220.15	964.25
CO:	0.5	5.00	21.91	5.00	21.91
TSP (most conservative)	160	1,601.08	7,012.75	96.07	420.76
PM10 (most conservative)	37	368.25	1,612.93	22.09	96.78
Total NMOC (Used to estimate VOC)	0.06	0.60	2.63	0.60	2.63
Lead	4.2E-04	4.2E-03	1.8E-02	4.2E-03	1.8E-02
TAPs/HAPs					
Acetaldehyde	5.7E-04	5.7E-03	2.5E-02	5.7E-03	2.5E-02
Actophenone	1.5E-05	1.5E-04	6.6E-04	1.5E-04	6.6E-04
Acrolein	2.9E-04	2.9E-03	1.3E-02	2.9E-03	1.3E-02
Benzene	1.3E-03	1.3E-02	5.7E-02	1.3E-02	5.7E-02
Benzyl Chloride	7.0E-04	7.0E-03	3.1E-02	7.0E-03	3.1E-02
Bis(2-ethylhexyl)pthalate (DEHP)	7.3E-05	7.3E-04	3.2E-03	7.3E-04	3.2E-03
Bromoform	3.9E-05	3.9E-04	1.7E-03	3.9E-04	1.7E-03
Carbon disulfide	1.3E-04	1.3E-03	5.7E-03	1.3E-03	5.7E-03
2-Chloroacetophonone	7.0E-06	7.0E-05	3.1E-04	7.0E-05	3.1E-04
Chlorobenzene	2.2E-05	2.2E-04	9.6E-04	2.2E-04	9.6E-04
Chloroform	5.9E-05	5.9E-04	2.6E-03	5.9E-04	2.6E-03
Cumene	5.3E-06	5.3E-05	2.3E-04	5.3E-05	2.3E-04
Cyanide	2.5E-03	2.5E-02	1.1E-01	2.5E-02	1.1E-01
2,4-Dinitrotoluene	2.8E-07	2.8E-06	1.2E-05	2.8E-06	1.2E-05
Dimethyl sulfate	4.8E-05	4.8E-04	2.1E-03	4.8E-04	2.1E-03
Ethyl benzene	9.4E-05	9.4E-04	4.1E-03	9.4E-04	4.1E-03
Ethyl chloride	4.2E-05	4.2E-04	1.8E-03	4.2E-04	1.8E-03
Ethylene dichloride	4.0E-05	4.0E-04	1.8E-03	4.0E-04	1.8E-03
Ethylene dibromide	1.2E-06	1.2E-05	5.3E-05	1.2E-05	5.3E-05

Title V Boiler Emissions Calculations

See attached documentation on basis for emission factors

Abatement Effiiencies:

Particulate:	94%	Criteria:	0%
SARA 313:	0%	HAP:	0%
VOC:	0%	SC Air Toxic:	0%

Boiler #5 Equipment ID 3PHBOL05S1

Rated Capacity	221.9
Max. Long term Capacity	244.4
Max. Steam (lb/hr)	200,000
Max. Coal Burned (lb/hr) = max steam lb/hr x CF	20,014

Constituent	Emission Factor MPE Operation (lb/ton coal)	Boiler #5 Equipment ID 3PHBOL05S1 Stack ID 3PHBOL05E1			
		Uncontolled lb/hr	Uncontrolled ton/year	Abated lb/hr	Abated ton/year
Formaldehyde	2.4E-04	2.4E-03	1.1E-02	2.4E-03	1.1E-02
Hexane	6.7E-05	6.7E-04	2.9E-03	6.7E-04	2.9E-03
Isophorone	5.8E-04	5.8E-03	2.5E-02	5.8E-03	2.5E-02
Methyl bromide	1.6E-04	1.6E-03	7.0E-03	1.6E-03	7.0E-03
Methyl chloride	5.3E-04	5.3E-03	2.3E-02	5.3E-03	2.3E-02
Methyl ethyl ketone	3.9E-04	3.9E-03	1.7E-02	3.9E-03	1.7E-02
Methyl hydrazine	1.7E-04	1.7E-03	7.5E-03	1.7E-03	7.5E-03
Methyl methacrylate	2.0E-05	2.0E-04	8.8E-04	2.0E-04	8.8E-04
Methyl tert butyl ether	3.5E-05	3.5E-04	1.5E-03	3.5E-04	1.5E-03
Methylene chloride	2.9E-04	2.9E-03	1.3E-02	2.9E-03	1.3E-02
Phenol	1.6E-05	1.6E-04	7.0E-04	1.6E-04	7.0E-04
Propionaldehyde	3.8E-04	3.8E-03	1.7E-02	3.8E-03	1.7E-02
Tetrachlorethylene	4.3E-05	4.3E-04	1.9E-03	4.3E-04	1.9E-03
Toluene	2.4E-05	2.4E-04	1.1E-03	2.4E-04	1.1E-03
1,1,1-Trichloroethane	2.0E-05	2.0E-04	8.8E-04	2.0E-04	8.8E-04
Styrene	2.5E-05	2.5E-04	1.1E-03	2.5E-04	1.1E-03
Xylenes	3.7E-05	3.7E-04	1.6E-03	3.7E-04	1.6E-03
Vinyl acetate	7.6E-06	7.6E-05	3.3E-04	7.6E-05	3.3E-04
Hydrogen Chloride	1.2	12.01	52.60	12.01	52.60
Hydrogen Fluoride	0.15	1.50	6.57	1.50	6.57
Antimony	1.8E-05	1.8E-04	7.9E-04	1.8E-04	7.9E-04
Arsenic	4.1E-04	4.1E-03	1.8E-02	4.1E-03	1.8E-02
Beryllium	2.1E-05	2.1E-04	9.2E-04	2.1E-04	9.2E-04
Cadmium	5.1E-05	5.1E-04	2.2E-03	5.1E-04	2.2E-03
Chromium	2.6E-04	2.6E-03	1.1E-02	2.6E-03	1.1E-02
Chromium (IV)	7.9E-05	7.9E-04	3.5E-03	7.9E-04	3.5E-03
Cobalt	1.0E-04	1.0E-03	4.4E-03	1.0E-03	4.4E-03
Magnesium	0.01	1.1E-01	4.8E-01	1.1E-01	4.8E-01
Manganese	4.9E-04	4.9E-03	2.1E-02	4.9E-03	2.1E-02
Mercury	8.3E-05	8.3E-04	3.6E-03	8.3E-04	3.6E-03
Nickel	2.8E-04	2.8E-03	1.2E-02	2.8E-03	1.2E-02
Selenium	1.3E-03	1.3E-02	5.7E-02	1.3E-02	5.7E-02

Cinergy Solutions of Rock Hill, LLC
Coal and Flyash System

Calculation of Flyash Emissions

Table - Summary of Emissions			
Emission Point ID	**Description**	**TSP**	**PM-10**
3PHBA001E1	Bottom Ash Hopper #1 - #5	0.004	0.001
3PHBA002E1	Ash Pit	0.004	0.001
3PHFA004E1	Mechanical Exhaustors(1)	0.1102	0.0254
3PHFA005E1	500 Ton Silo	0.001	0.0001
3PHFA006E1	Ash Unloader	0.018	0.004
3PHCH001E1	Coal Pile	0.000	0.047
3MSMFLGE1	Flyash Monofill	0.000	0.169
	Fugitives(2)	0.000	0.000
	Total Ash Handling System (lb/hour)	**0.136**	**0.247**
Maximum PTE TSP (tons per year)(a)		**0.597**	
Maximum PTE PM-10 (tons per year)(a)		**1.082**	

(1) The mechanical exhausters pull a vacuum on the filter collectors. The filter separator collectors are considered process equipment. Therefore, emissions from the mechanical exhausters are uncontrolled.

(2) Fugitive emissions will be reduced to a negligible amount by the vacuum system.

Cinergy Solutions of Rock Hill, LLC

Coal and Flyash System

Calculation of Flyash and Bottom Ash Generated from Boilers

Unit	Max Rated Steam Output (lbs/hr)	Equivalent Coal Combustion Rate (Max Coal Usuage) (lbs/hr)	MPE Flyash Produced (lbs/hr)	MPE Bottom Ash Produced (lbs/hr)
Boiler #1	170,000	17,000	1340	268
Boiler #2	170,000	17,000	1340	268
Boiler #3	170,000	17,000	1340	268
Boiler #4	200,000	20,000	1576	315
Boiler #5	200,000	20,000	1576	315
Total, All Boilers		**91,000**	**7,171**	**1,434**

Notes:

(1)The maximum coal usage is based on the long term average coal to steam ratio multiplied by the ratio of average to low heating value of 1.08 (avg. heating value of 13,400 Btu/lb is developed from historical data, Low heating value of 12,400 Btu/lb is also developed from historical data). The conversion factor for relating lbs of steam produced to amount of coal burned was obtained from the average of historical data dating back to 1993. The conversion factor is 0.0926 lbs coal burned/lb steam produced.

(2)AP-42 Emission Factors for particulate matter (both TSP and PM10) are not based on a rigorous mass balance. It was determined that a mass balance around the ash fed to the boiler would yield more accurate emission results. This approach results in higher emissions than predicted by AP-42, so it is considered conservative. Therefore, this approach was used to determine the emission factor. The mass balance assumes all ash fed to the boilers comes out as either fly ash or bottom ash. It is assumed that 80% of the ash generated in the boiler is flyash and 20% is bottom ash.

(3)The MPE ash assumes an 80/20 split between flyash and bottom ash.

2.0 Calculation of Flyash Generated from Boiler #1

2.1 Maximum Coal Usage(1)

Max coal usage = Max Steam Output (lbs/hr) x Long Term Average Coal to Steam Ratio x Ratio of Average to Low Heating Value

2.2 Flyash Emission Factor Calculation(2)

Emission Factor Calculation (lb/ton) = (% Ash content of coal x 80%) (lb/lb) x 2,000 lb/ton

2.3 MPE Flyash Produced

MPE Flyash Produced (lbs/hr) = Maximum coal usage (lbs/hr) x Emission Factor (lb/ton) x 1 ton/2000 lbs

2.4 MPE Bottom Ash Produced(3)

MPE Bottom Ash Produced (lbs/hr) = MPE Flyash Produced (lbs/hr) x 0.20

Cinergy Solutions of Rock Hill, LLC Solutions of Rock Hill, LLC

Coal and Flyash System

Emissions Point 3PHCH001E1

Description: Coal Surge Pile and Handling

Emission Unit	Maximum Emission Rate (lbs/hr)
Coal Pile Handling (PM-10)	0.043
Coal Pile Storage (Wind Erosion) (PM-10)	0.004

Note: Emission Estimates of the Coal Surge Pile are very conservative. It is based on the Coal Surge Pile being disturbed daily as well as the fastest mile value occuring daily.

(1)The Coal pile emission calculations include only the surge pile. During normal operation, coal is loaded to and unloaded to the surge pile. Fugitive emissions are generated from handling the coal and wind erosion of the coal pile

(2) EPA AP-42 Section 13.2.4 Aggregate Handling and Storage Piles was used to estimate emissions from unloading railcars and loading into a conveyor, and AP-42 Section 13.2.5 Industrial Wind Erosion was used to estimate emissions from wind erosion

(3) The maximum coal combustion rate of 91,000 lb/hr total for all five boilers is calculated on the Calculation of Flyash and Bottom Ash Generated from Boilers spreadsheet. See this sheet for additional information.

2.0 Maximum Emission Calculations for 3PHCH001E1

2.1 Handling Operations PM-10 Emission Factor Determination(2)

Emission Factor (lb/hr) = k x (0.0032) x (((U/5)1.3)/((M/2)1.4))

Where:

k	= Particulate Size Multiplier =	0.35
U	= Mean Wind Speed (mph) =	6.2 mph
M	= Material Moisture Content (%) =	4.5 %

Using the particlate size multiplier of 0.35 (AP-42 13.4.3) for PM-10, a mean wind speed of 6.2 miles/hour (review of meteorolgical data from January 2002 through January 2004), and a moisture content of 4.5% (AP-42 Table 13.2.4.1), the emission factor is calculated below:

Emission Factor (lb/ton) = 0.35 x (0.0032) x($((6.2/5)^{1.3})/((4.50/2)^{1.4})$) = 0.0005 lb/ton

2.2 Handling Operations PM10 Emission Rate Calculation(3)

PM-10 Emission Rate (lb/hr) = Total Maximum Coal Combustion Rate x Emission Factor x (1 ton / 2000 lb)

PM-10 Emission Rate (lb/hr) = 91,000 lb/hr x 0.0005 lb/ton x (1 ton/2000lb) = 0.022 lb/hr

To include emissions from loading and loadout, the emission rate should be doubled.

PM-10 Handling Emission Rate (lb/hr) = PM-10 Emission Rate (lb/hr) x 2 = 0.043 lb/hr

2.3 Wind Erosion of Coal Surge Pile PM-10 Emission Factor Determination[2]

Using Equation 2 of AP-42 Section 13.2.5.3, the emission factor for wind-generated particulate emissions are calculated as follows:

Emission Factor (grams/m^2) = k x Sum(P_i) (i = 1 to N)

Where:

k = Particulate Size Multiplier = 0.5

N = Number of Disturbances per Year

P_i = Erosion Potential to the fastest mile of wind for the ith period between disturbances (grams/m^2)

The Particulate Size Multiplier was obtained from AP-42 Section 13.5.2 for particles <10 μm. The Erosion Potential Function for a dry, exposed surface (AP-42 Section 13.2.5.3 Equation 3) is calculated as follows:

P_i =Erosion Potential = 58 x $(u^* - u_t^*)^2$ + 25 x $(u^* - u_t^*)$

Where:

u^* = Friction Velocity (m/sec)

u_t^* = Threshold Friction Velocity (m/sec) = 1.12 m/sec

The Threshold Friction Velocity (u_t^*) was obtained form AP-42, Section 13.2.5, Table 13.2.5-2

The Friction Velocity is calculated as follows:

$u^* = (u_s/u_r) \times (u_{10}+) \times 0.1$

Where:

u_s = Surface Wind Speed

u_r = Approach Wind Speed

u_{10}+ = fastest mile for period between disturbances (m/sec) = 20.6 m/sec

The ratios of surface wind speed (u_s) to approach wind speed (u_r) used were 0.2, 0.6, and 0.9 (AP-42, Section 13.2.5, Table 13.2.5-4). The fastest mile of reference anemometer for period between disturbances (u_{10}+) was obtained from a review of meteorological data from January 2002 through January 2004.

For u_s/u_r = 0.20

u^* = 0.2 x 20.6 m/sec x 0.1 = 0.41 m/sec

The Friction Velocity (u^*)is less than the Threshold Velocity (u_t^* = 1.12),

So P1 = 0.00 m/sec

For u_s/u_r = 0.60

u^* = 0.6 x 20.6 m/sec x 0.1 = 1.24 m/sec

The Friction Velocity (u^*)is greater than the Threshold Velocity (u_t^* = 1.12), so the Erosion Potential P_2 is calculated as follows:

$P_2 = 58 \times (u^* - u_t^*)^2 + 25 \times (u^* - u_t^*)$

$P_2 = 58(1.24-1.12)^2 + 25(1.24-1.12)$ = 3.68 grams/m^2

For u_s/u_r = 0.90

u^* = 0.9 x 20.6 m/sec x 0.1 = 1.85 m/sec

The Friction Velocity (u^*)is greater than the Threshold Velocity (u_t^* = 1.12), so the Erosion Potential P_3 is calculated as follows:

$P_3 = 58 \times (u^* - u_t^*)^2 + 25 \times (u^* - u_t^*)$

$P_3 = 58(1.85-1.12)^2 + 25(1.85-1.12)$ = 49.60 grams/m^2

So, the emission factor for the coal surge pile due to wind erosion is calculated as follows:

Emission Factor (grams/m^2) = k x Sum($P_1 + P_2 + P_3$)

Emission Factor (grams/m2) = 0.5*(0+3.68+49.60) = 26.64 grams/m^2

2.4 Wind Erosion of Coal Surge Pile PM-10 Emission Factor Determination[2]

The area of the surge pile was supplied by Cinergy Solutions of Rock Hill, LLC Solutions of Roc 532.0 m^2

PM-10 Emission Rate for Wind Erosion of Surge Pile = Emission Factor (grams/m^2) x Area of Surge Pile (m^2)

PM-10 Emission Rate for Wind Erosion of Surge Pile = 26.64 gram/m^2 x 532 m^2 = 14,172 grams/year

PM-10 Emission Rate for Wind Erosion of Surge Pile = 14,1727 gram x 0.0022 lb/gram= 31.2 lb/year

PM-10 Emission Rate for Wind Erosion of Surge Pile = 31.2 lb/year / 8760 hr/year = 0.004 lb/hour

Cinergy Solutions of Rock Hill, LLC
Coal and Flyash System

Emissions Point 3MSMFLFGE1
Description: Flyash Monofill

Emission Unit	Maximum Emission Rate (lbs/hr)
Ash Handling (PM-10)	0.0003
Wind Erosion of Ash Monofill (PM-10)	0.169

Note: Emission Estimates of the Flyash Monofill are very conservative. It is based on the Flyash Monofill being disturbed daily as well as the fastest mile value occuring daily.

(1) Fugitive emissions are generated from handling the ash and wind erosion of the ash pile

(2) EPA AP-42 Section 13.2.4 Aggregate Handling and Storage Piles was used to estimate emissions from the flyash monofill and AP-42 Section 13.2.5 Industrial Wind Erosion was used to estimate emissions from wind erosion

(3) The maximum ash production rate of 8,605 lb/hr total for both flyash and bottom ash from all five boilers is calculated on the Calculation of Flyash and Bottom Ash Generated from Boilers spreadsheet. See this sheet for additional information.

(4) Phase I of the Flyash Monofill is closed and Capped. No particulate emissions are expected. The area of the Flyash Monofill takes into account Phase II and Phase III areas of 12.45 acres or 50,383 meter^2.

2.0 Maximum Emission Calculations for 3MSMFLFGE1

2.1 Handling Operations PM-10 Emission Factor Determination(2)

Emission Factor (lb/hr) = k x (0.0032) x (((U/5)1.3)/((M/2)1.4))

Where:
k = Particulate Size Multiplier = 0.35
U = Mean Wind Speed (miles per hour) = 6.2 mph
M = Material Moisture Content (%) = 27 %

Using the particlate size multiplier of 0.35 (AP-42 13.4.3) for PM-10, a mean wind speed of 6.2 miles/hour (review of meteorolgical data from January 2002 through January 2004), and a moisture content of 27% (AP-42 Table 13.2.4.1), the emission factor is calculated below:

Emission Factor (lb/ton) = 0.35 x (0.0032) x($((6.2/5)^{1.3})/((27/2)^{1.4})$) = 0.00004 lb/ton

2.2 Handling Operations PM10 Emission Rate Calculation(3)

PM-10 Emission Rate (lb/hr) = Maximum Ash Production Rate x Emission Factor x (1 ton / 2000 lb)

PM-10 Emission Rate (lb/hr) = 8,605 lb/hr x 0.00004 lb/ton x (1 ton/2000lb) = 0.0002 lb/hr

To include emissions from loading and loadout, the emission rate should be doubled.

PM-10 Handling Emission Rate (lb/hr) = PM-10 Emission Rate (lb/hr) x 2 = 0.0003 lb/hr

2.3 Wind Erosion of Flyash Monofill PM-10 Emission Factor Determination[2]

Using Equation 2 of AP-42 Section 13.2.5.3, the emission factor for wind-generated particulate emissions are calculated as follows:

Emission Factor (grams/m^2) = k x Sum(P_i) (i = 1 to N)

Where:

k = Particulate Size Multiplier = 0.5

N = Number of Disturbances per Year

P_i = Erosion Potential to the fastest mile of wind for the ith period between disturbances (grams/m^2)

The Particulate Size Multiplier was obtained from AP-42 Section 13.5.2 for particles <10 μm. The Erosion Potential Function for a dry, exposed surface (AP-42 Section 13.2.5.3 Equation 3) is calculated as follows:

P_i =Erosion Potential = 58 x $(u^* - u_t^*)^2$ + 25 x $(u^* - u_t^*)$

Where:

u^* = Friction Velocity (m/sec)

u_t^* = Threshold Friction Velocity (m/sec) = 1.12 m/sec

The Threshold Friction Velocity (u_t^*) was obtained form AP-42, Section 13.2.5, Table 13.2.5-2

The Friction Velocity is calculated as follows:

$u^* = (u_s/u_r) \times (u_{10}+) \times 0.1$

Where:

u_s = Surface Wind Speed

u_r = Approach Wind Speed

u_{10}+ = fastest mile for period between disturbances (m/sec) = 20.6 m/sec

The ratios of surface wind speed (u_s) to approach wind speed (u_r) used were 0.2, 0.6, and 0.9 (AP-42, Section 13.2.5, Table 13.2.5-4). The fastest mile of reference anemometer for period between disturbances (u_{10}+) was obtained from a review of meteorological data from January 2002 through January 2004.

For u_s/u_r = 0.20

u^* = 0.2 x 20.6 m/sec x 0.1 = 0.41 m/sec

The Friction Velocity (u^*)is less than the Threshold Velocity (u_t^* = 1.12),

So, P1 = 0.0 grams/m^2

For u_s/u_r = 0.60

u^* = 0.6 x 20.6 m/sec x 0.1 = 1.24 m/sec

The Friction Velocity (u^*) is greater than the Threshold Velocity (u_t^* = 1.12),so the Erosion Potential P_2 is calculated as follows:

$P_2 = 58 \times (u^* - u_t^*)^2 + 25 \times (u^* - u_t^*)$

$P_2 = 58(1.24-1.12)^2 + 25(1.24-1.12)$ = 3.68 grams/m^2

For u_s/u_r = 0.90

u^* = 0.9 x 20.6 m/sec x 0.1 = 1.85 m/sec

The Friction Velocity (u^*)is greater than the Threshold Velocity (u_t^* = 1.12), so the Erosion Potential P_3 is calculated as follows:

$P_3 = 58 \times (u^* - u_t^*)^2 + 25 \times (u^* - u_t^*)$

$P_3 = 58(1.85-1.12)^2 + 25(1.85 -1.12)$ = 49.60 grams/m^2

So, the emission factor for the coal surge pile due to wind erosion is calculated as follows:

Emission Factor (grams/m^2) = k x Sum($P_1 + P_2 + P_3$)

Emission Factor (grams/m2) = 0.5*(0+3.68+49.60) = 26.64 grams/m^2

2.4 Wind Erosion of Flyash Monofill PM-10 Emission Factor Determination[4]

The area of the flyash monofill (Phase II and III) was supplied by Cinergy Solutions of Rock Hill, LLC 50,383 m^2

PM-10 Emission Rate for Wind Erosion of Flyash Monofill = Emission Factor (grams/m^2) x Area of Surge Pile (m^2)

PM-10 Emission Rate for Wind Erosion of Flyash Monofill = 26.64gram/m^2 x 50,383 m^2 = 1,342,160 grams/year

PM-10 Emission Rate for Wind Erosion of Flyash Monofill = 1,342,160gram x 0.0022 lb/gram= 2,952.8 lb/year

PM-10 Emission Rate for Wind Erosion ofFlyash Monofill = 2,952.8 lb/year / 8760 hour/year = 0.337 lb/hour

However, it is assumed that particulate emissions are reduced by 50% ffor daily wetting of ash monofill. Therefore the PM-10 Emission Rate is as follows:

PM-10 Emission Rate for Flyash Monofill (wind erosion)=Emission Rate (lb/hr) x 50%

PM-10 Emission Rate for Flyash Monofill (wind erosion) = 0..337 lb/hourr x 0.50 = 0.169 lb/hour

Cinergy Solutions of Rock Hill, LLC
Coal and Flyash System

Emissions Point 3PHBA001E1
Description: Bottom Ash Hopper #1-#5 Fugitives

Emission Unit	MPE Flyash Produced Boilers #1 to #5 (lbs/hr)[1]	MPE Bottom Ash Produced Boilers # 1 to #5 (lbs/hr)[1]	Maximum Emission Rate (lbs/hr)
Bottom Ash Hopper #1#5 (TSP)	7171	1434	0.004
Bottom Ash Hopper #1-#5 (PM-10)	7171	1434	0.001

Note:

[1]See Calculation of MPE Flyash and Bottom Ash Produced from Boilers

[2]The TSP emission factor is 0.0051 lb of pollutant/ton of material loaded (2.55×10^6 lbs of emission / lb of product.(EPA AP-42, Section 11.12)

[3]The emission factor for PM-10 is assumed to be 23% of TSP and is based on the ratio of TSP and PM-10 emissions from EPA AP-42, Section 1.1, Bituminous and Subbituminous Coal Combustion.

2.0 Maximum Emission Calculations for 3PHBA001E1

2.1 TSP Maximum Emission Rate (lbs/hr) Calculation[2]

TSP Maximum Emission Rate (lbs/hr) = Production rate of Bottom Ash (lbs/hr) x AP-42 emission factor (lb/lb)

2.2 PM10 Emission Rate Calculation[3]

PM-10 Emission Rate Calculation = TSP Maximum Emission rate (lbs/hr) x 0.23

Cinergy Solutions of Rock Hill, LLC
Coal and Flyash System

Emissions Point 3PHBA002E1
Description: Ash Pit

Emission Unit	MPE Flyash Produced Boilers #1 to #5 (lbs/hr)[1]	MPE Bottom Ash Produced Boilers # 1 to #5 (lbs/hr)[1]	Maximum Emission Rate (lbs/hr)
Ash Pit (TSP)	7171	1434	0.004
Ash Pit (PM-10)	7171	1434	0.001

Note:

[1]See Calculation of MPE Flyash and Bottom Ash Produced from Boilers

[2]The TSP emission factor is 0.0051 lb of pollutant/ton of material loaded (2.55×10^6 lbs of emission / lb of product.(EPA AP-42, Section 11.12)

[3]The emission factor for PM-10 is assumed to be 23% of TSP and is based on the ratio of TSP and PM-10 emissions from EPA AP-42, Section 1.1, Bituminous and Subbituminous Coal Combustion.

2.0 Maximum Emission Calculations for 3PHBA002E1

2.1 TSP Maximum Emission Calculation[2]

TSP Maximum Emission Rate (lbs/hr) = Production rate of Bottom Ash (lbs/hr) x AP-42 emission factor (lb/lb)

2.3 PM10 Emission Rate Calculation[3]

PM-10 Emission Rate Calculation = TSP emission rate x 0.23

Emission Point 3PHFA004E1
Description: Mechanical Exhausters

Emission Unit	MPE Flyash Produced Boilers #1 to #5 (lbs/hr)[1]	Maximum Emission Rate (lbs/hr)
Mechanical Exhausters (TSP)	7171	0.110
Mechanical Exhausters (PM-10)	7171	0.025

Note:

[1]See Calculation of MPE Flyash Produced from Boilers

[2]The flyash capture equation assumes 94% efficiency in the ESP's.

[3]The flow rate for the vacuum system is 643 scfm. A conservative grain loading factor of 0.02 grains/ft^3 was used to estimate emissions from the bag filter system.

[4]The emission factor for PM-10 is assumed to be 23% of TSP and is based on the ratio of TSP and PM-10 emissions from EPA AP-42, Section 1.1, Bituminous and Subbituminous Coal Combustion.

2.0 Maximum Emission Calculations for 3PHFA004E1

2.1 MPE Flyash Captured from Boilers #1 to #5[2]

MPE Flyash Captured Boilers #1 to #5 (lbs/hr) = MPE flyash produced from all boilers (lbs/hr) x 0.94

2.2 Production Rate of Ash

Production Rate of Ash = MPE Flyash Captured Boilers #1 to #5 (lbs/hr)

2.3 TSP Maximum Emission Rate Calculation[3]

TSP Maximum Emission Rate (lbs/hr) = (Grain loading factor for fabric filters / 7000 gr/lb) x Vacum System Flow Rate x 60 min/hr

2.4 PM10 Emission Rate Calculation[4]

PM-10 Emission Factor Calculation = TSP emission rate x 0.23

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Coal and Flyash System

Emission Point 3PHFA005E1
Description: 500 ton Silo

Emission Unit	MPE Flyash Produced Boilers #1 to #5 (lbs/hr)[1]	Maximum Emission Rate (lbs/hr)
500 ton Silo (TSP)	7171	0.0006
500 ton Silo (PM-10)	7171	0.0001

Note:

[1]See Calculation of MPE Flyash Produced from Boilers

[2]The flyash capture equation assumes 99% efficiency in the baghouse filters

[3]The density of the flyash is estimated to be 4.55lb/g (35 lb/ft^3). A conservative grain loading factor of 0.02 grains/ft^3 was used to estimate emissions from the bag filter system.

[4]The emission factor for PM-10 is assumed to be 23% of TSP and is based on the ratio of TSP and PM-10 emissions from EPA AP-42, Section 1.1, Bituminous and Subbituminous Coal Combustion.

2.0 Maximum Emission Calculations for Vent 3PHFA005E1

2.1 MPE Flyash Captured from Boilers #1 to #5[2]

MPE Flyash Captured Boilers #1 to #5 (lbs/hr) = MPE flyash produced from all boilers (lbs/hr) x 0.99

2.2 Production Rate of Ash

Production Rate of Ash = MPE Flyash Captured Boilers #1 to #5 (lbs/hr)

2.3 TSP Maximum Emission Rate Calculation for 3PHFA005E1[3]

TSP Maximum Emission Rate (lbs/hr) = (Grain loading factor for fabric filters / 7000 (gr/lb) / Density of material in process stream) x Production rate of ash

2.4 PM10 Emission Rate Calculation[4]

PM-10 Emission Factor Calculation = TSP emission rate x 0.23

Cinergy Solutions of Rock Hill, LLC

Coal and Flyash System

Emission Point 3PHFA006E1
Description: Ash Unloader

Emission Unit	MPE Flyash Produced Boilers #1 to #5 (lbs/hr)[1]	Maximum Emission Rate (lbs/hr)
Ash Unloader (TSP)	7171	0.018
Ash Unloader (PM-10)	7171	0.004

Note:
[1]See Calculation of MPE Flyash Produced from Boilers

[2]The flyash capture equation assumes 99% efficiency in the baghouse filters

[2]The TSP emission factor is 0.0051 lb of pollutant/ton of material loaded (2.55×10^6 lbs of emission / lb of product.(EPA AP-42, Section 11.12)

[4]The emission factor for PM-10 is assumed to be 23% of TSP and is based on the ratio of TSP and PM-10 emissions from EPA AP-42, Section 1.1, Bituminous and Subbituminous Coal Combustion.

2.0 Maximum Emission Calculations for 3PHFA006E1

2.1 MPE Flyash Captured from Boilers #1 to #5[2]

MPE Flyash Captured Boilers #1 to #5 (lbs/hr) = MPE flyash produced from all boilers (lbs/hr) x 0.99

2.2 Production Rate of Ash

Production Rate of Ash = MPE Flyash Captured Boilers #1 to #5 (lbs/hr)

2.3 TSP Maximum Emission Calculation[3]

TSP Maximum Emission Rate (lbs/hr) = Production rate of ash (lbs/hr) x AP-42 emission factor (lb/lb)

2.4 PM10 Maximum Emission Rate Calculation[4]

PM-10 Maximum Emission Rate Calculation = TSP emission rate x 0.23

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Storage Tanks

Emissions Point ID:	**3FPTK002E1**
Description:	**NaOH Tank 1 Vent**
Source ID:	**3FPTK002S1**
Description:	**NaOH Tank1**
Control Device:	**None**

The sodium hydroxide storage tanks holds 4% of a 50% caustic solution used to regenerate anion resins in desilicizers which is used to treat boiler feed water for use in steam generation in the power house boilers. The solution is fed to the system on a batch basis and the tank is periodically refilled.

Emissions are estimated for the causitic tanks using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

Average Caustic Soda Usage = 12500 gal/year

With a specific gravity of 1.53, the Average Caustic Soda Usage = 18.21 lb/hour

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum power house steam production capacity to actual steam production and multiplying the ratio by the actual caustic usage for the year. 1991-1994 data was used since the plant was at peak production during this time period.

1992-1994 Average Steam Production =	634,000	lb/hr
The Maximum Steam Production Capacity =	910,000	lb/hr

MPE Actual Production Ratio = 1.44

Therefore, the maximum production rate of Caustic Soda = MPE Actual Production Ratio x Average Usage

Maximum Production Rate of Caustic Soda =	26.1	lb/hour
	114	tpy

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Storage Tanks

Emissions Point ID:	**3FPTK003E1**
Description:	**NaOH Tank 2 Vent**
Source ID:	**3FPTK003S1**
Description:	**NaOH Tank 2**
Control Device:	**None**

The sodium hydroxide storage tanks hold a 50% caustic solution used to regenerate anion resins in desilicizers which is used to treat boiler feed water for use in steam generation in the power house boilers. The solution is fed to the system on a batch basis and the tank is periodically refilled.

Emissions are estimated for the causitic tanks using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

Average Caustic Soda Usage = 25,000 gal/year

With a specific gravity of 1.53, the Average Caustic Soda Usage = 36.42 lb/hour

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum power house steam production capacity to actual steam production and multiplying the ratio by the actual caustic usage for the year. 1991-1994 data was used since the plant was at peak production during this time period.

1992-1994 Average Steam Production =	634,000	lb/hr
The Maximum Steam Production Capacity =	910,000	lb/hr

MPE Actual Production Ratio = 1.44

Therefore, the maximum production rate of Caustic Soda = MPE Actual Production Ratio x Average Usage

Maximum Production Rate of Caustic Soda =	52.3	lb/hr
	229	tpy

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Storage Tanks

Emissions Point ID: **3FPTK004E1**
Description: **NaOH Tank 3 Vent**
Source ID: **3FPTK004S1**
Description: **NaOH Tank 3**
Control Device: **None**

The sodium hydroxide storage tanks holds 4% of a 50% caustic solution used to regenerate anion resins in desilicizers which is used to treat boiler feed water for use in steam generation in the power house boilers. The solution is fed to the system on a batch basis and the tank is periodically refilled.

Emissions are estimated for the causitic tanks using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

Average Caustic Soda Usage = 12,500 gal/year
With a specific gravity of 1.53, the Average Caustic Soda Usage = 18.21 lb/hour

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum power house steam production capacity to actual steam production and multiplying the ratio by the actual caustic usage for the year. 1991-1994 data was used since the plant was at peak production during this time period.

1992-1994 Average Steam Production = 634,000 lb/hr
The Maximum Steam Production Capacity = 910,000 lb/hr

MPE Actual Production Ratio = 1.44

Therefore, the maximum production rate of Caustic Soda = MPE Actual Production Ratio x Average Usage
Maximum Production Rate of Caustic Soda = 26.1 lb/hour
114 tpy

Cinergy Solutions of Rock Hill, LLC

Storage Tanks

Emissions Point ID:	**3FPTK005E1**
Description:	**NaOH Tank 4 Vent**
Source ID:	**3FPTK005S1**
Description:	**NaOH Tank 4 Vent**
Control Device:	**None**

The sodium hydroxide storage tanks hold a 50% caustic solution used to regenerate anion resins in desilicizers which is used to treat boiler feed water for use in steam generation in the power house boilers. The solution is fed to the system on a batch basis and the tank is periodically refilled.

Emissions are estimated for the causitic tanks using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

Average Caustic Soda Usage = 25,000 gal/year

With a specific gravity of 1.53, the Average Caustic Soda Usage = 36.42 lb/hour

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum power house steam production capacity to actual steam production and multiplying the ratio by the actual caustic usage for the year. 1991-1994 data was used since the plant was at peak production during this time period.

1992-1994 Average Steam Production =	634,000	lb/hr
The Maximum Steam Production Capacity =	910,000	lb/hr

MPE Actual Production Ratio = 1.44

Therefore, the maximum production rate of Caustic Soda = MPE Actual Production Ratio x Average Usage

Maximum Production Rate of Caustic Soda =	52.3	lb/hr
	229	tpy

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Storage Tanks

Emissions Point ID:	**3FPTK006E1**
Description:	**Sulfuric Acid Tank Vent**
Source ID:	**3FPTK006S1**
Description:	**93% Sulfuric Acid Tank**
Control Device:	**None**

The sulfuric acid storage tanks hold a 93% sulfuric acid solution used to adjust boiler feed water pH for use in steam generation in the power house boilers. The solution is fed to the system continuously and the tank is periodically refilled.

Emissions are estimated for the sulfuric acid tank using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

Average Sulfuric Acid Usage = 3,300 gal/year

With a density of 15.35 lb/gal, the Average Sulfuric Acid Usage = 5.78 lb/hour

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum power house steam production capacity to actual steam production and multiplying the ratio by the average sulfuric acid usage for the year. 1991-1994 data was used since the plant was operating at peak production rate.

1992-1994 Average Steam Production = 634,000 lb/hr

The Maximum Steam Production Capacity = 910,000 lb/hr

MPE Actual Production Ratio = 1.44

Therefore, the maximum production rate of Sulfuric Acid = MPE Actual Production Ratio x Average Usage

Maximum Production Rate of Sulfuric Acid = 8.3 lb/hr

36 tpy

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Storage Tanks

Emissions Point ID:	**3FPTK007E1**
Description:	**Cortrol IS3000 Tank Vent (Former Sulfite Tank)**
Source ID:	**3FPTK007S1**
Description:	**Cortrol IS3000 Tank (Former Sulfite Tank)**
Control Device:	**None**

The sCortrol IS3000 Tank (Former Sulfite Tank) holds a sodium bisulfite solution used as an oxygen scavenger to treat boiler feed water for use in steam generation in the power house boilers. The solution is fed to the system continuously and the tank is periodically refilled.

Emissions are estimated for the sulfite tank using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

Average Sodium Bisulfite Usage = 4,800 gal/year

With a density of 10.51 lb/gal, the Average Sulfuric Acid Usage = 5.76 lb/hour

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum power house steam production capacity to actual steam production and multiplying the ratio by the average sulfuric acid usage for the year. 1991-1994 data was used since plant was operating at a peak production rate.

1992-1994 Average Steam Production = 634,000 lb/hr

The Maximum Steam Production Capacity = 910,000 lb/hr

MPE Actual Production Ratio = 1.44

Therefore, the maximum production rate of Sodium Bisulfite = MPE Actual Production Ratio x Average Usage

Maximum Production Rate of Sodium Bisulfite = 8.3 lb/hr

36 tpy

Cinergy Solutions of Rock Hill, LLC

Storage Tanks

Emissions Point ID:	**3FPTK008E1**
Description:	**Steamte NA0660 Vent (Former Opti-Meen Tank)**
Source ID:	**3FPTK008S1**
Description:	**Steamte NA0660 (Former Opti-Meen Tank)**
Control Device:	**None**

The steamate NAO660 tank (former opti-meen storage tank) holds an amine solution used as rust inhibitor to treat boiler feed water for use in steam generation in the power house boilers. The solution is fed to the system continuously and the tank is periodically refilled.

Emissions are estimated for the opti-meen tank using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

Average Steamate NAO660 Usage = 1500 gal/year

With a density of 8.0 lb/gal, the Average Steamate NAO660 Usage = 1.37 lb/hour

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum power house steam production capacity to actual steam production and multiplying the ratio by the average opti-meen usage for the year. 1991-1994 data was used since plant was operating at a peak production rate.

1992-1994 Average Steam Production = 634,000 lb/hr

The Maximum Steam Production Capacity = 910,000 lb/hr

MPE Actual Production Ratio = 1.44

Therefore, the maximum production rate of opti-meen = MPE Actual Production Ratio x Average Usage

Maximum Production Rate of opti-meen = 1.97 lb/year

9 tpy

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Storage Tanks

Emissions Point ID:	**3FPTK009E1**
Description:	**Optisperse AP0500 Vent (Former Balance Polymer Tank Vent)**
Source ID:	**3FPTK009S1**
Description:	**Optisperse AP0500 (Former Balance Polymer Tank)**
Control Device:	**None**

The balance polymer storage tank holds an proprietary polymer solution used to tie up suspended material to treat boiler feed water for use in steam generation in the power house boilers. The solution is fed to the system continuously and the tank is periodically refilled.

Emissions are estimated for the balance polymer tank using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

Average Polymer Usage = 2000 gal/yr

With a density of 10.01 lb/gal, the Average Optisperse Usage = 2.29 lb/hr

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum power house steam production capacity to actual steam production and multiplying the ratio by the average polymer usage for the year. 1991-1994 data was used since pl

1992-1994 Average Steam Production = 634,000 lb/hr

The Maximum Steam Production Capacity = 910,000 lb/hr

MPE Actual Production Ratio = 1.44

Therefore, the maximum production rate of polymer = MPE Actual Production Ratio x Average Usage

Maximum Production Rate of polymer = 3.28 lb/hour

14 tpy

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Storage Tanks

Emissions Point ID:	**3FPTK010E1**
Description:	**#2 Fuel Oil Tank 1**
Source ID:	**3FPTK010S1**
Control Device:	**None**

The #2 fuel oil storage tank holds #2 fuel oil used to operate the steam production boilers during start-up. The boilers do have the capability to burn fuel oil exclusively if coal is not available. The fuel oil is fed to the system periodically as needed and the fuel oil tanks periodically refilled.

Emissions are estimated for the#2 fuel oil tank using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

The maximum potential to emit for fuel oil tanks was calculated assuming one turnover per day for 365 days.

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Storage Tanks

Emissions Point ID:	**3FPTK011E1**
Source ID:	**3FPTK011S1**
Description:	**#2 Fuel Oil Storage Tank 2**
Control Device:	**None**

The #2 fuel oil storage tank holds #2 fuel oil used to operate the steam production boilers during start-up. The boilers do have the capability to burn fuel oil exclusively if coal is not available. The fuel oil is fed to the system periodically as need

Emissions are estimated for the#2 fuel oil tank using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

The maximum potential to emit for fuel oil tanks was calculated assuming one turnover per day for 365 days.

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Storage Tanks

Emissions Point ID:	**3FPTK012E1**
Description:	**#2 Fuel Oil Tank 3**
Source ID:	**3FPTK012S1**
Control Device:	**None**

The #2 fuel oil storage tank holds #2 fuel oil used to operate the steam production boilers during start-up. The boilers do have the capability to burn fuel oil exclusively if coal is not available. The fuel oil is fed to the system periodically as need

Emissions are estimated for the#2 fuel oil tank using the EPA AP-42 TANKS Version 4.0 for fixed roof tanks.

The maximum potential to emit for fuel oil tanks was calculated assuming one turnover per day for 365 days.

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K2/K3 Methanol Brine Storage Tank and Utility Tank

Source: 1AMTKK1BS1

Criteria Pollutants	Emissions (lbs/day)	Emissions (lbs/year)
PM_{10}	0	0
CO	0	0
NOx	0	0
SO_2	0	0
VOC	3.8086	1,390
Lead	0.0000	0

TAPs	Emissions (lbs/day)	Emissions (lbs/year)
Acetic Anhydride	0.0000	0.0000
Acetonitrile	0.0000	0.0000
n-Hexane	0.0000	0.0000
1,3-Butadiene	0.0000	0.0000
Methyl Ethyl Ketone	0.0000	0.0000
Methanol	3.8086	1,390.14

Description

The K2/K3 Methanol Brine Storage Tank and Utility Tank are part of the K2/K3 refrigeration system. The brine system is a closed loop system with cold brine leaving the chillers then entering the process to be used for cooling, the warmed brine leaving the process is then sent back to the chillers. The brine storage tank contains make-up brine that is transferred to the process as needed. Brine from the system is drained back to the utility tank and then to the storage tank. The utility tank overflows/vents into the storage tank. Both tanks are insulated and have a nitrogen blanket. The emissions from the storage and utility tanks will be modeled using the Tanks program. Brine is 40 wt% methanol in water.

Tanks Input Data

Equipment ID	**1AMTKK2S1**	
Tank Dimensions	**K2/K3 Storage Tank**	
Type	Vertical Fixed Roof Tank	
Shell Height	15	Ft
Diameter	8	Ft
Liquid Height	15	Ft
Avg Liquid Ht	7.5	Ft
Volume	5,640	gal
Turnovers	8,760	per year
Net Throughput	49,408,130	gal / year
Tank Heated	No	
Paint Characteristics		
Shell Color/Shade	Gray/Medium	
Shell Condition	Good	
Roof Color/Shade	Gray/Medium	
Roof Condition	Good	
Roof Characteristics		
Type	Dome	
Height	2.2	Ft
Radius	8	Ft
Breather Vent Settings		
Vacuum Setting	0	psig
Pressure Setting	0	psig

Equipment ID	**1AMTKK2S2**	
Tank Dimensions	**K2/K3 Utility Tank**	
Type	Horizontal Tank	
Shell Length	5.75	Ft
Diameter	3	Ft
Volume	271	gal
Turnovers	8,760	per year
Net Throughput	2,373,960	gal / year
Tank Heated	No	
Paint Characteristics		
Shell Color/Shade	Gray/Medium	
Shell Condition	Good	
Roof Color/Shade	Gray/Medium	
Roof Condition	Good	
Breather Vent Settings		
Vacuum Setting	0	psig
Pressure Setting	0	psig

Tanks Results

Component	Emissions (lb/year)
Methanol	3,313.8
Water	934.97
Brine	4,248.7

Tanks Results

Component	Emissions (lb/year)
Methanol	161.6
Water	45.6
Brine	207.2

Total Methanol Emissions

Total Unabated Methanol Emissions =	3475.4	lb/yr
Condenser Efficiency =	60%	
Total Abated Methanol Emissions =	1390.1	lb/yr

K2/K3 Methanol Brine Storage Tank and Utility Tank

Source: 1AMTKK1BS1

Tank Vent Condenser

The methanol brine storage tank is equipped with a vent condenser. Cold methanol brine leaving the chillers (nominal temperature = 14 deg F) is used to condense methanol out of the vent stream. The Ketene Project Equipment Manual did not contain a data sheet on the condenser so the condenser efficiency was estimated based on methanol vapor pressure. From the TANKS program (v4.09b) the average temperature for Charlotte is 69 deg F and the atmospheric pressure is 14.37 psia. The condenser efficiency will be estimated based on methanol/nitrogen entering the condenser at 69 deg F and leaving the condenser at 39 deg F. This results in a conservative approach temperature of 25 deg F. The efficiency then is the difference in methanol in nitrogen at atmospheric pressure as it is cooled from 69 deg F to 39 deg F.

Using Antoine equation for methanol vapor pressure (ref Felder & Rousseau):

Temperature (F)	Vapor Pressure (psia)	Mole % in Nitrogen (Total pressure = 14.37 psia)
69	1.930	13.43%
39	0.736	5.12%

Efficiency of Scrubber = Methanol Removed / Total Methanol
(Assume 100 moles of nitrogen/methanol fed to condenser)
Efficiency of Scrubber = (13.43 - 5.12) / 13.43
= 62%
- Use 60% efficiency for abated emissions

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Insignificant Sources

Emissions Point ID:	**3MSFREONE1**
Description:	**Freon R12 Fugitives from Process Refrigerators**
Source ID:	**3MSFREONS2**
Control Device:	**None**

Freon Fugitives result from piping leaks and other inefficiencies in the process refrigeration system. Comfort air conditioning freon emissions and freon emissions from process refrigerators in the CC complex are not included in this emissions estimate.

Freon emission data was obtained from 1992-1994 data when the plant was operating at peak production and is a summary of makeup freon charged into the various process refrigerators. It is assumed that the fugitive emissions are equal to the quantity of freon charged into the system during maintenance.

1993 Freon Usage R12 =	165	lb/year
1994 Freon Usage R12 =	680	lb/year

The maximum potential to emit (MPE) is estimated to be twice the highest recorded annual emissions rate.

MPE Freon =	1360	lb/year
MPE Freon =	0.1553	lb/hour

Emissions Point ID:	**3MSFREONE1**
Description:	**Freon R22 Fugitives from Process Refrigerators**
Source ID:	**3MSFREONS3**
Control Device:	**None**

Freon Fugitives result from piping leaks and other inefficiencies in the process refrigeration system. Comfort air conditioning freon emissions and freon emissions from process refrigerators in the CC complex are not included in this emissions estimate.

Freon emission data was obtained from 1992-1994 data when the plant was operating at peak production and is a summary of makeup freon charged into the various process refrigerators. It is assumed that the fugitive emissions are equal to the quantity of freon charged into the system during maintenance.

1993 Freon Usage R22 =	20	lb/year
1994 Freon Usage R22 =	250	lb/year

The maximum potential to emit (MPE) is estimated to be twice the highest recorded annual emissions rate.

MPE Freon =	500	lb/year
MPE Freon =	0.0571	lb/hour

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Insignificant Sources

Emissions Point ID: **3FPPHHOPE1**
Description: **Filter Plant Phosphate Hopper Fugitive Emissions**
Source ID: **3FPPHHOPS1**
Control Device: **None**

The Phosphate Hopper is used to feed powdered phosphate into the filter plant clearwells (used to hold treated water) for corrosion control. The powdered phosphate is received in 50 lb bags and A10manually added to the hopper by operators. Fugitive dust emissions occur when the bags are poured into the hopper and dust escapes from the top of the hopper. The fugitives are generated indoors and migrate to the ambient air through doorways and windows in the filter plant.

Emissions are estimated using EPA AP-42 emission factors for concrete loading operations (Section 11.12, Table 11.12-2) where the powdered materials are loaded into hoppers or storage bins by dropping material into an open topped vessel. The phosphate hopper operates in a similar fashion and phosphate is assumed to have similar emission properties as concrete powder. The emission factors given in the AP-42 discussion for Total Particulate Matter (PM) is 0.0051 lb of pollutant/ton of material loaded and for PM-10 is 0.0024 lb of pollutant/ton of material loaded.

The resulting emission factors are:

Total PM	0.0051	lb/ton of phosphate =	2.55E-06	lb/lb of phosphate
PM-10:	0.0024	lb/ton of phosphate =	1.20E-06	lb/lb of phosphate

The production rates for the phosphate hopper were obtained by tallying the yearly usage of phosphate. The 1992-1994 average was used because the production rate at the plant was at its peak at this time.

The 1992-1994 Average Phosphate Usage = 25,033 lb/year

The Maximum Potential to Emit (MPE) was calculated by incorporating a ratio of Maximum Filter Plant Capacity to Actual Production and multipling the Ratio by the Actual Phosphate Usage.

1992-1994 Average Water Production = 3.83 MGD
Maximum Water Production Capacity = 7.00 MGD

The MPE to Actual Production Ratio = 1.83

Therefore,MPE Rate of Phosphate = MPE to Actual Production Ratio x Average Phosphate Usage

MPE Phosphate Usuage = 45,752 lb/year

Total PM Emissions (lb/year) = MPE Phosphate Usage x AP-42 Emission Factor
Total PM (lb/year) = 0.117 lb/year

PM-10 Emissions (lb/year) = MPE Phosphate Usage x AP-42 Emission Factor
PM-10 Emissions (lb/year) = 0.055 lb/year

Cinergy Solutions of Rock Hill, LLC

Insignificant Sources

Emissions Point ID:	**3FPTKCL2E1**
Description:	**Chlorine Tank Fugitive Emissions**
Source ID:	**3FPTKCL2S1**
Control Device:	**None**

The chlorine cylinders are used to provide chlorine for disinfection of treated water in the filter plant. The chlorine is contained in 1400 lb cylinders and bubbled directly into a water contact chamber

Emissions from the chlorine cylinders are fugitive in nature and their quantity is estimated by assuming that chlorine trapped in the connection pigtail is released to the atmosphere during cylinder change-out.

The mass of chlorine released during each change-out is calculated based on the ideal gas law :

Ideal Gas Law: $P * V = n * R * T$

Where:

n = Amount of Gas Present (lb-mole)
P = Pressure of System (psia)
R = Universal Gas Constant = 10.73 psi*ft^3/lb-mole*deg R
T = Temperature of System (deg R)
V = Volume of System (ft^3)

Calculating Variables:

The Pigtail Cylinder Diameter =	0.25	inches or	0.021	feet
The Pigtail Cylinder Length =	4.00	feet		
V =(Π x (Diameter)^2/4) x Length =	0.00136	ft^3		
T = 70 deg F =	530	deg R		
P = Vapor Pressure of Cl_2 at 25 degree C =	114	psia		
n = unknown variable				

Solving for n yields: 2.73E-05 lb-mole of Chlorine/ Pigtail

The molecular weight of Cl_2 = 70.9 lb/lb-mole

Converting n to mass: 1.94E-03 lb Chlorine/Pigtail

Determining the Final Emission Factor

Amount Chlorine Contained in Each Cylinder = 1400 lb

So, the Emission Factor = Mass of Chlorine/Amount of Chlorine in each Cylinder

Emission Factor = 1.38E-06 lb/lb Chlorine Used is Released

The emission factor is then multiplied by the annual usage of chlorine to determine the annual emissions. The annual emission rate is divided by 8760 to provide the results in units of lbs/hour.

The maximum potential to emit (MPE) was calculated by incorporating a ratio of maximum filter plant capacity to actual production and multiplying the ratio by the actual chlorine usuage for the year. The 1992-1994 usuage rates were used due to it being the peak period of production at the plant.

1992-1994 Average Water Production = 3.83 MGD

Cinergy Solutions of Rock Hill, LLC

Insignificant Sources

Emissions Point ID:	**3FPTKCL2E1**		
Description:	**Chlorine Tank Fugitive Emissions**		
Source ID:	**3FPTKCL2S1**		
Control Device:	**None**		
Maximum Water Production Capacity =		7.00	MGD
The MPE to Actual Production Ratio =		1.83	MGD
2003 Chlorine Usage =		89,790	lb/year

Therefore, MPE Rate of Chlorine = MPE to Actual Production Ratio x Annual Chlorine Usage

MPE Chlorine Usage = 164,107 lb/year

Total Chlorine Emissions (lb/year) = MPE Chlorine Usage x Emission Factor

Total Chlorine Emissions (lb/year) = 0.23 lb/year

Cinergy Solutions of Rock Hill, LLC

Insignificant Sources

Emissions Point ID:	**3MSCOOL1E1**
Description:	**Cooling Tower Emissions**
Source ID:	**3MSCOOL1S1**
Control Device:	**None**

Plant cooling towers recirculate noncontact cooling water (NCCW) for use as a heat exchange fluid. The water is cooled by evaporation in the towers. Treatment chemicals are added periodically to the recirculating NCCW system to control the growth of biological organisms which can foul equipment. A constant blowdown is drawn off the towers to prevent the buildup of solids and other impurities.

Emissions for the cooling towers are estimated by assuming that 0.1 % of the the treatment chemicals added to the towers volatize and 99.9% are either destroyed in reactions with biomass or removed through the blowdown from the towers.

The maximum potential to emit (MPE) for the towers is calculated assuming:

1.00% of the material volatilizes

99.00% is removed by reaction or blowdown

1992-1994 data was used since plant was at peak production at that time. (Supplied by Betz Chemicals)

Usage Rate of Treatment Chemicals = 230,200 lbs/year

Chemical Emitted	Annual Usage (lb)	Emissions (lb/year)	Emissions (lb/hour)
Betz 2025	8,200	82	0.0094
Betz 26 K 26215	150,000	1500	0.1712
Betz 445	12,000	120	0.0137
Betz Biotrol 88P	35,000	350	0.0400
Betz FOAM-TROL 300	5,000	50	0.0057
Betz Slimicide	20,000	200	0.0228

Cinergy Solutions of Rock Hill, LLC

Insignificant Sources - Tanks

Emissions Point ID:	**3FPTK001E1**
Description:	**Aluminum Sulfate Storage Tank**
Source ID:	**3FPTK001S1**
Control Device:	**None**

The Aluminum Sulfate storage tank holds an alum solution used to precipitate solids in the filter plant reactor/clarifiers. The alum is fed to the system continuously and the tank is periodically refilled.

Emissions are estimated for the alum tank using the EPA AP-42 TANKS Version 4.0 for a fixed roof tank. However, the vapor pressure of alum is less than 0.001 psia and emissions of alum are neglible. Therefore, only water vapor is emitted from the tank.

Average Alum Usage = 27,000 gal/year
With a density of 11.12 lb/gal, the average alum usage = 300,240 lb/year

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum filter plant capacity to actual production and multiplying the ratio by the average alum usage for 1992-1994. 1992-1994 data was used since the plant was at peak production

1992-1994 Average Water Production = 3.83 MGD
The Maximum Water Production Capacity = 7.00 MGD

MPE Actual Production Ratio = 1.83

Therefore, the maximum production rate of alum = MPE Actual Production Ratio x Average Usage
Maximum Production Rate of Alum = 548,742 lb/year

Cinergy Solutions of Rock Hill, LLC

Insignificant Sources - Tanks

Emissions Point ID:	**3FPTK001E2**
Description:	**Aluminum Sulfate Day Storage Tank**
Source ID:	**3FPTK001S2**
Control Device:	**None**

The Aluminum Sulfate Day Storage Tank holds an alum solution used to precipitate solids in the filter plant reactor/clarifiers. The alum is fed to the system continuously and the tank is periodically refilled.

Emissions are estimated for the alum tank using the EPA AP-42 TANKS Version 4.0 for a fixed roof tank. However, the vapor pressure of alum is less than 0.001 psia and emissions of alum are neglible. Therefore, only water vapor is emitted from the tank.

Average Alum Usage = 27,000 gal/year
With a density of 11.12 lb/gal, the average alum usage = 300,240 lb/year

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum filter plant capacity to actual production and multiplying the ratio by the average alum usage for 1992-1994. 1992-1994 data was used since the plant was at peak production.

1992-1994 Average Water Production = 3.83 MGD
The Maximum Water Production Capacity = 7.00 MGD

MPE Actual Production Ratio = 1.83

Therefore, the maximum production rate of alum = MPE Actual Production Ratio x Average Usage
Maximum Production Rate of Alum = 548,742 lb/year

Cinergy Solutions of Rock Hill, LLC

Insignificant Sources - Tanks

Emissions Point ID:	**3FPTKNALE1**
Description:	**Sodium Aluminate Storage Tank**
Source ID:	**3FPTKNALS1**
Control Device:	**None**

The sodium aluminate storage tank holds an sodium aluminate solution used to precipitate solids in the filter plant reactor/clarifiers. The solution is fed to the system on a as needed basis and the tank is periodically refilled.

Emissions are estimated for the sodium aluminate tank using the EPA AP-42 TANKS Version 4.0 for a fixed roof tank. However, the vapor pressure for the sodium aluminate is less than 0.001 psia and emissions of the sodium aluminate are neglible. Therefore, only water vapor is emitted from the tank.

Average Sodium Aluminate Usage = 55,000 gal/year
With a density of 12.23 lb/gal, the average Sodium Aluminate usage = 672,650 lb/year

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum filter plant capacity to actual production and multiplying the ratio by the average sodium aluminate usage for 1992-1994. 1992-1994 data was used since the plant was at peak production

1992-1994 Average Water Production = 3.83 MGD
The Maximum Water Production Capacity = 7.00 MGD

MPE Actual Production Ratio = 1.83

Therefore, the maximum production rate of Sodium Aluminate = MPE Actual Production Ratio x Average Usage
Maximum Production Rate of Sodium Aluminate = 1,229,386 lb/year

Cinergy Solutions of Rock Hill, LLC

Insignificant Sources - Tanks

Emissions Point ID:	**3FPSLURE1**
Description:	**Lime Slurry Tank**
Source ID:	**3FPSLURS1**
Control Device:	**None**

The lime slurry storage tank holds an calcium hydroxdehydrated lime solution used to in the filter plant reactor/clarifiers. The solution is fed to the system on a as needed basis and the tank is periodically refilled.

Emissions are estimated for the lime slurry tank using the EPA AP-42 TANKS Version 4.0 for a fixed roof tank. However, the vapor pressure for the calcium hydroxide is less than 0.001 psia and emissions of the calcium hydroxide are neglible. Therefore, only water vapor is emitted from the tank

Average Calcium Hydroxide Usage = 20,788 gal/year
With a density of 18.35 lb/gal, the average Calcium Hydroxide usage = 381,460 lb/year

The maximum potential to emit (MPE) was calcuated by incorporating a ratio of maximum filter plant capacity to actual production and multiplying the ratio by the average sodium aluminate usage for 1992-1994. 1992-1994 data was used since the plant was at

1992-1994 Average Water Production = 3.83 MGD
The Maximum Water Production Capacity = 7.00 MGD

MPE Actual Production Ratio = 1.83

Therefore, the maximum production rate of Sodium Aluminate = MPE Actual Production Ratio x Average Usage
Maximum Production Rate of Sodium Aluminate = 697,185 lb/year

Cinergy Solutions of Rock Hill, LLC

Emission Source: **487 hp Diesel Fire Pump #4**
Emission ID: **3WWWWDP4S1**

Engine Output (hp):	487
Annual Electrical Output (kW-hr):	79,894
Annual Output (hp-hr):	121,750
Annual Operation (hours):	250
Generator Output (kW):	363
Annual Electrical Output (kW-hr):	90,750

Pollutant	Emission Factor (lb/hp-hr)	lb/hr	lb/yr	tpy
PM	2.20E-03	1.07E+00	2.68E+02	1.34E-01
PM-10	2.20E-03	1.07E+00	2.68E+02	1.34E-01
PM-2.5	2.20E-03	1.07E+00	2.68E+02	1.34E-01
NOx	3.10E-02	1.51E+01	3.77E+03	1.89E+00
CO	6.68E-03	3.25E+00	8.13E+02	4.07E-01
SO_x	2.05E-03	9.98E-01	2.50E+02	1.25E-01
Acetaldehyde	5.37E-06	2.61E-03	6.54E-01	3.27E-04
Acrolein	6.48E-07	3.15E-04	7.88E-02	3.94E-05
Benzene	6.53E-06	3.18E-03	7.95E-01	3.98E-04
Benzo (a) pyrene	1.32E-09	6.41E-07	1.60E-04	8.01E-08
1,3-Butadiene	8.26E-06	4.02E-03	1.01E+00	5.03E-04
Formaldehyde	8.26E-06	4.02E-03	1.01E+00	5.03E-04
Napthalene	5.94E-07	2.89E-04	7.23E-02	3.61E-05
PAH	1.18E-06	5.73E-04	1.43E-01	7.16E-05
Propylene	1.81E-05	8.80E-03	2.20E+00	1.10E-03
Toluene	2.86E-06	1.39E-03	3.49E-01	1.74E-04
Xylene	2.00E-06	9.72E-04	2.43E-01	1.21E-04

Emission factors are from AP-42 Chapter 3, Section 3, Gasoline and Diesel Industrial Engines, dated October 1996.

Hourly emission rates for all pollutants are based on the hourly engine output. Annual emissions are based on the annual engine output.

Cinergy Solutions of Rock Hill, LLC
Fuel Oil Combustion Emissions

Boiler #1 (Equipment ID 3PHBOI01S1)
Emission ID 3PHBOL01E1

Maximum Heat Input (mmBtu/hour)	176.4
Actual Annual Fuel Usage (gallons/year)	103,000
Maximum Annual Fuel Usage (gallons/year) based on max hours of boiler useof 7days	211,680
Maximum Sulfur Content (%)	0.50
Fuel Heating Value (Btu/gallon)	140,000
Type of Particulate Control	ESP
Average Particulate Control Efficiency	94%

Pollutant	Emission Factors ($lb/10^3$ gallon)	Uncontrolled MPE (lb/hour)	Uncontrolled MPE (ton/year)	Abated MPE (lb/hour)	Abated MPE (ton/year)
Total Particulate Matter (PM) (FPM+CPM)	3.30E+00	0.080	0.349	0.005	0.021
Filterable PM (FPM)	2.00E+00	0.048	0.212	0.003	0.013
Condensable PM (CPM)	1.30E+00	0.031	0.138	0.002	0.008
Filterable PM<10 MICRONS (PM_{10})	1.00E+00	0.024	0.106	0.001	0.006
Filterable PM<2.5 MICRONS ($PM_{2.5}$)	2.50E-01	0.006	0.026	3.62E-04	0.002
Sulfur Dioxide (SO2)	7.10E+01	1.716	7.515	1.716	7.515
Nitrogen Oxides (NOx)	2.40E+01	0.580	2.540	0.580	2.540
Carbon Monoxide (CO)	5.00E+00	0.121	0.529	0.121	0.529
Volatile Organic Compounds (VOC)	2.00E-01	0.005	0.021	0.005	0.021
Lead	1.26E-03	3.04E-05	1.33E-04	3.04E-05	1.33E-04
TOXIC / HAZARDOUS AIR POLLUTANT					
Arsenic & compounds	5.60E-04	1.35E-05	5.93E-05	1.35E-05	5.93E-05
Benzene	2.75E-03	6.65E-05	2.91E-04	6.65E-05	2.91E-04
Beryllium & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Cadium & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Chromium - All/Total	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Ethylbenzene	8.17E-04	1.97E-05	8.65E-05	1.97E-05	8.65E-05
Fluorides (sum fluoride compounds)	3.73E-02	9.01E-04	3.95E-03	9.01E-04	3.95E-03
Formaldehyde	4.80E-02	1.16E-03	5.08E-03	1.16E-03	5.08E-03
Lead and Lead compounds	1.26E-03	3.04E-05	1.33E-04	3.04E-05	1.33E-04
Manganese & compounds	8.40E-04	2.03E-05	8.89E-05	2.03E-05	8.89E-05
Mercury & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Methyl chloroform	2.36E-04	5.70E-06	2.50E-05	5.70E-06	2.50E-05
Napthalene	3.33E-04	8.05E-06	3.52E-05	8.05E-06	3.52E-05
Nickle & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
POM rates uncontrolled	3.30E-03	7.97E-05	3.49E-04	7.97E-05	3.49E-04
Selenium compounds	2.10E-03	5.07E-05	2.22E-04	5.07E-05	2.22E-04
Toluene	7.97E-02	1.93E-03	8.43E-03	1.93E-03	8.43E-03
Xylene	1.40E-03	3.38E-05	1.48E-04	3.38E-05	1.48E-04
Total HAP		**0.004**	**0.019**	**0.004**	**0.019**

Cinergy Solutions of Rock Hill, LLC
Fuel Oil Combustion Emissions

Boiler #2 (Equipment ID 3PHBOI02S1)
Emission ID 3PHBOL02E1

Maximum Heat Input (mmBtu/hour)	176.4
Actual Annual Fuel Usage (gallons/year)	103,000
Maximum Annual Fuel Usage (gallons/year) based on max hours of boiler useof 7days	211,680
Maximum Sulfur Content (%)	0.50
Fuel Heating Value (Btu/gallon)	140,000
Type of Particulate Control	ESP
Average Particulate Control Efficiency	94%

Pollutant	Emission Factors (lb/10^3 gallon)	Uncontrolled MPE (lb/hour)	Uncontrolled MPE (ton/year)	Abated MPE (lb/hour)	Abated MPE (ton/year)
Total Particulate Matter (PM) (FPM+CPM)	3.30E+00	0.080	0.349	0.005	0.021
Filterable PM (FPM)	2.00E+00	0.048	0.212	0.003	0.013
Condensable PM (CPM)	1.30E+00	0.031	0.138	0.002	0.008
Filterable PM<10 MICRONS (PM_{10})	1.00E+00	0.024	0.106	0.001	0.006
Filterable PM<2.5 MICRONS ($PM_{2.5}$)	2.50E-01	0.006	0.026	3.62E-04	0.002
Sulfur Dioxide (SO2)	7.10E+01	1.716	7.515	1.716	7.515
Nitrogen Oxides (NOx)	2.40E+01	0.580	2.540	0.580	2.540
Carbon Monoxide (CO)	5.00E+00	0.121	0.529	0.121	0.529
Volatile Organic Compounds (VOC)	2.00E-01	0.005	0.021	0.005	0.021
Lead	1.26E-03	3.04E-05	1.33E-04	3.04E-05	1.334E-04
TOXIC / HAZARDOUS AIR POLLUTANT					
Arsenic & compounds	5.60E-04	1.35E-05	5.93E-05	1.35E-05	5.93E-05
Benzene	2.75E-03	6.65E-05	2.91E-04	6.65E-05	2.91E-04
Beryllium & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Cadium & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Chromium - All/Total	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Ethylbenzene	8.17E-04	1.97E-05	8.65E-05	1.97E-05	8.65E-05
Fluorides (sum fluoride compounds)	3.73E-02	9.01E-04	3.95E-03	9.01E-04	3.95E-03
Formaldehyde	4.80E-02	1.16E-03	5.08E-03	1.16E-03	5.08E-03
Lead and Lead compounds	1.26E-03	3.04E-05	1.33E-04	3.04E-05	1.33E-04
Manganese & compounds	8.40E-04	2.03E-05	8.89E-05	2.03E-05	8.89E-05
Mercury & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Methyl chloroform	2.36E-04	5.70E-06	2.50E-05	5.70E-06	2.50E-05
Napthalene	3.33E-04	8.05E-06	3.52E-05	8.05E-06	3.52E-05
Nickle & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
POM rates uncontrolled	3.30E-03	7.97E-05	3.49E-04	7.97E-05	3.49E-04
Selenium compounds	2.10E-03	5.07E-05	2.22E-04	5.07E-05	2.22E-04
Toluene	7.97E-02	1.93E-03	8.43E-03	1.93E-03	8.43E-03
Xylene	1.40E-03	3.38E-05	1.48E-04	3.38E-05	1.48E-04
Total HAP		0.004	0.019	0.004	0.019

Cinergy Solutions of Rock Hill, LLC
Fuel Oil Combustion Emissions

Boiler #3 (Equipment ID 3PHBOI03S1)
Emission ID 3PHBOL03E1

Maximum Heat Input (mmBtu/hour)	176.4
Actual Annual Fuel Usage (gallons/year)	103,000
Maximum Annual Fuel Usage (gallons/year) based on max hours of boiler useof 7days	211,680
Maximum Sulfur Content (%)	0.50
Fuel Heating Value (Btu/gallon)	140,000
Type of Particulate Control	ESP
Average Particulate Control Efficiency	94%

Pollutant	Emission Factors ($lb/10^3$ gallon)	Uncontrolled MPE (lb/hour)	Uncontrolled MPE (ton/year)	Abated MPE (lb/hour)	Abated MPE (ton/year)
Total Particulate Matter (PM) (FPM+CPM)	3.30E+00	0.080	0.349	0.005	0.021
Filterable PM (FPM)	2.00E+00	0.048	0.212	0.003	0.013
Condensable PM (CPM)	1.30E+00	0.031	0.138	0.002	0.008
Filterable PM<10 MICRONS (PM_{10})	1.00E+00	0.024	0.106	0.001	0.006
Filterable PM<2.5 MICRONS ($PM_{2.5}$)	2.50E-01	0.006	0.026	3.62E-04	0.002
Sulfur Dioxide (SO2)	7.10E+01	1.716	7.515	1.716	7.515
Nitrogen Oxides (NOx)	2.40E+01	0.580	2.540	0.580	2.540
Carbon Monoxide (CO)	5.00E+00	0.121	0.529	0.121	0.529
Volatile Organic Compounds (VOC)	2.00E-01	0.005	0.021	0.005	0.021
Lead	1.26E-03	3.04E-05	1.33E-04	3.04E-05	1.334E-04
TOXIC / HAZARDOUS AIR POLLUTANT					
Arsenic & compounds	5.60E-04	1.35E-05	5.93E-05	1.35E-05	5.93E-05
Benzene	2.75E-03	6.65E-05	2.91E-04	6.65E-05	2.91E-04
Beryllium & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Cadium & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Chromium - All/Total	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Ethylbenzene	8.17E-04	1.97E-05	8.65E-05	1.97E-05	8.65E-05
Fluorides (sum fluoride compounds)	3.73E-02	9.01E-04	3.95E-03	9.01E-04	3.95E-03
Formaldehyde	4.80E-02	1.16E-03	5.08E-03	1.16E-03	5.08E-03
Lead and Lead compounds	1.26E-03	3.04E-05	1.33E-04	3.04E-05	1.33E-04
Manganese & compounds	8.40E-04	2.03E-05	8.89E-05	2.03E-05	8.89E-05
Mercury & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
Methyl chloroform	2.36E-04	5.70E-06	2.50E-05	5.70E-06	2.50E-05
Napthalene	3.33E-04	8.05E-06	3.52E-05	8.05E-06	3.52E-05
Nickle & compounds	4.20E-04	1.01E-05	4.45E-05	1.01E-05	4.45E-05
POM rates uncontrolled	3.30E-03	7.97E-05	3.49E-04	7.97E-05	3.49E-04
Selenium compounds	2.10E-03	5.07E-05	2.22E-04	5.07E-05	2.22E-04
Toluene	7.97E-02	1.93E-03	8.43E-03	1.93E-03	8.43E-03
Xylene	1.40E-03	3.38E-05	1.48E-04	3.38E-05	1.48E-04
Total HAP		0.004	0.019	0.004	0.019

Cinergy Solutions of Rock Hill, LLC
Fuel Oil Combustion Emissions

Boiler #4(Equipment ID 3PHBOI04S1)
Emission ID 3PHBOL04E1

Maximum Heat Input (mmBtu/hour)	221.9
Actual Annual Fuel Usage (gallons/year)	103,000
Maximum Annual Fuel Usage (gallons/year) based on max hours of boiler useof 7days	266,280
Maximum Sulfur Content (%)	0.50
Fuel Heating Value (Btu/gallon)	140,000
Type of Particulate Control	ESP
Average Particulate Control Efficiency	94%

Pollutant	Emission Factors (lb/10^3 gallon)	Uncontrolled MPE (lb/hour)	Uncontrolled MPE (ton/year)	Abated MPE (lb/hour)	Abated MPE (ton/year)
Total Particulate Matter (PM) (FPM+CPM)	3.30E+00	0.100	0.439	0.006	0.026
Filterable PM (FPM)	2.00E+00	0.061	0.266	0.004	0.016
Condensable PM (CPM)	1.30E+00	0.040	0.173	0.002	0.010
Filterable PM<10 MICRONS (PM_{10})	1.00E+00	0.030	0.133	0.002	0.008
Filterable PM<2.5 MICRONS ($PM_{2.5}$)	2.50E-01	0.008	0.033	4.56E-04	0.002
Sulfur Dioxide (SO2)	7.10E+01	2.158	9.453	2.158	9.453
Nitrogen Oxides (NOx)	2.40E+01	0.730	3.195	0.730	3.195
Carbon Monoxide (CO)	5.00E+00	0.152	0.666	0.152	0.666
Volatile Organic Compounds (VOC)	2.00E-01	0.006	0.027	0.006	0.027
Lead	1.26E-03	3.83E-05	1.68E-04	3.83E-05	1.678E-04
TOXIC / HAZARDOUS AIR POLLUTANT					
Arsenic & compounds	5.60E-04	1.70E-05	7.46E-05	1.70E-05	7.46E-05
Benzene	2.75E-03	8.36E-05	3.66E-04	8.36E-05	3.66E-04
Beryllium & compounds	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
Cadium & compounds	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
Chromium - All/Total	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
Ethylbenzene	8.17E-04	2.48E-05	1.09E-04	2.48E-05	1.09E-04
Fluorides (sum fluoride compounds)	3.73E-02	1.13E-03	4.97E-03	1.13E-03	4.97E-03
Formaldehyde	4.80E-02	1.46E-03	6.39E-03	1.46E-03	6.39E-03
Lead and Lead compounds	1.26E-03	3.83E-05	1.68E-04	3.83E-05	1.68E-04
Manganese & compounds	8.40E-04	2.55E-05	1.12E-04	2.55E-05	1.12E-04
Mercury & compounds	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
Methyl chloroform	2.36E-04	7.17E-06	3.14E-05	7.17E-06	3.14E-05
Napthalene	3.33E-04	1.01E-05	4.43E-05	1.01E-05	4.43E-05
Nickle & compounds	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
POM rates uncontrolled	3.30E-03	1.00E-04	4.39E-04	1.00E-04	4.39E-04
Selenium compounds	2.10E-03	6.38E-05	2.80E-04	6.38E-05	2.80E-04
Toluene	7.97E-02	2.42E-03	1.06E-02	2.42E-03	1.06E-02
Xylene	1.40E-03	4.26E-05	1.86E-04	4.26E-05	1.86E-04
Total HAP		0.005	0.024	0.005	0.024

Cinergy Solutions of Rock Hill, LLC
Fuel Oil Combustion Emissions

Boiler #5(Equipment ID 3PHBOI05S1)
Emission ID 3PHBOL05E1

Maximum Heat Input (mmBtu/hour)	221.9
Actual Annual Fuel Usage (gallons/year)	103,000
Maximum Annual Fuel Usage (gallons/year) based on max hours of boiler useof 7days	266,280
Maximum Sulfur Content (%)	0.50
Fuel Heating Value (Btu/gallon)	140,000
Type of Particulate Control	ESP
Average Particulate Control Efficiency	94%

Pollutant	Emission Factors ($lb/10^3$ gallon)	Uncontrolled MPE (lb/hour)	Uncontrolled MPE (ton/year)	Abated MPE (lb/hour)	Abated MPE (ton/year)
Total Particulate Matter (PM) (FPM+CPM)	3.30E+00	0.100	0.439	0.006	0.026
Filterable PM (FPM)	2.00E+00	0.061	0.266	0.004	0.016
Condensable PM (CPM)	1.30E+00	0.040	0.173	0.002	0.010
Filterable PM<10 MICRONS (PM_{10})	1.00E+00	0.030	0.133	0.002	0.008
Filterable PM<2.5 MICRONS ($PM_{2.5}$)	2.50E-01	0.008	0.033	4.56E-04	0.002
Sulfur Dioxide (SO2)	7.10E+01	2.158	9.453	2.158	9.453
Nitrogen Oxides (NOx)	2.40E+01	0.730	3.195	0.730	3.195
Carbon Monoxide (CO)	5.00E+00	0.152	0.666	0.152	0.666
Volatile Organic Compounds (VOC)	2.00E-01	0.006	0.027	0.006	0.027
Lead	1.26E-03	3.83E-05	1.68E-04	3.83E-05	1.678E-04
TOXIC / HAZARDOUS AIR POLLUTANT					
Arsenic & compounds	5.60E-04	1.70E-05	7.46E-05	1.70E-05	7.46E-05
Benzene	2.75E-03	8.36E-05	3.66E-04	8.36E-05	3.66E-04
Beryllium & compounds	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
Cadium & compounds	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
Chromium - All/Total	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
Ethylbenzene	8.17E-04	2.48E-05	1.09E-04	2.48E-05	1.09E-04
Fluorides (sum fluoride compounds)	3.73E-02	1.13E-03	4.97E-03	1.13E-03	4.97E-03
Formaldehyde	4.80E-02	1.46E-03	6.39E-03	1.46E-03	6.39E-03
Lead and Lead compounds	1.26E-03	3.83E-05	1.68E-04	3.83E-05	1.68E-04
Manganese & compounds	8.40E-04	2.55E-05	1.12E-04	2.55E-05	1.12E-04
Mercury & compounds	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
Methyl chloroform	2.36E-04	7.17E-06	3.14E-05	7.17E-06	3.14E-05
Napthalene	3.33E-04	1.01E-05	4.43E-05	1.01E-05	4.43E-05
Nickle & compounds	4.20E-04	1.28E-05	5.59E-05	1.28E-05	5.59E-05
POM rates uncontrolled	3.30E-03	1.00E-04	4.39E-04	1.00E-04	4.39E-04
Selenium compounds	2.10E-03	6.38E-05	2.80E-04	6.38E-05	2.80E-04
Toluene	7.97E-02	2.42E-03	1.06E-02	2.42E-03	1.06E-02
Xylene	1.40E-03	4.26E-05	1.86E-04	4.26E-05	1.86E-04
Total HAP		0.005	0.024	0.005	0.024

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	18DTKCA1S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Horizontal Tank
Description:	CALCIUM CHLORIDE STORAGE TANK

Tank Dimensions

Shell Length (ft):	23.00
Diameter (ft):	14.00
Volume (gallons):	26,000.00
Turnovers:	1.15
Net Throughput (gal/yr):	30,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Aluminum/Specular
Shell Condition:	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Calcium Chloride	All	65.15	57.59	72.72	61.41	0.2918	0.2228	0.3768	18.0203			23.94	Option 1: VP60 = .001 VP70 = .001
Calcium Chloride						0.0010	0.0010	0.0010	110.9900	0.2960	0.0013	110.99	Option 1: VP60 = .001 VP70 = .001
Water						0.3116	0.2380	0.4024	18.0000	0.7040	0.9987	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	44.6084
Vapor Space Volume (cu ft):	2,255.1433
Vapor Density (lb/cu ft):	0.0009
Vapor Space Expansion Factor:	0.0643
Vented Vapor Saturation Factor:	0.9023
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	2,255.1433
Tank Diameter (ft):	14.0000
Effective Diameter (ft):	20.2532
Vapor Space Outage (ft):	7.0000
Tank Shell Length (ft):	23.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0009
Vapor Molecular Weight (lb/lb-mole):	18.0203
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2918
Daily Avg. Liquid Surface Temp. (deg. R):	524.8246
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	521.0808
Tank Paint Solar Absorptance (Shell):	0.3900
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0643
Daily Vapor Temperature Range (deg. R):	30.2568
Daily Vapor Pressure Range (psia):	0.1540
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2918
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2228
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.3768
Daily Avg. Liquid Surface Temp. (deg R):	524.8246
Daily Min. Liquid Surface Temp. (deg R):	517.2604
Daily Max. Liquid Surface Temp. (deg R):	532.3888
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9023
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2918
Vapor Space Outage (ft):	7.0000
Working Losses (lb):	3.7561
Vapor Molecular Weight (lb/lb-mole):	18.0203
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2918
Annual Net Throughput (gal/yr.):	30,000.0000
Annual Turnovers:	1.1538
Turnover Factor:	1.0000
Tank Diameter (ft):	14.0000

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Loss Product Factor:	1.0000
Total Losses (lb):	48.3645

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Calcium Chloride	3.76	44.61	48.36
Calcium Chloride	0.01	0.06	0.07
Water	3.75	44.55	48.30

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	1AMTKK2S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	K2/K3 METHANOL BRINE STORAGE TANK

Tank Dimensions

Shell Height (ft):	15.00
Diameter (ft):	8.00
Liquid Height (ft):	15.00
Avg. Liquid Height (ft):	14.99
Volume (gallons):	5,640.00
Turnovers:	8,760.00
Net Throughput (gal/yr):	49,408,130.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	2.20
Radius (ft) (Dome Roof):	8.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig):	0.00

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Methanol Brine	All	69.35	58.93	79.77	63.15	0.7750	0.6192	0.9605	27.3462			21.83	Option 1: VP60 = .019 VP70 = .022
Methanol						1.8933	1.6088	2.1777	32.0400	0.4000	0.7799	32.04	Option 1: VP60 = 1.638 VP70 = 1.911
Water						0.3561	0.2486	0.5047	18.0000	0.6000	0.2201	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	8.2726
Vapor Space Volume (cu ft):	61.3700
Vapor Density (lb/cu ft):	0.0037
Vapor Space Expansion Factor:	0.1039
Vented Vapor Saturation Factor:	0.9522
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	61.3700
Tank Diameter (ft):	8.0000
Vapor Space Outage (ft):	1.2209
Tank Shell Height (ft):	15.0000
Average Liquid Height (ft):	14.9900
Roof Outage (ft):	1.2109
Roof Outage (Dome Roof)	
Roof Outage (ft):	1.2109
Dome Radius (ft):	8.0000
Shell Radius (ft):	4.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0037
Vapor Molecular Weight (lb/lb-mole):	27.3462
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7750
Daily Avg. Liquid Surface Temp. (deg. R):	529.0213
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	522.8208
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1039
Daily Vapor Temperature Range (deg. R):	41.6775
Daily Vapor Pressure Range (psia):	0.3413
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7750
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.6192
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.9605
Daily Avg. Liquid Surface Temp. (deg R):	529.0213
Daily Min. Liquid Surface Temp. (deg R):	518.6019
Daily Max. Liquid Surface Temp. (deg R):	539.4406
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9522
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7750
Vapor Space Outage (ft):	1.2209
Working Losses (lb):	4,240.4549

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TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	27.3462
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7750
Annual Net Throughput (gal/yr.):	49,408,130.00
	00
Annual Turnovers:	8,760.0000
Turnover Factor:	0.1701
Maximum Liquid Volume (gal):	5,640.0000
Maximum Liquid Height (ft):	14.9995
Tank Diameter (ft):	8.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	4,248.7276

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Methanol Brine	4,240.45	8.27	4,248.73
Methanol	3,307.31	6.45	3,313.76
Water	933.15	1.82	934.97

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	1AMTKK2S2
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Horizontal Tank
Description:	K2/K3 UTILITY TANK

Tank Dimensions

Shell Length (ft):	5.75
Diameter (ft):	3.00
Volume (gallons):	271.00
Turnovers:	8,760.00
Net Throughput (gal/yr):	2,373,960.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig):	0.00

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Methanol Brine	All	69.35	58.93	79.77	63.15	0.7750	0.6192	0.9605	27.3462			21.83	Option 1: VP60 = .019 VP70 = .022
Methanol						1.8933	1.6088	2.1777	32.0400	0.4000	0.7799	32.04	Option 1: VP60 = 1.638 VP70 = 1.911
Water						0.3561	0.2486	0.5047	18.0000	0.6000	0.2201	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	3.4520
Vapor Space Volume (cu ft):	25.8881
Vapor Density (lb/cu ft):	0.0037
Vapor Space Expansion Factor:	0.1039
Vented Vapor Saturation Factor:	0.9420
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	25.8881
Tank Diameter (ft):	3.0000
Effective Diameter (ft):	4.6877
Vapor Space Outage (ft):	1.5000
Tank Shell Length (ft):	5.7500
Vapor Density	
Vapor Density (lb/cu ft):	0.0037
Vapor Molecular Weight (lb/lb-mole):	27.3462
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7750
Daily Avg. Liquid Surface Temp. (deg. R):	529.0213
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	522.8208
Tank Paint Solar Absorptance (Shell):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1039
Daily Vapor Temperature Range (deg. R):	41.6775
Daily Vapor Pressure Range (psia):	0.3413
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7750
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.6192
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.9605
Daily Avg. Liquid Surface Temp. (deg R):	529.0213
Daily Min. Liquid Surface Temp. (deg R):	518.6019
Daily Max. Liquid Surface Temp. (deg R):	539.4406
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9420
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7750
Vapor Space Outage (ft):	1.5000
Working Losses (lb):	203.7452
Vapor Molecular Weight (lb/lb-mole):	27.3462
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7750
Annual Net Throughput (gal/yr.):	2,373,960.000
Annual Turnovers:	0
Turnover Factor:	8,760.0000
	0.1701

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TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Tank Diameter (ft):	3.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	207.1972

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Methanol Brine	203.75	3.45	207.20
Methanol	158.91	2.69	161.60
Water	44.84	0.76	45.60

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	1D8TKCA2S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Horizontal Tank
Description:	CALCIUM CHLORIDE HEAD TANK

Tank Dimensions

Shell Length (ft):	12.00
Diameter (ft):	7.00
Volume (gallons):	1,000.00
Turnovers:	4.00
Net Throughput (gal/yr):	4,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Aluminum/Specular
Shell Condition:	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Calcium Chloride	All	65.15	57.59	72.72	61.41	0.2918	0.2228	0.3768	18.0203			23.94	Option 1: VP60 = .001 VP70 = .001
Calcium Chloride						0.0010	0.0010	0.0010	110.9900	0.2960	0.0013	110.99	Option 1: VP60 = .001 VP70 = .001
Water						0.3116	0.2380	0.4024	18.0000	0.7040	0.9987	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	6.1173
Vapor Space Volume (cu ft):	294.1491
Vapor Density (lb/cu ft):	0.0009
Vapor Space Expansion Factor:	0.0643
Vented Vapor Saturation Factor:	0.9486
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	294.1491
Tank Diameter (ft):	7.0000
Effective Diameter (ft):	10.3444
Vapor Space Outage (ft):	3.5000
Tank Shell Length (ft):	12.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0009
Vapor Molecular Weight (lb/lb-mole):	18.0203
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2918
Daily Avg. Liquid Surface Temp. (deg. R):	524.8246
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	521.0808
Tank Paint Solar Absorptance (Shell):	0.3900
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0643
Daily Vapor Temperature Range (deg. R):	30.2568
Daily Vapor Pressure Range (psia):	0.1540
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2918
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2228
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.3768
Daily Avg. Liquid Surface Temp. (deg R):	524.8246
Daily Min. Liquid Surface Temp. (deg R):	517.2604
Daily Max. Liquid Surface Temp. (deg R):	532.3888
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9486
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2918
Vapor Space Outage (ft):	3.5000
Working Losses (lb):	0.5008
Vapor Molecular Weight (lb/lb-mole):	18.0203
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2918
Annual Net Throughput (gal/yr.):	4,000.0000
Annual Turnovers:	4.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	7.0000

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Loss Product Factor:	1.0000
Total Losses (lb):	6.6181

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Calcium Chloride	0.50	6.12	6.62
Calcium Chloride	0.00	0.01	0.01
Water	0.50	6.11	6.61

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	1D8TKCA3S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	CALCIUM CHLORIDE MIX TANK

Tank Dimensions

Shell Height (ft):	5.00
Diameter (ft):	6.00
Liquid Height (ft):	4.73
Avg. Liquid Height (ft):	4.73
Volume (gallons):	1,000.00
Turnovers:	4.00
Net Throughput (gal/yr):	4,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	1.00
Radius (ft) (Dome Roof):	6.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Calcium Chloride	All	69.35	58.93	79.77	63.15	0.3335	0.2328	0.4725	18.0178			23.94	Option 1: VP60 = .001 VP70 = .001
Calcium Chloride						0.0010	0.0010	0.0010	110.9900	0.2960	0.0012	110.99	Option 1: VP60 = .001 VP70 = .001
Water						0.3561	0.2486	0.5047	18.0000	0.7040	0.9988	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	0.7809
Vapor Space Volume (cu ft):	22.3797
Vapor Density (lb/cu ft):	0.0011
Vapor Space Expansion Factor:	0.0916
Vented Vapor Saturation Factor:	0.9862
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	22.3797
Tank Diameter (ft):	6.0000
Vapor Space Outage (ft):	0.7915
Tank Shell Height (ft):	5.0000
Average Liquid Height (ft):	4.7270
Roof Outage (ft):	0.5185
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.5185
Dome Radius (ft):	6.0000
Shell Radius (ft):	3.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0011
Vapor Molecular Weight (lb/lb-mole):	18.0178
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3335
Daily Avg. Liquid Surface Temp. (deg. R):	529.0213
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	522.8208
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0916
Daily Vapor Temperature Range (deg. R):	41.6775
Daily Vapor Pressure Range (psia):	0.2398
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3335
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2328
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.4725
Daily Avg. Liquid Surface Temp. (deg R):	529.0213
Daily Min. Liquid Surface Temp. (deg R):	518.6019
Daily Max. Liquid Surface Temp. (deg R):	539.4406
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9862
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3335
Vapor Space Outage (ft):	0.7915
Working Losses (lb):	0.5722

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	18.0178
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3335
Annual Net Throughput (gal/yr.):	4,000.0000
Annual Turnovers:	4.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	1,000.0000
Maximum Liquid Height (ft):	4.7280
Tank Diameter (ft):	6.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	1.3531

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Calcium Chloride	0.57	0.78	1.35
Calcium Chloride	0.00	0.00	0.00
Water	0.57	0.78	1.35

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3DFST001S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Horizontal Tank
Description:	#2 DIESEL FUEL TANK

Tank Dimensions

Shell Length (ft):	5.33
Diameter (ft):	4.33
Volume (gallons):	550.00
Turnovers:	10.18
Net Throughput (gal/yr):	5,600.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig):	0.00

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
No. 2 Diesel Fuel	All	69.35	58.93	79.77	63.15	0.0006	0.0005	0.0007	198.0400			198.04	Option 1: VP60 = .0005 VP70 = .0006

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	0.0298
Vapor Space Volume (cu ft):	49.9912
Vapor Density (lb/cu ft):	0.0000
Vapor Space Expansion Factor:	0.0788
Vented Vapor Saturation Factor:	0.9999
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	49.9912
Tank Diameter (ft):	4.3300
Effective Diameter (ft):	5.4222
Vapor Space Outage (ft):	2.1650
Tank Shell Length (ft):	5.3300
Vapor Density	
Vapor Density (lb/cu ft):	0.0000
Vapor Molecular Weight (lb/lb-mole):	198.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0006
Daily Avg. Liquid Surface Temp. (deg. R):	529.0213
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	522.8208
Tank Paint Solar Absorptance (Shell):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0788
Daily Vapor Temperature Range (deg. R):	41.6775
Daily Vapor Pressure Range (psia):	0.0002
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0006
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0005
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0007
Daily Avg. Liquid Surface Temp. (deg R):	529.0213
Daily Min. Liquid Surface Temp. (deg R):	518.6019
Daily Max. Liquid Surface Temp. (deg R):	539.4406
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9999
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0006
Vapor Space Outage (ft):	2.1650
Working Losses (lb):	0.0157
Vapor Molecular Weight (lb/lb-mole):	198.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0006
Annual Net Throughput (gal/yr.):	5,600.0000
Annual Turnovers:	10.1818
Turnover Factor:	1.0000
Tank Diameter (ft):	4.3300

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Loss Product Factor:	1.0000
Total Losses (lb):	0.0454

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
No. 2 Diesel Fuel	0.02	0.03	0.05

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3FPSLURS1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	LIME SLURRY TANK

Tank Dimensions

Shell Height (ft):	20.67
Diameter (ft):	12.00
Liquid Height (ft):	18.91
Avg. Liquid Height (ft):	18.91
Volume (gallons):	16,000.00
Turnovers:	1.37
Net Throughput (gal/yr):	20,788.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	1.00
Radius (ft) (Dome Roof):	12.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Calcium Hydroxide Hydrated Lime	All	61.97	56.57	67.37	60.09	0.2518	0.2083	0.3036	18.0210			23.29	Option 1: VP60 = .001 VP70 = .001
Calcium Hydroxide						0.0010	0.0010	0.0010	74.1000	0.3000	0.0015	74.10	Option 1: VP60 = .001 VP70 = .001
Water						0.2779	0.2299	0.3351	18.0000	0.7000	0.9985	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	3.2285
Vapor Space Volume (cu ft):	256.1236
Vapor Density (lb/cu ft):	0.0008
Vapor Space Expansion Factor:	0.0439
Vented Vapor Saturation Factor:	0.9707
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	256.1236
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	2.2646
Tank Shell Height (ft):	20.6700
Average Liquid Height (ft):	18.9100
Roof Outage (ft):	0.5046
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.5046
Dome Radius (ft):	12.0000
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0008
Vapor Molecular Weight (lb/lb-mole):	18.0210
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2518
Daily Avg. Liquid Surface Temp. (deg. R):	521.6409
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	519.7608
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0439
Daily Vapor Temperature Range (deg. R):	21.5929
Daily Vapor Pressure Range (psia):	0.0953
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2518
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2083
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.3036
Daily Avg. Liquid Surface Temp. (deg R):	521.6409
Daily Min. Liquid Surface Temp. (deg R):	516.2427
Daily Max. Liquid Surface Temp. (deg R):	527.0392
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9707
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2518
Vapor Space Outage (ft):	2.2646
Working Losses (lb):	2.2458

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TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	18.0210
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2518
Annual Net Throughput (gal/yr.):	20,788.0000
Annual Turnovers:	1.3673
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	16,000.0000
Maximum Liquid Height (ft):	18.9119
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	5.4743

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Calcium Hydroxide Hydrated Lime	2.25	3.23	5.47
Calcium Hydroxide	0.00	0.00	0.01
Water	2.24	3.22	5.47

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3FPTK001S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	ALUMINUM SULFATE TANK

Tank Dimensions

Shell Height (ft):	14.90
Diameter (ft):	11.50
Liquid Height (ft):	14.90
Avg. Liquid Height (ft):	14.90
Volume (gallons):	12,000.00
Turnovers:	2.17
Net Throughput (gal/yr):	27,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition:	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	0.00
Radius (ft) (Dome Roof):	11.50

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Aluminum Sulfate Solution	All	67.33	58.28	76.37	62.31	0.3265	0.2375	0.4443	18.0483			33.77	Option 1: VP60 = .001 VP70 = .001
Aluminum Sulfate						0.0010	0.0010	0.0010	666.4000	0.4800	0.0028	666.40	Option 1: VP60 = .001 VP70 = .001
Water						0.3346	0.2434	0.4553	18.0000	0.5200	0.9972	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	2.4310
Vapor Space Volume (cu ft):	81.9308
Vapor Density (lb/cu ft):	0.0010
Vapor Space Expansion Factor:	0.0791
Vented Vapor Saturation Factor:	0.9865
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	81.9308
Tank Diameter (ft):	11.5000
Vapor Space Outage (ft):	0.7888
Tank Shell Height (ft):	14.9000
Average Liquid Height (ft):	14.9000
Roof Outage (ft):	0.7888
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.7888
Dome Radius (ft):	11.5000
Shell Radius (ft):	5.7500
Vapor Density	
Vapor Density (lb/cu ft):	0.0010
Vapor Molecular Weight (lb/lb-mole):	18.0483
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3265
Daily Avg. Liquid Surface Temp. (deg. R):	526.9953
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	521.9808
Tank Paint Solar Absorptance (Shell):	0.5400
Tank Paint Solar Absorptance (Roof):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0791
Daily Vapor Temperature Range (deg. R):	36.1640
Daily Vapor Pressure Range (psia):	0.2067
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3265
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2375
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.4443
Daily Avg. Liquid Surface Temp. (deg R):	526.9953
Daily Min. Liquid Surface Temp. (deg R):	517.9543
Daily Max. Liquid Surface Temp. (deg R):	536.0363
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9865
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3265
Vapor Space Outage (ft):	0.7888
Working Losses (lb):	3.7886

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	18.0483
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3265
Annual Net Throughput (gal/yr.):	27,000.0000
Annual Turnovers:	2.1667
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	12,000.0000
Maximum Liquid Height (ft):	14.9000
Tank Diameter (ft):	11.5000
Working Loss Product Factor:	1.0000

Total Losses (lb):	6.2196

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Aluminum Sulfate Solution	3.79	2.43	6.22
Aluminum Sulfate	0.01	0.01	0.02
Water	3.78	2.42	6.20

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3FPTK001S2
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	ALUMINUM SULFATE DAY TANK

Tank Dimensions

Shell Height (ft):	5.00
Diameter (ft):	4.33
Liquid Height (ft):	3.10
Avg. Liquid Height (ft):	3.10
Volume (gallons):	342.00
Turnovers:	78.95
Net Throughput (gal/yr):	27,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	9.50
Radius (ft) (Dome Roof):	4.33

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Aluminum Sulfate Solution	All	61.97	56.57	67.37	60.09	0.2712	0.2244	0.3270	18.0582			33.77	Option 1: VP60 = .001 VP70 = .001
Aluminum Sulfate						0.0010	0.0010	0.0010	666.4000	0.4800	0.0033	666.40	Option 1: VP60 = .001 VP70 = .001
Water						0.2779	0.2299	0.3351	18.0000	0.5200	0.9967	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	
Vapor Space Volume (cu ft):	5.0566
Vapor Density (lb/cu ft):	546.8441
Vapor Space Expansion Factor:	0.0009
Vented Vapor Saturation Factor:	0.0444
	0.6520
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	546.8441
Tank Diameter (ft):	4.3300
Vapor Space Outage (ft):	37.1362
Tank Shell Height (ft):	5.0000
Average Liquid Height (ft):	3.1000
Roof Outage (ft):	35.2362
Roof Outage (Dome Roof)	
Roof Outage (ft):	
Dome Radius (ft):	35.2362
Shell Radius (ft):	4.3300
	2.1650
Vapor Density	
Vapor Density (lb/cu ft):	
Vapor Molecular Weight (lb/lb-mole):	0.0009
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	18.0582
Daily Avg. Liquid Surface Temp. (deg. R):	0.2712
Daily Average Ambient Temp. (deg. F):	521.6409
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	60.0708
Liquid Bulk Temperature (deg. R):	10.731
Tank Paint Solar Absorptance (Shell):	519.7608
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	0.1700
	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	
Daily Vapor Temperature Range (deg. R):	0.0444
Daily Vapor Pressure Range (psia):	21.5929
Breather Vent Press. Setting Range(psia):	0.1026
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0600
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2712
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.2244
Daily Avg. Liquid Surface Temp. (deg R):	0.3270
Daily Min. Liquid Surface Temp. (deg R):	521.6409
Daily Max. Liquid Surface Temp. (deg R):	516.2427
Daily Ambient Temp. Range (deg. R):	527.0392
	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.6520
Vapor Space Outage (ft):	0.2712
	37.1362
Working Losses (lb):	1.7208

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TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	18.0582
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2712
Annual Net Throughput (gal/yr.):	27,000.0000
Annual Turnovers:	78.9474
Turnover Factor:	0.5467
Maximum Liquid Volume (gal):	342.0000
Maximum Liquid Height (ft):	3.1048
Tank Diameter (ft):	4.3300
Working Loss Product Factor:	1.0000
Total Losses (lb):	6.7774

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Aluminum Sulfate Solution	1.72	5.06	6.78
Aluminum Sulfate	0.01	0.02	0.02
Water	1.72	5.04	6.75

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3FPTKNALS1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Horizontal Tank
Description:	SODIUM ALUMINATE TANK (KLARAID IC-1171 TANK)

Tank Dimensions

Shell Length (ft):	14.00
Diameter (ft):	7.00
Volume (gallons):	4,000.00
Turnovers:	13.75
Net Throughput (gal/yr):	55,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Sodium Aluminate	All	61.97	56.57	67.37	60.09	0.0490	0.0448	0.0533	40.2811			53.76	Option 1: VP60 = .001 VP70 = .001
Sodium Aluminate						0.0010	0.0010	0.0010	81.9700	0.5000	0.0136	81.97	Option 1: VP60 = .001 VP70 = .001
Sodium Hydroxide						0.0724	0.0662	0.0788	40.0000	0.5000	0.9864	40.00	Option 1: VP60 = .07 VP70 = .082

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	1.6530
Vapor Space Volume (cu ft):	343.1740
Vapor Density (lb/cu ft):	0.0004
Vapor Space Expansion Factor:	0.0378
Vented Vapor Saturation Factor:	0.9910
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	343.1740
Tank Diameter (ft):	7.0000
Effective Diameter (ft):	11.1732
Vapor Space Outage (ft):	3.5000
Tank Shell Length (ft):	14.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0004
Vapor Molecular Weight (lb/lb-mole):	40.2811
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0490
Daily Avg. Liquid Surface Temp. (deg. R):	521.6409
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	519.7608
Tank Paint Solar Absorptance (Shell):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0378
Daily Vapor Temperature Range (deg. R):	21.5929
Daily Vapor Pressure Range (psia):	0.0085
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0490
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0448
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0533
Daily Avg. Liquid Surface Temp. (deg R):	521.6409
Daily Min. Liquid Surface Temp. (deg R):	516.2427
Daily Max. Liquid Surface Temp. (deg R):	527.0392
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9910
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0490
Vapor Space Outage (ft):	3.5000
Working Losses (lb):	2.5826
Vapor Molecular Weight (lb/lb-mole):	40.2811
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0490
Annual Net Throughput (gal/yr.):	55,000.0000
Annual Turnovers:	13.7500
Turnover Factor:	1.0000
Tank Diameter (ft):	7.0000

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Loss Product Factor:	1.0000
Total Losses (lb):	4.2356

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Sodium Aluminate	2.58	1.65	4.24
Sodium Aluminate	0.04	0.02	0.06
Sodium Hydroxide	2.55	1.63	4.18

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK002S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	NaOH TANK 1 (DILUTE CAUSTIC TANK 1)

Tank Dimensions

Shell Height (ft):	8.50
Diameter (ft):	7.50
Liquid Height (ft):	6.05
Avg. Liquid Height (ft):	6.05
Volume (gallons):	2,000.00
Turnovers:	6.58
Net Throughput (gal/yr):	12,500.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition:	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	1.10
Radius (ft) (Dome Roof):	7.50

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Sodium Hydroxide Solution	All	67.33	58.28	76.37	62.31	0.3299	0.2402	0.4486	18.0967			18.40	Option 1: VP60 = .0711 VP70 = .0829
Sodium Hydroxide						0.0788	0.0681	0.0896	40.0000	0.0400	0.0097	40.00	Option 1: VP60 = .07 VP70 = .082
Water						0.3346	0.2434	0.4553	18.0000	0.9600	0.9903	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	3.8623
Vapor Space Volume (cu ft):	133.2328
Vapor Density (lb/cu ft):	0.0011
Vapor Space Expansion Factor:	0.0792
Vented Vapor Saturation Factor:	0.9499
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	133.2328
Tank Diameter (ft):	7.5000
Vapor Space Outage (ft):	3.0158
Tank Shell Height (ft):	8.5000
Average Liquid Height (ft):	6.0500
Roof Outage (ft):	0.5658
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.5658
Dome Radius (ft):	7.5000
Shell Radius (ft):	3.7500
Vapor Density	
Vapor Density (lb/cu ft):	0.0011
Vapor Molecular Weight (lb/lb-mole):	18.0967
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3299
Daily Avg. Liquid Surface Temp. (deg. R):	526.9953
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	521.9808
Tank Paint Solar Absorptance (Shell):	0.5400
Tank Paint Solar Absorptance (Roof):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0792
Daily Vapor Temperature Range (deg. R):	36.1640
Daily Vapor Pressure Range (psia):	0.2084
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3299
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2402
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.4486
Daily Avg. Liquid Surface Temp. (deg R):	526.9953
Daily Min. Liquid Surface Temp. (deg R):	517.9543
Daily Max. Liquid Surface Temp. (deg R):	536.0363
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9499
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3299
Vapor Space Outage (ft):	3.0158
Working Losses (lb):	1.7770

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	18.0967
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3299
Annual Net Throughput (gal/yr.):	12,500.0000
Annual Turnovers:	6.5780
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	2,000.0000
Maximum Liquid Height (ft):	6.0518
Tank Diameter (ft):	7.5000
Working Loss Product Factor:	1.0000

Total Losses (lb):	5.6393

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Sodium Hydroxide Solution	1.78	3.86	5.64
Sodium Hydroxide	0.02	0.04	0.05
Water	1.76	3.82	5.58

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK003S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	NaOH TANK 2 (FRESH CAUSTIC TANK)

Tank Dimensions

Shell Height (ft):	5.00
Diameter (ft):	3.00
Liquid Height (ft):	4.99
Avg. Liquid Height (ft):	4.99
Volume (gallons):	264.00
Turnovers:	94.70
Net Throughput (gal/yr):	25,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition:	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	0.20
Radius (ft) (Dome Roof):	3.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig):	0.00

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Sodium Hydroxide Solution	All	67.33	58.28	76.37	62.31	0.2555	0.1893	0.3421	20.1306			24.83	Option 1: VP60 = .0711 VP70 = .0829
Sodium Hydroxide Solution						0.0797	0.0691	0.0905	40.0000	0.5000	0.1924	40.00	Option 1: VP60 = .0711 VP70 = .0829
Water						0.3346	0.2434	0.4553	18.0000	0.5000	0.8076	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	0.0206
Vapor Space Volume (cu ft):	0.7817
Vapor Density (lb/cu ft):	0.0009
Vapor Space Expansion Factor:	0.0794
Vented Vapor Saturation Factor:	0.9985
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	0.7817
Tank Diameter (ft):	3.0000
Vapor Space Outage (ft):	0.1106
Tank Shell Height (ft):	5.0000
Average Liquid Height (ft):	4.9900
Roof Outage (ft):	0.1006
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.1006
Dome Radius (ft):	3.0000
Shell Radius (ft):	1.5000
Vapor Density	
Vapor Density (lb/cu ft):	0.0009
Vapor Molecular Weight (lb/lb-mole):	20.1306
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2555
Daily Avg. Liquid Surface Temp. (deg. R):	526.9953
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	521.9808
Tank Paint Solar Absorptance (Shell):	0.5400
Tank Paint Solar Absorptance (Roof):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0794
Daily Vapor Temperature Range (deg. R):	36.1640
Daily Vapor Pressure Range (psia):	0.1528
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2555
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.1893
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.3421
Daily Avg. Liquid Surface Temp. (deg R):	526.9953
Daily Min. Liquid Surface Temp. (deg R):	517.9543
Daily Max. Liquid Surface Temp. (deg R):	536.0363
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9985
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2555
Vapor Space Outage (ft):	0.1106
Working Losses (lb):	1.4804

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	20.1306
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2555
Annual Net Throughput (gal/yr.):	25,000.0000
Annual Turnovers:	94.6970
Turnover Factor:	0.4835
Maximum Liquid Volume (gal):	264.0000
Maximum Liquid Height (ft):	4.9927
Tank Diameter (ft):	3.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	1.5010

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Sodium Hydroxide Solution	1.48	0.02	1.50
Sodium Hydroxide Solution	0.28	0.00	0.29
Water	1.20	0.02	1.21

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK004S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	NaOH TANK 3 (DILUTE CAUSTIC TANK 2)

Tank Dimensions

Shell Height (ft):	8.50
Diameter (ft):	7.50
Liquid Height (ft):	6.05
Avg. Liquid Height (ft):	6.05
Volume (gallons):	2,000.00
Turnovers:	6.58
Net Throughput (gal/yr):	12,500.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition:	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	1.10
Radius (ft) (Dome Roof):	7.50

Breather Vent Settings

Vacuum Settings (psig):	-0.01
Pressure Settings (psig):	0.01

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Sodium Hydroxide Solution	All	67.33	58.28	76.37	62.31	0.3299	0.2402	0.4486	18.0967			18.40	Option 1: VP60 = .0711 VP70 = .0829
Sodium Hydroxide						0.0788	0.0681	0.0896	40.0000	0.0400	0.0097	40.00	Option 1: VP60 = .07 VP70 = .082
Water						0.3346	0.2434	0.4553	18.0000	0.9600	0.9903	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	4.0012
Vapor Space Volume (cu ft):	133.2328
Vapor Density (lb/cu ft):	0.0011
Vapor Space Expansion Factor:	0.0820
Vented Vapor Saturation Factor:	0.9499
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	133.2328
Tank Diameter (ft):	7.5000
Vapor Space Outage (ft):	3.0158
Tank Shell Height (ft):	8.5000
Average Liquid Height (ft):	6.0500
Roof Outage (ft):	0.5658
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.5658
Dome Radius (ft):	7.5000
Shell Radius (ft):	3.7500
Vapor Density	
Vapor Density (lb/cu ft):	0.0011
Vapor Molecular Weight (lb/lb-mole):	18.0967
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3299
Daily Avg. Liquid Surface Temp. (deg. R):	526.9953
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	521.9808
Tank Paint Solar Absorptance (Shell):	0.5400
Tank Paint Solar Absorptance (Roof):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0820
Daily Vapor Temperature Range (deg. R):	36.1640
Daily Vapor Pressure Range (psia):	0.2084
Breather Vent Press. Setting Range(psia):	0.0200
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3299
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2402
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.4486
Daily Avg. Liquid Surface Temp. (deg R):	526.9953
Daily Min. Liquid Surface Temp. (deg R):	517.9543
Daily Max. Liquid Surface Temp. (deg R):	536.0363
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9499
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3299
Vapor Space Outage (ft):	3.0158
Working Losses (lb):	1.7770

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	18.0967
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3299
Annual Net Throughput (gal/yr.):	12,500.0000
Annual Turnovers:	6.5780
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	2,000.0000
Maximum Liquid Height (ft):	6.0518
Tank Diameter (ft):	7.5000
Working Loss Product Factor:	1.0000

Total Losses (lb):	5.7783

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Sodium Hydroxide Solution	1.78	4.00	5.78
Sodium Hydroxide	0.02	0.04	0.06
Water	1.76	3.96	5.72

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK005S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	NaOH TANK 4 (STORAGE CAUSTIC TANK)

Tank Dimensions

Shell Height (ft):	18.50
Diameter (ft):	15.00
Liquid Height (ft):	9.37
Avg. Liquid Height (ft):	9.37
Volume (gallons):	12,390.00
Turnovers:	2.12
Net Throughput (gal/yr):	25,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition:	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	7.50
Radius (ft) (Dome Roof):	15.00

Breather Vent Settings

Vacuum Settings (psig):	-0.01
Pressure Settings (psig):	0.01

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Sodium Hydroxide Solution	All	67.33	58.28	76.37	62.31	0.2552	0.1890	0.3418	20.1076			24.83	Option 1: VP60 = .0711 VP70 = .0829
Sodium Hydroxide						0.0788	0.0681	0.0896	40.0000	0.5000	0.1906	40.00	Option 1: VP60 = .07 VP70 = .082
Water						0.3346	0.2434	0.4553	18.0000	0.5000	0.8094	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	54.1852
Vapor Space Volume (cu ft):	2,496.9771
Vapor Density (lb/cu ft):	0.0009
Vapor Space Expansion Factor:	0.0780
Vented Vapor Saturation Factor:	0.8395
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	2,496.9771
Tank Diameter (ft):	15.0000
Vapor Space Outage (ft):	14.1300
Tank Shell Height (ft):	18.5000
Average Liquid Height (ft):	9.3700
Roof Outage (ft):	5.0000
Roof Outage (Dome Roof)	
Roof Outage (ft):	5.0000
Dome Radius (ft):	15.0000
Shell Radius (ft):	7.5000
Vapor Density	
Vapor Density (lb/cu ft):	0.0009
Vapor Molecular Weight (lb/lb-mole):	20.1076
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2552
Daily Avg. Liquid Surface Temp. (deg. R):	526.9953
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	521.9808
Tank Paint Solar Absorptance (Shell):	0.5400
Tank Paint Solar Absorptance (Roof):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0780
Daily Vapor Temperature Range (deg. R):	36.1640
Daily Vapor Pressure Range (psia):	0.1528
Breather Vent Press. Setting Range(psia):	0.0200
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2552
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.1890
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.3418
Daily Avg. Liquid Surface Temp. (deg R):	526.9953
Daily Min. Liquid Surface Temp. (deg R):	517.9543
Daily Max. Liquid Surface Temp. (deg R):	536.0363
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.8395
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2552
Vapor Space Outage (ft):	14.1300
Working Losses (lb):	3.0550

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TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	20.1076
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2552
Annual Net Throughput (gal/yr.):	25,000.0000
Annual Turnovers:	2.1249
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	12,390.0000
Maximum Liquid Height (ft):	9.3727
Tank Diameter (ft):	15.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	57.2401

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Sodium Hydroxide Solution	3.05	54.19	57.24
Sodium Hydroxide	0.58	10.33	10.91
Water	2.47	43.86	46.33

TANKS 4.0
Emissions Report - Detail Format
Total Emissions Summaries - All Tanks in Report (Continued)

Annual Emissions Report

3PHTKOO9S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	0.98
3UFST001S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Horizontal Tank	ROCK HILL, SOUTH CAROLINA	13.16
Total Emissions for all Tanks:				6,003.40

TANKS 4.0
Emissions Report - Detail Format
Total Emissions Summaries - All Tanks in Report

Annual Emissions Report

Tank Identification				Losses (lbs)
18DTKCA1S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Horizontal Tank	ROCK HILL, SOUTH CAROLINA	48.36
1AMTKK2S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	4,248.73
1AMTKK2S2	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Horizontal Tank	ROCK HILL, SOUTH CAROLINA	207.20
1D8TKCA2S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Horizontal Tank	ROCK HILL, SOUTH CAROLINA	6.62
1D8TKCA3S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	1.35
3DFST001S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Horizontal Tank	ROCK HILL, SOUTH CAROLINA	0.05
3FPSLURS1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	5.47
3FPTK001S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	6.22
3FPTK001S2	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	6.78
3FPTKNALS1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Horizontal Tank	ROCK HILL, SOUTH CAROLINA	4.24
3PHTK002S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	5.64
3PHTK003S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	1.50
3PHTK004S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	5.78
3PHTK005S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	57.24
3PHTK006S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	0.73
3PHTK007S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Horizontal Tank	ROCK HILL, SOUTH CAROLINA	22.10
3PHTK008S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	1.71
3PHTK010S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	232.92
3PHTK011S1	CINERGY SOLUTIONS OF ROCK HILL, LLC	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	637.86
3PHTK012S1	CINERGY SOLUTIONS OF ROCK HILL, LLC.	Vertical Fixed Roof Tank	ROCK HILL, SOUTH CAROLINA	488.77

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Unleaded Fuel	2.11	11.05	13.16

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Loss Product Factor:	1.0000
Total Losses (lb):	13.1631

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	11.0506
Vapor Space Volume (cu ft):	22.8851
Vapor Density (lb/cu ft):	0.0129
Vapor Space Expansion Factor:	0.1082
Vented Vapor Saturation Factor:	0.9445
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	22.8851
Tank Diameter (ft):	3.0000
Effective Diameter (ft):	4.4074
Vapor Space Outage (ft):	1.5000
Tank Shell Length (ft):	5.0830
Vapor Density	
Vapor Density (lb/cu ft):	0.0129
Vapor Molecular Weight (lb/lb-mole):	100.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7394
Daily Avg. Liquid Surface Temp. (deg. R):	532.0602
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	524.0808
Tank Paint Solar Absorptance (Shell):	0.8900
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1082
Daily Vapor Temperature Range (deg. R):	49.9476
Daily Vapor Pressure Range (psia):	0.2547
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7394
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.6120
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.8667
Daily Avg. Liquid Surface Temp. (deg R):	532.0602
Daily Min. Liquid Surface Temp. (deg R):	519.5733
Daily Max. Liquid Surface Temp. (deg R):	544.5471
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9445
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7394
Vapor Space Outage (ft):	1.5000
Working Losses (lb):	2.1125
Vapor Molecular Weight (lb/lb-mole):	100.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7394
Annual Net Throughput (gal/yr.):	1,200.0000
Annual Turnovers:	4.8000
Turnover Factor:	1.0000
Tank Diameter (ft):	3.0000

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Unleaded Fuel	All	72.39	59.90	84.88	64.41	0.7394	0.6120	0.8667	100.0000			100.00	Option 1: VP70 = .715 VP80 = .817

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3UFST001S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Horizontal Tank
Description:	UNLEADED FUEL STORAGE TANK

Tank Dimensions

Shell Length (ft):	5.08
Diameter (ft):	3.00
Volume (gallons):	250.00
Turnovers:	4.80
Net Throughput (gal/yr):	1,200.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Red/Primer
Shell Condition:	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Optisperse AP0500	0.26	0.72	0.98

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	18.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3079
Annual Net Throughput (gal/yr.):	2,000.0000
Annual Turnovers:	1.4038
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	1,500.0000
Maximum Liquid Height (ft):	10.2124
Tank Diameter (ft):	5.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	0.9828

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	0.7190
Vapor Space Volume (cu ft):	45.6840
Vapor Density (lb/cu ft):	0.0010
Vapor Space Expansion Factor:	0.0452
Vented Vapor Saturation Factor:	0.9634
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	45.6840
Tank Diameter (ft):	5.0000
Vapor Space Outage (ft):	2.3267
Tank Shell Height (ft):	12.0000
Average Liquid Height (ft):	10.2000
Roof Outage (ft):	0.5267
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.5267
Dome Radius (ft):	5.0000
Shell Radius (ft):	2.5000
Vapor Density	
Vapor Density (lb/cu ft):	0.0010
Vapor Molecular Weight (lb/lb-mole):	18.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3079
Daily Avg. Liquid Surface Temp. (deg. R):	521.6409
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	519.7608
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0452
Daily Vapor Temperature Range (deg. R):	21.5929
Daily Vapor Pressure Range (psia):	0.0536
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3079
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2812
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.3348
Daily Avg. Liquid Surface Temp. (deg R):	521.6409
Daily Min. Liquid Surface Temp. (deg R):	516.2427
Daily Max. Liquid Surface Temp. (deg R):	527.0392
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9634
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3079
Vapor Space Outage (ft):	2.3267
Working Losses (lb):	0.2639

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Optisperse AP0500	All	61.97	56.57	67.37	60.09	0.3079	0.2812	0.3348	18.0000			18.00	Option 1: VP60 = .298 VP70 = .348

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTKOO9S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	BALANCE POLYMER TANK (OPTISPERSE AP0500 TANK)

Tank Dimensions

Shell Height (ft):	12.00
Diameter (ft):	5.00
Liquid Height (ft):	10.21
Avg. Liquid Height (ft):	10.20
Volume (gallons):	1,500.00
Turnovers:	1.40
Net Throughput (gal/yr):	2,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	1.00
Radius (ft) (Dome Roof):	5.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig):	0.00

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
#2 Fuel Oil	486.27	2.49	488.77

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Annual Net Throughput (gal/yr.):	77,015,000.00 00
Annual Turnovers:	365.0000
Turnover Factor:	0.2489
Maximum Liquid Volume (gal):	211,000.0000
Maximum Liquid Height (ft):	39.9040
Tank Diameter (ft):	30.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	488.7687

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	2.4939
Vapor Space Volume (cu ft):	962.4400
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0373
Vented Vapor Saturation Factor:	0.9994
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	962.4400
Tank Diameter (ft):	30.0000
Vapor Space Outage (ft):	1.3616
Tank Shell Height (ft):	40.0000
Average Liquid Height (ft):	39.9000
Roof Outage (ft):	1.2616
Roof Outage (Dome Roof)	
Roof Outage (ft):	1.2616
Dome Radius (ft):	30.0000
Shell Radius (ft):	15.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Daily Avg. Liquid Surface Temp. (deg. R):	521.6409
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	519.7608
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0373
Daily Vapor Temperature Range (deg. R):	21.5929
Daily Vapor Pressure Range (psia):	0.0014
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0073
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0087
Daily Avg. Liquid Surface Temp. (deg R):	521.6409
Daily Min. Liquid Surface Temp. (deg R):	516.2427
Daily Max. Liquid Surface Temp. (deg R):	527.0392
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9994
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Vapor Space Outage (ft):	1.3616
Working Losses (lb):	486.2747

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
#2 Fuel Oil	All	61.97	56.57	67.37	60.09	0.0082	0.0073	0.0087	130.0000			130.00	Option 1: VP60 = .008 VP70 = .009

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK012S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	#2 FUEL OIL TANK 3

Tank Dimensions

Shell Height (ft):	40.00
Diameter (ft):	30.00
Liquid Height (ft):	39.90
Avg. Liquid Height (ft):	39.90
Volume (gallons):	211,000.00
Turnovers:	365.00
Net Throughput (gal/yr):	77,015,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	2.50
Radius (ft) (Dome Roof):	30.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
#2 Fuel Oil	622.25	15.61	637.86

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Annual Net Throughput (gal/yr.):	98,550,000.00 00
Annual Turnovers:	365.0000
Turnover Factor:	0.2489
Maximum Liquid Volume (gal):	270,000.0000
Maximum Liquid Height (ft):	31.8254
Tank Diameter (ft):	38.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	637.8573

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	15.6101
Vapor Space Volume (cu ft):	6,034.4366
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0373
Vented Vapor Saturation Factor:	0.9977
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	6,034.4366
Tank Diameter (ft):	38.0000
Vapor Space Outage (ft):	5.3208
Tank Shell Height (ft):	32.0000
Average Liquid Height (ft):	31.8250
Roof Outage (ft):	5.1458
Roof Outage (Dome Roof)	
Roof Outage (ft):	5.1458
Dome Radius (ft):	38.0000
Shell Radius (ft):	19.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Daily Avg. Liquid Surface Temp. (deg. R):	521.6409
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	519.7608
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0373
Daily Vapor Temperature Range (deg. R):	21.5929
Daily Vapor Pressure Range (psia):	0.0014
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0073
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0087
Daily Avg. Liquid Surface Temp. (deg R):	521.6409
Daily Min. Liquid Surface Temp. (deg R):	516.2427
Daily Max. Liquid Surface Temp. (deg R):	527.0392
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9977
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Vapor Space Outage (ft):	5.3208
Working Losses (lb):	622.2473

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
#2 Fuel Oil	All	61.97	56.57	67.37	60.09	0.0082	0.0073	0.0087	130.0000			130.00	Option 1: VP60 = .008 VP70 = .009

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK011S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	#2 FUEL OIL TANK 2

Tank Dimensions

Shell Height (ft):	32.00
Diameter (ft):	38.00
Liquid Height (ft):	31.83
Avg. Liquid Height (ft):	31.83
Volume (gallons):	270,000.00
Turnovers:	365.00
Net Throughput (gal/yr):	98,550,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	9.50
Radius (ft) (Dome Roof):	38.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
#2 Fuel Oil	230.46	2.46	232.92

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Annual Net Throughput (gal/yr.):	36,500,000.00 00
Annual Turnovers:	365.0000
Turnover Factor:	0.2489
Maximum Liquid Volume (gal):	100,000.0000
Maximum Liquid Height (ft):	30.8206
Tank Diameter (ft):	23.5000
Working Loss Product Factor:	1.0000

Total Losses (lb):	232.9221

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	2.4601
Vapor Space Volume (cu ft):	949.7336
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0373
Vented Vapor Saturation Factor:	0.9990
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	949.7336
Tank Diameter (ft):	23.5000
Vapor Space Outage (ft):	2.1897
Tank Shell Height (ft):	32.0000
Average Liquid Height (ft):	30.8200
Roof Outage (ft):	1.0097
Roof Outage (Dome Roof)	
Roof Outage (ft):	1.0097
Dome Radius (ft):	23.5000
Shell Radius (ft):	11.7500
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Daily Avg. Liquid Surface Temp. (deg. R):	521.6409
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	519.7608
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0373
Daily Vapor Temperature Range (deg. R):	21.5929
Daily Vapor Pressure Range (psia):	0.0014
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0073
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0087
Daily Avg. Liquid Surface Temp. (deg R):	521.6409
Daily Min. Liquid Surface Temp. (deg R):	516.2427
Daily Max. Liquid Surface Temp. (deg R):	527.0392
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9990
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0082
Vapor Space Outage (ft):	2.1897
Working Losses (lb):	230.4620

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
#2 Fuel Oil	All	61.97	56.57	67.37	60.09	0.0082	0.0073	0.0087	130.0000			130.00	Option 1: VP60 = .008 VP70 = .009

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK010S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	#2 Fuel Oil Tank 1

Tank Dimensions

Shell Height (ft):	32.00
Diameter (ft):	23.50
Liquid Height (ft):	30.82
Avg. Liquid Height (ft):	30.82
Volume (gallons):	100,000.00
Turnovers:	365.00
Net Throughput (gal/yr):	36,500,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	2.00
Radius (ft) (Dome Roof):	23.50

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Steamate NA0660	0.61	1.10	1.71
Cyclohexylamine	0.34	0.60	0.94
3-Methoxypropylamine	0.27	0.49	0.77

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	94.4037
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1813
Annual Net Throughput (gal/yr.):	1,500.0000
Annual Turnovers:	1.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	1,500.0000
Maximum Liquid Height (ft):	8.9870
Tank Diameter (ft):	5.3300
Working Loss Product Factor:	1.0000

Total Losses (lb):	1.7086

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	1.0974
Vapor Space Volume (cu ft):	14.7384
Vapor Density (lb/cu ft):	0.0030
Vapor Space Expansion Factor:	0.0678
Vented Vapor Saturation Factor:	0.9937
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	14.7384
Tank Diameter (ft):	5.3300
Vapor Space Outage (ft):	0.6606
Tank Shell Height (ft):	9.0000
Average Liquid Height (ft):	8.9800
Roof Outage (ft):	0.6406
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.6406
Dome Radius (ft):	5.3300
Shell Radius (ft):	2.6650
Vapor Density	
Vapor Density (lb/cu ft):	0.0030
Vapor Molecular Weight (lb/lb-mole):	94.4037
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1813
Daily Avg. Liquid Surface Temp. (deg. R):	526.9953
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	521.9808
Tank Paint Solar Absorptance (Shell):	0.5400
Tank Paint Solar Absorptance (Roof):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0678
Daily Vapor Temperature Range (deg. R):	36.1640
Daily Vapor Pressure Range (psia):	0.0489
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1813
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.1570
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.2059
Daily Avg. Liquid Surface Temp. (deg R):	526.9953
Daily Min. Liquid Surface Temp. (deg R):	517.9543
Daily Max. Liquid Surface Temp. (deg R):	536.0363
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9937
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1813
Vapor Space Outage (ft):	0.6606
Working Losses (lb):	0.6112

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Steamate NA0660	All	67.33	58.28	76.37	62.31	0.1813	0.1570	0.2059	94.4037			93.89	Option 1: VP60 = .298 VP70 = .348
3-Methoxypropylamine						0.1636	0.1419	0.1859	89.1400	0.5000	0.4487	89.14	Option 1: VP60 = .146 VP70 = .17
Cyclohexylamine						0.2010	0.1739	0.2281	99.1700	0.5000	0.5513	99.17	Option 1: VP60 = .179 VP70 = .209

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK008S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	Optimeen Tank (Steamate NA0660 Tank)

Tank Dimensions

Shell Height (ft):	9.00
Diameter (ft):	5.33
Liquid Height (ft):	8.99
Avg. Liquid Height (ft):	8.98
Volume (gallons):	1,500.00
Turnovers:	1.00
Net Throughput (gal/yr):	1,500.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition:	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	1.20
Radius (ft) (Dome Roof):	5.33

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Cortrol IS3000 - Sodium Bisulfite	3.68	18.41	22.10

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Loss Product Factor:	1.0000
Total Losses (lb):	22.0956

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	18.4147
Vapor Space Volume (cu ft):	223.4288
Vapor Density (lb/cu ft):	0.0058
Vapor Space Expansion Factor:	0.0409
Vented Vapor Saturation Factor:	0.9586
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	223.4288
Tank Diameter (ft):	5.3000
Effective Diameter (ft):	10.3610
Vapor Space Outage (ft):	2.6500
Tank Shell Length (ft):	15.9000
Vapor Density	
Vapor Density (lb/cu ft):	0.0058
Vapor Molecular Weight (lb/lb-mole):	104.6200
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3079
Daily Avg. Liquid Surface Temp. (deg. R):	521.6409
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	519.7608
Tank Paint Solar Absorptance (Shell):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0409
Daily Vapor Temperature Range (deg. R):	21.5929
Daily Vapor Pressure Range (psia):	0.0536
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3079
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2812
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.3348
Daily Avg. Liquid Surface Temp. (deg R):	521.6409
Daily Min. Liquid Surface Temp. (deg R):	516.2427
Daily Max. Liquid Surface Temp. (deg R):	527.0392
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9586
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3079
Vapor Space Outage (ft):	2.6500
Working Losses (lb):	3.6809
Vapor Molecular Weight (lb/lb-mole):	104.6200
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3079
Annual Net Throughput (gal/yr.):	4,800.0000
Annual Turnovers:	1.9200
Turnover Factor:	1.0000
Tank Diameter (ft):	5.3000

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Cortrol IS3000 - Sodium Bisulfite	All	61.97	56.57	67.37	60.09	0.3079	0.2812	0.3348	104.6200			104.62	Option 1: VP60 = .298 VP70 = .348

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK007S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Horizontal Tank
Description:	SULFITE TANK (CORTROL IS3000 TANK)

Tank Dimensions

Shell Length (ft):	15.90
Diameter (ft):	5.30
Volume (gallons):	2,500.00
Turnovers:	1.92
Net Throughput (gal/yr):	4,800.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Sulfuric Acid Solution	0.22	0.51	0.73
Sulfuric Acid	0.07	0.17	0.24
Water	0.15	0.35	0.49

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Vapor Molecular Weight (lb/lb-mole):	24.4850
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1127
Annual Net Throughput (gal/yr.):	3,300.0000
Annual Turnovers:	0.6619
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	5,250.0000
Maximum Liquid Height (ft):	13.9623
Tank Diameter (ft):	8.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	0.7283

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	0.5114
Vapor Space Volume (cu ft):	36.6690
Vapor Density (lb/cu ft):	0.0005
Vapor Space Expansion Factor:	0.0790
Vented Vapor Saturation Factor:	0.9957
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	36.6690
Tank Diameter (ft):	8.0000
Vapor Space Outage (ft):	0.7295
Tank Shell Height (ft):	14.0000
Average Liquid Height (ft):	13.9600
Roof Outage (ft):	0.6895
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.6895
Dome Radius (ft):	8.0000
Shell Radius (ft):	4.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0005
Vapor Molecular Weight (lb/lb-mole):	24.4850
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1127
Daily Avg. Liquid Surface Temp. (deg. R):	529.0213
Daily Average Ambient Temp. (deg. F):	60.0708
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	522.8208
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,406.4843
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0790
Daily Vapor Temperature Range (deg. R):	41.6775
Daily Vapor Pressure Range (psia):	0.0774
Breather Vent Press. Setting Range(psia):	0.0750
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1127
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0799
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.1574
Daily Avg. Liquid Surface Temp. (deg R):	529.0213
Daily Min. Liquid Surface Temp. (deg R):	518.6019
Daily Max. Liquid Surface Temp. (deg R):	539.4406
Daily Ambient Temp. Range (deg. R):	20.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9957
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1127
Vapor Space Outage (ft):	0.7295
Working Losses (lb):	0.2168

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Sulfuric Acid Solution	All	69.35	58.93	79.77	63.15	0.1127	0.0799	0.1574	24.4850			74.79	Option 1: VP60 = .011 VP70 = .013
Sulfuric Acid						0.0129	0.0108	0.0150	98.0800	0.9300	0.3244	98.08	Option 1: VP60 = .011 VP70 = .013
Water						0.3561	0.2486	0.5047	18.0000	0.0700	0.6756	18.00	Option 1: VP60 = .257 VP70 = .363

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	3PHTK006S1
City:	ROCK HILL
State:	SOUTH CAROLINA
Company:	CINERGY SOLUTIONS OF ROCK HILL, LLC.
Type of Tank:	Vertical Fixed Roof Tank
Description:	93% Sulfuric Tank

Tank Dimensions

Shell Height (ft):	14.00
Diameter (ft):	8.00
Liquid Height (ft):	13.96
Avg. Liquid Height (ft):	13.96
Volume (gallons):	5,250.00
Turnovers:	0.66
Net Throughput (gal/yr):	3,300.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft):	1.33
Radius (ft) (Dome Roof):	8.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.05

Meteorological Data used in Emissions Calculations: Charlotte, North Carolina (Avg Atmospheric Pressure = 14.37 psia)

COMPLIANCE ASSURANCE MONITORING PLAN

Opacity and Particulate Matter from Coal Fired Boilers with Electrostatic Precipitators

Cinergy Solutions, Rock Hill

Boilers 1, 2, 3, 4 & 5

I. Background

A. Emissions Unit

Description:	**Coal Fired: 176.4 MM Btu/hr Boiler #1** **Coal Fired: 176.4 MM Btu/hr Boiler #2** **Coal Fired: 176.4 MM Btu/hr Boiler #3** **Coal Fired: 221.9 MM Btu/hr Boiler #4** **Coal Fired: 221.9 MM Btu/hr Boiler #5**
Identification:	**Unit 01, 02, 03, 04, 05**
Facility:	**Celanese Acetate, Celriver Facility**

B. Applicable Regulation, Emissions Limit, and Monitoring Requirements

Regulation:	SC Reg. 61-62.5, Std. 1, Sec I for Opacity SC Reg. 61-62.5, Std. 1, Sec II for Particulate Matter

Emissions Limits

Particulate matter:	0.6 lbs/MM Btu
Opacity:	Each boiler shall not discharge into the ambient air smoke which exceeds an opacity of 40%. During times of soot blowing the opacity may be exceeded for a total of 6 minutes in any hour or 24 minutes in any 24 hour period, but shall in no case exceed an opacity of 60%.

Monitoring Requirements:	Units 01-05, the owner/operator shall install, operate and maintain PRIMARY VOLTAGE METERS, PRIMARY CURRENT METERS for each field of the ESPs. Each parameter shall be recorded at least ONCE EACH SHIFT and maintained on site for a period of at least five (5) years from the date generated and shall be made available to Department personnel upon request. Semi-annual reports of all deviations shall be submitted to the Manager of the Technical Management Section, Bureau of Air Quality postmarked no later than 30 calendar days after the end of the reporting period.

C. Control Technology

Each boiler is equipped with an electrostatic precipitator (ESP) for control of particulate matter (PM) emissions. All boilers exhaust through separate stacks. ESPs for boilers 1, 2 and 3 are dual field; boilers 4 and 5 have single-field.

II. Monitoring Approach

The Monitoring Elements and Approach for PM are presented in Table 1. Primary Voltage and Current will be used to demonstrate compliance with the PM and Opacity limits. Recent test data will be provided within the allowed 180 day window showing process parameter readings, PM emissions and Opacity readings.

III. Corrective Action

The Corrective Actions Procedures Summary from Cinergy's operations and maintenance procedures are presented in Table 2. In the event of an excursion, as defined in Table 1, the procedures will be initiated as deemed appropriate to ensure that the indicators are restored to normal operating condition.

MONITORING APPROACH JUSTIFICATION

I. Background

Cinergy Solutions, Rock Hill operates five (5) coal fired stoker boilers at the Celanese Acetate, Rock Hill facility. All five boilers were operational prior to 1971 and are not subject to the New Source Performance Standard Subpart D. Each boiler has a dedicated electrostatic precipitator and discharges through individual stacks. All boilers are subject to the same PM emission and opacity limits. Boilers 1, 2 and 3 have dual-field ESPs while Boilers 4 and 5 have single-field ESPs.

Each boiler is subject to the 40 CFR 64 CAM requirements since uncontrolled Particulate

Matter emissions would be greater than 100 tons/year.

None of the boilers have a maximum heat input capacity greater than 250 MMBTU/hr, therefore SCDHEC 62.5 Standard 1, Section IV (Continuous Opacity Monitoring Requirements) does not apply.

II. Rationale for Selection of Performance Indicators

The indicator ranges for the ESP voltage and current was selected based on the levels indicated from recent operations and during particulate emission testing. The normal operating voltage is specified by the manufacturer to be the highest practical level without having excessive spark rate. Based on operating experience with these units, voltage levels below 100 volts or current levels below 10 amps indicate potential malfunctions in the ESP which may compromise the ESP performance.

III. Rationale for Selection of Indicator Ranges

Field experience shows that voltage and current readings typically stay above 190 V and 10 A, respectively. Existing internal procedures have action limits at 100 V and 10 A.

Test data from PM emission compliance tests performed on the units indicates that actual PM emissions are typically 50% of the allowable permit limits. The PM emission test results summary is provided in Table 3.

To verify the voltage and current levels concurrent with emission test results, one each of the 176.4 MMBTU/hr and 221.9 MMBTU/hr boilers will be re-tested during the next 180 days. Steam production, fuel usage, voltage, current and PM emissions will be monitored. Opacity will be checked using EPA Method 9 in conjunction with the PM emission test.

IV. Rationale for Selection of Corrective Actions

Table 2 contains the Corrective Action Procedure. The Cinergy boilers are operated on a continuous basis (24 hrs/day, 7 days/week) and operations are governed by the company's documented operation and maintenance procedures. These procedures detail troubleshooting and repair of the ESPs. The crew lead is responsible for notifying the production manager and for initiating and directing maintenance and repair activities to bring the unit(s) back into design performance specifications.

Table 1. Monitoring Elements and Approach

	Compliance Indicator
I. Indicator	ESP Primary Voltage and Primary Current
Measurement Approach	ESP parameters are displayed and alarmed in the central distributed control system (DCS). Operations personnel log parameter values manually.
II. Indicator Range	An excursion is defined as any one average value (voltage or current) taken in an 8 hour period that is below 100 volts or 10 amps on either inlet or outlet fields, excluding periods of start-up or shutdown.
III. Performance Criteria	
A. Data Representatives	Historical voltage and current trends are available for 5 years. Stack emission testing has been performed every other year for the past 15 years, with typical emissions 50% below the present allowable permit limits. To verify the parameter selected, emission testing will be performed to demonstrate device performance with the selected process parameter ranges (i.e., primary voltage and current).
B. Verification of Operational Status	Periodic calibration of voltage and current meters is performed in accordance with the company's documented operations and maintenance procedures.
C. QA/QC Practices and Criteria	Operate control devices per the manufacturer's recommendations. Perform calibrations in accordance with the company's documented operations and maintenance procedures.
D. Monitoring Frequency	Twelve readings per 24 hour period nominally spaced at 2 hour intervals. This data is averaged three times per 24 hour period. Alarms are enabled to alert unit operators of process parameter deviations on a real-time basis.
E. Data Collection Procedures	The ESP alarm and instrument readings are monitored and recorded by the central control computer with workstations located in the control room. Operations personnel obtain the readings from the workstations and log them manually.
F. Averaging Period	8 hour average of readings taken every 2 hours (4 readings per average value).

Table 2. Corrective Action Procedures Summary

	Description
I. Initiation of Corrective Action Procedures	Corrective action shall be initiated when any one reading (voltage or current) is verified to be below the selected parameters, as defined in Table 1. The operations personnel will immediately notify the shift supervisor of the excursion. If an exceedance occurs, the shift supervisor will notify the production manager who informs the company's environmental specialist of the event.
II. Time of Completion of Corrective Action Procedures	As soon as practically possible
III. Corrective Action	The shift supervisor will implement the following as a corrective action: • Perform operational diagnostics to identify the cause of the excursion • Make adjustments, if possible to bring the process parameters back into normal range. • If it is determined that the ESP has malfunctioned, implement repairs according to the company's operations and maintenance procedures. • If required, the affected boiler will be operated under reduced load and, if required, will be temporarily shut down to eliminate emissions and affect repairs. A shutdown will follow the company's operations and maintenance procedures. A written report of the findings of any reported excursion will be made and filed in the log book for affected boiler and ESP.

Table 3. Historical PM Emission Test Data

Date	Boiler #	Emissions Rate lb/MMBtu	Steam Rate Mlb/hr	Boiler Capacity Mlb/hr steam
4/22/2003	1	0.169	132.1	170
4/23/2003	2	0.100	129	170
5/19/2003	3	0.219	135.4	170
03/26/2002	4	0.196	185.1	220
04/30/2002	5	0.224	183.7	220

Note: Allowable emission limits per 61-62.5 Standard 1 are 0.6 lb/MMBtu