Golder Associates Inc.

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Golder Associates

July 20, 2007

063-7645

RECEIVED

JUL 25 2007

BUREAU OF AIR REGULATION

Florida Department of Environmental Protection
Bureau of Air Regulation
Northwest District
2600 Blair Stone Road
Tallahassee, Florida 32399

Attention: Jeffery F. Koerner, P.E., Air Permitting North

**RE: SMURFIT-STONE CONTAINER ENTERPRISES, INC.
PROJECT NO. 0050009-028-AC (PSD-FL-388)
PETCOKE FIRING IN LIME KILN
REVISIONS TO APPLICATION**

Dear Mr. Koerner:

Based on our recent discussions, on behalf of Smurfit-Stone Container Enterprises, Inc. (SSCE), we are submitting additional information regarding the sulfur content of petroleum coke to be fired in the Lime Kiln. Discussions with suppliers indicate that the petcoke could contain up to 8 percent sulfur (compared to the previous estimate of 7 percent). Although the maximum petcoke sulfur content for the project is increasing, we are not revising the maximum SO_2 emissions, since we believe the SO_2 removal efficiencies we have used for the Lime Kiln and wet scrubber are conservatively low. The overall control efficiency previously used was 98 percent. This has now been revised to 98.3 percent. This revised efficiency, coupled with the higher petcoke sulfur content, actually yields maximum SO_2 emissions slightly lower than previously estimated.

Revised application pages and tables from the PSD report that reflect these changes are attached. Also attached is the Professional Engineer certification statement. Thank you for consideration of this information. If you have any questions, please do not hesitate to call me at (352) 336-5600.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

David A. Buff, P.E., Q.E.P.
Principal Engineer

DB/all

Enclosures

cc: T. Clements

Y:\Projects\2006\0637645 SSCE Panama City PSD\4.1\L0707\L072007-645.doc

APPLICATION INFORMATION

Professional Engineer Certification

1.	Professional Engineer Name: **David A. Buff** Registration Number: **19011**
2.	Professional Engineer Mailing Address... Organization/Firm: **Golder Associates Inc.**** Street Address: **6241 N.W. 23rd Street, Suite 500** City: **Gainesville** State: **Florida** Zip Code: **32653**
3.	Professional Engineer Telephone Numbers... Telephone: **(352) 336-5600** ext.**545** Fax: **(352) 336-6603**
4.	Professional Engineer Email Address: **dbuff@golder.com**
5.	Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

David A. Buff
Signature

7/24/07
Date

(seal)

STATE OF FLORIDA

*Attach any exception to certification statement.
****Board of Professional Engineers Certificate of Authorization #00001670**

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 5

1. Segment Description (Process/Fuel Type): **In-process Fuel Use; Natural Gas: Lime Kiln**		
2. Source Classification Code (SCC): **3-90-006-03**	3. SCC Units: **Million Cubic Feet Burned**	
4. Maximum Hourly Rate: **0.180**	5. Maximum Annual Rate: **1,576.8**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1,000**
10. Segment Comment: **Maximum hourly rate based on 180 MMBtu/hr (daily average) and 1,000 Btu/ft^3.**		

Segment Description and Rate: Segment 4 of 5

1. Segment Description (Process/Fuel Type): **In-process Fuel Use; Petroleum Coke: Lime Kiln**		
2. Source Classification Code (SCC): **3-90-008-99**	3. SCC Units: **Tons Petcoke Burned**	
4. Maximum Hourly Rate: **5.88**	5. Maximum Annual Rate: **51,529.4**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **8.0**	8. Maximum % Ash: **1.5**	9. Million Btu per SCC Unit: **30.6**
10. Segment Comment: **Maximum annual rate is based on maximum heat input of 180 MMBtu/hr and 15,300 Btu/lb heating value. Maximum percent sulfur ranges from 5 to 8 percent, and percent ash is very low, ranging from 0 percent to 1.5 percent.**		

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **32.0** lb/hour **140.16** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **8 percent maximum Sulfur content in petcoke, 98.3% removal** Reference: **Supplier guarantee**	7. Emissions Method Code: **3**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly:

0.08 lb S/lb petcoke x 2 lb SO_2/lb S x 1 lb petcoke/15,300 Btu x 10^6 Btu/MMBtu x 180 MMBtu/hr x (1 - 0.983) = 32.0 lb/hr

Annual:

32.0 lb/hr SO_2 x 8,760 hr/yr x 1 ton/2,000 lb = 140.2 TPY

11. Potential Fugitive and Actual Emissions Comment:

The Lime Kiln scrubber system has an overall SO_2 removal efficiency of at least 98.3 percent. The Lime Kiln has a 83 percent inherent SO_2 removal efficiency, and the scrubber has a 90 percent SO_2 removal efficiency. The petroleum coke has a maximum 8 percent sulfur content and all calculations assume burning 100 percent petcoke.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **32 lb/hr**	4. Equivalent Allowable Emissions: **32** lb/hour **140.2** tons/year
5. Method of Compliance: **EPA Method 8**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

ATTACHMENT SSCE-EU1-I2

FUEL ANALYSIS

LIME KILN

Fuel	Density (lb/gal)	Weight % Sulfur	Weight % Nitrogen	Weight % Ash	Heat Capacity
No. 6 Fuel Oil	8.33	2.5	0.08	0.067	145,000 – 150,000 Btu/gal 18,500 Btu/lb
Natural Gas	--	0.1	--	--	1,000 Btu/scf
Petroleum Coke	--	5 - 8	1.3 – 1.9	0 – 1.5	15,300 Btu/lb

Note: scf = standard cubic foot.

TABLE 2-2
PROJECTED ACTUAL EMISSIONS FOR THE LIME KILN, SSCE PANAMA CITY
(revised 7-19-07)

Pollutant	Emission Factor	Ref.	Activity Factor[a]	Annual Emissions (TPY)
SO_2	0.178 lb/MMBtu	1	1,126,050 MMBtu/yr	100.1
NO_x	0.57 lb/MMBtu	2	1,126,050 MMBtu/yr	320.9
CO	0.181 lb/ton CaO	3	159,099 ton CaO/yr	14.4
PM	26.49 lb/hr	4	8,408 hr/yr	111.4
PM_{10}	22.44 lb/hr	5	8,408 hr/yr	94.3
VOC	0.046 lb/ton CaO	3	159,099 ton CaO/yr	3.7
TRS	10.56 ppm @ 10% O_2	6	66,284 dscfm @ 10% O_2 8,408 hr/yr	15.6
SAM	0.0924 lb/ton CaO	7	159,099 ton CaO/yr	7.35
Lead	0.0032 lb/ton CaO	3	159,099 ton CaO/yr	0.25
Mercury	6.20E-07 lb/ton CaO	3	159,099 ton CaO/yr	4.93E-05

[a] Activity factors based on actual maximum 2-year average heat input, hours of operation, lime production in AORs, as well as stack testing. See Tables A-5 through A-7.

References:
1 Based on 8% S in petcoke, 15,300 Btu/lb of petcoke, and overall SO_2 removal efficiency 98.3%.
2 Based on vendor maximum emissions estimate of 185 ppm when firing 20/80 mix of fuel oil/petcoke.
3 See Table A-2 for past actual emission factors.
4 Maximum reported rates from stack testing. See Table A-5.
5 Emission factor is 84.7% of PM, obtained from NCASI "Particulate Emission Data for Pulp and Paper Industry-Specific Sources" (August 25, 2006)
6 Maximum reported rates from stack testing. See Table A-6.
7 Based on emission factor from Table A-2 multiplied by the ratio of the projected actual SO_2 annual emissions and the baseline actual annual emissions, because the increase in SAM emissions is directly correlated to the increase in SO_2 emissions.

TABLE 2-3
FUTURE POTENTIAL EMISSIONS FOR THE LIME KILN, SSCE PANAMA CITY
(revised 7-19-07)

Pollutant	Emission Factor	Ref.	Short-Term Activity Factor	Short-Term Emissions (lb/hr)	Annual Average Activity Factor	Annual Average Emissions (TPY)
SO_2	0.178 lb/MMBtu	1	180 MMBtu/hr	32.0	1,576,800 MMBtu/yr	140.2
NO_x	0.57 lb/MMBtu	2	180 MMBtu/hr	102.6	1,576,800 MMBtu/yr	449.4
CO	0.181 lb/ton CaO	3	18.35 ton CaO/hr	3.3	160,746 ton CaO/yr	14.5
PM	29.83 lb/hr	4	1 hr	29.83	8,760 hr/yr	130.7
PM_{10}	25.27 lb/hr	5	1 hr	25.27	8,760 hr/yr	110.7
VOC	0.046 lb/ton CaO	3	18.35 ton CaO/hr	0.84	160,746 ton CaO/yr	3.7
TRS	20 ppm @ 10% O_2 (12-hr avg)	4	81,400 dscfm @ 10% O_2	8.6	8,760 hr/yr	37.7
SAM	0.0924 lb/ton CaO	6	18.35 ton CaO/hr	1.70	160,746 ton CaO/yr	7.43
Lead	0.0032 lb/ton CaO	3	18.35 ton CaO/hr	0.059	160,746 ton CaO/yr	0.26
Mercury	6.2E-07 lb/ton CaO	3	18.35 ton CaO/hr	1.14E-05	160,746 ton CaO/yr	4.98E-05

References:
1 Based on 8% S in petcoke, 15,300 Btu/lb of petcoke, and overall SO_2 removal efficiency 98.3%.
2 Based on vendor maximum emissions estimate of 185 ppm when firing 20/80 mix of fuel oil/petcoke.
3 See Table A-2 for past actual emission factors.
4 Based on maximum emission limit defined in Permit No. 0050009-020-AV.
5 Emission factor is 84.7% of PM, obtained from NCASI "Particulate Emission Data for Pulp and Paper Industry-Specific Sources" (August 25, 2006)
6 Based on emission factor from Table A-2 multiplied by the ratio of the projected actual SO_2 annualemissions and the baseline actual annual emissions, because the increase in SAM emissions is directly correlated to the increase in SO_2 emissions.

TABLE 3-3
PSD CONTEMPORANEOUS AND PROJECT EMISSIONS NETTING ANALYSIS
LIME KILN PETCOKE PROJECT, SSCE PANAMA CITY

Source Description	Pollutant Emission Rate (TPY)										
	SO_2	NO_x	CO	PM	PM_{10}	VOC	TRS	SAM	Lead	Mercury	Fluoride
Projected Actual Emissions											
Lime Kiln Petcoke Project											
Lime Kiln[a]	100.1	320.9	14.4	111.4	94.3	3.66	15.6	7.35	0.25	4.93E-05	--
Petcoke Storage Silo[b]	--	--	--	0.60	0.60	--	--	--	--	--	--
Petcoke Truck Traffic[c]	--	--	--	1.27	0.25	--	--	--	--	--	--
Total- Projected Actual	**100.1**	**320.9**	**14.4**	**113.2**	**95.2**	**3.66**	**15.6**	**7.35**	**0.25**	**4.93E-05**	--
Baseline Actual Emissions											
Lime Kiln[d]	22.8	184.2	14.4	97.3	85.0	3.66	10.3	1.67	0.25	4.93E-05	--
Total - Past Actual	**22.8**	**184.2**	**14.4**	**97.3**	**85.0**	**3.66**	**10.3**	**1.67**	**0.25**	**4.93E-05**	--
Increase Due to Project	**77.3**	**136.7**	**0.0**	**16.0**	**10.2**	**0.00**	**5.3**	**5.68**	**0.00**	**0.00E+00**	**0.00**
PSD SIGNIFICANT EMISSION RATE	40	40	100	25	15	40	10.0	7	0.6	0.1	3
Netting Triggered?	Yes	Yes	No	No	No	No	No	No	No	No	No
CONTEMPORANEOUS EMISSION CHANGES[h]											
Pulp Production Increase (09/2002)											
(Permit No. 0050009-005-AC)											
--Increase Due to Increased Pulp Production	f	f	g	g	g	g	g	g	g	g	--
--Decrease Due to Existing Pulp Production	f	f	g	g	g	g	g	g	g	g	--
--Net Change	f	f	g	g	g	g	g	g	g	g	--
Smelt Dissolving Tanks/MACT II (11/2001)											
(Permit No. 0050009-007-AC)											
--Increase Due to Future MACT I Sources	0.0	0.0	g	g	g	g	g	g	g	g	--
--Decrease Due to Existing Sources	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	0.0	g	g	g	g	g	g	g	g	--
MACT I Compliance- Update NOx Emissions (7/2002)											
(Permit Nos. 0050009-006-AC and -010-AC)											
--Increase Due to Future MACT I Sources	0.0	118.3	g	g	g	g	g	g	g	g	--
--Decrease Due to Existing Sources	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	118.3 f	g	g	g	g	g	g	g	g	--
Methanol Storage Tank (4/2003)											
(Permit No. 0050009-012-AC)	0.0	0.0	g	g	g	g	g	g	g	g	--
No. 3/No. 4 Comb. Boiler Misc. Amendments (6/2003)											
(Permit No. 0050009-013-AC)	0.0	0.0	g	g	g	g	g	g	g	g	--
Woodyard Rate Correction (6/2003)											
(Permit No. 0050009-014-AC)	0.0	0.0	g	g	g	g	g	g	g	g	--
Lime Kiln Fuel Modification (10/2003)											
(Permit No. 0050009-015-AC)	0.0	0.0	g	g	g	g	g	g	g	g	--
Bleach Plant Softwood Increase (6/2004)											
(Permit No. 0050009-018-AC)											
--Increase Due to Future Bleach Plant	0.0	0.0	g	g	g	g	g	g	g	g	--
--Decrease Due to Existing Bleach Plant	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	0.0	g	g	g	g	g	g	g	g	--
Clean Condensate Alternative Project (6/2005)											
(Permit No. 0050009-016-AC)											
--Increase Due to Future CCA Sources	1,976.6	164.0	g	g	g	g	g	g	g	g	--
--Decrease from Existing CCA Sources	-	-66.9	g	g	g	g	g	g	g	g	--
--Net Change	1,976.6 f	97.1 f	g	g	g	g	g	g	g	g	--
No. 4 Combination Boiler (11/2005)											
(Permit No. 0050009-021, -022-AC)											
--Increase Due to Future No. 4 CB	0.0	0.0	g	g	g	g	g	g	g	g	--
--Decrease from Existing No. 4 CB	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	0.0	g	g	g	g	g	g	g	g	--
No. 3 Combination Boiler (5/2006)											
(Permit No. 0050009-023-AC)											
--Future Actuals	3,885.1	476.8	g	g	g	g	g	g	g	g	--
--Past Actuals	-3,885.1	-458.9	g	g	g	g	g	g	g	g	--
--Net Change	0.0	17.9	g	g	g	g	g	g	g	g	--
Stripper Off-Gas to No. 4 CB (4/2006)											
(Permit No. 0050009-024-AC)											
--Increase Due to Future No. 3/No. 4 CB	0.0	0.0	g	g	g	g	g	g	g	g	--
--Decrease from Existing No. 3/No. 4 CB	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	0.0	g	g	g	g	g	g	g	g	--
Total Contemporaneous Emission Changes		17.9	g	g	g	g	g	g	g	g	N/A
TOTAL NET CHANGE	77.3	154.6	0.0	16.0	10.2	0.00	5.3	5.68	0.00	0.00	0.00
PSD SIGNIFICANT EMISSION RATE	40	40	100	25	15	40	10.0	7	0.6	0.1	3
PSD REVIEW TRIGGERED?	Yes	Yes	No	No	No	No	No	No	No	No	No

Footnotes:
[a] See Table 2-2 for projected actual emissions calculations for the Lime Kiln.
[b] Based on 2,000 acfm, and 0.008 grains/ft^3).
[c] Based on calculation in AP-42, Section 13.2.1, for particulate emissions from paved roads, December 2003.
[d] See Table 2-1 for baseline actual emissions from the Lime Kiln.
[e] Pollution Control Project (PCP). Pollutants which triggered PSD review were exempted under the PCP.
[f] Denotes that PSD review was triggered for this pollutant; therefore this, and any previous contemporaneous increases/decreases, are wiped clean.
[g] Since project increase does not exceed PSD significant emission rate, netting is not performed for this pollutant.
[h] The contemporaneous period begins 5 years prior to the projected date of commencement of construction on the Lime Kiln project, which is fall of 2007.

TABLE 3-3
PSD CONTEMPORANEOUS AND PROJECT EMISSIONS NETTING ANALYSIS
LIME KILN PETCOKE PROJECT, SSCE PANAMA CITY

	Pollutant Emission Rate (TPY)										
Source Description	SO_2	NO_X	CO	PM	PM_{10}	VOC	TRS	SAM	Lead	Mercury	Fluoride
<u>Projected Actual Emissions</u>											
Lime Kiln Petcoke Project											
Lime Kiln[a]	100.1	320.9	14.4	111.4	94.3	3.66	15.6	7.35	0.25	4.93E-05	--
Petcoke Storage Silo[b]	--	--	--	0.60	0.60	--	--	--	--	--	--
Petcoke Truck Traffic[c]	--	--	--	1.27	0.25	--	--	--	--	--	--
Total- Projected Actual	**100.1**	**320.9**	**14.4**	**113.2**	**95.2**	**3.66**	**15.6**	**7.35**	**0.25**	**4.93E-05**	**--**
<u>Baseline Actual Emissions</u>											
Lime Kiln[d]	22.8	184.2	14.4	97.3	85.0	3.66	10.3	1.67	0.25	4.93E-05	--
Total - Past Actual	**22.8**	**184.2**	**14.4**	**97.3**	**85.0**	**3.66**	**10.3**	**1.67**	**0.25**	**4.93E-05**	**--**
Increase Due to Project	**77.3**	**136.7**	**0.0**	**16.0**	**10.2**	**0.00**	**5.3**	**5.68**	**0.00**	**0.00E+00**	**0.00**
PSD SIGNIFICANT EMISSION RATE	40	40	100	25	15	40	10.0	7	0.6	0.1	3
<u>Netting Triggered?</u>	Yes	Yes	No	No	No	No	No	No	No	No	No
CONTEMPORANEOUS EMISSION CHANGES[h]											
Pulp Production Increase (09/2002)											
(Permit No. 0050009-005-AC)											
--Increase Due to Increased Pulp Production	f	f	g	g	g	g	g	g	g	g	--
--Decrease Due to Existing Pulp Production	f	f	g	g	g	g	g	g	g	g	--
--Net Change	f	f	g	g	g	g	g	g	g	g	--
Smelt Dissolving Tanks/MACT II (11/2001)											
(Permit No. 0050009-007-AC)											
--Increase Due to Future MACT I Sources	0.0	0.0	g	g	g	g	g	g	g	g	--
--Decrease Due to Existing Sources	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	0.0	g	g	g	g	g	g	g	g	--
MACT I Compliance- Update NOx Emissions (7/2002)											
(Permit Nos. 0050009-006-AC and -010-AC)											
--Increase Due to Future MACT I Sources	0.0	118.3	g	g	g	g	g	g	g	g	--
--Decrease Due to Existing Sources	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	118.3 f	g	g	g	g	g	g	g	g	--
Methanol Storage Tank (4/2003)											
(Permit No. 0050009-012-AC)	0.0	0.0	g	g	g	g	g	g	g	g	--
No. 3/No. 4 Comb. Boiler Misc. Amendments (6/2003)											
(Permit No. 0050009-013-AC)	0.0	0.0	g	g	g	g	g	g	g	g	--
Woodyard Rate Correction (6/2003)											
(Permit No. 0050009-014-AC)	0.0	0.0	g	g	g	g	g	g	g	g	--
Lime Kiln Fuel Modification (10/2003)											
(Permit No. 0050009-015-AC)	0.0	0.0	g	g	g	g	g	g	g	g	--
Bleach Plant Softwood Increase (6/2004)											
(Permit No. 0050009-018-AC)											
--Increase Due to Future Bleach Plant	0.0	0.0	g	g	g	g	g	g	g	g	--
--Decrease Due to Existing Bleach Plant	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	0.0	g	g	g	g	g	g	g	g	--
Clean Condensate Alternative Project (6/2005)											
(Permit No. 0050009-016-AC)											
--Increase Due to Future CCA Sources	1,976.6	164.0	g	g	g	g	g	g	g	g	--
--Decrease from Existing CCA Sources	-	-66.9	g	g	g	g	g	g	g	g	--
--Net Change	1,976.6 f	97.1 f	g	g	g	g	g	g	g	g	--
No. 4 Combination Boiler (11/2005)											
(Permit No. 0050009-021, -022-AC)											
--Increase Due to Future No. 4 CB	0.0	0.0	g	g	g	g	g	g	g	g	--
--Decrease from Existing No. 4 CB	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	0.0	g	g	g	g	g	g	g	g	--
No. 3 Combination Boiler (5/2006)											
(Permit No. 0050009-023-AC)											
--Future Actuals	3,885.1	476.8	g	g	g	g	g	g	g	g	--
--Past Actuals	-3,885.1	-458.9	g	g	g	g	g	g	g	g	--
--Net Change	0.0	17.9	g	g	g	g	g	g	g	g	--
Stripper Off-Gas to No. 4 CB (4/2006)											
(Permit No. 0050009-024-AC)											
--Increase Due to Future No. 3/No. 4 CB	0.0	0.0	g	g	g	g	g	g	g	g	--
--Decrease from Existing No. 3/No. 4 CB	0.0	0.0	g	g	g	g	g	g	g	g	--
--Net Change	0.0	0.0	g	g	g	g	g	g	g	g	--
<u>Total Contemporaneous Emission Changes</u>		17.9	g	g	g	g	g	g	g	g	N/A
TOTAL NET CHANGE	77.3	154.6	0.0	16.0	10.2	0.00	5.3	5.68	0.00	0.00	0.00
PSD SIGNIFICANT EMISSION RATE	40	40	100	25	15	40	10.0	7	0.6	0.1	3
PSD REVIEW TRIGGERED?	Yes	Yes	No	No	No	No	No	No	No	No	No

Footnotes:
[a] See Table 2-2 for projected actual emissions calculations for the Lime Kiln.
[b] Based on 2,000 acfm, and 0.008 grains/ft^3).
[c] Based on calculation in AP-42, Section 13.2.1, for particulate emissions from paved roads, December 2003.
[d] See Table 2-1 for baseline actual emissions from the Lime Kiln.
[e] Pollution Control Project (PCP). Pollutants which triggered PSD review were exempted under the PCP.
[f] Denotes that PSD review was triggered for this pollutant; therefore this, and any previous contemporaneous increases/decreases, are wiped clean.
[g] Since project increase does not exceed PSD significant emission rate, netting is not performed for this pollutant.
[h] The contemporaneous period begins 5 years prior to the projected date of commencement of construction on the Lime Kiln project, which is fall of 2007.

Harvey, Mary

9/26/07

From:	Harvey, Mary
Sent:	Wednesday, September 26, 2007 11:27 AM
To:	'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc:	Holladay, Cleve; Adams, Patty; Gibson, Victoria
Subject:	SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388
Attachments:	0050009.028.AC.F_pdf.zip

Tracking:

Recipient	Read
'Mr. B. G. Sammons, Smurfit-Stone'	
'Mr. Tom Clements, Smurfit-Stone'	
'Mr. David Buff, Golder Associates'	
Bradburn, Rick	Read: 9/26/2007 11:55 AM
'Ms. Kathleen Forney, EPA Region 4'	
'Mr. Jim Little, EPA Region 4'	
'Mr. Dee Morse, National Park Service'	
Holladay, Cleve	Read: 9/26/2007 11:50 AM
Adams, Patty	
Gibson, Victoria	Read: 9/26/2007 11:34 AM

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The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

Harvey, Mary

From: Clements, Tom [TMCLEMEN@SMURFIT.COM]
Sent: Wednesday, September 26, 2007 11:30 AM
To: Harvey, Mary
Cc: BSAMMONS@SMURFIT.COM; Buff, Dave
Subject: RE: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

Message received, Thank you.
Tom Clements

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Wednesday, September 26, 2007 10:27 AM
To: Sammons, Bob; Clements, Tom; Mr. David Buff, Golder Associates; Bradburn, Rick; Ms. Kathleen Forney, EPA Region 4; Mr. Jim Little, EPA Region 4; Mr. Dee Morse, National Park Service
Cc: Holladay, Cleve; Adams, Patty; Gibson, Victoria
Subject: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

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Thank you,

DEP, Bureau of Air Regulation

Harvey, Mary

From: Gibson, Victoria
To: Harvey, Mary
Sent: Wednesday, September 26, 2007 11:34 AM
Subject: Read: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

Your message

To:	'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc:	Holladay, Cleve; Adams, Patty; Gibson, Victoria
Subject:	SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388
Sent:	9/26/2007 11:27 AM

was read on 9/26/2007 11:34 AM.

Harvey, Mary

From:	Holladay, Cleve
To:	Harvey, Mary
Sent:	Wednesday, September 26, 2007 11:50 AM
Subject:	Read: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

Your message

To:	'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc:	Holladay, Cleve; Adams, Patty; Gibson, Victoria
Subject:	SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388
Sent:	9/26/2007 11:27 AM

was read on 9/26/2007 11:50 AM.

Harvey, Mary

From: Buff, Dave [DBuff@GOLDER.com]
To: undisclosed-recipients
Sent: Wednesday, September 26, 2007 11:40 AM
Subject: Read: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

Your message

To: DBuff@GOLDER.com
Subject:

was read on 9/26/2007 11:40 AM.

Harvey, Mary

From: Bradburn, Rick
To: Harvey, Mary
Sent: Wednesday, September 26, 2007 11:55 AM
Subject: Read: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

Your message

To:	'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc:	Holladay, Cleve; Adams, Patty; Gibson, Victoria
Subject:	SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388
Sent:	9/26/2007 11:27 AM

was read on 9/26/2007 11:55 AM.

Harvey, Mary

From: Sammons, Bob [BSAMMONS@SMURFIT.COM]
To: undisclosed-recipients
Sent: Wednesday, September 26, 2007 12:04 PM
Subject: Read: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

Your message

To: BSAMMONS@SMURFIT.COM
Subject:

was read on 9/26/2007 12:04 PM.

Harvey, Mary

From: Forney.Kathleen@epamail.epa.gov
Sent: Wednesday, September 26, 2007 2:29 PM
To: Harvey, Mary
Cc: little.james@epa.gov
Subject: Re: FW: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

thanks we got it this time...

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30024

Phone: 404-562-9130
Fax: 404-562-9019

"Harvey, Mary" <Mary.Harvey@dep.state.fl.us>

09/26/2007 02:22 PM

To
Kathleen Forney/R4/USEPA/US@EPA, James Little/R4/USEPA/US@EPA

cc

Subject
FW: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

From: Harvey, Mary
Sent: Wednesday, September 26, 2007 11:28 AM
To: 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'
Subject: FW: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

From: Harvey, Mary
Sent: Wednesday, September 26, 2007 11:27 AM
To: 'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc: Holladay, Cleve; Adams, Patty; Gibson, Victoria
Subject: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC-PSD-FL-388

Harvey, Mary

From: Adams, Patty
To: Harvey, Mary
Sent: Wednesday, September 26, 2007 3:53 PM
Subject: Read: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

Your message

To:	'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc:	Holladay, Cleve; Adams, Patty; Gibson, Victoria
Subject:	SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388
Sent:	9/26/2007 11:27 AM

was read on 9/26/2007 3:53 PM.

Harvey, Mary

From: Thomas, Bruce X.
To: Harvey, Mary
Sent: Thursday, September 27, 2007 9:01 AM
Subject: Read: FW: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC-PSD-FL-388

Your message

To:	Thomas, Bruce X.
Subject:	FW: SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388
Sent:	9/27/2007 9:01 AM

was read on 9/27/2007 9:01 AM.

Harvey, Mary

From:	Dee_Morse@nps.gov
Sent:	Wednesday, September 26, 2007 5:53 PM
To:	Harvey, Mary
Subject:	SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388

Return Receipt

Your document:	SMURFIT CONTAINER ENTERPRISES, INC. - PROJECT #0050009-028-AC- PSD-FL-388
was received by:	Dee Morse/DENVER/NPS
at:	09/26/2007 03:52:33 PM

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

PERMITTEE

Smurfit-Stone Container Enterprises, Inc
One Everitt Avenue
Panama City, Florida 32402

Authorized Representative:
Mr. B. G. Sammons, General Manager

Air Permit No. PSD-FL-388
Project No. 0050009-028-AC
Expires: December 1, 2008
Panama City Mill
Facility ID No. 0050009
Addition of Petcoke to Lime Kiln

FACILITY AND LOCATION

Smurfit Stone Corporation's Panama City Mill is a Kraft process pulp and paper mill (SIC Nos. 2611 and 2621) located in Bay County at One Everitt Avenue in Panama City, Florida. The UTM coordinates are Zone 16, 632.8 km East, and 3335.1 km North.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and Title 40, Parts 60 and 63 of the Code of Federal Regulations (CFR). The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

CONTENTS

Joseph Kahn, Director
Division of Air Resource Management

9/26/2007
Effective Date

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:

Smurfit-Stone Container Enterprises, Inc
One Everitt Avenue
Panama City, Florida 32402
Authorized Representative:
Mr. B. G. Sammons, General Manager

Air Permit No. PSD-FL-388
Project No. 0050009-028-AC
Panama City Mill
Addition of Petcoke to Lime Kiln
Bay County

Enclosed is the final PSD air construction permit which authorizes the addition of petcoke as a primary fuel for the existing lime kiln. The proposed work will be conducted at the Panama City Mill, which is located in Bay County at One Everitt Avenue in Panama City, Florida. As noted in the attached Final Determination, only minor changes and clarifications were made to the permit as drafted. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final Permit and Final Determination) was sent by electronic mail with received receipt requested before close of business on 9/26/07 to the persons listed below.

Mr. B. G. Sammons, Smurfit-Stone (bsammons@smurfit.com)
Mr. Tom Clements, Smurfit-Stone (tmclemen@smurfit.com)
Mr. David Buff, Golder Associates (dbuff@golder.com)
Mr. Rick Bradburn, NWD Office (rick.bradburn@dep.state.fl.us)
Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
Mr. Jim Little, EPA Region 4 (little.james@epa.gov)
Mr. Dee Morse, National Park Service (Dee_Morse@nps.gov)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Mary L. Harvey 9/26/07

(Clerk) (Date)

PERMITTEE

Smurfit-Stone Container Enterprises, Inc
One Everitt Avenue
Panama City, Florida 32402

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation, Air Permitting North Section
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

PROJECT

Air Permit No. PSD-FL-388
Project No. 0050009-028-AC
Panama City Mill
Addition of Petcoke to Lime Kiln

This project authorizes the addition of petcoke as a primary fuel for the existing lime kiln. The project includes installation of a new 180 million Btu/hour (MMBtu/hour) lime kiln burner capable of co-firing a combination of petcoke with distillate oil or natural gas; a 250 ton ground petcoke storage silo; a dense phase pneumatic conveying system to unload delivery trucks and transport ground petcoke to the storage silo; a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner, and enclosure or partial enclosure of the recovery boilers.

NOTICE AND PUBLICATION

The Department distributed an "Intent to Issue Permit" package on July 27, 2007. The applicant published the Public Notice of Intent to Issue in the Panama City News Herald on August 2, 2007. The Department received the proof of publication on August 9, 2007. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

COMMENTS

No comments on the Draft Permit were received from the public or the Department's Northwest District Office.

EPA Comments

On August 27, 2007 the Department received comments from the EPA Region 4 Office. EPA's comments were related to the modeling information. The applicant and the Department remodeled to address these comments. The following summarizes the comments and the Department's response.

<u>Boiler No. 3 NO_2 Emissions</u>

1. Significant Impact Modeled Emissions (Table 6-3) in the application – The emissions provided in this table appear to only be used in SIL assessments.

   Response: It is correct that the emissions in Table 6-3 were only used in the significant impact level (SIL) assessments. The SIL impact assessment only considers changes to the facility due to the project. Please note that in the original Table 6-3, the emission rates shown in the column labeled as "Future Potential Emissions" were actually "Projected Actual" emissions. This column has been revised to reflect future potential emissions. Note also that the past actual short-term NO_x emissions (42.1 lb/hr) for the Lime Kiln have been corrected and increased to be equal to the long-term emissions. The revised table 6-3 is attached. The SIL impact assessments for NOx were revised with these emissions. In the PSD Class II area, these changes resulted in higher modeled impacts (7 ug/m^3 compared to 5 ug/m^3) and in a larger significant impact area. However, the applicant had already modeled the AAQS and the PSD increment II with an even larger significant impact area than resulted from this modeling change. The department verified that the maximum modeled AAQS and PSD Class II NO_2 impacts were the same as submitted previously by the applicant. In the PSD Class I areas, the predicted NO_x impacts were also larger, but were still well below the PSD Class I SIL.

2. Boiler No. 3 is included as having an increase in NO_2 emissions associated with the kiln project. The reason for this increase and the basis for the values provided should be explained.

   Response: The NO_x emissions increase for the No. 3 Combination Boiler is associated with a contemporaneous emissions change on the boiler, as shown in Table 3-3 of the application. This contemporaneous change involved the non-PSD permit issued for increasing the ability of the boiler to burn bark/wood (Permit No. 0050009-023-AC). The annual increase in actual emissions of 17.9 TPY (476.8 TPY minus 458.9 TPY) was documented in the permit application for the changes to the No. 3 Combination Boiler and in Permit No. 0050009-023-AC. However, the future potential NO_x emissions from the No. 3 Combination Boiler have been used in the revised significant impact modeling, as reflected in the revised Table 6-3 (attached).

3. The future potential for Boiler No. 3 appears to be the permit allowable value of 176.7 lb/hr or 773.9 TPY provided in Table 6-5. The basis for the smaller values in this table should be provided.

   Response: As described above, the potential NO_x emissions of 176.7 lb/hr associated with the No. 3 Combination Boiler have now been modeled in the SIL assessment, as shown in the revised Table 6-3.

Lime Kiln

1. The long term future potential SO_2 rate of 103 TPY is much less than the current permit limit of 144.3 TPY (Table D-1) in the application.

   Response: As mentioned above, Table 6-3 has been revised. However, the SO_2 SIL modeling submitted with the original application correctly assessed the impact between the short-term emission rate associated with the 144.3 TPY and the short-term past actual emission rate (32.9 lb/hr and 5.6 lb/hr). This SIL assessment is conservative since the department's final permit contains a slightly lower lime kiln SO_2 emission limit of 32.0 lb/hr or 140.2 TPY instead of the applicant's requested 32.9 lb/hr.

2. The future short term NO_2 rate of 87.8 lb/hr is smaller that the PSD limit of 103 lb/hr.

   Response: The potential NO_x emissions associated with the Lime Kiln have now been modeled in the revised SIL assessment, as shown in the revised Table 6-3 (future potential long-term emission rate of 472.2 TPY, 13.58 g/s or 107.8 lb/hr). This analysis is conservative since the Department's final permit contains a limit of 103.0 lb/hr..

PSD Sources Expanding Increment

1. Two sources were indicated as PSD increment expanding sources. Arizona Chemical Company's inactive Boiler No. 1 and Florida Coast Paper which is no longer operating and is dismantled. These sources should be included in Table 6-9. Confirmation is needed that these emission sources were PSD baseline sources whose permits were revoked. The emission rates used in the modeling should be confirmed to be the actual emission rates occurring on the minor or major source baseline date.

   Response: Upon further investigation, Boiler No. 1 at Arizona Chemical is no longer active and did not exist in the SO_2 baseline. Therefore, it is no longer included in the revised SO_2 AAQS or PSD increment modeling. Boiler No. 2 did not exist in the SO_2 baseline, but currently exists. Its actual emissions were used for the revised SO_2 PSD increment consumption modeling, while its potential emissions used for the revised SO_2 AAQS analysis. See revised Table 6-9 (attached). Florida Coast paper was not included in the analysis, which would make these analyses conservative, since this facility has now shutdown.

The revised SO_2 modeling using the above input changes and the draft SO_2 emission limits for the project resulted in SO_2 impact values greater than those in the draft permit. The applicant revised and lowered the emission rates for Combination Boilers No. 3 and No. 4 to values which result in predicted air quality impacts which are less than or equal to the PSD Class II increment impacts stated in the Public Notice.

The revised SO_2 emission limits are:

3 hour average: Combination Boiler No. 3 only operating: 1219 lb/hr

Combination Boiler No. 4 maximum: 1183 lb/hr plus 36 lb/hr from Combination Boiler No. 3 = 1219 lb/hr

24 hour average: Combination Boiler No. 3 only operating: 845 lb/hr

Combination Boiler No. 4 only operating: 965 lb/hr

Combination Boiler No. 3 and No. 4 both operating: 300 lb/hr maximum for No. 3 and 643 lb/hr maximum for No. 4

Combination Boiler No. 3 has the worst case dispersion characteristics; therefore, the 24-hour maximum emission rates are less than No. 4.

The SO_2 emission limits were reduced from the draft permit to ensure that the impacts remained at or less than those published in the public notice. However, the applicant may apply within 90 days to increase these emission limits based on a revised modeling analysis. This action would require an additional 30-day public notice.

The applicant also remodeled the PSD Class I analyses. The SO_2 and NO_2 impacts were higher, but they were substantially less than the significant impact levels; therefore, no further modeling is required.

Applicant's Comments

On August 30, 2007, the applicant submitted comments, which are summarized below with the Department's corresponding response.

1. The applicant requested Section 3.A Condition 1 be revised to subject the facility to the applicable requirements of NSPS Subpart BB of 40 CFR 60 only if the analysis according to Appendix C demonstrates an increase in particulate emissions.

   Response: The netting analysis in Table 3-3 of the application indicates a particulate emissions increase of 16.0 tons per year of PM and 10.2 tons per year of PM_{10}. As proposed, the project results in an increase in the maximum hourly emissions rate for particulate matter, which subjects the lime kiln to the applicable requirements for this pollutant in 40 CFR 60 for NSPS Subparts A (General Provisions) and BB (Kraft Pulp Mills).

2. Section 3.A Condition 6 requires that a CEMS be installed for NOx. The applicant requests that the requirements of Appendix F not be imposed due to significant additional requirements and associated cost. The Mill currently does not have any CEMS which must meet the QA requirements of Appendix F. The applicant requests that the NO_x monitoring requirements mirror those for TRS emissions from the Lime Kiln. Condition E.9 of the current Title V permit specifies the test method for TRS as EPA Method 16, 16A or 16B. Condition L.4 of the Title V permit specifies the requirements for the continuous TRS monitor. It requires, among other things, that the TRS monitor be located, installed, and certified pursuant to the provisions of PS-2, PS-3 and PS-5, and that for the purposes of compliance testing and certification, that Method 16 or 16A be used. Daily zero and span checks must be performed. The applicant also requests that this condition be revised to add a 3-hour limit for NO_x based on stack testing per EPA Method

7E. The 3-hour limit could be the same numerical limit as the 30-day rolling average limits. Then the "compliance method" for the 30-day rolling average could be changed to the "compliance indicator".

Response: The Department intended the CEMS to be the method for determining compliance with the NO_x BACT standard. The 30-day rolling average provides flexibility for the operator to manage emissions and ensure continuous compliance. Appendix F provides the quality assurance procedures necessary to collect valid emissions data. No change was made.

2. The SO_2 emission standard in Section 3.A Condition 10 is incorrect. The correct SO_2 limit for "natural gas or oil" is the one listed in Appendix E "BACT Determination". This lists 7.3 lb/hr and 0.40 lb/ton CaO as BACT

   Response: The correct SO_2 limit for "natural gas or oil" is 4.6 lb/hr and 0.25 lb/ton CaO based on the BACT analysis in the Technical Evaluation and Preliminary Determination. The correction has been made in Appendix E.

3. The applicant requests that the allowable stack test methods specified for SO_2 in Section 3.A, Condition 11 include Method 6 as well as Method 6C.

   Response: Section 3.A Condition 11 has been changed accordingly.

CONCLUSION

The final action of the Department is to issue the permit with the minor revisions, corrections, and clarifications as described above.

TABLE 6-3
EMISSIONS USED IN SIGNIFICANT IMPACT ANALYSIS, SSCE PANAMA CITY

Emission Unit	Unit ID	Past Actual Emissions				Future Potential Emissions			
		Short-Term		Long-Term		Short-Term		Long-Term	
		lb/hr	g/s	TPY	g/s	lb/hr	g/s	TPY	g/s
SO_2 Emissions									
Lime Kiln	LK1	5.6	0.71	22.8	0.66	32.9 [c]	4.15	140.2	4.03
NO_x Emissions									
Lime Kiln	LK1	42.1 [a]	5.30	184.2	5.30	107.8	13.58	472.2	13.58
No. 3 Combination Boiler	BB3	132.5 [b]	16.70	458.9	13.20	176.7	22.26	773.9	22.26

Unless otherwise noted, refer to Section 2.0 for basis of emission rates.

[a] Based on long-term emissions.

[b] Based on stack test conducted in February 2005, prior to the change on the No. 3 Combination Boiler.

[c] Draft permit contains a limit of 32.0 lb/hr; therefore this higher value produces a higher impact for the SIL analysis.

TABLE 6-9
SUMMARY OF SO_2 SOURCES INCLUDED IN THE AIR MODELING FOR THE AAQS AND PSD CLASS II COMPLIANCE ANALYSES
SSCE PANAMA CITY LIME KILN PETCOKE PROJECT

Facility ID	Facility Name / Emission Unit Description	EU ID	Model ID Name	UTM Location X (m)	UTM Location Y (m)	Stack Parameters Height ft	Height m	Diameter ft	Diameter m	Temperature °F	Temperature K	Velocity ft/s	Velocity m/s	SO_2 Emission Rate (lb/hr)	SO_2 Emission Rate (g/sec)	PSD Consuming PSD Source? (EXP/CON)	Modeled in AAQS	Modeled in PSD Class II
0050001	Arizona Chemical Company - Panama City																	
	Boiler #2	15	ACPCB2	632,975	3,335,214	100.0	30.5	4.0	1.22	380	466.5	57.0	17.37	11.9	1.50	CON	NO	YES
														140.0	17.64		YES	NO
	Thermal Oxidizer with caustic scrubber	34	ACPCTO	632,889	3,335,209	120.0	36.6	3.8	1.14	1000	810.9	7.5	2.29	1.3	0.16	CON	YES	YES
0050045	Gulf Terminal Corporation																	
	3 Dual Fuel Hot Oil Heaters & 1 dual fuel steam boiler	17	GTCSB	630,510	3,335,230	5.0	1.5	0.4	0.12	72	295.4	5.0	1.52	0.8	0.10	NO	YES	NO
7775294	Anderson Columbia Co Inc - Plant #4																	
	Astec Model 05140 double barrel asphalt plant	1	ACPCAP	630,130	3,338,260	30.0	9.1	45.0	13.72	250	394.3	0.5	0.15	15.9	2.00	NO	YES	NO
7770062	C.W. Roberts Contracting Inc - Panama City Plant																	
	CMI Continuous Flow Drum Mix Asphalt Concrete Plant	2	CWRPCAP	628,090	3,340,280	44.0	13.4	5.1	1.54	215	374.8	40.6	12.37	20.5	2.58	NO	YES	NO
0050014	Gulf Power Company - Lansing Smith Plant																	
	Boiler #1 - 1,944.8 MMBtu/hr (Phase II Acid Rain)	1	GPLSB1	625,030	3,349,080	199.0	60.7	18.0	5.49	260	399.8	102.7	31.30	4,084.1	514.59	NO	YES	NO
	Boiler #2 - 2,246.2 MMBtu/hr (Phase II Acid Rain)	2	GPLSB2	625,030	3,349,080	199.0	60.7	18.0	5.49	260	399.8	102.7	31.30	6,064.7	764.14	NO	YES	NO
	Combustion Turbines A&B - 542 MMBtu/hr Peaking Unit	3	GPLSCT	625,030	3,349,080	33.0	10.1	13.7	4.18	1200	922.0	120.9	36.85	263.6	33.21	NO	YES	NO
	Unit #4: 170 MW CT1 with HRSG and duct burner	4	GPLSU4	625,030	3,349,080	121.0	36.9	16.8	5.12	186	358.7	73.8	22.49	12.7	1.60	NO	YES	NO
	Unit #5: 170 MW CT2 with HRSG and duct burner	5	GPLSU5	625,030	3,349,080	121.0	36.9	16.8	5.12	186	358.7	73.8	22.49	12.7	1.60	NO	YES	NO
0050031	Bay County Board of County Commissioners																	
	MSW Combustion Unit #1 (North)	1	BCBCU1	642,400	3,349,500	125.0	38.1	4.5	1.37	400	477.6	58.7	17.89	35.8	4.51	CON	YES	YES
	MSW combustion Unit #2 (South)	2	BCBCU2	642,400	3,349,500	125.0	38.1	4.5	1.37	400	477.6	58.7	17.89	35.8	4.51	CON	YES	YES
0630014	Gulf Power Company - Scholz Electric Generating Plant																	
	Boiler #1 (Phase I & II Acid Rain Unit)	1	GSCB1	712,400	3,395,800	150.0	45.7	13.5	4.11	330	438.7	40.0	12.19	3,984.0	501.98	NO	YES	NO
	Boiler #2 (Phase I & II Acid Rain Unit)	2	GSCB2	712,400	3,395,800	150.0	45.7	13.5	4.11	330	438.7	40.0	12.19	3,984.0	501.98	NO	YES	NO

Note: EXP = PSD expanding source
CON = PSD consuming source
NO = Baseline Source, does not affect PSD increment

FACILITY AND PROJECT DESCRIPTION

The permittee operates an existing Kraft process pulp and paper mill in Panama City. The existing mill is comprised of major activities areas such as: wood handling facility; pulping, bleaching, and chemical recovery; power house operations; paper machines; finishing, shipping, and warehouse operations; and other associated processes and equipment. This project authorizes the addition of petcoke as a primary fuel for the existing lime kiln. The project includes: installation of a new 180 million Btu/hour (MMBtu/hour) lime kiln burner capable of co-firing a combination of petcoke with distillate oil or natural gas; a 250 ton ground petcoke storage silo; a dense phase pneumatic conveying system to unload delivery trucks and transport ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. The project is subject to preconstruction review for emissions of nitrogen oxides (NO_X) and sulfur dioxide (SO_2) pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality). This permit includes emissions standards for these pollutants representing the Best Available Control Technology (BACT).

The project will also partially enclose the area housing the recovery boilers to reduce corrosion and maintenance. The enclosure will be implemented in two phases. The first phase will add a wall only along the east side of the building. The second phase will initially consist of adding a second wall along the south side of the building and may eventually include enclosing the entire building. The enclosures affect the dispersion of the stack plumes. Therefore, the permittee requested lower 24-hour SO_2 emissions standards for the Nos. 3 and 4 combination boilers.

This project affects the following existing emissions units.

EU No.	Emission Unit Description
004	Lime Kiln
015	#3 Bark Boiler
016	#4 Bark Boiler

This project adds the following new emissions unit.

EU No.	Emission Unit Description
038	Petcoke Handling and Storage Silo

REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants.
- The facility has no units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400 (PSD), F.A.C.

RELEVANT DOCUMENTS

The following relevant documents are not a part of this permit, but helped form the basis for this permitting action: the permit application and additional information received to make it complete; the Final Permit; the Department's Technical Evaluation and Preliminary Determination; the Written Notice of Intent to Issue Air Permit; the Public Notice of Intent to Issue Air Permit; the publication in a newspaper of general circulation; comments received on the Draft Permit package; and the Department's Final Determination.

1. Permitting Authority: The Permitting Authority for this project is the Department's Bureau of Air Regulation in the Division of Air Resource Management. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's Northwest District office. The mailing address is: 160 Governmental Center, Pensacola, Florida 32502-5794. The phone number is (850)595-8300.
3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Formats and Glossary of Common Terms), Appendix B (General Conditions), Appendix C (Common Conditions), Appendix D (Common Testing Requirements), Appendix E (Summary of BACT Determinations), Appendix F (CEMS Requirements) and Appendix G (NSPS Subpart BB Provisions).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Source Obligation:

   (a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.

   (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   (c) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

8. Title V Permit: This permit authorizes specific modifications and/or new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to each Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

This section of the permit addresses the following emissions unit.

Emissions Unit No. 004
Lime Kiln: The lime kiln processes approximately 85,000 pounds per hour of lime mud to produce 18.35 tons per hour of lime (CaO) to reuse in the recovery process. It is currently authorized to fire natural gas and No. 6 fuel oil with up to 2.4% sulfur by weight. The lime kiln is also used as the primary control device to thermally destroy non-condensable gases from the batch digesting system and multiple effects evaporator system. This permit authorizes petcoke with up to 8.0% sulfur by weight as a primary fuel to be blended with No. 6 fuel oil and natural gas. The maximum heat input rate for the petcoke burner system is 180 MMBtu per hour; however, for purposes of flame stability, petcoke will be co-fired with oil or gas and constitute up to 90% of the maximum heat input rate to the lime kiln. Exhaust gas exits at 166° F from a stack that is 6.3 feet in diameter and 60.5 feet tall with a volumetric flow rate of 81,400 dscfm @ 10% oxygen (92,800 acfm).

{Permitting Note: In accordance with Rule 62-212.400 (PSD), F.A.C., the above emission unit is subject to BACT determinations for emissions of NO_X and SO_2. The final BACT determinations are summarized in Appendix D of this permit. Throughout this permit, particulate matter emissions are referred to as PM emissions, which serve as a surrogate for regulating $PM_{2.5}$ and PM_{10} emissions.

EXISTING APPLICABLE REQUIREMENTS

1. NSPS Subpart BB for Kraft Pulp Mills: As a result of the project, the lime kiln becomes subject to the applicable requirements for particulate matter in NSPS Subpart BB of 40 CFR 60. See Appendix G (NSPS Subpart BB Provisions) of this permit.
2. State Rule for Kraft Pulp Mills: The lime kiln remains subject to the applicable requirements of Rule 62-296.404, F.A.C. for Kraft pulp mills.
3. NESHAP Subpart MM for Kraft Pulp Mills: The lime kiln remains subject to the applicable requirements of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) in Subpart MM of 40 CFR 63.
4. NESHAP Subpart S for the Pulp and Paper Industry: The lime kiln remains subject to the applicable requirements of the NESHAP in Subpart S in 40 CFR 63.

EQUIPMENT

5. Petcoke Burners: The permittee is authorized to install a petcoke burner system on the lime kiln to fire a blend of petcoke with No. 6 fuel oil and natural gas. The maximum heat input rate for the new petcoke burner system is 180 MMBtu per hour. {Permitting Note: For purposes of flame stability, petcoke will be co-fired with oil or gas and constitute up to 90% of the maximum heat input rate to the lime kiln.} [Rule 62-210.200 (PTE), F.A.C. and Application No. 0050009-028-AC]
6. CEMS Required for Demonstrating Compliance: The permittee shall properly install, calibrate, maintain and operate continuous emissions monitoring systems (CEMS) to measure and record NO_X emissions in units of the applicable standard. The permittee shall comply with the conditions of Appendix F (CEMS Requirements) for each CEMS required to be installed by this permit as the compliance method for the permitted emission standard. [Rules 62-4.070(3) and 62-212.400 (PSD), F.A.C.]

PERFORMANCE RESTRICTIONS

7. Permitted Capacity: The maximum allowable operating rate for the lime kiln is 85,000 pounds per hour of lime mud input (dry basis, 24-hour average) for a maximum lime production rate of 36,700 pounds of CaO per hour (dry basis). [Rule 62-210.200 (PTE), F.A.C. and Application No. 0050009-028-AC]

8. Authorized Fuel: The lime kiln is currently permitted to fire natural gas and No. 6 fuel oil with a maximum sulfur content of 2.4% by weight. This permit authorizes the firing of a blend of petcoke with No. 6 fuel oil and natural gas. The maximum sulfur content of petcoke shall be 8.0% by weight. [Rule 62-210.200 (PTE), F.A.C. and Application No. 0050009-028-AC]

9. Restricted Operation: The hours of operation of are not limited (8760 hours per year). [Rules 62-4.070(3) and 62-210.200 (PTE), F.A.C.]

EMISSIONS STANDARDS

10. Emissions Standards: Emissions from the lime kiln shall not exceed the following.

Pollutant	Fuel	Emission Standards	Averaging Time	Compliance Method
NO_X [a]	natural gas or oil	110 ppmvd @ 10% O_2 and 68.0 lb/hour	30-day rolling average	CEMS
	petcoke blends	190 ppmvd @ 10% O_2 and 103.0 lb/hour	30-day rolling average	CEMS
SO_2 [b]	No. 6 oil	4.6 lb/hour and 0.25 lb/ton of CaO	3-hour average	EPA Method 6 or 6C
	petcoke blends	*First 180 days:* 32.0 lb/hour and 1.74 lb/ton CaO	3-hour average	
		After first 180 days: 18.8 lb/hour and 1.02 lb/ton CaO		

a. NO_X: Continuous compliance with the NO_X standards shall be demonstrated based on CEMS data once the CEMS is installed and certified.

b. SO_2: The SO_2 standards for oil firing are effective after completing construction of the burner system. The higher SO_2 standards for petcoke firing are effective during the first 180 calendar days after first firing petcoke. This is to provide sufficient time to evaluate and adjust the wet scrubber performance to accommodate the higher uncontrolled SO_2 emissions rate. The lower SO_2 standards for petcoke firing are effective following the first 180 calendar days after first firing petcoke; however, the permittee may demonstrate compliance with the lower SO_2 standards for petcoke firing with tests conducted during the first 180 calendar days after first firing petcoke.

TESTING REQUIREMENTS

11. Test Requirements: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix C (Common Testing Requirements) of this permit. [Rule 62-297.310(7)(a)9, F.A.C.]

12. Test Methods: Required tests shall be performed in accordance with the following reference methods.

EPA Method	Description
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
6 or 6C	Method for Determining Sulfur Dioxide Emissions (Instrumental)
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources (Instrumental)
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

13. Initial Compliance Tests: The emissions unit shall be tested to demonstrate initial compliance with the emissions standards for SO_2. Testing shall be conducted with the emissions unit operating at permitted capacity in accordance with Rule 62-297.310(2), F.A.C. The initial tests for SO_2 shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. The tests shall be conducted at the maximum sulfur content of petcoke expected to be fired. If the petcoke sulfur content increases by more than 0.5% by weight above the tested level, the permittee shall conduct an additional compliance test at the higher petcoke sulfur content to demonstrate compliance with the SO_2 standard. [Rules 62-4.070(3) and 62-297.310(7)(a)1, F.A.C.]

14. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), the emissions unit shall be tested to demonstrate compliance with the emissions standards for SO_2. [Rule 62-297.310(7)(a)4, F.A.C.]

MONITORING REQUIREMENTS

15. Scrubber Monitoring: The permittee shall monitor the following scrubber parameters: bull nozzle flow rate in gpm, tangential flow rate in gpm, and pressure differential in inches of water column. The permittee shall monitor these scrubber parameters in accordance with the provisions in Subpart MM of 40 CFR Part 63. In addition, the permittee shall submit a testing protocol to the Bureau of Air Regulation for approval to determine the minimum pH operating level and the appropriate monitoring frequency that will provide reasonable assurance of compliance with the SO_2 BACT standard. The testing protocol shall include, but not be limited to, the following information: SO_2 stack testing methods and procedures, pH monitoring methods and frequency, pH adjustment, and a test schedule. Within 90 days of approval, the permittee shall conduct the tests. Within 30 days of conducting the last test, the permittee shall submit a report to the Bureau of Air Regulation that summarizes the testing program and proposes for approval a minimum pH operating level and the appropriate monitoring frequency that will provide reasonable assurance of compliance with the SO_2 BACT standard. The permittee shall operate the scrubber and conduct the monitoring in accordance with the approval. [Rule 62-4.070(3) and 62-212.400 (BACT), F.A.C.]

RECORDS AND REPORTS

16. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D, Section 4 of this permit. For each test run, the report shall also indicate the heat input, fuel type, sulfur content, and lime mud throughput (dry basis). [Rule 62-297.310(8), F.A.C.]

17. Operational Data: The permittee shall record the hours of operation and the sulfur content of each fuel in a written or electronic log. Information recorded and stored as an electronic file shall be available for inspection and printing within at least three days of a request by the Department. [Rule 62-4.070(3), F.A.C.]

18. Fuel Sulfur Records: Records of the sulfur content of each shipment of fuel oil and petcoke shall be maintained and available for inspection by the Department.

19. Stack Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report shall provide the applicable information specified in Rule 62-297.310(8), F.A.C. and summarized in Appendix C of this permit. [Rule 62-297.310(8), F.A.C.]

20. CEMS Required for Reporting Annual Emissions: The permittee shall use data from the CEMS when calculating annual emissions for purposes of computing actual emissions, baseline actual emissions and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for purposes of computing emissions pursuant to the reporting requirements of Rules 62-210.370(3) and 62-212.300(1)(e), F.A.C. The owner or operator shall follow the procedures in Appendix CEMS for calculating annual emissions.

21. TRS Report: After completion of construction and commencing operation on petcoke, the permittee shall conduct the analysis in Appendix C of 40 CFR 60 to determine whether the project resulted in an increase in the hourly total reduce sulfur (TRS) mass emission rate. The permittee shall submit the report to the Bureau of Air Regulation and the Compliance Authority within 180 days of first firing petcoke. [Appendix C of 40 CFR 60 and Rule 62-4.070(3), F.A.C.]

22. Annual TRS and PM Emissions Reports: In accordance with Rule 62-212.300(1)(e), F.A.C., the permittee shall comply with the following monitoring, reporting and recordkeeping provisions to determine whether a PSD significant emissions increase occurred:

    a. The permittee shall monitor the TRS and PM emissions using the most reliable information available. On a calendar year basis, the permittee shall calculate and maintain a record of the annual emissions (tons per year) for a period of 5 years after completing construction of the petcoke burner. Emissions shall be computed in accordance with Rule 62-210.370, F.A.C.

    b. Within 60 days after each calendar year following completion of construction of the petcoke burner, the permittee shall report to the Compliance Authority the annual emissions for each unit during the calendar year that preceded submission of the report. The report shall contain the following:

        1) The name, address and telephone number of the owner or operator of the major stationary source;

        2) The annual emissions as calculated pursuant to subparagraph 62-212.300(1)(e)1., F.A.C.;

        3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

        4) Any other information that the owner or operator wishes to include in the report.

    c. The information required to be documented and maintained shall be submitted to the Compliance Authority, where it will be available for review to the general public.

d. The permittee shall retain a copy of all records used to compute emissions pursuant to this rule for a period of five years from the date on which such emissions information is submitted to the Compliance Authority for any regulatory purpose.

[Rule 62-212.300(1)(e) and 62-210.370, F.A.C.]

B. Petcoke Handling and Storage (EU-038)

This section of the permit addresses the following emissions unit.

Emissions Unit No. 038
Petcoke Handling and Storage: Ground petcoke will be delivered to the facility by truck and pneumatically conveyed to a 250 ton ground petcoke storage silo. The storage silo will vent through a baghouse prior to discharging to atmosphere. The ground petcoke will drop into a weigh bin from the storage silo before being conveyed to the kiln burner through the use of a blower and eductor. The piping system that delivers the petcoke to the kiln burner will be completely enclosed. The displaced air from the weigh bin will be redirected to the storage silo and will exit the storage silo baghouse.

EQUIPMENT

1. Petcoke Handling and Storage: The permittee is authorized to construct a 250 ton ground petcoke storage silo; a dense phase pneumatic conveying system that will be used to unload the delivery trucks and transport the ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. [Application No. 0050009-028-AC]

PERFORMANCE RESTRICTIONS

2. Restricted Operation: The hours of operation of are not limited (8760 hours per year). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSION LIMITING AND PERFORMANCE STANDARDS

3. Fugitive Dust Emissions: During the construction period, fugitive dust emissions shall be minimized by techniques such as covering, confining and/or the application of water or dust suppressants to the affected areas, or removal of particulate matter from roads and other paved areas to prevent reentrainment, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

4. Petcoke Storage Silo, Baghouse: The permittee shall install a baghouse to control particulate matter emissions from the petcoke storage silo and the weigh bin. The baghouse shall be designed and maintained for a flow rate of 2000 acfm and an outlet dust loading of 0.02 grains/dscf of exhaust. The permittee shall retain records from the vendor showing the control equipment meets this design specification. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C. and Application No. 0050009-028-AC]

5. Opacity: As determined by EPA Method 9, visible emissions from the baghouse vent shall not exceed 5% opacity. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

TESTING REQUIREMENTS

6. Initial Compliance Tests: The permittee shall test conduct EPA Method 9 testing to demonstrate compliance with the opacity standard for the baghouse vent. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. Initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. Subsequent tests shall be conducted during each federal fiscal year (October 1st to September 30th). [Rules 62-4.070(3) and 62-297.310(7)(a)1&4, F.A.C.]

7. Test Requirements: Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) in Section 4 of this permit, which include notifications, methods, procedures, test reports, etc. [Rule 62-297.310(7)(a)9, F.A.C.]

C. Nos. 3 and 4 Combination Boilers (EU-015 and EU-016)

This section of the permit addresses the following emissions units.

EU No.	Description
-015	No. 3 Combination Boiler (existing)
-016	No. 4 Combination Boiler (existing)

EQUIPMENT

1. Enclosure for Recovery Boiler Building: The permittee is authorized to construct an enclosure for the recovery boiler building to reduce corrosion and maintenance. The enclosure will be implemented in two phases. The first phase will add one wall along the east side of the building. The second phase will add a second wall along the south side of the building and may eventually include enclosing the entire building. [Rule 62-212.400(BACT), F.A.C. and Application No. 0050009-028-AC]

EMISSIONS STANDARDS

2. New SO_2 Standards: The following new SO_2 emissions standards apply to the Nos. 3 and 4 combination boilers in addition to any existing SO_2 emissions standards.
    1. SO_2 emissions shall not exceed 1219 lb/hour when only the No. 3 combination boiler is operating based on a 3-hour rolling CEMS average.
    2. The combined SO_2 emissions from No. 3 and No. 4 combination boilers shall not exceed 1219 lb/hr when both Nos. 3 and 4 are operating and the SO_2 emissions from No. 4 shall not exceed 1183 lb/hr based on 3-hour rolling CEMS averages.
    3. SO_2 emissions shall not exceed 845 lb/hour when only the No. 3 combination boiler is operating based on a 24-hour rolling CEMS average.
    4. SO_2 emissions shall not exceed 965 lb/hour when only the No. 4 combination boiler is operating based on a 24-hour rolling CEMS average.
    5. When both Nos. 3 and 4 combination boilers are operating SO_2 emissions from No. 3 shall not exceed 300 lb/hr and the SO_2 emissions from No. 4 shall not exceed 643 lb/hr based on 24-hour rolling CEMS averages.

Within 90 days of issuance of this permit, the permittee may submit an application to revise the above SO_2 emissions standards based on a revised modeling analysis. {Permitting Note: The new enclosure adversely affects dispersion of the existing stack plumes. The new SO_2 emissions standards are based on the revised air quality analysis provided in support of the PSD application.} [Rule 62-212.400(BACT), F.A.C. and Application No. 0050009-028-AC]

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CITATION FORMATS AND GLOSSARY OF COMMON TERMS

CITATION FORMATS

The following illustrate the formats used in the permit to identify applicable requirements from permits and regulations.

Old Permit Numbers

Example: Permit No. AC50-123456 or Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located

"2222" represents the specific facility ID number for that county

"001"identifies the specific permit project number

"AC" identifies the permit as an air construction permit

"AF" identifies the permit as a minor source federally enforceable state operation permit

"AO" identifies the permit as a minor source air operation permit

"AV" identifies the permit as a major Title V air operation permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the preconstruction review requirements of the Prevention of Significant Deterioration of Air Quality

"FL" means that the permit was issued by the State of Florida

"317" identifies the specific permit project number

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CRF 60.7]

Means: Title 40, Part 60, Section 7

GLOSSARY OF COMMON TERMS

° F: degrees Fahrenheit

acfm: actual cubic feet per minute

ARMS: Air Resource Management System (Department's database)

BACT: best available control technology

Btu: British thermal units

CAM: compliance assurance monitoring

CEMS: continuous emissions monitoring system

cfm: cubic feet per minute

CFR: Code of Federal Regulations

CO: carbon monoxide

COMS: continuous opacity monitoring system

DEP: Department of Environmental Protection

Department: Department of Environmental Protection

dscfm: dry standard cubic feet per minute

EPA: Environmental Protection Agency

ESP: electrostatic precipitator (control system for reducing particulate matter)

EU: emissions unit

F.A.C.: Florida Administrative Code

F.D.: forced draft

F.S.: Florida Statutes

FGR: flue gas recirculation

Fl: fluoride

ft^2: square feet

ft^3: cubic feet

gpm: gallons per minute

gr: grains

HAP: hazardous air pollutant

Hg: mercury

I.D.: induced draft

ID: identification

kPa: kilopascals

lb: pound

MACT: maximum achievable technology

MMBtu: million British thermal units

MSDS: material safety data sheets

MW: megawatt

NESHAP: National Emissions Standards for Hazardous Air Pollutants

NO_X: nitrogen oxides

NSPS: New Source Performance Standards

O&M: operation and maintenance

O_2: oxygen

Pb: lead

PM: particulate matter

PM_{10}: particulate matter with a mean aerodynamic diameter of 10 microns or less

PSD: prevention of signifi9cant deterioration

psi: pounds per square inch

PTE: potential to emit

RACT: reasonably available control technology

RATA: relative accuracy test audit

SAM: sulfuric acid mist

scf: standard cubic feet

scfm: standard cubic feet per minute

SIC: standard industrial classification code

SNCR: selective non-catalytic reduction (control system used for reducing emissions of nitrogen oxides)

SO_2: sulfur dioxide

TPH: tons per hour

TPY: tons per year

UTM: Universal Transverse Mercator coordinate system

VE: visible emissions

VOC: volatile organic compounds

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S.. Such evidence

shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.
11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
    a. Determination of Best Available Control Technology;
    b. Determination of Prevention of Significant Deterioration; and
    c. Compliance with New Source Performance Standards.
14. The permittee shall comply with the following:
    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
    c. Records of monitoring information shall include:
        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

COMMON CONDITIONS

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Excess Emissions, Permitted: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. Excess Emissions, Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(Definitions), F.A.C.]
8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

{Permitting Note: Rule 62-210.700 (Excess Emissions), F.A.C., cannot vary any NSPS or NESHAP provision.}

RECORDS AND REPORTS

10. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least 5 years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2, F.A.C.]
11. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(3), F.A.C.]

COMMON TESTING REQUIREMENTS

Unless otherwise specified in the permit, the following testing requirements apply to all emissions units at the facility.

COMPLIANCE TESTING REQUIREMENTS

1. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

2. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]

3. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

4. Applicable Test Procedures

   a. *Required Sampling Time.*

      (1) Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.

      (2) Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

         (a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.

         (b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.

         (c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

   b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

d. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

[Rule 62-297.310(4), F.A.C.]

5. Determination of Process Variables

a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

6. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must also comply with all applicable Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E.

a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.

b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.

c. *Sampling Ports.*

(1) All sampling ports shall have a minimum inside diameter of 3 inches.

(2) The ports shall be capable of being sealed when not in use.

(3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.

(4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.

(5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

d. *Work Platforms.*

(1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.

(2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.

(3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.

(4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toe board, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

(1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.

(2) Walkways over free-fall areas shall be equipped with safety rails and toe boards.

f. *Electrical Power.*

(1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.

(2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

(1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.

(a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.

(b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.

(c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.

(2) A complete monorail or dual rail arrangement may be substituted for the eyebolt and bracket.

(3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

[Rule 62-297.310(6), F.A.C.]

7. Frequency of Compliance Tests: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

a. *General Compliance Testing.*

1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.

2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.

3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

   (a) Did not operate; or

   (b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,

4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

   (a) Visible emissions, if there is an applicable standard;

   (b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

   (c) Each NESHAP pollutant, if there is an applicable emission standard.

5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.

6. For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.

7. For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.

8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.

9. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.

10. An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.

b. *Special Compliance Tests.* When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

c. *Waiver of Compliance Test Requirements.* If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of paragraph 62-297.310(7)(b), F.A.C., shall apply.

[Rule 62-297.310(7), F.A.C.]

RECORDS AND REPORTS

8. Test Reports:

a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.

c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information.

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.

16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

SECTION 4. APPENDIX E

SUMMARY OF BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATIONS

Project Description

The permittee operates an existing Kraft process pulp and paper mill in Panama City. The existing mill is comprised of major activities areas such as: wood handling facility; pulping, bleaching, and chemical recovery; power house operations; paper machines; and finishing, shipping, warehouse and associated processes and equipment. This project authorizes the addition of petcoke as a primary fuel for the existing lime kiln. For purposes of flame stability, petcoke will be co-fired with oil or gas and constitute up to 90% of the maximum heat input rate to the lime kiln. The project includes: installation of a new 180 million Btu/hour (MMBtu/hour) lime kiln burner; a 250 ton ground petcoke storage silo; a dense phase pneumatic conveying system to unload delivery trucks and transport ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. The project is subject to PSD preconstruction review for emissions of NO_X and SO_2 pursuant to Rule 62-212.400, F.A.C. This permit includes emissions standards for these pollutants representing BACT.

The project will also partially enclose the area housing the recovery boiler building to reduce corrosion and maintenance. The enclosure will be implemented in two phases. The first phase will add a wall only along the east side of the building. The second phase will initially consist of adding a second wall along the south side of the building and may eventually include enclosing the entire building. The enclosures affect the dispersion of the stack plumes. Therefore, the permittee requested lower 24-hour SO_2 emissions standards for the Nos. 3 and 4 combination boilers.

BACT Determinations

The following table summarizes the emissions standards representing the BACT determinations for NO_X and SO_2 emissions.

Pollutant	Fuel	Emission Standards	Averaging Time	Compliance Method
NO_X [a]	natural gas or oil	110 ppmvd @ 10% O_2	30-day rolling average	CEMS
		68.0 lb/hour	3-hour average	EPA Method 7E
	90% petcoke blends	190 ppmvd @ 10% O_2	30-day rolling average	CEMS
		103.0 lb/hour	3-hour average	EPA Method 7E
SO_2 [b]	natural gas or oil	4.6 lb/hour and 0.25 lb/ton of CaO	3-hour average	EPA Method 6C
	90% petcoke blends	*First 180 days:* 32.0 lb/hour and 1.74 lb/ton CaO	3-hour average	
		After first 180 days: 18.8 lb/hour and 1.02 lb/ton CaO		

a. NO_X: Initial compliance with the "lb/hour" standard shall be demonstrated based on stack testing. Continuous compliance with the "ppmvd @ 10% O_2" standard shall be demonstrated based on CEMS data once the CEMS is installed and certified. The basis for the NO_X BACT determination is the use of good combustion practices and a low-NO_X burner system.

b. SO_2: The SO_2 standards for oil firing are effective after completing construction of the burner system. The higher SO_2 standards for petcoke firing are effective during the first 180 calendar days after first firing petcoke. This is to provide sufficient time to evaluate and adjust the wet scrubber performance to accommodate the higher uncontrolled SO_2 emissions rate. The lower SO_2 standards for petcoke firing are effective following the first 180 calendar days after first firing petcoke; however, the permittee may demonstrate compliance with the lower SO_2 standards for petcoke firing with tests conducted during the first 180 calendar days after first firing petcoke. The basis for the SO_2 BACT determination is proper kiln operation, optimal mud washing and wet flue gas desulfurization with proper parametric monitoring and good operating practices.

CEMS OPERATION PLAN

1. CEMS Operation Plan: The owner or operator shall create and implement a facility-wide plan for the proper installation, calibration, maintenance and operation of each CEMS required by this permit. The owner or operator shall submit the CEMS Operation Plan to the Bureau of Air Monitoring and Mobile Sources for approval at least 60 days prior to CEMS installation. The CEMS Operation Plan shall become effective 60 days after submittal or upon its approval. If the CEMS Operation Plan is not approved, the owner or operator shall submit a new or revised plan for approval.

   {Permitting Note: The Department maintains both guidelines for developing a CEMS Operation Plan and example language that can be used as the basis for the facility-wide plan required by this permit. Contact the Emissions Monitoring Section of the Bureau of Air Monitoring and Mobile Sources at 850/488-0114.}

INSTALLATION, PERFORMANCE SPECIFICATIONS AND QUALITY ASSURANCE

2. Timelines: The owner or operator shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS no later than 180 calendar days after initial startup on petcoke.
3. Installation: All CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The owner or operator shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR part 60, Appendix B.
4. Span Values and Dual Range Monitors: The owner or operator shall set appropriate span values for the CEMS. The owner or operator shall install dual range monitors if required by and in accordance with the CEMS Operation Plan.
5. Continuous Flow Monitor: For compliance with mass emission rate standards, the owner or operator shall install a continuous flow monitor to determine the stack exhaust flow rate. The flow monitor shall be certified pursuant to 40 CFR part 60, Appendix B, Performance Specification 6. Alternatively, the owner or operator may install a fuel flow monitor and use an appropriate F-Factor computational approach to calculate stack exhaust flow rate.
6. Diluent Monitor: If it is necessary to correct the CEMS output to the oxygen concentrations specified in this permit's emission standards, the owner or operator shall either install an oxygen monitor or install a CO_2 monitor and use an appropriate F-Factor computational approach.
7. Moisture Correction: If necessary, the owner or operator shall determine the moisture content of the exhaust gas and develop an algorithm to enable correction of the monitoring results to a dry basis (0% moisture).

   {Permitting Note: The CEMS Operation Plan will contain additional CEMS-specific details and procedures for installation.}

8. Performance Specifications: The owner or operator shall evaluate the acceptability of each CEMS by conducting the appropriate performance specification, as follows. CEMS determined to be unacceptable shall not be considered installed for purposes of meeting the timelines of this permit. For NO_X monitors, the owner or operator shall conduct Performance Specification 2 of 40 CFR part 60, Appendix B.
9. Quality Assurance: The owner or operator shall follow the quality assurance procedures of 40 CFR part 60, Appendix F. For NO_X, The required RATA tests shall be performed using EPA Method 7E in Appendix A of 40 CFR part 60. NO_X shall be expressed "as NO_2."
10. Substituting RATA Tests for Compliance Tests: Data collected during CEMS quality assurance RATA tests can substitute for annual stack tests, and vice versa, at the option of the owner or operator, provided the owner or operator indicates this intent in the submitted test protocol and follows the procedures outlined in the CEMS Operation Plan.

CALCULATION APPROACH

11. CEMS Used for Compliance: Once adherence to the applicable performance specification for each CEMS is demonstrated, the owner or operator shall use the CEMS to demonstrate compliance with the applicable emission standards as specified by this permit.
12. CEMS Data: Each CEMS shall monitor and record emissions during all periods of operation and whenever emissions are being generated, including during episodes of startups, shutdowns, and malfunctions. All data shall be used, except

for invalid measurements taken during monitor system breakdowns, repairs, calibration checks, zero adjustments and span adjustments.

13. Operating Hours and Operating Days: For purposes of this appendix, the following definitions shall apply. An hour is the 60-minute period beginning at the top of each hour. Any hour during which an emissions unit is in operation for more than 15 minutes is an operating hour for that emission unit. A day is the 24-hour period from midnight to midnight. Unless otherwise specified by this permit, any day with at least one operating hour for an emissions unit is an operating day for that emission unit.

14. Valid Hourly Averages: Each CEMS shall be designed and operated to sample, analyze and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour.

    a. Hours that are not operating hours are not valid hours.

    b. For each operating hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, there is insufficient data, the 1-hour block average is not valid, and the hour is considered as "monitor unavailable."

15. Calculation Approaches, 30-day Rolling Average: Compliance with the 30-day rolling average shall be determined after each operating day by calculating the arithmetic average of all the valid hourly averages from that operating day and the prior 29 operating days.

MONITOR AVAILABILITY

16. Monitor Availability: The quarterly excess emissions report shall identify monitor availability for each quarter in which the unit operated. Monitor availability for the CEMS shall be 95% or greater in any calendar quarter in which the unit operated for more than 760 hours. In the event the applicable availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving the required availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit.

EXCESS EMISSIONS

17. Definitions:

    a. *Startup* is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.

    b. *Shutdown* means the cessation of the operation of an emissions unit for any purpose.

    c. *Malfunction* means any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

18. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.

19. Notification Requirements: The owner or operator shall notify the Compliance Authority within one working day of discovering any emissions that demonstrate noncompliance for a given averaging period. Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. For malfunctions, notification is sufficient for the owner or operator to exclude CEMS data.

ANNUAL EMISSIONS

20. CEMS Used for Calculating Annual Emissions: All valid data, shall be used when calculating annual emissions.

    a. Annual emissions shall include data collected during startup, shutdown and malfunction periods.

b. Annual emissions shall include data collected during periods when the emission unit is not operating but emissions are being generated (for example, when firing fuel to warm up a process for some period of time prior to the emission unit's startup).

c. Annual emissions shall not include data from periods of time where the monitor was functioning properly but was unable to collect data while conducting a mandated quality assurance/quality control activity such as calibration error tests, RATA, calibration gas audit or RAA. These periods of time shall be considered missing data for purposes of calculating annual emissions.

d. Annual emissions shall not include data from periods of time when emissions are in excess of the calibrated span of the CEMS. These periods of time shall be considered missing data for purposes of calculating annual emissions.

21. Accounting for Missing Data: All valid measurements collected during each hour shall be used to calculate a 1-hour block average. For each hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, the owner or operator shall account for emissions during that hour using site-specific data to generate a reasonable estimate of the 1-hour block average.

22. Emissions Calculation: Hourly emissions shall be calculated for each hour as the product of the 1-hour block average and the duration of pollutant emissions during that hour. Annual emissions shall be calculated as the sum of all hourly emissions occurring during the year.

As a result of this project, the existing lime kiln (EU-004) becomes subject to the applicable requirements for particulate matter in NSPS Subpart BB and the applicable general provisions in NSPS Subpart A of 40 CFR 60.

SUBPART A, GENERAL PROVISIONS

(The General Provisions are not included in this permit, but can be obtained from the Department upon request.)

§ 60.7 Notification and Record Keeping.

§ 60.8 Performance Tests.

§ 60.11 Compliance with Standards and Maintenance Requirements.

§ 60.12 Circumvention.

§ 60.13 Monitoring Requirements.

§ 60.19 General Notification and Reporting Requirements.

SUBPART BB, STANDARDS OF PERFORMANCE FOR KRAFT PULP MILLS

§ 60.280 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in kraft pulp mills: Digester system, brown stock washer system, multiple-effect evaporator system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this subpart are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

(b) Except as noted in §60.283(a)(1)(iv), any facility under paragraph (a) of this section that commences construction or modification after September 24, 1976, is subject to the requirements of this subpart.

§ 60.281 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in subpart A.

(a) *Kraft pulp mill* means any stationary source which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at high temperature and pressure. Regeneration of the cooking chemicals through a

(n) *Lime kiln* means a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

§ 60.282 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(3) From any lime kiln any gases which contain particulate matter in excess of:

(i) 0.15 g/dscm (0.066 gr/dscf) corrected to 10 percent oxygen, when gaseous fossil fuel is burned.

(ii) 0.30 g/dscm (0.13 gr/dscf) corrected to 10 percent oxygen, when liquid fossil fuel is burned.

§ 60.285 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures in this section, except as provided in §60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.282(a) (1) and (3) as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used as the cleanup solvent instead of acetone in the sample recovery procedure. The particulate concentration shall be corrected to the appropriate oxygen concentration according to §60.284(c)(3).

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration. The gas sample shall be taken at the same time and at the same traverse points as the particulate sample.

(3) Method 9 and the procedures in §60.11 shall be used to determine opacity.

(f) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5, Method 17 may be used if a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17 and the stack temperature is no greater than 204 °C (400 °F).

SMURFIT-STONE

Smurfit-Stone
Container Corporation
Panama City Mill
1 Everitt Ave.
Panama City, FL 32401
850-785-4311
850-763-8530 *fax*

RECEIVED
AUG 09 2007
BUREAU OF AIR REGULATION

August 8, 2007

Mr. Bruce Thomas P.E.
FDEP
2600 Blair Stone Rd
Tallahassee FL 32399

Re: Proof of public notice – Permit No. PSD-FL-388
Project No. 0050009-028-AC

Dear Mr. Thomas

Attached is the proof of public notice for the above permit. Please contact me at (850) 785-4311 x470 if you have additional questions.

Sincerely

Tom Clements
Environmental Mgr.

Florida Freedom Newspapers, Inc.

PUBLISHERS OF THE NEWS HERALD
Panama City, Bay County, Florida
Published Daily

RECEIVED
AUG 09 2007
BUREAU OF AIR REGULATION

State of Florida
County of Bay

Before the undersigned authority appeared ______________________

Pam Gregory, who on oath says that (s)he

is Advertising Director of The News Herald, a daily

newspaper published at Panama City, in Bay County, Florida; that the attached copy of

advertisement, being a Legal Advertisement - #5051

in the matter of Public Notice

Air Permit

in the Bay County

Court, was published in said newspaper in the issue of

August 2, 2007

Affiant further says that The News Herald is a direct successor of the Panama City News and that this publication, together with its direct predecessor, has been continuously published in said Bay County, Florida, each day (except that the predecessor, Panama City News, was not published on Sundays), and that this publication together with its said predecessor, has been entered as periodicals matter at the post office in Panama City, in said Bay County, Florida, for a period of 1 year next preceding the first publication of the attached copy of advertisement; and affiant further says that he or she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Pam Gregory

State of Florida
County of Bay
Sworn and subscribed before me this 2nd day of August, A.D., 2007 by Pam Gregory, Advertising director of The News Herald, who is personally known to me or has produced na as identification.

MARIE L. FORREST
Commission DD 667091
Expires May 5, 2011
Bonded Thru Troy Fain Insurance 800-385-7019

Marie L. Forrest
Notary Public, State of Florida at Large

5051

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection; Division of Air Resource Management, Bureau of Air Regulation, Draft Air Permit No. PSD-FL-388, Project No. 0050009-028-AC, Smurfit-Stone Container Enterprises, Inc., Panama City Mill, Bay County, Florida

Applicant: The applicant for this project is Smurfit-Stone Container Enterprises, Inc. The applicant's authorized representative and mailing address is: B. G. Sammons, General Manager, Smurfit-Stone Container Enterprises, Inc., Panama City Mill, One Everitt Avenue, Panama City, Florida 32402.

Facility Location: Smurfit-Stone Container Enterprises, Inc., operates the existing Panama City Mill, which is located in Bay County at One Everitt Avenue, in Panama City, Florida 32402. The existing facility is a Kraft pulp and paper mill.

Project: The applicant proposes to add petroleum coke as a primary fuel to the existing lime kiln. The following equipment will be installed: a new lime kiln burner capable of firing a combination of petroleum coke with No. 6 fuel oil and/or natural gas; a petcoke storage silo; a dense phase pneumatic conveying system that will be used to unload the delivery trucks and transport the ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. The project also includes enclosing or partially enclosing the recovery boiler building to reduce corrosion and maintenance.

The project is projected to result in a net actual emissions increase of 155 tons per year of nitrogen oxides (NOx) and a net actual emissions increase of 77 tons per year of sulfur dioxide (SO2). Because these rates are greater than the significant emissions rates, the project is subject to preconstruction review for these pollutants in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. Pursuant to this rule, the Department is required to make a determination of the Best Available Control Technology (BACT) and review the ambient air quality impacts for each pollutant. The Department's preliminary BACT determination for NOx is based on good combustion practices and low-NOx burners. The Department's preliminary BACT determination for SO2 is based on proper kiln design and operation, optimal mud washing and flue gas desulfurization with the existing wet scrubber.

The Department reviewed the applicant's air quality impact analysis. The following table shows the maximum predicted SO2 and NO2 increments consumed by all sources in the PSD Class II area (vicinity of the facility) including this project.

Pollutant-Averaging Time-Allowable Increment (ug/m3)-Increment Consumed (ug/m3)-Increment Consumed (%)
SO2

proposed equipment w not adversely impact a quality and that the proje will comply with all appro priate provisions of Chap ters 62-4, 62-204, 62-21 62-212, 62-296, an 62-297, F.A.C. The Permi ting Authority will issue Final Permit in accordanc with the conditions of th proposed Draft Permit ur less a timely petition fo an administrative hearin is filed under Section 120.569 and 120.57, F.S or unless public commen received in accordance with this notice results in a different decision or a sig nificant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be post-marked by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish notice of the time, date, and location in the Florida Administrative Weekly and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority will issue a revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding with the existing wet scrubber.

The Department reviewed the applicant's air quality impact analysis. The following table shows the maximum predicted SO2 and NO2 increments consumed by all sources in the PSD Class II area (vicinity of the facility) including this project.

Pollutant-Averaging Time-Allowable Increment (ug/m3)-Increment Consumed (ug/m3)-Increment Consumed (%)
SO2
3-hour-512(ug/m3)-447(ug/m3)-87%
24-hour-91(ug/m3)-78(ug/m3)-86%
Annual-20(ug/m3)-0.12(ug/m3)-0.6%
NO2
Annual-25(ug/m3)-13(ug/m3)-52%

In addition, there were no significant impacts predicted for the PSD Class I, Bradwell Bay or St. Marks National Wilderness Areas located 96 and 112 kilometers east of the facility, respectively. Therefore, no PSD Class I increment consumption analyses were required for SO2 and NO2 in these areas. Emissions from the facility will not significantly contribute to or cause a violation of any state or federal ambient air quality standards.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212, of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements, and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available on the following web site: http://www.dep.state.fl.us/air/eproducts/apds/default.asp.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable as- shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency action or proposed decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so state;

(e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and,

(g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available for this proceeding.
August 2, 2007

Harvey, Mary

7/27/07

From: Clements, Tom [TMCLEMEN@SMURFIT.COM]

Sent: Monday, August 06, 2007 2:41 PM

To: Harvey, Mary

Subject: RE: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

I was on vacation last week, sorry about that. Message received.
Tom Clements

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Wednesday, August 01, 2007 2:18 PM
To: Mr. Jim Little, EPA Region 4; Clements, Tom
Subject: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Good Afternoon:

This email was sent to you on 7/27. Please email me back if you have received this letter. We need the read receipt so that we can complete the files.

Thank you very kindly.
Mary

From: Harvey, Mary
Sent: Friday, July 27, 2007 2:46 PM
To: 'bsammons@smurfit.com'
Cc: Thomas, Bruce X.
Subject: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

From: Harvey, Mary
Sent: Friday, July 27, 2007 2:09 PM
To: 'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc: Koerner, Jeff; Thomas, Bruce X.; Gibson, Victoria; Adams, Patty
Subject: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open

Harvey, Mary

From: Harvey, Mary
Sent: Wednesday, August 01, 2007 3:18 PM
To: 'Mr. Jim Little, EPA Region 4'; 'Mr. Tom Clements, Smurfit-Stone'
Subject: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT
Attachments: 0050009.028.AC.D_pdf.zip

Good Afternoon:

This email was sent to you on 7/27. Please email me back if you have received this letter. We need the read receipt so that we can complete the files.

Thank you very kindly.
Mary

From: Harvey, Mary
Sent: Friday, July 27, 2007 2:46 PM
To: 'bsammons@smurfit.com'
Cc: Thomas, Bruce X.
Subject: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

From: Harvey, Mary
Sent: Friday, July 27, 2007 2:09 PM
To: 'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc: Koerner, Jeff; Thomas, Bruce X.; Gibson, Victoria; Adams, Patty
Subject: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site:
http://www.adobe.com/products/acrobat/readstep.html.

Harvey, Mary

From: Forney.Kathleen@epamail.epa.gov
Sent: Wednesday, August 01, 2007 3:41 PM
To: Harvey, Mary
Cc: Little.James@epamail.epa.gov
Subject: RE: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Hi Mary,

Sorry. I didn't realize that you needed it from both of us. If Jim's suggestion isn't satisfactory, then maybe its just easier to only have one of us on the list.

Thanks,
Katy

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30024

Phone: 404-562-9130
Fax: 404-562-9019

"Harvey, Mary" <Mary.Harvey@dep.state.fl.us>
08/01/2007 03:36 PM

To: Kathleen Forney/R4/USEPA/US@EPA
cc: James Little/R4/USEPA/US@EPA
Subject: RE: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Katy, yes I did get a confirmed receipt from you. I needed the confirmed receipt for Jim Little. Is this a confirmed receipt for Jim?

Thanks,
Mary

-----Original Message-----
From: Forney.Kathleen@epamail.epa.gov [mailto:Forney.Kathleen@epamail.epa.gov]
Sent: Wednesday, August 01, 2007 3:31 PM
To: Harvey, Mary
Cc: Little.James@epamail.epa.gov
Subject: Fw: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Hey Mary,

- Next page

I thought I confirmed the reciept of this previous, but just in case it didn't reach you... Yes we got this.

Thanks,
Katy

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30024

Phone: 404-562-9130
Fax: 404-562-9019
----- Forwarded by Kathleen Forney/R4/USEPA/US on 08/01/2007 03:30 PM -----

Kathleen Forney/R4/USEPA/US
07/27/2007 04:04 PM

To
"Harvey, Mary" <Mary.Harvey@dep.state.fl.us>

cc

Subject
Re: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT(Document link: Kathleen Forney)

Thanks.

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30024

Phone: 404-562-9130
Fax: 404-562-9019

"Harvey, Mary" <Mary.Harvey@dep.state.fl.us>
07/27/2007 02:11 PM

To
James Little/R4/USEPA/US@EPA, Kathleen Forney/R4/USEPA/US@EPA

cc
"Koerner, Jeff" <Jeff.Koerner@dep.state.fl.us>, "Adams, Patty" <Patty.Adams@dep.state.fl.us>, "Thomas, Bruce X." <Bruce.X.Thomas@dep.state.fl.us>

Subject
FW: Smurfit-Stone Container Enterprises, Inc. - Project

Harvey, Mary

From: Little.James@epamail.epa.gov
Sent: Wednesday, August 01, 2007 3:39 PM
To: Harvey, Mary
Cc: Forney.Kathleen@epamail.epa.gov
Subject: RE: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Mary -

Consider me confirmed. In future, if either Katy Forney or I respond, that means we both received the message. Is that good enough, or do you still need both of us to respond?

Jim Little - EPA Region 4
(404) 562-9118

"Harvey, Mary" <Mary.Harvey@dep.state.fl.us>
08/01/2007 03:36 PM

To: Kathleen Forney/R4/USEPA/US@EPA
cc: James Little/R4/USEPA/US@EPA
Subject: RE: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Katy, yes I did get a confirmed receipt from you. I needed the confirmed receipt for Jim Little. Is this a confirmed receipt for Jim?

Thanks,
Mary

-----Original Message-----
From: Forney.Kathleen@epamail.epa.gov [mailto:Forney.Kathleen@epamail.epa.gov]
Sent: Wednesday, August 01, 2007 3:31 PM
To: Harvey, Mary
Cc: Little.James@epamail.epa.gov
Subject: Fw: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Hey Mary,

I thought I confirmed the reciept of this previous, but just in case it didn't reach you... Yes we got this.

Thanks,
Katy

Katy R. Forney

Harvey, Mary

From: Harvey, Mary
Sent: Wednesday, August 01, 2007 3:47 PM
To: 'Little.James@epamail.epa.gov'
Cc: Forney.Kathleen@epamail.epa.gov
Subject: RE: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Jim -

I need a read receipt from you and Kathy please. This is needed for our permitting tracking system files.

Sorry for any inconvenience.

Thanks,
Mary

-----Original Message-----
From: Little.James@epamail.epa.gov [mailto:Little.James@epamail.epa.gov]
Sent: Wednesday, August 01, 2007 3:39 PM
To: Harvey, Mary
Cc: Forney.Kathleen@epamail.epa.gov
Subject: RE: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Mary -

Consider me confirmed. In future, if either Katy Forney or I respond, that means we both received the message. Is that good enough, or do you still need both of us to respond?

Jim Little - EPA Region 4
(404) 562-9118

"Harvey, Mary" <Mary.Harvey@dep.state.fl.us>

08/01/2007 03:36 PM

To
Kathleen Forney/R4/USEPA/US@EPA
cc
James Little/R4/USEPA/US@EPA
Subject
RE: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Harvey, Mary

From: Dee_Morse@nps.gov
Sent: Monday, July 30, 2007 5:10 PM
To: Harvey, Mary
Subject: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Return Receipt

Your document:	Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT
was received by:	Dee Morse/DENVER/NPS
at:	07/30/2007 03:10:32 PM

Harvey, Mary

From: Harvey, Mary
Sent: Friday, July 27, 2007 2:09 PM
To: 'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc: Koerner, Jeff; Thomas, Bruce X.; Gibson, Victoria; Adams, Patty
Subject: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT
Attachments: 0050009.028.AC.D_pdf.zip

Tracking:

Recipient	Delivery	Read
'Mr. B. G. Sammons, Smurfit-Stone'		
'Mr. Tom Clements, Smurfit-Stone'		
'Mr. David Buff, Golder Associates'		
Bradburn, Rick	Delivered: 7/27/2007 2:09 PM	
'Ms. Kathleen Forney, EPA Region 4'		
'Mr. Jim Little, EPA Region 4'		
'Mr. Dee Morse, National Park Service'		
Koerner, Jeff	Delivered: 7/27/2007 2:09 PM	
Thomas, Bruce X.	Delivered: 7/27/2007 2:09 PM	Read: 7/27/2007 2:09 PM
Gibson, Victoria	Delivered: 7/27/2007 2:09 PM	Read: 7/27/2007 2:17 PM
Adams, Patty	Delivered: 7/27/2007 2:09 PM	

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

Harvey, Mary

From: Buff, Dave [DBuff@GOLDER.com]
To: undisclosed-recipients
Sent: Friday, July 27, 2007 6:10 PM
Subject: Read: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Your message

To: DBuff@GOLDER.com
Subject:

was read on 7/27/2007 6:10 PM.

Harvey, Mary

From: Sammons, Bob [BSAMMONS@SMURFIT.COM]
To: undisclosed-recipients
Sent: Friday, July 27, 2007 4:30 PM
Subject: Read: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Your message

To: BSAMMONS@SMURFIT.COM
Subject:

was read on 7/27/2007 4:30 PM.

Harvey, Mary

From: Thomas, Bruce X.
To: Harvey, Mary
Sent: Friday, July 27, 2007 2:46 PM
Subject: Read: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Your message

To: 'bsammons@smurfit.com'
Cc: Thomas, Bruce X.
Subject: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT
Sent: 7/27/2007 2:46 PM

was read on 7/27/2007 2:46 PM.

Harvey, Mary

From: Gibson, Victoria
To: Harvey, Mary
Sent: Friday, July 27, 2007 2:17 PM
Subject: Read: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Your message

To:	'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc:	Koerner, Jeff; Thomas, Bruce X.; Gibson, Victoria; Adams, Patty
Subject:	Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT
Sent:	7/27/2007 2:09 PM

was read on 7/27/2007 2:17 PM.

Harvey, Mary

From: Bradburn, Rick
Sent: Friday, July 27, 2007 2:09 PM
To: Harvey, Mary
Subject: Out of Office AutoReply: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

I am currently out of the office. I will be back in the office on Monday, July 30. If you need assistance, please contact Mary Beth Curle at mary.beth.curle@dep.state.fl.us or 850-595-8300 ext. 1220 and she will direct you to the appropriate person.

Thank you.

Harvey, Mary

From: Forney.Kathleen@epamail.epa.gov
Sent: Friday, July 27, 2007 4:04 PM
To: Harvey, Mary
Subject: Re: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Thanks.

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30024

Phone: 404-562-9130
Fax: 404-562-9019

"Harvey, Mary" <Mary.Harvey@dep.state.fl.us>

07/27/2007 02:11 PM

To
James Little/R4/USEPA/US@EPA, Kathleen Forney/R4/USEPA/US@EPA

cc
"Koerner, Jeff" <Jeff.Koerner@dep.state.fl.us>, "Adams, Patty" <Patty.Adams@dep.state.fl.us>, "Thomas, Bruce X." <Bruce.X.Thomas@dep.state.fl.us>

Subject
FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

From: Harvey, Mary
Sent: Friday, July 27, 2007 2:09 PM
To: 'Mr. B. G. Sammons, Smurfit-Stone'; 'Mr. Tom Clements, Smurfit-Stone'; 'Mr. David Buff, Golder Associates'; Bradburn, Rick; 'Ms. Kathleen Forney, EPA Region 4'; 'Mr. Jim Little, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc: Koerner, Jeff; Thomas, Bruce X.; Gibson, Victoria; Adams, Patty
Subject: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting

Harvey, Mary

From: Adams, Patty
To: Harvey, Mary
Sent: Friday, July 27, 2007 3:45 PM
Subject: Read: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT

Your message

To: 'Mr. Jim Little, EPA Region 4'; 'Ms. Kathleen Forney, EPA Region 4'
Cc: Koerner, Jeff; Adams, Patty; Thomas, Bruce X.
Subject: FW: Smurfit-Stone Container Enterprises, Inc. - Project #0050009-028-AC-DRAFT
Sent: 7/27/2007 2:11 PM

was read on 7/27/2007 3:45 PM.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

July 27, 2007

Mr. B. G. Sammons, General Manager
Smurfit-Stone Container Enterprises, Inc.
One Everitt Avenue
Panama City, Florida 32402

Re: Draft Air Permit No. PSD-FL-388
Project No. 0050009-028-AC
Panama City Mill, Lime Kiln
Addition of Petroleum Coke

Dear Mr. Sammons:

On February 23, 2007, Smurfit-Stone Container Enterprises, Inc. submitted an application for an air construction permit subject to the preconstruction review requirements for the Prevention of Significant Deterioration of Air Quality. The primary purpose of the project is to modify the existing lime kiln to add petroleum coke as a primary fuel. This work will be conducted at the Panama City Mill, which is located in Bay County at One Everitt Avenue, Panama City, Florida. Enclosed are the following documents:

- The Written Notice of Intent to Issue Air Permit provides important information regarding: the Bureau of Air Regulation's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Bureau of Air Regulation's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation.
- The Public Notice of Intent to Issue Air Permit is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.
- The Technical Evaluation and Preliminary Determination summarizes the Bureau of Air Regulation's technical review of the application and provides the rationale for making the preliminary determination to issue a draft permit.
- The proposed Draft Permit includes the specific conditions that will regulate the emissions units covered by the proposed project.

If you have any questions, please contact the Project Engineer, Bruce Thomas, at 850/488-0114.

Sincerely,

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

TLV/jfk/bt

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

In the Matter of an
Application for Air Permit by:

Smurfit-Stone Container Enterprises, Inc
One Everitt Avenue
Panama City, Florida 32402

Authorized Representative:
B. G. Sammons, General Manager

Air Permit No. PSD-FL-388
Project No. 0050009-028-AC
Panama City Mill
Existing Lime Kiln
Addition of Petroleum Coke
Bay County, Florida

Facility Location: The applicant, Smurfit-Stone Container Enterprises, Inc., operates the existing Panama City Mill, which is located in Bay County at One Everitt Avenue in Panama City, Florida. The existing facility is a Kraft pulp and paper mill.

Project: The purpose of this project is to modify the existing lime kiln to fire petroleum coke as a primary fuel. The project includes burners, a storage silo, a conveying system, a weigh feeder and blower, and enclosure or partial enclosure of the recovery boilers. The project is subject to preconstruction review for nitrogen oxides and sulfur dioxide in accordance with the Rule 62-212.400, Florida Administrative Code (F.A.C.) for the Prevention of Significant Deterioration of Air Quality. Details of the project are provided in the application and the enclosed Technical Evaluation and Preliminary Determination.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and F.A.C. Chapters 62-4, 62-210, and 62-212. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at the address or phone number listed above. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be post-marked by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish notice of the time, date, and location in the Florida Administrative Weekly and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority will issue a revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within fourteen 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, the Public Notice of Intent to Issue Air Permit, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by electronic mail with received receipt requested before the close of business on 7/27/07 to the persons listed below.

Mr. B. G. Sammons, Smurfit-Stone (bgsammons@smurfit.com)
Mr. Tom Clements, Smurfit-Stone (tmclemen@smurfit.com)
Mr. David Buff, Golder Associates (dbuff@golder.com)
Mr. Rick Bradburn, NWD Office (rick.bradburn@dep.state.fl.us)
Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
Mr. Jim Little, EPA Region 4 (little.james@epa.gov)
Mr. Dee Morse, National Park Service (Dee_Morse@nps.gov)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

(Clerk) 7/27/07 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation
Draft Air Permit No. PSD-FL-388, Project No. 0050009-028-AC
Smurfit-Stone Container Enterprises, Inc., Panama City Mill
Bay County, Florida

Applicant: The applicant for this project is Smurfit-Stone Container Enterprises, Inc. The applicant's authorized representative and mailing address is: B. G. Sammons, General Manager, Smurfit-Stone Container Enterprises, Inc., Panama City Mill, One Everitt Avenue, Panama City, Florida 32402.

Facility Location: Smurfit-Stone Container Enterprises, Inc., operates the existing Panama City Mill, which is located in Bay County at One Everitt Avenue in Panama City, Florida 32402. The existing facility is a Kraft pulp and paper mill.

Project: The applicant proposes to add petroleum coke as a primary fuel to the existing lime kiln. The following equipment will be installed: a new lime kiln burner capable of firing a combination of petroleum coke with No. 6 fuel oil and/or natural gas; a petcoke storage silo, a dense phase pneumatic conveying system that will be used to unload the delivery trucks and transport the ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. The project also includes enclosing or partially enclosing the recovery boiler building to reduce corrosion and maintenance.

The project is projected to result in a net actual emissions increase of 155 tons per year of nitrogen oxides (NO_x) and a net actual emissions increase of 77 tons per year of sulfur dioxide (SO_2). Because these rates are greater than the significant emissions rates, the project is subject to preconstruction review for these pollutants in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. Pursuant to this rule, the Department is required to make a determination of the Best Available Control Technology (BACT) and review the ambient air quality impacts for each pollutant. The Department's preliminary BACT determination for NO_x is based on good combustion practices and low-NO_x burners. The Department's preliminary BACT determination for SO_2 is based on proper kiln design and operation, optimal mud washing and flue gas desulfurization with the existing wet scrubber.

The Department reviewed the applicant's air quality impact analysis. The following table shows the maximum predicted SO_2 and NO_2 increments consumed by all sources in the PSD Class II area (vicinity of the facility) including this project.

Pollutant	Averaging Time	Allowable Increment ($\mu g/m^3$)	Increment Consumed ($\mu g/m^3$)	Increment Consumed (%)
SO_2	3-hour	512	447	87%
	24-hour	91	78	86%
	Annual	20	0.12	0.6%
NO_2	Annual	25	13	52%

In addition, there were no significant impacts predicted for the PSD Class I Bradwell Bay or St. Marks National Wilderness Areas located 96 and 112 kilometers east of the facility, respectively. Therefore, no PSD Class I increment consumption analyses were required for SO_2 and NO_2 in these areas. Emissions from the facility will not significantly contribute to or cause a violation of any state or federal ambient air quality standards.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is:

2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available on the following web site: http://www.dep.state.fl.us/air/eproducts/apds/default.asp.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be post-marked by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish notice of the time, date, and location in the Florida Administrative Weekly and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority will issue a revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of when and how the petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available for this proceeding.

Memorandum

Florida Department of
Environmental Protection

TO:	Trina Vielhauer, Bureau of Air Regulation
THROUGH:	Jeff Koerner, Air Permitting North Section
FROM:	Bruce Thomas, Air Permitting North Section
DATE:	July 25, 2007
SUBJECT:	Draft Air Permit No. PSD-FL-388 Project No. 0050009-028-AC Smurfit-Stone Container Enterprises, Inc., Panama City Mill Addition of Petroleum Coke to the Existing Lime Kiln

This project is subject to PSD preconstruction review. Attached for your review are the following items:

- Written Notice of Intent to Issue Air Permit;
- Public Notice of Intent to Issue Air Permit;
- Technical Evaluation and Preliminary Determination;
- Draft Permit; and
- P.E. Certification.

The draft permit authorizes modification of the existing lime kiln to add petroleum coke as a primary fuel. The proposed work will be conducted at the existing Panama City Mill, which is located in Bay County, Florida. The Technical Evaluation and Preliminary Determination provides a detailed description of the project and the rationale for issuance. The P.E. certification briefly summarizes the proposed project. I recommend your approval of the attached Draft Permit.

Attachments

P.E. CERTIFICATION STATEMENT

APPLICANT

Smurfit-Stone Container Enterprises, Inc
One Everitt Avenue
Panama City, Florida 32402

Air Permit No. PSD-FL-388
Project No. 0050009-028-AC
Panama City Mill, Lime Kiln
Addition of Petroleum Coke
Bay County, Florida

PROJECT DESCRIPTION

This project authorizes the addition of petcoke as a primary fuel for the existing lime kiln. The following new equipment will be installed: a new 180 MMBtu/hour lime kiln burner capable of firing a combination of petroleum coke with No. 6 fuel oil and/or natural gas; a 250 ton ground petcoke storage silo, a dense phase pneumatic conveying system that will be used to unload the delivery trucks and transport the ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. The project also includes enclosing the recovery boilers building to reduce corrosion and maintenance.

The project is subject to preconstruction review for particulate matter NO_X and SO_2 in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration of Air Quality, which requires a determination of the Best Available Control Technology (BACT) and an ambient air quality analysis. The Department's preliminary BACT determination for NO_X is based on good combustion practices and a low-NO_x burner system. The Department's preliminary BACT determination for SO_2 is based on proper kiln design and operation, optimal mud washing and flue gas desulfurization.

***I HEREBY CERTIFY** that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).*

Jeffery F. Koerner — 7-27-07

Jeffery F. Koerner, P.E.
Registration No. 49441

(Date)

TECHNICAL EVALUATION

&

PRELIMINARY DETERMINATION

APPLICANT

Smurfit-Stone Container Enterprises, Inc.
One Everitt Avenue
Panama City, Florida 32402

Panama City Mill
ARMS Facility ID No. 0050009

PROJECT

Draft Permit No. PSD-FL-388
Project No. 0050009-028-AC
Addition of Petroleum Coke to Lime Kiln

COUNTY

Bay County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Air Permitting North Section
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

July 24, 2007

1. GENERAL PROJECT INFORMATION

Facility Description and Location

The facility is a Kraft pulp and paper mill with Standard Industrial Classification codes of SIC No. 2611 and 2621. The facility is located in Bay County at One Everitt Avenue in Panama City, Florida. The UTM coordinates are Zone 16, 632.8 km East, and 3335.1 km North. The existing mill is comprised of major activities areas such as: wood handling facility; pulping, bleaching, and chemical recovery; power house operations; paper machines; finishing, shipping, and warehouse operations; and other associated processes and equipment.

Primary Regulatory Categories

- The facility is a major source of hazardous air pollutants.
- The facility has no units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, Florida Administrative Code (F.A.C.).
- The facility is a major stationary source in accordance with Rule 62-212.400 (PSD), F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

Smurfit-Stone Container Enterprises, Inc. submitted an application for an air construction permit subject to the PSD preconstruction review requirements of Rule 62-212.400, F.A.C. The applicant proposes to add petroleum coke (petcoke) as a primary fuel to the existing lime kiln. This project includes a new 180 million Btu/hour (MMBtu/hour) lime kiln burner system capable of firing a combination of petcoke with No. 6 fuel oil or natural gas; a 250 ton ground petcoke storage silo, a dense phase pneumatic conveying system that will be used to unload the delivery trucks and transport the ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. The petcoke will have a maximum sulfur content of 8.0% by weight. For purposes of flame stability, petcoke will be co-fired fired with oil or gas and will constitute up to 90% of the maximum heat input rate. Petcoke is a less expensive fuel than natural gas and fuel oil. The applicant estimates a savings of approximately $2.2 million per year in fuel costs if 75% petcoke is fired.

The project will also partially enclose the recovery boiler building to reduce corrosion and maintenance. The enclosure will be implemented in two phases. The first phase will add a wall only along the east side of the building. The second phase will initially consist of adding a second wall along the south side of the building and may eventually include enclosing the entire building. The enclosures affect the dispersion of the stack plumes for the Nos. 3 and 4 combination boilers. Therefore, the applicant also requests lower sulfur dioxide emissions standards for these units.

The following existing emissions units will be affected by this project.

ID No.	Description
004	Lime Kiln
015	No. 3 Bark Boiler
016	No. 4 Bark Boiler

The following new emissions units will be added by this project.

ID No.	Description
038	Petcoke Handling and Storage

Processing Schedule

February 23, 2007	Department received the application for an air pollution construction permit.
March 23, 2007	Department requested additional information; application incomplete.
April 12, 2007	Department received additional information.
May 11, 2007	Department requested additional information; application incomplete.
June 13, 2007	Department received additional information.
July 23, 2007	Department received additional information; application complete.

2. APPLICABLE REGULATIONS

State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes. The Florida Statutes authorize the Department of Environmental Protection (Department) to establish rules and regulations regarding air quality as part of the F.A.C. This project is subject to the applicable rules and regulations defined in the following F.A.C. Chapters: 62-4 (Permitting Requirements); 62-204 (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference); 62-210 (Permits Required, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms); 62-212 (Preconstruction Review, PSD Review and BACT, and Non-attainment Area Review and LAER); 62-213 (Title V Air Operation Permits for Major Sources of Air Pollution); 62-296 (Emission Limiting Standards); and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures).

The following summarizes the state rule applicability for the emissions units affected by this project:

- The lime kiln is currently subject to the applicable requirements in Rule 62-296.404, F.A.C. for Kraft pulp mills. No new requirements in this rule are triggered. As shown below, PSD preconstruction review in accordance with Rule 62-212.400, F.A.C. applies to the lime kiln.
- The new petcoke storage and handling activities are subject to the general preconstruction review requirements of Rule 62-212.300, F.A.C. These activities will result in increases of particulate matter emissions, but at less than the PSD significant emissions rate.
- The Nos. 3 and 4 combination boilers are not subject to any new requirements because the project will not increase emissions. Lower sulfur dioxide emissions standards are requested to satisfy requirements for the air quality analysis.

Federal Regulations

The Environmental Protection Agency establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 identifies New Source Performance Standards (NSPS) for a variety of industrial activities. Part 61 specifies National Emissions Standards for Hazardous Air Pollutant (NESHAP) based on specific pollutants. Part 63 specifies NESHAP provisions based on the Maximum Achievable Control Technology (MACT) for given source categories. Federal regulations are adopted in Rule 62-204.800, F.A.C. The following summarizes the affected emissions units with regard to the federal regulations.

- The lime kiln is currently subject to the applicable requirements in 40 CFR 63 for NESHAP Subparts A (General Provisions), S (Pulp and Paper Industry) and MM (Kraft Pulp Mills). The project does not trigger any new requirements in these rules for the lime kiln. However, the project does result in an increase in the maximum hourly emissions rate for particulate matter, which subjects the lime kiln to the applicable requirements for this pollutant in 40 CFR 60 for NSPS Subparts A (General Provisions) and BB (Kraft Pulp Mills). Therefore, the draft permit will include the applicable requirements from NSPS Subparts A and BB.
- The new petcoke storage and handling activities are not subject to any specific federal requirements.

- The Nos. 3 and 4 combination boilers are not subject to any new federal requirements as a result of this project.

General PSD Applicability

The Department regulates major stationary sources in accordance with Florida's PSD program pursuant to Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or areas designated as "unclassifiable" for these regulated pollutants. As defined in Rule 62-210.200, F.A.C., a facility is considered a "major stationary source" if it emits or has the potential to emit 5 tons per year of lead, 250 tons per year or more of any PSD pollutant, or 100 tons per year or more of any PSD pollutant and the facility belongs to one of the 28 listed PSD major facility categories. PSD pollutants include: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter; particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); Fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as nonmethane organic compounds (NMOC); and mercury (Hg).

For major stationary sources, PSD applicability is based on emissions thresholds known as the "significant emission rates" as defined in Rule 62-210.200, F.A.C. Emissions of PSD pollutants from the project exceeding these rates are considered "significant" and the Best Available Control Technology (BACT) must be employed to minimize emissions of each PSD pollutant. Although a facility may be "major" for only one PSD pollutant, a project must include BACT controls for any PSD pollutant that exceeds the corresponding significant emission rate. Rule 62-210.200, F.A.C. defines "BACT" as:

An emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account:

1. *Energy, environmental and economic impacts, and other costs;*
2. *All scientific, engineering, and technical material and other information available to the Department; and*
3. *The emission limiting standards or BACT determinations of Florida and any other state;*

determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.

If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of an emissions unit or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation.

Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60, 61, and 63.

In addition, applicants must provide an air quality analysis that evaluates the predicted air quality impacts resulting from the project for each significant PSD pollutant.

PSD Applicability for the Project

The project is located in Bay County, which is in an area that is currently in attainment with the state and federal AAQS or otherwise designated as unclassifiable. The facility is a Kraft pulp mill, which is one of the 28 listed PSD major facility categories, and emits or has the potential to emit 100 tons per year or more of at least one PSD pollutant. Therefore, the facility is a major stationary source and the project is subject to a PSD applicability review. The following table identifies the estimated emissions increases based on the initial application.

Summary of PSD Applicability as Provided by the Applicant

Pollutant	Net Emissions Increase	PSD Significant Emissions Rate	Subject to PSD Review?
CO	none projected	100 tons/year	No
NO_X	155 tons/year	40 tons/year	Yes
PM	16 tons/year	25 tons/year	No
PM_{10}	10 tons/year	15 tons/year	No
SAM	6 tons/year	7 tons/year	No
SO_2	77 tons/year	40 tons/year	Yes
VOC	none projected	40 tons/year	No
Hg	none projected	200 pounds/year	No
Pb	none projected	1200 pounds/year	No
Fl	none projected	3 tons/year	No
H_2S	none projected	10 tons/year	No
TRS	5 tons/year	10 tons/year	No
D/F	none projected	3.5×10^{-06} tons/year	No

The table identifies overall emissions increases based on projected emissions and a netting analysis. As shown in the table, the project is subject to PSD preconstruction review for emissions of NO_X and SO_2. The following sections provide the BACT review and air quality analysis for these pollutants.

4. BACT REVIEW FOR LIME KILN (EU-004)

This section summarizes the review and preliminary determination of BACT for NO_X and SO_2 emissions.

NO_X BACT Analysis

Discussion

Emissions of NO_X are a result of the oxidation of nitrogen available in the combustion air (thermal NO_X) and the conversion of chemically-bound nitrogen in the fuel (fuel-bound NO_X). Thermal NOx forms in the high temperature area of the burner, increases exponentially with increasing flame temperature and increases linearly with increasing residence time. Fuel-bound NO_X forms from the combustion of fuels containing bound nitrogen. Based on the applicant's proposal, the total potential NO_X emissions would be 449 tons per year. Projected actual NO_X emissions increases from the project are predicted to be 137 tons per year.

Applicant's Proposal

A summary of the applicant's evaluation of the available technologies is as follows:

Oxidation/Reduction Scrubbing (O/R)

Several proprietary add-on NO_X removal processes are commercially available, such as Tri-Mer Corporation's TRI-NO_X and The BOC Group's $LoTO_X$ (Low Temperature Oxidation) NO_X control system. It has been reported that O/R scrubbing has a theoretical NO_X removal efficiency of 90%. The ability of O/R scrubbing to perform on a lime kiln or a similar source has never been demonstrated. The presence of carbon dioxide from both calcination and combustion is also a complicating factor. The technology is not listed for lime kilns in EPA's RACT/BACT/LAER Clearinghouse (RBLC). For the reasons listed above, the applicant does not consider O/R scrubbing as technically feasible for the lime kiln.

Selective Catalytic Reduction (SCR)

SCR involves the injection of ammonia (NH_3) and a catalytic reactor to convert NO_X to nitrogen and water vapor. Several technical and operational difficulties exist with SCR technology as applied to lime kilns. The SCR process is temperature sensitive, and efficient operation requires flue gas operating temperatures within a narrowly defined range. Load fluctuations can result in exhaust gas temperature fluctuations, which upset the NH_3/NO_X molar ratio and, in turn, affect removal efficiency. A lower than necessary temperature results in slow reaction rates, which leads to low NO_X conversion rates, as well as unreacted NH_3 passing through the reactor bed (ammonia slip). A higher temperature than necessary results in shortened catalyst life and can lead to the oxidation of NH_3 and the formation of additional NO_X. SCR technology has not been applied to lime kilns due to the variable exhaust temperatures associated with the process. Furthermore, the optimum temperature range for the catalytic reaction is 575°F to 750°F while a lime kiln typically operates in the 1,600 – 2,700 °F range for the hot end and approximately 600 °F for the cold end.

The NH_3 also causes potential corrosion problems, and unreacted ammonia may also react with sulfur to form ammonium bisulfate, which has the potential to create a visible and/or detached plume. The lime in the lime kiln may also react with the sulfur to form calcium sulfate. Ammonium bisulfate and calcium sulfate coatings, along with other dusts, will block the catalyst pores, thereby reducing the catalyst effectiveness. SCR technology is not listed for lime kilns in EPA's RBLC. The applicant does not consider SCR to be technically feasible due to the likelihood of catalyst fouling and operation outside the effective temperature range.

Selective Non-Catalytic Reduction (SNCR)

SNCR involves the injection of ammonia or urea at an optimum temperature window (1600° F to 2100° F) to convert NO_X to nitrogen and water vapor. Several difficulties preclude use of an SNCR system to control NO_X emissions from a lime kiln including: maintaining the proper temperature window, maintaining the correct NH_3/NO_X ratio during any load fluctuations, excessive ammonia slip and resulting formation of ammonium salts resulting in a visible plume. The optimum NH_3/NO_X molar ratio as well as correct reaction temperatures would be extremely difficult to monitor and maintain because of load and exhaust gas temperature fluctuations. In addition, the correct temperature window occurs inside the rotating body of the kiln, which presents difficulties in locating the ammonia injection nozzles and has not been attempted on any lime kiln. The applicant does not consider SNCR as technically feasible for a lime kiln at the present time.

Flue Gas Recirculation (FGR)

In a FGR control system, a portion of the flue gases are recirculated back to the primary combustion chamber to create a lower oxygen content atmosphere. This oxygen-lean atmosphere provides less oxygen available for NO_X formation. Due to the lower temperature of the recirculated gases, peak flame temperature is lowered. Therefore, FGR reduces both fuel and thermal NO_X. Reducing the peak flame temperature below the temperature necessary for proper lime formation is not acceptable for ensuring fully calcined lime. Since the kiln is 375 feet long, FGR would also require an excessive amount of ducting from the kiln outlet back to the kiln inlet. FGR has never been demonstrated on a lime kiln and the applicant does not consider FGR as technically feasible for the project.

Non-Selective Catalytic Reduction (NSCR)

NSCR is another exhaust gas treatment technique for NO_X reduction that uses a catalyst, typically a platinum/rhodium catalyst. Use of NSCR reduces emissions of NO_X, CO, and VOC simultaneously across the catalyst bed. It is only effective in fuel rich combustion air. To achieve a fuel-rich environment, excess combustion air must be kept to a minimum, typically resulting in a flue gas oxygen content of less than 3% by volume. Ideally, the oxygen content should be less than 0.5% by volume for proper operation of NSCR.

The lime kiln at the Panama City Mill will normally operate with in-stack oxygen concentrations above 5% by volume. Decreasing the excess air, and thus the oxygen concentrations, may result in increased CO emissions. In addition to the operational incompatibility of the control strategy, various problems will arise from the fuel-borne contaminants that cause catalyst poisoning from SO_2 and Cl_2 in the flue gas, and catalyst fouling and plugging from dust that can lead to excessive backpressure. All of these may cause premature failure of the catalyst and reduce the control efficiency. For all of the reasons mentioned above, the applicant considers NSCR as technically infeasible for the lime kiln.

Low NO_X Burners (LNB) and Good Combustion Practices

Traditional burners in a lime kiln are designed to introduce the fuel and air into a single combustion zone. With this arrangement large amounts of excess air must be introduced to obtain optimal flames. This results in a relatively uncontrolled combustion condition and high flame temperatures. The high flame temperatures create thermal NO_X. LNB technology stages combustion at the burner in the high temperature zone of the flame to control the generation of thermal NO_X.

LNB have been extensively tested and used in utility and industrial boilers and this technology has been transferred to lime kilns to the extent possible. Burner flame properties are critical to the quality control and calcining process in the lime kiln. The burner flame shape and properties have a dramatic effect on calcining efficiency. Poor efficiency increases energy usage and decreases the calcining capacity of the kiln. The modern lime kiln burner incorporates features to stage the combustion, lower the peak flame temperature and result in lower NO_X emissions. LNB technology is feasible for this project.

Applicant's Conclusion:

As BACT, the applicant proposes good combustion practices, preventative maintenance and the installation of a LNB system with dual air and gas zones specifically designed to burn combinations of petcoke, gas and oil. For petcoke firing, the applicant proposes a NO_X emissions standard of 0.57 lb/MMBtu, which is equivalent to 103.0 lb/hour, 190.0 ppmvd @ 10% oxygen (O_2), and 5.61 lb/ton of lime produced. When firing natural gas or No. 6 fuel oil, the applicant proposes a single NO_X emission standard of 110 ppmvd @ 10% O_2, which equates to 68.0 lb/hour, 0.38 lb/MMBtu and 3.71 lb/ton of lime produced.

Department's Review

The applicant provided a list of 19 recent NO_X BACT determinations for lime kilns from EPA's RBLC. The NO_X emissions standards range from 100 to 340 ppmvd @ 10% O_2; however, only the Weyerhaeuser Red River Mill identified petcoke as the fuel. The NO_X BACT determination for this project was 190 ppmvd @ 10% O_2. Several of the 19 lime kilns specified "lb/hour" emissions rates, but did not identify any other standards or the kiln capacity, making comparison with Smurfit-Stone lime kiln difficult.

The Department discussed the RBLC listings with EPA Region 4 and adjoining state agencies. The Department was able to determine that the following additional mills fire petcoke: the Georgia-Pacific Port Hudson Mill, the Georgia-Pacific Monticello Mill, the Graymore Cellulose Mill, the Bellefonte Cellulose Mill and the Brunswick Cellulose Mill. The Department was only able to determine comparative units for the Brunswick Cellulose Mill, which is permitted for NO_X at 250 ppmvd @ 10% O_2 when firing petcoke blends and 150 ppmvd @ 10% O_2 when firing fuels other than petcoke blends based on burner design and operation. In addition, compliance for this unit is demonstrated continuously with a NO_X monitoring system.

The preliminary determination from the Georgia Department of Environmental Protection for the Brunswick Cellulose petcoke lime kiln conversion project included a discussion of test data collected on the lime kiln at the Georgia-Pacific Monticello Mill. Tests conducted in March of 2006, showed NO_X emissions of 304 ppmvd @ 10% O_2 when firing a fuel blend with 73% petcoke. Tests conducted in April of 2006 at the Georgia-Pacific Port Hudson Mill showed NO_X emissions of 245 ppmvd @ 10% O_2 when firing a fuel blend with 75% petcoke.

In addition, the Department is aware of the following control technology developments:

- The Department has recently permitted several new preheater/precalciner Portland cement kilns with SNCR systems. Although differences in the design and operation of cement and lime kilns is acknowledged, it is noted that the Portland cement industry claimed that SNCR was technically infeasible and incompatible with cement kilns for many years.
- In its research on Portland cement kilns, the Department discovered at least one cement kiln operating in Europe that currently uses SCR to control NO_X emissions.
- In addition, there is an existing wet cement kiln in Lumbres, France utilizing SNCR to control NO_X emissions overcoming the issue of locating the injectors and piping on the rotating body.
- Cadence Combustion Technology Partners offers a system to deliver mixing air and/or ammonia for SNCR on a rotating kiln.
- FuelTech, Inc., an SNCR vendor, holds a patent for the design of an SNCR system that uses compressed air to inject urea prill in a rotating kiln for SNCR control.

The Department requested the applicant to contact FuelTech, Inc., for a quote on an SNCR system. After reviewing the project, FuelTech, Inc. indicated that load fluctuations could be accommodated in the design of the SNCR system. However, the vendor concluded that an SNCR system would not provide any meaningful reductions because of: the difficulty of injecting the reagent within a rotating kiln; and the overall the length of the kiln (375 feet) and injecting the reagent in the hot end of the kiln (94 feet away from the optimum temperature zone) or injecting the reagent in the cold end of the kiln (200 feet away from the optimum temperature zone).

Conclusion

The Department will continue to research the transfer of SNCR and SCR technology to lime kilns. For this project to modify an existing lime kiln, the Department will establish the following preliminary BACT standards for NO_X emissions based on the new kiln burner design and good operating practices:

Petcoke Blended with Oil and/or Gas: 190.0 ppmvd @ 10% O_2 and 103.0 lb/hour based on a 30-day rolling average (equivalent to 5.61 lb/ton CaO)

Oil and/or Natural Gas: 110 ppmvd @ 10% O_2 and 68.0 lb/hour based on a 30-day rolling average (equivalent to 3.71 lb/ton CaO)

Based on the available information, the above standards appear to be the lowest for a lime kiln firing petcoke. Compliance with the standards will be demonstrated continuously with a NO_X monitoring system, which will be installed within 180 days of initial petcoke firing. The Department considered establishing separate limits for firing petcoke, fuel oil and natural gas and then prorating these limits for firing blends of these fuels. However, the vendor guarantees the NO_X emissions standards for firing petcoke blended with gas or oil. For purposes of flame stability, some gas or oil will be co-fired with up to approximately 90% petcoke. Because the purpose of the project is to reduce operating costs by firing the less expensive petcoke, the Department believes that petcoke will be fired as the primary fuel when fuel costs dictate and that the above standards are sufficient. The standards for firing oil and/or natural gas would apply only when these fuels are fired without petcoke.

SO_2 BACT Analysis

Discussion

Lime muds contain a small amount of sulfur that forms SO_2 when oxidized in the kiln. SO_2 is also formed in lime kilns when fuel oil or petroleum coke is fired as the primary fuel and when non-condensable gases (NCGs) or stripper off-gases (SOGs) containing sulfur are destroyed in the kiln when used as a control device. Much of the SO_2 formed is naturally scrubbed in the kiln as a result of the lime being processed. Based on the applicant's proposal, the potential SO_2 emissions would be 140 tons per year. Projected actual SO_2 emissions increases from the project are predicted to be 77 tons per year.

Applicant's Proposal

A summary of the applicant's evaluation of the available technologies is as follows:

Proper Kiln Design and Operation

The emission of SO_2 from a lime kiln is minimized by employing proper kiln design and operation, which is synonymous with good combustion practices to ensure that SO_2 in the flue gas is readily absorbed by the lime. Efficient combustion is a function of several parameters including the quantity of oxygen supplied in the burner to support combustion of the fuel and the temperature and residence time inside the kiln to which the products of fuel combustion are exposed. Good combustion control practices manage the process to maintain a consistent level of SO_2 absorption within the kiln. Employing good combustion practices is a technically feasible manner in which to control emissions of SO_2.

Optimal Mud Washing

Some sulfur removal (and therefore SO_2 removal) would be expected with optimal lime mud washing. By filtering and washing soluble sodium and sulfur compounds from the lime mud, ball and ring formation is minimized in the lime kiln, which reduces the amount of sulfur available to form SO_2, TRS, and SAM emissions. The Panama City Mill currently utilizes lime mud washing techniques on the lime kiln. The lime mud is washed as thoroughly as possible using fresh water. The solids off of the mud filter are tested on a regular basis, the amount of vacuum is monitored and recorded, and the filter is cleaned regularly with acid.

Flue Gas Desulfurization (FGD)/Wet Scrubbers

FGD systems are collection devices that use an absorbent to remove SO_2 from a gas stream. Although dry sorbents can be injected into the flue gas stream for effective control, FGD systems more frequently use a liquid absorbent as the scrubbing media. Wet scrubbers are collection devices that trap wet particles in order to remove them from a gas stream. They utilize inertial impaction and/or Brownian diffusion as the particle collection mechanism. Wet scrubbers typically use water as the cleaning liquid, but caustic or lime can be added for pH control in order to remove SO_2 from the gas stream. Types of scrubbers include spray scrubbers, cyclone scrubbers, packed-bed scrubbers, plate scrubbers, and venturi scrubbers. The most common scrubber is the venturi scrubber because of its simplicity (no moving parts) and high collection efficiency. In this type of scrubber, a gas stream is passed through a venturi section, before which, a low-pressure liquid (usually water) is added to the throat. The liquid is atomized by the turbulence in the throat and begins to collect pollutants impacting the liquid

The lime kiln at the Panama City Mill is currently equipped with a venturi scrubber followed by a cyclonic collector. The venturi scrubber primarily uses fresh water as the scrubbing media. Although not designed as an SO_2 control device, the venturi scrubber acts as a highly efficient SO_2 scrubber because it collects lime dust particles that exit the lime kiln in the flue gas. This renders the scrubbing liquid as highly alkaline and the venturi scrubber in essence becomes an FGD system using the lime slurry as the scrubbing media.

Applicant's Conclusion

The only feasible SO_2 control technologies for the lime kiln are: proper kiln design and operation; optimal mud washing; and flue gas desulfurization with the existing wet scrubber. As BACT, the applicant proposes SO_2 emissions standards of 32.0 lb/hour when firing petcoke blends and 7.3 lb/hour when burning natural gas or No. 6 fuel oil. Based on firing a blend of 90% petcoke with 10% No. 6 oil and the maximum sulfur contents of the fuels, this represents 98.2% control efficiency.

Department's Review

The Department believes that the current system is capable of more than 98% control. Tests conducted in October of 2002 indicate an average SO_2 emission rate of 5.6 lb/hour when firing oil. Additional tests conducted in February of 2006 indicate an average SO_2 emission rate of less then 0.5 lb/hr when firing oil. The average of these tests would be 3.1 lb/hour. Based on a maximum sulfur content of 2.4% by weight for No. 6 oil and an assumption of 90% capacity during the tests, the Department estimates an uncontrolled stoichiometric SO_2 emission rate of 409.5 lb/hour, which doesn't account for any uncontrolled SO_2 generated from the lime mud. Therefore, the SO_2 control efficiency would be greater than 99%.

Conclusion

The Department preliminarily determines that proper kiln operation, optimal mud washing and wet flue gas desulfurization with proper parametric monitoring and good operating practices represent BACT for SO_2 control in the lime kiln. The following preliminary standards are established as BACT:

Petcoke Only: 1.02 lb/ton of lime produced and 18.8 lb/hour

No. 6 Fuel Oil Only: 0.25 lb/ton of lime produced and 4.6 lb/hour

Compliance will be demonstrated by conducting stack tests in accordance with EPA Methods 6C and 19. When firing a petcoke blend, the standards shall be prorated based on heat input provided from each fuel. No standard is set for natural gas, which contains nearly negligible amounts of sulfur.

Upon completing construction of the new burner system, the BACT standard for firing fuel oil is effective. For the first 180 calendar days after initially firing petcoke, the draft permit includes a temporary standard for petcoke only firing of 1.74 lb/ton of lime produced and 32.0 lb/hour as requested by the applicant. This will provide sufficient time to conduct testing and establish the operating conditions that reflect good control. The draft permit establishes a minimum pH level to be developed based on testing and periodic pH monitoring so that the scrubber liquid may be adjusted as necessary. After the initial temporary period for petcoke firing, the lower BACT standards apply; however, tests conducted within the first 180 days of petcoke firing may be used to demonstrate compliance with the final BACT standards.

5. OTHER PERMIT REQUIREMENTS

Lime Kiln, NSPS Subpart BB Applicability

The existing lime kiln predates NSPS Subpart BB for Kraft pulp mills and is not currently subject to this rule, which regulates TRS and PM emissions. The applicant indicates that the firing of petcoke will not increase the maximum hourly TRS mass emission rate, but will increase the maximum hourly PM emission rate. Pursuant to 40 CFR 60.14(a), "Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere." Therefore, the draft permit includes the NSPS Subpart BB provisions regulating PM emissions as well as the General Provisions in Subpart A. In addition, the draft permit includes a requirement to determine whether or not an increase in the maximum hourly TRS emissions rate occurred in accordance with 40 CFR 60, Appendix C (Determination of Emission Rate Change).

Lime Kiln, Actual PM and TRS Emissions Reports

For projects in which the applicant projects emissions to avoid PSD preconstruction review, Rule 62-212.300(1)(e), F.A.C. requires the permittee to monitor, report and keep records to determine whether a PSD significant emissions increase occurred as a result of the project. Both PM and TRS emissions are close to the corresponding PSD significant emissions rate. Currently, compliance with the PM standards is demonstrated by annual stack tests and compliance with the TRS standard is demonstrated by CEMS. The draft permit requires the annual calculation of actual PM and TRS emissions and reporting pursuant to Rules 62-210.370 and 62-212.300(1)(e), F.A.C.

Petcoke Storage and Handling Activities

The new petcoke storage and handling activities are subject to the general preconstruction review requirements of Rule 62-212.300, F.A.C. Ground petcoke will be delivered to the facility by truck and pneumatically conveyed to a 250 ton ground petcoke storage silo. The storage silo will vent through a baghouse prior to discharging to atmosphere. The ground petcoke will drop into a weigh bin from the storage silo before being conveyed to the kiln burner through the use of a blower and eductor. The piping system that delivers the petcoke to the kiln burner will be completely enclosed. The displaced air from the weigh bin will be redirected to the storage silo and will exit the storage silo baghouse. The baghouse exhaust is limited to 5% opacity with initial and annual testing required. These activities will result in increases of particulate matter emissions, but the overall project is less than the corresponding PSD significant emissions rates.

Enclosure for Recovery Boiler Building

The draft permit authorizes construction of an enclosure for the recovery boiler building to reduce corrosion and maintenance. The enclosure will be implemented in two phases. The first phase will add one wall along the east side of the building. The second phase will add a second wall along the south side of the building and may eventually include enclosing the entire building. The new enclosure adversely affects dispersion of the existing stack plumes. The draft permit includes the following new SO_2 emissions standards based on the air quality analysis provided in support of the PSD application:

Beginning on the day the permittee begins construction of the new enclosure of the east wall of the recovery boiler building:

1. SO_2 emissions from the No. 4 Combination Boiler shall not exceed 690 lb/hour based on a 24-hour average determined from CEMS data; and
2. The combined SO_2 emissions from the Nos. 3 and 4 Combination Boilers shall not exceed 1350 lb/hour based on a 24-hour rolling average determined from CEMS data.

Beginning on the day the permittee begins construction on one or more walls of the recovery boiler building in addition to the east wall:

1. SO_2 emissions from the No. 4 Combination Boiler shall not exceed 690 lb/hour based on a 24-hour average determined from CEMS data;
2. The combined SO_2 emissions from the Nos. 3 and 4 Combination Boilers shall not exceed 1350 lb/hour based on a 3-hour rolling average determined from CEMS data; and
3. The combined SO_2 emissions from the Nos. 3 and 4 Combination Boilers shall not exceed 1100 lb/hour based on a 24-hour average determined from CEMS data.

For each stage of construction identified above, the draft permit requires the permittee to notify the Compliance Authority within one business day of commencing construction of: the construction activity begun and the SO_2 emissions standards in effect. The supporting air quality analysis is discussed in the next section.

6. AIR QUALITY ANALYSIS

The proposed lime kiln project results in PSD significant emissions increases for SO_2 and NO_X. These are criteria pollutants with defined national and state ambient air quality standards (AAQS), PSD increments and significant impact levels. The PSD regulations require the following air quality analyses for this project:

- Significant impact analysis for SO_2 and NO_X;
- Analysis of existing air quality for SO_2 and NO_2;

- PSD increment analysis for SO_2 and NO_2; and
- AAQS analysis for SO_2 and NO_2.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

Determination of Background Concentrations

Background ambient concentrations of the PSD-significant pollutants must be established for use in the required AAQS analysis. The background concentrations represent the combined air quality impacts from sources not included in the modeling analysis and are added to the pollutant impacts predicted by model. To develop the background concentrations, preconstruction ambient monitoring is required for all pollutants subject to PSD review unless exempt or the data requirements can be otherwise satisfied.

Based on an initial air quality modeling analysis, if the maximum air quality impact resulting from the projected emissions increase is less than the corresponding pollutant-specific *de minimis* concentration, the project is exempt from the preconstruction ambient monitoring requirement. If existing representative ambient monitoring data is available, it may be used to satisfy the preconstruction ambient monitoring requirement. In addition, if an acceptable monitoring method has not been established for the specific pollutant, preconstruction ambient monitoring may not be required.

The following table summarizes the initial modeling analysis to determine whether the predicted PSD-pollutant concentrations are above the regulatory de minimis levels.

Maximum Project Impacts Compared to De Minimis Ambient Levels

Pollutant	Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	De Minimis Level ($\mu g/m^3$)	Impact above de minimis level?
SO_2	24-hour	31	13	Yes
NO_2	Annual	5	14	No

As shown in the table, the predicted maximum SO_2 impact from the project is above the applicable de minimis level. Therefore, preconstruction ambient monitoring is required for SO_2. This requirement is satisfied by the use of existing representative ambient monitoring data that is available from Florida's ambient air monitoring network. In addition, this existing data will be used for the NO_2 background concentrations needed for subsequent analyses. The following table shows the background concentrations based on the existing representative ambient monitoring data.

Summary of Background Concentrations

Pollutant	Background Concentrations ($\mu g/m^3$)		
	3-hour	24-hour	Annual
SO_2	71	24	5
NO_2	NA	NA	14

Models and Meteorological Data

PSD Class II Area Model

The EPA-approved American Meteorological Society and EPA Regulatory Model (AERMOD) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. In November of 2005, the EPA promulgated AERMOD as the preferred regulatory model for predicting pollutant concentrations within 50 km from a source. AERMOD is a replacement for the Industrial Source Complex Short-Term Model (ISCST3).

The AERMOD model calculates hourly concentrations based on hourly meteorological data. For evaluating plume behavior within the building wake of structures, the AERMOD model incorporates the Plume Rise Enhancement (PRIME) downwash algorithm developed by the Electric Power Research Institute (EPRI). AERMOD can predict pollutant concentrations for annual, 24-hour, 8-hour, 3-hour and 1-hour averaging periods. A series of specific EPA-recommended model features are referred to as the "regulatory options". The applicant used the regulatory options in each modeling scenario and building downwash effects were evaluated for stacks below the good engineering practice (GEP) stack heights. The stack associated with this project satisfied the GEP stack height criteria.

Meteorological data used in the AERMOD model consists of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service offices located at Apalachicola and Tallahassee Regional Airports, respectively. These stations were selected as the closest primary weather stations to the project area and are most representative of the project site. The meteorological data was collected from 2001 through 2005.

Because five years of data are used in AERMOD, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual averages, the highest annual average predicted by the model was compared with the corresponding standard. For determining the project's significant impact area in the vicinity of the facility, and for determining if significant impacts occur from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to the respective significant impact levels.

PSD Class I Area Model

The Bradwell Bay and St. Marks National Wilderness Areas (NWA) are identified as affected PSD Class I areas. Since these PSD Class I areas are greater than 50 km from the existing facility, long-range transport modeling was required for the PSD Class I increment analysis. The California Puff (CALPUFF) dispersion model was used to evaluate the potential impact from the proposed project on the PSD Class I increments. CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources. The CALPUFF model has the capability to treat time-varying sources. It is also suitable for modeling domains from tens of meters to hundreds of kilometers and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanisms.

The meteorological data was processed for use in the CALPUFF model by the California Meteorological (CALMET) model. The CALMET model utilizes data from multiple meteorological stations and produces a three-dimensional modeling grid domain of hourly temperature and wind fields. The wind field is enhanced by the use of terrain data, which is also input into the model. Two-dimensional fields such as mixing heights, dispersion properties, and surface characteristics are produced by the CALMET model as well. Meteorological data were obtained and processed for the calendar years of 2001-2003. The CALMET wind field and the CALPUFF model options used were consistent with the suggestions of the federal land managers.

Significant Impact Analysis

Initially, the applicant conducts a modeling analysis to determine whether the proposed project will exceed the regulatory "significant impact levels". If the modeling analysis shows the impacts will not be significant, no further modeling is required. If the modeling analysis shows significant impacts, additional multi-source modeling is required to determine the project's impacts on the AAQS and PSD increments.

To determine the significant impact areas for the proposed project in the PSD Class II area in the vicinity of the mill, SO_2 and NO_X concentrations were predicted by using discrete grids for receptor locations. The receptors were located at the following intervals and distances from the origin: every 100 meters from the site fence-line out to 2000 meters; and every 250 meters from 2000 out to 5000 meters. In the PSD Class I areas for the Bradwell Bay and St. Marks National NWA, maximum pollutant concentrations were predicted at 233 discrete receptors. If significant impacts are predicted and further AAQS and PSD increment modeling is required in the Class II area, modeling receptor refinements performed using a polar receptor grid (or equivalent) with a maximum spacing of 100 meters along each radial and an angular spacing between radials of 1 or 2 degrees.

The applicant first conducted modeling using only the proposed project's worst-case emissions changes. The lime kiln project's partial enclosure of the recovery boiler building would cause downwash from the Nos. 3 and 4 Combination Boilers. The following maximum emission rates from these units result in the highest predicted concentrations for comparing to the significant impact levels and, in turn, the AAQS or the allowable PSD Class II increments.

- Case 1 (east wall enclosure only): 1350 lb/hour based on a 24-hour average of combined emissions from both boilers with the No. 4 Combination Boiler operating at a maximum rate of 690 lb/hour (24-hour average, as proposed in the pending BART application).
- Case 2 (full enclosure): 1100 lb/hour based on a 24-hour average of combined emissions from both boilers with the No.3 Combination Boiler operating at a maximum rate of 887 lb/hour (24-hour average based on the current permit limit).
- Case 3 (full enclosure): 1350 lb/hour based on a 3-hour average of combined emissions from both boilers with the No. 3 Combination Boiler operating at its maximum limit of 887 lb/hour (24-hour average based on the current permit limit).

The following tables below show the results of the initial significant impact modeling analysis.

Significant Impact Analysis

Pollutant	Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	Significant Impact?	Radius of Significant Impact (km)
Class II Areas, Vicinity of Project					
SO_2	Annual	3	1	Yes	4
	24-hour	31	5	Yes	4
	3-hour	146	25	Yes	4
NO_X	Annual	5	1	Yes	1
Class I Areas, Bradwell Bay and St. Marks National NWA					
SO_2	Annual	0.002	0.1	No	NA
	24-hour	0.03	0.2	No	NA
	3-hour	0.09	1.0	No	NA
NO_X	Annual	0.002	0.1	No	NA

As shown, no significant impacts are predicted in the Class I areas; therefore, no further modeling analysis is required for the PSD Class I areas. Significant impacts are predicted in the Class II area of the project for SO_2 and NO_2. Therefore, an additional modeling analysis is required for SO_2 and NO_2 within the radius of predicted significant impact areas to determine impacts with regard to the AAQS and PSD increments.

AAQS Analysis

For PSD pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding the maximum concentrations predicted by the model to representative "background" concentrations. The maximum concentrations predicted by the model are based on the modeled results of the maximum allowable emissions from sources at the facility as well as all other major sources in the vicinity of the facility. The background concentration is based on representative ambient data and accounts for all sources not explicitly modeled. As shown in the following table, the modeling analysis predicts total ambient impacts for SO_2 and NO_2 to be less than the corresponding AAQS.

AAQS Impacts

Pollutant	Averaging Time	Modeled Impacts ($\mu g/m^3$)	Background Concentrations ($\mu g/m^3$)	Total Ambient Impacts ($\mu g/m^3$)	AAQS ($\mu g/m^3$)	Total impact greater than AAQS?
SO_2	Annual	32	5	37	60	No
	24-hour	235	24	259	260	No
	3-hour	898	71	969	1300	No
NO_X	Annual	18	14	32	100	No

PSD Class II Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground-level concentrations of a pollutant from a regulatory baseline concentration that was established in 1977 for PM_{10} and SO_2 and 1988 for NO_2. The baseline years are 1975 for existing major sources of PM_{10} and SO_2 and 1988 for existing major sources of NO_2. Projects that increase emissions "consume" increment. The emission rates input to the model for predicting increment consumption are typically based on maximum potential emissions from increment-consuming sources at the facility and all other increment-consuming sources in the vicinity of the facility. The following table shows the maximum predicted PSD Class II increments for SO_2 and NO_2 consumed by this project and all other increment-consuming sources in the vicinity of the facility.

PSD Class II Increment Analysis

Pollutant	Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	Allowable Increment ($\mu g/m^3$)	Impact Greater Than Allowable Increment?
SO_2	Annual	0.12	20	No
	24-hour	78	91	No
	3-hour	447	512	No
NO_X	Annual	13	25	No

As shown above, the project will not consume all of the available increment for SO_2 or NO_2.

Additional Impacts Analysis

Impacts on Soils, Vegetation, Wildlife, and Visibility

According to the modeling results, impacts based on the maximum allowable emission rates from the project are predicted to be less than the corresponding AAQS and PSD Class II increments. The AAQS are designed to protect both the public health and welfare. As such, it is reasonable to assume the impacts on soils, vegetation, and wildlife will be minimal or insignificant.

An air quality-related values (AQRV) analysis was conducted by the applicant for the affected PSD Class I and Class II areas. No significant impacts on these areas are expected based on this analysis. The long-range transport model CALPUFF was used to conduct a regional haze analysis for the PSD Class I areas. The analysis showed no significant impact on visibility in this area. Because SO_2 and NO_X emissions from the project exceeded the PSD significant emission rates, acid deposition rates for sulfur and nitrogen compounds were also predicted in the Class I areas and the results show the predicted impacts to be below the deposition analysis thresholds.

Growth-Related Air Quality Impacts

The proposed project will not cause a significant air quality impact from any associated changes in employment, population, housing, commercial development or industrial development in the area.

Conclusion

Based on the air quality analysis provided by the applicant, the project will not significantly contribute to or cause any exceedance of any ambient air quality standard, increment or visibility limit.

PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the Draft Permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the Draft Permit. Bruce Thomas is the project engineer responsible for reviewing the application and drafting the permit changes. Cleve Holladay is the meteorologist responsible for reviewing and approving the ambient air quality analyses. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

DRAFT PERMIT

PERMITTEE

Smurfit-Stone Container Enterprises, Inc
One Everitt Avenue
Panama City, Florida 32402

Authorized Representative:
Mr. B. G. Sammons, General Manager

Air Permit No. PSD-FL-388
Project No. 0050009-028-AC
Expires: December 1, 2008
Panama City Mill
Facility ID No. 0050009
Addition of Petcoke to Lime Kiln

FACILITY AND LOCATION

Smurfit Stone Corporation's Panama City Mill is a Kraft process pulp and paper mill (SIC Nos. 2611 and 2621) located in Bay County at One Everitt Avenue in Panama City, Florida. The UTM coordinates are Zone 16, 632.8 km East, and 3335.1 km North.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and Title 40, Parts 60 and 63 of the Code of Federal Regulations (CFR). The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

CONTENTS

(DRAFT)

Joseph Kahn, Director
Division of Air Resource Management

Effective Date

FACILITY AND PROJECT DESCRIPTION

The permittee operates an existing Kraft process pulp and paper mill in Panama City. The existing mill is comprised of major activities areas such as: wood handling facility; pulping, bleaching, and chemical recovery; power house operations; paper machines; finishing, shipping, and warehouse operations; and other associated processes and equipment. This project authorizes the addition of petcoke as a primary fuel for the existing lime kiln. The project includes: installation of a new 180 million Btu/hour (MMBtu/hour) lime kiln burner capable of co-firing a combination of petcoke with distillate oil or natural gas; a 250 ton ground petcoke storage silo; a dense phase pneumatic conveying system to unload delivery trucks and transport ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. The project is subject to preconstruction review for emissions of nitrogen oxides (NO_X) and sulfur dioxide (SO_2) pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality). This permit includes emissions standards for these pollutants representing the Best Available Control Technology (BACT).

The project will also partially enclose the area housing the recovery boilers to reduce corrosion and maintenance. The enclosure will be implemented in two phases. The first phase will add a wall only along the east side of the building. The second phase will initially consist of adding a second wall along the south side of the building and may eventually include enclosing the entire building. The enclosures affect the dispersion of the stack plumes. Therefore, the permittee requested lower 24-hour sulfur dioxide (SO_2) emissions standards for the Nos. 3 and 4 combination boilers.

This project affects the following existing emissions units.

EU No.	Emission Unit Description
004	Lime Kiln
015	#3 Bark Boiler
016	#4 Bark Boiler

This project adds the following new emissions unit.

EU No.	Emission Unit Description
038	Petcoke Handling and Storage Silo

REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants.
- The facility has no units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400 (PSD), F.A.C.

RELEVANT DOCUMENTS

The following relevant documents are not a part of this permit, but helped form the basis for this permitting action: the permit application and additional information received to make it complete; the Draft Permit; the Department's Technical Evaluation and Preliminary Determination; the Written Notice of Intent to Issue Air Permit; the Public Notice of Intent to Issue Air Permit; the publication in a newspaper of general circulation; comments received on the Draft Permit package; and the Department's Final Determination.

1. Permitting Authority: The Permitting Authority for this project is the Department's Bureau of Air Regulation in the Division of Air Resource Management. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's Northwest District office. The mailing address is: 160 Governmental Center, Pensacola, Florida 32502-5794. The phone number is (850)595-8300.
3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Formats and Glossary of Common Terms), Appendix B (General Conditions), Appendix C (Common Conditions), Appendix D (Common Testing Requirements), Appendix E (Summary of BACT Determinations), Appendix F (CEMS Requirements) and Appendix G (NSPS Subpart BB Provisions).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Source Obligation:

   (a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.

   (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   (c) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

8. Title V Permit: This permit authorizes specific modifications and/or new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to each Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

This section of the permit addresses the following emissions unit.

Emissions Unit No. 004
Lime Kiln: The lime kiln processes approximately 85,000 pounds per hour of lime mud to produce 18.35 tons per hour of lime (CaO) to reuse in the recovery process. It is currently authorized to fire natural gas and No. 6 fuel oil with up to 2.4% sulfur by weight. The lime kiln is also used as the primary control device to thermally destroy non-condensable gases from the batch digesting system and multiple effects evaporator system. This permit authorizes petcoke with up to 8.0% sulfur by weight as a primary fuel to be blended with No. 6 fuel oil and natural gas. The maximum heat input rate for the petcoke burner system is 180 MMBtu per hour; however, for purposes of flame stability, petcoke will be co-fired with oil or gas and constitute up to 90% of the maximum heat input rate to the lime kiln. Exhaust gas exits at 166° F from a stack that is 6.3 feet in diameter and 60.5 feet tall with a volumetric flow rate of 81,400 dscfm @ 10% oxygen (92,800 acfm).

{Permitting Note: In accordance with Rule 62-212.400 (PSD), F.A.C., the above emission unit is subject to BACT determinations for emissions of NO_X and SO_2. The final BACT determinations are summarized Appendix D of this permit. Throughout this permit, particulate matter emissions are referred to as PM emissions, which serve as a surrogate for regulating $PM_{2.5}$ and PM_{10} emissions.

EXISTING APPLICABLE REQUIREMENTS

1. NSPS Subpart BB for Kraft Pulp Mills: As a result of the project, the lime kiln becomes subject to the applicable requirements for particulate matter in NSPS Subpart BB of 40 CFR 60. See Appendix G (NSPS Subpart BB Provisions) of this permit.
2. State Rule for Kraft Pulp Mills: The lime kiln remains subject to the applicable requirements of Rule 62-296.404, F.A.C. for Kraft pulp mills.
3. NESHAP Subpart MM for Kraft Pulp Mills: The lime kiln remains subject to the applicable requirements of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) in Subpart MM of 40 CFR 63.
4. NESHAP Subpart S for the Pulp and Paper Industry: The lime kiln remains subject to the applicable requirements of the NESHAP in Subpart S in 40 CFR 63.

EQUIPMENT

5. Petcoke Burners: The permittee is authorized to install a petcoke burner system on the lime kiln to fire a blend of petcoke with No. 6 fuel oil and natural gas. The maximum heat input rate for the new petcoke burner system is 180 MMBtu per hour. {Permitting Note: For purposes of flame stability, petcoke will be co-fired with oil or gas and constitute up to 90% of the maximum heat input rate to the lime kiln.} [Rule 62-210.200 (PTE), F.A.C. and Application No. 0050009-028-AC]
6. CEMS Required for Demonstrating Compliance: The permittee shall properly install, calibrate, maintain and operate continuous emissions monitoring systems (CEMS) to measure and record NO_X emissions in units of the applicable standard. The permittee shall comply with the conditions of Appendix F (CEMS Requirements) for each CEMS required to be installed by this permit as the compliance method for the permitted emission standard. [Rules 62-4.070(3) and 62-212.400 (PSD), F.A.C.]

PERFORMANCE RESTRICTIONS

7. Permitted Capacity: The maximum allowable operating rate for the lime kiln is 85,000 pounds per hour of lime mud input (dry basis, 24-hour average) for a maximum lime production rate of 36,700 pounds of CaO per hour (dry basis). [Rule 62-210.200 (PTE), F.A.C. and Application No. 0050009-028-AC]

8. Authorized Fuel: The lime kiln is currently permitted to fire natural gas and No. 6 fuel oil with a maximum sulfur content of 2.4% by weight. This permit authorizes the firing of a blend of petcoke with No. 6 fuel oil and natural gas. The maximum sulfur content of petcoke shall be 8.0% by weight. [Rule 62-210.200 (PTE), F.A.C. and Application No. 0050009-028-AC]

9. Restricted Operation: The hours of operation of are not limited (8760 hours per year). [Rules 62-4.070(3) and 62-210.200 (PTE), F.A.C.]

EMISSIONS STANDARDS

10. Emissions Standards: Emissions from the lime kiln shall not exceed the following.

Pollutant	Fuel	Emission Standards	Averaging Time	Compliance Method
NO_X [a]	natural gas or oil	110 ppmvd @ 10% O_2 and 68.0 lb/hour	30-day rolling average	CEMS
	petcoke blends	190 ppmvd @ 10% O_2 and 103.0 lb/hour	30-day rolling average	CEMS
SO_2 [b]	No. 6 oil	4.6 lb/hour and 0.25 lb/ton of CaO	3-hour average	EPA Method 6C
	petcoke blends	*First 180 days:* 32.0 lb/hour and 1.74 lb/ton CaO	3-hour average	
		After first 180 days: 18.8 lb/hour and 1.02 lb/ton CaO		

a. NO_X: Continuous compliance with the NO_X standards shall be demonstrated based on CEMS data once the CEMS is installed and certified.

b. SO_2: The SO_2 standards for oil firing are effective after completing construction of the burner system. The higher SO_2 standards for petcoke firing are effective during the first 180 calendar days after first firing petcoke. This is to provide sufficient time to evaluate and adjust the wet scrubber performance to accommodate the higher uncontrolled SO_2 emissions rate. The lower SO_2 standards for petcoke firing are effective following the first 180 calendar days after first firing petcoke; however, the permittee may demonstrate compliance with the lower SO_2 standards for petcoke firing with tests conducted during the first 180 calendar days after first firing petcoke.

TESTING REQUIREMENTS

11. Test Requirements: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix C (Common Testing Requirements) of this permit. [Rule 62-297.310(7)(a)9, F.A.C.]

12. Test Methods: Required tests shall be performed in accordance with the following reference methods.

EPA Method	Description
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
6C	Method for Determining Sulfur Dioxide Emissions (Instrumental)
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources (Instrumental)
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

13. Initial Compliance Tests: The emissions unit shall be tested to demonstrate initial compliance with the emissions standards for SO_2. Testing shall be conducted with the emissions unit operating at permitted capacity in accordance with Rule 62-297.310(2), F.A.C. The initial tests for SO_2 shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. The tests shall be conducted at the maximum sulfur content of petcoke expected to be fired. If the petcoke sulfur content increases by more than 0.5% by weight above the tested level, the permittee shall conduct an additional compliance test at the higher petcoke sulfur content to demonstrate compliance with the SO_2 standard. [Rules 62-4.070(3) and 62-297.310(7)(a)1, F.A.C.]

14. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), the emissions unit shall be tested to demonstrate compliance with the emissions standards for SO_2. [Rule 62-297.310(7)(a)4, F.A.C.]

MONITORING REQUIREMENTS

15. Scrubber Monitoring: The permittee shall monitor the following scrubber parameters: bull nozzle flow rate in gpm, tangential flow rate in gpm, and pressure differential in inches of water column. The permittee shall monitor these scrubber parameters in accordance with the provisions in Subpart MM of 40 CFR Part 63. In addition, the permittee shall submit a testing protocol to the Bureau of Air Regulation for approval to determine the minimum pH operating level and the appropriate monitoring frequency that will provide reasonable assurance of compliance with the SO_2 BACT standard. The testing protocol shall include, but not be limited to, the following information: SO_2 stack testing methods and procedures, pH monitoring methods and frequency, pH adjustment, and a test schedule. Within 90 days of approval, the permittee shall conduct the tests. Within 30 days of conducting the last test, the permittee shall submit a report to the Bureau of Air Regulation that summarizes the testing program and proposes for approval a minimum pH operating level and the appropriate monitoring frequency that will provide reasonable assurance of compliance with the SO_2 BACT standard. The permittee shall operate the scrubber and conduct the monitoring in accordance with the approval. [Rule 62-4.070(3) and 62-212.400 (BACT), F.A.C.]

RECORDS AND REPORTS

16. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D, Section 4 of this permit. For each test run, the report shall also indicate the heat input, fuel type, sulfur content, and lime mud throughput (dry basis). [Rule 62-297.310(8), F.A.C.]

17. Operational Data: The permittee shall record the hours of operation and the sulfur content of each fuel in a written or electronic log. Information recorded and stored as an electronic file shall be available for inspection and printing within at least three days of a request by the Department.

    [Rule 62-4.070(3), F.A.C.]

18. Fuel Sulfur Records: Records of the sulfur content of each shipment of fuel oil and petcoke shall be maintained and available for inspection by the Department.

19. Stack Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report shall provide the applicable information specified in Rule 62-297.310(8), F.A.C. and summarized in Appendix C of this permit. [Rule 62-297.310(8), F.A.C.]

20. CEMS Required for Reporting Annual Emissions: The permittee shall use data from the CEMS when calculating annual emissions for purposes of computing actual emissions, baseline actual emissions and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for purposes of computing emissions pursuant to the reporting requirements of Rules 62-210.370(3) and 62-212.300(1)(e), F.A.C. The owner or operator shall follow the procedures in Appendix CEMS for calculating annual emissions.

21. TRS Report: After completion of construction and commencing operation on petcoke, the permittee shall conduct the analysis in Appendix C of 40 CFR 60 to determine whether the project resulted in an increase in the hourly total reduce sulfur (TRS) mass emission rate. The permittee shall submit the report to the Bureau of Air Regulation and the Compliance Authority within 180 days of first firing petcoke. [Appendix C of 40 CFR 60 and Rule 62-4.070(3), F.A.C.]

22. Annual TRS and PM Emissions Reports: In accordance with Rule 62-212.300(1)(e), F.A.C., the permittee shall comply with the following monitoring, reporting and recordkeeping provisions to determine whether a PSD significant emissions increase occurred:

    a. The permittee shall monitor the TRS and PM emissions using the most reliable information available. On a calendar year basis, the permittee shall calculate and maintain a record of the annual emissions (tons per year) for a period of 5 years after completing construction of the petcoke burner. Emissions shall be computed in accordance with Rule 62-210.370, F.A.C.

    b. Within 60 days after each calendar year following completion of construction of the petcoke burner, the permittee shall report to the Compliance Authority the annual emissions for each unit during the calendar year that preceded submission of the report. The report shall contain the following:

        1) The name, address and telephone number of the owner or operator of the major stationary source;

        2) The annual emissions as calculated pursuant to subparagraph 62-212.300(1)(e)1., F.A.C.;

        3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

        4) Any other information that the owner or operator wishes to include in the report.

    c. The information required to be documented and maintained shall be submitted to the Compliance Authority, where it will be available for review to the general public.

d. The permittee shall retain a copy of all records used to compute emissions pursuant to this rule for a period of five years from the date on which such emissions information is submitted to the Compliance Authority for any regulatory purpose.

[Rule 62-212.300(1)(e) and 62-210.370, F.A.C.]

B. Petcoke Handling and Storage (EU-038)

This section of the permit addresses the following emissions unit.

Emissions Unit No. 038
Petcoke Handling and Storage: Ground petcoke will be delivered to the facility by truck and pneumatically conveyed to a 250 ton ground petcoke storage silo. The storage silo will vent through a baghouse prior to discharging to atmosphere. The ground petcoke will drop into a weigh bin from the storage silo before being conveyed to the kiln burner through the use of a blower and eductor. The piping system that delivers the petcoke to the kiln burner will be completely enclosed. The displaced air from the weigh bin will be redirected to the storage silo and will exit the storage silo baghouse.

EQUIPMENT

1. Petcoke Handling and Storage: The permittee is authorized to construct a 250 ton ground petcoke storage silo; a dense phase pneumatic conveying system that will be used to unload the delivery trucks and transport the ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. [Application No. 0050009-028-AC]

PERFORMANCE RESTRICTIONS

2. Restricted Operation: The hours of operation of are not limited (8760 hours per year). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSION LIMITING AND PERFORMANCE STANDARDS

3. Fugitive Dust Emissions: During the construction period, fugitive dust emissions shall be minimized by techniques such as covering, confining and/or the application of water or dust suppressants to the affected areas, or removal of particulate matter from roads and other paved areas to prevent reentrainment, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

4. Petcoke Storage Silo, Baghouse: The permittee shall install a baghouse to control particulate matter emissions from the petcoke storage silo and the weigh bin. The baghouse shall be designed and maintained for a flow rate of 2000 acfm and an outlet dust loading of 0.02 grains/dscf of exhaust. The permittee shall retain records from the vendor showing the control equipment meets this design specification. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C. and Application No. 0050009-028-AC]

5. Opacity: As determined by EPA Method 9, visible emissions from the baghouse vent shall not exceed 5% opacity. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

TESTING REQUIREMENTS

6. Initial Compliance Tests: The permittee shall test conduct EPA Method 9 testing to demonstrate compliance with the opacity standard for the baghouse vent. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. Initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. Subsequent tests shall be conducted during each federal fiscal year (October 1st to September 30th). [Rules 62-4.070(3) and 62-297.310(7)(a)1&4, F.A.C.]

7. Test Requirements: Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) in Section 4 of this permit, which include notifications, methods, procedures, test reports, etc. [Rule 62-297.310(7)(a)9, F.A.C.]

C. Nos. 3 and 4 Combination Boilers (EU-015 and EU-016)

This section of the permit addresses the following emissions units.

EU No.	Description
-015	No. 3 Combination Boiler (existing)
-016	No. 4 Combination Boiler (existing)

EQUIPMENT

1. Enclosure for Recovery Boiler Building: The permittee is authorized to construct an enclosure for the recovery boiler building to reduce corrosion and maintenance. The enclosure will be implemented in two phases. The first phase will add one wall along the east side of the building. The second phase will add a second wall along the south side of the building and may eventually include enclosing the entire building. [Rule 62-212.400(BACT), F.A.C. and Application No. 0050009-028-AC]

EMISSIONS STANDARDS

2. New SO_2 Standards: The following new SO_2 emissions standards apply to the Nos. 3 and 4 combination boilers in addition to any existing SO_2 emissions standards.
   a. Beginning on the day the permittee begins construction of the new enclosure of the east wall of the recovery boiler building:
      1. SO_2 emissions from the No. 4 combination boiler shall not exceed 690 lb/hour based on a 24-hour average determined from CEMS data; and
      2. The combined SO_2 emissions from the Nos. 3 and 4 combination boiler s shall not exceed 1350 lb/hour based on a 24-hour rolling average determined from CEMS data.
   b. Beginning on the day the permittee begins construction on one or more walls of the recovery boiler building in addition to the east wall, and thereafter:
      1. SO_2 emissions from the No. 4 combination boiler shall not exceed 690 lb/hour based on a 24-hour average determined from CEMS data;
      2. The combined SO_2 emissions from the Nos. 3 and 4 combination boilers shall not exceed 1350 lb/hour based on a 3-hour rolling average determined from CEMS data; and
      3. The combined SO_2 emissions from the Nos. 3 and 4 combination boilers shall not exceed 1100 lb/hour based on a 24-hour average determined from CEMS data.

For each stage of construction identified above, the permittee shall notify the Compliance Authority within one business day of commencing construction of: the construction activity begun and the SO_2 emissions standards in effect. {Permitting Note: The new enclosure adversely affects dispersion of the existing stack plumes. The new SO_2 emissions standards are based on the air quality analysis provided in support of the PSD application.} [Rule 62-212.400(BACT), F.A.C. and Application No. 0050009-028-AC]

CONTENTS

CITATION FORMATS AND GLOSSARY OF COMMON TERMS

CITATION FORMATS

The following illustrate the formats used in the permit to identify applicable requirements from permits and regulations.

Old Permit Numbers

Example: Permit No. AC50-123456 or Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located

"2222" represents the specific facility ID number for that county

"001"identifies the specific permit project number

"AC" identifies the permit as an air construction permit

"AF" identifies the permit as a minor source federally enforceable state operation permit

"AO" identifies the permit as a minor source air operation permit

"AV" identifies the permit as a major Title V air operation permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the preconstruction review requirements of the Prevention of Significant Deterioration of Air Quality

"FL" means that the permit was issued by the State of Florida

"317" identifies the specific permit project number

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CRF 60.7]

Means: Title 40, Part 60, Section 7

GLOSSARY OF COMMON TERMS

° F: degrees Fahrenheit

acfm: actual cubic feet per minute

ARMS: Air Resource Management System (Department's database)

BACT: best available control technology

Btu: British thermal units

CAM: compliance assurance monitoring

CEMS: continuous emissions monitoring system

cfm: cubic feet per minute

CFR: Code of Federal Regulations

CO: carbon monoxide

COMS: continuous opacity monitoring system

DEP: Department of Environmental Protection

Department: Department of Environmental Protection

dscfm: dry standard cubic feet per minute

EPA: Environmental Protection Agency

ESP: electrostatic precipitator (control system for reducing particulate matter)

EU: emissions unit

F.A.C.: Florida Administrative Code

F.D.: forced draft

F.S.: Florida Statutes

FGR: flue gas recirculation

Fl: fluoride

ft²: square feet

ft³: cubic feet

gpm: gallons per minute

gr: grains

HAP: hazardous air pollutant

Hg: mercury

I.D.: induced draft

ID: identification

kPa: kilopascals

lb: pound

MACT: maximum achievable technology

MMBtu: million British thermal units

MSDS: material safety data sheets

MW: megawatt

NESHAP: National Emissions Standards for Hazardous Air Pollutants

NO_X: nitrogen oxides

NSPS: New Source Performance Standards

O&M: operation and maintenance

O_2: oxygen

Pb: lead

PM: particulate matter

PM_{10}: particulate matter with a mean aerodynamic diameter of 10 microns or less

PSD: prevention of signifi9cant deterioration

psi: pounds per square inch

PTE: potential to emit

RACT: reasonably available control technology

RATA: relative accuracy test audit

SAM: sulfuric acid mist

scf: standard cubic feet

scfm: standard cubic feet per minute

SIC: standard industrial classification code

SNCR: selective non-catalytic reduction (control system used for reducing emissions of nitrogen oxides)

SO_2: sulfur dioxide

TPH: tons per hour

TPY: tons per year

UTM: Universal Transverse Mercator coordinate system

VE: visible emissions

VOC: volatile organic compounds

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S.. Such evidence

shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.
11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
    a. Determination of Best Available Control Technology;
    b. Determination of Prevention of Significant Deterioration; and
    c. Compliance with New Source Performance Standards.
14. The permittee shall comply with the following:
    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
    c. Records of monitoring information shall include:
        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Excess Emissions, Permitted: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. Excess Emissions, Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(Definitions), F.A.C.]
8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

{Permitting Note: Rule 62-210.700 (Excess Emissions), F.A.C., cannot vary any NSPS or NESHAP provision.}

RECORDS AND REPORTS

10. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least 5 years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2, F.A.C.]
11. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(3), F.A.C.]

COMMON TESTING REQUIREMENTS

Unless otherwise specified in the permit, the following testing requirements apply to all emissions units at the facility.

COMPLIANCE TESTING REQUIREMENTS

1. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

2. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]

3. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

4. Applicable Test Procedures

   a. *Required Sampling Time.*

      (1) Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.

      (2) Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

         (a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.

         (b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.

         (c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

   b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

d. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

[Rule 62-297.310(4), F.A.C.]

5. Determination of Process Variables

a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

6. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must also comply with all applicable Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E.

a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.

b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.

c. *Sampling Ports.*

(1) All sampling ports shall have a minimum inside diameter of 3 inches.

(2) The ports shall be capable of being sealed when not in use.

(3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.

(4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.

(5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

d. *Work Platforms.*

(1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.

(2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.

(3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.

(4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toe board, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

(1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.

(2) Walkways over free-fall areas shall be equipped with safety rails and toe boards.

f. *Electrical Power.*

(1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.

(2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

(1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.

(a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.

(b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.

(c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.

(2) A complete monorail or dual rail arrangement may be substituted for the eyebolt and bracket.

(3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

[Rule 62-297.310(6), F.A.C.]

7. <u>Frequency of Compliance Tests</u>: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

a. *General Compliance Testing.*

1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.

2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.

3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

    (a) Did not operate; or

    (b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,

4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

    (a) Visible emissions, if there is an applicable standard;

    (b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

    (c) Each NESHAP pollutant, if there is an applicable emission standard.

5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.

6. For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.

7. For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.

8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.

9. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.

10. An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.

b. *Special Compliance Tests.* When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

c. *Waiver of Compliance Test Requirements.* If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of paragraph 62-297.310(7)(b), F.A.C., shall apply.

[Rule 62-297.310(7), F.A.C.]

RECORDS AND REPORTS

8. Test Reports:

a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.

c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information.

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.

16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

SECTION 4. APPENDIX E

SUMMARY OF BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATIONS

Project Description

The permittee operates an existing Kraft process pulp and paper mill in Panama City. The existing mill is comprised of major activities areas such as: wood handling facility; pulping, bleaching, and chemical recovery; power house operations; paper machines; and finishing, shipping, warehouse and associated processes and equipment. This project authorizes the addition of petcoke as a primary fuel for the existing lime kiln. For purposes of flame stability, petcoke will be co-fired with oil or gas and constitute up to 90% of the maximum heat input rate to the lime kiln. The project includes: installation of a new 180 million Btu/hour (MMBtu/hour) lime kiln burner; a 250 ton ground petcoke storage silo; a dense phase pneumatic conveying system to unload delivery trucks and transport ground petcoke to the storage silo; and a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the kiln burner. The project is subject to PSD preconstruction review for emissions of NO_X and SO_2 pursuant to Rule 62-212.400, F.A.C. This permit includes emissions standards for these pollutants representing BACT.

The project will also partially enclose the area housing the recovery boiler building to reduce corrosion and maintenance. The enclosure will be implemented in two phases. The first phase will add a wall only along the east side of the building. The second phase will initially consist of adding a second wall along the south side of the building and may eventually include enclosing the entire building. The enclosures affect the dispersion of the stack plumes. Therefore, the permittee requested lower 24-hour SO_2 emissions standards for the Nos. 3 and 4 combination boilers.

BACT Determinations

The following table summarizes the emissions standards representing the BACT determinations for NO_X and SO_2 emissions.

Pollutant	Fuel	Emission Standards	Averaging Time	Compliance Method
NO_X [a]	natural gas or oil	110 ppmvd @ 10% O_2	30-day rolling average	CEMS
		68.0 lb/hour	3-hour average	EPA Method 7E
	90% petcoke blends	190 ppmvd @ 10% O_2	30-day rolling average	CEMS
		103.0 lb/hour	3-hour average	EPA Method 7E
SO_2 [b]	natural gas or oil	7.3 lb/hour and 0.40 lb/ton of CaO	3-hour average	EPA Method 6C
	90% petcoke blends	*First 180 days:* 32.0 lb/hour and 1.74 lb/ton CaO	3-hour average	
		After first 180 days: 18.8 lb/hour and 1.02 lb/ton CaO		

a. NO_X: Initial compliance with the "lb/hour" standard shall be demonstrated based on stack testing. Continuous compliance with the "ppmvd @ 10% O_2" standard shall be demonstrated based on CEMS data once the CEMS is installed and certified. The basis for the NO_X BACT determination is the use of good combustion practices and a low-NO_X burner system.

b. SO_2: The SO_2 standards for oil firing are effective after completing construction of the burner system. The higher SO_2 standards for petcoke firing are effective during the first 180 calendar days after first firing petcoke. This is to provide sufficient time to evaluate and adjust the wet scrubber performance to accommodate the higher uncontrolled SO_2 emissions rate. The lower SO_2 standards for petcoke firing are effective following the first 180 calendar days after first firing petcoke; however, the permittee may demonstrate compliance with the lower SO_2 standards for petcoke firing with tests conducted during the first 180 calendar days after first firing petcoke. The basis for the SO_2 BACT determination is proper kiln operation, optimal mud washing and wet flue gas desulfurization with proper parametric monitoring and good operating practices.

CEMS OPERATION PLAN

1. CEMS Operation Plan: The owner or operator shall create and implement a facility-wide plan for the proper installation, calibration, maintenance and operation of each CEMS required by this permit. The owner or operator shall submit the CEMS Operation Plan to the Bureau of Air Monitoring and Mobile Sources for approval at least 60 days prior to CEMS installation. The CEMS Operation Plan shall become effective 60 days after submittal or upon its approval. If the CEMS Operation Plan is not approved, the owner or operator shall submit a new or revised plan for approval.

   {Permitting Note: The Department maintains both guidelines for developing a CEMS Operation Plan and example language that can be used as the basis for the facility-wide plan required by this permit. Contact the Emissions Monitoring Section of the Bureau of Air Monitoring and Mobile Sources at 850/488-0114.}

INSTALLATION, PERFORMANCE SPECIFICATIONS AND QUALITY ASSURANCE

2. Timelines: The owner or operator shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS no later than 180 calendar days after initial startup.on petcoke.
3. Installation: All CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The owner or operator shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR part 60, Appendix B.
4. Span Values and Dual Range Monitors: The owner or operator shall set appropriate span values for the CEMS. The owner or operator shall install dual range monitors if required by and in accordance with the CEMS Operation Plan.
5. Continuous Flow Monitor: For compliance with mass emission rate standards, the owner or operator shall install a continuous flow monitor to determine the stack exhaust flow rate. The flow monitor shall be certified pursuant to 40 CFR part 60, Appendix B, Performance Specification 6. Alternatively, the owner or operator may install a fuel flow monitor and use an appropriate F-Factor computational approach to calculate stack exhaust flow rate.
6. Diluent Monitor: If it is necessary to correct the CEMS output to the oxygen concentrations specified in this permit's emission standards, the owner or operator shall either install an oxygen monitor or install a CO_2 monitor and use an appropriate F-Factor computational approach.
7. Moisture Correction: If necessary, the owner or operator shall determine the moisture content of the exhaust gas and develop an algorithm to enable correction of the monitoring results to a dry basis (0% moisture).

   {Permitting Note: The CEMS Operation Plan will contain additional CEMS-specific details and procedures for installation.}

8. Performance Specifications: The owner or operator shall evaluate the acceptability of each CEMS by conducting the appropriate performance specification, as follows. CEMS determined to be unacceptable shall not be considered installed for purposes of meeting the timelines of this permit. For NO_X monitors, the owner or operator shall conduct Performance Specification 2 of 40 CFR part 60, Appendix B.
9. Quality Assurance: The owner or operator shall follow the quality assurance procedures of 40 CFR part 60, Appendix F. For NO_X, The required RATA tests shall be performed using EPA Method 7E in Appendix A of 40 CFR part 60. NO_X shall be expressed "as NO_2."
10. Substituting RATA Tests for Compliance Tests: Data collected during CEMS quality assurance RATA tests can substitute for annual stack tests, and vice versa, at the option of the owner or operator, provided the owner or operator indicates this intent in the submitted test protocol and follows the procedures outlined in the CEMS Operation Plan.

CALCULATION APPROACH

11. CEMS Used for Compliance: Once adherence to the applicable performance specification for each CEMS is demonstrated, the owner or operator shall use the CEMS to demonstrate compliance with the applicable emission standards as specified by this permit.
12. CEMS Data: Each CEMS shall monitor and record emissions during all periods of operation and whenever emissions are being generated, including during episodes of startups, shutdowns, and malfunctions. All data shall be used, except

for invalid measurements taken during monitor system breakdowns, repairs, calibration checks, zero adjustments and span adjustments.

13. Operating Hours and Operating Days: For purposes of this appendix, the following definitions shall apply. An hour is the 60-minute period beginning at the top of each hour. Any hour during which an emissions unit is in operation for more than 15 minutes is an operating hour for that emission unit. A day is the 24-hour period from midnight to midnight. Unless otherwise specified by this permit, any day with at least one operating hour for an emissions unit is an operating day for that emission unit.

14. Valid Hourly Averages: Each CEMS shall be designed and operated to sample, analyze and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour.

    a. Hours that are not operating hours are not valid hours.

    b. For each operating hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, there is insufficient data, the 1-hour block average is not valid, and the hour is considered as "monitor unavailable."

15. Calculation Approaches, 30-day Rolling Average: Compliance with the 30-day rolling average shall be determined after each operating day by calculating the arithmetic average of all the valid hourly averages from that operating day and the prior 29 operating days.

MONITOR AVAILABILITY

16. Monitor Availability: The quarterly excess emissions report shall identify monitor availability for each quarter in which the unit operated. Monitor availability for the CEMS shall be 95% or greater in any calendar quarter in which the unit operated for more than 760 hours. In the event the applicable availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving the required availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit.

EXCESS EMISSIONS

17. Definitions:

    a. *Startup* is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.

    b. *Shutdown* means the cessation of the operation of an emissions unit for any purpose.

    c. *Malfunction* means any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

18. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.

19. Notification Requirements: The owner or operator shall notify the Compliance Authority within one working day of discovering any emissions that demonstrate noncompliance for a given averaging period. Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. For malfunctions, notification is sufficient for the owner or operator to exclude CEMS data.

ANNUAL EMISSIONS

20. CEMS Used for Calculating Annual Emissions: All valid data, shall be used when calculating annual emissions.

    a. Annual emissions shall include data collected during startup, shutdown and malfunction periods.

b. Annual emissions shall include data collected during periods when the emission unit is not operating but emissions are being generated (for example, when firing fuel to warm up a process for some period of time prior to the emission unit's startup).

c. Annual emissions shall not include data from periods of time where the monitor was functioning properly but was unable to collect data while conducting a mandated quality assurance/quality control activity such as calibration error tests, RATA, calibration gas audit or RAA. These periods of time shall be considered missing data for purposes of calculating annual emissions.

d. Annual emissions shall not include data from periods of time when emissions are in excess of the calibrated span of the CEMS. These periods of time shall be considered missing data for purposes of calculating annual emissions.

21. Accounting for Missing Data: All valid measurements collected during each hour shall be used to calculate a 1-hour block average. For each hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, the owner or operator shall account for emissions during that hour using site-specific data to generate a reasonable estimate of the 1-hour block average.

22. Emissions Calculation: Hourly emissions shall be calculated for each hour as the product of the 1-hour block average and the duration of pollutant emissions during that hour. Annual emissions shall be calculated as the sum of all hourly emissions occurring during the year.

As a result of this project, the existing lime kiln (EU-004) becomes subject to the applicable requirements for particulate matter in NSPS Subpart BB and the applicable general provisions in NSPS Subpart A of 40 CFR 60.

SUBPART A, GENERAL PROVISIONS

(The General Provisions are not included in this permit, but can be obtained from the Department upon request.)

§ 60.7 Notification and Record Keeping.

§ 60.8 Performance Tests.

§ 60.11 Compliance with Standards and Maintenance Requirements.

§ 60.12 Circumvention.

§ 60.13 Monitoring Requirements.

§ 60.19 General Notification and Reporting Requirements.

SUBPART BB, STANDARDS OF PERFORMANCE FOR KRAFT PULP MILLS

§ 60.280 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in kraft pulp mills: Digester system, brown stock washer system, multiple-effect evaporator system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this subpart are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

(b) Except as noted in §60.283(a)(1)(iv), any facility under paragraph (a) of this section that commences construction or modification after September 24, 1976, is subject to the requirements of this subpart.

§ 60.281 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in subpart A.

(a) *Kraft pulp mill* means any stationary source which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at high temperature and pressure. Regeneration of the cooking chemicals through a

(n) *Lime kiln* means a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

§ 60.282 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(3) From any lime kiln any gases which contain particulate matter in excess of:

(i) 0.15 g/dscm (0.066 gr/dscf) corrected to 10 percent oxygen, when gaseous fossil fuel is burned.

(ii) 0.30 g/dscm (0.13 gr/dscf) corrected to 10 percent oxygen, when liquid fossil fuel is burned.

§ 60.285 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures in this section, except as provided in §60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.282(a) (1) and (3) as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used as the cleanup solvent

instead of acetone in the sample recovery procedure. The particulate concentration shall be corrected to the appropriate oxygen concentration according to §60.284(c)(3).

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration. The gas sample shall be taken at the same time and at the same traverse points as the particulate sample.

(3) Method 9 and the procedures in §60.11 shall be used to determine opacity.

(f) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5, Method 17 may be used if a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17 and the stack temperature is no greater than 204 °C (400 °F).

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL USA 32653
Telephone (352) 336-5600
Fax (352) 336-6603
www.golder.com

Golder Associates

June 11, 2007

063-7645

Florida Department of Environmental Protection
Bureau of Air Regulation
Northwest District
2600 Blair Stone Road
Tallahassee, Florida 32399

RECEIVED
JUN 13 2007
BUREAU OF AIR REGULATION

Attention: Jeffery F. Koerner, P.E., Air Permitting North

**RE: SMURFIT-STONE CONTAINER ENTERPRISES, INC.
PROJECT NO. 0050009-028-AC (PSD-FL-388)
PETCOKE FIRING IN LIME KILN
2nd REQUEST FOR ADDITIONAL INFORMATION**

Dear Mr. Koerner:

Smurfit-Stone Container Enterprises, Inc. (SSCE) and Golder Associates Inc. (Golder) have received the Florida Department of Environmental Protection (FDEP) request for additional information (RAI) dated May 11, 2007, regarding the proposed firing of petroleum coke (petcoke) in the Lime Kiln at the Panama City Mill. Each of FDEP's requests is answered below, in the same order as they appear in the RAI letter. Note that the RAI indicated the project as project No. 0590005-028-AC. We believe this should instead be project No. 0050009-028-AC.

NO_x Controls and Emissions

Comment 1. Please account for BACT as combustion control for firing natural gas and distillate oil as stand alone fuels.

Response: In the prevention of significant deterioration (PSD) application, SSCE proposed a best available control technology (BACT) limit for nitrogen oxides (NO_x) of 185 parts per million by volume dry (ppmvd) at 10 percent oxygen (O_2) when firing the maximum amount of petcoke. This limit actually represents an 80 percent petcoke, 20 percent No. 6 fuel oil mixture, and was based on the burner manufacturer's estimated maximum emission rate for this scenario. The equivalent maximum emissions are 107.8 pounds per hour (lb/hr) and 472.3 tons per year (TPY).

We have had Coen review its emission estimates and confirm the estimates for all four combinations of fuels: petcoke/No. 6 fuel oil; petcoke/natural gas; No. 6 fuel oil only; and natural gas only. The refined estimates are presented in the attached email from Coen. The Coen estimates are based on a number of assumptions, so we are hesitant to accept these as permit limits. Therefore, we propose to add a 10 percent safety factor to Coen's estimates. In addition, Coen has provided emission factors in terms of lb/MMBtu, which is more accurate than specifying a concentration level, which is dependent on exhaust gas flow, oxygen level, etc. Therefore, SSCE is proposing NO_x limits in terms of lb/MMBtu.

The proposed limits are shown in the attached Table 1. As shown, the maximum emission rate of 0.57 lb/MMBtu equates to an hourly mass emission rate of 103.0 lb/hr, which is lower than the previously proposed 107.8 lb/hr. The basis of the BACT limits is the same as for petcoke/No. 6 fuel oil presented in the application, i.e., low-NO_x burner, good combustion practices, efficient operation, and preventative maintenance on the Lime Kiln. In addition, BACT for natural gas would include use of a low-nitrogen fuel. SSCE may at times burn only No. 6 fuel oil, or only natural gas, based upon availability of petcoke, fuel prices, etc.

Revised application form pages are attached which reflect the proposed limits.

Comment 2. Please describe the combustion control methods and monitoring that will be used to comply with the BACT standard.

Response: Combustion control methods: the process requires a kiln hot end temperature of between 2,400 and 2,500 degrees Fahrenheit (°F), and control of the combustion air to attain an excess O_2 level of between 2 percent and 4 percent at the kiln discharge end. This promotes proper calcination of the lime mud, while optimizing complete combustion of the fuel. A low-NO_x burner will be installed.

Comment 3. The Department is considering requiring a continuous emissions monitoring system (CEMS) to measure and record NO_x emissions. Please comment.

Response: Although a low-NO_x burner will be installed, NO_x is not a controllable parameter. Due to operational constraints, the Lime Kiln must be operated within specific limits on temperature and excess oxygen. The burner is of a staged combustion design and represents the current state of the art in low-NO_x burners. Requiring a CEMS for a parameter that cannot be controlled by the operator would not be of real value. Perhaps a test program upon startup which would test emissions over the range of fuels would provide sufficient data for NO_x.

<u>SO_2 Controls and Emissions</u>

Comment 4. Please account for BACT as combustion control for firing natural gas and distillate oil as stand alone fuels.

Response: It is understood that FDEP meant to refer to residual oil instead of distillate oil in this comment. The proposed BACT for sulfur dioxide (SO_2) when firing natural gas is good combustion practices (GCP), optimal mud washing, and flue gas desulfurization, the same as for firing of No. 6 fuel oil or natural gas. When firing natural gas, there is minimal sulfur input to the Lime Kiln due to the fuel. All sulfur input to the system comes from the lime mud input to the kiln as well as from non-condensable gases (NCGs) burned in the Lime Kiln. Since it has been demonstrated by testing that SO_2 emissions from the Lime Kiln are already very low (range of 0.5 to 5.6 lb/hr) when firing No. 6 fuel oil (2.4 percent sulfur), firing of natural gas may not result in measurably lower SO_2 emissions. Therefore, the proposed BACT for natural gas firing is 0.40 pound per ton (lb/ton) of calcium oxide (CaO) produced, based on the highest test data for SO_2. This is equivalent to 7.3 lb/hr at the maximum production rate of 18.35 tons per hour (TPH) CaO.

Comment 5. Please describe the monitoring procedures and levels for the venturi scrubber to control SO_2 emissions.

Response: SSCE would propose the same scrubber parameters contained in the current Title V permit (0050009-025-AV) for the Lime Kiln. These scrubber parameters are intended to ensure efficient scrubbing action in order to control particulate matter (PM) emissions to meet Title 40, Part 63 of the Code of Federal Regulations (40 CFR 63), Subpart MM, National Emission Standards for Hazardous Air Pollutants (NESHAPs) requirements. PM is the same substance (lime product) that would ensure adequate pH is maintained in the scrubber water for SO_2 control. The minimum scrubber parameters contained in the current Title V permit are as follows (all as 3-hour averages):

Bull nozzle (center flow) flow rate:	455 gallons per minute (gpm)
Tangential nozzle flow rate:	493 gpm
Scrubber pressure differential:	18 inches water

These setpoints are verified at each stack test scrubber. The pH on the scrubber is normally about 9 due to the collection of lime dust from the process. The amount of lime dust buildup in the scrubber is controlled by monitoring and controlling the scrubber lime/water density.

Comment 6. The emissions stack test data from October 31, 2002, indicate a mean emissions rate of 0.39 lb/ton, while the data from February 28, 2006, indicate a mean emissions rate of less than 0.034 lb/ton. The application proposes a 32.9 lb/hr SO_2 emission limit as BACT or 1.79 lb/ton CaO (dry basis). Justify the higher determination.

Response: The higher determination is based on the increased sulfur loading entering the Lime Kiln. Using No. 6 fuel oil, the sulfur loading to the Lime Kiln due to just the fuel is approximately 230 lb/hr. Using the same assumptions for SO_2 removal used in the application for the petcoke (80 percent inherent removal in the Lime Kiln; 90 percent removal in the scrubber), the SO_2 emissions due to fuel combustion would be 9 lb/hr. This is in close agreement to the measured SO_2 emission rate of 5.6 lb/hr during one of the two SO_2 emission tests on the Lime Kiln. Using petcoke as a fuel, the sulfur input to the system due to fuel only is much higher: 823 lb/hr. Using the same assumptions on SO_2 removal, the controlled emission rate is 32.9 lb/hr. Until actual test data become available on petcoke burning, the SO_2 removal assumptions are reasonable.

Comment 7. In response to our comment 9, SSCE provided revised permit conditions for Combination Boilers No. 3 and 4. On page 1-3 of the PSD permit application, SSCE proposes a lower limit of 690 lb/hr, 24-hour average for the No. 4 Combination Boiler. This value was not included in the revised permit condition for this source. Will there be a period of time when the Lime Kiln will be burning petcoke and the enclosure of the Recovery Boilers will not have been completed? If this is the case, the SO_2 impacts from this case should be addressed.

Response: FDEP is correct, the 690 lb/hr should have been included in the revised permit condition for the No. 4 Combination Boiler, as follows:

C.5. Sulfur Dioxide. Sulfur dioxide emissions shall not exceed 1,183 lb/hr when incinerating NCG and stripper-off gas (SOG), 1,174 lb/hr when burning SOG but not

NCG, 1,183 lb/hr when burning NCG but not SOG, and 772 lb/hr when not incinerating NCG or SOG. Sulfur dioxide emissions shall be continuously monitored and recorded. The permittee shall maintain a scrubber pH of 8.0 or greater (24-hour average) during times when the continuous monitor is being repaired and/or calibrated. Monitoring records shall be maintain and available for inspection by FDEP.

a. **Beginning on the date that the permittee completes the enclosure of the east wall of the Recovery Boilers building, the sulfur dioxide emission from the No. 4 Combination Boiler shall not exceed 690 lb/hr, 24-hour average, and the combined total sulfur dioxide emissions from the Nos. 3 and 4 Combination boilers shall not exceed 1,350 pounds per hour based on a 24-hour average.**

b. **Beginning on the date that the permittee completes the enclosure of the east wall and one or more additional walls of the Recovery Boilers building, the sulfur dioxide emissions from the No. 4 Combination Boiler shall not exceed 690 lb/hr, 24-hour average, and the combined total sulfur dioxide emissions from the Nos. 3 and 4 Combination boilers shall not exceed 1,100 pounds per hour based on a 24-hour average.**

c. **The permittee shall provide notification to the Department within 7 days of completion of activities authorized in condition C.5.a and C.5.b above.**

Based on the current construction schedules, the Lime Kiln petcoke project is scheduled to become operational by December 2007. The enclosure of the east wall of the Recovery Boilers building is scheduled to be completed prior to burning petcoke in the Lime Kiln, while the remainder of the enclosure is scheduled to also be completed by December 2007. Thus, there will be no period of time when the Lime Kiln will be burning petcoke and the Recovery Boilers building enclosure will not have been completed.

Also attached is the Professional Engineer certification statement. Thank you for consideration of this information. If you have any questions, please do not hesitate to call me at (352) 336-5600.

Sincerely,

GOLDER ASSOCIATES INC.

Robert McCann for

David A. Buff, P.E., Q.E.P.
Principal Engineer

DB/kjp

Enclosures

Cc: T. Clements

Y:\Projects\2006\0637645 SSCE Panama City PSD\4.1\RAI 0507\RAI053007-645.doc

APPLICATION INFORMATION

Professional Engineer Certification

1.	Professional Engineer Name: **David A. Buff** Registration Number: **19011**
2.	Professional Engineer Mailing Address... Organization/Firm: **Golder Associates Inc.**** Street Address: **6241 N.W. 23rd Street, Suite 500** City: **Gainesville** State: **Florida** Zip Code: **32653**
3.	Professional Engineer Telephone Numbers... Telephone: **(352) 336-5600** ext.**545** Fax: **(352) 336-6603**
4.	Professional Engineer Email Address: **dbuff@golder.com**
5.	Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

David A. Buff — Signature (seal)

6/12/07 — Date

* Attach any exception to certification statement.
** **Board of Professional Engineers Certificate of Authorization #00001670**

TABLE 1
SSCE PANAMA CITY LIME KILN NO_x EMISSIONS
(6-11-07)

Fuel Scenario	Coen - NO_x Concentration at 10% O_2 [1]	Coen - NO_x Emissions (lb/MMBtu) [1]	Proposed Limit [2] (lb/MMBtu)	Equivalent NO_x [3] - lb/hr
Petcoke/No. 6 oil	165 ppm	0.50	0.55	99.0
Petcoke/gas	171 ppm	0.52	0.57	103.0
100% gas	74 ppm	0.20	0.22	39.6
100% No. 6 oil	101 ppm	0.30	0.38 [4]	68.4

[1] Updated by Coen in email dated 6/6/07.

[2] Coen estimate times a safety factor of 10 percent.

[3] Based on equivalent lb/MMBtu factor and maximum heat input of 180 MMBtu/hr.

[4] Based on maximum NO_x emission rate measured during Feb 7, 2006, stack testing. Coen predicts no increase over current Lime Kiln emissions.

Buff, Dave

From: KBLee@coen.com
Sent: Wednesday, June 06, 2007 9:03 PM
To: Buff, Dave
Cc: Thomas, Laura ; Clements, Tom ; Knight, Kevin ; BWadhwani@coen.com; RSantos@coen.com; WSchulze@coen.com
Subject: RE: Panama City Coen Burner
Attachments: Lime Kiln NOx Comparison 5-31-07.xls

Mr. Dave Buff,

I apologize for the delayed response in a time of urgency. There needed to be several discussions done internally between myself, applications, and staff engineering to confirm the estimated NOx emissions for the SSCE Panama City Kiln burners (Coen File 50D-15278-1).

We are listing the following numbers to eliminate all discrepancies listed in the spreadsheet attached. Numbers below assumes certain criteria, including but not limited to:
- pet. coke analysis given in email dated 5/25/07 by Tom Clements
- 0.3 wt% Fuel Bound Nitrogen in #6 oil
- firing rate at 100% capacity
- petcoke/fuel split at 80/20%
- specific primary & pet. coke conveying air flows for optimal burner performance
- hot end temperatures of about 1,800 degrees F.

Please note once again, this is for emissions related to burner contribution only (NOT stack emissions/O2 readings) and that changes in any of the above assumption can result in varying degrees of effects on the expected burner NOx emission (i.e. changing the volume of pet.coke conveying air flow).

Petcoke/No.6 Oil	.5 LB/MMBtu	165 PPM @ 10% O2
Petcoke/Gas	.52 LB/MMBtu	171 PPM @ 10% O2
100% Gas	.2 LB/MMBtu	74 PPM @ 10% O2
100% No.6 Oil	.30 LB/MMBtu	101 PPM @ 10% O2

Hopefully, this will help with your permit process and with moving forward on the project. I will be happy to discuss this issue further over a conference call. If possible, I'd like to suggest Monday, June 11 at 1PM ET (10AM PT) when I will be available in the office. Please confirm if this is feasible.

Thank you for your kind attention.

Regards,
King Lee
Project Manager
Engineering - Project Management
Coen Company, Inc.
100 Foster City Blvd.
Foster City, California 94404
USA
Tel: 1 (650) 638-0365
Fax: 1 (650) 638-0355
Direct: 1 (650) 686-3217

REVISED APPLICATION FORM PAGES

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

<u>Potential/Estimated Fugitive Emissions</u>

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **NO_x**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **103** lb/hour **451** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.57 lb/MMBtu** Reference: **Quote by COEN (6/6/07)**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly:
0.57 lb/MMBtu x 180 MMBtu/hr = 103 lb/hr

Annual:
103 lb/hr NO_x x 8,760 hr/yr x 1 ton/2,000 lb = 451 TPY

11. Potential Fugitive and Actual Emissions Comment:

Potential emissions based on a quote by COEN (June 6, 2007) that estimated NO_x at 0.57 lb/MMBtu for a mixture of 80 percent petcoke and 20 percent natural gas.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 4

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.57 lb/MMBtu**	4. Equivalent Allowable Emissions: **103** lb/hour **451** tons/year
5. Method of Compliance: **EPA Method 7E**	
6. Allowable Emissions Comment (Description of Operating Method): **Limit reflects petcoke/natural gas burning.**	

Allowable Emissions Allowable Emissions 2 of 4

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.55 lb/MMBtu**	4. Equivalent Allowable Emissions: **99** lb/hour **434** tons/year
5. Method of Compliance: **EPA Method 7E**	
6. Allowable Emissions Comment (Description of Operating Method): **Limit reflects petcoke/No. 6 fuel oil firing.**	

Allowable Emissions Allowable Emissions 3 of 4

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.22 lb/MMBtu**	4. Equivalent Allowable Emissions: **40** lb/hour **173** tons/year
5. Method of Compliance: **EPA Method 7E**	
6. Allowable Emissions Comment (Description of Operating Method): **Limit reflects 100 percent natural gas burning.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 4 of 4

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.38 lb/MMBtu**	4. Equivalent Allowable Emissions: **68.4** lb/hour **300** tons/year
5. Method of Compliance: **EPA Method 7E**	
6. Allowable Emissions Comment (Description of Operating Method): **Limit reflects 100 percent No. 6 fuel oil burning.**	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Friday, Barbara

From: Harvey, Mary
Sent: Tuesday, May 15, 2007 9:39 AM
To: Koerner, Jeff; Arif, Syed; Sheplak, Scott; Cascio, Tom; Linero, Alvaro; Mitchell, Bruce; Thomas, Bruce X.; Heron, Teresa; Holtom, Jonathan
Cc: Adams, Patty
Subject: FW: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID #0590005-028-AC
Attachments: LTR.Smurfit-Stone Container - Facility #0590005-028-AC.pdf

Good Morning All!

I hope that I didn't omit anyone - but please read below. I think that I email this before - but I may not have - but anyway this is the third email that I have received from Kathy about her name not being added to the mailing list. Can you please help me with this?

Thanks a million,
Mary

-----Original Message-----
From: Forney.Kathleen@epamail.epa.gov [mailto:Forney.Kathleen@epamail.epa.gov]
Sent: Tuesday, May 15, 2007 8:53 AM
To: Harvey, Mary
Subject: Fw: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID #0590005-028-AC

Hey Mary,

We received the email, but it would be helpful if you added me to the email list.

Thanks,
Katy

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30024

Phone: 404-562-9130
Fax: 404-562-9019
----- Forwarded by Kathleen Forney/R4/USEPA/US on 05/15/2007 08:51 AM -----

----- Forwarded by James Little/R4/USEPA/US on 05/15/2007 08:33 AM -----

----- Forwarded by Gregg Worley/R4/USEPA/US on 05/14/2007 09:14 AM -----

"Harvey, Mary"
<Mary.Harvey@dep.state.fl.us>

05/11/2007 02:43 PM

To
<bgsammons@smurfit.com>, <tmclemen@smurfit.com>, "Mr. David Buff, P.E., Golder Associates, Inc." <dbuff@golder.com>, "Bradburn, Rick" <Rick.Bradburn@dep.state.fl.us>, Gregg Worley/R4/USEPA/US@EPA, "Mr. Dee Morse, National Park Service" <dee_morse@nps.gov>

cc
"Thomas, Bruce X." <Bruce.X.Thomas@dep.state.fl.us>, "Koerner, Jeff" <Jeff.Koerner@dep.state.fl.us>, "Adams, Patty" <Patty.Adams@dep.state.fl.us>, "Gibson, Victoria" <Victoria.Gibson@dep.state.fl.us>, "Holtom, Jonathan" <Jonathan.Holtom@dep.state.fl.us>

Subject
Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID #0590005-028-AC

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,
DEP, Bureau of Air Regulation
(See attached file: LTR.Smurfit-Stone Container - Facility #0590005-028-AC.pdf)

Friday, Barbara

From: Harvey, Mary
Sent: Monday, May 14, 2007 11:36 AM
To: Adams, Patty
Subject: FW: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID # 0590005-028-AC

-----Original Message-----
From: Dee_Morse@nps.gov [mailto:Dee_Morse@nps.gov]
Sent: Monday, May 14, 2007 11:33 AM
To: Harvey, Mary
Subject: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID # 0590005-028-AC

Return Receipt

Your document:	Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID #0590005-028-AC
was received by:	Dee Morse/DENVER/NPS
at:	05/14/2007 09:33:19 AM

Friday, Barbara

From: Harvey, Mary
Sent: Monday, May 14, 2007 9:10 AM
To: Adams, Patty
Subject: FW: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID # 0590005-028-AC

From: Bradburn, Rick
Sent: Friday, May 11, 2007 3:20 PM
To: Harvey, Mary
Subject: Read: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID #0590005-028-AC

Your message

To:	'bgsammons@smurfit.com'; 'tmclemen@smurfit.com'; 'Mr. David Buff, P.E., Golder Associates, Inc.'; Bradburn, Rick; 'Mr. Gregg Worley, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc:	Thomas, Bruce X.; Koerner, Jeff; Adams, Patty; Gibson, Victoria; Holtom, Jonathan
Subject:	Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID #0590005-028-AC
Sent:	5/11/2007 2:44 PM

was read on 5/11/2007 3:20 PM.

Friday, Barbara

From: Harvey, Mary
Sent: Monday, May 14, 2007 9:10 AM
To: Adams, Patty
Subject: FW: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID # 0590005-028-AC

From: Sammons, Bob [mailto:BSAMMONS@SMURFIT.COM]
Sent: Saturday, May 12, 2007 10:57 AM
To: undisclosed-recipients
Subject: Read: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID #0590005-028-AC

Your message

To: BSAMMONS@SMURFIT.COM
Subject:

was read on 5/12/2007 10:57 AM.

Friday, Barbara

From: Harvey, Mary
Sent: Friday, May 11, 2007 2:54 PM
To: Thomas, Bruce X.; Adams, Patty
Subject: FW: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID # 0590005-028-AC

Bruce it was delivered.

Thanks,
mary

From: System Administrator
Sent: Friday, May 11, 2007 2:53 PM
To: Harvey, Mary
Subject: Delivered:FW: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID +ACM-0590005-028-AC

Your message

To: bsammons@smurfit.com
Subject: FW: Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID #0590005-028-AC
Sent: 5/11/2007 2:52 PM

was delivered to the following recipient(s):

Sammons, Bob on 5/11/2007 2:53 PM

Friday, Barbara

From:	Harvey, Mary
Sent:	Friday, May 11, 2007 2:44 PM
To:	'bgsammons@smurfit.com'; 'tmclemen@smurfit.com'; 'Mr. David Buff, P.E., Golder Associates, Inc.'; Bradburn, Rick; 'Mr. Gregg Worley, EPA Region 4'; 'Mr. Dee Morse, National Park Service'
Cc:	Thomas, Bruce X.; Koerner, Jeff; Adams, Patty; Gibson, Victoria; Holtom, Jonathan
Subject:	Letter - B.G. Sammons-Smurfit-Stone Container Enterprises, Inc. - Facility ID #0590005-028-AC
Attachments:	LTR.Smurfit-Stone Container - Facility #0590005-028-AC.pdf

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

May 11, 2007

ELECTRONIC MAIL - RECEIVED RECEIPT REQUESTED

B. G. Sammons, General Manager
Smurfit-Stone Container Enterprises, Inc
One Everitt Avenue
Panama City, Florida 32402

Re: **Request for Additional Information**
Project No. 0590005-028-AC (PSD-FL-388)
Petcoke Firing in Lime Kiln

Dear Mr. Sammons:

On February 23, 2007, the Department received your application and sufficient fee for an air construction permit to allow petcoke firing in the lime kiln at the Smurfit-Stone Panama City Mill. On April 12, 2007, the Department received a response to a request for additional information that was sent on March 23, 2007. The application is incomplete. In order to continue processing your application, the Department will need the additional information requested below. Should your response to any of the items below require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

NO_x Controls and Emissions

1. Please account for BACT as combustion control for firing natural gas and distillate oil as stand alone fuels.

2. Please describe the combustion control methods and monitoring that will be used to comply with the BACT standard.

3. The Department is considering requiring a continuous emissions monitoring system (CEMS) to measure and record NO_x emissions. Please comment.

SO_2 Controls and Emissions

4. Please account for BACT as combustion control for firing natural gas and distillate oil as stand alone fuels.

5. Please describe the monitoring procedures and levels for the venture scrubber to control SO_2 emissions.

6. The emissions stack test data from October 31, 2002, indicate a mean emissions rate of 0.39 lb/ton, while the data from February 28, 2006, indicate a mean emissions rate of less than 0.034 lb/ton. The application proposes a 32.9 lb/hr SO_2 emission limit as BACT or 1.79 lb/ton CaO (dry basis). Justify the higher determination.

Air Quality Modeling Analysis

7. In the response to our comment 9, SSCE provided revised permit conditions for Combination Boilers No. 3 and No. 4. On page 1-3 of the PSD permit application, SSCE proposes a lower limit of 690 lb/hr, 24-hour average for the Combination Boiler No. 4. This value was not included in the revised permit condition for this source. Will there be a period of time where the Lime Kiln will be burning petcoke and the enclosure of the Recovery Boilers will not have been completed? If this is the case, the SO2 impacts from this case should be addressed.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information.

If you have any questions regarding this matter, please call Bruce Thomas at 850/921-7744 or me at 850/921-9536.

Sincerely,

for Jeff Koerner / B Thomas

Jeffery F. Koerner, P.E.
BAR - Air Permitting North

cc: Mr. B. G. Sammons, Smurfit-Stone (bgsammons@smurfit.com)
Mr. Tom Clements, Smurfit-Stone (tmclemen@smurfit.com)
Mr. David Buff, Golder Associates (dbuff@golder.com)
Mr. Rick Bradburn, NWD Office (rick.bradburn@dep.state.fl.us)
Mr. Gregg Worley, EPA Region 4 (worley.gregg@epa.gov)
Dee Morse, NPS (dee_morse@nps.gov)

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL USA 32653
Telephone (352) 336-5600
Fax (352) 336-6603
www.golder.com

RECEIVED

APR 12 2007

BUREAU OF AIR REGULATION

Golder Associates

April 11, 2007

063-7645

Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Northwest District
Tallahassee, Florida 32399-2400

Attention: Jeffery F. Koerner, P.E., Air Permitting North

**RE: SMURFIT-STONE CONTAINER ENTERPRISES, INC.
PROJECT NO. 0050009-028-AC (PSD-FL-388)
PETCOKE FIRING IN LIME KILN
REQUEST FOR ADDITIONAL INFORMATION**

Dear Mr. Koerner:

Smurfit-Stone Container Enterprises, Inc. (SSCE) and Golder Associates Inc. have received the Department's request for additional information (RAI) dated March 23, 2007, regarding the proposed petroleum coke (petcoke) firing in the Lime Kiln at the Panama City Mill. Each of the Department's requests is answered below, in the same order as they appear in the RAI letter. Note that the RAI indicated the project number as 0590005-028-AC. We believe this should instead be project no. 0050009-028-AC.

__Alternate Fuel Blends – Petroleum Coke and natural Gas or Fuel Oil__

Comment 1. The application requests authorization to fire up to 90% petroleum coke with a maximum sulfur content of 7% as a substitute for fuel oil and natural gas. Please provide the "as-fired" specifications for petcoke including the ultimate and proximate analyses as well as metal concentrations.

Response: Provided below is an ultimate/proximate analysis and metals analysis for a representative petcoke sample.

	As Received	**Dry Basis**
Moisture	6.84	----.---
Ash	0.47	0.50
Sulfur	6.90	7.41
Carbon	80.79	86.72
Hydrogen	3.17	3.40
Nitrogen	1.36	1.46
Oxygen by Diff	0.47	0.51

Other Analysis	**Dry Basis (ppm):**
Vanadium	1,402
Calcium	185
Iron	269
Nickel	258
Silicon	535
Sodium	69

NO_x Controls

Comment 2. **The vendor estimated NO_x emissions for a blend of 80% petroleum coke / 20% natural gas at 105 – 125 ppm. Please provide data to support the vendor estimate, such as actual stack test data for the burners firing petcoke blends.**

Response: Unfortunately, Coen could not locate copies of the actual stack test data from units firing the petcoke blends. However, Coen states the following in regards to the Department's comments:

> "The numbers have been provided in the proposal as estimates based on burner calculations. Please note, the NO_x emissions listed in the proposal are based on lime recovery kilns. In lime kilns used to make cements, typically natural gas has the highest NO_x emissions (as listed in the Arcadis report) with a very high flame temperature. With lime recovery kilns requiring lower flame temperatures, fuel nitrogen from oil contributes additional NO_x when compared to natural gas combustion. Hence, NO_x emissions for oil is greater than natural gas."

Comment 3. **The vendor estimated NO_x emissions for a blend of 80% petroleum coke / 20% natural gas at 165 – 185 ppm. Please provide data to support the vendor estimate, such as actual stack test data for the burners firing petcoke blends. The Department is aware of a report by Arcadis[1] stating, "For example, in the kiln, natural gas combustion with a high flame temperature and low fuel nitrogen generates a larger quantity of NO_x than does oil or coal, which have higher fuel nitrogen but which burn with lower flame temperatures." If this is true, then it would appear that NO_x emissions would decrease with the use of oil. Please comment.**

Response: Refer to response to Comment 2 above. Also, Arcadis is quoting AP-42, Section 11.6 for Lime Kilns. However, Coen states in their proposal, page 5 of 13, in regards to their Dual Zone gas gun: "In addition recirculation is produced by the spinner bringing in flue gases (internal flue gas generator) and since the heat is transferred efficiently the flame cools down, thereby reducing the thermal NO_x produced from our burner as compared to any other make burner." Therefore, it is the unique design of the Coen burner that produces lower NO_x emissions when burning natural gas compared to fuel oil.

Comment 4. **The PSD report indicates that the exhaust from the lime kiln is between 1600°F and 2700°F, which may provide a reasonable temperature window for SNCR (1600°F to 2000°F). However, the application states that load fluctuations and difficulties in maintaining the proper temperature window would preclude using a SNCR system for control of NO_x emissions.**

- **a.** **Please explain why there is such a wide variation in loads for the lime kiln as suggested in the application. Describe the lime kiln operation and document the magnitude and frequency of the load fluctuations by providing hourly production rates for 2006.**

- **b.** **The Department has discussed load variations with Fuel-Tech, an SNCR vendor. From these discussions, it appears that load fluctuations are simply another design consideration. In addition, new cement kilns are being permitted with SNCR systems that do not involve a complicated injection grid for ammonia or urea. Please provide data on the lime kiln**

[1] "Environmental Considerations and Permitting, use of Petroleum Coke as Supplemental Fuel in Lime Kilns", Arcadis report prepared for DTE Energy Services, December 2003.

exhaust temperature downstream of the lime kiln and upstream of the venturi scrubber. Provide dimensions and/or drawings of the exhaust duct from the lime kiln through the venturi scrubber. Indicate if any obstructions exist that would prohibit modifications to the existing duct to accommodate ammonia injection. Please provide a vendor quotation for an SNCR system.

Response: On page 5-4 of the PSD application, it is stated that "A lime kiln typically operates in the 1,600 to 2,700 °F range." This is a general statement, and not specific to SSCE's Lime Kiln. On page 5-5 in the discussion of SNCR, the application states, "The correct temperature window of 1,600°F to 2,100°F occurs inside the rotating body of the kiln. Locating injection nozzles in such an area is not technically feasible at the present time and has not been attempted on any lime kiln." SSCE measures flue gas temperature at two locations in the kiln: at the hot end, where the burner is located, and at the cold end where the combustion gases exit the kiln and where the lime mud enters the kiln.

Hourly hot end temperature data for the first quarter of 2007 is shown graphically in Figure 1 attached. The data reveal that the temperature at the hot end averages about 2,500°F, and rarely falls below 2,200°F. Hourly cold end temperature data for the first quarter of 2007 is shown in Figure 2. The data shows that the temperature at the cold end is normally between 550°F and 600°F. Therefore, as stated in the application, the correct temperature window of 1,600°F to 2,100°F occurs inside the rotating body of the kiln

SSCE also examined Lime Kiln load variation. Hourly Lime Kiln throughput is shown graphically in Figures 3, 4, and 5 for the periods January, June, and December 2006. The data reveal significant load variations. These data are typical of year-around operation. The primary reason for the load variations is that the kiln is part of a larger production process and needs to be able to respond to fluctuations in that process due to limited storage capacity in the liquor cycle. The demands of the production process vary due to a number of reasons. These include: different product mixes, scheduled downtime, and unscheduled downtime. In addition, the kiln needs to have "catch up" capacity should it need to be down.

For all of the above reasons, SNCR is not technically feasible for application to the SSCE Lime Kiln. To confirm the correctness of this conclusion, FuelTech Inc. was contacted and their combustion survey form completed for the Lime Kiln. Additional information regarding the dimensions of the Lime Kiln and the temperature information was also provided. FuelTech's response was as follows:

> *Fuel Tech has reviewed the information you provided for the above referenced lime kiln application, but it does not appear feasible to release the chemical within the appropriate temperature window for the SNCR process.*
>
> *The kiln is 375 ft long with a diameter of 12.5 ft. The hot end of the kiln is at 2,400°F and the cold end of the kiln is at 600°F. The appropriate temperature window is somewhere in between, but since the kiln is rotating we can only inject from either end. The baseline NO_x is between 165 and 185 ppm. In order for FTI to be able to produce any reduction in NO_x emissions, the chemical would have to be released at a temperature of 1950°F or below, assuming low CO. If we assume a linear temperature drop across the kiln, that would mean that the temperature gradient is 4.8°F per foot (a temperature drop of 1800°F – from 2400°F to 600°F – over a length of 375 feet). If we inject through the end at 2400°F, need to release at 1950°F, and use the gradient of 4.8°F/ft, the urea would have to travel 94 feet into the kiln before it reaches the temperature of interest. If we inject through the cold end at 600°F, the urea would have to travel over 200 feet to reach a minimum temperature of 1600°F where some NO_x reduction could take place. We do not believe that either approach is realistic.*

This statement substantiates that SNCR is not technically feasible for the SSCE Lime Kiln. A copy of the combustion survey form and the email from FuelTech are provided in Attachment A.

Comment 5. Please submit the 2006 NO_x emissions stack test report, including emissions data, operating conditions, etc.

Response: The pertinent pages from the 2006 stack test report are provided in Attachment B.

SO_2 Controls

Comment 6. The application estimates 80% SO_2 reduction in the lime kiln and 90% reduction in the wet scrubber for an overall reduction of approximately 98%. The Arcadis report[1] suggests an SO_2 reduction for the lime kiln alone may be as high as 99.5%. From historical permit records, this lime kiln is more than 300 feet in length, which would provide intimate contact with the exhaust gas and lime. Please provide data to support the low expected SO_2 reductions.

Response: For purposes of the permit application, emission estimates must necessarily be conservative since an emission limit may be imposed which must be met on a continuous basis. Actual SO_2 reductions will likely be greater than the application estimates. However, the actual SO_2 reduction can not yet be quantified, until the project is implemented and emission testing is conducted.

Comment 7. The application indicates that the venturi scrubber uses fresh water as the scrubber media and combined with the highly alkaline lime dust that exits the lime kiln acts as a virtual flue gas desulfurization system. Please discuss the option of adding lime to the scrubber media to increase SO_2 removal efficacy.

Response: The pH of the scrubber water, as measured by SSCE, is already approximately 9, due to the lime dust captured in the venturi scrubber. Adding additional lime would not result in any higher pH, or any greater SO_2 control.

Comment 8. Please submit the SO_2 stack test reports from 2002 and 2006 including emissions data, operating conditions, etc.

Response: The pertinent pages from the 2002 and 2006 stack test reports are attached in Attachment B.

Air Quality Modeling Analysis

Comment 9. Please revise Table 6-5 to show that the short-term SO_2 emission rates for Combination Boilers 3 and 4 represent an *actual* decrease in emissions and not an increase that should be included in the SO_2 PSD Class I and II significant impact analyses. From the table, it appears that you are requesting a new combined SO_2 emissions limit for these units. Please specify the new enforceable permit limit that formed the basis for the SO_2 air quality analysis.

Response: The emissions shown in Table 6-5 were used in the ambient air quality standard (AAQS) analysis and PSD Class II increment analysis, and are not related to the significant impact analysis. The emissions used in the significant impact analysis are shown in Table 6-3. These emissions did not include the reductions from the Nos. 3 and 4 Combination Boilers. The emissions used in the significant impact analysis did not include any emission reductions due to the Nos. 3 and 4 Combination Boilers because the Recovery Boilers building enclosure is not related to the Lime Kiln petcoke project. However, since the Lime Kiln petcoke project required modeling for AAQS and PSD Class II increments, it was decided to include the Recovery Boiler buildings modeling analysis in the petcoke application in order to expedite review of the modeling. Proposed wording for new enforceable permit conditions that form the basis of the SO_2 air quality analysis are provided below:

No. 3 Combination Boiler

B.5. Sulfur Dioxide. Sulfur dioxide emissions shall not exceed 887 pounds per hour based on a 24-hour average. Sulfur dioxide emissions shall be continuously monitored and recorded. The permittee shall maintain a scrubber pH of 7.0 or greater (24-hour average) during times when the continuous monitor is being repaired and/or calibrated. Monitoring records shall be maintain and available for inspection by the Department.

a. **Beginning on the date that the permittee completes the enclosure of the east wall of the Recovery Boilers building, the combined total sulfur dioxide emissions from the Nos. 3 and 4 Combination boilers shall not exceed 1,350 pounds per hour based on a 24-hour average.**

b. **Beginning on the date that the permittee completes the enclosure of the east wall and one or more additional walls of the Recovery Boilers building, the combined total sulfur dioxide emissions from the Nos. 3 and 4 Combination boilers shall not exceed 1,100 pounds per hour based on a 24-hour average.**

c. **The permittee shall provide notification to the Department within 7 days of completion of activities authorized in condition B.5.a and B.5.b above.**

No. 4 Combination Boiler

C.5. Sulfur Dioxide. Sulfur dioxide emissions shall not exceed 1,183 pounds per hour when incinerating NCG and SOG, 1,174 pounds per hour when burning SOG but not NCG, 1,183 pounds per hour when burning NCG but not SOG, and 772 pounds per hour when not incinerating NCG or SOG. Sulfur dioxide emissions shall be continuously monitored and recorded. The permittee shall maintain a scrubber pH of 8.0 or greater (24-hour average) during times when the continuous monitor is being repaired and/or calibrated. Monitoring records shall be maintain and available for inspection by the Department.

a. **Beginning on the date that the permittee completes the enclosure of the east wall of the Recovery Boilers building, the combined total sulfur dioxide emissions from the Nos. 3 and 4 Combination boilers shall not exceed 1,350 pounds per hour based on a 24-hour average.**

b. **Beginning on the date that the permittee completes the enclosure of the east wall and one or more additional walls of the Recovery Boilers building, the combined total sulfur dioxide emissions from the Nos. 3 and 4 Combination boilers shall not exceed 1,100 pounds per hour based on a 24-hour average.**

c. The permittee shall provide notification to the Department within 7 days of completion of activities authorized in condition C.5.a and C.5.b above.

Comment 10. **Rule 212.400(4)(e), F.A.C. requires an analysis of the air quality impacts as well as the nature and extent of any or all commercial, residential, industrial, and other growth which has occurred since August 7, 1977 in the area that the modification would affect. Please provide this information.**

Response: The requested analysis is provided in Attachment C.

Comment 11. **NO_x is an ozone precursor and, for any net increase of 100 tons per year, the federal rules require an ambient impact analysis for ozone. The predicted NO_x increase for this project is greater than 100 tons per year. Please provide this analysis.**

Response: The requested analysis is provided in Attachment D.

Also attached is the Professional Engineer certification statement. Thank you for consideration of this information. If you have any questions, please do not hesitate to call me at (352)336-5600.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

David A. Buff, P.E., Q.E.P.
Principal Engineer

DB/all

Enclosure

Cc: Tom Clements, Smurfit-Stone

Y:\Projects\2006\0637645 SSCE Panama City PSD\4.1\RAI0407\RAI041007-645.doc

APPLICATION INFORMATION

Professional Engineer Certification

1.	Professional Engineer Name: **David A. Buff** Registration Number: **19011**
2.	Professional Engineer Mailing Address... Organization/Firm: **Golder Associates Inc.**** Street Address: **6241 N.W. 23rd Street, Suite 500** City: **Gainesville** State: **Florida** Zip Code: **32653**
3.	Professional Engineer Telephone Numbers... Telephone: **(352) 336-5600** ext.**545** Fax: **(352) 336-6603**
4.	Professional Engineer Email Address: **dbuff@golder.com**
5.	Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

David A. Buff

Signature

4/11/07

Date

(seal)

* Attach any exception to certification statement.
**Board of Professional Engineers Certificate of Authorization #00001670

FIGURE 1
SMURFIT-STONE LIME KILN HOT ENDTEMP
1st QUARTER 2007

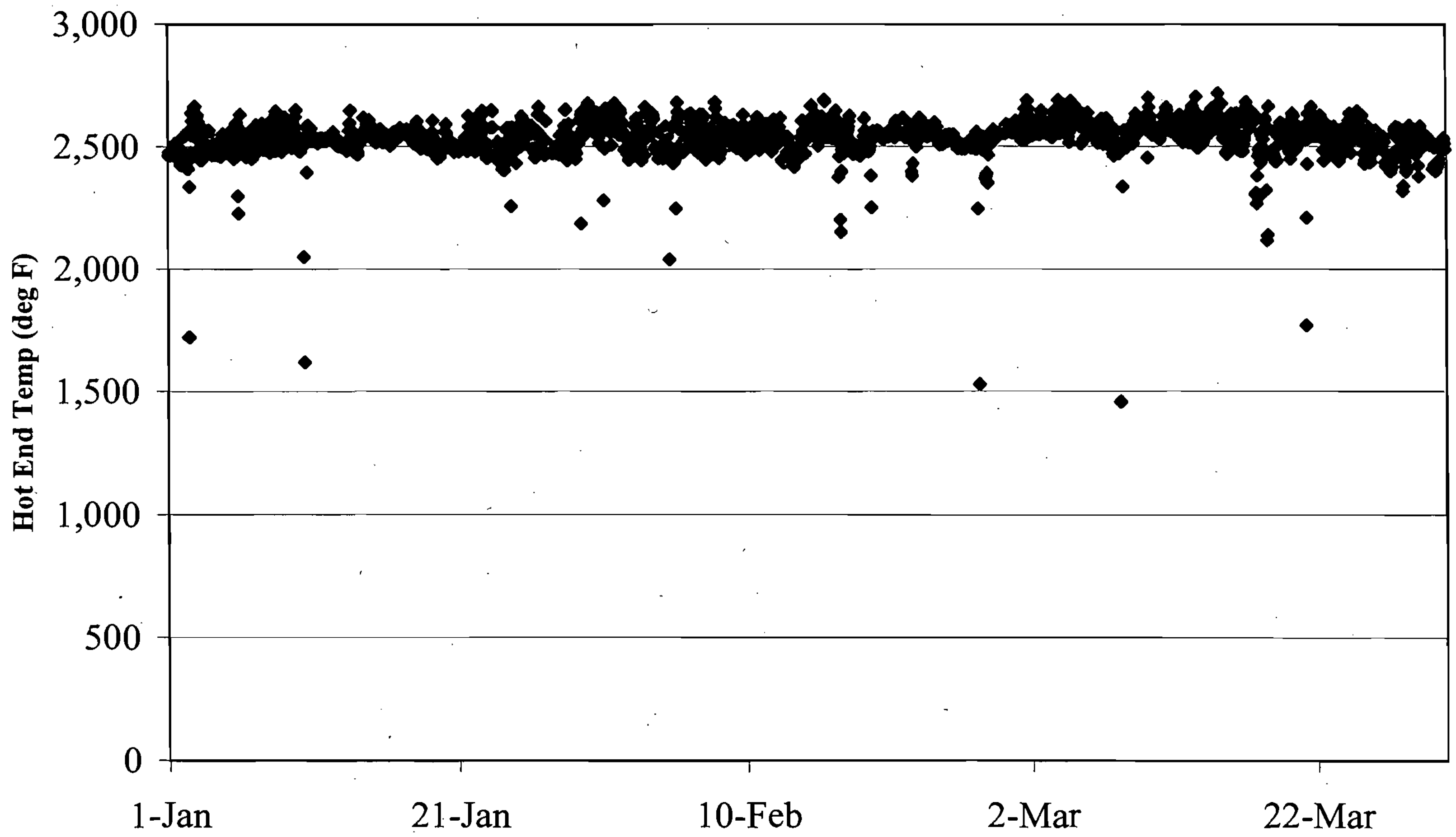


FIGURE 2
SMURFIT-STONE KILN COLD END TEMP
1st QUARTER 2007

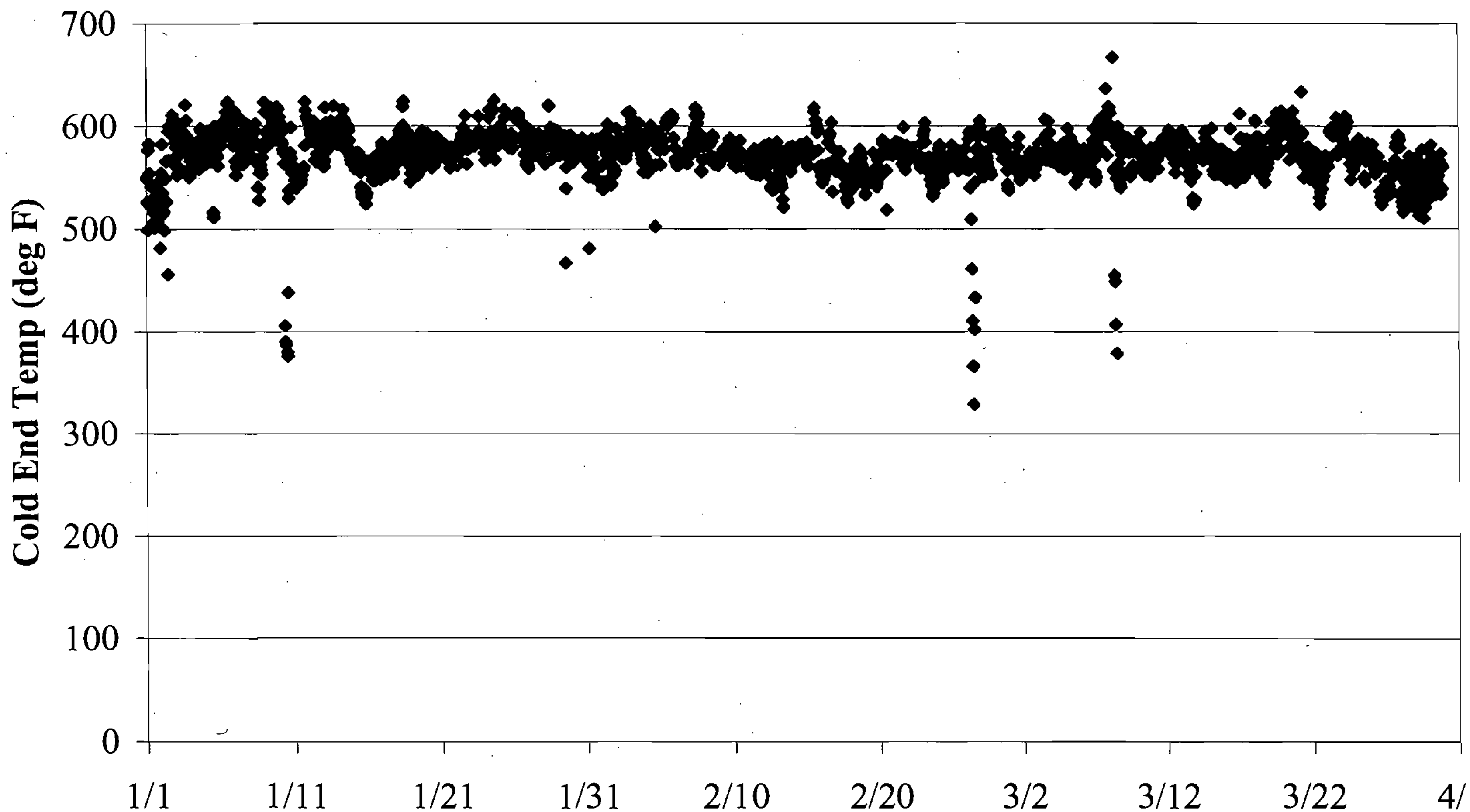
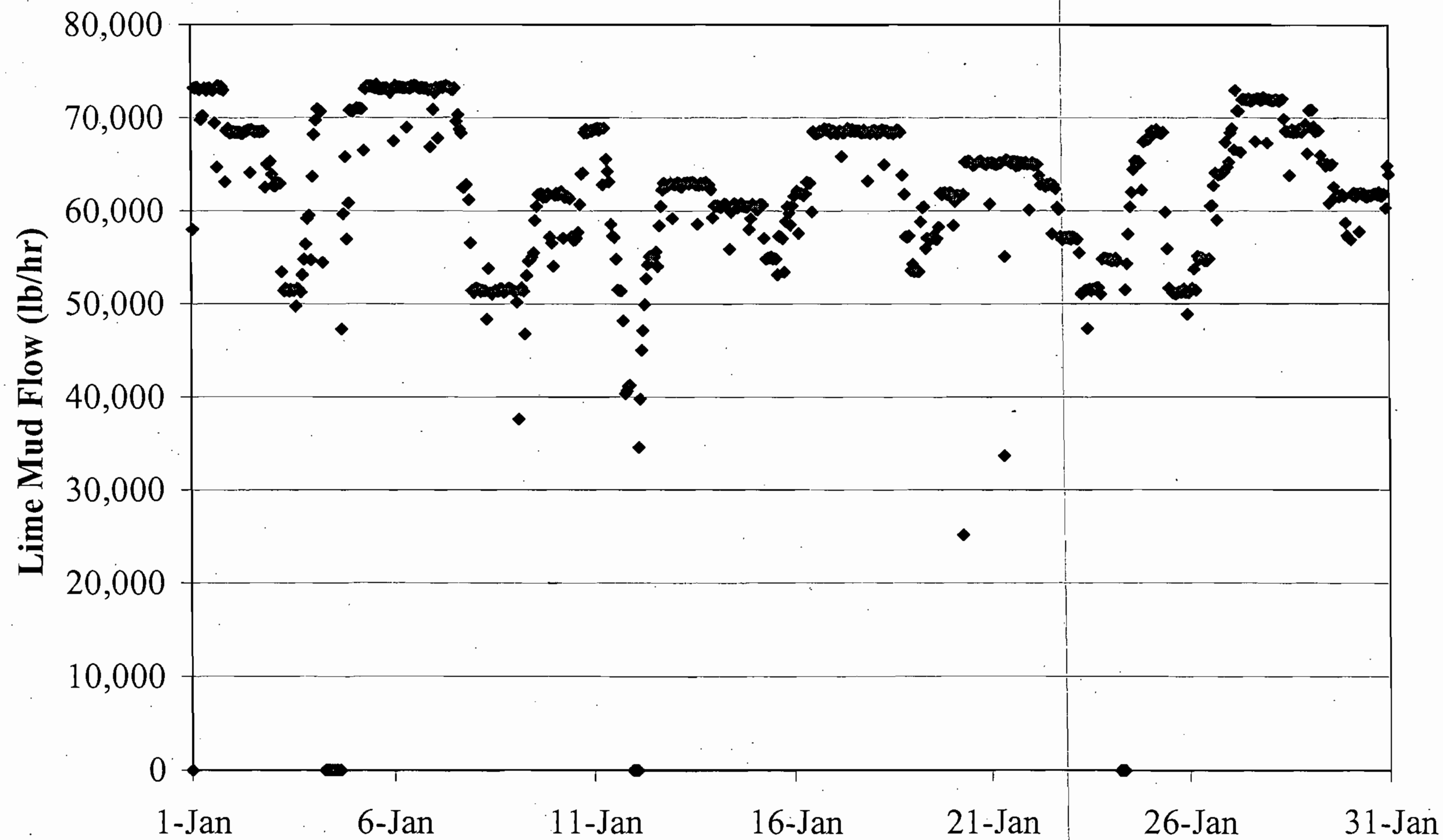


FIGURE 3
SMURFIT-STONE LIME KILN THROUGHPUT - JANUARY 2006



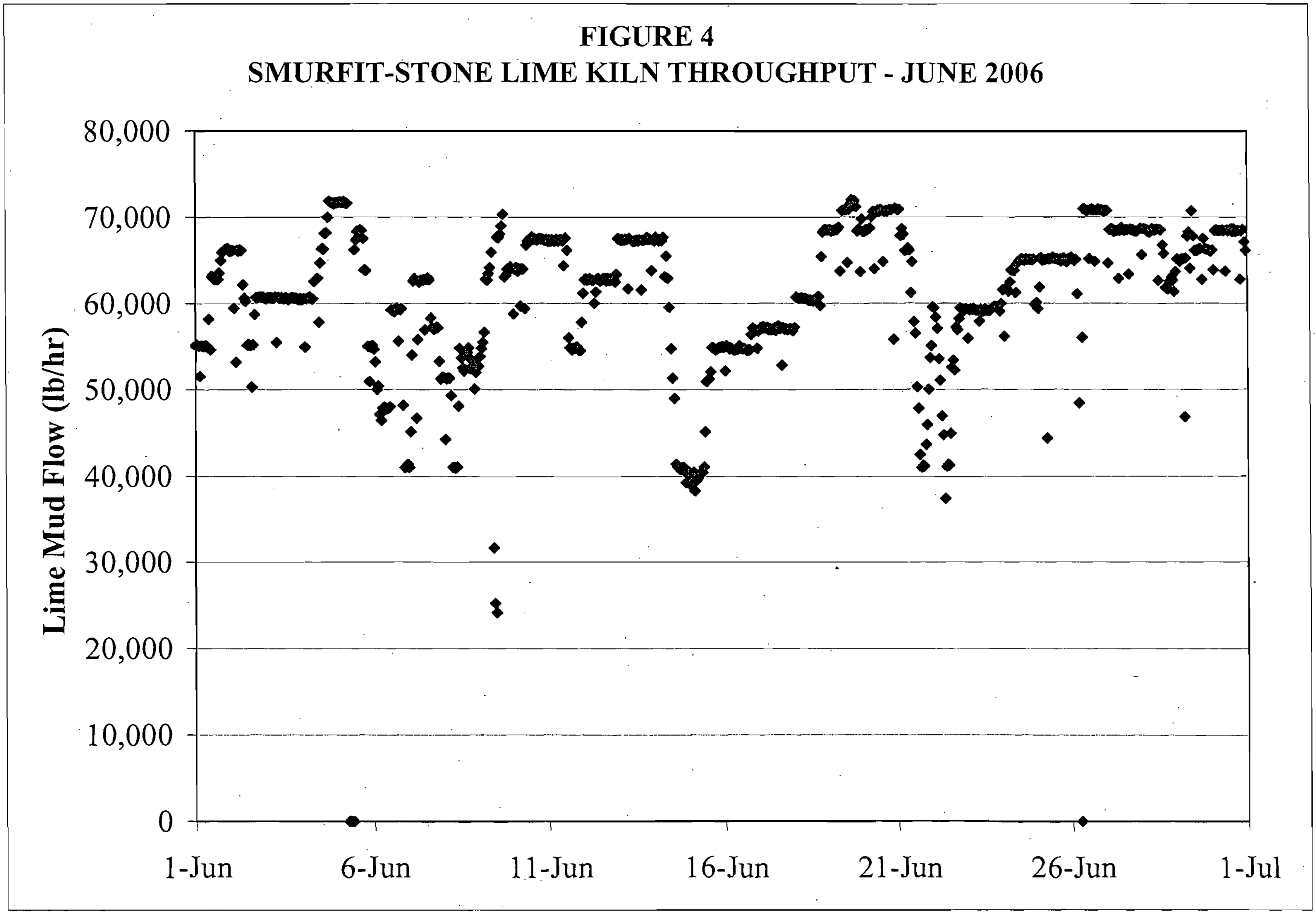


FIGURE 4
SMURFIT-STONE LIME KILN THROUGHPUT - JUNE 2006
Lime Mud Flow (lb/hr)
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1-Jun
6-Jun
11-Jun
16-Jun
21-Jun
26-Jun
1-Jul

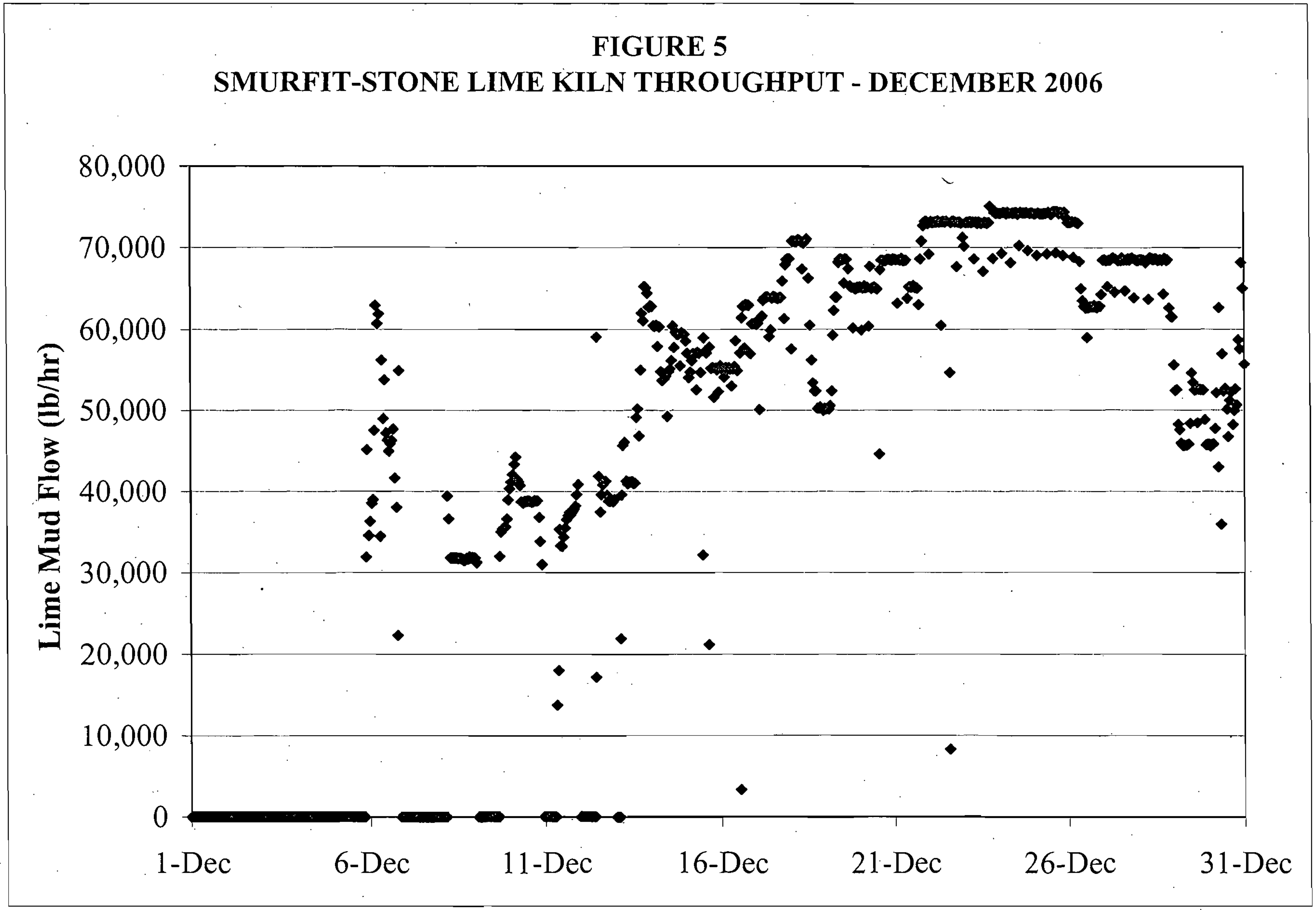


FIGURE 5
SMURFIT-STONE LIME KILN THROUGHPUT - DECEMBER 2006
Lime Mud Flow (lb/hr)
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1-Dec
6-Dec
11-Dec
16-Dec
21-Dec
26-Dec
31-Dec

ATTACHMENT A

SNCR INFORMATION FOR FUELTECH, INC.

Buff, Dave

From: Terry Brown [TBrown@ftek.com]
Sent: Tuesday, April 03, 2007 1:38 PM
To: Buff, Dave
Cc: Tex Quillian
Subject: SSCE Lime Kiln SNCR

Dave,

Fuel Tech has reviewed the information you provided for the above referenced lime kiln application, but it does not appear feasible to release the chemical within the appropriate temperature window for the SNCR process.

The kiln is 375 ft long with a diameter of 12.5 ft. The hot end of the kiln is at 2400°F and the cold end of the kiln is at 600°F. The appropriate temperature window is somewhere in between, but since the kiln is rotating we can only inject from the either end. The baseline NOx is between 165 and 185 ppm. In order for FTI to be able to produce any reduction in NOx emissions, the chemical would have to be released at a temperature of 1950°F or below, assuming low CO. If we assume a linear temperature drop across the kiln, that would mean that the temperature gradient is 4.8°F per foot (a temperature drop of 1800°F – from 2400°F to 600°F – over a length of 375 feet). If we inject through the end at 2400°F, need to release at 1950°F, and use the gradient of 4.8°F/ft, the urea would have to travel 94 feet into the kiln before it reaches the temperature of interest. If we inject through the cold end at 600°F, the urea would have to travel over 200 feet to reach a minimum temperature of 1600°F where some NOx reduction could take place. We do not believe that either approach is realistic.

Thank you for the opportunity to review this application for your client. Please let me know if you have any questions. Thank you.

Terry L. Brown
Regional Sales Manager

Fuel Tech, Inc.
110 Habersham Drive, Suite 108
Fayetteville, GA 30214-1381
770-371-5020 Office Phone
770-371-5021 Office Fax
770-560-1880 Mobile Phone
tbrown@ftek.com

ATTACHMENT B

2002 AND 2006 STACK TESTS ON LIME KILN

SOURCE TEST REPORT

ENGINEERING TESTS FOR SO_2
SMURFIT-STONE CONTAINER CORP.
PANAMA CITY, FLORIDA

LIME KILN

October 31, 2002

Prepared By:

AAS Inc.

Ambient Air Services, Inc.

106 Ambient Airway • Starke, FL 32091 • (904) 964-8440 • Fax (904) 964-6675

1.0 INTRODUCTION

Ambient Air Services, Inc. was engaged by Smurfit-Stone Container Corporation, Panama City, Florida to perform emissions test on the Lime Kiln for Sulfur Dioxide. This was an Engineering test for information only. The test was performed on October 31, 2002, and three runs of 1 hour each were made by AASI personnel with the assistance of the Smurfit-Stone operating crews.

Results for the SO2 emissions are reported on a mass emissions basis and therefore Volumetric flow rates were determined as well.

We wish to express our appreciation to Mr. Tom Clements and associates and the mill operating staff for their cooperation in the successful completion of this project. We also wish to thank the production staff for maintaining the required production rates and recording the operating data during the test period.

SOURCE	PARAMETERS	TEST METHOD
Lime Kiln	Sulfur Dioxide	EPA Method 6C

TABLE 2.1

SULFUR DIOXIDE EMISSIONS SUMMARY
LIME KILN

SMURFIT-STONE CONTAINER CORPORATION
PANAMA CITY, FLORIDA

DATE	RUN NUMBER	TIME PERIOD	LEVEL	SO2 PPM	VOLUMETRIC FLOW SCFMD	OXYGEN %	SO2 EMISSIONS LBS/DSCF	SO2 EMISSIONS LB/HR
10/31/02	1	1040-1140	MAX	299.93			4.979E-05	117.75
			MIN	0.00			0.000E+00	0.00
			AVG	58.30	54799	5.94	9.677E-06	22.89 **
10/31/02	2	1150-1250	MAX	36.16			6.003E-06	13.60
			MIN	0.00			0.000E+00	0.00
			AVG	17.11	52482	6.96	2.840E-06	6.43
10/31/02	3	1300-1400	MAX	32.07			5.324E-06	12.37
			MIN	0.00			0.000E+00	0.00
			AVG	12.27	53836	7.35	2.037E-06	4.73
			MEAN	29.23	53705.7	6.75	4.851E-06	11.35

ppm - Parts per million by volume

* Mean determined as arithmetic average of the results for each run of the runs

LBS/HR = 1.66E-07 x ppm x SCFMD x 60

* Process upset - invalid data. TRS emissions also unusually high (see next sheet)

JW

Date: 10-31-02

	Lime Kiln			Lime Kiln Scrubber				Slaker Flows				NOTE: When the out, identify the being taken to ge
	Mud Flow	Oil Flow	Gas Flow	Corrected TRS	Vent Diff	Bull Flow	Tangential Flow	Green Liquor	Lime	Scrubber		
UNITS	LBS/HR	GPM	MCFH	PPM	In	GPM	GPM	TPH	TPH	GPM	WHAT'S WRONG!	
LIMIT	<69,000	<15.7	<203	<20	>18	>500	>500	<60.39	<21.18	>30		A
6 am	43920	15.3	0	1.3	24	1085	577	41.2	14.3	25		
7	47790	14.7	0	.9	24	1070	776	41.7	14.2	35		
8	47790	14.2	0	1.1	24	1058	779	41.9	14.2	35		
9	50030	14.2	0	2.3	24	1062	772	0	0	35	Slaker PM	
10	51620	14.7	0	5.6	23	1056	788	41.2	14.3	35		
11	63870	15.7	0	16.8	23	1056	780	41.2	14.3	35	SO2 TESTING	
12 pm	68520	15.7	0	4.5	20	1080	800	41.2	14.3	35		
1	64190	15.7	0	4.0	20	1075	900	43.9	15.2	35		
2	47870	14.0	0	3.3	20	1044	918	43.9	15.2	35		
3	44120	13.6	0	1.2	23	1054	772	49.3	17.1	35		
4	44120	13.0	0	1.0	24	1047	771	49.3	17.1	35		
5	44120	13.0	0	1.0	24	1068	794	49.4	17.1	35		
6	43680	13.0	0	.5	24	1055	783	49.3	17.1	35		
7	44360	13.3	0	.6	25	1053	784	49.4	17.1	35		
8	38530	13.3	0	.5	25	1059	788	49.4	17.1	35		
9	41110	13.1	0	.4	25	1057	780	49.4	17.1	35		
10	39260	13.1	0	.6	25	1048	771	49.3	17.1	35		
11	36630	12.4	0	.4	26	1043	773	49.4	17.1	35		
12 am	33970	11.5	0	.4	28	1049	774	49.1	17.0	35		
1	34410	10.8	0	.3	27	1049	786	49.4	17.1	35		
2	34190	10.8	0	.3	27	1058	781	43.9	15.2	35		
3	34190	10.8	0	.3	27	1039	773	43.8	15.2	35		
4	34190	10.8	0	.3	27	1043	771	43.9	15.2	35		
5	33970	10.8	0	.3	27	1044	788	46.6	16.1	35		

	OPERATOR	Foreman	Superintendent
7-3	Chewning	[illegible]	
3-11	Spann	[illegible]	[illegible]
11-7	Potter	LR	

JB: FORMS/BLEACH/LimeKilnScrubber (7-19-02)

WESTON SOLUTIONS
Weston Solutions, Inc.
1625 Pumphrey Avenue
Auburn, Alabama 36832-4303
334-466-5600 • Fax 334-466-5660
www.westonsolutions.com

28 February 2006

Mr. Benny Raffield
Smurfit-Stone Container Corporation
1 Everitt Avenue
Panama City, Florida 32412-0560

Work Order No. 03939.009.006

(we only have 1 kiln)
Re: No. ~~3~~ Lime Kiln Emission Testing

Dear Mr. Raffield:

This letter with attachments constitutes our report of the nitrogen oxides (NO_X) and sulfur dioxide (SO_2) emission testing performed on the No. ~~3~~ Lime Kiln at the Panama City, Florida facility. Mr. Rodney Padgett and Mr. Paul Green of Weston Solutions, Inc. (WESTON®) performed the testing on 7 February 2006 for in-house engineering use by mill personnel.

Attachment A to this letter presents the results of the testing in tabular form. Attachment B includes copies of the field data.

Nitrogen oxides and SO_2 sampling and analysis were conducted according to EPA Reference Methods 7E and 6C, respectively. The source gas volumetric flow rate was determined during sampling according to EPA Reference Methods 1-4.

We appreciate the opportunity to serve you on this project. If you have any questions or require additional information, please call me at 334-466-5617.

Sincerely,

WESTON SOLUTIONS, INC.

For

Billy Routhier
Project Manager

Sincerely,

WESTON SOLUTIONS, INC.

Melanie L. Wright

Melanie Wright, Ph.D.
Quality Assurance Representative

jb

Enclosure

TABLE A-1
NO. 3 LIME KILN
SUMMARY OF NO_X AND SO_2 EMISSION RESULTS

	Run 1	Run 2	Run 3	Mean
Date	2/7/06	2/7/06	2/7/06	----
Time Began	1201	1301	1401	----
Time Ended	1301	1401	1501	----
Stack Gas Data				
Temperature, °F	160	159	160	160
Velocity, ft/sec	48	48	50	48
Moisture, %	32	32	32	32
CO_2 Concentration, %	19.0	16.4	17.2	17.5
O_2 Concentration, %	6.7	8.0	7.7	7.5
VFR, x 10^4 dscfm	5.17	5.20	5.34	5.24
Nitrogen Oxides				
Concentration, ppm	99	96	90	95
Concentration, ppm @ 10% O_2	76	81	74	77
Emission Rate, lb/hr	37	36	34	36
Sulfur Dioxide				
Concentration, ppm	<1.0	<1.0	<1.0	<1.0
Concentration, ppm @ 10% O_2	<0.8	<0.8	<0.8	<0.8
Emission Rate, lb/hr	<0.5	<0.5	<0.5	<0.5

VOLUMETRIC FLOW CALCULATIONS

Run Number	Run 1	Run 2	Run 3	Mean
Date	2/7/06	2/7/06	2/7/06	----
Time	1240	1320	1450	----
Volumetric Flow Data				
Velocity Head, in. H2O				
Point 1	1.45	1.50	1.45	1.47
Point 2	1.10	1.10	1.15	1.12
Point 3	0.66	0.60	0.62	0.63
Point 4	0.20	0.18	0.20	0.19
Point 5	0.06	0.05	0.24	0.12
Point 6	0.20	0.22	0.20	0.21
Point 7	0.72	0.73	0.74	0.73
Point 8	0.68	0.66	0.70	0.68
Point 9	0.66	0.66	0.70	0.67
Point 10	0.40	0.39	0.40	0.40
Point 11	0.04	0.05	0.06	0.05
Point 12	0.06	0.05	0.05	0.05
Point 13	0.84	0.84	0.85	0.84
Point 14	1.45	1.40	1.45	1.43
Point 15	1.45	1.45	1.50	1.47
Point 16	1.40	1.40	1.40	1.40
Square Root of Delta P, (in. H20)^½	0.767	0.763	0.789	0.773
Pitot Tube Coefficient (Cp)	0.84	0.84	0.84	0.84
Barometric Pressure (Pb), in. Hg	30.15	30.15	30.15	30.15
Static Pressure (Pg), in. H2O	-0.68	-0.66	-0.66	-0.67
Stack Pressure (Ps), in. Hg	30.10	30.10	30.10	30.10
Stack Diameter (I.D.), in.	75.1	75.1	75.1	75.1
Stack Cross-sectional Area, ft^2	30.76	30.76	30.76	30.76
Stack Gas				
Temperature (ts), °F	160	159	160	160
Moisture (Bws)	0.319	0.315	0.318	0.317
CO2 Concentration (CO2), %	19.0	16.4	17.2	17.5
O2 Concentration (O2), %	6.7	8.0	7.7	7.5
Molecular Weight (Ms), lb/lb-mole	27.1	26.9	26.9	26.9
Velocity (Vs), ft/sec	48.1	47.9	49.5	48.5
Volumetric Flow Rate,				
At Stack Conditions (Qa), ACFM	88703	88461	91415	89526
At Standard Conditions (Qs), DSCFM	**51749**	**51955**	**53429**	**52378**

Smurfit Stone
Panama City, FL

03939.009.006
No. 3 Lime Kiln

EMISSION CALCULATIONS

	Run 1	Run 2	Run 3	Mean
Date	2/7/06	2/7/06	2/7/06	---
Time Began	1201	1301	1401	---
Time Ended	1301	1401	1501	---
Volumetric Flow Rate, (Qs), DSCFM	5.17E+04	5.20E+04	5.34E+04	5.24E+04
BWS	0.319	0.315	0.318	0.317
% Oxygen	6.7	8.0	7.7	7.5
Oxygen Reference Concentration, %	10.0	10.0	10.0	10.0

Nitrogen Oxides MW= 46.01				
Concentration, ppm	99.0	96.0	90.0	95.0
Concentration, ppm @10%O2	76.0	81.1	74.3	77.1
Emission Rate, lb/hr	36.7 ✓	35.7	34.4	35.6

Sulfur Dioxide MW= 64.06				
Concentration, ppm	< 1.0	< 1.0	< 1.0	< 1.0
Concentration, ppm @10%O2	< 0.8	< 0.8	< 0.8	< 0.8
Emission Rate, lb/hr	< 0.5	< 0.5	< 0.5	< 0.5

MH

LT

Caustic Room Environmental Log Sheet

Date: 2-07-07

UNITS LIMIT	Lime Kiln			Lime Kiln Scrubber				Slacker Flows			Check ERS System	WHAT'S WRONG!	NOTE: When the environmental targets are Out, identify the problem and log the action Being taken to get it back within limits.
	Mud Flow LBS/HR < 78,892	Oil Flow mmbtu < 180	Gas Flow mmbtu < 180	Corrected TRS PPM < 20	Vent Diff In > 20	Bull Flow GPM > 752	Tangential Flow GPM > 748	Green Liquor TPH < 60.39	Lime TPH < 21.18	Scrubber GPM > 30			Action Taken To Fix It
TIME AVE>	Hour	Hour	Hour	12 Hour	Hour	Hour	Hour	Hour	Hour	Hour	Yes		
6 am	59830	106	✓	1.3	25	1082	1058	~~5~~49.5	17.1	35	✓		
7	58990	106	–	1.0	25	1086	1060	49.4	17.1	35	✓		
8	59610	106	–	1.0	25	1088	1063	49.4	17.1	35	✓		
9	59830	106	–	1.4	25	1087	1059	49.4	17.1	35	✓		
10	50880	106	–	.7	26	1086	1059	49.5	17.0	35	✓		
11	46090	97	–	.5	27	1086	1058	49.4	17.1	35	✓		
12 pm	68430	89	–	.9	26	1084	1053	46.8	16.1	35	✓		
1	68300	115	–	1.1	24	1086	1070	46.7	16.2	35	✓		
2	68500	106	–	1.0	26	1088	1066	46.7	16.1	35	✓		
3	68450	106	–	1.2	26	1082	1061	43.8	15.2	35	✓		
4	57120	106	–	1.0	27	1087	1065	44.1	15.2	35	✓		
5	57290	106	–	1.4	27	1081	1059	44.0	15.2	35	✓		
6	56640	106	–	1.1	26	1075	1058	43.9	15.2	35	✓		
7	57330	106	off	1.1	26	1076	1065	41.1	14.3	35	yes		
8	57220	106	✓	.8	26	1078	1070	41.2	14.3	35	✓		
9	57050	106	✓	.8	26	1079	1064	41.2	14.3	35	✓		
10	57180	106	✓	1.6	26	1085	1062	42.4	14.7	35	✓		
11	57190	106	✓	.8	27	1087	1071	42.4	14.7	34	✓		
12 am	57020	106	✓	.8	27	1080	1061	42.5	14.7	33	✓		
1	57190	106	✓	1.4	27	1086	1062	42.5	14.7	33	✓		
2	56850	106	✓	2.1	27	1079	1065	42.5	14.7	34	✓		
3	57440	106	✓	1.4	26	1086	1066	42.4	14.7	33	✓		
4	57620	106	–	1.1	26	1085	1070	42.5	14.7	33	✓		
5	57400	106	✓	1.1	26	1081	1074	42.6	14.7	35	✓		

	OPERATOR	Foreman	Superintendent
7 - 3	Earnest	[illegible]	[illegible]
3 - 11	Earnest / [illegible] McAllister		
11 - 7	John McAllister	[illegible]	[illegible]

Green Liquor {THP} = GL Flow X 0.0549
Lime {THP} = GL Flow X 0.0190
Mud Flow {LBS/HR} = 450.6 X Mud Flow X Density X {1+ Density}

Note: Red Circle Any Limits That Are Out Of Target

ATTACHMENT C

AIR QUALITY IMPACTS OF ADDITIONAL GROWTH

1.0 IMPACTS DUE TO ASSOCIATED DIRECT GROWTH

1.1 Introduction

Rule 62-212.400(3)(h)(5), Federal Administrative Code (F.A.C.), states that an application must include information relating to the air quality impacts of, and the nature and extent of, all general, residential, commercial, industrial, and other growth that has occurred since August 7, 1977, in the area the facility or modification would affect. This growth analysis considers air quality impacts due to emissions resulting from the industrial, commercial, and residential growth associated with the Lime Kiln petcoke project proposed for the SSCE Panama City Mill. This information is consistent with the U.S. Environmental Protection Agency (EPA) guidance related to this requirement in the *Draft New Source Review Workshop Manual* (EPA, 1990).

The SSCE Mill is located in Bay County, which is bounded by Washington County to the north, Walton County to the west, Calhoun and Gulf Counties to the east, and the Gulf of Mexico to the south. The total area of Bay County is 1,033 square miles; 763 square miles of land and 270 square miles of water.

There should not be any increase in the workforce needed for the Lime Kiln petcoke project at the SSCE Mill. Therefore, there is not expected to be any increase in vehicular traffic in the area, with no effect on air quality levels.

There are also expected to be no air quality impacts due to associated commercial and industrial growth given the location of the Mill. The existing commercial and industrial infrastructure should be adequate to provide any support services that the project might require and would not increase with the operation of the Mill.

The following discussion presents general trends in residential, commercial, industrial, and other growth that has occurred since August 7, 1977, in Bay County. As such, the information presented is available from a variety of sources (i.e., Florida Statistical Abstract, FDEP, etc.) that characterize Bay County as a whole.

1.2 Residential Growth

1.2.1 Population and Household Trends

As an indicator of residential growth, the trends in the population and number of household units in Bay County since 1977 are shown in Figure 1. The County experienced a 68-percent increase in population for the years 1977 through 2004. During this period, there was an increase in population of about 64,000. Similarly, the number of households in the County increased by about 28,000, or 90 percent, since 1977.

Growth Associated with the Mill Modification

Because there will be no additional employees needed for the proposed modification, residential growth will not change.

1.3 Commercial Growth

1.3.1 Retail Trade and Wholesale Trade

As an indicator of commercial growth in Bay County, the trends in the number of commercial facilities and employees involved in retail and wholesale trade are presented in Figure 2. The retail trade sector comprises establishments engaged in retailing merchandise. The retailing process is the final step in the distribution of merchandise. Retailers are, therefore, organized to sell merchandise in small quantities to the general public. The wholesale trade sector comprises establishments engaged in wholesaling merchandise. This sector includes merchant wholesalers who buy and own the goods they sell; manufacturers' sales branches, and offices that sell products manufactured domestically by their own company; and agents and brokers who collect a commission or fee for arranging the sale of merchandise owned by others.

Since 1977, retail trade has increased by 121 establishments and 2,100 employees, or 19 and 27 percent, respectively. For the same period, wholesale trade has increased by about 55 establishments and 1,100 employees, or 44 and 95 percent, respectively.

1.3.2 Labor Force

The trend in the labor force in Bay County since 1977 is shown in Figure 3. The greatest number of persons employed in Bay County has been in the manufacturing, trade, and transportation industries and education, health, and government services. Between 1977 and 2004, approximately 45,000 persons were added to the available work force, for an increase of 135 percent.

1.3.3 Tourism

Another indicator of commercial growth in Bay County is the tourism industry. As an indicator of tourism growth in the county, the trend in the number of hotels and motels and the number of units at the hotels and motels are presented in Figure 4.

This industry comprises establishments primarily engaged in marketing and promoting communities and facilities to businesses and leisure travelers through a range of activities, such as assisting organizations in locating meeting and convention sites; providing travel information on area attractions, lodging accommodations, restaurants; providing maps; and organizing group tours of local historical, recreational, and cultural attractions.

Between 1978 and 2004, there was a decrease of 40 percent in the number of hotels and motels. However, there was essentially no change in the total number of units at those facilities. In addition, the number of food establishments has more than doubled.

1.3.4 Transportation

As an indicator of transportation growth, the trend in the number of vehicle miles traveled (VMT) by motor vehicles on major roadways in Bay County is presented in Figure 5. The county's main arteries are Routes 98 and 231.

Between 1977 and 2005, there was an increase of more than 1,000,000 VMT, or 41-percent increase, on major roadways in the county.

1.3.5 Growth Associated with the Mill Modification

The existing commercial and transportation infrastructure should be adequate to provide any support services that might be required due to modification at the Mill.

1.4 Industrial Growth

1.4.1 Manufacturing and Agricultural Industries

As an indicator of industrial growth, the trend in the number of employees in the manufacturing industry in Bay County since 1977 is shown in Figure 6. As shown, the manufacturing industry experienced a slight decrease in the number of employees from 1977 through 2003.

As another indicator of industrial growth, the trend in the number of employees in the agricultural industry in Bay County since 1977 is also shown in Figure 6. As shown, the agricultural industry experienced a decrease in employment of 35 percent from 1977 through 2003.

1.4.2 Utilities

The existing power plants in Bay County are Gulf Power Company's Lansing Smith Plant and Bay County Energy Systems. The Gulf Power Company plant has an electrical nameplate generating capacity of nearly 1,000 megawatts (MW).

As an indicator of industrial growth, the change in electrical nameplate generating capacity in Bay County since 1977 is shown in Figure 7. As shown, the electrical nameplate generating capacity has increased by 524 MW, or 150 percent since 1977.

1.4.3 Growth Associated with the Mill Modification

Since the PSD baseline date of August 7, 1977, there have been only a few new major facilities built within a 35-km radius of the SSCE Mill. The nearest major sources are the Arizona Chemical Plant, Gulf Power Company's Lansing Smith Plant, and Bay County Energy Systems. Based on the locations of nearby air emission sources, there has not been a concentration of industrial and commercial growth in the vicinity of the SSCE Mill.

1.5 Air Quality Discussion

1.5.1 Air Emissions of Nearby Sources

Based on actual emissions reported for 2001 (latest year of available data) by EPA on its AIRSdata website, total emissions from stationary and area sources in Bay County are as follows:

- SO_2: 22,741 TPY
- PM_{10}: 10,009 TPY
- NO_x: 14,882 TPY
- CO: 87,660 TPY
- VOC: 12,743 TPY

1.5.2 Air Emissions from Mobile Sources

The trends in the air emissions of CO, VOC, and NO_x from mobile sources in Bay County are presented in Figure 8. Between 1977 and 2005, there were significant decreases in these emissions. The decrease in CO, VOC, and NO_x emissions were about 282, 26, and 10 tons per day (TPD), respectively, which represent decreases from 1977 emissions of 76, 79, and 45 percent, respectively.

1.5.3 Air Monitoring Data

Since 1977, Bay County has been classified as attainment or maintenance for all criteria pollutants. Air quality monitoring data have been collected in the county at monitoring stations located in the following cities:

- SO_2 concentrations - Panama City and Lynn Haven;
- PM_{10} concentrations – Panama City;
- NO_2 concentrations – Panama City and Lynn Haven; and
- O_3 concentrations – Panama City.

Data collected from these stations are considered to be generally representative of air quality in Bay County. Because these monitoring stations are generally located in more industrialized areas than at the SSCE Mill, the reported concentrations are likely to be somewhat higher than that experienced at the Mill.

These data indicate that the maximum air quality concentrations currently measured in the region comply with and are well below the applicable AAQS. These monitoring stations are located in areas where the highest concentrations of a measured pollutant are expected due to the combined effect of emissions from stationary and mobile sources, as well as the effects of meteorology. Therefore, the ambient concentrations in areas not monitored should have pollutant concentrations less than the monitored concentrations from these sites.

In addition, since 1988, PM in the form of PM_{10} has been collected at the air monitoring stations due to the promulgation of the PM_{10} AAQS. Prior to 1989, the AAQS for PM was in the form of TSP concentrations, and this form was measured at the stations.

SO_2 Concentrations

The trends in the annual, 24-hour, and 3-hour average SO_2 concentrations measured at the five Bay County monitoring stations since 1981 are presented in Figures 9 through 11, respectively. SO_2 concentrations have been measured at five stations for various time periods throughout these years. As shown in these figures, concentrations have been and continue to be well below the AAQS.

PM_{10}/TSP Concentrations

The trends in the annual and 24-hour average PM_{10} and TSP concentrations since 1977 for monitoring sites in the county are presented in Figures 12 and 13, respectively. TSP concentrations are presented through 1988 since the AAQS was based on TSP concentrations through that year. In 1988, the TSP AAQS was revoked and the PM standard was revised to PM_{10}.

As shown in these figures, measured TSP concentrations were below the TSP AAQS. Since 1988, when PM_{10} concentrations have been measured, the PM_{10} concentrations have been and continue to be below the AAQS.

NO_2 Concentrations

The trends in the annual average NO_2 concentrations measured at the nearest monitors to the Mill is presented in Figure 14. As shown in this figure, measured NO_2 concentrations at the monitors have been well below the AAQS.

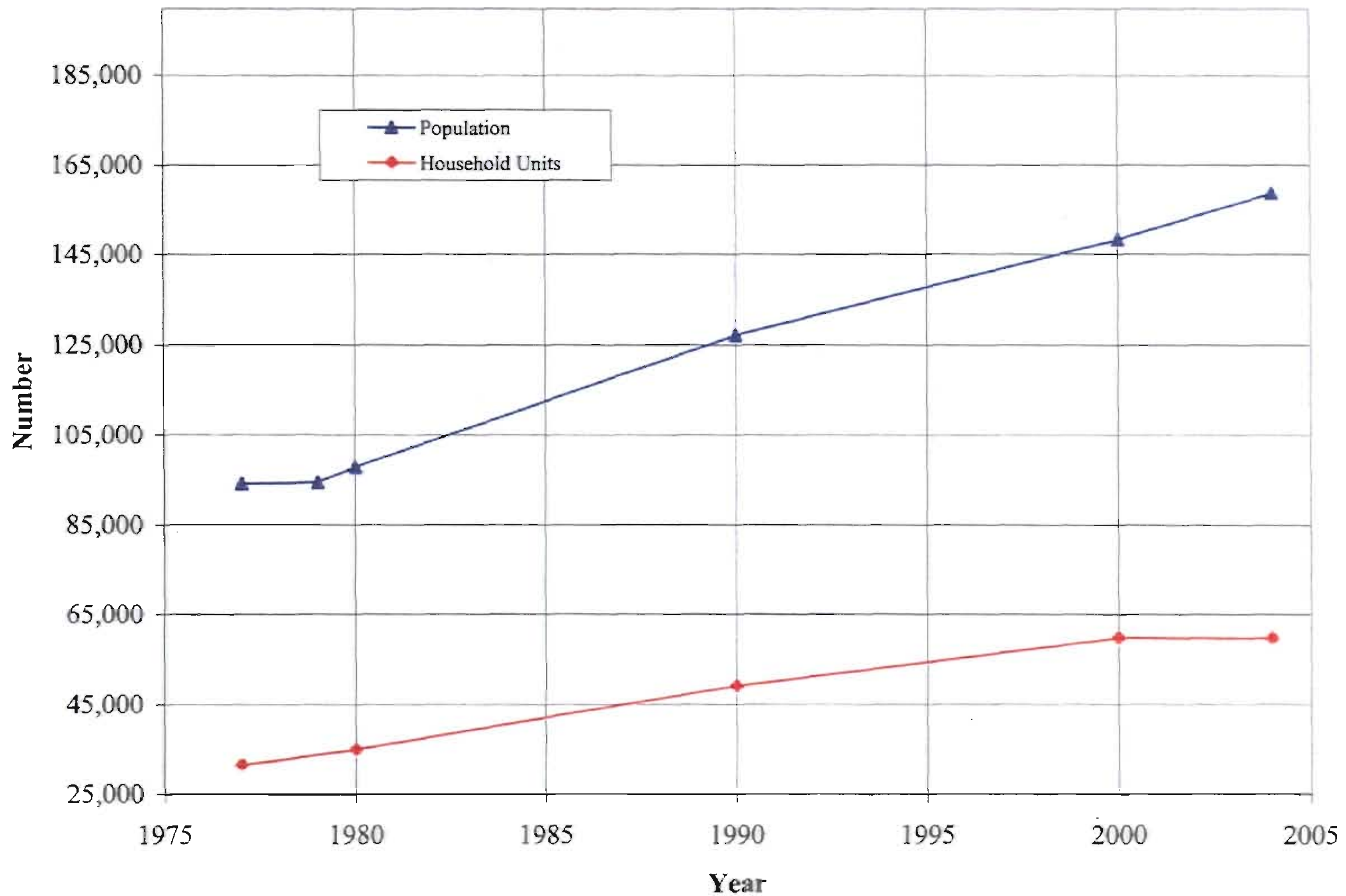
Ozone Concentrations

The trends in the 1-hour average O_3 concentrations since 1977 are presented in Figure 15. The 8-hour average O_3 concentrations are presented in Figure 16. As shown in these figures, the measured O_3 concentrations have been below the AAQS.

Air Quality Associated with the Mill Modification

The air quality data measured in the region of the SSCE Mill indicate that the maximum air quality concentrations are well below and comply with the AAQS. Also, based on the trends of these maximum concentrations, the air quality has generally improved in the region since the baseline date of August 7, 1977. Because the maximum concentrations for the Mill are predicted to be below the AAQS, the air quality concentrations in the region are expected to remain below and comply with the AAQS after the modification occurs.

FIGURE 1
POPULATION AND HOUSEHOLD UNIT TRENDS IN BAY COUNTY



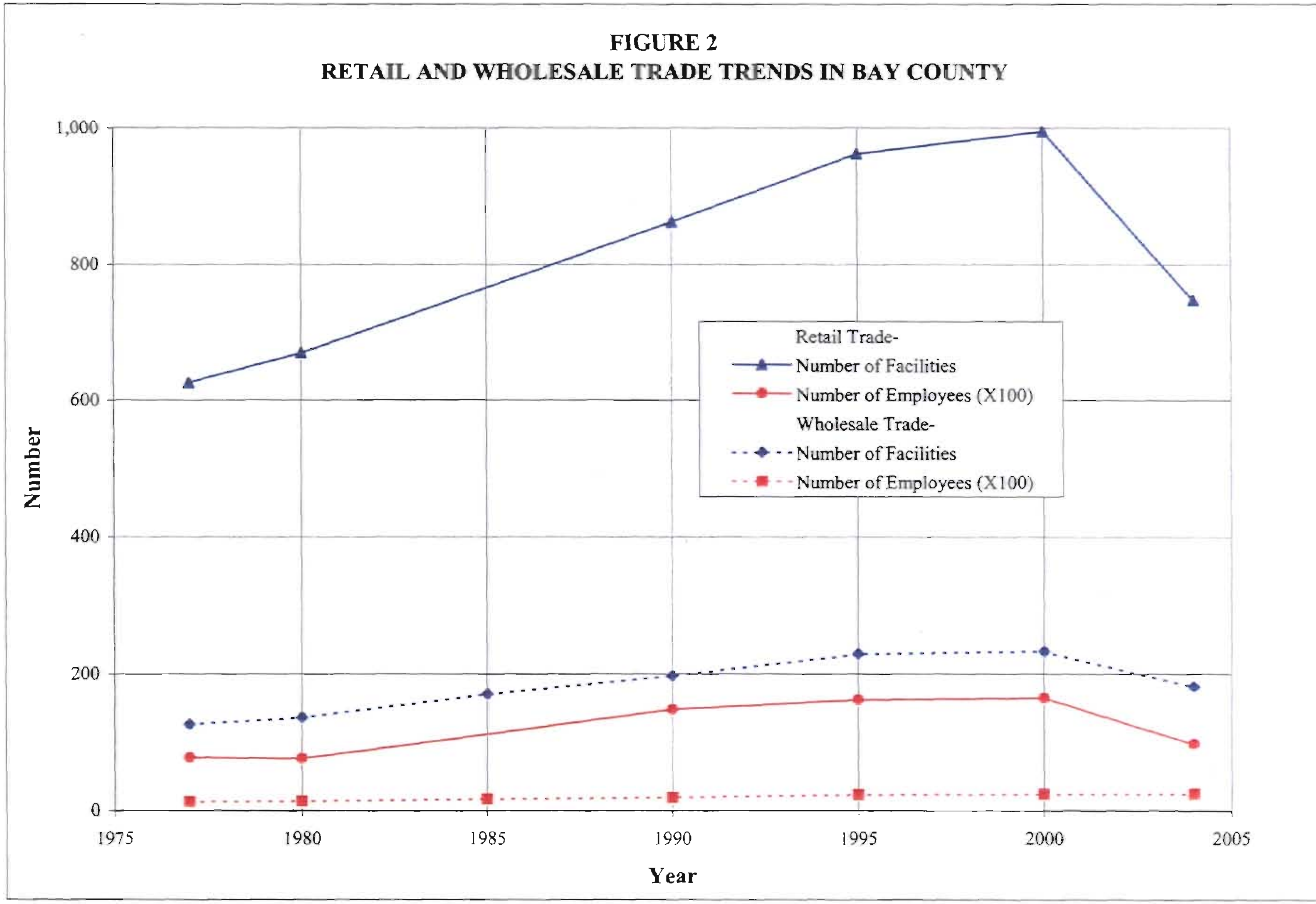


FIGURE 2
RETAIL AND WHOLESALE TRADE TRENDS IN BAY COUNTY
1,000
800
600
400
200
0
Number
1975
1980
1985
1990
1995
2000
2005
Year
Retail Trade-
Number of Facilities
Number of Employees (X100)
Wholesale Trade-
Number of Facilities
Number of Employees (X100)

FIGURE 3

LABOR FORCE TREND IN BAY COUNTY

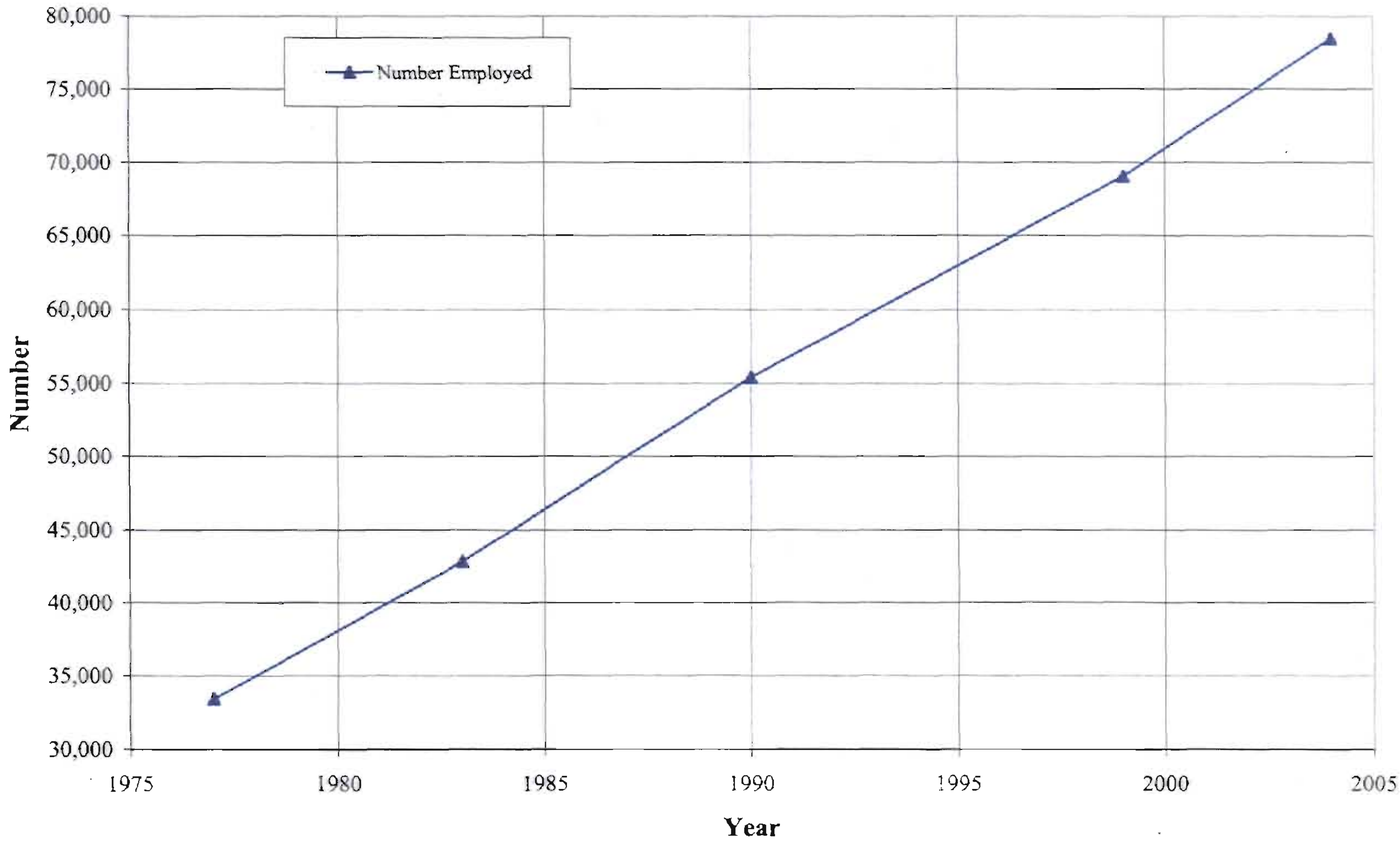


FIGURE 4

HOTEL, MOTEL, AND FOOD ESTABLISHMENT TRENDS IN BAY COUNTY

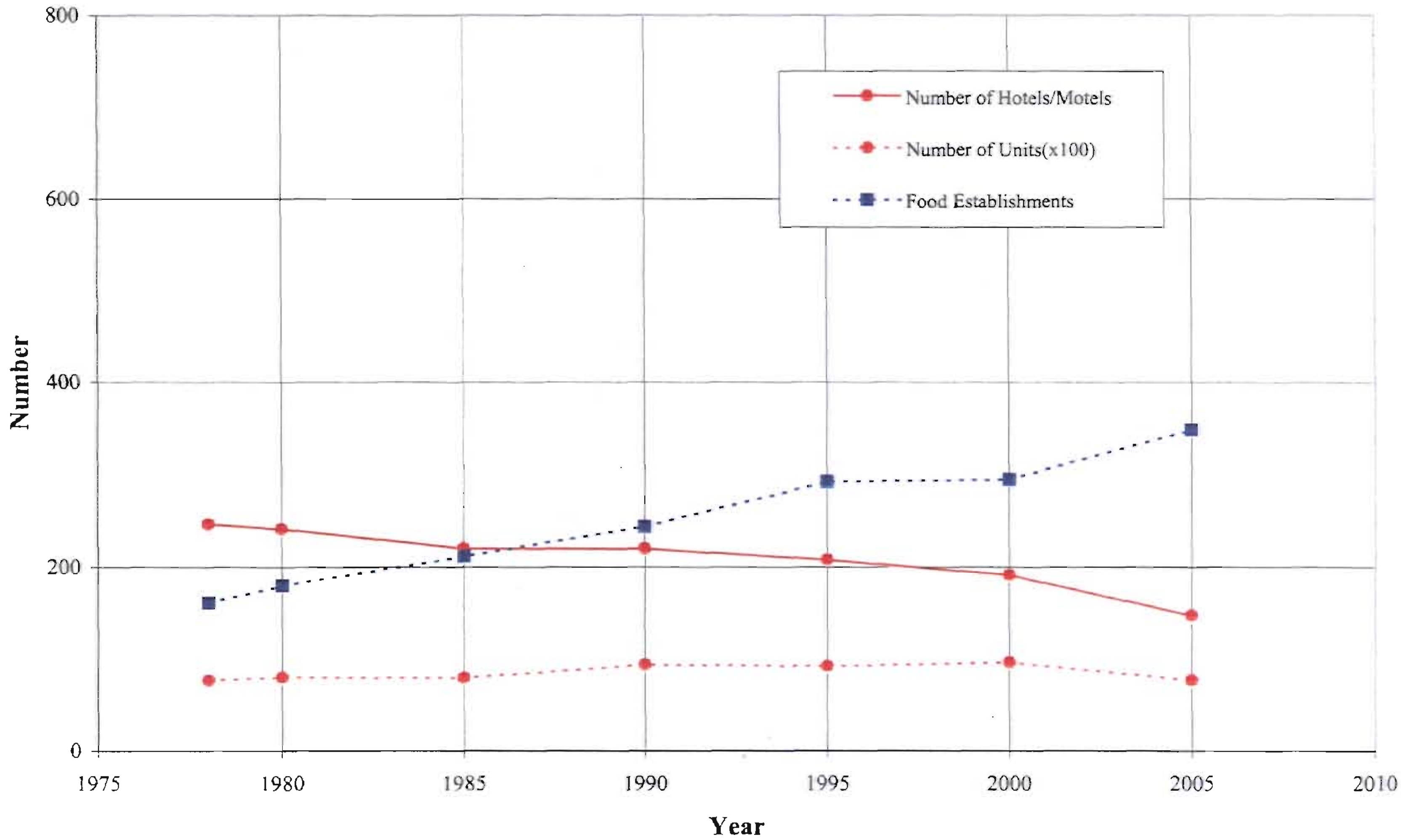


FIGURE 5
VEHICLE MILES TRAVELED (VMT) ESTIMATES FOR MOTOR VEHICLES FOR BAY COUNTY

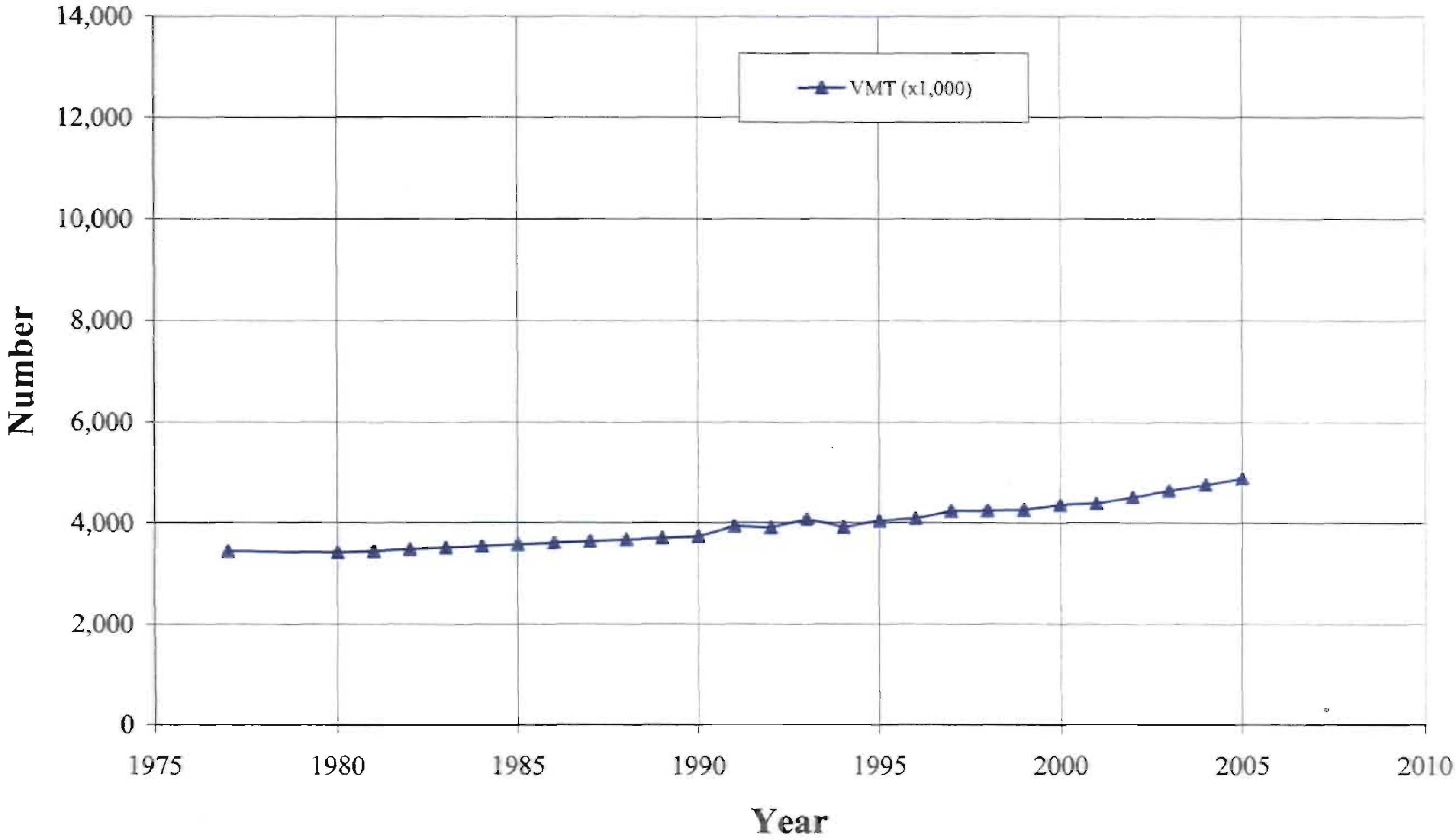


FIGURE 6
MANUFACTURING AND AGRICULTURE TRENDS IN BAY COUNTY

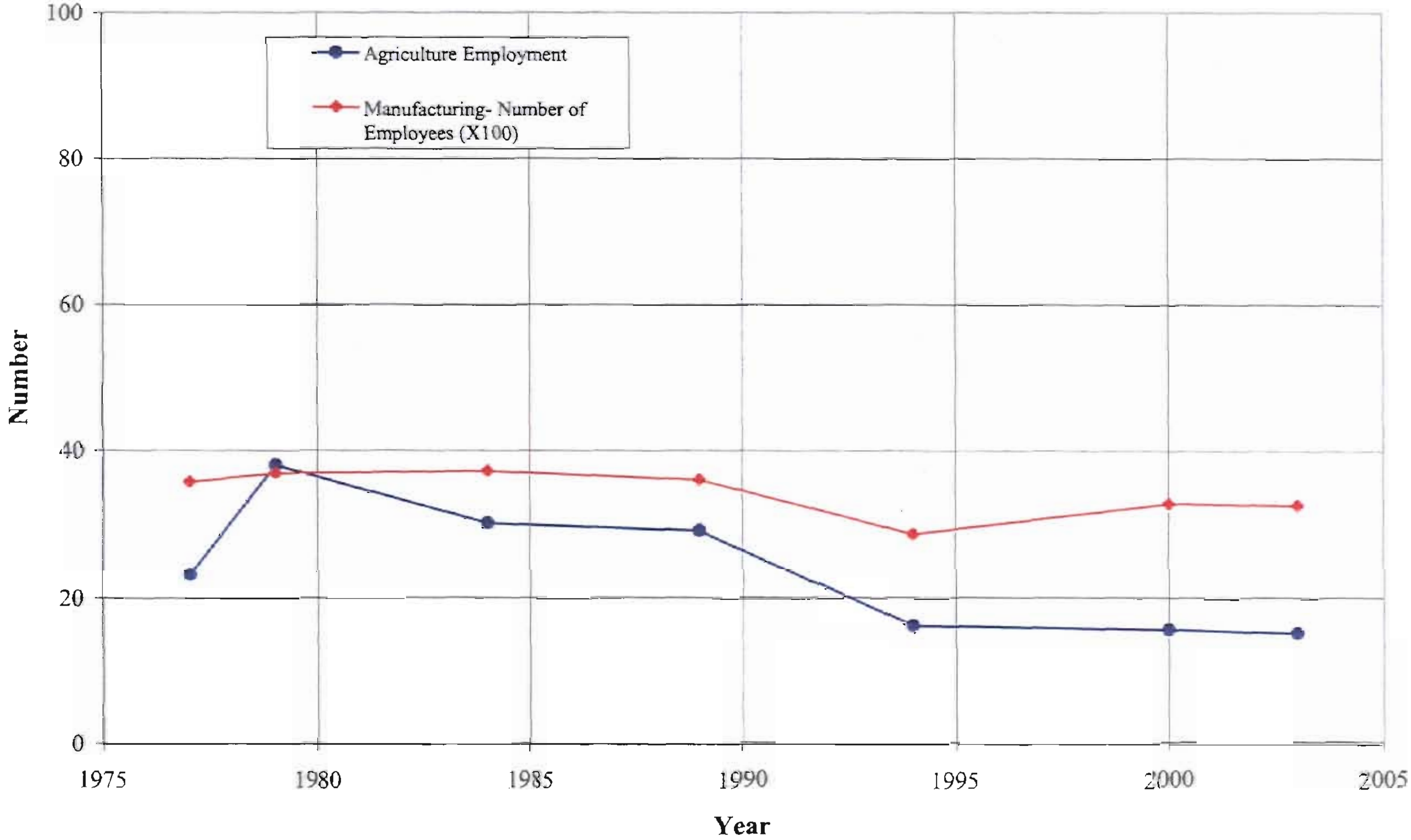


FIGURE 7
ELECTRICAL POWER GENERATION CAPACITY IN BAY COUNTY

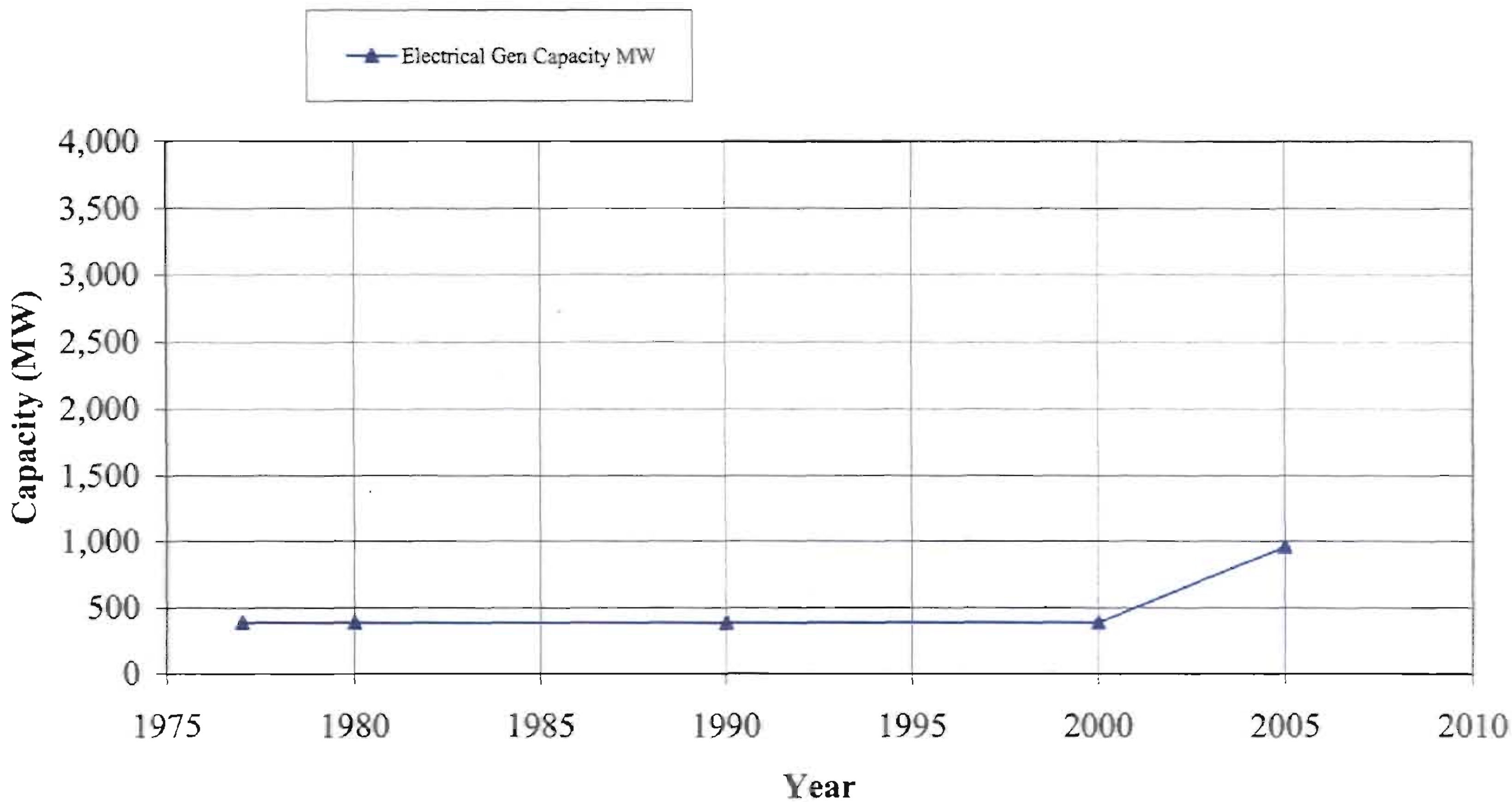
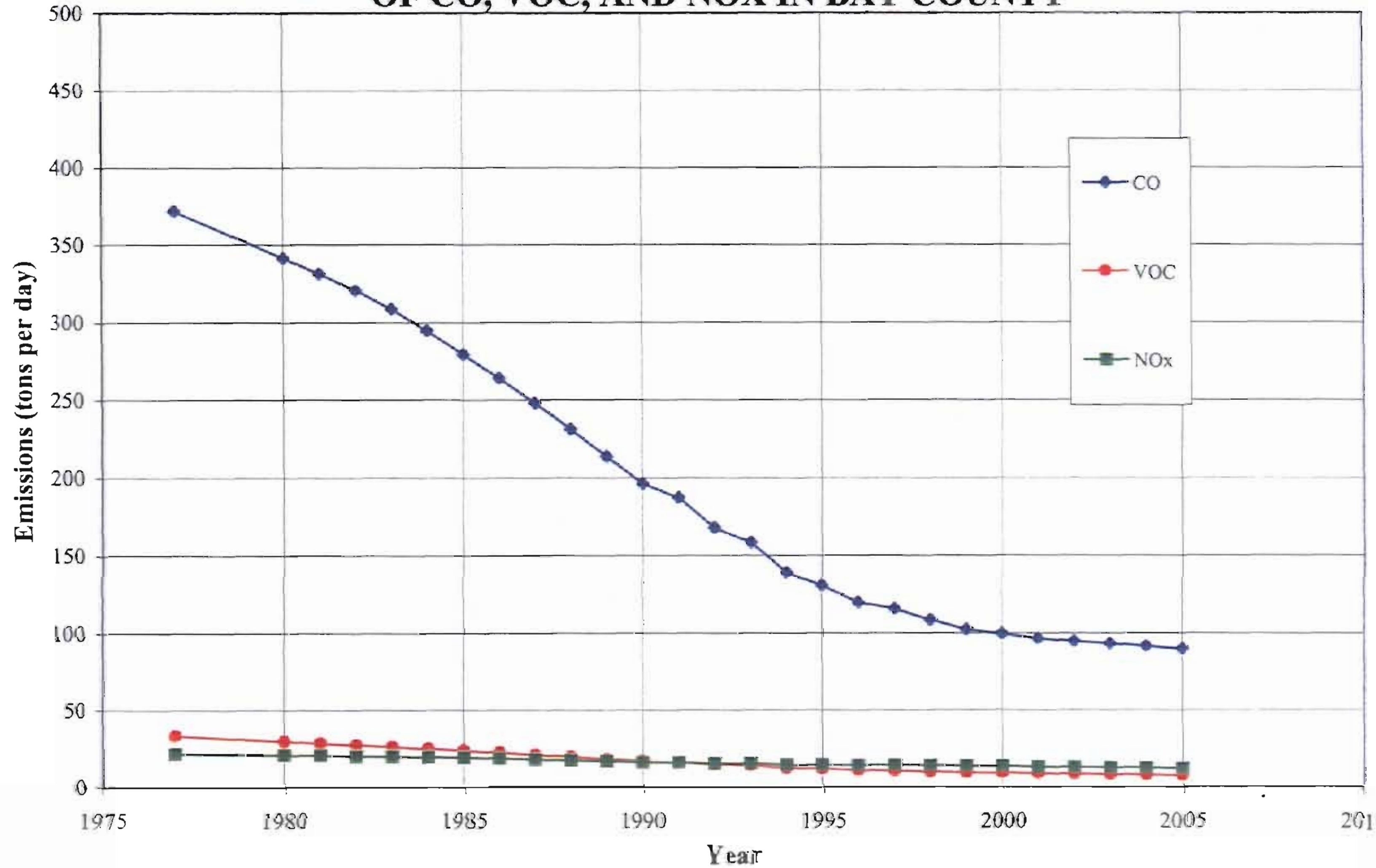


FIGURE 8
MOBILE SOURCE EMISSIONS (TONS PER DAY) OF CO, VOC, AND NOX IN BAY COUNTY



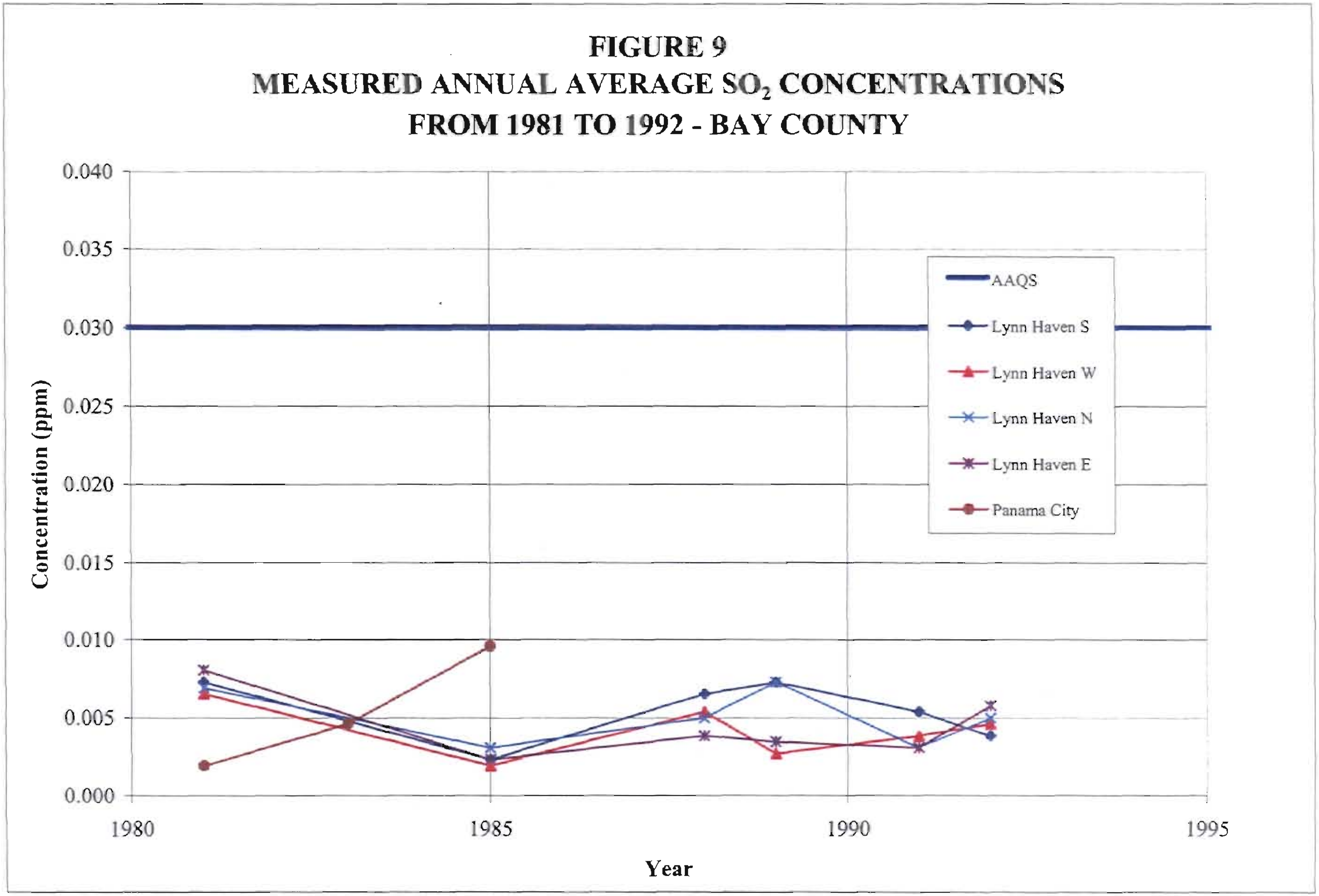


FIGURE 9
MEASURED ANNUAL AVERAGE SO_2 CONCENTRATIONS
FROM 1981 TO 1992 - BAY COUNTY
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
Concentration (ppm)
1980
1985
1990
1995
Year
AAQS
Lynn Haven S
Lynn Haven W
Lynn Haven N
Lynn Haven E
Panama City

FIGURE 10
MEASURED 24-HOUR AVERAGE SO_2 CONCENTRATIONS (2ND HIGHEST) FROM 1981 TO 19922 - BAY COUNTY

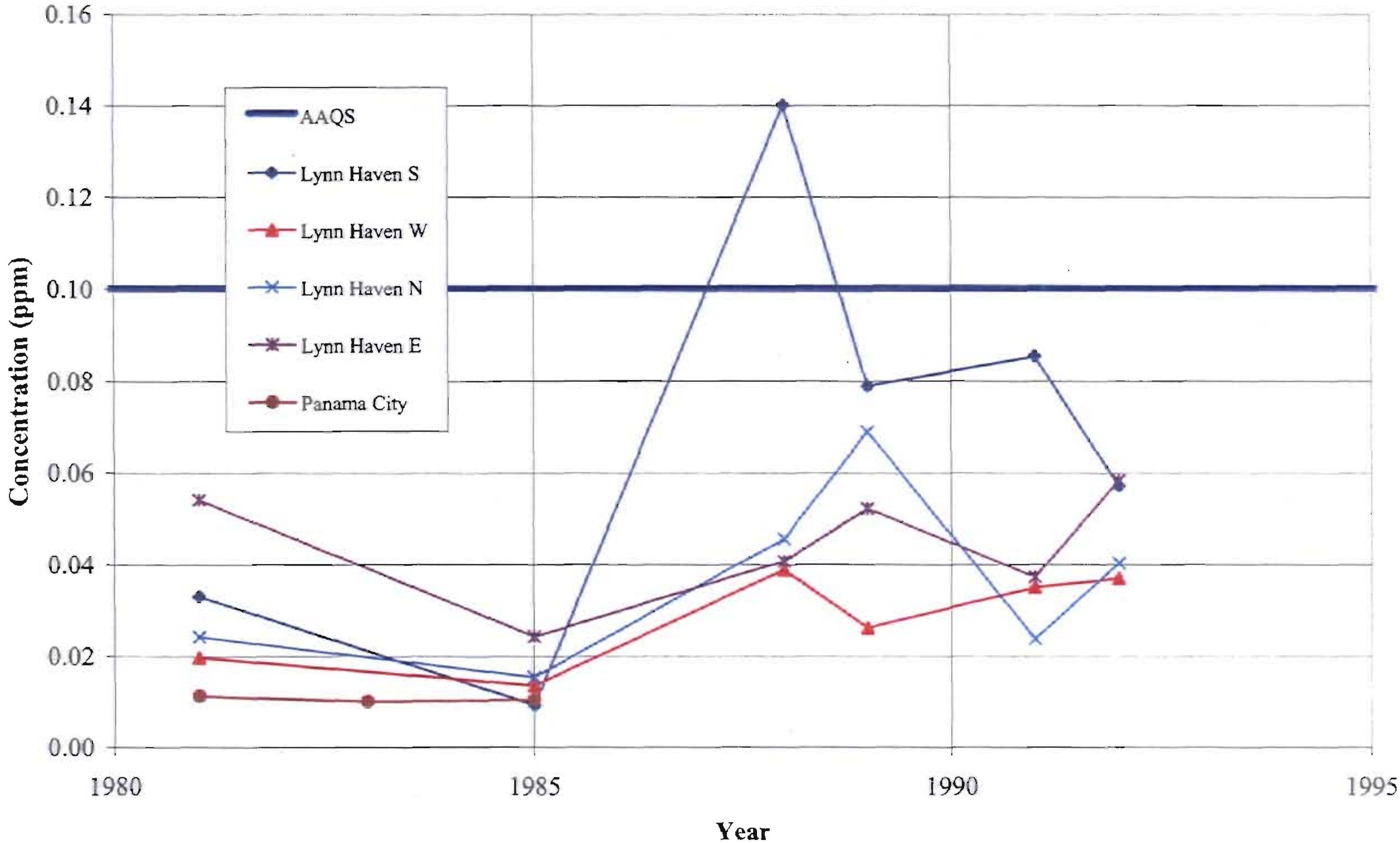


FIGURE 11
MEASURED 3-HOUR AVERAGE SO_2 CONCENTRATIONS (2ND HIGHEST) FROM 1981 TO 1992 - BAY COUNTY

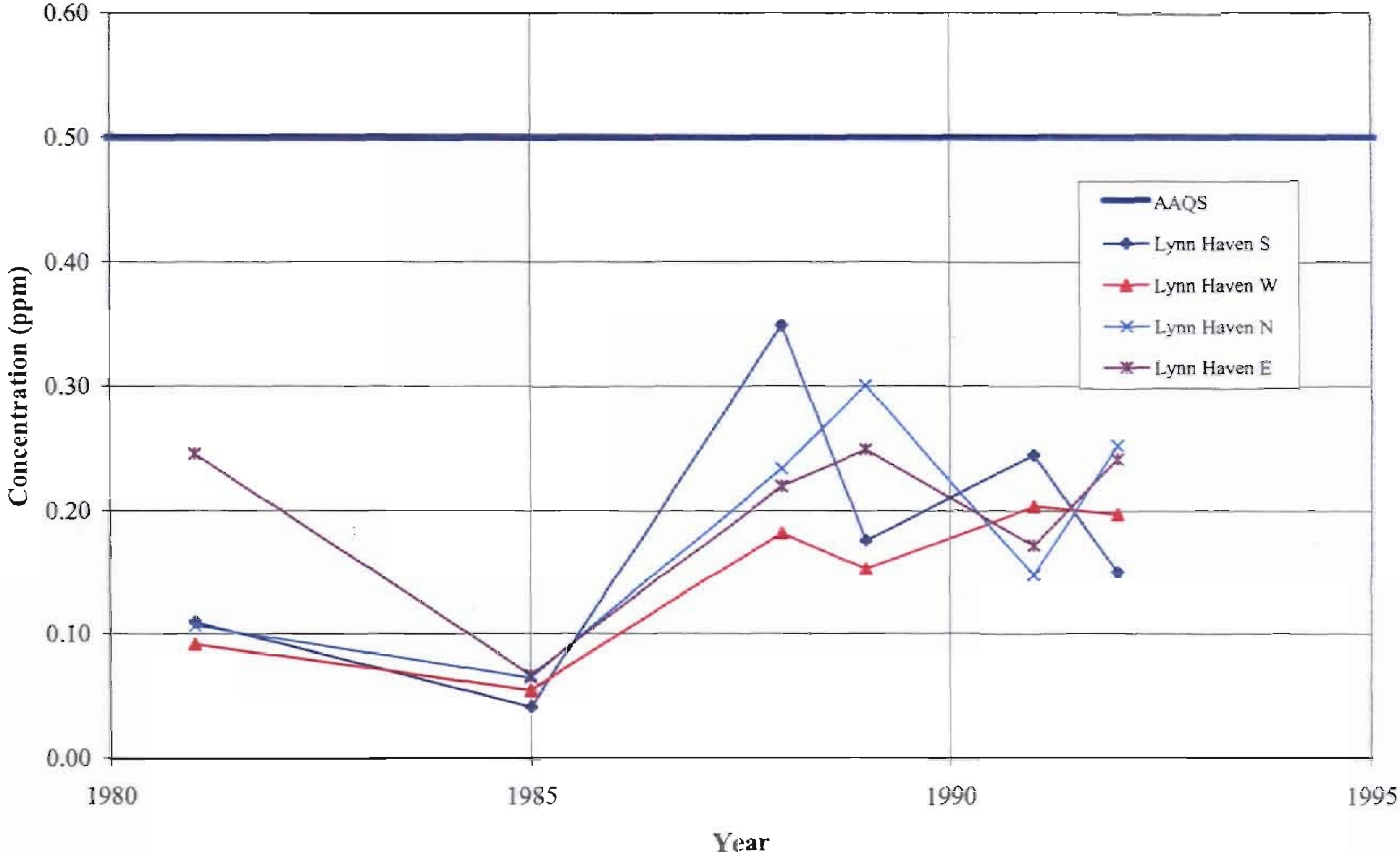


FIGURE 12
MEASURED ANNUAL AVERAGE PM_{10} AND TSP CONCENTRATIONS FROM 1981 TO 2005 IN PANAMA CITY, BAY COUNTY

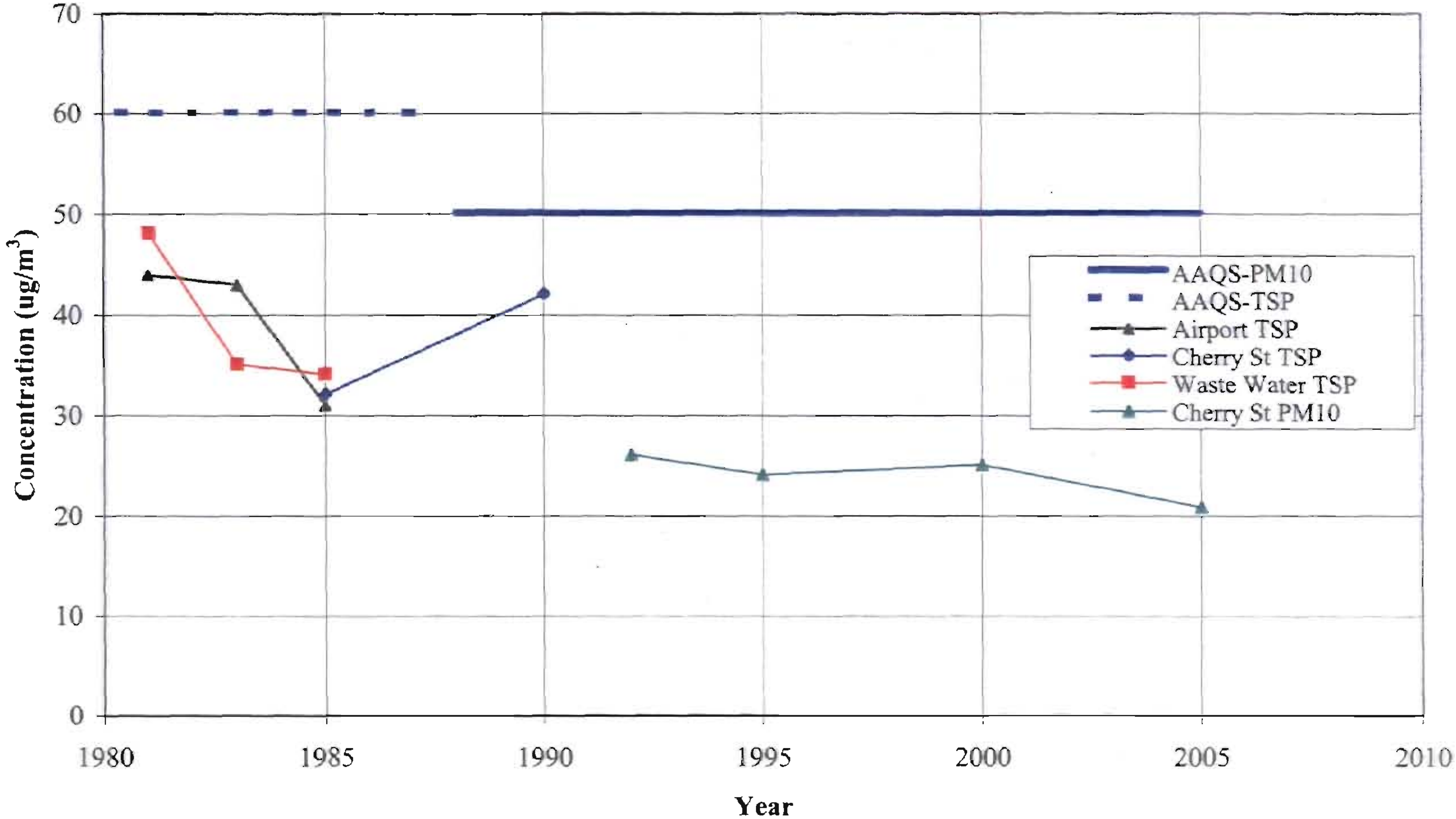


FIGURE 13
MEASURED 24-HOUR AVERAGE PM_{10} AND TSP CONCENTRATIONS
2ND HIGHEST FROM 1981-2005-PANAMA CITY, BAY COUNTY

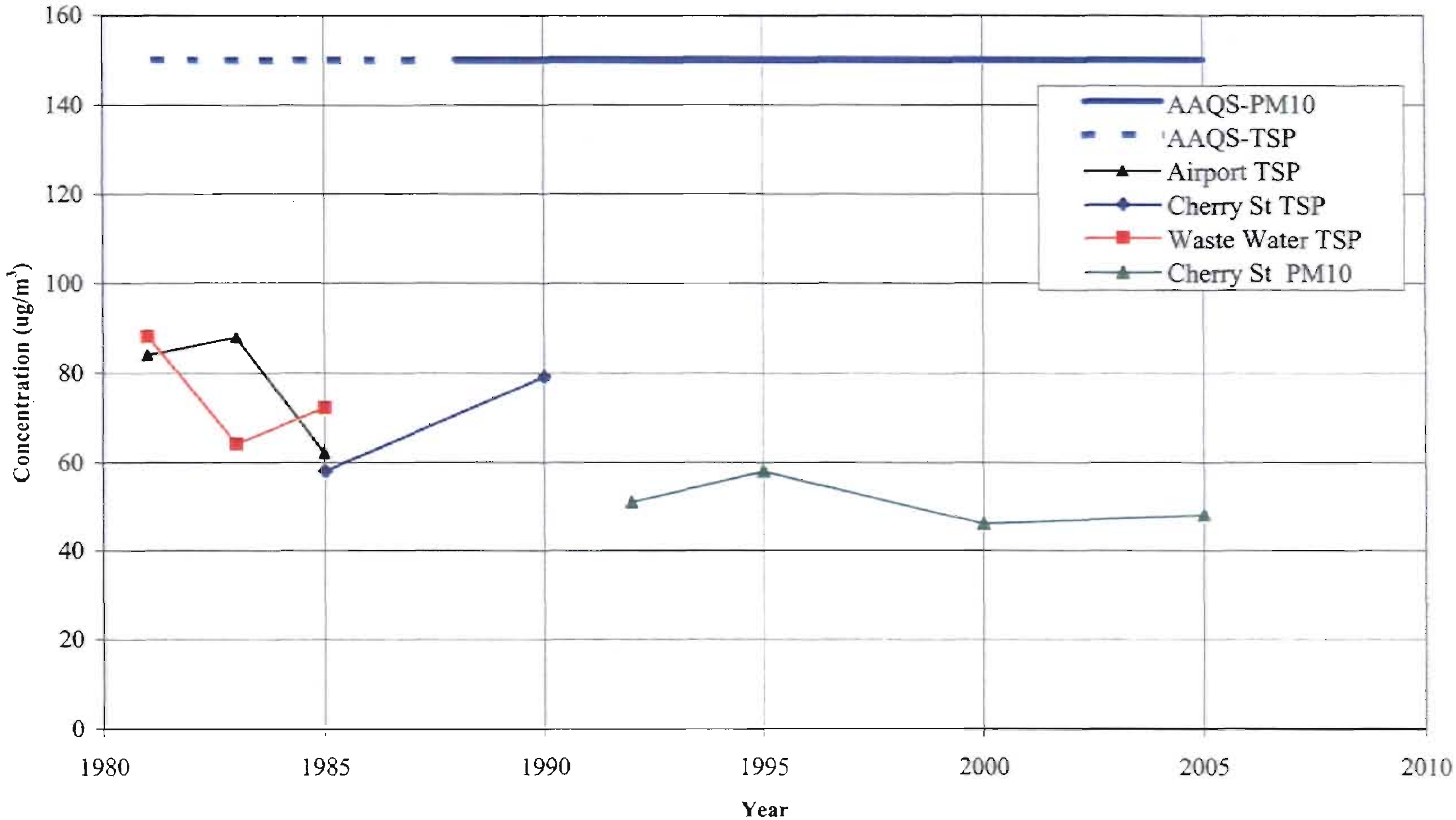


FIGURE 14
MEASURED ANNUAL AVERAGE NITROGEN DIOXIDE CONCENTRATIONS FROM 1981 TO 1992 IN BAY COUNTY

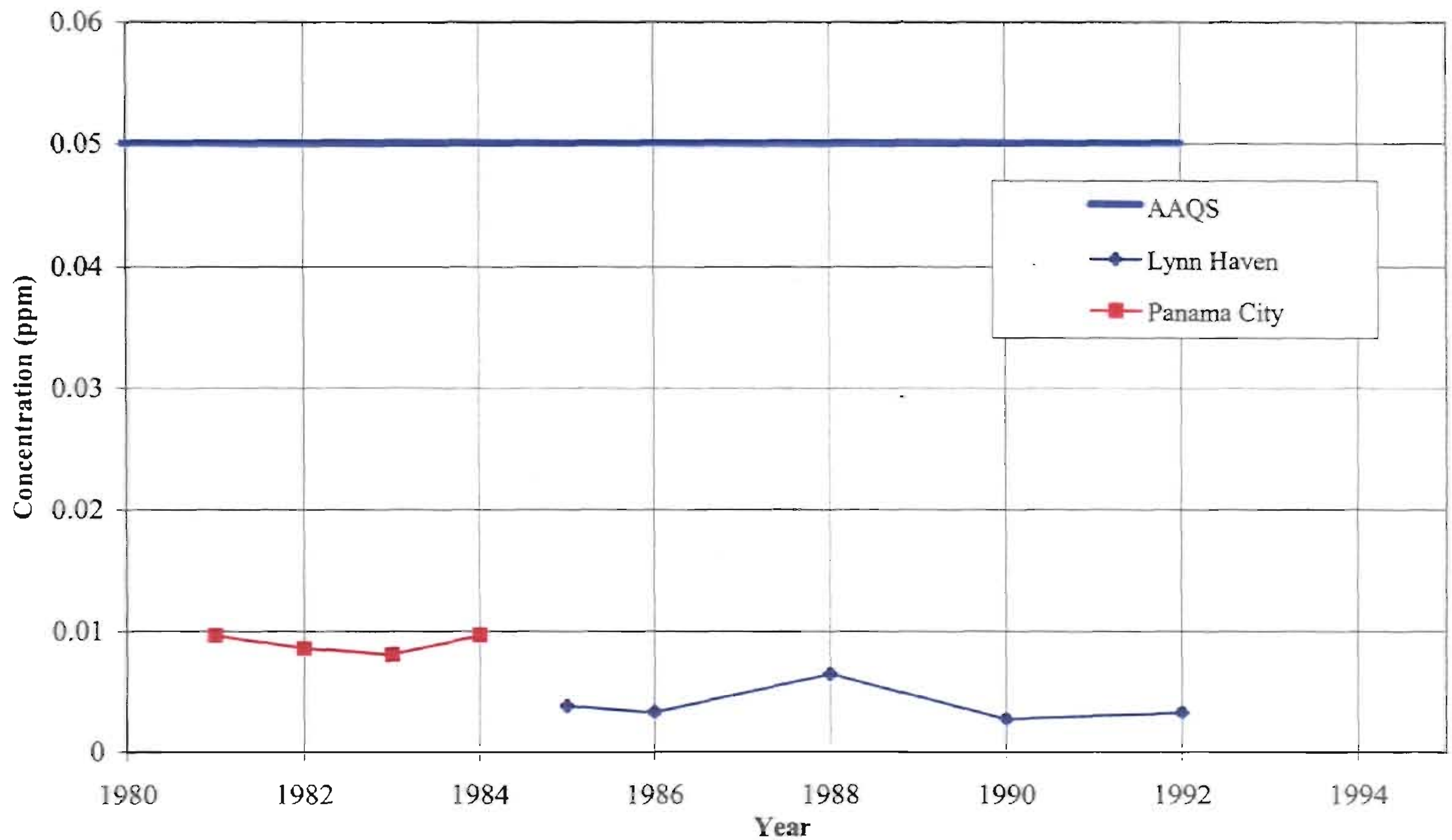


FIGURE 15
MEASURED 1-HOUR AVERAGE OZONE CONCENTRATIONS (2ND HIGHEST) FROM 2000 TO 2006- BAY COUNTY

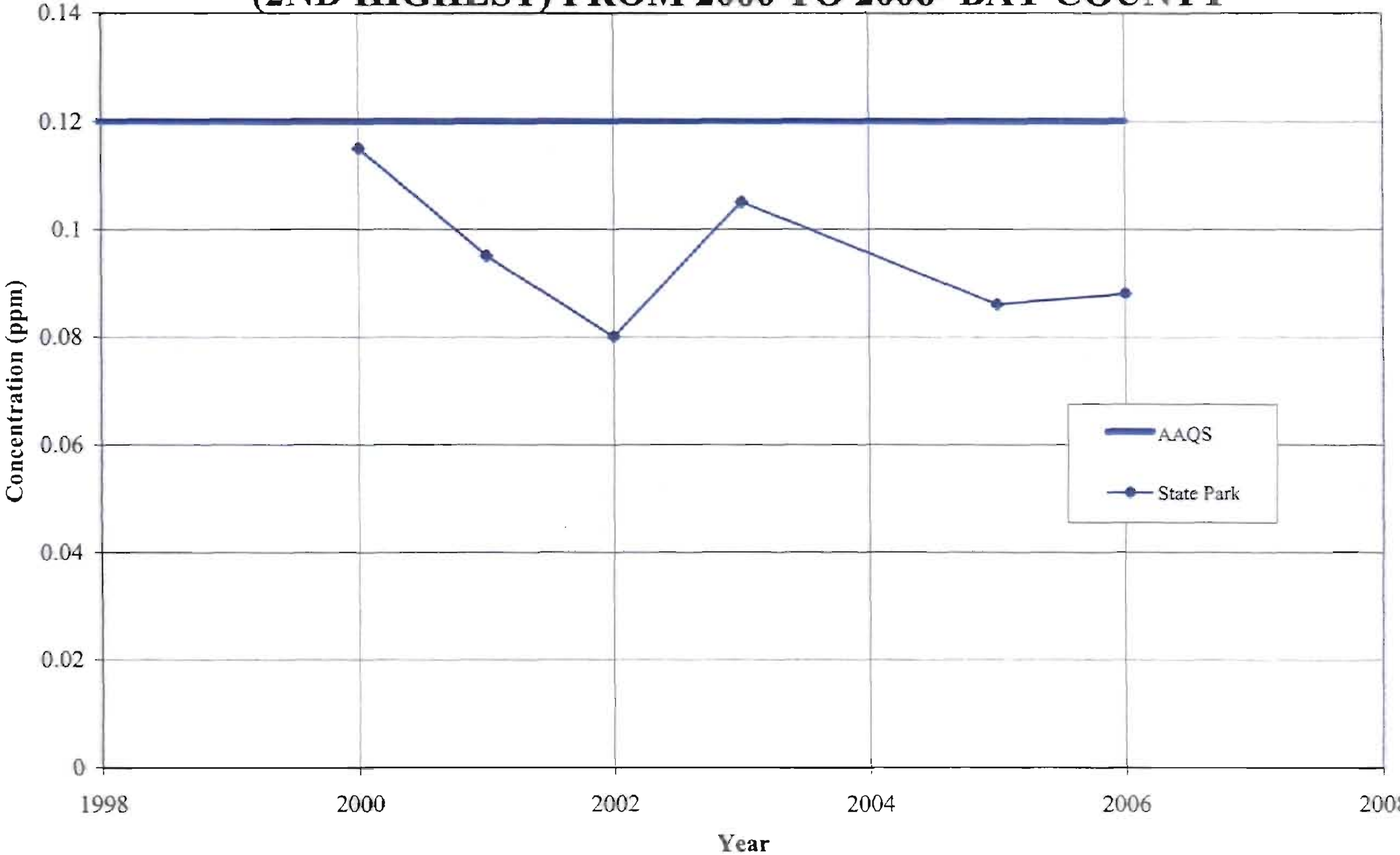
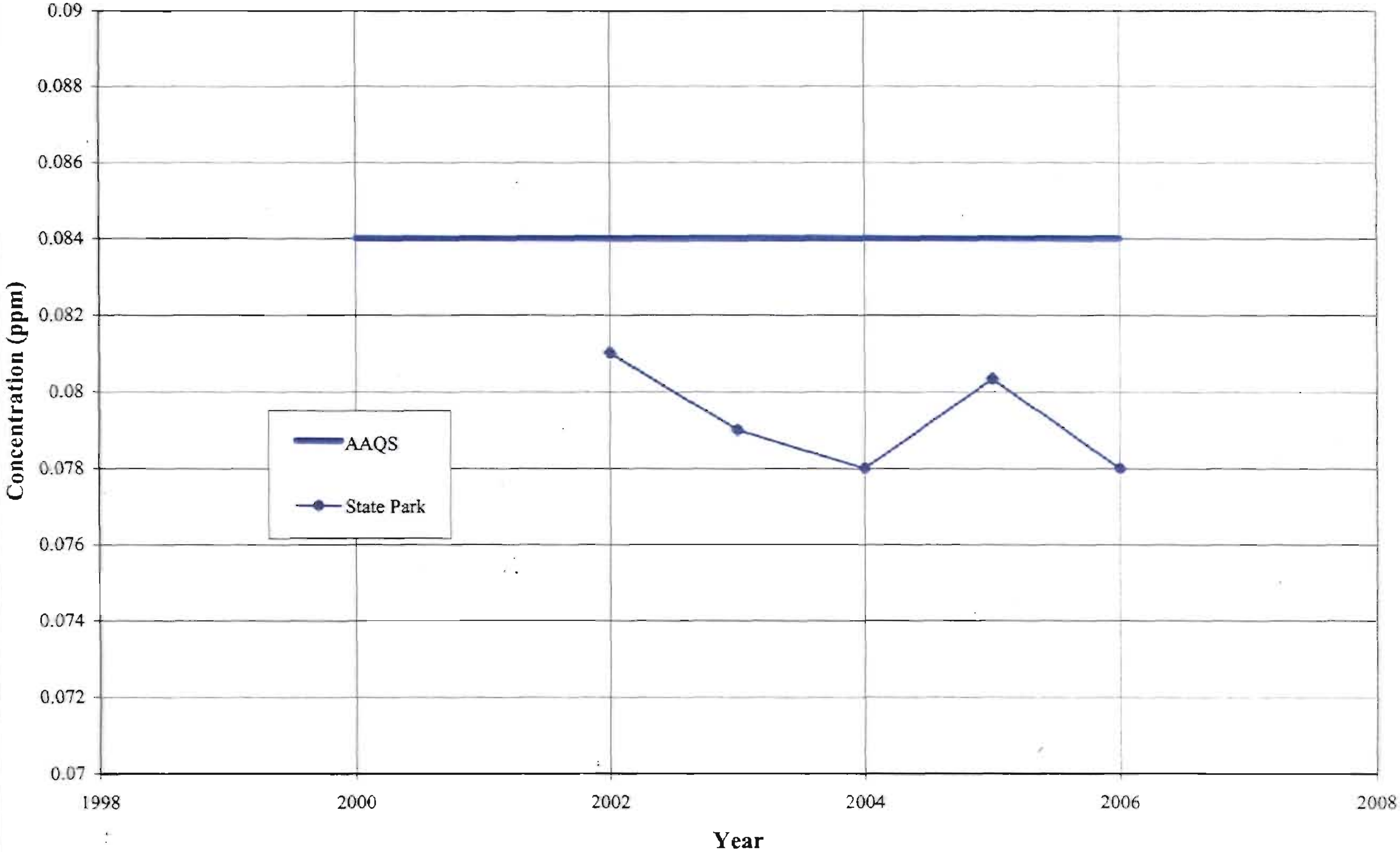


FIGURE 16
MEASURED 8-HOUR AVERAGE OZONE CONCENTRATIONS
(3-YEAR AVERAGE OF THE 4TH HIGHEST VALUES) FROM 2000 TO 2006- BAY COUNTY



ATTACHMENT D

AMBIENT IMPACT ANALYSIS FOR OZONE

AMBIENT MONITORING ANALYSIS FOR OZONE

INTRODUCTION

In accordance with requirements of Title 40 of the Code of Federal Regulations (CFR), Subpart 52.21(m) and Rule 62-212.400(5)(f), Florida Administrative Code (F.A.C.), any application for a Prevention of Significant Deterioration (PSD) permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a new major facility, the affected pollutants are those that the facility potentially would emit in significant amounts. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate.

Ambient air monitoring for a period of up to 1 year is generally appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the proposed source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in U.S. Environmental Protection Agency (EPA) Ambient Monitoring Guidelines for Prevention of Significant Deterioration (EPA, 1987).

An exemption from the preconstruction ambient monitoring requirements is also available if certain criteria are met. If the predicted increase in ambient concentrations due to the proposed modification is less than the specified *de minimis* concentration for a particulate pollutant, the modification can be exempted from the preconstruction air monitoring requirements for that pollutant.

A preconstruction air monitoring analysis is required for the Smurfit Stone Container Enterprises (SSCE) Panama City Mill Lime Kiln petcoke project for ozone, since the increase in nitrogen oxides (NO_x) emissions due to the project is greater than 100 tons per year (TPY). This analysis is presented in the following section.

AMBIENT OZONE CONCENTRATIONS

The PSD ambient monitoring guidelines allow the use of existing data to satisfy preconstruction review requirements. Presented in Table 1 is a summary of existing continuous ambient ozone data for the ozone monitor located in the vicinity of the Panama City facility. Data are presented for the last 3 years of record, 2004 to 2006. As shown, one ozone monitor was operational in the vicinity of Panama City during this period. The nearest ozone monitoring station was located in Panama City Beach.

The ozone monitor shows that ambient ozone concentrations were below the ambient air quality standards of: 0.12 parts per million (ppm) [235 micrograms per cubic meter (mg/m^3)], maximum 1-hour average allowed to be exceeded on average one day per year; and 0.08 ppm (157 ug/m^3), average annual fourth highest 8-hour average concentration over a 3-year period. The monitor in Panama City Beach is considered to be representative of the SSCE mill site due to the proximity of the monitor to the mill.

TABLE 1
SUMMARY OF AMBIENT OZONE DATA COLLECTED NEAR THE SSCE PANAMA CITY MILL

Pollutant	City	Site ID No.	Location	Year	Valid Days Measured	2nd Maximum Concentration-1-Hour Average		4th Highest Concentration-8-Hour Average	
						ppm	μg/m³	ppm	μg/m³
Ozone (O_3)	Panama City	12-005-006	5401 State Park Lane	2006	243	0.088	173	0.077	151
				2005	229	0.086	169	0.078	153
				2004	236	0.091	179	0.081	159

Note: μg/m³ = micrograms per cubic meter
ppm = parts per million
NA= not applicable

Source: FDEP Quick Look Reports, 2003, and 2004 (based on EPA's Air Quality System).

FM: DEP AIR RESOURCE MGMT
P. Adams
DIRECTOR OFFICE STE 23
111 S MAGNOLIA DR
TALLAHASSEE, FL 32301
UNITED STATES Phone: 850-921-9505

To: NATIONAL PARK SERVICE
MR. JOHN BUNYAK
12795 W. ALAMEDA PARKWAY
AIR DIVISION
LAKEWOOD, CO 80228
UNITED STATES

NAS

Pieces: 1/1

ORIGIN: TLH

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Air Division
12795 W. Alameda Parkway

Lakewood, CO 80228
UNITED STATES

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Phone#: 303-966-2818

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 10.25
Protection: Not Required
Description: PSD-FL-388 4/11/07 letter

Weight (lbs.): 1
Dimensions: 0 x 0 x 0

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TALLAHASSEE, FL 32301
UNITED STATES Phone: 850-921-9505

ORIGIN: TLH

To: U.S. EPA REGION 4
MR. GREGG M. WORLEY
61 FORSYTH STREET
AIR PERMITS SECTION
ATLANTA, GA 30303
UNITED STATES

Sender's ref. 37550201000 A7 AP255

POSTCODE: 30303

TEL: 404-562-9141

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Air Permits Section
61 Forsyth Street

Atlanta, GA 30303
UNITED STATES

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Phone#: 404-562-9141

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 3.06
Protection: Not Required
Description: PSD-FL-388 4/11/07 letter

Weight (lbs.): 1
Dimensions: 0 x 0 x 0

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Service Level: Ground (Est. delivery in 1 business day(s))

Special Svc:

Date Printed: 4/25/2007
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P. Adams
DIRECTOR OFFICE STE 23
111 S MAGNOLIA DR
TALLAHASSEE, FL 32301
UNITED STATES Phone: 850-921-9505

ORIGIN: TLH

Sender's ref 37550201000 A7 AP255

To: DEP NORTHWEST DISTRICT
MR. RICK BRADBURN
160 GOVERNMENTAL CENTER
SUITE 160
PENSACOLA, FL 32502
UNITED STATES

POSTCODE: 32502

TEL: 850-595-8300 ex 1225

Day 27FR

Description: BART app. Smurfit Stone, COT, PSD-FL-388 4/11 lett
Weight: 2 lbs for 1 pcs
Date: 2007-04-25

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SSH

(2L)US32502

WAYBILL: 21248984455

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To(Company):
DEP Northwest District
Suite 160
160 Governmental Center

Pensacola, FL 32502
UNITED STATES

Attention To: Mr. Rick Bradburn
Phone#: 850-595-8300 ex 1225

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 3.06
Protection: Not Required
Description: BART app. Smurfit Stone, COT, PSD-FL-388 4/11 lett

Weight (lbs.): 2
Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AP255
Service Level: Ground (Est. delivery in 2 business day(s))

Special Svc:

Date Printed: 4/25/2007
Bill Shipment To: Sender
Bill To Acct: 778941286

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Florida Department of
Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

March 6, 2007

Mr. Gregg M. Worley, Chief
Air Permits Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303-8960

RE: Smurfit-Stone Container Enterprises
Panama City Mill
0050009-028-AC, PSD-FL-388

Dear Mr. Worley:

Enclosed for your review and comment is a PSD permit application from Smurfit-Stone Container Enterprises, Inc. for petcoke burning in the lime kiln at the Panama City Mill in Bay County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact Bruce Thomas, review engineer, at 850/921-7744.

Sincerely,

Patty Adams
for
Jeffrey F. Koerner, Program Administrator
Permitting North Section

JFK/pa

Enclosure

cc: B. Thomas

GND

FM: DEP AIR RESOURCE MGMT
P. Adams
DIRECTOR OFFICE STE 23
111 S MAGNOLIA DR
TALLAHASSEE, FL 32301
UNITED STATES Phone: 850-921-9505

To: U.S. EPA REGION 4
MR. GREGG M. WORLEY
61 FORSYTH STREET
AIR PERMITS SECTION
ATLANTA, GA 30303
UNITED STATES

Pieces: 1/1

ORIGIN: TLH

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POSTCODE: 30303

TEL: 404-562-9141

Day 07WE

Description: PSD-FL-388 application

Weight: 3 lbs for 1 pcs
Date: 2007-03-06

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(2L)US30303

WAYBILL: 20445695852

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U.S. EPA Region 4
Air Permits Section
61 Forsyth Street

Atlanta, GA 30303
UNITED STATES

Attention To: Mr. Gregg M. Worley
Phone#: 404-562-9141

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 3.08
Protection: Not Required
Description: PSD-FL-388 application

Weight (lbs.): 3
Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AP255
Service Level: Ground (Est. delivery in 1 business day(s))

Special Svc:

Date Printed: 3/6/2007
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Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

March 6, 2007

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
P. O. Box 25287
Denver, Colorado 80225

RE: Smurfit-Stone Container Enterprises
Panama City Mill
0050009-028-AC, PSD-FL-388

Dear Mr. Bunyak:

Enclosed for your review and comment is a PSD permit application from Smurfit-Stone Container Enterprises, Inc. for petcoke burning in the lime kiln at the Panama City Mill in Bay County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact Bruce Thomas, review engineer, at 850/921-7744.

Sincerely,

Patty Adams
for
Jeffrey F. Koerner, Program Administrator
Permitting North Section

JFK/pa

Enclosure

cc: B. Thomas

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NAS

Pieces: 1/1

FM: DEP AIR RESOURCE MGMT
P. Adams
DIRECTOR OFFICE STE 23
111 S MAGNOLIA DR
TALLAHASSEE, FL 32301
UNITED STATES Phone: 850-921-9505

ORIGIN: TLH

Sender's ref. 37550201000 A7 AP255

To: NATIONAL PARK SERVICE
MR. JOHN BUNYAK
12795 W. ALAMEDA PARKWAY
AIR DIVISION
LAKEWOOD, CO 80228
UNITED STATES

POSTCODE: 80228

TEL: 303-966-2818

Description: PSD-FL-388 application.

Weight: 3 lbs for 1 pcs
Date: 2007-03-06

DHL standard terms and conditions apply.

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(2L)US80228

WAYBILL: 20445069750

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12795 W. Alameda Parkway

Lakewood, CO 80228
UNITED STATES

Attention To: Mr. John Bunyak
Phone#: 303-966-2818

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 12.78
Protection: Not Required
Description: PSD-FL-388 application

Weight (lbs.): 3
Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AP255
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UNITED STATES Phone: 850-921-9505

NAS

Pieces: 1/1

ORIGIN: TLH

Sender's ref. 37550201000 A7 AP255

To: DEP NORTHWEST DISTRICT
MR. RICK BRADBURN
160 GOVERNMENTAL CENTER
SUITE 160
PENSACOLA, FL 32502
UNITED STATES

POSTCODE: 32502

TEL: 850-595-8364

Description: PSD-FL-388 application

Weight: 3 lbs for 1 pcs
Date: 2007-03-06

DHL standard terms and conditions apply.

PNS 6K

(2L)US32502

WAYBILL: 20444953756

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DEP Northwest District
Suite 160
160 Governmental Center

Pensacola, FL 32502
UNITED STATES

Attention To: Mr. Rick Bradburn
Phone#: 850-595-8364

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 4.98
Protection: Not Required
Description: PSD-FL-388 application

Weight (lbs.): 3
Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AP255
Service Level: Next Day 3:00 (Next business day by 3 PM)

Special Svc:

Date Printed: 3/6/2007
Bill Shipment To: Sender
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EXPRESS

PSD PERMIT APPLICATION
FOR
PETCOKE BURNING IN THE LIME KILN

SMURFIT-STONE CONTAINER ENTERPRISES
PANAMA CITY MILL

Prepared For:

SMURFIT-STONE CONTAINER ENTERPRISES, INC.
PANAMA CITY, FLORIDA

Prepared By:

Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500

February 2007

0637645

7 Copies – FDEP
2 Copies – SSCE
1 Copy - Golder

APPLICATION FOR AIR PERMIT – LONG FORM

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air permit. Also use this form to apply for an air construction permit:

- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- Where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- Where the applicant proposes to establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial/revised/renewal Title V air operation permit.

Air Construction Permit & Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: Smurfit-Stone Container Enterprises, Inc.	
2. Site Name: Panama City Mill	
3. Facility Identification Number: 0050009	
4. Facility Location...: Street Address or Other Locator: One Everitt Avenue City: Panama City County: Bay Zip Code: 32402	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: Tom Clements, Environmental Superintendent
2. Application Contact Mailing Address... Organization/Firm: Smurfit-Stone Container Enterprises, Inc. Street Address: One Everitt Avenue City: Panama City   State: FL   Zip Code: 32402
3. Application Contact Telephone Numbers... Telephone: (850) 785-4311   ext.470   Fax: (850) 763-8530
4. Application Contact Email Address: tmclemen@smurfit.com

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 2/23/07	3. PSD Number (if applicable): PSD-FL-388
2. Project Number(s): 0050009-038-AC	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

☒ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This application is for the ability to substitute up to 90 percent petcoke for No. 6 fuel oil and Natural Gas in the Lime Kiln (EU 004), along with the installation of new burners into the Lime Kiln in order to be able to fire the petcoke. The project also includes the installation of petcoke handling and storage facilities, along with an accompanying baghouse. Based on ambient air quality modeling, the maximum allowable SO_2 emission rates for the Nos. 3 and 4 Combination Boilers will be reduced in order to account for the effect of the planned enclosure of the Recovery Boilers building.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
004	Lime Kiln/NCG Collection	AC1A	
	Petcoke Storage Silo	AC1A	
015	No. 3 Combination Boiler	AC1A	
016	No. 4 Combination Boiler	AC1A	

Application Processing Fee

Check one: ☒ Attached - Amount: $ 7,500 ☐ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1.	Owner/Authorized Representative Name : **B. G. Sammons, General Manager**
2.	Owner/Authorized Representative Mailing Address... Organization/Firm: **Smurfit-Stone Container Enterprises, Inc.** Street Address: **One Everitt Avenue** City: **Panama City** State: **FL** Zip Code: **32402**
3.	Owner/Authorized Representative Telephone Numbers... Telephone: **(850) 785-4311** ext. Fax: **(850) 763-6290**
4.	Owner/Authorized Representative Email Address: **bsammons@smurfit.com**
5.	Owner/Authorized Representative Statement: *I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.* B G Sammons Signature 2/21/07 Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):
   - ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
   - ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
   - ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
   - ☐ The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ( ) - ext. Fax: ( ) -

5. Application Responsible Official Email Address:

6. Application Responsible Official Certification:

   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

   ____________________ ________________
   Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1.	Professional Engineer Name: **David A. Buff** Registration Number: **19011**
2.	Professional Engineer Mailing Address... Organization/Firm: **Golder Associates Inc.**** Street Address: **6241 N.W. 23rd Street, Suite 500** City: **Gainesville** State: **Florida** Zip Code: **32653**
3.	Professional Engineer Telephone Numbers... Telephone: **(352) 336-5600** ext.**545** Fax: **(352) 336-6603**
4.	Professional Engineer Email Address: **dbuff@golder.com**
5.	Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

David A. Buff

Signature

2/19/07

Date

(Seal)

PROFESSIONAL ENGINEER STATE OF FLORIDA No. 19011 DAVID A. BUFF

* Attach any exception to certification statement.

**Board of Professional Engineers Certificate of Authorization #00001670

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **16** East (km) **632.8** North (km) **3335.1**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) **30 / 08 / 30** Longitude (DD/MM/SS) **85 / 37 / 25**	
3. Governmental Facility Code: **0**	4. Facility Status Code: **A**	5. Facility Major Group SIC Code: **26**	6. Facility SIC(s): **2611** **2621**
7. Facility Comment : **This facility is in the Kraft Paper and Bleached Paper Grade subcategories of the pulp and paper industry.**			

Facility Contact

1. Facility Contact Name: **Tom Clements**
2. Facility Contact Mailing Address... Organization/Firm: **Smurfit-Stone Container Enterprises, Inc.** Street Address: **One Everitt Avenue** City: **Panama City** State: **FL** Zip Code: **32402**
3. Facility Contact Telephone Numbers: Telephone: **(850) 785-4311** ext.**470** Fax: **(850) 763-8530**
4. Facility Contact Email Address: **tmclemen@smurfit.com**

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☒ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☒ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Particulate Matter Total – PM	**A**	**N**
Particulate Matter – PM_{10}	**A**	**N**
Sulfur Dioxide – SO_2	**A**	**N**
Nitrogen Oxides – NO_x	**A**	**N**
Carbon Monoxide – CO	**A**	**N**
Volatile Organic Compounds - VOC	**A**	**N**
Total Reduced Sulfur – TRS	**A**	**N**
Sulfuric Acid Mist – SAM	**A**	**N**
Total Hazardous Air Pollutants – HAPs	**A**	**N**
Mercury – H114	**B**	**N**
Acetaldehyde – H001	**A**	**N**
Chlorine – H038	**B**	**N**
Chloroform – H043	**B**	**N**
Formaldehyde – H095	**A**	**N**
Hydrochloric Acid – H106	**A**	**N**
Methanol – H115	**A**	**N**
1, 2, 4 – Trichlorodenzene – H174	**A**	**N**
Xylenes – H186	**A**	**N**

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1.	Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **SSCE-FI-C1** ☐ Previously Submitted, Date:____
2.	Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **SSCE-FI-C2** ☐ Previously Submitted, Date:____
3.	Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **SSCE-FI-C3** ☐ Previously Submitted, Date:____

Additional Requirements for Air Construction Permit Applications

1.	Area Map Showing Facility Location: ☒ Attached, Document ID: **SSCE-FI-CC1** ☐ Not Applicable (existing permitted facility)
2.	Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): ☒ Attached, Document ID: **PSD Report**
3.	Rule Applicability Analysis: ☒ Attached, Document ID: **SSCE-FI-CC3**
4.	List of Exempt Emissions Units (Rule 62-210.300(3), F.A.C.): ☐ Attached, Document ID: ____ ☒ Not Applicable (no exempt units at facility)
5.	Fugitive Emissions Identification: ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable
6.	Air Quality Analysis (Rule 62-212.400(7), F.A.C.): ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable
7.	Source Impact Analysis (Rule 62-212.400(5), F.A.C.): ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable
8.	Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable
9.	Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable
10.	Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): ☐ Attached, Document ID: ____ ☒ Not Applicable

FACILITY INFORMATION

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): ☐ Attached, Document ID:____ ☐ Not Applicable (no exempt units at facility)	

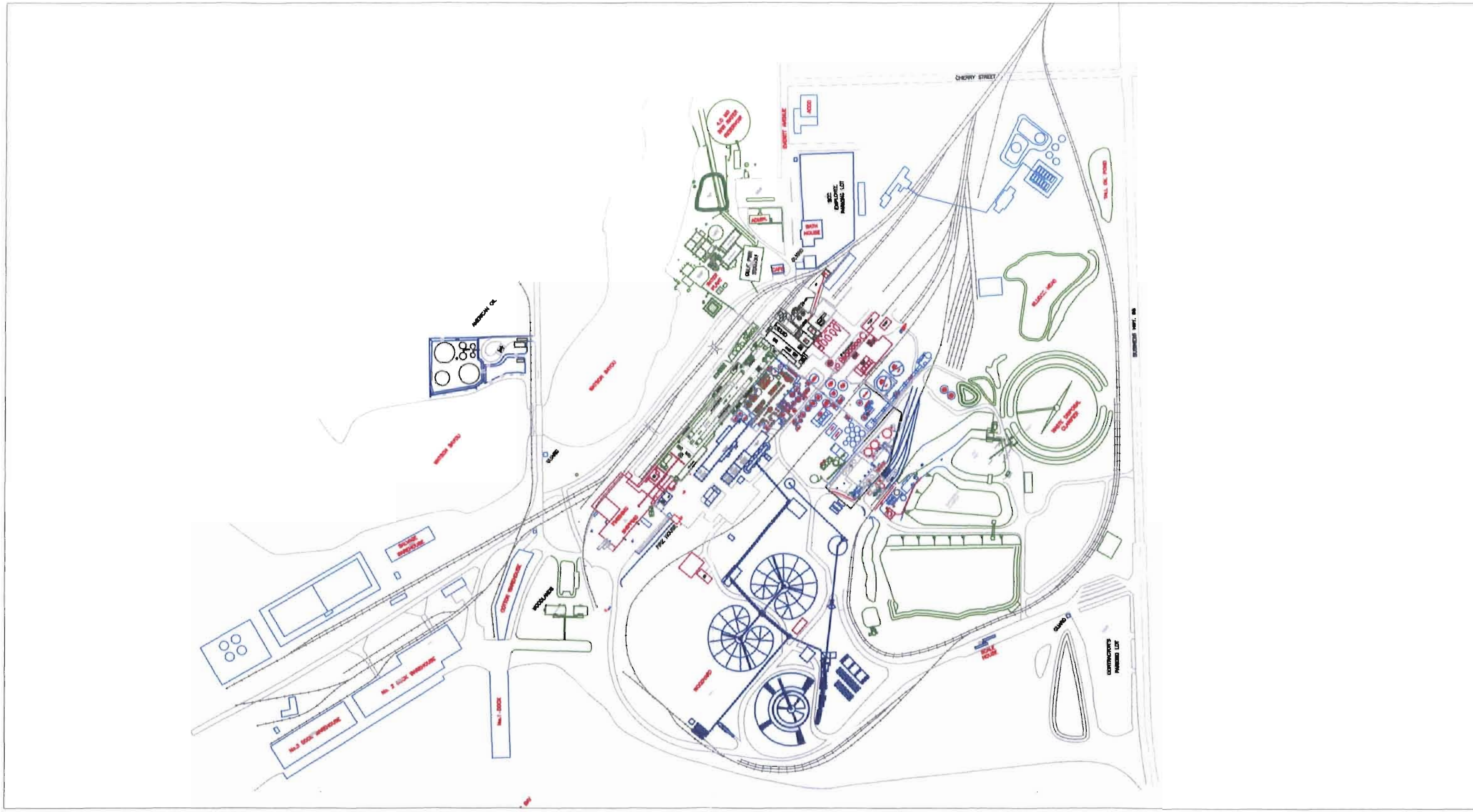
Additional Requirements for Title V Air Operation Permit Applications

1.	List of Insignificant Activities (Required for initial/renewal applications only): ☐ Attached, Document ID:____ ☐ Not Applicable (revision application)
2.	Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought): ☐ Attached, Document ID:____ ☐ Not Applicable (revision application with no change in applicable requirements)
3.	Compliance Report and Plan (Required for all initial/revision/renewal applications): ☐ Attached, Document ID:____ Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4.	List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only): ☐ Attached, Document ID:____ ☐ Equipment/Activities On site but Not Required to be Individually Listed ☐ Not Applicable
5.	Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) : ☐ Attached, Document ID:____ ☐ Not Applicable
6.	Requested Changes to Current Title V Air Operation Permit: ☐ Attached, Document ID:____ ☐ Not Applicable

Additional Requirements Comment

ATTACHMENT SSCE-FI-C1

FACILITY PLOT PLAN

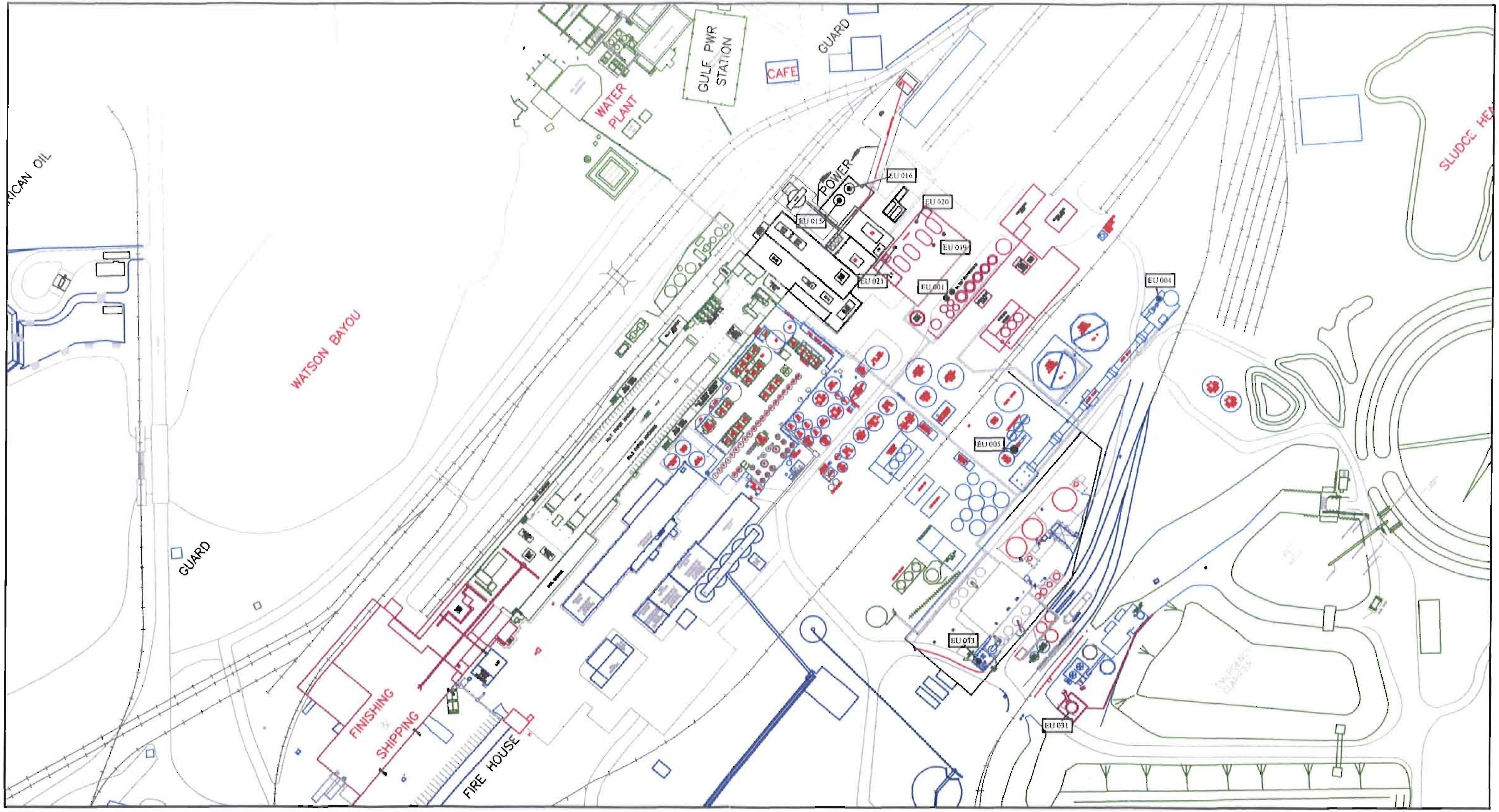


ATTACHMENT SSCE-FI-C1a. FACILITY PLOT PLAN

STONE CONTAINER ENTERPRISES, INC.
PANAMA CITY, FL

FILENAME:	0637645/4.4/App Att/SSCE-FI-C1.dwg
LATEST REVISION:	12/02/04

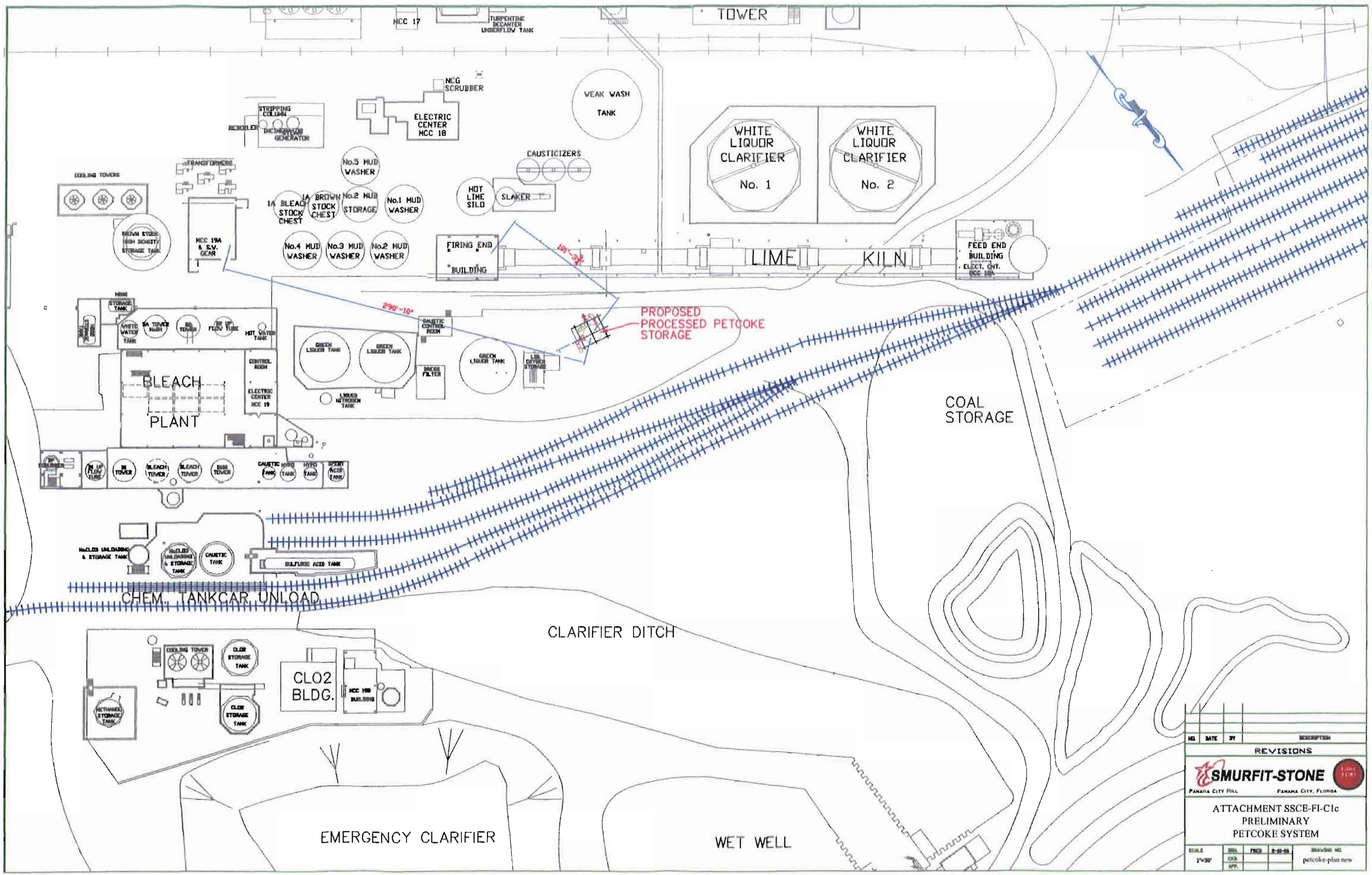
Golder Associates



ATTACHMENT SSCE-FI-C1b. FACILITY PLOT PLAN
(Enlarged to Identify Emission Points)
STONE CONTAINER ENTERPRISES, INC.
PANAMA CITY, FL

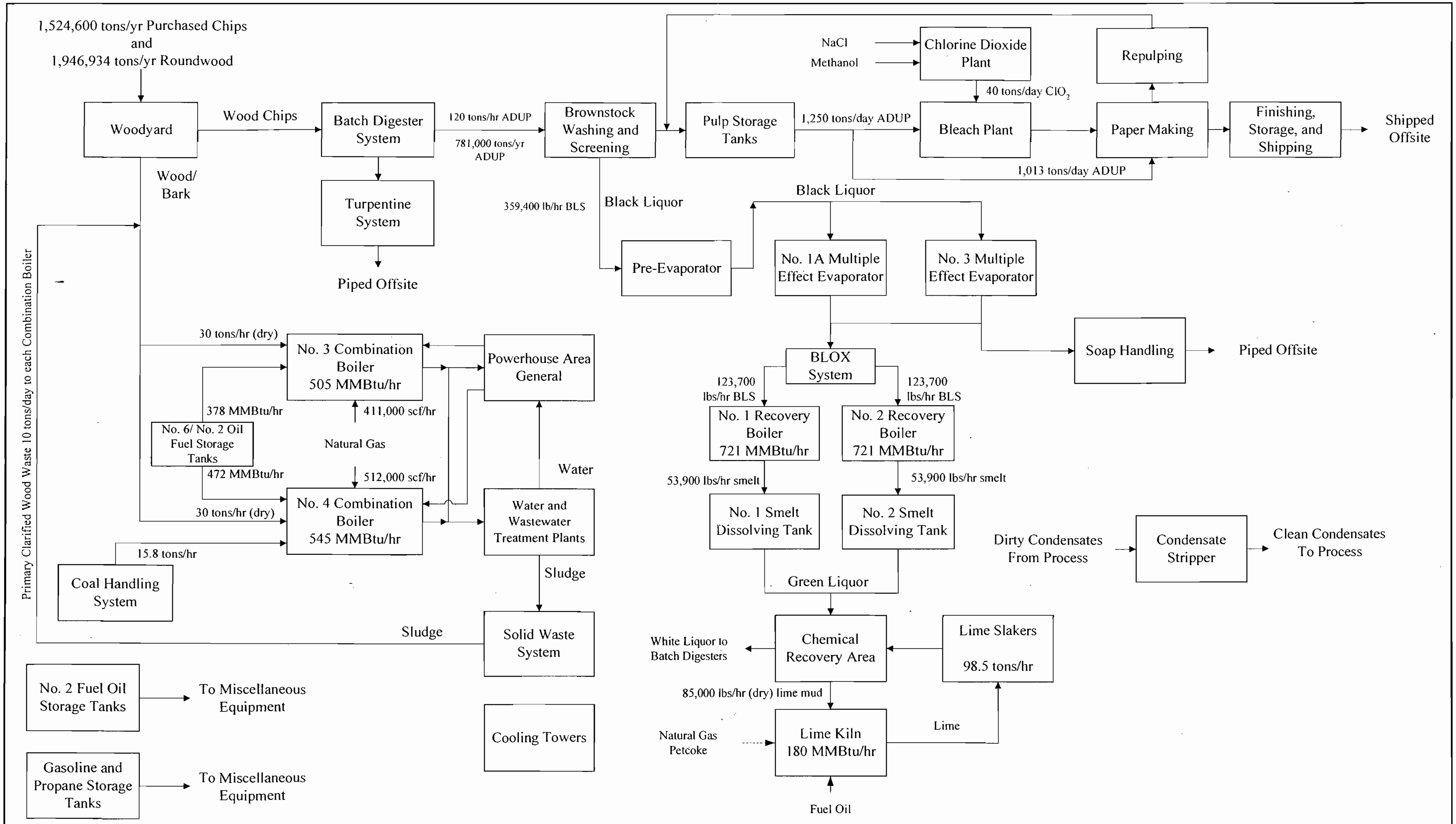
FILENAME:	0637645/4.4/App Att/SSCE-FI-C1.dwg
LATEST REVISION:	12/02/04

Golder Associates


TOWER
MCC 17
TURPENTINE DECANTER UNDERFLOW TANK
NCG SCRUBBER
WEAK WASH TANK
STRIPPING COLUMN
REBOILER
ELECTRIC CENTER MCC 18
WHITE LIQUOR CLARIFIER No. 1
WHITE LIQUOR CLARIFIER No. 2
CAUSTICIZERS
TRANSFORMERS
COOLING TOWERS
No.5 MUD WASHER
No.2 MUD STORAGE
No.1 MUD WASHER
1A BLEACH STOCK CHEST
1A BROWN STOCK CHEST
HOT LIME SILO
SLAKER
MCC 19A & S.V. GEAR
No.4 MUD WASHER
No.3 MUD WASHER
No.2 MUD WASHER
FIRING END BUILDING
LIME KILN
FEED END BUILDING ELECT. CNT. MCC 18A
290'-10"
PROPOSED PROCESSED PETCOKE STORAGE
GREEN LIQUOR TANK
DREGS FILTER
BLEACH PLANT
CONTROL ROOM
ELECTRIC CENTER MCC 19
COAL STORAGE
SULFURIC ACID TANK
CAUSTIC TANK
CHEM. TANKCAR UNLOAD
CLARIFIER DITCH
COOLING TOWER
CLO2 BLDG.
EMERGENCY CLARIFIER
WET WELL
REVISIONS
SMURFIT-STONE
PANAMA CITY MILL
PANAMA CITY, FLORIDA
ATTACHMENT SSCE-FI-C1c
PRELIMINARY
PETCOKE SYSTEM
1"=30'
petcoke-plan new

ATTACHMENT SSCE-FI-C2

PROCESS FLOW DIAGRAM



Attachment SSCE-FI-C2. Overall Plant Flow Diagram
Stone Container Corporation - Panama City, Florida

Source: Golder, 2007.

Golder Associates

ATTACHMENT SSCE-FI-C3

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

ATTACHMENT SSCE-FI-C3

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

Reasonable precautions shall be taken to prevent emissions of unconfined particulate matter. Reasonable precautions shall include, but are not limited to, the following:

1. Maintenance of roads, parking areas, and yards.
2. Application of water or other dust suppressants when necessary to control emissions.
3. Removal of particulate matter from roads and other paved areas under control of the owner or operator, and from buildings or work areas to prevent re-entrainment.
4. Stone Container Corporation will protect dust transfer points and transport and storage containers from wind action which might make dust airborne.
5. Chips manufactured on-site shall be screened following storage.
6. Chips will be screened following removal from storage prior to conveying to digesters.
7. All woodyard conveyor systems shall be covered or enclosed.
8. Drop distance from chip storage stacker shall be maintained at a minimum.
9. All main access roads shall be paved.

ATTACHMENT SSCE-FI-CC1

AREA MAP SHOWING FACILITY LOCATION

SSCE-FI-CC1 Area Map
Smurfit-Stone Container Enterprises
Panama City Mill
0637645/4.4/AppAtt/SSCE-FI-CC1
Source: Terraserver.com, 2005; Golder 2005.

Golder Associates

ATTACHMENT SSCE-FI-CC3

RULE APPLICABILITY ANALYSIS

ATTACHMENT SSCE-FI-CC3

RULE APPLICABILITY ANALYSIS

TITLE V CORE LIST (Effective: 03/01/02)

[**Note:** The Title V Core List is meant to simplify the completion of the "List of Applicable Regulations" for DEP Form No. 62-210.900(1), Application for Air Permit - Long Form. The Title V Core List is a list of rules to which all Title V Sources are presumptively subject. The Title V Core List may be referenced in its entirety, or with specific exceptions. The Department may periodically update the Title V Core List.]

Federal: ***(description)***

40 CFR 61, Subpart M: NESHAP for Asbestos.

~~40 CFR 82: Protection of Stratospheric Ozone.~~
~~40 CFR 82, Subpart B: Servicing of Motor Vehicle Air Conditioners (MVAC).~~
40 CFR 82, Subpart F: Recycling and Emissions Reduction.

State: ***(description)***

CHAPTER 62-4, F.A.C.: PERMITS (Effective 06/01/01)

62-4.030, F.A.C.: General Prohibition.
62-4.040, F.A.C.: Exemptions.
62-4.050, F.A.C.: Procedure to Obtain Permits; Application.
62-4.060, F.A.C.: Consultation.
62-4.070, F.A.C.: Standards for Issuing or Denying Permits; Issuance; Denial.
62-4.080, F.A.C.: Modification of Permit Conditions.
62-4.090, F.A.C.: Renewals.
62-4.100, F.A.C.: Suspension and Revocation.
62-4.110, F.A.C.: Financial Responsibility.
62-4.120, F.A.C.: Transfer of Permits.
62-4.130, F.A.C.: Plant Operation - Problems.
62-4.150, F.A.C.: Review.
62-4.160, F.A.C.: Permit Conditions.
62-4.210, F.A.C.: Construction Permits.
62-4.220, F.A.C.: Operation Permit for New Sources.

CHAPTER 62-210, F.A.C.: STATIONARY SOURCES - GENERAL REQUIREMENTS (Effective 06/21/01)

62-210.300, F.A.C.: Permits Required.
62-210.300(1), F.A.C.: Air Construction Permits.
62-210.300(2), F.A.C.: Air Operation Permits.
62-210.300(3), F.A.C.: Exemptions.
62-210.300(5), F.A.C.: Notification of Startup.
62-210.300(6), F.A.C.: Emissions Unit Reclassification.
62-210.300(7), F.A.C.: Transfer of Air Permits.

62-210.350, F.A.C.: Public Notice and Comment.
62-210.350(1), F.A.C.: Public Notice of Proposed Agency Action.
62-210.350(2), F.A.C.: Additional Public Notice Requirements for Emissions Units Subject to Prevention of Significant Deterioration or Nonattainment-Area Preconstruction Review.
62-210.350(3), F.A.C.: Additional Public Notice Requirements for Sources Subject to Operation Permits for Title V Sources.
62-210.360, F.A.C.: Administrative Permit Corrections.
62-210.370(3), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility.
62-210.400, F.A.C.: Emission Estimates.
62-210.650, F.A.C.: Circumvention.
62-210.700, F.A.C.: Excess Emissions.
62-210.900, F.A.C.: Forms and Instructions.
62-210.900(1), F.A.C.: Application for Air Permit – Title V Source, Form and Instructions.
62-210.900(5), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility, Form and Instructions.
62-210.900(7), F.A.C.: Application for Transfer of Air Permit – Title V and Non-Title V Source.

CHAPTER 62-212, F.A.C.: STATIONARY SOURCES - PRECONSTRUCTION REVIEW (Effective 08/17/00)

CHAPTER 62-213, F.A.C.: OPERATION PERMITS FOR MAJOR SOURCES OF AIR POLLUTION (Effective 04/16/01)

62-213.205, F.A.C.: Annual Emissions Fee.
62-213.400, F.A.C.: Permits and Permit Revisions Required.
62-213.410, F.A.C.: Changes without Permit Revision.
62-213.412, F.A.C.: Immediate Implementation Pending Revision Process.
62-213.415, F.A.C.: Trading of Emissions within a Source.
62-213.420, F.A.C.: Permit Applications.
62-213.430, F.A.C.: Permit Issuance, Renewal, and Revision.
62-213.440, F.A.C.: Permit Content.
62-213.450, F.A.C.: Permit Review by EPA and Affected States
62-213.460, F.A.C.: Permit Shield.
62-213.900, F.A.C.: Forms and Instructions.
62-213.900(1), F.A.C.: Major Air Pollution Source Annual Emissions Fee Form.
62-213.900(7), F.A.C.: Statement of Compliance Form.

CHAPTER 62-296, F.A.C.: STATIONARY SOURCES - EMISSION STANDARDS (Effective 03/02/99)

62-296.320(4)(c), F.A.C.: Unconfined Emissions of Particulate Matter.
62-296.320(2), F.A.C.: Objectionable Odor Prohibited.

CHAPTER 62-297, F.A.C.: STATIONARY SOURCES - EMISSIONS MONITORING (Effective 03/02/99)

62-297.310, F.A.C.: General Test Requirements.
62-297.330, F.A.C.: Applicable Test Procedures.
62-297.340, F.A.C.: Frequency of Compliance Tests.
62-297.345, F.A.C.: Stack Sampling Facilities Provided by the Owner of an Emissions Unit.
62-297.350, F.A.C.: Determination of Process Variables.
62-297.570, F.A.C.: Test Report.
62-297.620, F.A.C.: Exceptions and Approval of Alternate Procedures and Requirements.

Miscellaneous:

CHAPTER 28-106, F.A.C.: Decisions Determining Substantial Interests
CHAPTER 62-110, F.A.C.: Exception to the Uniform Rules of Procedure, Effective 07-01-98
~~**CHAPTER 62-256, F.A.C.:** Open Burning and Frost Protection Fires, Effective 11-30-94~~
CHAPTER 62-257, F.A.C.: Asbestos Notification and Fee, Effective 02-09-99
CHAPTER 62-281, F.A.C.: Motor Vehicle Air Conditioning Refrigerant Recovery and Recycling, Effective 09-10-96

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   ☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

   Lime Kiln/NCG Collection

3. Emissions Unit Identification Number: **004**

4. Emissions Unit Status Code: **A**	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: **26**	8. Acid Rain Unit? ☐ Yes ☒ No

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

    The Lime Kiln will be fueled by No. 6 fuel oil, natural gas, and up to 90 percent pulverized petcoke (10 percent No. 6 fuel oil, or natural gas, minimum). The petcoke will be brought onsite by trucks. Total reduced sulfur (TRS) and hazardous air pollutant (HAP) emissions from the Low-Volume High Concentration (LVHC) system [Batch Digester System (EU 027), the pre-evaporator, and Nos. 1A and 3 MEE Systems (EU 026)] are vented to the Lime Kiln/NCG Collection System (EU 004), or alternatively to No. 4 Combination Boiler, for destruction.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

   021 – Incineration of non-condensable gases (NCGs) in Lime Kiln
   053 – Venturi Scrubber on the Lime Kiln

   The petcoke is pneumatically conveyed from the storage silo to the Lime Kiln burner. The conveying system is enclosed.

2. Control Device or Method Code(s): **021, 053**

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **85,000 lb/hr $CaCO_3$**		
2. Maximum Production Rate: **36,700 lb/hr CaO**		
3. Maximum Heat Input Rate: **180** million Btu/hr		
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	**24** hours/day **52** weeks/year	**7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment: **Process, production, and heat input rates are 24-hour averages. $CaCO_3$ is lime mud (dry). CaO is reburned lime (dry). Maximum production rate with 10-percent impurities is 40,370 lb/hr (dry).**		

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **Lime Kiln/NCG Collection**		2. Emission Point Type Code: **2**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **Pulping System – MACT I Sources and Lime Kiln/NCG Collection**		
5. Discharge Type Code: **V**	6. Stack Height: **60.5** feet	7. Exit Diameter: **6.3** feet
8. Exit Temperature: **166**°F	9. Actual Volumetric Flow Rate: **92,800** acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: **81,400** dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment: **Exit temperature and actual volumetric flow rate represent average of last 9 years of stack tests. Maximum dry standard flow rate is corrected to 10-percent O_2, and represents highest from last 9 years of stack tests. See Attachment SSC-EU1-C15.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 5

1. Segment Description (Process/Fuel Type): **Pulp and Paper and Wood Products, Sulfate (Kraft) Pulping, Lime Kiln: General**		
2. Source Classification Code (SCC): **3-07-001-06**	3. SCC Units: **Tons Air-dried Unbleached Pulp Produced**	
4. Maximum Hourly Rate: **120**	5. Maximum Annual Rate: **781,000**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Maximum annual pulp production rate based on permit limit set for PSD purposes.**		

Segment Description and Rate: Segment 2 of 5

1. Segment Description (Process/Fuel Type): **In-process Fuel Use; Residual Oil: Lime Kiln**		
2. Source Classification Code (SCC): **3-90-004-03**	3. SCC Units: **Thousands Gallons Burned**	
4. Maximum Hourly Rate: **1.20**	5. Maximum Annual Rate: **10,512**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **2.5**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **150**
10. Segment Comment: **Based on maximum heat input of 180 MMBtu/hr (daily average) and 150,000 Btu/gal from No. 6 Fuel Oil.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 5

1. Segment Description (Process/Fuel Type): **In-process Fuel Use; Natural Gas: Lime Kiln**		
2. Source Classification Code (SCC): **3-90-006-03**	3. SCC Units: **Million Cubic Feet Burned**	
4. Maximum Hourly Rate: **0.180**	5. Maximum Annual Rate: **1,576.8**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1,000**
10. Segment Comment: **Maximum hourly rate based on 180 MMBtu/hr (daily average) and 1,000 Btu/ft^3.**		

Segment Description and Rate: Segment 4 of 5

1. Segment Description (Process/Fuel Type): **In-process Fuel Use; Petroleum Coke: Lime Kiln**		
2. Source Classification Code (SCC): **3-90-008-99**	3. SCC Units: **Tons Petcoke Burned**	
4. Maximum Hourly Rate: **5.88**	5. Maximum Annual Rate: **51,529.4**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **7.0**	8. Maximum % Ash: **1.5**	9. Million Btu per SCC Unit: **30.6**
10. Segment Comment: **Maximum annual rate is based on maximum heat input of 180 MMBtu/hr and 15,300 Btu/lb heating value. Maximum percent sulfur ranges from 5 percent to 7 percent, and maximum percent ash is very low, ranging from 0 percent to 1.5 percent.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 5 of 5

1. Segment Description (Process/Fuel Type): **Lime Manufacture; Calcining: Rotary Kiln**		
2. Source Classification Code (SCC): **3-05-016-04**	3. SCC Units: **Tons Lime (CaO) Produced**	
4. Maximum Hourly Rate: **18.35**	5. Maximum Annual Rate: **160,746**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	053		EL
PM_{10}	053		NS
SO_2	053		EL
SAM	053		NS
NO_x			NS
CO			NS
VOC			NS
TRS	021		EL
HAPs	021		NS
PB			NS
H114 – Mercury			NS
Acetaldehyde – H001			NS
Methanol – H115			NS
Xylenes – H186			NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **29.83** lb/hour **130.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **Permit Limit** Reference: **Permit No. 0050009-025-AV**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **29.83 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 130.7 TPY**	
11. Potential Fugitive and Actual Emissions Comment: **Emission limit of 29.83 lb/hr and 130.7 TPY specified in Permit No. 0050009-025-AV.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **E = 17.31 $P^{0.16}$ lb/hr**	4. Equivalent Allowable Emissions: **29.83** lb/hour **130.7** tons/year
5. Method of Compliance: **Annual stack testing using EPA Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on process weight table: 62-296.320(4)(a)2. Emissions capped at 29.83 lb/hr by Permit No. 0050009-025-AV.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.064 grains/dscf at 10 percent O_2**	4. Equivalent Allowable Emissions: **44.7** lb/hour **195.6** tons/year
5. Method of Compliance: **Annual test using EPA Test Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **40 CFR 63.862(a)(1)(i)(c). 0.064 grains/dscf x 81,400 dscfm x 60 min/hr x 1 lb/7,000 grains = 44.7 lb/hr**	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM_{10}**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **25.27** lb/hour **110.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **PM_{10} is 84.7 percent of PM** Reference: **NCASI Emission Factor**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: 29.83 lb/hr PM x 0.847 lb PM_{10}/lb PM = 25.27 lb/hr

Annual: 25.27 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 110.7 TPY

11. Potential Fugitive and Actual Emissions Comment:

Emission factor is 84.7 percent of PM, obtained from NCASI "Particulate Emission Data for Pulp and Paper Industry-Specific Sources" (August 25, 2006)

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **TRS**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **8.6** lb/hour **37.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **20 ppmvd at 10 percent O_2 (12-hr average)** Reference: **Rule 62-296.404(3)(e)1**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly:
20 $ft^3/10^6$ ft^3 TRS x 81,400 dscf/min x 2116.8 lb/ft^2 x lb-mole-°R/1,545.6 ft-lb_f x 1/528°R x 34 lb/lb-mol x 60 min/hr = 8.6 lb/hr

Annual:
8.6 lb/hr TRS x 8,760 hr/yr x 1 ton/2,000 lb = 37.7 TPY

11. Potential Fugitive and Actual Emissions Comment:

Emission limit of 20 ppmvd at 10 percent O_2 (12-hr average) specified in Permit No. 0050009-025-AV.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **20 ppmvd at 10 percent O_2 (12-hr average)**	4. Equivalent Allowable Emissions: **8.6** lb/hour **37.7** tons/year
5. Method of Compliance: **Annual source test using EPA Method 16, or 16A.**	
6. Allowable Emissions Comment (Description of Operating Method): **62-296.404(3)(e)1, F.A.C. and Permit No. 0050009-025-AV.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **32.9** lb/hour **144.3** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **7 percent maximum Sulfur content in petcoke** Reference: **Supplier guarantee**	7. Emissions Method Code: **3**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly:
0.07 lb S/lb petcoke x 2 lb SO_2/lb S x 1 lb petcoke/15,300 Btu x 10^6 Btu/MMBtu x 180 MMBtu/hr x (1 - 0.9) x (1 – 0.8) = 32.9 lb/hr

Annual:
32.9 lb/hr SO_2 x 8,760 hr/yr x 1 ton/2,000 lb = 144.3 TPY

11. Potential Fugitive and Actual Emissions Comment:

The Lime Kiln has an 80 percent inherent SO_2 removal efficiency, and the scrubber has a 90 percent SO_2 removal efficiency. The petroleum coke has a maximum 7 percent sulfur content and all calculations assume burning 100 percent petcoke.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **32.9 lb/hr**	4. Equivalent Allowable Emissions: **32.9** lb/hour **144.3** tons/year
5. Method of Compliance: **EPA Method 8**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SAM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.75** lb/hour **7.64** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.0951 lb/ton CaO** Reference: **See PSD Report (Table 2-3)**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Hourly: 0.0951 lb SAM/ton CaO x 18.35 ton/hr CaO = 1.75 lb/hr** **Annual: 1.75 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 7.64 TPY**	
11. Potential Fugitive and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **NO_x**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **107.8** lb/hour **472.2** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **185 ppm at 10 percent O_2** Reference: **Quote by COEN (11/18/06)**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly:
185 $ft^3/10^6\ ft^3$ NO_x x 81,400 dscf/min x 2116.8 lb/ft^2 x lb-mole-°R/1,545.6 ft-lb_f x 1/528°R x 46 lb/lb-mol x 60 min/hr = 107.8 lb/hr

Annual:
107.8 lb/hr NO_x x 8,760 hr/yr x 1 ton/2,000 lb = 472.2 TPY

11. Potential Fugitive and Actual Emissions Comment:

Potential emissions based on a quote by COEN (November 18, 2006) that estimated NO_x at 165 - 185 ppm at 10 percent O_2 for a mixture of 80 percent petcoke and 20 percent No. 6 Fuel Oil.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **185 ppm at 10 percent O_2**	4. Equivalent Allowable Emissions: **107.8** lb/hour **472.2** tons/year
5. Method of Compliance: **EPA Method 7E**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **3.32** lb/hour **14.5** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.181 lb/ton CaO** Reference: **NCASI Technical Bulletin No. 884**	7. Emissions Method Code: **2**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: 0.181 lb/ton CaO x 18.35 ton/hr CaO = 3.32 lb/hr
Annual: 3.32 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 14.5 TPY

11. Potential Fugitive and Actual Emissions Comment:

NCASI Technical Bulletin No. 884, Table 4.13, mean value.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.84** lb/hour **3.70** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.046 lb/ton CaO** Reference: **NCASI Technical Bulletin No. 884**	7. Emissions Method Code: **2**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Hourly: 0.046 lb/ton CaO x 18.35 ton/hr CaO = 0.84 lb/hr** **Annual: 0.84 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 3.70 TPY**	
11. Potential Fugitive and Actual Emissions Comment: **NCASI Technical Bulletin No. 884, Table 4.13, mean value.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **Pb**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.059** lb/hour **0.257** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.0032 lb/ton CaO** Reference: **NCASI Technical Bulletin No. 858**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: 0.0032 lb/ton CaO x 18.35 ton CaO/hr = 0.059 lb/hr
Annual: 0.059 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 0.257 TPY

11. Potential Fugitive and Actual Emissions Comment:

NCASI Technical Bulletin No. 858, Table 16C, mean value.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **H114 - Mercury**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **$1.14x10^{-5}$** lb/hour **$4.98x10^{-5}$** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **$6.2x10^{-7}$ lb/ton CaO** Reference: **NCASI Technical Bulletin No. 858**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: $6.2x10^{-7}$ lb/ton CaO x 18.35 ton CaO/hr = $1.14x10^{-5}$ lb/hr
Annual: $1.1x10^{-5}$ lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = $4.98x10^{-5}$ TPY

11. Potential Fugitive and Actual Emissions Comment:

NCASI Technical Bulletin No. 858, Table 16C, mean value.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **HAPs**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.5** lb/hour **6.4** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **8.0x10^{-2} lb/ton CaO** Reference: **NCASI Technical Bulletin**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Hourly: 8.0x10^{-2} lb/ton CaO x 18.35 ton CaO/hr = 1.5 lb/hr
Annual: 1.5x10^{-5} lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 6.4 TPY

11. Potential Fugitive and Actual Emissions Comment:

Emission factor based on median values of Lime Kilns firing only fuel oil or petcoke. Non-detects are zero.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **Annual testing using EPA Method 9, upon request.**	
5. Visible Emissions Comment: **Due to moisture interference, the visible emission limiting standard pursuant to Rule 62-296.320(4), F.A.C. is not applicable and is deferred to Rule 62-296.404(2)(b), F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 4

1. Parameter Code: **EM**	2. Pollutant(s): **TRS**
3. CMS Requirement: ☒ Rule ☐ Other	
4. Monitor Information... Manufacturer: **Lear-Seigler** Model Number: **ML 8950** Serial Number: **78**	
5. Installation Date: **20 Nov 1992**	6. Performance Specification Test Date: **29 Apr 1993**
7. Continuous Monitor Comment: **62-296.404(5)(a) and (b).**	

Continuous Monitoring System: Continuous Monitor 2 of 4

1. Parameter Code: **O_2**	2. Pollutant(s):
3. CMS Requirement: ☒ Rule ☐ Other	
4. Monitor Information... Manufacturer: **Lear-Seigler** Model Number: **ML 8950** Serial Number: **78**	
5. Installation Date: **20 Nov 1992**	6. Performance Specification Test Date: **29 Apr 1993**
7. Continuous Monitor Comment: **62-296.404(5)(b)1.a.**	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 3 of 4

1. Parameter Code: **PRS**	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☒ Other	
4. Monitor Information... Manufacturer: **Lear-Seigler** Model Number: **P/N 80280366-1** Serial Number: **54007-1**	
5. Installation Date: **01 Oct 1994**	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Permit No. 0050009-025-AV and 40 CFR 63.864(e)(10) require measurement of pressure differential across wet scrubber. PRS represents pressure drop.**	

Continuous Monitoring System: Continuous Monitor 4 of 4

1. Parameter Code: **FLOW**	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☒ Other	
4. Monitor Information... Manufacturer: **Yokogawa** Model Number: **AM11-DHA1A** Serial Number:	
5. Installation Date: **2002**	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Two meters. Permit No. 0050009-025-AV and 40 CFR 63.864(e)(10) require measurement of scrubber water flow rate to the bull nozzle and for the tangential flow.**	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **SSCE-EU1-I1** ☐ Previously Submitted, Date ____
2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **SSCE-EU1-I2** ☐ Previously Submitted, Date ____
3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **SSCE-EU1-I3** ☐ Previously Submitted, Date ____
4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____ ☒ Not Applicable (construction application)
5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: ____ ☐ Previously Submitted, Date ____ ☒ Not Applicable
6. Compliance Demonstration Reports/Records ☐ Attached, Document ID: ____ Test Date(s)/Pollutant(s) Tested: ____ ☐ Previously Submitted, Date: ____ Test Date(s)/Pollutant(s) Tested: ____ ☐ To be Submitted, Date (if known): ____ Test Date(s)/Pollutant(s) Tested: ____ ☒ Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable	
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable	
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☒ Not Applicable	

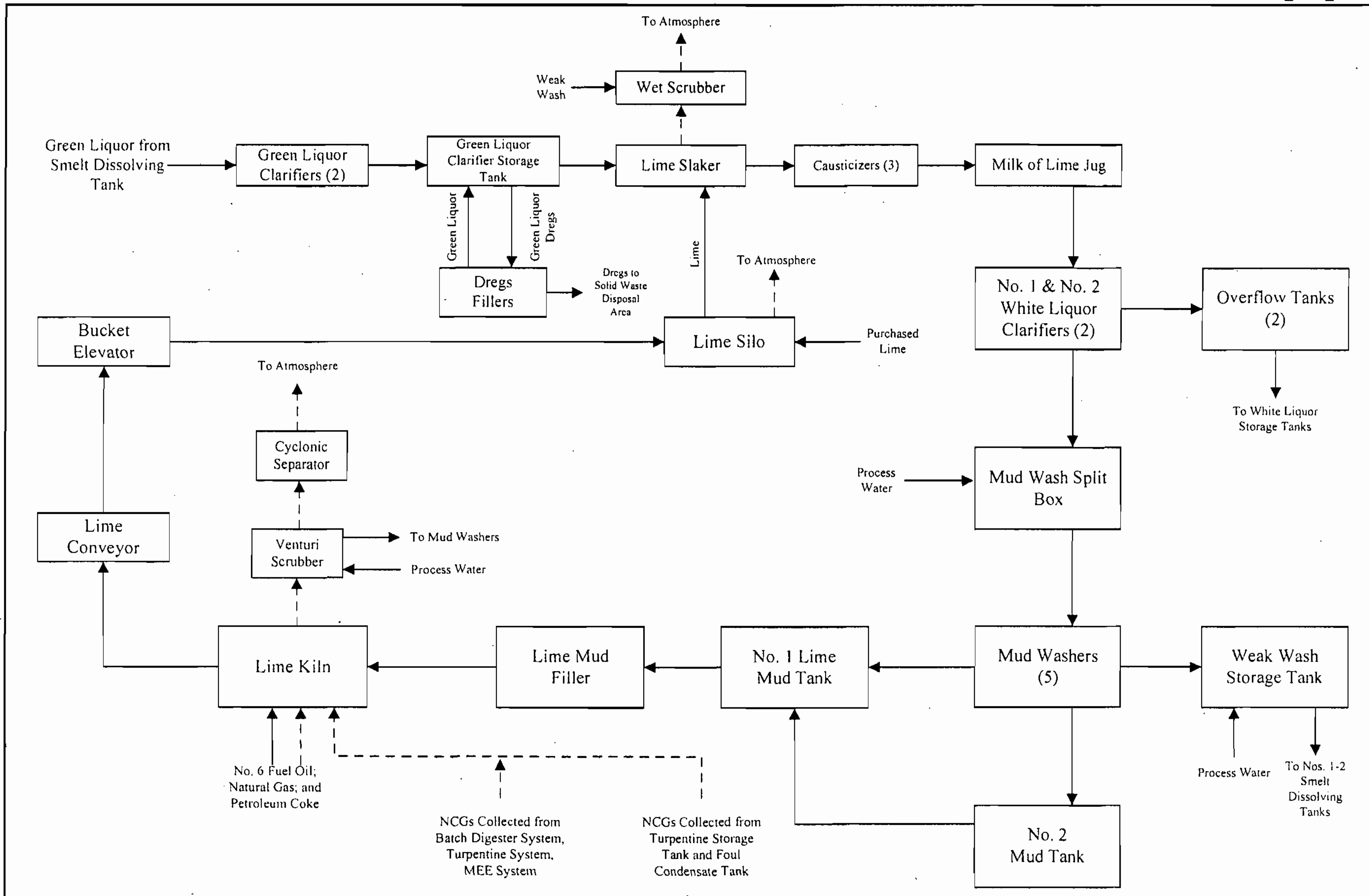
Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements ☐ Attached, Document ID: _____ ☐ Not Applicable	
2. Compliance Assurance Monitoring ☐ Attached, Document ID: _____ ☐ Not Applicable	
3. Alternative Methods of Operation ☐ Attached, Document ID: _____ ☐ Not Applicable	
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: _____ ☐ Not Applicable	
5. Acid Rain Part Application ☐ Certificate of Representation (EPA Form No. 7610-1) ☐ Copy Attached, Document ID: _____ ☐ Acid Rain Part (Form No. 62-210.900(1)(a)) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Not Applicable	

Additional Requirements Comment

ATTACHMENT SSCE-EU1-I1

PROCESS FLOW DIAGRAM



Attachment SSCE-EU1-I1
Process Flow Diagram — Lime Kiln
Smurfit-Stone Container Enterprises, Inc.
Panama City, Florida

Process Flow Legend

Solid/Liquid Flow ⟶

Gas Flow - - - ->

Golder Associates

ATTACHMENT SSCE-EU1-I2

FUEL ANALYSIS OR SPECIFICATION

ATTACHMENT SSCE-EU1-I2

FUEL ANALYSIS

LIME KILN

Fuel	Density (lb/gal)	Weight % Sulfur	Weight % Nitrogen	Weight % Ash	Heat Capacity
No. 6 Fuel Oil	8.33	2.5	0.08	0.067	145,000 – 150,000 Btu/gal 18,500 Btu/lb
Natural Gas	--	0.1	--	--	1,000 Btu/scf
Petroleum Coke	--	5 - 7	1.3 – 1.9	0 – 1.5	15,300 Btu/lb

Note: scf = standard cubic foot.

ATTACHMENT SSCE-EU1-I3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

ATTACHMENT SSCE-EU1-I3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

CONTROL EQUIPMENT PARAMETERS[a]

LIME KILN SCRUBBER (VENTURI)

Manufacturer	Chemico	
Model No.	1843	
Date of Installation	1970	
Inlet Gas Temp	420-600	°F
Inlet Gas Flow Rate (Maximum)	204,000	acfm
Outlet Gas Temp	160-170	°F
Pressure Drop Across Device (Minimum)[c]	18	in. H_2O
Scrubber Media	Water	
Scrubber Liquor Flow Rate (Minimum)[c]		
Bull Nozzle	455	gpm
Tangential Flow	493	gpm
Control Efficiency – Particulate Matter[b]	+90	%
Maximum Permitted Particulate Emission Rate[c]	29.83	lb(PM)/hr

[a] Control Equipment Parameters may vary according to process conditions.
[b] Based on manufacturer's quote.
[c] Values obtained from Permit 0050009-025-AV.

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION
Section [2]
Petcoke Storage Silo

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   ☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

   Petroleum Coke (petcoke) storage silo

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C			**26**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

    A 250-ton storage silo will be constructed to receive ground petcoke deliveries by truck. The petcoke will be transferred pneumatically from the truck to the storage silo. Petcoke will also be transferred pneumatically from the storage silo to the Lime Kiln (EU 004) as a primary fuel. A baghouse will be installed on top of the storage silo to collect dust from the silo loading, and unloading system.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **127 – Baghouse on the petcoke storage silo**	
2. Control Device or Method Code(s): **127**	

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **50 tons/hr petcoke**	
2. Maximum Production Rate: **51,529 tons/yr**	
3. Maximum Heat Input Rate: million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: **24** hours/day **52** weeks/year	 **7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment: **Maximum Process or Throughput Rate refers to maximum truck deliveries of petcoke of two trucks per hour, with each truck carrying 25 tons of petcoke. Maximum production rate refers to maximum annual use of petcoke in Lime Kiln.**	

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **Proposed Processed Petcoke Storage**		2. Emission Point Type Code: **1**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **H**	6. Stack Height: **123** feet	7. Exit Diameter: **1** feet
8. Exit Temperature: **80**°F	9. Actual Volumetric Flow Rate: **2,000** acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Industrial Processes; Mineral Products; Bulk Materials Storage Bins; Coke**		
2. Source Classification Code (SCC): **3-05-102-04**	3. SCC Units: **Tons Petcoke Stored**	
4. Maximum Hourly Rate: **50**	5. Maximum Annual Rate: **51,529.4**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Maximum annual rate is based on maximum heat input of 180 MMBtu/hr and 15,300 Btu/lb to the Lime Kiln (EU 004). Maximum hourly rate is based on two truck deliveries per hour, with each truck carrying 25 tons.**		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION
Section [2]
Petcoke Storage Silo

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	127		NS
PM_{10}	127		NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.14** lb/hour **0.60** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.008 grains/ft^3** Reference: **Vendor supplied grain loading**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Hourly: 2,000 ft^3/min x 0.008 grains/ft^3 x 1 lb/7,000 grains x 60 min/hr = 0.14 lb/hr** **Annual: 0.14 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 0.60 TPY**	
11. Potential Fugitive and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

<u>Potential/Estimated Fugitive Emissions</u>

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM_{10}**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.14** lb/hour **0.60** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **PM_{10} is 100 percent of PM** Reference: **AP-42, Table 10.2-4**	7. Emissions Method Code: **3**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions:	
11. Potential Fugitive and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **Annual testing using EPA Method 9, upon request.**	
5. Visible Emissions Comment: **Due to moisture interference, the visible emission limiting standard pursuant to Rule 62-296.320(4), F.A.C. is not applicable and is deferred to Rule 62-296.404(2)(b), F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1.	Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **SSCE-EU2-I1** ☐ Previously Submitted, Date _____
2.	Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
3.	Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **SSCE-EU2-I3** ☐ Previously Submitted, Date _____
4.	Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____ ☒ Not Applicable (construction application)
5.	Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____ ☒ Not Applicable
6.	Compliance Demonstration Reports/Records ☐ Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ ☐ Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ ☐ To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ ☒ Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7.	Other Information Required by Rule or Statute ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.) ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

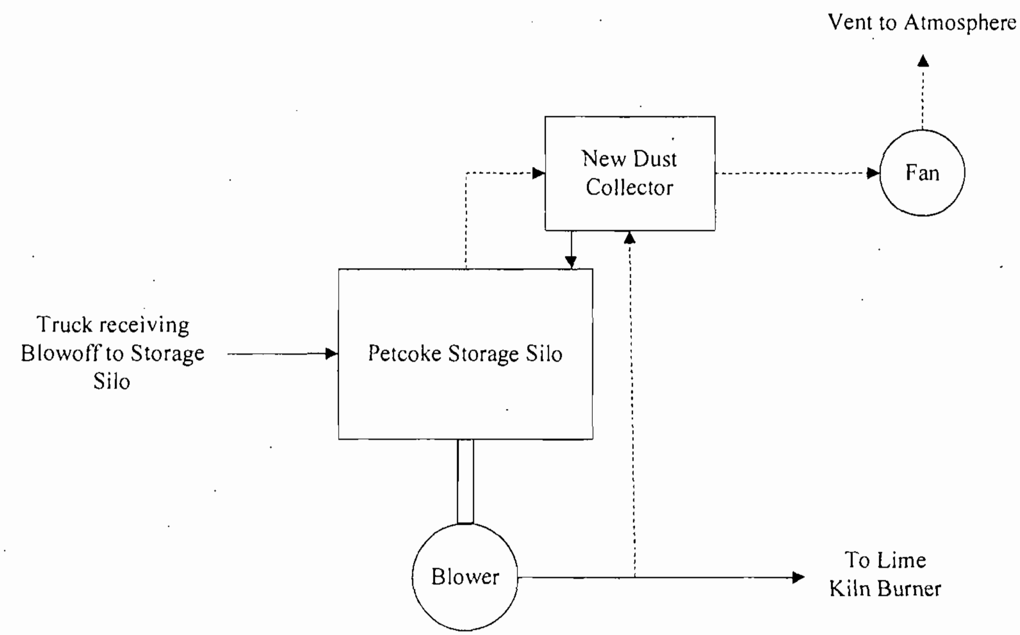
1. Identification of Applicable Requirements ☐ Attached, Document ID: _____ ☐ Not Applicable
2. Compliance Assurance Monitoring ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Alternative Methods of Operation ☐ Attached, Document ID: _____ ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading) ☐ Attached, Document ID: _____ ☐ Not Applicable
5. Acid Rain Part Application ☐ Certificate of Representation (EPA Form No. 7610-1) ☐ Copy Attached, Document ID: _____ ☐ Acid Rain Part (Form No. 62-210.900(1)(a)) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____ ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [2]
Petcoke Storage Silo

Additional Requirements Comment

ATTACHMENT SSCE-EU2-I1

PROCESS FLOW DIAGRAM



Attachment SSCE-EU2-I1
Petcoke Handling System
Process Flow Diagram
Smurfit-Stone Container Enterprises
Panama City, Florida

Process Flow Legend
Solid/Liquid
Gas
Steam

Filename: 0637645/4.4/SSCE-EU2-I1.VSD
Date: 02/19/07

Golder Associates

ATTACHMENT SSCE-EU2-I3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

ATTACHMENT SSCE-EU2-I3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

CONTROL EQUIPMENT PARAMETERS[a]

STORAGE SILO BAGHOUSE

Manufacturer	Not Selected	
Model No.	Not Selected	
Outlet Gas Temp	80	°F
Outlet Gas Flow Rate	2,000	acfm
Exhaust Gas Moisture Content	5	%
Outlet Gas Flow Rate	1858	scfm
Cleaning Method	Pulsed Jet	
No. of bags	To Be Determined	
Bag Material	To Be Determined	
Total Area of Filter Media	To Be Determined	ft^2
Air to Cloth Ratio	To Be Determined	
Manufacturer's Guaranteed Outlet Loading[b]	0.02	grains/acf
Pollutants	Outlet Loading	
Particulate Matter (PM)	0.34	lb/hr

[a] Control Equipment Parameters may vary according to process conditions.
[b] Based on manufacturer's data.

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   ☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

   No. 3 Combination Boiler

3. Emissions Unit Identification Number: **015**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A			**26**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

   The Condensate Stripper System vents stripper off-gases (SOG) to the No. 3 Combination Boiler or the No. 4 Combination Boiler as a TRS/HAP control device.

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	053		EL
PM_{10}	053		NS
SO_2	053		EL
NO_X			NS
CO			NS
VOC			NS
TRS	021		EL
Pb – Lead			NS
HAPs	021		NS
H095 – Formaldehyde			NS
H106 – Hydrochloric Acid			EL
H114 – Mercury			EL

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

<u>Potential/Estimated Fugitive Emissions</u>

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1,592.4** lb/hour **3,885.1** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **887.0 lb/hr, 24-hr average** Reference: **Permit No. 0050009-023-AC**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **SO_2 emissions controlled through caustic addition and SO_2 monitor. Maximum hourly based on maximum fuel oil plus wood/bark and combusting SOGs. Proposed cap over Nos. 3 and 4 Combination Boilers is 1,350 lb/hr for case of one wall enclosure on Recovery Boilers building, and 1,100 lb/hr for case of total enclosure.**	
11. Potential Fugitive and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 3

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **887 lb/hr, 24-hr average**	4. Equivalent Allowable Emissions: **887** lb/hour **3,885.1** tons/year
5. Method of Compliance: **SO_2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on Permit No. 0050009-023-AC.**	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1,350 lb/hr, 24-hr average**	4. Equivalent Allowable Emissions: **1,350** lb/hour tons/year
5. Method of Compliance: **SO_2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Represents Case 1 SO_2 cap for Nos. 3 and 4 Combination Boilers.**	

Allowable Emissions Allowable Emissions 3 of 3

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1,100 lb/hr, 24-hr average**	4. Equivalent Allowable Emissions: **1,100** lb/hour tons/year
5. Method of Compliance: **SO_2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Represents Case 2 SO_2 cap for Nos. 3 and 4 Combination Boilers.**	

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   ☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

   No. 3 Combination Boiler

3. Emissions Unit Identification Number: **015**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A			**26**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

    The Condensate Stripper System vents stripper off-gases (SOG) to the No. 3 Combination Boiler or the No. 4 Combination Boiler as a TRS/HAP control device. The EU ID No. for the Condensate Stripper is also EU 015.

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	053		EL
PM_{10}	053		NS
SO_2	053		EL
NO_X			NS
CO			NS
VOC			NS
TRS	021		EL
Pb – Lead			NS
HAPs	021		NS
H095 – Formaldehyde			NS
H106 – Hydrochloric Acid			EL
H114 – Mercury			EL

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1,183.0** lb/hour **3,022.2** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **1,183 lb/hr** Reference: **Permit No. 0050009-024-AC**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Maximum hourly based on combusting NCGs but not SOGs, or when combusting NCGs and SOGs. Maximum 24-hour SO_2 limit based on proposed BART limit of 690 lb/hr. Proposed cap over Nos. 3 and 4 Combination Boilers is 1,350 lb/hr for case of one wall enclosure on Recovery Boilers building, and 1,100 lb/hr for case of total enclosure.**	
11. Potential Fugitive and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 6

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **772 lb/hr, 24-hr average**	4. Equivalent Allowable Emissions: **772** lb/hour tons/year
5. Method of Compliance: **SO_2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on Permit No. 0050009-023-AC when not combusting NCGs or SOGs.**	

Allowable Emissions Allowable Emissions 2 of 6

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1,174.0 lb/hr**	4. Equivalent Allowable Emissions: **1,174.0** lb/hour **5,142.12** tons/year
5. Method of Compliance: **SO_2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on Permit No. 0050009-024-AC when combusting SOGs but not NCGs.**	

Allowable Emissions Allowable Emissions 3 of 6

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1,183.0 lb/hr**	4. Equivalent Allowable Emissions: **1,183.0** lb/hour **5,181.54** tons/year
5. Method of Compliance: **SO_2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on Permit No. 0050009-024-AC when combusting NCGs but not SOGs, or when combusting NCGs and SOGs.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 4 of 6

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **690 lb/hr, 24-hr average**	4. Equivalent Allowable Emissions: **690** lb/hour **3,022.2** tons/year
5. Method of Compliance: **SO_2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on proposed BART limit.**	

Allowable Emissions Allowable Emissions 5 of 6

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1,350 lb/hr, 24-hr average**	4. Equivalent Allowable Emissions: **1,350** lb/hour tons/year
5. Method of Compliance: **SO_2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Represents Case 1 SO_2 cap for Nos. 3 and 4 Combination Boilers**	

Allowable Emissions Allowable Emissions 6 of 6

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1,100 lb/hr, 24-hr average**	4. Equivalent Allowable Emissions: **1,100** lb/hour tons/year
5. Method of Compliance: **SO_2 CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Represents Case 2 SO_2 cap for Nos. 3 and 4 Combination Boilers.**	

PSD REPORT

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1.0 INTRODUCTION

Smurfit-Stone Container Enterprises, Inc. (SSCE) is proposing to add petroleum coke (petcoke) as an allowable fuel for the Lime Kiln [Emission Unit (EU) 004] at its Kraft and Bleached pulp and paper mill located in Panama City, Bay County, Florida (Mill). The Mill consists of the following major plant areas: chipyard, digester system, brown stock washing system, bleaching system, chemical recovery area, paper drying/converting/warehousing, and power/utilities area. The Mill is currently operating under Title V Permit No. 0050009-025-AV, issued November 8, 2006.

SSCE currently operates the Lime Kiln to calcine washed and filtered lime mud ($CaCO_3$) and regenerate calcium oxide (CaO). CaO is used in the chemical recovery process to react with green liquor to form white liquor (the cooking liquor for the pulp digesters). After CaO is regenerated in the Lime Kiln, it is stored in a silo until it is needed to react with green liquor.

The Lime Kiln is currently permitted to burn No. 6 fuel oil and natural gas as fuels. SSCE is requesting to modify the Lime Kiln to burn up to 90 percent petcoke as a substitute to No. 6 fuel oil and natural gas, as well as installation of a new burner in the Lime Kiln in order to allow firing the petcoke/oil/gas. Fuel oil will continue to be fired in the Lime Kiln, in combination with petcoke. Petcoke is a low ash (0-1.5 percent), high heating value, albeit higher sulfur (S) fuel (5 to 7 percent S), that is well suited for Lime Kiln applications. Petcoke handling and storage facilities will be installed to support the firing of this fuel in the Lime Kiln, along with a baghouse serving the petcoke storage silo.

The changes required to implement this project include:

- Installation of a new burner with primary air fan capable of firing petcoke/oil/gas with 180 million British thermal units per hour (MMBtu/hr) capacity, up to 90 percent as petcoke;
- Installation of a ground petcoke storage silo with a capacity of 250 tons, controlled by a baghouse;
- Installation of a dense phase pneumatic conveying system that will be used to unload the delivery trucks and transport the ground petcoke to the storage silo; and
- Installation of a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the Kiln burner.

Based on the comparison of past actual (baseline actual) annual emissions to future actual annual emissions from all affected sources associated with the Lime Kiln project, emission increases of sulfur dioxide (SO_2) and nitrogen oxides (NO_x) will trigger new source review (NSR) under the Federal and State prevention of significant deterioration (PSD) regulations.

For each pollutant subject to PSD review, the following analyses are required:

1. Ambient monitoring analysis, unless the net increase in emissions due to the modification causes impacts that are below specified significant impact levels;
2. Application of best available control technology (BACT) for each new or modified emissions unit, for each pollutant subject to PSD review;
3. Air quality impact analysis, unless the net increase in emissions due to the modification causes impacts which are below specified significant impact levels; and
4. Additional impact analysis (e.g., impact on soils, vegetation, visibility), including impacts on PSD Class I areas.

This PSD permit application addresses these requirements and is organized into four additional sections, followed by appendices. A description of the project, including air emission sources and pollution control equipment, is presented in Section 2.0. The regulatory applicability analysis for the proposed project is presented in Section 3.0. The required ambient air monitoring analysis is presented in Section 4.0, and the BACT analysis is presented in Section 5.0. The air quality impact analysis is presented in Section 6.0, and additional impacts upon PSD Class I areas are presented in Section 7.0. Supporting documentation is presented in the Appendices.

The air quality impact analysis conducted for the Lime Kiln petcoke project takes into consideration SSCE's plans to enclose the Recovery Boilers building in order to reduce corrosion and maintenance. The enclosure will be implemented in two phases. The first phase will add an enclosure (wall) only along the east side of the Recovery Boiler building. The second phase will initially consist of adding a second wall along the south side of the building. The Mill may ultimately enclose the entire building. This would represent a worst-case scenario, and is the scenario modeled as "Case 2". The enclosures will affect dispersion of the stack plumes, and will cause SSCE to take lower 24-hour SO_2

emission limits in order to meet ambient air quality standards for SO_2. The proposed lower limits are as follows:

No. 4 Combination Boiler – 690 lb/hr, 24-hour average

Nos. 3 and 4 Combination Boiler – combined cap – 1,350 lb/hr, 24-hour average (Case 1)

Nos. 3 and 4 Combination Boiler – combined cap – 1,100 lb/hr, 24-hour average (Case 2)

2.0 PROJECT DESCRIPTION

SSCE is proposing to add petcoke as an allowable fuel for the Lime Kiln at the Panama City Mill. This project will include replacing the burner in the Lime Kiln, installing a petcoke receiving and transport system that is fully enclosed, and installing a petcoke storage silo and baghouse. The facility is currently operating under Title V Permit No. 0050009-025-AV, issued November 8, 2006. The facility is located at One Everitt Avenue, in Panama City in Bay County. A plot plan of the facility, showing stack locations, is presented in Figure 2-1. The following sections describe the proposed project in more detail.

2.1 Existing operations

SSCE currently operates the Lime Kiln in the chemical recovery process to calcine lime mud and regenerate CaO. The CaO is used in the process to react with green liquor to form white liquor, which is the cooking liquor for the pulp digesters. The existing Lime Kiln has a permitted input rate of 85,000 pounds per hour (lb/hr) [42.5 tons per hour (TPH)] of lime mud (dry basis), based on a 24-hour average. The input rate is based on a maximum production rate of 36,700 lb/hr (18.35 TPH) of CaO (dry basis), 24-hour average.

The Lime Kiln fires No. 6 fuel oil with a maximum S content of 2.5 percent (by weight) or natural gas to support combustion in the Kiln. The maximum heat input rate is 180 MMBtu/hr, 24-hour average. The Lime Kiln is permitted to operate up to 8,760 hours per year (hr/yr).

The Lime Kiln is also the primary combustion device for the destruction of non-condensable gases (NCGs) from the Batch Digester System and the Multiple Effect Evaporator System.

Particulate matter (PM) and SO_2 emissions from the Lime Kiln are controlled by means of a venturi scrubber. Total reduced sulfur (TRS) emissions are controlled by good lime mud washing and proper combustion in the Kiln.

This emissions unit is regulated under Rule 62-296.404, Florida Administrative Code (F.A.C.), Kraft Pulp Mills; and Code of Federal Regulations Title 40, Part 63 (40 CFR 63), Subpart MM, National Emissions Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at

Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills. The unit was required to be in compliance with this subpart in March 2004.

2.2 Proposed Modifications

SSCE is proposing to add petcoke as an allowable fuel for the Lime Kiln. The Lime Kiln is currently permitted to burn No. 6 fuel oil and natural gas, but this project will allow SSCE to burn up to 90 percent petcoke as a substitute to oil/gas. To support petcoke as a substitute fuel, SSCE will install a new 180 MMBtu/hr burner in the Kiln, and install a petcoke receiving and transport system, as well as a petcoke storage silo and baghouse. The changes required to implement this project include:

- Installation of a new petcoke/oil/gas burner with a 180 MMBtu/hr capacity, including dual air zone burner, dual zone gas gun, oil gun, gas/electric igniter, primary air fan, and burner management system;
- Installation of a ground petcoke receiving and conveying system;
- Installation of a ground petcoke storage silo with a capacity of 250 tons, controlled by a baghouse;
- Installation of a dense phase pneumatic conveying system that will be used to unload the delivery trucks and transport the ground petcoke to the storage silo; and
- Installation of a weigh feeder and blower with eductor to pneumatically convey the ground petcoke to the Kiln burner.

The new burner in the Kiln will be capable of burning up to 90 percent petcoke as a substitute to fuel oil or natural gas. Some quantity of fuel oil must be burned in combination with petcoke, in order to support combustion. For the purposes of this application, it is assumed that 100 percent of the heat input (180 MMBtu/hr) to the Kiln will be supplied through the firing of petcoke alone, since the result is a worst-case emissions scenario.

The new Lime Kiln burner will operate at a maximum heat input rate of 180 MMBtu/hr, 24-hour average. Based on a heating value for petcoke of 15,300 British thermal units per pound (Btu/lb), this heat input rate is equivalent to 5.88 TPH of petcoke. This corresponds to a maximum usage of 141.2 tons per day (TPD), or 51,529.4 tons per year (TPY) of petcoke. The maximum sulfur content of the petcoke will be 7 percent.

Ground petcoke will be delivered to the facility via truck, and pneumatically conveyed to a 250-ton storage silo. The conveying air will discharge through a baghouse located on top of the storage silo. From the storage silo, the ground petcoke will drop into a weigh bin before being conveyed to the Kiln burner through the use of a blower and eductor. The piping system that delivers the petcoke to the Kiln burner will be completely enclosed. The displaced air from the weigh bin will be redirected to the storage silo and will exit via the storage silo baghouse. A plan layout of the storage silo is shown in Figure 2-2.

All of the transfers associated with the handling system of the pulverized petcoke involve enclosed piping. However, transport of petcoke by truck traffic on the paved plant roads will potentially cause fugitive PM and PM_{10} (PM with less than or equal to 10 microns in diameter) emissions.

2.3 Air Emission Estimates and Pollution Control Equipment

PM/PM_{10} and SO_2 emissions from the Lime Kiln are currently controlled by a venturi scrubber. This control device will continue to control PM/PM_{10} and SO_2 emissions while firing petcoke. SSCE is proposing to install a storage silo and handling system for the pulverized petcoke. The storage silo will include a baghouse to control PM/PM_{10} emissions from conveying the petcoke and from the weigh bin. The petcoke will be pneumatically transferred from trucks to the storage silo. The conveying air will exit through the baghouse to the atmosphere. As the pulverized petcoke is dropped into the weigh bin before being conveyed to the Kiln burner, the displaced air will also exit to the atmosphere via the storage silo baghouse.

2.3.1 Baseline Actual Emissions

The past actual (baseline actual) annual average emissions for the Lime Kiln are presented in Table 2-1. The basis of the emission estimates are presented in Appendix A. Based on the recently adopted Florida NSR reform rules [Rules 62-210 and 212, Florida Administrative Code (F.A.C.)], the baseline actual emissions are based on a consecutive 24-month period out of the last 10 years. Actual emissions for each of these 10 years (1997-2006) were determined based on operating data, available stack test data, and emission factors. For each pollutant, the consecutive 2-year period with the highest average tons per year (TPY) emissions was selected as the baseline actual emissions for the Lime Kiln. The 2-year averages used for each pollutant are as follows:

- Sulfur Dioxide (SO_2): 2005 - 2006

- Nitrogen Oxides (NO_x): 2005 – 2006
- Carbon Monoxide (CO): 2005 – 2006
- Particulate Matter (PM): 1999 – 2000
- Particulate Matter less than or equal to 10 microns (PM_{10}): 1999 – 2000
- Volatile Organic Compounds (VOCs): 2005 – 2006
- Total Reduced Sulfur (TRS): 1997 – 1998
- Sulfuric Acid Mist (SAM): 2005 – 2006
- Lead (Pb): 2005 – 2006
- Mercury (Hg – H114): 2005 – 2006

The baseline actual emissions for the Lime Kiln shown in Table 2-1 may differ from the annual emissions shown in the Annual Operating Reports (AORs) submitted to the Florida Department of Environmental Protection (FDEP), as described below. The emission factors reported in the AOR for each pollutant, as well as the Lime Kiln operating data, are presented in Appendix A, Table A-1. The revised emission factors used for determining the baseline actual emissions are shown in Appendix A, Table A-2. These emission factors were based on the latest emission factors obtained from National Council for Air and Stream Improvement (NCASI) technical bulletins and from stack testing on the Lime Kiln. It is noted that the basic operation of the Lime Kiln has not changed over the last 10 years.

The resulting baseline actual emissions for each pollutant, based on the revised emission factors, are presented in Appendix A, Table A-3 for each year. The resulting 2-year average emissions for each 2-year period during the last 10 years are presented in Appendix A, Table A-4. The highest 2-year average for each pollutant represents the baseline actual emissions, which are shown in Table 2-1.

Sulfur Dioxide

The SO_2 emission factor used in the past AOR reporting was generally either 0.3 lb/ton air-dried unbleached pulp (ADUP) produced or 0.286 lb/ton CaO produced (see Appendix A, Table A-1). SO_2 emissions from the Lime Kiln, based on special stack test data conducted in 2002 and 2006, are shown in Appendix A, Table A-5. These are the only stack test data available for the Lime Kiln for SO_2. The SO_2 emissions ranged from 0.03 lb/ton CaO to 0.40 lb/ton CaO. Since this range of factors compares favorably with the factors which have been used in the AORs (0.286 lb/ton CaO), the AOR factor of 0.286 lb/ton CaO was used for all years to estimate baseline actual emissions (see Appendix

A, Table A-2). Using the annual lime production rate (from the AOR data), the annual emissions for each year were determined (refer to Appendix A, Table A-3). Emissions for the 2-year period of 2005-2006 were selected for the baseline actual SO_2 emissions (Tables A-4 and 2-1).

Nitrogen Oxides

The NO_x emission factor used in the past AOR reporting was generally either 1.0 lb/ton ADUP produced or 7.9 lb/ton CaO produced (see Appendix A, Table A-1). NO_x emissions from the Lime Kiln, based on a special stack test data conducted in 2006, are shown in Appendix A, Table A-5. This is the only stack test data available for the Lime Kiln for NO_x. The NO_x emissions averaged 2.316 lb/ton CaO. Since this is the only actual NO_x test data available for the Lime Kiln, this emission factor was used for all years to estimate baseline actual emissions (see Appendix A, Table A-2). Using the annual lime production rate (from the AOR data), the annual emissions for each year were determined (refer to Appendix A, Table A-3). Emissions for the 2-year period of 2005-2006 were selected for the baseline actual NO_x emissions (Tables A-4 and 2-1).

Carbon Monoxide

The CO emission factor used in the past AOR reporting was generally either 0.1 lb/ton ADUP produced or 0.386 lb/ton CaO produced (Appendix A, Table A-1). CO emissions from the Lime Kiln have not been measured. The most current NCASI factor for Lime Kilns is 0.181 lb/ton CaO produced, from the NCASI Technical Bulletin No. 884 (see Appendix B). This factor represents the mean of kraft lime kilns. Since there are no actual CO test data available for the Lime Kiln, this emission factor was used for all years to estimate baseline actual emissions (see Appendix A, Table A-2). Using the annual lime production rate (from the AOR data), the annual emissions for each year were determined (refer to Appendix A, Table A-3). Emissions for the 2-year period of 2005-2006 were selected for the baseline actual CO emissions (Tables A-4 and 2-1).

Particulate Matter/PM_{10}

The PM emission factor used in past AOR reporting was based on the annual stack test result in lb/hr (Appendix A, Table A-1). This factor coupled with the annual operating hours was used to calculate annual PM emissions.

The PM emissions limit for the Lime Kiln, 29.83 lb/hr, has not changed over the last 10 years. In March 2004, Maximum Achievable Control Technology (MACT) Requirements for the Pulp and

Paper Industry under 40 CFR 63, Subpart MM became effective on the Lime Kiln. The MACT standards limit PM emissions to 0.064 grains per dry standard cubic foot (gr/dscf) of exhaust gas. However, this equates to approximately 48 lb/hr of PM, which is higher than the current allowable limit of 29.83 lb/hr.

Baseline actual PM emissions were calculated based on annual PM compliance test data conducted over the 10-year period (see Appendix A, Table A-5). The compliance test averages, in lb/hr, were determined for each year. Rule 62-210.370(2)(d)1.a., F.A.C. requires that, when using annual stack test results to calculate baseline actual emissions, a minimum 5-year period that encompasses the 2-year period for which emission estimates are being made must be used, if adequate data is available. To comply with this requirement, in order to determine actual emissions for 1997, the year 1997 and the following four years (1998-2001) were used. Using the average PM emissions in lb/hr, the 5-year average PM emissions in lb/hr was determined (see Appendix A). Using the annual operating hours for the Lime Kiln (from the AOR data), the annual emissions for 1997 were then determined (refer to Appendix A). This process was repeated for each year until the year 2003, when four following years are not available. Therefore, for the years 2003 and beyond, the 5-year average of 2002-2006 was used. Emissions for the 2-year period of 1999-2000 were selected for the baseline actual PM emissions (see Table 2-1 and Appendix A).

PM_{10} emissions reported in the AOR have generally been based on 100 percent of PM emissions. The latest NCASI guidance, issued in response to best available retrofit technology (BART) modeling requirements, shows that PM_{10} from lime kilns with wet scrubbers is on average 84.7 percent of total PM emissions (see Appendix B). This factor was therefore applied to the PM emission factor for each year to obtain PM_{10} emissions (see Appendix A). Emissions for the 2-year period of 1999-2000 were selected for the baseline actual PM emissions (see Table 2-1 and Appendix A).

Volatile Organic Compounds

The VOC emission factor used in past AOR reporting was generally either 0.25 lb/ton ADUP produced, or 0.236 lb/ton CaO produced (see Appendix A). VOC emissions from the Lime Kiln have not been measured. The most current NCASI factor for lime kilns is 0.046 lb/ton CaO produced (see Appendix B). Since there are no actual VOC test data available for the Lime Kiln, this emission factor was used for all years to estimate baseline actual emissions (see Appendix A). Using the annual lime production rate (from the AOR data), the annual emissions for each year were determined (refer to Appendix A). Emissions for the 2-year period of 2005-2006 were selected for the baseline actual VOC emissions (Table 2-1 and Appendix A).

Total Reduced Sulfur

The TRS emission factor used in the past AOR reporting were generally based on continuous emissions monitoring system (CEMS) data (see Appendix A). These data were used along with an assumed gas flow rate to calculate lb/hr TRS, and then used with the annual operating hours. The assumed gas flow rates are shown in Appendix A, Table A-1.

In order to determine baseline actual emissions, the historical stack test exhaust gas flow rates were used in conjunction with the TRS CEMS data for the Lime Kiln. Shown in Appendix A, Table A-5 are the historic stack gas flow rates. The years 2004 and 2005 showed unusually low gas flow rates. Considering the anomalous gas flow rates in 2004 and 2005, the average gas flow rate from all other stack tests during the 10-year period 1997-2006 was used (66,284 dscfm at 10 percent O_2; see Appendix A, Table A-5) and applied to the CEMS TRS data for each year (see Appendix A, Table A-2). The equation to calculate the TRS emissions, in lb/hr, was as follows:

$$\left(\frac{\text{TRS ppmvd}}{10^6\,\text{ft}^3}\right)\left(\frac{66{,}284\ \text{dscf}}{\text{min}}\right)\left(\frac{2{,}116.8\ \text{lb}}{\text{ft}^2}\right)\left(\frac{\text{lb}-\text{mole}-\text{R}}{1{,}545.6\ \text{ft}-\text{lb}_f}\right)\left(\frac{1}{528\ \text{R}}\right)\left(\frac{34\ \text{lb}}{\text{lb}-\text{mole}}\right)\left(\frac{60\ \text{min}}{\text{hr}}\right)=\frac{\text{lb}}{\text{hr}}\text{TRS}$$

where, TRS ppmvd = annual average TRS CEMS concentration at 10 percent O_2

Using the annual operating hours for the Lime Kiln (from the AOR data), the annual emissions for each year were determined (refer to Appendix A, Table A-3). Emissions for the 2-year period of 1997-1998 were selected for the baseline actual TRS emissions (see Table 2-1 and Appendix A).

Sulfuric Acid Mist

Sulfuric acid mist (SAM) emissions have not been reported in the AORs for the Lime Kiln. Therefore, SAM emissions were calculated based on a NCASI emission factor of 0.021 lb/ton CaO produced (see Appendix B). Using the annual CaO production rate for the Lime Kiln (from the AOR data), the annual emissions for each year were determined (refer to Appendix A, Table A-3).

Emissions for the 2-year period of 2005-2006 were selected for the baseline actual SAM emissions (see Table 2-1 and Appendix A, Table A-4).

Lead

Lead (Pb) emissions have not been reported in the AORs for the Lime Kiln. Therefore, Pb emissions were calculated based on a NCASI emission factor of 0.0032 lb/ton CaO produced (see Appendix B). Using the annual CaO production rate for the Lime Kiln (from the AOR data), the annual emissions for each year were determined (refer to Appendix A, Table A-3). Emissions for the 2-year period of 2005-2006 were selected for the baseline actual Pb emissions (see Table 2-1 and Appendix A, Table A-4).

Mercury

Mercury (Hg) emissions have not been reported in the AORs for the Lime Kiln. Therefore, Hg emissions were calculated based on a NCASI emission factor of $6.2x10^{-7}$ lb/ton CaO produced (see Appendix B). Using the annual CaO production rate for the Lime Kiln (from the AOR data), the annual emissions for each year were determined (refer to Appendix A). Emissions for the 2-year period of 2005-2006 were selected for the baseline actual Hg emissions (see Table 2-1 and Appendix A, Table A-4).

Fluorides

There are no emission factors available for fluoride emission from Lime Kilns.

Refer to Appendix A tables and Appendix B for further explanation and references.

2.3.2 Projected Actual Emissions

Lime Kiln

"Projected actual emissions" for the Lime Kiln were developed using the same operating factors used for the baseline actual emissions. Projected annual average heat input and lime production was derived from the highest 2-year period of heat input and lime production during the baseline period (1,126,050 MMBtu/yr during 1999-2000; 159,099 tons CaO/yr during 2005-2006). SSCE does not expect any increase in heat input or CaO production on an annual basis due to the proposed project. The derivation of the projected actual heat input and lime production is shown in Appendix A, Table A-6.

Emission factors used to determine the projected actual emissions were the same as used for the baseline actual emissions, except for SO_2, NO_x and SAM. This is because emissions of all other pollutants are not expected to increase on a lb/MMBtu or lb/ton CaO basis due to the burning of petcoke. The proposed project may increase SO_2, NO_x and SAM emission due to the burning of petcoke.

Projected actual emissions of SO_2 from the Lime Kiln are based on 100 percent petcoke firing, a petcoke heating value of 15,300 Btu/lb, and a maximum petcoke sulfur content of 7 percent. While the Lime Kiln has an 80 percent inherent SO_2 removal efficiency, the venturi scrubber results in an additional 90 percent SO_2 removal efficiency. This results in maximum SO_2 emissions as shown below:

$$\left(\frac{0.07\ \text{lb S}}{\text{lb petcoke}}\right)\left(\frac{2\ \text{lb SO}_2}{\text{lb S}}\right)\left(\frac{\text{lb petcoke}}{15{,}300\ \text{Btu}}\right)\left(\frac{10^6\ \text{Btu}}{\text{MMBtu}}\right)(1-0.8)(1-0.9)=0.183\,\frac{\text{lb SO}_2}{\text{MMBtu}}$$

Projected actual NO_x emissions for the Lime Kiln are based on petcoke burner vendor estimates for burning petcoke with either natural gas or No. 6 fuel oil. The vendor estimates a NO_x concentration in the flue gases of 105 to 125 ppmvd at 10 percent O_2 when burning petcoke/gas, and between 165 to 185 ppmvd at 10 percent O_2 when burning petcoke/No. 6 fuel oil. Using the worst case fuel mix and the baseline actual exhaust gas flow rate for the Lime Kiln, the projected actual emissions are as follows:

$$\left(\frac{185\ \text{ft}^3}{10^6\ \text{ft}^3}(\text{ppmvd})\right)\left(\frac{66{,}284\ \text{dscf}}{\text{min}}\right)\left(\frac{2{,}116.8\ \text{lb}}{\text{ft}^2}\right)\left(\frac{\text{lb}-\text{mole}-\text{R}}{1{,}545.6\ \text{ft}-\text{lb}_f}\right)\left(\frac{1}{528\ \text{R}}\right)\left(\frac{46\ \text{lb}}{\text{lb}-\text{mole}}\right)\left(\frac{60\ \text{min}}{\text{hr}}\right)=87.8\,\frac{\text{lb}}{\text{hr}}$$

SAM emissions could increase in proportion to the increase in SO_2 emissions, since SAM is normally directly related to SO_2. Therefore, to project future actual emissions, the baseline SAM emission factor of 0.021 lb/ton CaO was increased by the ratio of projected actual to baseline SO_2 emissions. This results in a projected actual SAM emission factor as follows:

0.021 lb/ton CaO x 103.0 TPY SO_2 / 22.8 TPY SO_2 = 0.095 lb/ton CaO

The maximum hourly TRS emissions are not expected to increase as a result of this project. A report titled "Environmental Considerations and Permitting, Use of Petroleum Coke as Supplemental Fuel in Lime Kilns", prepared December 2003 by Arcadis G&M of Michigan, LLC, recommends that the same TRS emission factor be used for burning natural gas or a combination of natural gas and petcoke. The report states, "When burning pet coke in the Kiln, the sulfur in the pet coke is converted to SO_2. Most of the SO_2 is absorbed by the Lime in the Kiln forming calcium sulfate ($CaSO_4$), also referred to as anhydrite. Anhydrite is a solid and will not be emitted to the air. Therefore, any additional sulfur generated from combusting pet coke in the Lime Kiln will be converted to SO_2 or $CaSO_4$." This is also consistent with SSCE's knowledge of the calcining process.

Projected actual annual emissions for the Lime Kiln are shown in Table 2-2.

Petcoke Handling and Storage

Since the petcoke handling and storage activities are new sources of air emissions, the projected actual emissions from these sources are the same as the future potential emissions. The future potential emissions are described in Section 2.3.3.

2.3.3 Future Potential Emissions

Lime Kiln

The future potential annual emissions for the Lime Kiln are presented in Table 2-3. The table shows the calculations for both the annual and short-term averaging periods. Annual emissions are calculated based on unlimited use of the Lime Kiln [i.e. 8,760 hours per year (hr/yr)]. The future capacity of the Lime Kiln will not be increased over the current capacity of 18.35 TPH CaO. The maximum capacity of the new burner will be 180 MMBtu/hr. When firing No. 6 fuel oil, the maximum sulfur content is 2.5 percent (by weight).

The emission factors used to calculate the future potential emissions are the same as those used to calculate the projected actual emissions, except for PM/PM_{10} and TRS, which have allowable emissions established by permit or rule.

PM potential emissions for the Lime Kiln are calculated from the current allowable PM limit of 28.93 lb/hr, which was established in a previous air permit. PM_{10} potential emissions for the Lime

Kiln are obtained from NCASI letter titled "Particulate Emission Data for Pulp and Paper Industry-Specific Sources" of 84.7 percent of PM from Lime Kilns (August 25, 2006). This factor represents the mean of lime kilns with wet particulate control devices.

TRS potential emissions from the Lime Kiln are calculated from the allowable TRS limit of 20 ppmvd at 10 percent O_2. The potential emissions are further based on assuming the maximum potential stack gas flow rate, 81,400 dscfm at 10 percent O_2, as shown in Table A-5.

Petcoke Handling and Storage

Based on the addition of firing up to 90 percent petcoke as a substitute fuel to No. 6 fuel oil for the Lime Kiln, PM/PM_{10} emissions from the petcoke storage silo and truck transport must be taken into consideration. All other transfers associated with handling the pulverized petcoke involve pneumatic transfers through closed piping. Emission estimates for the worst-case scenario were developed assuming all petcoke is delivered by truck.

To support the amount of petcoke planned to be used by the Lime Kiln, maximum usage of petcoke will be 5.88 TPH, based on a maximum heat input of 180 MMBtu/hr, and 15,300 Btu/lb of petcoke. This corresponds to a maximum usage of 141.2 TPD, or 51,529.4 TPY of ground petcoke. Approximate truck weights are 31,000 (empty truck) and 81,000 lbs (truck filled with ground petcoke), with a petcoke capacity of 50,000 lbs (25 tons). The average number of trucks transporting the petcoke into the facility each day will be six (6), with a maximum per day of ten (10) trucks. The maximum number of truck deliveries per year will be 2,062, based on 51,529.4 TPY of petcoke and 25 tons per truck.

The AP-42 equation was used to estimate fugitive dust emissions for trucks on paved roads (Section 13.2.1, December 2003). This emission factor is used with the roundtrip distance (1.5 miles) the trucks will be traveling, the maximum amount of trucks per day (10) and per year (2,062), and the average weight of the truck fleet (28 tons) to determine PM and PM_{10} annual and hourly emissions. The equation used to calculate the truck traffic emissions is:

$$E = k\left(\frac{sL}{2}\right)^{0.65}\left(\frac{W}{3}\right)^{1.5}$$

where, E is the particulate emission rate (in lb/VMT),

VMT is the vehicle miles traveled,

k is the base emission factor for particulate size range (0.082 lb/VMT for PM, 0.016 lb/VMT for PM_{10}),

sL is the road surface silt loading (0.4 g/m^2), and W is the average weight of the vehicles traveling the road.

Using the equation and the truck traffic mileage, potential maximum emissions for PM are 0.51 lb/hr and 1.27 TPY, and potential maximum emissions for PM_{10} are 0.10 lb/hr and 0.25 TPY. The calculations are seen in the table below:

	Roundtrip Distance (miles)	Annual Distance (VMT/yr)	Average Weight (tons)	E (lb PM / VMT)	PM Maximum Emissions	E (lb PM_{10} / VMT)	PM_{10} Maximum Emissions
Maximum Long-term Emissions	1.5	3,093	28	0.821	1.27 TPY	0.160	0.25 TPY
Maximum Short-term Emissions	1.5	15	28	0.821	0.51 lb/hr	0.160	0.10 lb/hr

Pulverized petcoke will be pneumatically conveyed to a storage silo from trucks. The storage silo will be equipped with a fan and baghouse. This baghouse will also serve to collect displaced dust emissions from the weigh bin drop. Based on vendor-supplied exhaust gas flow rate (2,000 acfm) grain loading (0.02 gr/acf), and a weight (1 lb per 7,000 grains of petcoke), the potential emissions of PM/PM_{10} from the storage silo are calculated as follows:

$$\left(\frac{2000\,\text{ft}^3}{\text{min}}(\text{acfm})\right)\left(\frac{0.02\ \text{grains}}{\text{ft}^3}\right)\left(\frac{\text{lb}}{7{,}000\ \text{grains}}\right)\left(\frac{60\ \text{min}}{\text{hr}}\right) = 0.34\,\frac{\text{lb}}{\text{hr}}$$

$$\left(0.34\,\frac{\text{lb}}{\text{hr}}\right)\left(\frac{8{,}760\,\text{hr}}{\text{yr}}\right)\left(\frac{\text{ton}}{2{,}000\,\text{lb}}\right) = 1.50\ \text{TPY}$$

Potential emissions of PM_{10} are calculated to be 100 percent of PM emissions. Normally, the baghouse and fan will only be operational during silo loading; however, estimated emissions reflect continuous operation, even though proposed operations are intermittent.

2.4 Effects on Other Emissions Units

No other emission units at the SSCE Panama City Mill will be affected by the proposed addition of petcoke as the primary fuel for the Lime Kiln. The addition of petcoke as a fuel will only affect the Lime Kiln since this is only a fuel switch, and will not affect Lime Kiln production.

However, as discussed in Section 1.0, SSCE is planning the partial and total enclosure of the existing Recovery Boilers building at the Mill. The Recovery Boilers building is an open superstructure, which contains the Nos. 1 and 2 Recovery Boilers and Nos. 1 and 2 Smelt Dissolving Tanks. Located just to the east of the building are a set of cooling towers. The cooling towers drift can at times impact the building. This, coupled with other factors, has led to increased maintenance issues on the Recovery Boilers. As a result, SSCE desires to enclose the building. This would generally just require the installation of siding on the superstructure.

SSCE would like to perform the enclosure in two phases: Phase 1 would be to install siding on only the east side of the building. Phase 2 would be to add siding to the remaining three sides, resulting in a total enclosure.

Based on these plans, air dispersion modeling has been conducted to determine the effects upon compliance with the AAQS for SO_2. Both phases of the building enclosure were evaluated: Case 1 – one side enclosed; and Case 2 – building totally enclosed. The results of the modeling are presented in Section 6.0 and are based on the following restrictions on SO_2 emissions from the Nos. 3 and 4 Combination Boilers:

No. 3 Combination Boiler – 887 lb/hr, 24-hour average
No. 4 Combination Boiler – 690 lb/hr, 24-hour average
Case 1 – Nos. 3 and 4 Combination Boilers – combined cap of 1,350 lb/hr, 24-hour average
Case 2 – Nos. 3 and 4 Combination Boilers – combined cap of 1,100 lb/hr, 24-hour average

TABLE 2-1
SUMMARY OF BASELINE ACTUAL EMISSIONS FROM LIME KILN, SSCE

Source	Pollutant Emission Rate (TPY)[a]										
Description	SO_2	NO_x	CO	PM	PM_{10}	VOC	TRS	SAM	Lead	Mercury	Fluorides
Average Actual Emissions of Highest 2-Year Period											
	'05-'06	'05-'06	'05-'06	'99-'00	'99-'00	'05-'06	'97-'98	'05-'06	'05-'06	'05-'06	--
Lime Kiln	22.8	184.2	14.4	97.3	85.0	3.66	10.3	1.67	0.25	4.93E-05	0.0

TPY = Tons per year.
Notes:
[a] Refer to tables in Appendix A for derivation.

TABLE 2-2
PROJECTED ACTUAL EMISSIONS FOR THE LIME KILN, SSCE PANAMA CITY

Pollutant	Emission Factor	Ref.	Activity Factor[a]	Annual Emissions (TPY)
SO_2	0.183 lb/MMBtu	1	1,126,050 MMBtu/yr	103.0
NO_x	87.8 lb/hr	2	8,408 hr/yr	369.1
CO	0.181 lb/ton CaO	3	159,099 ton CaO/yr	14.4
PM	26.49 lb/hr	4	8,408 hr/yr	111.4
PM_{10}	22.44 lb/hr	5	8,408 hr/yr	94.3
VOC	0.046 lb/ton CaO	3	159,099 ton CaO/yr	3.7
TRS	10.56 ppm @ 10% O_2	6	66,284 dscfm @ 10% O_2 8,408 hr/yr	15.6
SAM	0.0951 lb/ton CaO	7	159,099 ton CaO/yr	7.57
Lead	0.0032 lb/ton CaO	3	159,099 ton CaO/yr	0.25
Mercury	6.20E-07 lb/ton CaO	3	159,099 ton CaO/yr	4.93E-05

[a] Activity factors based on actual maximum 2-year average heat input, hours of operation, lime production in AORs, as well as stack testing. See Tables A-5 through A-7.

References:
1 Based on 7% S in petcoke, 15,300 Btu/lb of petcoke, and SO_2 removal efficiencies of 80 and 90%.
2 Based on vendor maximum emissions estimate of 185 ppm when firing 20/80 mix of fuel oil/petcoke.
3 See Table A-2 for past actual emission factors.
4 Maximum reported rates from stack testing. See Table A-5.
5 Emission factor is 84.7% of PM, obtained from NCASI "Particulate Emission Data for Pulp and Paper Industry-Specific Sources" (August 25, 2006)
6 Maximum reported rates from stack testing. See Table A-6.
7 Based on emission factor from Table A-2 multiplied by the ratio of the projected actual SO_2 annual emissions and the baseline actual annual emissions, because the increase in SAM emissions is directly correlated to the increase in SO_2 emissions.

TABLE 2-3
FUTURE POTENTIAL EMISSIONS FOR THE LIME KILN, SSCE PANAMA CITY

			Short-Term		Annual Average	
Pollutant	Emission Factor	Ref.	Activity Factor	Emissions (lb/hr)	Activity Factor	Emissions (TPY)
SO_2	0.183 lb/MMBtu	1	180 MMBtu/hr	32.9	1,576,800 MMBtu/yr	144.3
NO_x	185 ppm	2	81,400 dscfm @ 10% O_2	107.8	8,760 hr/yr	472.2
CO	0.181 lb/ton CaO	3	18.35 ton CaO/hr	3.3	160,746 ton CaO/yr	14.5
PM	29.83 lb/hr	4	1 hr	29.83	8,760 hr/yr	130.7
PM_{10}	25.27 lb/hr	5	1 hr	25.27	8,760 hr/yr	110.7
VOC	0.046 lb/ton CaO	3	18.35 ton CaO/hr	0.84	160,746 ton CaO/yr	3.7
TRS	20 ppm @ 10% O_2 (12-hr avg)	4	81,400 dscfm @ 10% O_2	8.6	8,760 hr/yr	37.7
SAM	0.0951 lb/ton CaO	6	18.35 ton CaO/hr	1.75	160,746 ton CaO/yr	7.64
Lead	0.0032 lb/ton CaO	3	18.35 ton CaO/hr	0.059	160,746 ton CaO/yr	0.26
Mercury	6.2E-07 lb/ton CaO	3	18.35 ton CaO/hr	1.14E-05	160,746 ton CaO/yr	4.98E-05

References:
1 Based on 7% S in petcoke, 15,300 Btu/lb of petcoke, and SO_2 removal efficiencies of 80 and 90%.
2 Based on vendor maximum emissions estimate of 185 ppm when firing 20/80 mix of fuel oil/petcoke.
3 See Table A-2 for past actual emission factors.
4 Based on maximum emission limit defined in Permit No. 0050009-020-AV.
5 Emission factor is 84.7% of PM, obtained from NCASI "Particulate Emission Data for Pulp and Paper Industry-Specific Sources" (August 25, 2006)
6 Based on emission factor from Table A-2 multiplied by the ratio of the projected actual SO_2 annualemissions and the baseline actual annual emissions, because the increase in SAM emissions is directly correlated to the increase in SO_2 emissions.

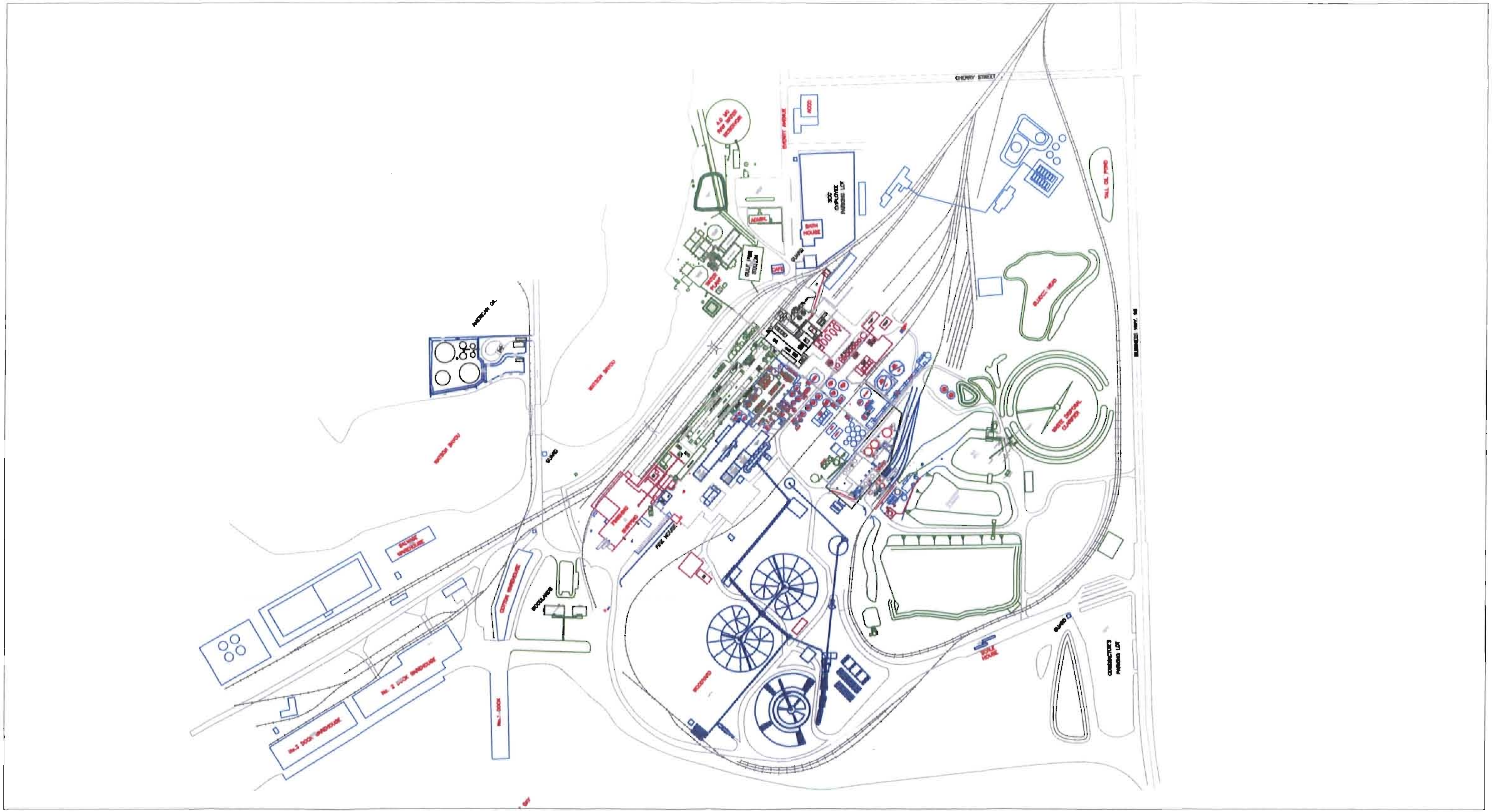


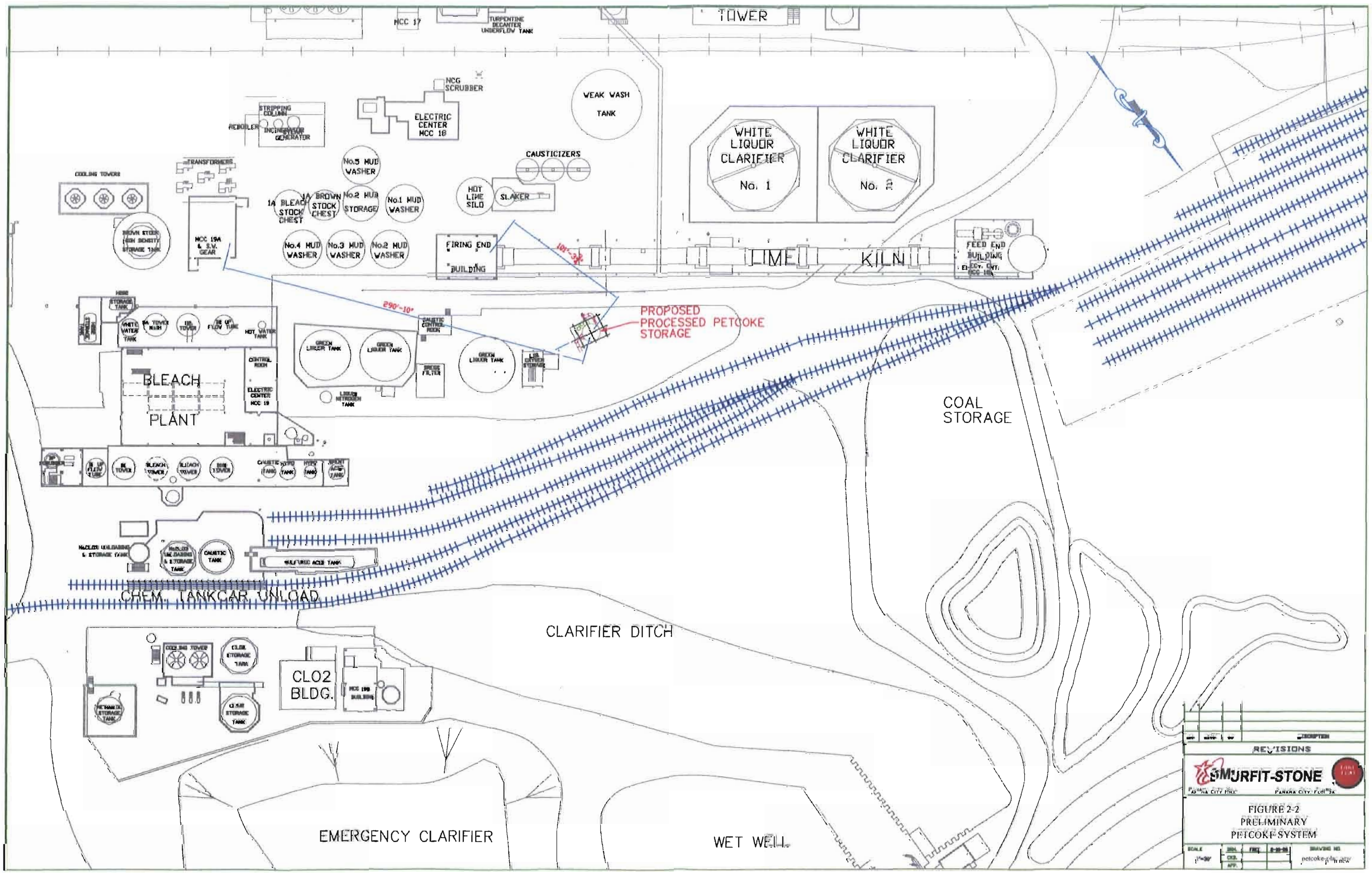
FIGURE 2-1. FACILITY PLOT PLAN

STONE CONTAINER ENTERPRISES, INC.
PANAMA CITY, FL

FILENAME: 0637645/4.4/PSD/FIGURE 2-1

LATEST REVISION: 12/02/04

Golder Associates



TOWER
WEAK WASH TANK
WHITE LIQUOR CLARIFIER No. 1
WHITE LIQUOR CLARIFIER No. 2
ELECTRIC CENTER MCC 18
CAUSTICIZERS
SLAKER
HOT LIME SILO
FIRING END BUILDING
LIME KILN
FEED END BUILDING
PROPOSED PROCESSED PETCOKE STORAGE
COAL STORAGE
BLEACH PLANT
CHEM. TANKCAR UNLOAD
CLARIFIER DITCH
CLO2 BLDG.
EMERGENCY CLARIFIER
WET WELL
REVISIONS
SMURFIT-STONE
FIGURE 2-2
PRELIMINARY
PETCOKE SYSTEM

3.0 AIR QUALITY REVIEW REQUIREMENTS

Federal and State air regulatory requirements for a major new or modified source of air pollution are discussed in Sections 3.1 through 3.3. The applicability of these regulations to the proposed SSCE modification is presented in Section 3.4. These regulations must be satisfied before the proposed projects can be approved.

3.1 National and State Ambient Air Quality Standards

The existing applicable national and Florida Ambient Air Quality Standards (AAQS) are presented in Table 3-1. Primary national AAQS were promulgated to protect the public health, and secondary national AAQS were promulgated to protect the public welfare from any known or anticipated adverse effects associated with the presence of pollutants in the ambient air. Areas of the country in violation of AAQS are designated as nonattainment areas and new or modified sources to be located in or near these areas may be subject to more stringent air permitting requirements.

Florida has adopted State AAQS in Rule 62-204.240, Florida Administrative Code (F.A.C.). These standards are the same as the national AAQS, except in the case of SO_2. For SO_2, Florida has adopted the former 24-hour secondary standard of 260 micrograms per cubic meter ($\mu g/m^3$) and the former annual average secondary standard of 60 $\mu g/m^3$.

3.2 PSD Requirements

3.2.1 General Requirements

Under federal and State of Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) must be reviewed and a pre-construction permit issued. Florida's State Implementation Plan (SIP), which contains PSD regulations, has been approved by the EPA. Therefore, PSD approval authority has been granted to the FDEP.

For Kraft pulp mills, a "major facility" is defined as one that has the "potential-to-emit" 100 TPY or more of any pollutant regulated under the CAA. "Potential-to-emit" means the capability, at maximum design capacity, to emit a pollutant after the application of control equipment.

For an existing source for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates (i.e., a "major modification"). The PSD significant emission rates are listed in Table 3-2. The determination of whether a significant net increase in emissions will occur is based on comparison of "baseline actual emissions" to "projected actual emissions" for all emission units affected by the proposed project, including any contemporaneous increases or decreases which have occurred at the facility in the last five years. See Section 3.4.2.1 for further discussion of these concepts.

The EPA class designation and allowable PSD increments are also presented in Table 3-1. The magnitude of the allowable increment depends on the classification of the area in which a new source (or modification) will be located or have an impact. Three classifications are designated based on criteria established in the 1977 CAA Amendments. Congress promulgated areas as Class I (international parks, national wilderness areas, and memorial parks larger than 5,000 acres and national parks larger than 6,000 acres) or as Class II (all areas not designated as Class I). No Class III areas, which would be allowed greater deterioration than Class II areas, were designated. The State of Florida has adopted the EPA class designations and allowable PSD increments for SO_2, PM_{10}, and nitrogen dioxide (NO_2).

PSD review is used to determine whether significant air quality deterioration will result from the new or modified facility. Federal PSD requirements are contained in Title 40 of the CFR, Section 52.21 (Prevention of Significant Deterioration of Air Quality). The State of Florida has adopted PSD regulations that are equivalent to the federal PSD regulations (Rule 62-212.400, F.A.C.). Major facilities and major modifications are required to undergo the following analyses related to PSD for each pollutant for which the emissions increase is significant:

- Control technology review;
- Source impact analysis;
- Air quality analysis (monitoring); and
- Additional impact analyses.

In addition to these analyses, a new or modified facility must also be reviewed with respect to Good Engineering Practice (GEP) stack height regulations. Discussions concerning each of these requirements are presented in the following sections.

3.2.2 Control Technology Review

The control technology review requirements of the federal and State PSD regulations require that all applicable federal and State emission-limiting standards be met, and that BACT be applied to control emissions from the source. The BACT requirements are applicable to all regulated pollutants for which the increase in emissions from the facility exceeds the significant emission rate (see Table 3-2).

BACT is defined in 40 CFR 52.21(b)(12), as:

> *An emissions limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the Act which would be emitted by any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant, which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular part of a source or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means which achieve equivalent results.*

BACT was promulgated within the framework of the PSD requirements in the 1977 amendments of the CAA [Public Law 95-95; Part C, Section 165(a)(4)]. The primary purpose of BACT is to optimize consumption of PSD air quality increments and thereby enlarge the potential for future economic growth without significantly degrading air quality (EPA, 1978; 1980). Guidelines for the evaluation of BACT can be found in EPA's Guidelines for Determining BACT (EPA, 1978) and in the PSD Workshop Manual (EPA, 1980). These guidelines were promulgated by EPA to provide a consistent approach to BACT and to ensure that the impacts of alternative emission control systems are measured by the same set of parameters. In addition, through implementation of these guidelines, BACT in one area may not be identical to BACT in another area. According to EPA (1980), "BACT analyses for the same types of emissions unit and the same pollutants in different locations or situations may determine that different control strategies should be applied to the different sites, depending on site-specific factors. Therefore, BACT analyses must be conducted on a case-by-case basis."

The BACT requirements are intended to ensure that the control systems incorporated in the design of a proposed or modified facility reflect the latest in control technologies used in a particular industry and take into consideration existing and future air quality in the vicinity of the facility. BACT must, as a minimum, demonstrate compliance with New Source Performance Standards (NSPS) for a source (if applicable). An evaluation of the air pollution control techniques and systems, including a cost-benefit analysis of alternative control technologies capable of achieving a higher degree of emission reduction than the proposed control technology, is required. The cost-benefit analysis requires the documentation of the materials, energy, and economic penalties associated with the proposed and alternative control systems, as well as the environmental benefits derived from these systems. A decision on BACT is to be based on sound judgment, balancing environmental benefits with energy, economic, and other impacts (EPA, 1978).

3.2.3 Source Impact Analysis

A source impact analysis must be performed for a proposed major source or major modification subject to PSD review and for each pollutant for which the increase in emissions exceeds the PSD significant emission rate (Table 3-2). The PSD regulations specifically provide for the use of atmospheric dispersion models in performing impact analyses, estimating baseline and future air quality levels, and determining compliance with AAQS and allowable PSD increments. Designated EPA models normally must be used in performing the impact analysis. Specific applications for other than EPA-approved models require EPA's consultation and prior approval. Guidance for the use and application of dispersion models is presented in the EPA publication *Guideline on Air Quality Models* (EPA, 1980).

To address compliance with AAQS and PSD Class I and II increments, a source impact analysis must be performed. However, this analysis is not required for a specific pollutant if the net increase in impacts as a result of the new source or modification is below significant impact levels, as presented in Table 3-1. The significant impact levels are threshold levels that are used to determine the level of air impact analyses needed for the project. If the new or modified source's impacts are predicted to be less than significant, then the source's impacts are assumed not to have a significant adverse effect on air quality. Additional modeling, taking into account other emission sources, is not required. However, if the source's impacts are predicted to be greater than the significant impact levels, additional modeling, including other emission sources, is required in order to demonstrate compliance with AAQS and PSD increments.

EPA has issued guidance related to significant impact levels for Class I areas, as shown in Table 3-1. Although these levels have not been officially promulgated as part of the PSD review process and may not be binding for States in performing PSD reviews, the levels serve as a guideline in assessing a source's impact in a Class I area. The EPA action to incorporate Class I significant impact levels into the PSD process is part of implementing the NSR regulations. Because the process of developing the regulations will be lengthy, EPA believes that the guidance concerning the significant impact levels is appropriate to assist States in implementing the PSD permit process.

Various lengths of record for meteorological data can be used for impact analyses. A 5-year period is normally used with corresponding evaluation of highest, second-highest short-term concentrations for comparison to AAQS or PSD increments. The meteorological data are selected based on an evaluation of measured weather data from a nearby weather station that represents weather conditions at the project site. The criteria used in this evaluation includes: determining the distance of the project site to the weather station; comparing topographical and land use features between the locations; and determining availability of necessary weather parameters.

The term "highest, second-highest" (HSH) refers to the highest of the second-highest concentrations at all receptors (*i.e.*, the highest concentration at each receptor is discarded). The second-highest concentration is important because short-term AAQS specify that the standard should not be exceeded at any location more than once a year. If fewer than 5 years of meteorological data are used in the modeling analysis, the highest concentration at each receptor normally must be used for comparison to air quality standards.

The term "baseline concentration" evolves from federal and State PSD regulations and refers to a concentration level corresponding to a specified baseline date and certain baseline sources. By definition, in the PSD regulations as amended August 7, 1980, baseline concentration means the ambient concentration level that exists in the baseline area at the time of the applicable baseline date. A baseline concentration is determined for each pollutant for which a baseline date is established and includes:

- The actual emissions representative of facilities in existence on the applicable baseline date; and
- The allowable emissions of major stationary facilities that commenced construction before January 6, 1975, for SO_2 and PM_{10}, or February 8, 1988, for NO_2, but that were not in operation by the applicable baseline date.

The following emissions are not included in the baseline concentration, and therefore, affect PSD increment consumption:

- Actual emissions from any major stationary facility on which construction commenced after January 6, 1975, for SO_2 and PM_{10}, and after February 8, 1988, for NO_2; and
- Actual emission increases and decreases at any stationary facility occurring after the baseline date.

In reference to the baseline concentration, the term "baseline date" actually includes three different dates:

- The major facility baseline date, which is January 6, 1975, in the cases of SO_2 and PM_{10}, and February 8, 1988, in the case of NO_2;
- The trigger date, which is August 7, 1977, for SO_2 and PM_{10}, and February 8, 1988, for NO_2; and
- The minor facility baseline date, which is the earliest date after the trigger date on which a major stationary facility or major modification subject to PSD regulations submits a complete PSD application.

3.2.4 Air Quality Monitoring Requirements

In accordance with requirements of 40 CFR 52.21(m), any application for a PSD permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate (see Table 3-2).

Ambient air monitoring for a period of up to 1 year generally is appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the proposed/modified source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in EPA's *Ambient Monitoring Guidelines for Prevention of Significant Deterioration* (EPA, 1987a).

The regulations include an exemption that excludes or limits the pollutants for which an air quality monitoring analysis must be conducted. This exemption states that FDEP may exempt a proposed major stationary facility or major modification from the monitoring requirements, with respect to a particular pollutant, if the emissions increase of the pollutant from the facility or modification would cause, in any area, air quality impacts less than the *de minimis* levels presented in Table 3-2.

3.3 Source Information/GEP Stack Height

Source information must be provided to adequately describe the proposed project. The general type of information required for this project is presented in Section 2.0.

The 1977 CAA Amendments require that the degree of emission limitation required for control of any pollutant not be affected by a stack height that exceeds GEP or any other dispersion technique. On July 8, 1985, EPA promulgated final stack height regulations (EPA, 1985a). The FDEP has adopted identical regulations (Rule 62-210.550, F.A.C.). GEP stack height is defined as the highest of:

- 65 meters (m); or
- A height established by applying the formula:

$$Hg = H + 1.5L$$

where: Hg = GEP stack height,

H = Height of the structure or nearby structure, and

L = Lesser dimension (height or projected width) of nearby structure(s); or

- A height demonstrated by a fluid model or field study.

"Nearby" is defined as a distance up to five times the lesser of the height or width dimensions of a structure or terrain feature, but not greater than 0.8 kilometer (km). Although GEP stack height regulations require that the stack height used in modeling for determining compliance with AAQS and PSD increments not exceed the GEP stack height, the actual stack height may be greater.

The stack height regulations also allow increased GEP stack height beyond that resulting from the above formula in cases where plume impaction occurs. Plume impaction is defined as concentrations measured or predicted to occur when the plume interacts with elevated terrain. Elevated terrain is defined as terrain that exceeds the height calculated by the GEP stack height formula.

3.3.1 Additional Impact Analysis

In addition to air quality impact analyses, federal and State of Florida regulations require analyses of the impairment to visibility and the impacts on soils and vegetation that would occur as a result of the proposed source or proposed modification [40 CFR 52.21(o) and Rule 62-212.400, F.A.C.]. These analyses are to be conducted primarily for PSD Class I areas. Impacts as a result of general commercial, residential, industrial, and other growth associated with the source also must be addressed. These analyses are required for each pollutant emitted in significant amounts (Table 3-2).

3.4 Potentially Applicable Emission Standards

3.4.1 New Source Performance Standards

The NSPS are a set of national emission standards that apply to specific categories of new sources. As stated in the CAA Amendments of 1970, these standards "shall reflect the degree of emission limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction the Administrator determines has been adequately demonstrated."

Existing non-NSPS sources may become subject to the NSPS if such sources undergo a "modification" or "reconstruction". "***Modification***" means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

"***Reconstruction***" means the replacement of components of an affected facility to such an extent that:

1. The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; and
2. It is technologically and economically feasible to meet the applicable standards set forth in this part.

40 CFR 60.5 defines "***fixed capital cost***" as the capital needed to provide all the depreciable components. 40 CFR 60.2 defines "***capital expenditure***" as:

> *an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair percentage" specified in the latest edition of IRS Publication 534 and the existing facility's basis, as defined by Section 1012 of the IRS Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any "excluded additions" as defined in IRS Publication 534, as would be done for tax purposes.*

Federal NSPS exist for Kraft Pulp Mills constructed or modified after September 24, 1976. The NSPS are contained in 40 CFR 60, Subpart BB and contain emission limits for PM and TRS for lime kilns. According to the NSPS definition, a lime kiln is a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

3.4.2 National Emission Standards for Hazardous Air Pollutants (NESHAP)

The National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills were promulgated on January 12, 2001. These are codified in 40 CFR 63, Subpart MM, and are commonly referred to as maximum achievable control technology – phase two (MACT II) standards. The standards apply to both existing and new Lime Kilns located at Kraft pulp mills.

The MACT General Provisions, in 40 CFR 63.2, define a new source as, "...any affected source the construction or reconstruction of which is commenced after the Administrator first proposes a relevant emission standard under this part." The Lime Kiln at the SSCE Panama City Mill was constructed well prior to the proposal date for this NESHAP. Therefore, the Lime Kiln is an existing source, unless it becomes "reconstructed". Under the MACT General Provisions (40 CFR 63, Subpart A), *reconstruction* is defined as follows:

Reconstruction, unless otherwise defined in a relevant standard, means the replacement of components of an affected or previously nonaffected source to such an extent that:

1. The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and
2. It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator pursuant to Section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emission of hazardous air pollutants from that source.

3.4.3 Florida Rules

Emission limitations applicable to Kraft (Sulfate) Pulp Mills and Tall Oil Plants are contained in Rule 62-296.404 of the Florida Administrative Code (F.A.C.). This rule limits TRS emissions, as well as visible emissions, from Lime Kilns.

3.5 Source Applicability

3.5.1 Area Classification

The project site is located in Bay County, which has been designated by EPA and FDEP as an attainment or maintenance area for all criteria pollutants. Bay County and surrounding counties are designated as PSD Class II areas for all criteria pollutants. The SSCE Panama City Mill is located within 200 km of two PSD Class I areas- St. Marks National Wilderness Area (NWA) and Bradwell Bay NWA. The Class I areas in relation to the Panama City Mill are shown in Figure 3-1

3.5.2 PSD Review

Pollutant Applicability

The SSCE Panama City Mill is considered to be an existing major stationary facility because potential emissions of at least one PSD-regulated pollutant exceed 100 TPY (for example, potential NO_X emissions currently exceed 100 TPY). Therefore, PSD review is required for any pollutant for which the net increase in emissions due to the modification is greater than the PSD significant emission rates (see Table 3-2).

The net increase in emissions due to the proposed modification at the SSCE Panama City Mill is summarized in Table 3-3. For the Lime Kiln, the baseline actual emissions and projected actual emissions are based on information from Section 2.0. The future potential emissions from the petcoke storage silo and truck traffic are included in the table.

As shown in Table 3-3, the increase in emissions due to the project exceeds the significance levels for several PSD pollutants. For these pollutants, the PSD regulations require that all contemporaneous emissions increases and decreases be included in a netting analysis to determine PSD applicability. These emission changes are included in the bottom portion of Table 3-3. Also presented is the total net increase in emissions, considering the contemporaneous emission changes. As shown in Table 3-3, the net increase in emissions exceeds the PSD significant emission rates for SO_2 and NO_X. Therefore, PSD review applies for these pollutants.

Source Impact Analysis

A source impact analysis was performed for SO_2 and NO_X emissions resulting from the proposed modification. This analysis is presented in Section 6.0.

Ambient Monitoring

Based on the increase in emissions from the proposed modification (see Table 3-3), a pre-construction ambient monitoring analysis would be required for SO_2 and NO_X, and monitoring data would be required to be submitted as part of the application. However, if the net increase in impacts of a pollutant is less than the applicable *de minimis* monitoring concentration, then an exemption from submittal of pre-construction ambient monitoring data may be obtained [40 CFR 52.21(i)(8)]. In addition, if EPA has not established an acceptable ambient monitoring method for the pollutant, monitoring is not required.

Pre-construction monitoring data for SO_2 and NO_2 can be exempted for this project because, as shown in Section 6.0, the proposed modification's impacts are predicted to be less than the applicable *de minimis* monitoring concentrations for these pollutants.

GEP Stack Height Impact Analysis

All existing stacks at the SSCE facility currently comply with GEP stack height regulations. The stack height of the Lime Kiln is 18.44 meters (60.5 feet), and the height of the petcoke storage silo discharge point, which is proposed as part of this project, is 37.6 meters (123.5 feet). GEP stack height is 65 meters (213 feet); therefore, the proposed modification will comply with the GEP stack height regulations.

3.5.3 Emission Standards

New Source Performance Standards

The Lime Kiln is currently not subject to NSPS contained in 40 CFR 60, Subpart BB. The Lime Kiln was constructed prior to the 1976 proposal date of this NSPS. In addition, the Lime Kiln has not been previously reconstructed or modified to an extent that would have triggered applicability of NSPS Subpart BB.

As discussed in Section 2.0, maximum hourly emissions of TRS compounds are not expected to increase as a result of this project. An increase in annual TRS emissions is shown in Table 3-3 solely as a result of the requirement to compare baseline actual to future actual emissions in conducting a PSD applicability assessment. Furthermore, the cost of the changes to the Lime Kiln itself ($2.6 million), will not exceed 50 percent of the replacement cost of the Lime Kiln, which is estimated to be at least $30 million. As such, the Kiln is not being "reconstructed" as part of this project, and the NSPS for TRS emissions will not be triggered as a result of this project.

The Lime Kiln is potentially subject to NSPS contained in 40 CFR 60 Subpart BB for PM emissions. The NSPS limit for PM is 0.066 gr/dscf corrected to 10 percent oxygen for Lime Kilns burning gaseous fuel and 0.13 gr/dscf corrected to 10 percent oxygen for Lime Kilns burning liquid fuel. There are no specific NSPS limits for Lime Kilns burning solid fuels such as coal or petcoke. Since the Lime Kiln is permitted to burn both No. 6 fuel oil and natural gas, the Kiln is potentially subject to both PM emission limits. However, these limits are actually less restrictive than the MACT II limit of 0.064 gr/dscf and the current permit allowable of 29.83 lb/hr. Therefore, while the triggering of this NSPS for PM would not act to tighten the PM limit for the Lime Kiln, it would result in certain testing, recordkeeping, reporting and notification requirements as detailed in NSPS Subpart BB and the NSPS General Provisions.

NESHAPs for Source Categories

The Lime Kiln is considered an "existing source" for the purposes of MACT applicability, and permit conditions contained in the Mill's Title V permit already address the MACT requirements. 40 CFR 63 Subpart MM regulates emissions of PM from lime kilns.

The Lime Kiln is subject to a MACT II PM limit of 0.064 gr/dscf, corrected to 10 percent oxygen. Since the Lime Kiln is equipped with a venturi scrubber to control PM emissions, it is subject to continuous parameter monitoring system (CPMS) requirements, which require that pressure drop across the scrubber and scrubbing liquid flow rate be monitored at least once every successive 15-minute period. The Lime Kiln currently complies with these standards and requirements.

As discussed previously, the cost of the changes to the Lime Kiln itself ($2.6 million), will not exceed 50 percent of the replacement cost of the Lime Kiln, which is estimated to be at least $30 million. As such, the Kiln is not being "reconstructed" as part of this project, and the new source MACT for PM emissions will not be triggered as a result of this project.

State of Florida Standards

Emission limitations applicable to Kraft (Sulfate) Pulp Mills and Tall Oil Plants are contained in Rule 62-296.404 of the Florida Administrative Code (F.A.C.). This rule limits TRS emissions, as well as visible emissions, from Lime Kilns.

The Lime Kiln is subject to an opacity standard of 20 percent, according to Rule 62-296.404(2)(b), F.A.C., which is effective only if the VE measurement can be made without being substantially affected by plume mixing or moisture condensation.

TRS is limited to 20 ppmvd corrected to 10 percent O_2 as a 12-hour average under this rule, which also contains provisions for a continuous emissions monitoring system (CEMS) for TRS (Rule 62-296.404(3)(e), F.A.C.). The Lime Kiln will comply with the CEMS requirement. The Lime Kiln will continue to be subject to the testing, recordkeeping, reporting, and notification requirements as detailed in Rule 62-296.404, F.A.C.

TABLE 3-1. NATIONAL AND STATE AAQS, ALLOWABLE PSD INCREMENTS, AND SIGNIFICANT IMPACT LEVELS ($\mu g/m^3$)

		AAQS			PSD Increments		Significant Impact Levels[d]	
Pollutant	Averaging Time	National Primary Standard	National Secondary Standard	State of Florida	Class I	Class II	Class I (proposed)	Class II
Particulate Matter[a] (PM_{10})	Annual Arithmetic Mean	50	50	50	4	17	0.2	1
	24-Hour Maximum[b]	150[b]	150[b]	150[b]	8	30	0.3	5
Sulfur Dioxide	Annual Arithmetic Mean	80	N/A	60	2	20	0.1	1
	24-Hour Maximum[e]	365[b]	N/A	260[b]	5	91	0.2	5
	3-Hour Maximum[b]	NA	1,300[b]	1,300[b]	25	512	1	25
Carbon Monoxide	8-Hour Maximum[b]	10,000[b]	10,000[b]	10,000[b]	N/A	N/A	N/A	500
	1-Hour Maximum[b]	40,000[b]	40,000[b]	40,000[b]	N/A	N/A	N/A	2,000
Nitrogen Dioxide	Annual Arithmetic Mean	100	100	100	2.5	25	0.1	1
Ozone[a]	1-Hour Maximum	235[c]	235[c]	235[c]	N/A	N/A	N/A	N/A
	8-Hour Maximum	157	157	N/A	N/A	N/A	N/A	N/A
							N/A	
Lead	Calendar Quarter Arithmetic Mean	1.5	1.5	1.5	N/A	N/A	N/A	N/A

Note: NA = Not applicable, *i.e.*, no standard exists.
PM_{10} = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.

[a]On July 18, 1997, EPA promulgated revised AAQS for particulate matter and ozone. For particulate matter, $PM_{2.5}$ standards were introduced with a 24-hour standard of 65 $\mu g/m^3$ (3-year average of 98th percentile) and an annual standard of 15 $\mu g/m^3$ (3-year average at community monitors). The ozone standard was modified to be 0.08 ppm (157 $\mu g/m^3$) for an 8-hour average; achieved when 3-year average of 99th percentile is 0.08 ppm or less. FDEP has not yet adopted either of these standards.

[b]Short-term maximum concentrations are not to be exceeded more than once per year except for the PM_{10} AAQS (these do not apply to significant impact levels). The PM_{10} 24-hour AAQS is attained when the expected number of days per year with a 24-hour concentration above 150 $\mu g/m^3$ is equal to or less than 1. For modeling purposes, compliance is based on the sixth-highest 24-hour average value over a 5-year period.

[c]Achieved when the expected number of days per year with concentrations above the standard is fewer than 1.

[d]Maximum concentrations.

Sources: Federal Register, Vol. 43, No. 118, June 19, 1978; 40 CFR 50; 40 CFR 52.21; Rule 62-204, F.A.C.

TABLE 3-2
PSD SIGNIFICANT EMISSION RATES AND *DE MINIMIS* MONITORING CONCENTRATIONS

Pollutant	Significant Emission Rate (TPY)	De Minimis Monitoring Concentration[a] ($\mu g/m^3$)
Sulfur Dioxide	40	13, 24-hour
Particulate Matter [PM(TSP)]	25	NA
Particulate Matter (PM_{10})	15	10, 24-hour
Nitrogen Dioxide	40	14, annual
Carbon Monoxide	100	575, 8-hour
Volatile Organic Compounds (Ozone)	40	100 TPY[b]
Lead	0.6	0.1, 3-month
Sulfuric Acid Mist	7	NM
Total Fluorides	3	0.25, 24-hour
Total Reduced Sulfur	10	10, 1-hour
Reduced Sulfur Compounds	10	10, 1-hour
Hydrogen Sulfide	10	0.2, 1-hour
Mercury	0.1	0.25, 24-hour
MWC Organics	$3.5x10^{-6}$	NM
MWC Metals	15	NM
MWC Acid Gases	40	NM
MSW Landfill Gases	50	NM

Note: Ambient monitoring requirements for any pollutant may be exempted if the impact of the increase in emissions is less than *de minimis* monitoring concentrations.

NA = Not applicable.
NM = No ambient measurement method established; therefore, no *de minimis* concentration has been established.
$\mu g/m^3$ = micrograms per cubic meter.
MWC = Municipal waste combustor
MSW = Municipal solid waste

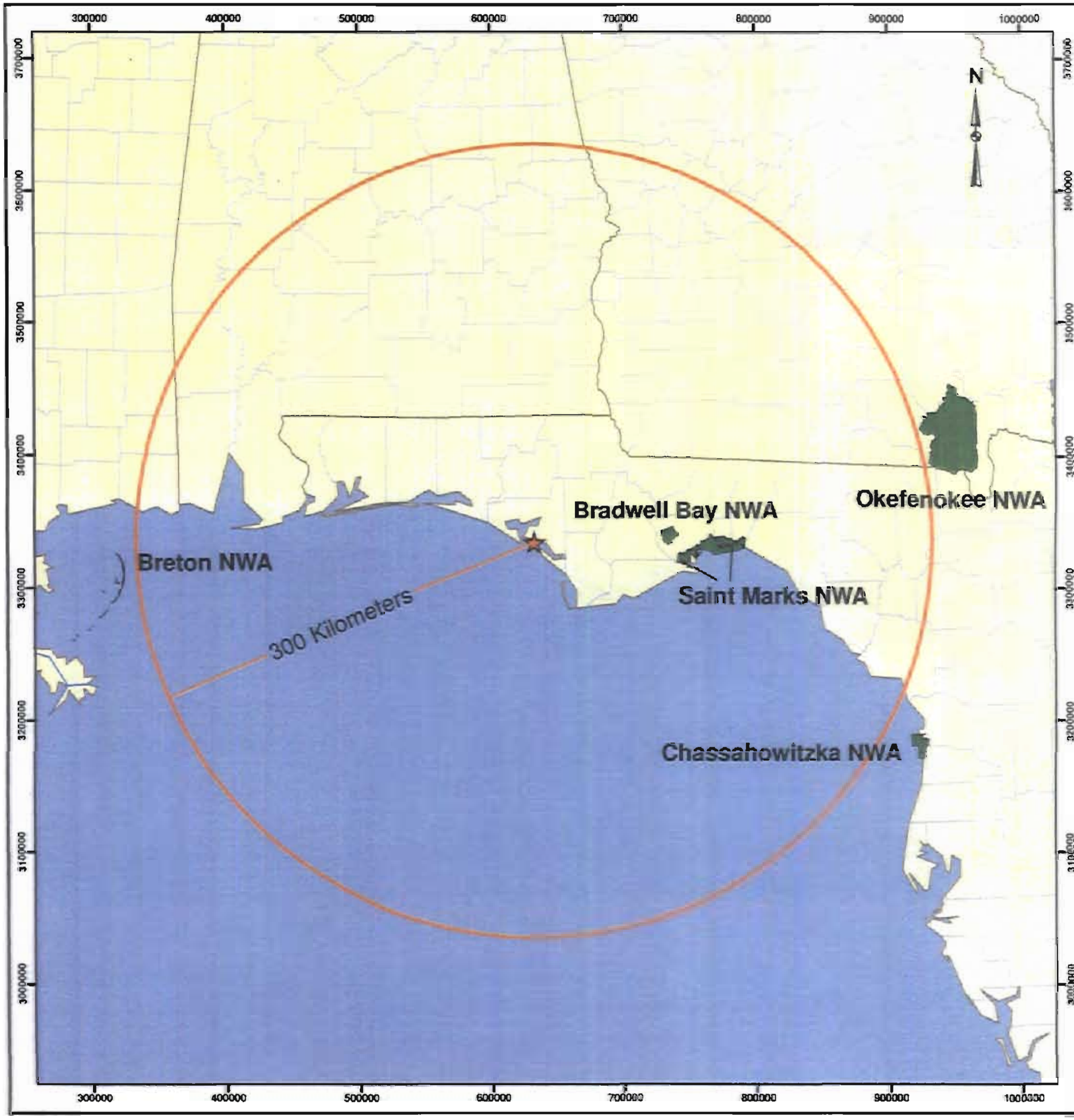
[a] Short-term concentrations are not to be exceeded.
[b] No *de minimis* concentration; an increase in VOC emissions of 100 TPY or more will require a monitoring analysis for ozone.

Sources: 40 CFR 52.21.
Rule 62-212.400, F.A.C.

TABLE 3-3
PSD CONTEMPORANEOUS AND PROJECT EMISSIONS NETTING ANALYSIS
LIME KILN PETCOKE PROJECT, SSCE PANAMA CITY

Source Description	Pollutant Emission Rate (TPY)										
	SO_2	NO_X	CO	PM	PM_{10}	VOC	TRS	SAM	Lead	Mercury	Fluoride
Projected Actual Emissions											
Lime Kiln Petcoke Project											
Lime Kiln[a]	103.0	369.1	14.4	111.4	94.3	3.66	15.6	7.57	0.25	4.93E-05	--
Petcoke Storage Silo[b]	--	--	--	0.60	0.60	--	--	--	--	--	--
Petcoke Truck Traffic[c]	--	--	--	1.27	0.25	--	--	--	--	--	--
Total- Projected Actual	103.0	369.1	14.4	113.2	95.2	3.66	15.6	7.57	0.25	4.93E-05	--
Baseline Actual Emissions											
Lime Kiln[d]	22.8	184.2	14.4	97.3	85.0	3.66	10.3	1.67	0.25	4.93E-05	--
Total - Past Actual	22.8	184.2	14.4	97.3	85.0	3.66	10.3	1.67	0.25	4.93E-05	--
Increase Due to Project	80.3	184.8	0.0	16.0	10.2	0.00	5.3	5.90	0.00	0.00E+00	0.00
PSD SIGNIFICANT EMISSION RATE	40	40	100	25	15	40	10.0	7	0.6	0.1	3
Netting Triggered?	Yes	Yes	No	No	No	No	No	No	No	No	No
CONTEMPORANEOUS EMISSION CHANGES[h]											
Pulp Production Increase (09/2002) (Permit No. 0050009-005-AC)											
--Increase Due to Increased Pulp Production	[f]	[f]	[g] [g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Decrease Due to Existing Pulp Production	[f]	[f]	[g] [g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Net Change	[f]	[f]	[g] [g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
Smelt Dissolving Tanks/MACT II (11/2001) (Permit No. 0050009-007-AC)											
--Increase Due to Future MACT I Sources	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Decrease Due to Existing Sources	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Net Change	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
MACT I Compliance- Update NOx Emissions (7/2002) (Permit Nos. 0050009-006-AC and -010-AC)											
--Increase Due to Future MACT I Sources	0.0	118.3	[g] [g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Decrease Due to Existing Sources	0.0	0.0	[g] [g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Net Change	0.0	118.3 [f]	[g] [g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
Methanol Storage Tank (4/2003) (Permit No. 0050009-012-AC)	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
No. 3/No. 4 Comb. Boiler Misc. Amendments (6/2003) (Permit No. 0050009-013-AC)	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
Woodyard Rate Correction (6/2003) (Permit No. 0050009-014-AC)	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
Lime Kiln Fuel Modification (10/2003) (Permit No. 0050009-015-AC)	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
Bleach Plant Softwood Increase (6/2004) (Permit No. 0050009-018-AC)											
--Increase Due to Future Bleach Plant	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Decrease Due to Existing Bleach Plant	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Net Change	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
Clean Condensate Alternative Project (6/2005) (Permit No. 0050009-016-AC)											
--Increase Due to Future CCA Sources	1,976.6	164.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Decrease from Existing CCA Sources	-	-66.9	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Net Change	1,976.6 [f]	97.1 [f]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
No. 4 Combination Boiler (11/2005) (Permit No. 0050009-021, -022-AC)											
--Increase Due to Future No. 4 CB	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Decrease from Existing No. 4 CB	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Net Change	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
No. 3 Combination Boiler (5/2006) (Permit No. 0050009-023-AC)											
--Future Actuals	3,885.1	476.8	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Past Actuals	-3,885.1	-458.9	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Net Change	0.0	17.9	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
Stripper Off-Gas to No. 4 CB (4/2006) (Permit No. 0050009-024-AC)											
--Increase Due to Future No. 3/No. 4 CB	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Decrease from Existing No. 3/No. 4 CB	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
--Net Change	0.0	0.0	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	--
Total Contemporaneous Emission Changes		17.9	[g]	[g]	[g]	[g]	[g]	[g]	[g]	[g]	N/A
TOTAL NET CHANGE	80.3	202.7	0.0	16.0	10.2	0.00	5.3	5.90	0.00	0.00	0.00
PSD SIGNIFICANT EMISSION RATE	40	40	100	25	15	40	10.0	7	0.6	0.1	3
PSD REVIEW TRIGGERED?	Yes	Yes	No	No	No	No	No	No	No	No	No

Footnotes:
[a] See Table 2-2 for projected actual emissions calculations for the Lime Kiln.
[b] Based on 2,000 acfm, and 0.008 grains/ft^3).
[c] Based on calculation in AP-42, Section 13.2.1, for particulate emissions from paved roads, December 2003.
[d] See Table 2-1 for baseline actual emissions from the Lime Kiln.
[e] Pollution Control Project (PCP). Pollutants which triggered PSD review were exempted under the PCP.
[f] Denotes that PSD review was triggered for this pollutant; therefore this, and any previous contemporaneous increases/decreases, are wiped clean.
[g] Since project increase does not exceed PSD significant emission rate, netting is not performed for this pollutant.
[h] The contemporaneous period begins 5 years prior to the projected date of commencement of construction on the Lime Kiln project, which is fall of 2007.



LEGEND

Facility Location

Class I Areas

REFERENCE

Projection: Transverse Mercator Datum: NAD 27 Coordinate System: UTM Zone 16

100,000 0 100,000 Meters

PROJECT	SSCE PANAMA CITY MILL
TITLE	Facility Location and PSD Class I Areas Within 300 km

Golder Associates
Gainesville, Florida

PROJECT No.			SCALE AS SHOWN	REV 0
DESIGN	AB	25 Apr 2006	FIGURE 3-1	
GIS	AB	25 Apr 2006		
CHECK	AB	25 Apr 2006		
REVIEW	AB	25 Apr 2006		

4.0 AMBIENT MONITORING ANALYSIS

4.1 Monitoring requirements

In accordance with requirements of 40 CFR 52.21(m) and Rule 62-212.400(5)(f), F.A.C., any application for a PSD permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate (see Table 3-2). As discussed in Section 3.4.2.1, SO_2 and NO_X are subject to PSD pre-construction monitoring requirements for the proposed modification because the net increase in emissions due to the project exceeds the PSD significant emission rate for these pollutants.

Ambient air monitoring for a period of up to 1 year is generally appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in EPA's *Ambient Monitoring Guidelines for Prevention of Significant Deterioration* (1987).

An exemption from the pre-construction ambient monitoring requirements is also available if certain criteria are met. If the predicted increase in ambient concentrations, due to the proposed modification, is less than specified *de minimis* concentrations, then the modification can be exempted from the pre-construction air monitoring requirements for that pollutant.

The PSD *de minimis* monitoring concentration for SO_2 is 13 $\mu g/m^3$ as a 24-hour average, and for NO_2 is 14 $\mu g/m^3$ as an annual average. The predicted increase in SO_2 concentrations due to the proposed project is 31 $\mu g/m^3$, 24-hour average, as presented in Section 6.0. Since the predicted increase in SO_2 impacts due to the proposed project is greater than the *de minimis* monitoring concentration level, a pre-construction air monitoring analysis is required for SO_2. The analysis is presented in Section 4.2.

The predicted increase in NO_2 concentrations due to the proposed projects is 4.6 $\mu g/m^3$, annual average, as presented in Section 6.0. Since the predicted increase in NO_2 impacts due to the proposed project is less than the *de minimis* monitoring concentration level, a pre-construction air monitoring analysis is not required for NO_2. Nevertheless, existing ambient monitoring data for NO_2 is presented in Section 4.3, in order to support the air impact analysis presented in Section 6.0. The data are used to estimate "background" air quality concentrations. "Background" concentrations are ambient concentrations that are due to sources other than those sources specifically included in the modeling analysis. These sources include distant major sources, minor sources, area sources, and natural sources.

4.2 SO_2 Ambient Monitoring Analysis

A summary of the existing ambient SO_2 data for monitors located in the vicinity of the SSCE Panama City Mill is presented in Table 4-1. Data are presented for 2004 – 2006. There were no existing monitoring stations within close proximity of the Panama City Mill. There are three stations in the state of Florida within 300 km of the Panama City Mill. These stations consist of two in Pensacola located to the west of Panama City, and one in Hamilton County located to the east-northeast. The monitoring facilities in Pensacola were not considered in the analysis, as they are heavily influenced by nearby point sources, and so would not be representative of the ambient conditions around the Panama City Mill. The monitoring station in Hamilton County, although potentially influenced by a major point source of emissions (PCS Phosphates), was selected for this analysis because the SO_2 data appear to be reflective of background concentrations.

The Hamilton County monitor shows that all of the ambient SO_2 concentrations were below the AAQS of 1,300 $\mu g/m^3$, maximum 3-hour average; 260 $\mu g/m^3$, maximum 24-hour average; and 60 $\mu g/m^3$, annual average. For purposes of an ambient SO_2 background concentration for use in the modeling analysis, the highest of the second-highest 3-hour and 24-hour and the highest annual average concentrations occurring over the 3-year period from the Hamilton County, County Road 137, monitoring station, the monitor most closely representative of the Panama City area, were selected. These concentrations are 69, 24 and 4.8 $\mu g/m^3$ for the 3-hour, 24-hour and annual averages, respectively.

4.3 NO_2 Ambient Monitoring Analysis

Background NO_2 concentrations must be estimated to account for NO_2 sources, which are not explicitly included in the atmospheric dispersion modeling analysis. To estimate reasonable background NO_2 concentrations, a review of recent, available NO_2 monitoring data in the area of SSCE Panama City was performed. A summary of ambient NO_2 data available for 2004 – 2006 is presented in Table 4-2. There were no monitoring stations within close proximity of the Panama City Mill. The two closest monitoring facilities are located in Pensacola and Jacksonville. The Pensacola monitoring station was chosen as the closest monitor to the Panama City Mill.

The monitoring station shows that ambient NO_2 annual average concentrations were well below the AAQS of 100 $\mu g/m^3$. For purposes of an ambient NO_2 background concentration modeling analysis, the highest annual average concentration occurring over the 3-year period was selected. This concentration is 13.6 $\mu g/m^3$, measured in Pensacola. This background is conservatively high, since it is impacted by major nearby point sources. This monitor is also impacted significantly by vehicular traffic in the Pensacola area.

TABLE 4-1
SUMMARY OF SO_2 MONITORING DATA COLLECTED NEAR SSCE, PANAMA CITY FACILITY

					Reported Concentration (ug/m^3)				
County	Station ID	Monitor Location	Year	Number of Observations	Highest 24-Hour	Second Highest 24-Hour	Highest 3-Hour	Second Highest 3-Hour	Annual
Hamilton	12-047-0015	County Road 137 at entrance to Oxy SRCC	2006	6216	16	11	29	29	3.5
			2005	8451	24	19	74	66	4.5
			2004	8634	29	24	69	69	4.8

Source: US EPA Air Quality System Quick Look Report, 2004 through 2006.

TABLE 4-2
SUMMARY OF NO_2 MONITORING DATA COLLECTED NEAR SSCE, PANAMA CITY FACILITY

County	Station ID	Monitor Location	Year	Number of Observations	Reported Concentration (ug/m³) Highest 1-Hour	Second Highest 1-Hour	Annual
Escambia	12-033-0004	Pensacola, Ellyson Industrial Park-Cooper RD	2006	6369	76	73	9.2
			2005	8518	84	76	11.1
			2004	8605	80	78	13.6

Source: US EPA Air Quality System Quick Look Report, 2004 through 2006.

5.0 BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

5.1 Requirements

The 1977 CAA Amendments established requirements for the approval of pre-construction permit applications under the PSD program. As discussed in Section 3.2.2, one of these requirements is that BACT be installed for applicable pollutants. BACT determinations must be made on a case-by-case basis considering technical, economic, energy, and environmental impacts for various BACT alternatives. To bring consistency to the BACT process, the EPA developed the "top-down" approach to BACT determinations.

The first step in a top-down BACT analysis is to determine, for each applicable pollutant, the most stringent control alternative available for a similar source or source category. If it can be shown that this level of control is not feasible on the basis of technical, economic, energy, or environmental impacts for the source in question, then the next most stringent level of control is identified and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any technical, economic, energy, or environmental consideration.

In the case of the proposed project, only the Lime Kiln is being physically modified. As a result, BACT only applies to the Lime Kiln. SO_2 and NO_X emissions from the Lime Kiln require a BACT analysis. The BACT analysis is presented in the following sections.

5.2 Nitrogen Oxides (NO_x)

5.2.1 Proposed Control Technology

NO_x emissions are proposed to be controlled through use of a low-NO_x burner especially designed to burn petcoke/gas/oil, efficient operation, good combustion practices, and preventative maintenance of the Lime Kiln. Maximum potential NO_x emissions from the Lime Kiln are expected to be 185 ppmvd at 10 percent O_2 when firing the maximum amount of petcoke, or 107.8 lbs/hr and 472.3 TPY, while projected actual emissions are 87.8 lbs/hr and 384.5 TPY.

5.2.2 BACT Analysis

Previous BACT Determinations

As part of the BACT analysis, a review was performed of previous NO_x BACT determinations for lime kilns listed in the RACT/BACT/LAER Clearinghouse (RBLC) on EPA's web page. A summary of the BACT determinations for lime kilns from this review is presented in Table 5-1. The NO_x emission limits for lime kilns identified in the RBLC search range from 100 to 340 ppmvd at 10 percent O_2, and from 21.8 to 95.6 lb/hr. This rather large range of emissions is due to differences in lime kiln design and operation, as well as differences in fuel type. The lower BACT emission limits were for natural gas firing.

Only one BACT determination was identified as pertaining to petcoke firing. This is also the most recent BACT determination – for Weyerhaeuser Co. Red River Mill. The BACT limit for NO_x was set at 190 ppmvd at 10 percent O_2.

From the review of previous determinations, as shown in Table 5-2, it is evident that all NO_x BACT determinations for lime kilns have been based on good combustion practices, *i.e.*, no add-on control equipment.

Control Technology Feasibility

The potentially feasible NO_x controls for the Lime Kiln are shown in Table 5-3. As shown, there are seven possible technologies for the control of NO_x from the lime kiln. Each available technique was listed with its associated efficiency estimate, identified as feasible or infeasible, and ranked based on control efficiency. SSCE believes that good combustion control, preventative maintenance, and efficient operation are the only technologies that are technically feasible for NO_x emissions.

Potential Control Method Descriptions

Oxidation/Reduction Scrubbing (O/R)

Several proprietary add-on NO_x removal processes are commercially available, such as Tri-Mer Corporation's TRI-NO_X and The BOC Group's $LoTO_x$ (Low Temperature Oxidation) NO_x control system. It has been reported that O/R scrubbing has a theoretical NO_x removal efficiency of 90 percent. The basic elements of the system are:

1. Cooling of the gas stream to its dew point temperature, which condenses a portion of the water vapor in the gas and generates condensate that requires disposal;
2. Low temperature oxidation of the NO_x, CO and SO_2 to higher oxides through controlled injection of ozone or sodium chlorite in a static mixer or reaction duct; and
3. Absorption of higher vapor forms of nitrogen and sulfur oxides in a wet scrubber that produces nitric, sulfuric, and carbonic acid solution. These acids must be recovered and neutralized by the use of sodium hydroxide in the scrubber water (caustic scrubbing).

The ability of the O/R Scrubbing System to perform on a lime kiln or a similar source has never been demonstrated. The presence of carbon dioxide from both calcination and combustion is also a complicating factor. Furthermore, the technology is not listed for lime kilns in the RBLC. For all of the reasons listed above, O/R Scrubbing is considered technically infeasible for the Lime Kiln.

Selective Catalytic Reduction (SCR)

SCR is an exhaust gas treatment process in which ammonia (NH_3) or urea is injected into the exhaust gas, which then passes through a catalyst bed. The NH_3 reacts to form nitrogen (N_2) and water on the surface of the catalyst. The overall chemical reaction is represented by the following equation:

$$NH_3 + NO + 1/4\ O_2 \rightarrow N_2 + 3/2\ H_2O$$

In the SCR process, urea or NH_3 from a liquid storage tank is vaporized and injected into the flue gas prior to the catalyst. The flue gas/ammonia mixture then passes over the catalyst. The catalyst acts to lower the activation energy of the NO decomposition reaction, therefore, lowering the temperature necessary to carry out the reaction.

Several technical and operational difficulties exist with SCR technology as applied to lime kilns. The SCR process is temperature sensitive, and efficient operation requires flue gas temperatures to be within a narrowly defined range. Load fluctuations can result in exhaust gas temperature fluctuations which upset the NH_3/NO_x molar ratio, in turn affecting removal efficiency. A lower than necessary temperature results in slow reaction rates, which leads to low NO_x conversion rates, as well as unreacted NH_3 passing through the reactor bed (ammonia slip). A higher temperature than necessary results in shortened catalyst life and can lead to the oxidation of NH_3 and the formation of additional NO_x.

The catalytic reaction can result in NO_x removal efficiencies between 60 and 90 percent under ideal conditions. SCR technology has not been applied to lime kilns due to the variable exhaust temperatures associated with the process. Furthermore, the optimum temperature range for the catalytic reaction is 575°F to 750°F. A lime kiln typically operates in the 1,600 – 2,700 °F range.

Additional concerns with using a SCR system include the hazards involved with storing large quantities of NH_3 and with disposal of spent catalyst.

The NH_3 also causes potential corrosion problems, and unreacted ammonia may also react with sulfur to form ammonium bisulfate, which has the potential to create a visible and/or detached plume. The lime in the Lime Kiln may also react with the sulfur to form calcium sulfate. Ammonium bisulfate and calcium sulfate coatings, along with other dusts, will block the catalyst pores, thereby reducing the catalyst effectiveness.

An SCR unit could potentially be placed downstream of the wet scrubber to alleviate the catalyst blockage problem; however, the flue gas is approximately 170°F and would require a heat exchanger (*i.e.,* an additional gas-fired duct burner) system to achieve the desired reaction temperature of greater than 575°F.

SCR technology is not listed for lime kilns in the RBLC. SCR is not considered to be technically feasible for controlling NO_x emissions from the Lime Kiln.

Selective Non-Catalytic Reduction (SNCR)

SNCR is similar to SCR except without the catalyst to enhance the reactions. In SNCR, urea or ammonia is injected into the flue gas at a point where the flue gas is between 1,600°F and 2,100°F. The reaction between NH_3 and NO_x to form N_2 and water is represented by the following equation.

$$NH_3 + NO + 1/4\ O_2 \rightarrow N_2 + 3/2\ H_2O$$

In this process, urea or NH_3 from a liquid storage tank is vaporized and injected into the flue gas.

Several difficulties preclude use of an SNCR system for control of NO_x emissions from a lime kiln. These include maintaining proper temperature window, maintaining the correct NH_3/NO_x ratio during any load fluctuations, ammonia slip and resulting formation of ammonium salts. These salts can result in a visible plume.

Due to load and exhaust gas temperature fluctuations, optimum NH_3/NO_x molar ratio, as well as correct reaction temperatures, would be extremely difficult to monitor and maintain, and release of NH_3 into the atmosphere can occur. The correct temperature window of 1,600°F to 2,100°F occurs inside the rotating body of the kiln. Locating injection nozzles in such an area is not technically feasible at the present time and has not been attempted on any lime kiln.

SNCR has never been demonstrated on a lime kiln and is not listed in the RBLC. For all of the above reasons, SNCR is considered a technically infeasible control technology for the Lime Kiln.

Low NO_x Burners (LNB)

Traditional burners in a lime kiln are designed to introduce the fuel and air into a single combustion zone. With this arrangement, to obtain optimal flames, large amounts of excess air must be introduced. This results in a relatively uncontrolled combustion condition and high flame temperatures. The high flame temperatures create thermal NO_x. LNB technology stages combustion at the burner in the high temperature zone of the flame to control the generation of thermal NO_x,

In a LNB, the first stage is a fuel-rich, oxygen-lean atmosphere where little oxygen is available for NO_x formation. This reduces peak flame temperatures by delaying the completion of the combustion process. Combustion is then completed in the second stage, where excess air is available, but temperatures are lower than at the hottest portion of the flame.

LNBs have been extensively tested and used in utility and industrial boilers, and this technology has been transferred to lime kilns to the extent possible.. Burner flame properties are critical to the quality control and calcining process in the lime kiln. The burner flame shape and properties have a dramatic effect on calcining efficiency. Poor efficiency increases energy usage and decreases the calcining capacity of the kiln. The modern lime kiln burner incorporates feature to stage the combustion and lower the peak flame temperature, although these burners are not typically referred to as "low-NO_x".

The State of Georgia issued a BACT determination in 2003 for the Weyerhaeuser Mill stated that there are no commercially available LNBs on the market for a lime kiln application. However, the

SSCE Panama City Lime Kiln will utilize the very latest in burner design to minimize NO_x emissions from the Lime Kiln.

Flue Gas Recirculation (FGR)

In FGR, a portion of the flue gases are recirculated back to the primary combustion chamber to create a lower oxygen content atmosphere. This oxygen-lean atmosphere provides less O_2 available for NO_x formation. Due to the lower temperature of the recirculated gases, peak flame temperature is lowered. Therefore, FGR reduces both fuel and thermal NO_x.

However, there exist major barriers to using FGR in a lime kiln. These include reducing the peak flame temperature below the temperature necessary for proper lime formation, and a long and lazy flame would be produced, which is not acceptable for ensuring fully calcined lime. FGR would also require an excessive amount of ducting from the kiln outlet back to the kiln inlet.

FGR has never been demonstrated on a lime kiln and is considered a technically infeasible control technology for the Lime Kiln.

Non-Selective Catalytic Reduction (NSCR)

NSCR is another exhaust gas treatment technique for NO_x reduction which uses a catalyst, typically a platinum/rhodium catalyst. Use of NSCR reduces emissions of NO_x, CO, and VOC simultaneously across the catalyst bed. It is only effective in fuel rich combustion air. To achieve a fuel-rich environment, excess combustion air must be kept to a minimum, resulting in a flue gas with less than three percent O_2 by volume ideally (the O_2 content should be less than half a percent by volume for proper operation).

The Lime Kiln at Panama City will normally operate with stack exhaust gas O_2 concentrations above 5 percent (by volume). Decreasing the excess air, and thus the O_2 concentrations, would result in increased CO emissions. In addition to the operational incompatibility of the control strategy, various problems will arise from the fuel-borne contaminants which cause catalyst fouling (dust, SO_2, and Cl_2 in the flue gas can poison the catalyst), excessive backpressure, plugging of the catalyst, and efficiency reduction. For all of the reasons mentioned above, NSCR is technically infeasible for the Lime Kiln.

Good Combustion Practices (GCP)

GCP, such as proper kiln design and operation, minimize the formation of NO_x. Emissions are minimized when the lime kiln temperature is kept at the lower end of the desired range and when the distribution of air at the burner (air and fuel injection zones) is controlled. Maintaining a low-oxygen condition at the fuel injection points simulates a staged combustion process. Also, higher thermal efficiency would lead to less consumption of heat and fuel and would produce less NO_x emissions. General improvement in thermal efficiency is one design method of reducing NO_x formation, since less fuel is used. Since this technology is technically feasible, good combustion practices are proposed for the Lime Kiln.

Environmental Impacts

The maximum predicted NO_2 impacts for the proposed project alone is below the EPA Class II significant impact level, and well below the EPA Class I significant impact level. Additional NO_x controls would result in an insignificant reduction of ambient impacts that are already below the EPA significance level for Class I areas. SSCE proposes BACT based on good combustion practices and proper burner design and operation in order to further minimize impacts in the Class II areas.

5.2.3 BACT Selection

The only feasible control technologies for NO_x control in the Lime Kiln are burner design and operation, good combustion practices, preventative maintenance, and efficient operation of the lime kiln. The Lime Kiln will employ these control techniques at the SSCE Panama City Mill. SSCE is considering the use of a Coen petcoke/oil/gas burner for the Lime Kiln project (see Appendix C). The burner is designed to fire up to 90 percent petcoke with either oil or gas. The burner is of proven design and uses dual (two) air zones for better flame shaping, low flame temperatures, and high energy efficiency. The burner incorporates a "spinner", which imparts a spin to the combustion air and creates a recirculation zone.

5.3 Sulfur Dioxide

5.3.1 Previous BACT Determinations

As part of the BACT analysis, a review was performed of previous SO_2 BACT determinations for lime kilns listed in the RACT/BACT/LAER Clearinghouse (RBLC) on EPA's web page. A summary of the BACT determinations for lime kilns from this review is presented in Table 5-5. The SO_2 emission limits for lime kilns identified in the RBLC search range from 20 to 70 ppmvd at 10 percent

O_2, and from 2.59 to 41.6 lb/hr. This rather large range of emissions is due to differences in lime kiln design and operation, as well as differences in fuel, which indicates that the chosen limits are mill-specific.

Only one BACT determination was identified as pertaining to petcoke firing. This is also the most recent BACT determination – for Weyerhaeuser Co. Red River Mill. The BACT limit for SO_2 was set at 70 ppmvd at 10 percent O_2, based on a combination of flue gas desulfurization, proper kiln design and operation, and optimized mud washing.

From the review of previous determinations, as shown in Table 5-5, it is evident that all SO_2 BACT determinations for lime kilns have been based on a combination of control methods.

5.3.2 Control Technology Feasibility

The potentially feasible SO_2 controls for the Lime Kiln are shown in Table 5-6. As shown, there are four possible technologies for the control of SO_2 from the Lime Kiln. Each available technique was listed with its associated efficiency estimate, identified as feasible or infeasible, and ranked based on control efficiency. SSCE believes that all of these technologies are feasible, except for the use of low sulfur fuels. The use of low sulfur fuel is not an option since SSCE is requesting the ability to burn high sulfur petcoke in the Lime Kiln.

5.3.3 Potential Control Method Descriptions

Lime muds contain a small amount of sulfur that forms SO_2 when oxidized in the kiln. SO_2 is also formed in lime kilns when fuel oil or petroleum coke is burned as primary fuel. Finally, SO_2 is also formed when non-condensable gases (NCGs) or stripper off-gases (SOGs) containing sulfur are burned in the kiln. NCASI reports the median sulfur content of concentrated NCGs and SOGs as containing 1.1 and 4.2 lb/ADTP (air dried ton pulp), respectively, and lime mud median sulfur contents as 0.2 percent, which translates to about 1.8 lb S/ADTP. Thus, fossil fuels such as fuel oil, kraft mill NCG/SOGs, and soluble sulfides in lime mud can contribute a significant amount of sulfur to the lime kiln input.

However, the regenerated quicklime in the kiln acts as a highly efficient scrubbing agent, and a significant amount of the SO_2 is absorbed into the lime. A venturi scrubber following the kiln can further decrease SO_2 removal because the scrubbing solution becomes highly alkaline from the captured lime dust. NCASI reports that, even though the potential for SO_2 formation in a kiln that burns sulfur-containing fuels with or without NCGs/SOGs is high, most lime kilns emit very low levels of SO_2 (~50 ppm). Some kilns do, however, occasionally emit higher levels of SO_2 (50 to 200 ppm). The specific reasons for this are not known.

NCASI also reports, and is confirmed by Table 5-4, that emission test data show that SO_2 concentrations do not appear to be related to either the fuel type (oil, gas) or the presence or absence of concentrated NCG or SOG burning in the kiln. A preliminary sulfur input-output balance carried out on 25 kilns with wet scrubbers and 7 kilns with electrostatic precipitators (ESPs), with sulfur inputs from fuel oil, NCGs and SOGs, or just lime mud, showed over 95 percent of the SO_2 generated from the oil, NCG/SOGs, or lime mud was captured within the kiln. For kilns with wet scrubbers (majority) that have high SO_2 emissions, alkali addition to the scrubbing fluid could further reduce the SO_2 emissions.

SSCE has identified one add-on control technologies and two pollution prevention techniques. The technical feasibility of each of these control approaches is discussed in the following paragraphs.

Flue Gas Desulfurization/Wet Scrubbers

Flue gas desuflurization (FGD) systems are collection devices that absorb SO_2 into an absorbent in order to remove them from a gas stream. FGD systems generally use a liquid absorbent as the scrubbing media, although dry sorbents can also be employed by injecting them into the flue gas stream. Water usage, wastewater disposal, and solid waste disposal requirements are important factors in the evaluation of a FGD alternative.

Wet scrubbers are collection devices that trap wet particles in order to remove them from a gas stream. They utilize inertial impaction and/or Brownian diffusion as the particle collection mechanism. Wet scrubbers generally use water as the cleaning liquid, but caustic or lime can be added for pH control in order to remove SO_2 from the gas stream. Water usage and wastewater disposal requirements are important factors in the evaluation of a scrubber alternative. Types of scrubbers include spray scrubbers, cyclone scrubbers, packed-bed scrubbers, plate scrubbers, and venturi scrubbers. The most common scrubber is the venturi scrubber because of its simplicity (no moving parts) and high collection efficiency. In this type of scrubber, a gas stream is passed through a venturi section, before which, a low-pressure liquid (usually water) is added to the throat. The liquid is atomized by the turbulence in the throat and begins to collect pollutants impacting the liquid

The Lime Kiln at the Panama City Mill is currently equipped with a venturi scrubber followed by a cyclonic collector. The venturi scrubber primarily uses fresh water as the scrubbing media. Although not designed as an SO_2 control device, the venturi scrubber acts as a highly efficient SO_2 scrubber by virtue of the fact that the scrubber collects lime dust particles which exit the Lime Kiln in the flue gases. This renders the scrubbing liquid as highly alkaline, and the venturi scrubber in essence becomes an FGD system using a lime slurry as the scrubbing media. Two emission tests have been conducted on the Lime Kiln for SO_2. Each test has demonstrated very low emissions (5.6 lb/hr and 0.5 lb/hr) while burning high sulfur (2.4 percent S) No. 6 fuel oil. This demonstrates the venturi scrubber system is nearly 100 percent efficient in removing SO_2 from the flue gas.

Optimal Mud Washing

Beyond the use of a FGD system, some sulfur removal (and therefore SO_2 removal) would be expected with optimal lime mud washing. By filtering and washing soluble sodium and sulfur compounds from the lime mud, ball and ring formation is minimized in the lime kiln, as well as SO_2, TRS, and SAM emissions. These technologies, both individually and combined, are effective in the removal of sulfur compounds in general.

SSCE practices effective lime mud washing techniques on the Lime Kiln. The lime mud is washed as thoroughly as possible, using fresh water. The solids off of the mud filter are tested on a regular basis, the amount of vacuum is monitored and recorded, and the filter is cleaned regularly with acid.

Proper Kiln Design and Operation

The emission of SO_2 from a lime kiln is minimized by employing proper kiln design and operation, which is synonymous with good combustion practices, which ensures that SO_2 in the flue gas can readily absorb into the lime. Efficient combustion is a function of several parameters, including the quantity of oxygen supplied in the burner to support combustion of the fuel and the temperature and residence time inside the kiln to which the products of fuel combustion are exposed. Good combustion control practices manage the process to maintain a consistent level of SO_2 absorption within the kiln. Employing good combustion practices is a technically feasible manner in which to control emissions of SO_2.

Use of Low Sulfur Fuels

The proposed project will enable the Lime Kiln to fire fuel with a higher sulfur fuel than the present fuel. Thus, the project cannot technically include lower sulfur fuels as a control option.

5.3.4 BACT Selection

The only feasible control technologies for SO_2 control in the Lime Kiln are flue gas desulfurization, proper kiln design and operation (good combustion practices/controls) and optimal mud washing. The Lime Kiln will employ these control techniques at the SSCE Panama City Mill. Maximum SO_2 emissions from the Lime Kiln are proposed at 0.183 lb/MMBtu, 32.9 lb/hr and 144.3 TPY when firing petcoke.

TABLE 5-1
SUMMARY OF BACT DETERMINATIONS FOR NITROGEN OXIDE EMISSIONS FROM LIME KILNS

Company Name	ST	Permit No. / RBLC ID	Permit Issue Date	Emission Unit	Throughput	Fuel	Emission Limit ppm	lb/hr	TPY	lb/ton CaO	Control Equipment
Weyerhaeuser Co. - Red River Mill	LA	PSD-LA-562(M-2)	5/24/2006	Lime Kiln No. 2	93 MMBtu/hr	Natural Gas	190.0 @ 10% O_2	--	--	--	Proper Kiln Design and Optimized Combustion Practices
					80 MMBtu/hr	Petroleum Coke	190.0 @ 10% O_2	--	--	--	Proper Kiln Design and Optimized Combustion Practices
Georgia Pacific Corp. - Monticello Mill	MS	1500-00007	3/3/2005	Lime Kiln	146 MMBtu/hr	Natural Gas & NCGs	--	95.6	418.5	--	Good Combustion
Pope & Talbot, Inc. - Halsey Pulp Mill	OR	22-0033	1/22/2004	Lime Kiln	78,320 TPY CaO	Natural Gas	112.0 @ 10% O_2 (3-hr avg)	--	241	--	Good Combustion Control
Georgia Pacific Corp. - Monticello Mill	MS	1500-00007	7/9/2003	Lime Kiln	200 MMBtu/hr	Natural Gas & NCGs	--	95.6	418.5	--	Good Combustion Practices and Kiln Design
Weyerhaeuser Co. - Flint River Operations	GA	2631-193-0013-V-01-1	5/28/2003	Rotary Lime Kiln	370 TPD	No. 6 Fuel Oil	175 @ 10% O_2	--	--	--	--
Georgia Pacific Corp. - Port Hudson Operations	LA	PSD-LA-581 (M-2)	1/25/2002	Lime Kiln No. 1	340 TPD	--	--	48.78	213.66	--	Good Equipment Design and Proper Combustion Techniques
				Lime Kiln No. 2	340 TPD	--	--	38.75	169.74	--	Good Equipment Design and Proper Combustion Techniques
Longview Fiber Company	WA	PSD-01-03	12/10/2001	Lime Kilns 1 & 2	140 TPD CaO each	--	340 @ 10% O_2 (24-hr avg)	--	139	--	--
				Lime Kiln 3	240 TPD CaO	--	340 @ 10% O_2 (24-hr avg)	--	238	--	--
				Lime Kiln 4	250 TPD CaO	--	340 @ 10% O_2 (24-hr avg)	--	248	--	--
				Lime Kiln 5	325 TPD CaO	--	275 @ 10% O_2 (24-hr avg)	--	262	--	--
Bowater - Bowater Coated Paper Division	SC	2400-0005-CO-CT	10/31/2001	Lime Kiln No. 2	-- --	No. 6 Fuel Oil	152 @ 10% O_2	--	--	--	--
Donahue Industries, Inc. - Paper Mill	TX	PSD-TX-437	10/17/2000	Lime Kiln	-- --	Natural Gas & No. 2 Fuel Oil	--	22.7	96.7	--	--
Weyerhaeuser Co.	MS	1680-00044	9/10/1996	Lime Kiln	504 TPD CaO	--	300 @ 3.6% O_2	--	--	--	Effective Operation of the Kiln
Buckey Florida, L.P.	FL	1230001-004-AC / PSD-FL-232	8/13/1996	Lime Kiln	750 TPD CaO	Natural Gas	--	68.44	--	--	Good Combustion & Burner Modifications
Riverwood International Corp.	GA	2631-011-11958	7/11/1996	Lime Kilns 1 & 2	8.4 ton/hr CaO per kiln	--	--	--	--	3.5	Low NO_X Burners
Apple Grove Pulp & Paper Company, Inc.	WV	R14-11	6/17/1996	Lime Kilns (2)	65,600 lb/hr CaO	Natural Gas	100	21.8	--	--	--
Willamette Industries - Marlboro Mill	SC	1680-0043	4/17/1996	Lime Kiln	450 TPD CaO	Natural Gas	175	44.3	194	--	Good Combustion Control

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, December, 2006.

TABLE 5-2
SUMMARY OF BACT DETERMINATIONS FOR NITROGEN OXIDE CONTROL IN LIME KILNS LISTED BY THE EPA

Pollutant	Control Technology
NO_x	No Controls
NO_x	Low-NOx Burners
NO_x	Efficient Operation
NO_x	Good Combustion Control
NO_x	Preventative Maintenance
NO_x	Good Equipment Design

TABLE 5-3
NITROGEN OXIDE CONTROL TECHNOLOGY FEASIBILITY ANALYSIS
FOR THE LIME KILN, SSCE PANAMA CITY

Nitrogen Oxide Control Technology	Estimated Efficiency	Feasible and Demonstrated? (Y/N)	Rank Based on Control Efficiency	Employed by the lime kiln? (Y/N)
Oxidation/Reduction Scrubbing	90%	N	1	N
Selective Catalytic Reduction	60-90%	N	2	N
Selective Non-Catalytic Reduction	30-50%	N	3	N
Low-NO_x Burners	20-30%	Y	4	Y
Flue Gas Recirculation	15-25%	N	5	N
Non-Selective Catalytic Reduction	Varies	N	NA	N
Good Combustion Control / Preventative Maintenance / Efficient Operation	Varies	Y	NA	Y

Note: NA = Not Applicable

TABLE 5-4
SUMMARY OF BACT DETERMINATIONS FOR SULFUR DIOXIDE EMISSIONS FROM LIME KILNS

Company Name	ST	Permit No. / RBLC ID	Permit Issue Date	Emission Unit	Throughput	Fuel	Emission Limit ppm	Emission Limit lb/hr	Emission Limit TPY	Control Equipment
Weyerhaeuser Co. - Red River Mill	LA	PSD-LA-562(M-2)	5/24/2006	Lime Kiln No. 2	93 MMBtu/hr	Natural Gas	70 @ 10% O_2	--	--	Flue Gas Desulfurization, Proper Kiln Design and Operation, and Optimized Mud Washing
					80 MMBtu/hr	Petroleum Coke	70 @ 10% O_2	--	--	Flue Gas Desulfurization, Proper Kiln Design and Operation, and Optimized Mud Washing
Georgia Pacific Corp. - Monticello Mill	MS	1500-00007	3/3/2005	Lime Kiln	146 MMBtu/hr	Natural Gas & NCGs	--	23.4	102.5	Wet (Venturi) Scrubber with Optimal Mud Washing
Georgia Pacific Corp. - Monticello Mill	MS	1500-00007	7/9/2003	Lime Kiln	200 MMBtu/hr	Natural Gas & NCGs	--	12.4	54.9	Scrubber
Georgia Pacific Corp. - Port Hudson Operations	LA	PSD-LA-581 (M-2)	1/25/2002	Lime Kiln No. 1	340 TPD	--	--	3.26	14.27	Wet Scrubbers and Optimal Mud Washing
				Lime Kiln No. 2	340 TPD	--	--	2.59	11.33	Wet Scrubbers and Optimal Mud Washing
Longview Fiber Company	WA	PSD-01-03	12/10/2001	Lime Kilns 1 & 2	140 TPD CaO each	--	20 @ 10% O_2 (3-hr avg)	--	16	--
				Lime Kiln 3	240 TPD CaO	--	20 @ 10% O_2 (3-hr avg)	--	27	--
				Lime Kiln 4	250 TPD CaO	--	20 @ 10% O_2 (3-hr avg)	--	28	--
				Lime Kiln 5	325 TPD CaO	--	20 @ 10% O_2 (3-hr avg)	--	28	--
International Paper - Mansfield Mill	LA	PSD-LA-93 (M-6)	8/14/2001	Lime Kiln	142 MMBtu/hr	--	--	8.4	29.3	CaO and Wet Scrubber using Caustic Solution
Donahue Industries, Inc. - Paper Mill	TX	PSD-TX-437	10/17/2000	Lime Kiln	-- --	Natural Gas & No. 2 Fuel Oil	--	5.4	23	Scrubber and Sweet Natural Gas with a Sulfur Content Limit of 0.3%
Weyerhaeuser Co.	MS	1680-00044	9/10/1996	Lime Kiln	504 TPD CaO	--	50 @ 10% O_2	--	--	Continues Use of Low-Sulfur Fuels
Riverwood International Corp.	GA	2631-011-11958	7/11/1996	Lime Kilns 1 & 2	8.4 ton/hr CaO per kiln	--	--	41.6	--	--
Apple Grove Pulp & Paper Company, Inc.	WV	R14-11	6/17/1996	Lime Kilns (2)	65,600 lb/hr CaO	Natural Gas	30	9.1	--	Fabric Filter
Willamette Industries - Marlboro Mill	SC	1680-0043	4/17/1996	Lime Kiln	450 TPD CaO	Natural Gas	30	10.5	46	Kiln Operation

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, December, 2006.

TABLE 5-5
SUMMARY OF BACT DETERMINATIONS FOR SULFUR DIOXIDE CONTROL IN LIME KILNS LISTED BY THE EPA

Pollutant	Control Technology
SO_2	Flue Gas Desulfurization/Wet Scrubbers
SO_2	Optimal Mud Washing
SO_2	Proper Kiln Design and Operation
SO_2	Use of Low Sulfur Fuels

TABLE 5-6
SULFUR DIOXIDE CONTROL TECHNOLOGY FEASIBILITY
ANALYSIS FOR THE LIME KILN, SSCE PANAMA CITY

Particulate Matter Control Technology	Estimated Efficiency	Feasible and Demonstrated? (Y/N)	Rank Based on Control Efficiency	Employed by the Lime Kiln?
Use of Low Sulfur Fuels	0-100%	N	--	N
Flue Gas Desulfurization/Wet Scrubbers	90%+	Y	1	Y
Proper Kiln Design and Operation	80%	Y	2	Y
Optimal Mud Washing	50%	Y	3	Y

6.0 AIR QUALITY IMPACT ANALYSIS METHODOLOGY

The EPA and FDEP rules require major new facilities and major modifications of existing facilities to EPA regulations (40 CFR 52.21(k)) require that an applicant perform a source impact analysis for each applicable pollutant. This air quality impact analysis is provided to demonstrate that the SSCE Mill's increase in emissions of SO_2 and NO_x due to the Lime Kiln petcoke project will comply with the AAQS and allowable PSD Class I and II increments.

The PSD regulations specifically provide for the use of atmospheric dispersion models in performing impact analyses, estimating baseline and future air quality levels, and determining compliance with AAQS and allowable PSD increments. This section presents the air quality modeling methodology and results.

6.1 General Air Quality Modeling Analysis Approach

The air quality impact analysis of the SSCE mill was conducted following EPA and FDEP modeling guidelines for assessing compliance with the AAQS and PSD increments.

The SSCE mill is located approximately 96 and 112 km, from the PSD Class I areas of the Bradwell Bay and the St. Marks NWA, respectively. Therefore, SO_2 and NO_2 concentrations were predicted at those areas.

More detailed descriptions of the models, along with the emission inventory, meteorological data, and receptor grids used in the analysis are presented in the following sections.

6.2 Significant Impact Analysis Approach

6.2.1 Site Vicinity

A significant impact analysis was performed to determine the magnitude and distance to which the project's SO_2 and NO_2 impacts are predicted to exceed the EPA's significant impact levels at any location beyond the plant's restricted boundaries. The EPA's significant SO_2 impact levels are 25, 5, and 1 microgram per cubic meter ($\mu g/m^3$) for the 3-hour, 24-hour, and annual averaging periods, respectively (refer to Table 3-1). The EPA's significant NO_2 impact level is 1 $\mu g/m^3$ for the annual averaging period.

If the project-only impacts are above the significant impact levels in the vicinity of the facility, then two additional and more detailed air modeling analyses are required. The first analysis is performed to demonstrate compliance with national and Florida AAQS, and the second analysis is performed to demonstrate compliance with allowable PSD Class II increments.

6.2.2 PSD Class I Areas

Generally, if the facility undergoing the modification is within 200 km of a PSD Class I area, then a significant impact analysis is also performed to evaluate the impact due to the project alone at the PSD Class I area. Because the Bradwell Bay and St. Marks NWA are located within 200 km of the SSCE Mill, the maximum predicted SO_2 and NO_2 impacts at those areas are compared to the proposed EPA's SO_2 and NO_2 significant impact levels for PSD Class I areas. The SO_2 significant impact levels are 1.0, 0.2, and 0.1 $\mu g/m^3$ for the 3-hour, 24-hour, and annual averaging periods, respectively (refer to Table 3-1). The NO_2 significant impact level is 0.1 $\mu g/m^3$ for the annual averaging period. These recommended levels have never been promulgated as rules, but are the currently accepted criteria to determine whether a proposed project will incur a significant impact on a PSD Class I area.

If the project-only impacts at the PSD Class I area are predicted to be above the proposed EPA PSD Class I significant impact levels, then an analysis is performed to demonstrate compliance with allowable PSD Class I impacts at the PSD Class I area.

6.3 AIR MODELING ANALYSIS APPROACH

6.3.1 General Procedures

Because there will be a significant increase in SO_2 and NO_x emissions from the Lime Kiln petcoke project, air modeling analyses are required to determine if the project-only impacts are predicted to be greater than the significant impact levels. These analyses consider impacts due to the proposed project alone. Air quality impacts are predicted using 5 years of meteorological data and selecting the highest predicted ground-level concentrations for comparison to the significant impact levels. To predict the maximum annual and short-term concentrations for the proposed project, a high-resolution receptor grid was used along with 5 years of hourly meteorology data. If the modification's impacts are greater than the significant impact levels, the air modeling analyses must consider other nearby sources and background concentrations to predict a total concentration for comparison to AAQS and PSD increments.

Generally, when using 5-years of meteorological data for the analysis, the highest annual and the highest, second-highest (HSH) short-term concentrations are compared to the applicable AAQS and allowable PSD increments. The HSH concentration is calculated for a receptor field by:

1. Eliminating the highest concentration predicted at each receptor,
2. Identifying the second-highest concentration at each receptor, and
3. Selecting the highest concentration among these second-highest concentrations.

The HSH approach is consistent with air quality standards and allowable PSD increments, which permit a short-term average concentration to be exceeded once per year at each receptor.

The AAQS analysis is a cumulative source analysis that evaluates whether the concentrations from all sources will comply with the AAQS. These concentrations include the modeled impacts from sources at the project site and from other nearby facility sources added to a background concentration. The background concentration accounts for sources not included in the modeling analysis.

The PSD Class II analysis is a cumulative source analysis that evaluates whether the concentrations for increment-affecting sources will comply with the allowable PSD Class II increments. These concentrations include the modeled impacts from PSD increment-affecting sources at the project site, plus nearby PSD increment-affecting sources at other facilities.

6.3.2 PSD Class I Analysis

For each pollutant for which a significant impact is predicted at the PSD Class I area, a PSD Class I analysis is required. The PSD Class I analysis is a cumulative source analysis that evaluates whether the concentrations for increment-affecting sources located within 200 km of the PSD Class I area will comply with the allowable PSD Class I increments. These concentrations include the impacts from PSD increment-affecting sources at the project site, plus the impacts from PSD increment-affecting sources at other facilities.

6.4 Model Selection

The selection of an air quality model to calculate air quality impacts was based on its applicability to simulate impacts in areas surrounding the SSCE Mill, as well as at the PSD Class I area of interest.

Two air quality dispersion models were selected and used in these analyses to address air quality impacts for the proposed project. These models were:

- The American Meteorological Society/EPA dispersion model (AERMOD); and
- The California Puff model (CALPUFF).

6.4.1 AERMOD

The area surrounding the Mill is mostly rural and flat. The Mill is located on the eastern side of St. Andrews Bay. A topographic map of the Mill vicinity is presented in the application form. Based on these features, the AERMOD dispersion model (Version 07026) was selected to evaluate the pollutant impacts due to the Mill alone and in combination with other emission sources.

For this analysis, the EPA regulatory default options were used to predict all maximum impacts. These options include:

- Final plume rise at all receptor locations,
- Stack-tip downwash,
- Buoyancy-induced dispersion,
- Default wind speed profile coefficients,
- Default vertical potential temperature gradients, and
- Calm wind processing.

The AERMOD model is maintained by the EPA on its Internet website, Support Center for Regulatory Air Models (SCRAM), within the Technical Transfer Network (TTN). A listing of AERMOD model features is presented in Table 6-1.

The EPA and FDEP recommend that the AERMOD model be used to predict pollutant concentrations at receptors located within 50 km from a source. The AERMOD model calculates hourly concentrations based on hourly meteorological data. The AERMOD model is applicable for most applications since it is recognized as containing the latest scientific algorithms for simulating plume behavior in all types of terrain. For evaluating plume behavior within the building wake of structures, the AERMOD model incorporates the Plume Rise Model Enhancement (PRIME) downwash algorithm developed by the Electric Power Research Institute (EPRI). AERMOD can predict pollutant concentrations for averaging times of annual and 24, 8, 3, and 1 hour.

The AERMOD model was used to predict the maximum pollutant concentrations due to the project in nearby areas surrounding the site. The AERMOD model was also used to predict the maximum pollutant concentrations due to the project's emissions together with appropriate background sources. The predicted concentrations were then compared to the applicable AAQS and PSD Class II increments.

6.4.2 CALPUFF

At distances beyond 50 km from a source, the CALPUFF model, Version 5.711a (EPA, 2003), is recommended for use by the EPA and the Federal Land Manager (FLM). Major features of the CALPUFF model are presented in Table 6-2. The CALPUFF model is a long-range transport model applicable for estimating the air quality impacts in areas that are more than 50 km from a source. The CALPUFF model is maintained by the EPA on the SCRAM internet website. The methods and assumptions used in the CALPUFF model are based on the latest recommendations for modeling analysis as presented in the following reports:

- The Interagency Workgroup on Air Quality Models (IWAQM), Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts (EPA, 1998); and
- The Federal Land Manager's Air Quality Relative Values Workgroup (FLAG) Phase I Report (December, 2000).

In addition, updates to the modeling methods and assumptions were followed based on discussion with the FLM.

The CALPUFF model was used to perform a significant impact analysis for the proposed project at the PSD Class I areas of the Bradwell Bay and St. Marks NWA. In addition, the CALPUFF model was used to predict the proposed project's maximum potential impacts on air quality related values (AQRV) at the PSD Class I areas. Visibility and acid deposition are AQRVs at the St. Marks NWA, while acid deposition is an AQRV of the Bradwell Bay NWA.

6.5 Meteorological Data

6.5.1 AERMOD

Meteorological data used in the AERMOD model to determine air quality impacts consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) offices located at the Apalachicola and Tallahassee

Regional Airports, respectively. Concentrations were predicted using 5 years of hourly meteorological data from 2001 through 2005. The hourly surface observations obtained by the Apalachicola NWS include the marine effects of the Gulf of Mexico and are considered the most representative of the climatology at the project site location.

A unique feature of AERMOD is its incorporation of land use parameters for the processing of boundary layer parameters used for the dispersion. Based on the most recent regulatory guidance, the land use parameters should be representative of the data measurement site (i.e., NWS at Apalachicola). Land use data, representing the average surface roughness, albedo, and Bowen ratio that exist within a 3-km radius of the NWS station at Apalachicola were extracted from 1-degree land use files from the U.S. Geographical Survey (USGS) using the AERSURFACE program. AERSURFACE currently extracts land use data in 12 wind direction sectors covering 360 degrees. These parameters were compared to those estimated in the same manner around the project site. Based on this comparison, the values for all parameters were similar.

6.5.2 CALPUFF

For CALPUFF, the air modeling analysis was conducted using the latest meteorological and geophysical databases which have been developed for use with the most recent versions of CALPUFF. These datasets were prepared by the Visibility Improvement State and Tribal Association of the Southeast (VISTAS) for the purpose of conducting visibility impairment analyses under the Best Available Retrofit Technology (BART) Rule

For this Project, the VISTAS Florida CALMET domain with 4-km spacing (VISTA refined Domain 2) was used. The data cover the period from 2001 to 2003. Golder obtained these datasets from the FDEP. The FDEP and FLM have recommended their use for PSD projects.

6.6 Emission Inventory

6.6.1 Significant Impact Analysis

The emissions for the SSCE Mill used in the significant impact analysis are summarized in Table 6-3. The proposed increases in SO_2 and NO_x emissions for the Lime Kiln were used in the PSD Class II and Class I significant impact analyses. Also shown are the contemporaneous increases in NO_x from the No. 3 Combination Boiler project (18 TPY), which was identified in Table 3-3. The stack and operating parameters are presented in Table 6-4. Source locations are in UTM East and North coordinates UTM Zone 16.

Based on modeling results presented in Section 6.10, the proposed increase in SO_2 air quality impacts for the Lime Kiln petcoke project are predicted to be greater than the PSD Class II significant impact levels. Therefore, additional modeling analyses are required to demonstrate compliance with the AAQS and PSD Class II increments. The maximum SO_2 concentrations due to the increase are predicted to be significant out to 3.6 km from the SSCE Mill for the 3-hour averaging time; 3.4 km from the Mill for the 24-hour averaging time; and 0.9 km from the Mill for the annual averaging time.

The proposed increase in NO_2 air quality impacts for the Lime Kiln petcoke project are also predicted to be greater than the PSD Class II significant impact level. Therefore, additional modeling analyses are required to demonstrate compliance with the AAQS and PSD Class II increments for NO_2. The maximum NO_2 concentrations due to the increase are predicted to be significant out to 1.3 km from the SSCE Mill for the annual averaging time.

For the PSD Class I areas, the proposed increase in SO_2 and NO_2 air quality impacts for the Lime Kiln petcoke project are predicted to be less than the PSD Class I significant impact levels. Therefore, additional modeling analyses to demonstrate compliance with the allowable PSD Class I increments is not required.

6.6.2 AAQS and PSD Class II Analyses

As discussed in Section 6.6.1, the maximum impacts from the proposed Lime Kiln petcoke project were predicted to be greater than the SO2 and NO2 significant impact levels. As a result, a cumulative source analysis is required to demonstrate compliance with the SO2 and NO2 AAQS and allowable PSD Class II increments.

The future maximum source SO2 and NOx emissions for the SSCE Mill are presented in Table 6-5. The basis of the maximum emissions is shown in Appendix D. This includes the maximum emissions for the Nos. 3 and 4 Combination Boilers for each of the two cases of the Recovery Boilers building enclosure. Note that for some cases, individual combination boiler maximum emissions are shown as well as a cap over both combination boilers.

The 1974 PSD baseline emissions for SO2, and the 1988 baseline emissions for NOx, used for determining PSD increment consumption, are presented in Table 6-6. These were obtained from previous SSCE Panama City Mill modeling analyses.

Future and baseline stack parameters and source locations are presented in Table 6-7. The future source emissions and operating parameters were used for the AAQS modeling analysis, while the future and 1974/1988 baseline source emissions and parameters were used for the PSD Class II increment analyses.

Because there were separate 3-hour and 24-hour average SO2 emission rates for the Nos. 3 and 4 Combination Boilers, additional modeling runs were performed for the SSCE Mill and Arizona Chemical Company (ACC) sources only to determine the worst-case Combination Boiler SO2 emission configuration that will result in the highest predicted impacts for each future Recovery Boilers building case. The results of this analysis are summarized in Section 6.12.

For the future case of the future Recovery Boilers building with only one wall enclosed (i.e., future Case 1), the highest, second-highest (HSH) 24-hour SO2 impact occurred with Combination Boiler No. 4 emitting at its maximum 24-hour average emission rate of 887 lb/hr, with the No. 3 Combination Boiler emitting 463 lb/hr, which is the remaining SO2 emissions to stay within the 24-hour cap of 1,350 lb/hr.

For the future case of the future Recovery Boilers building being fully enclosed (i.e., future Case 2), the HSH 24- and 3-hour SO2 impacts occurred when Combination Boiler No 3 was at its maximum SO2 emission rate, with the remaining SO2 emissions under the cap emitted by the No. 4 Combination Boiler (refer to Table 6-5).

The emission inventories for other non-SSCE and ACC facilities were updated from the previous analyses performed for the SSCE Mill (2000, 2002, 2004), source information provided by the FDEP, and from subsequent discussions with FDEP. For the PSD Class II increment analyses, ACC's Thermal Oxidizer and Bay County Energy Systems were identified as the only PSD increment consuming sources in the vicinity of the SSCE Mill. Future SO_2 emissions for ACC's boilers were obtained from the FDEP, while PSD baseline emissions were obtained from previous air modeling analyses. ACC's Boiler No 1 is no longer active, and was therefore assumed to be a PSD increment expanding facility.

FDEP has approved a technique for eliminating sources in the modeling analyses if the source's emissions do not meet an emission criterion. The technique is the Screening Threshold method, developed by the North Carolina Department of Natural Resources and Community Development

(NCDNRCD), and approved by EPA. The method is designed to objectively eliminate from the emission inventory those sources that are unlikely to have a significant interaction with the source undergoing evaluation. In general, sources that should be considered in the modeling analyses are those with emissions greater than a screening threshold value (in TPY) that is calculated by the following criteria:

$$Q = 20 \text{ x } D\text{-}SIA$$

where Q = the screening threshold value (TPY), and

D = The distance (km) from the proposed facility to the source undergoing evaluation for short-term analysis, or

SIA = The distance (km) to the edge of the facility's significant impact area.

For this analysis, the long-term criterion was used since fewer facilities would be eliminated than with the short-term criterion. Also, the total emissions from a facility were used rather than emissions from individual sources for comparison to the screening threshold value. These methods result in a more conservative approach to produce higher-than-expected concentrations. Those facilities with maximum allowable emissions that are below the calculated *screening threshold* were eliminated from further consideration in the AAQS and PSD Class II increment modeling analyses.

A summary of all nearby background SO_2 facilities, their locations with respect to the SSCE Mill, and their allowable emission rates is provided in Table 6-8. Based on the NC screening technique, the facilities to be included in the air modeling analysis are ACC, Granger Asphalt Paving, Gulf Asphalt Corporation, Triangle Construction Road Building, Gulf Power Corporation's Lansing Smith Power Plant, and Bay County Energy Systems. Based on discussions with the FDEP, the Florida Coast Paper facility in Gulf County, which is now owned by SSCE and had been modeled in previous air impact analyses, has been dismantled and is no longer operating. As a result, this facility was not included in the air modeling analysis for assessing compliance with the AAQS but was included as a baseline source for assessing compliance with the PSD increments. The Gulf Power Scholz Power Plant was included because of its high allowable emission rate.

The individual source emission, stack, and operating parameters for sources considered in the AAQS and PSD Class II modeling analyses are presented in Table 6-9. To minimize model run time, identical stacks within facilities were combined into one source and small emission sources within distant facilities were combined into one source.

A summary of all nearby NO_X background facilities, their locations with respect to the SSCE Mill, and their allowable emission rates is provided in Table 6-10. Based on the NC screening technique, the facilities to be included in the air modeling analysis are ACC and the Gulf Power Corporation's Lansing Smith Power Plant. ACC's Thermal Oxidizer and all the combustion turbines at the Lansing Smith Power Plant were assumed to consume PSD increment.

The individual source emission, stack, and operating parameters for sources considered in the AAQS and PSD Class II modeling analyses are presented in Table 6-11. To minimize model run time, identical stacks within facilities were combined into one source and small emission sources within distant facilities were combined into one source.

6.6.3 Class I Analysis

A list of background SO_2 and NO_x PSD facilities was not required because the PSD Class I significant impact levels were not exceeded by the proposed project. The predicted SO_2 and NO_2 impacts at the Class I areas of the Bradwell Bay and St. Marks NWA were used to support the air quality related values (AQRV) analysis presented in Section 7.0. For the Class I impact analysis, the net emissions increase due to the Lime Kiln petcoke project was modeled for each pollutant for various averaging times.

6.7 Building Downwash Effects

In accordance with current EPA policy, the effect of building downwash effects on predicted air quality concentration levels was evaluated. Building dimensions for all key SSCE Mill buildings were entered into the EPA-developed Building Profile Input Program (BPIP, Version 04274) to obtain direction-specific building heights, lengths, and widths for all SSCE Mill point sources. The BPIP model was used in its PRIME mode to generate the appropriate PRIME downwash input dimensions for the AERMOD model. The direction-specific building dimensions are input for Hb and lb for 36 radial directions, with each direction representing a 10-degree sector. The Hb is the building height and lb is the lesser of the building height or projected width. In addition, the AERMOD model inputs three additional building parameters that further describe the building/wake configuration:

- Projected length of the building along the flow direction,
- Along-flow distance from the stack to the center of the upwind face of the projected building, and
- Cross-flow distance from the stack to the center of the upwind face of the projected building.

The building dimensions considered in the air modeling analysis for the SSCE Mill are presented in Table 6-12. The building dimensions reflect SSCE's plans to further enclose the Recovery Boilers building at the Mill. Enclosing the Recovery Boilers building is being performed in two phases and Recovery Boilers building dimensions for both phases are presented in Table 6-12. The first phase includes covering only the east side of the building up to the 173-ft. tier level. The second phase includes fully enclosing all sides of the Recovery Boilers building up to the same 173-ft. tier level. Because each completed enclosure phase increases the amount of building downwash that will be caused by the future Recovery Boilers building, maximum pollutant concentrations from some SSCE Mill sources will increase. As such, air modeling results are presented for both phases of the Recovery Boilers building enclosure for both the significant impact analysis and the SO_2 AAQS analyses. For all other analyses, the air modeling results are presented for the fully enclosed phase (Case 2), which has the worst-case building downwash and air quality impacts.

6.8 Receptor Locations

6.8.1 Site Vicinity

To determine the maximum impact for all pollutants and averaging times in the vicinity of the SSCE Mill, a general Cartesian grid was used to predict concentrations on and beyond the facility property line out to 5 km. Receptors were located at the following intervals and distances from the origin:

- Every 100 m from the site fenceline to 2,000 m;
- Every 250 m from 2,000 to 5,000 m;

Elevations and hill scale heights were calculated for each receptor using the AERMAP (06341) terrain processor and 7.5-minute Digital Elevation Model (DEM) data from the U.S. Geographical Survey.

6.8.2 Class I Area

For the determining project's impacts at the PSD Class I areas, pollutant concentrations were predicted in an array of 132 discrete receptors located at the PSD Class I area of the Bradwell Bay NWA and 101 discrete receptors located at the PSD Class I area of the St. Marks NWA. These receptors were obtained from the National Park Service (NPS).

6.9 Background Concentrations

The methods and assumptions used to determine SO_2 and NO_2 background concentrations for use in the modeling analysis were presented in Section 4.0.

6.10 Air Quality Impact Analysis Results

6.10.1 PSD Class II Significant Impact Analysis

The maximum SO_2 and NO_2 concentrations predicted for the Lime Kiln petcoke project only for comparison to the PSD Class II significant impact levels are presented in Table 6-13. Because the project's SO_2 and NO_2 impacts are predicted to be above the PSD Class II significant impact levels, additional modeling analyses are required to be performed to address compliance with AAQS and PSD Class II increments.

The proposed Project's predicted SO_2 and NO_2 concentrations were determined to be significant out to 3.6 km and 1.3 km, respectively, from the SSCE Mill. The 5-km receptor grid used for the significant impact analysis was also used for the AAQS and PSD Class II increment analyses.

6.11 PSD Class I Significant Impact Analysis

The maximum SO_2 and NO_2 concentrations predicted for the Lime Kiln petcoke project only for the PSD Class I significant impact analysis at the Bradwell Bay NWA and St. Marks NWA are presented in Table 6-14. The maximum 3-hour, 24-hour and annual average SO_2 impacts are predicted to be less than the PSD Class I significant impact levels. The maximum annual average NO_2 impacts are also predicted be less than the PSD Class I significant impact levels. Therefore, additional modeling analyses are not required to address compliance with the SO_2 and NO_2 PSD Class I increments.

6.12 SSCE Combination Boiler Maximum SO_2 Emission Rates

A summary of predicted concentrations for the SSCE Mill and ACC sources only is presented in Table 6-15 for various short-term combination boiler SO_2 emission rates. From Table 6-15, the following combination boiler maximum emission rates result in the highest concentrations for comparing to the AAQS or allowable Class II increments:

- Case 1 (east wall enclosure only): 24-hour cap of 1,350 lb/hr for both boilers with the No. 4 Combination Boiler operating at its maximum 24-hour limit (from BART) of 690 lb/hr.
- Case 2 (full enclosure): 24-hour cap of 1,100 lb/hr for both boilers with the No. 3 Combination Boiler operating at it maximum 24-hour limit of 887 lb/hr (current permit limit).
- Case 2 (full enclosure): 3-hour cap of 1,350 lb/hr for both boilers with the No. 3 Combination Boiler operating at it maximum limit of 887 lb/hr.

The worst-case combination boiler emission cases were included in the cumulative source SO_2 modeling analysis.

6.13 AAQS Impact Analysis

The maximum 3-hour, 24-hour and annual SO_2 concentrations predicted for the modeled AAQS sources are presented in Table 6-16. The modeling results were added to the measured non-modeled background concentration to produce a cumulative total air quality concentration for comparison to the AAQS.

For the future Case 1, the maximum concentrations for the SO_2 AAQS analysis are predicted to be 967, 259, and 37.2 $\mu g/m^3$ for the 3-hour, 24-hour and annual averaging times, respectively. These concentrations are all below the AAQS of 1,300, 260, and 60 $\mu g/m^3$ for the respective averaging times.

For the future Case 2, the maximum SO_2 AAQS concentrations are predicted to be 688, 257, and 35.6 $\mu g/m^3$ for the 3-hour, 24-hour and annual averaging times, respectively. These concentrations are also below the AAQS of 1,300, 260, and 60 $\mu g/m^3$ for the respective averaging times.

The maximum annual NO_2 concentrations predicted for the AAQS analysis are presented in Table 6-17. The highest annual average concentration for Case 2, the fully enclosed Recovery Boilers building, is 32.3 $\mu g/m^3$ which is below the AAQS of 100 $\mu g/m^3$.

6.14 PSD Class II Increment Analysis

The maximum 3-hour, 24-hour and annual SO_2 concentrations predicted for the modeled PSD Class II sources are presented in Table 6-18. The maximum predicted concentrations are 447, 78, and 0.12 $\mu g/m^3$ for the 3-hour, 24-hour and annual averaging times, respectively. These concentrations are below the allowable PSD Class II increments of 512, 91, and 20 $\mu g/m^3$, for the 3-hour, 24-hour, and annual averaging times, respectively.

The maximum annual NO_2 concentrations predicted for the modeled PSD Class II sources are presented in Table 6-19. The maximum concentration is predicted to be 12.5 $\mu g/m^3$ for the annual averaging time, which is below the allowable PSD Class II increment of 25 $\mu g/m^3$.

6.15 Class I Impact Analysis

The maximum SO_2 and NO_2 concentrations predicted for the Lime Kiln petcoke project only at the PSD Class I areas are presented in Table 6-14 for various averaging times.

6.16 Conclusions

Based on the results of the air quality modeling analyses, the maximum SO_2 and NO_2 concentrations due to the proposed increases in SO_2 and NO_x emissions from the Lime Kiln petcoke project, together with those from other air emission sources, will comply with all applicable AAQS and PSD increments.

TABLE 6-1
MAJOR FEATURES OF THE AERMOD MODEL, VERSION 04300

AERMOD Model Features
• Plume dispersion/growth rates are determined by the profile of vertical and horizontal turbulence, vary with height, and use a continuous growth function.
• In a convective atmosphere, uses three separate algorithms to describe plume behavior as it comes in contact with the mixed layer lid; in a stable atmosphere uses a mechanically mixed layer near the surface.
• Polar or Cartesian coordinate systems for receptor locations can be included directly or by an external file reference.
• Urban model dispersion is input as a function of city size and population density; sources can also be modeled individually as urban sources.
• Stable plume rise: uses Briggs equations with winds and temperature gradients at stack top up to half-way up to plume rise. Convective plume rise: plume superimposed on random convective velocities.
• Procedures suggested by Briggs (1974) for evaluating stack-tip downwash.
• Has capability of simulating point, volume, area, and multi-sized area sources.
• Accounts for the effects of vertical variations in wind and turbulence (Brower *et al.*, 1998).
• Uses measured and computed boundary layer parameters and similarity relationships to develop vertical profiles of wind, temperature, and turbulence (Brower *et al.*, 1998).
• Concentration estimates for 1-hour to annual average times.
• Creates vertical profiles of wind, temperature, and turbulence using all available measurement levels.
• Terrain features are depicted by use of a controlling hill elevation and a receptor point elevation.
• Modeling domain surface characteristics are determined by selected direction and month/season values of surface roughness length, Albedo, and Bowen ratio.
• Contains both a mechanical and convective mixed layer height, the latter based on the hourly accumulation of sensible heat flux.
• The method of Pasquill (1976) to account for buoyancy-induced dispersion.
• A default regulatory option to set various model options and parameters to EPA-recommended values.
• Contains procedures for calm-wind and missing data for the processing of short term averages.

Note: AERMOD = The American Meteorological Society and Environmental Protection Agency Regulatory Model.

Source: Paine *et al.*, 2004.

TABLE 6-2

MAJOR FEATURES OF THE CALPUFF MODEL, VERSION 5.711A

CALPUFF Model Features
• Source types: Point, line (including buoyancy effects), volume, area (buoyant, non-buoyant) • Non-steady-state emissions and meteorological conditions (time-dependent source and emission data; gridded 3-dimensional wind and temperature fields; spatially-variable fields of mixing heights, friction velocity, precipitation, Monin-Obukhov length; vertically and horizontally-varying turbulence and dispersion rates; time-dependent source and emission data for point, area, and volume sources; temporal or wind-dependent scaling factors for emission rates) • Efficient sampling function (integrated puff formulation; elongated puff (slug) formation) • Dispersion coefficient options (Pasquill-Gifford (PG) values for rural areas; McElroy-Pooler values (MP) for urban areas; CTDM values for neutral/stable; direct measurements or estimated values) • Vertical wind shear (puff splitting; differential advection and dispersion) • Plume rise (buoyant and momentum rise; stack-tip effects; building downwash effects; partial plume penetration above mixing layer) • Building downwash effects (Huber-Snyder method; Schulman-Scire method) • Complex terrain effects (steering effects in CALMET wind field; puff height adjustments using ISC model method or plume path coefficient; enhanced vertical dispersion used in CTDMPLUS) • Subgrid scale complex terrain (CTSG option) (CTDM flow module; dividing streamline as in CTDMPLUS) • Dry deposition (gases and particles; options for diurnal cycle per pollutant, space and time variations with a resistance model, or none) • Overwater and coastal interaction effects (overwater boundary layer parameters; abrupt change in meteorological conditions, plume dispersion at coastal boundary; fumigation; option to use Thermal Internal Boundary Layers (TIBL) into coastal grid cells) • Chemical transformation options (Pseudo-first-order chemical mechanisms for SO_2, SO_4, HNO_3, and NO_3; Pseudo-first-order chemical mechanisms for SO_2, SO_4, NO, NO_2, HNO_3, and NO_3 (RIVAD/ARM3 method); user-specified diurnal cycles of transformation rates; no chemical conversions) • Wet removal (scavenging coefficient approach; removal rate as a function of precipitation intensity and type) • Graphical user interface • Interface utilities (scan ISC-PRIME and AUSPLUME meteorological data files for problems; translate ISC-PRIME and AUSPLUME input files to CALPUFF input files)

Note: CALPUFF = California Puff Model

Source: EPA, 2004.

TABLE 6-3
EMISSIONS USED IN SIGNIFICANT IMPACT ANALYSIS, SSCE PANAMA CITY

Emission Unit	Unit ID	Past Actual Emissions				Future Potential Emissions			
		Short-Term		Long-Term		Short-Term		Long-Term	
		lb/hr	g/s	TPY	g/s	lb/hr	g/s	TPY	g/s
SO_2 Emissions									
Lime Kiln	LK1	5.6	0.71	22.8	0.66	32.9	4.15	103.0	2.96
NO_x Emissions									
Lime Kiln	LK1	35.6	4.49	184.2	5.30	87.8	11.06	369.1	10.62
No. 3 Combination Boiler	BB3	132.5 [a]	16.70	458.9	13.20	154.0 [b]	19.40	476.8	13.72

Unless otherwise noted, refer to Section 2.0 for basis of emission rates.

[a] Based on stack test conducted in February 2005, prior to the change on the No. 3 Combination Boiler.

[a] Based on stack test conducted in August 2006, after the change on the No. 3 Combination Boiler.

TABLE 6-4
STACK PARAMETERS AND LOCATIONS USED IN THE SIGNIFICANT IMPACT MODELING, SCCE PANAMA CITY MILL

		UTM Coordinates[a]		Stack Parameters				Operating Parameters				
		Easting	Northing	Height		Diameter		Temperature		Flow Rate	Velocity	
Emission Unit	Unit ID	(m)	(m)	(ft)	(m)	(ft)	(m)	(°F)	(K)	(acfm)	(ft/s)	(m/s)
Future Conditions												
Lime Kiln	LK1	632,992	3,335,117	61	18.6	6.26	1.91	166	348	92,800	50.3	15.3
No. 3 Combination Boiler[b]	BB3	632,811	3,335,180	213	64.9	7.75	2.36	160	344	211,100	74.6	22.7
Past Actual Conditions												
Lime Kiln	LK1c	632,992	3,335,117	61	18.6	6.26	1.91	166	348	92,800	50.3	15.3
No. 3 Combination Boiler[c]	BB3	632,811	3,335,180	213	64.9	7.75	2.36	139	333	225,000	79.5	24.2

[a] UTM Coordinate Zone 16, NAD27 Datum

[b] Based on Ocotber 2006 testing, after the proposed change, prorated to 300,000 lb/hr steam.

[c] Based on Ocotber 2005 testing, prior to the proposed change.

TABLE 6-5
MAXIMUM FUTURE SO_2 AND NO_x EMISSIONS FOR THE SSCE PANAMA CITY MILL

Emission Unit		Unit ID	SO_2 Emissions		NO_x Emissions	
			lb/hr	g/s	TPY	g/s
No. 1 Recovery Boiler		RB1	141.6	17.85	295.3	8.49
No. 2 Recovery Boiler		RB2	141.6	17.85	295.3	8.49
No. 1 Smelt Dissolving Tank		SDT1	0.31	0.04	5.4	0.16
No. 2 Smelt Dissolving Tank		SDT2	0.31	0.04	5.4	0.16
Lime Kiln		LK1	32.9	4.15	472.2	13.58
No. 3 Combination Boiler	3-hour	BB3	1,592.4	200.6	--	--
No. 4 Combination Boiler	3-hour	BB4	1,183.0	149.1	--	--
Case 1- No. 3 CB at Max						
No. 3 Combination Boiler	24-hour	BB3	887.0	111.8	773.9	22.26
No. 4 Combination Boiler	24-hour	BB4	463.0	58.3	1,462.9	42.08
		Total	1,350.0	170.1		
Case 1 - No. 4 CB at Max						
No. 3 Combination Boiler	24-hour	BB3	660.0	83.2	773.9	22.26
No. 4 Combination Boiler[a]	24-hour	BB4	690.0	86.9	1,462.9	42.08
		Total	1,350.0	170.1		
Case 2- No. 3 CB at Max						
No. 3 Combination Boiler	24-hour	BB3	887.0	111.8	773.9	22.26
No. 4 Combination Boiler	24-hour	BB4	213.0	26.8	1,462.9	42.08
		Total	1,100.0	138.6		
Case 2 - No. 4 CB at Max						
No. 3 Combination Boiler	24-hour	BB3	410.0	51.7	773.9	22.26
No. 4 Combination Boiler[a]	24-hour	BB4	690.0	86.9	1,462.9	42.08
		Total	1,100.0	138.6		

[a] SO_2 emissions based on BART application.

Note: Refer to Table D-1 in Appendix D for derivation of emission rates.
Case 1 denotes installation of one wall on Recovery Boilers building.
Maximum SO_2 emissions for Nos. 3 and 4 Combination Boilers combined limited to 1,350 lb/hr.
Case 2 denotes installation of full enclosure on Recovery Boilers building.
Maximum SO_2 emissions for Nos. 3 and 4 Combination Boilers combined limited to 1,100 lb/hr.

TABLE 6-6
1974/1988 PSD BASELINE EMSSIONS USED IN THE MODELING ANALYSIS
FOR THE SCCE PANAMA CITY MILL

Emission Unit	Unit ID	1974 Baseline SO_2 Emissions		1988 Baseline NO_x Emissions	
Short-Term Emissions		lb/hr	g/s		
No. 1 Recovery Boiler	RB1b	121.5	15.3		
No. 2 Recovery Boiler	RB2b	121.5	15.3		
No. 1 Smelt Dissolving Tank	SDT1b	7.5	0.9		
No. 2 Smelt Dissolving Tank	SDT2b	7.5	0.9		
Lime Kiln	LK1b	3.2	0.4		
No. 4 Power Boiler[a]	PB45b	205.5	25.9		
No. 5 Power Boiler[a]		212.0	26.7		
No. 6 Power Boiler	PB6b	524.0	66.0		
No. 3 Combination Boiler	BB3b	342.9	43.2		
No. 4 Combination Boiler	BB4b	546.0	68.8		
TOTALS		2,091.6	263.5		
Long-Term Emissions		TPY	g/s	TPY	g/s
No. 1 Recovery Boiler	RB1b	452.8	13.0	276.9	8.0
No. 2 Recovery Boiler	RB2b	452.8	13.0	287.4	8.3
No. 1 Smelt Dissolving Tank	SDT1b	26.4	0.8	7.0	0.2
No. 2 Smelt Dissolving Tank	SDT2b	26.4	0.8	7.8	0.2
Lime Kiln	LK1b	12.0	0.3	137.0	3.9
No. 4 Power Boiler[a]	PB45b	773.9	22.3	--	--
No. 5 Power Boiler[a]		773.9	22.3	97.5	2.8
No. 6 Power Boiler	PB6b	1,934.7	55.7	--	--
No. 3 Combination Boiler	BB3b	1,335.9	38.4	228.3	6.6
No. 4 Combination Boiler	BB4b	2,114.8	60.8	484.3	13.9
TOTALS		7,903.6	227.4	1,526.2	43.9

[a] Nos. 4 and 5 Power Boilers shared a common stack and were modeled as one source.
Reference: Pulp Production Increase Application response letter dated Feb. 18, 2002.

TABLE 6-7
STACK PARAMETERS AND LOCATIONS USED IN THE AIR MODELING ANALYSIS FOR THE SCCE PANAMA CITY MILL

		UTM Coordinates[a]		Stack Parameters				Operating Parameters				
		Easting	Northing	Height		Diameter		Temperature		Flow Rate	Velocity	
Emission Unit	Unit ID	(m)	(m)	(ft)	(m)	(ft)	(m)	(°F)	(K)	(acfm)	(ft/s)	(m/s)
Future Conditions												
No. 1 Recovery Boiler[b]	RB1	632,870	3,335,118	233	71.0	6.50	1.98	300	422	167,422	84.1	25.6
No. 2 Recovery Boiler[b]	RB2	632,864	3,335,151	233	71.0	6.50	1.98	310	428	163,002	81.9	25.0
No. 1 Smelt Dissolving Tank	SDT1	632,838	3,335,146	233	71.0	6.00	1.83	153	340	50,399	29.7	9.1
No. 2 Smelt Dissolving Tank	SDT2	632,851	3,335,161	233	71.0	6.00	1.83	150	339	43,458	25.6	7.8
Lime Kiln	LK1	632,992	3,335,117	61	18.6	6.26	1.91	166	348	92,800	50.3	15.3
No. 3 Combination Boiler	BB3	632,811	3,335,180	213	64.9	7.75	2.36	160	344	211,100	74.6	22.7
No. 4 Combination Boiler	BB4	632,805	3,335,173	213	64.9	7.83	2.39	147	337	229,767	79.5	24.2
SO_2 PSD Baseline (1974) Conditions												
No. 1 Recovery Boiler[b]	RB1b	632,851	3,335,136	233	71.0	6.42	1.96	310	428	170,920	88.0	26.8
No. 2 Recovery Boiler[b]	RB2b	632,864	3,335,151	233	71.0	6.42	1.96	320	433	157,907	81.3	24.8
No. 1 Smelt Dissolving Tank	SDT1b	632,838	3,335,146	233	71.0	6.00	1.83	150	339	28,670	16.9	5.2
No. 2 Smelt Dissolving Tank	SDT2b	632,851	3,335,161	233	71.0	6.00	1.83	140	333	29,518	17.4	5.3
Lime Kiln	LK1b	632,992	3,335,117	61	18.6	8.00	2.44	160	344	101,335	33.6	10.2
No. 4 Power Boiler[c]	PB45b	632,794	3,335,161	296	90.2	12.00	3.66	400	478	168,289	24.8	7.6
No. 5 Power Boiler[c]		632,794	3,335,161	296	90.2	12.00	3.66	400	478	168,289	24.8	7.6
No. 6 Power Boiler	PB6b	632,887	3,335,157	241	73.5	8.00	2.44	430	494	107,367	35.6	10.9
No. 3 Combination Boiler	BB3b	632,917	3,335,243	150	45.7	8.50	2.59	440	500	164,107	48.2	14.7
No. 4 Combination Boiler	BB4b	632,925	3,335,214	150	45.7	7.34	2.24	470	516	153,853	60.6	18.5
NO_x PSD Baseline (1988) Conditions												
No. 1 Recovery Boiler[b]	RB1b	632,851	3,335,136	233	71.0	6.42	1.96	310	428	170,920	88.0	26.8
No. 2 Recovery Boiler[b]	RB2b	632,864	3,335,151	233	71.0	6.42	1.96	320	433	157,907	81.3	24.8
No. 1 Smelt Dissolving Tank	SDT1b	632,838	3,335,146	233	71.0	6.00	1.83	150	339	28,670	16.9	5.2
No. 2 Smelt Dissolving Tank	SDT2b	632,851	3,335,161	233	71.0	6.00	1.83	140	333	29,518	17.4	5.3
Lime Kiln	LK1b	632,992	3,335,117	61	18.6	8.00	2.44	160	344	101,335	33.6	10.2
No. 5 Power Boiler[c]		632,794	3,335,161	296	90.2	12.00	3.66	400	478	168,289	24.8	7.6
No. 3 Combination Boiler	BB3b	632,917	3,335,243	213	64.9	7.83	2.39	149	338	222,751	77.1	23.5
No. 4 Combination Boiler	BB4b	632,925	3,335,214	213	64.9	7.83	2.39	143	335	258,865	89.6	27.3

[a] UTM Coordinate Zone 16, NAD27 Datum

[b] Source has two identical stacks. Parameters are for each stack.

[c] Nos. 4 and 5 Power Boilers shared a common stack and were modeled as one source.

Reference: PSD baseline data is from Pulp Production Increase application response letter dated Feb. 18, 2002.

TABLE 6-8
SUMMARY OF SO_2 EMITTING FACILITIES IN THE VICINITY OF THE SSCE PANAMA CITY LIME KILN PETCOKE PROJECT

Plant ID	Facility Name	UTM Coordinates East (km)	UTM Coordinates North (km)	Relative to SSCE Panama City [a] X (km)	Y (km)	Direction (deg.)	Distance (km)	Maximum SO_2 Emissions (TPY)	Q, (TPY) Emission Threshold [b,c] Dist x 20	Include in Modeling Analysis ?
Modeling Area										
0050001	Arizona Cl	633.1	3,335.4	0.3	0.3	45.0	0.4	58	NA	Yes
0050045	Gulf Termi	630.5	3,335.2	-2.3	0.1	273.2	2.3	4	5.9	No
Screening Area										
7775294	Anderson (	630.1	3,338.3	-2.7	3.2	320.0	4.2	70	43.0	Yes
7770062	C.W. Robe	628.1	3,340.3	-4.7	5.2	317.7	7.0	90	100.0	No
0050008	G.A.C. Co	634.9	3,343.7	2.1	8.6	13.7	8.9	74	137.1	No
0050014	Gulf Powe	625.0	3,349.1	-7.8	14.0	330.9	16.0	45,712	279.9	Yes
0050031	Bay Count	642.4	3,349.5	9.6(	14.4	33.7	17.3	314	306.1	Yes
7774810	American !	622.1	3,362.2	-10.7	27.1	338.4	29.1	34	542.2	No
0450002	Arizona Cl	661.9	3,299.6	29.1	-35.5	140.7	45.9	97	877.1	No
Extended Screening Area										
1330005	Florida Ga	610.6	3,394.2	-22.2	59.1	339.4	63.1	11	1,222.6	No
7775118	C.W. Robe	584.1	3,377.8	-48.8	42.7	311.2	64.8	90	1,256.3	No
7770142	Apac-Sout	578.1	3,375.7	-54.7	40.6	306.6	68.1	23	1,322.0	No
0630031	White Con	654.2	3,403.5	21.4	68.4	17.4	71.7	96	1,393.4	No
0630002	Baxter Asp	666.7	3,406.9	33.9	71.8	25.3	79.4	41	1,548.0	No
0770009	CQ Biopov	709.4	3,358.1	76.6	23.0	73.3	80.0	24	1,559.6	No
7774811	C. W. Rob	711.0	3,365.2	78.2	30.1	69.0	83.7	47	1,634.8	No
7775017	White Con	579.5	3,400.5	-53.3	65.4	320.8	84.4	99	1,647.4	No
7770021	#412 Asph	577.2	3,400.7	-55.6	65.6	319.7	86.0	56	1,679.8	No
7770040	Apac-Sout	577.2	3,400.7	-55.6	65.6	319.7	86.0	91	1,679.9	No
0770010	Ga-Pacific	713.5	3,369.5	80.7	34.4	66.9	87.7	30	1,714.5	No
0630045	Waste Ma	650.5	3,423.1	17.7	88.0	11.4	89.7	65	1,754.9	No
0630014	Gulf Powe	702.4	3,395.8	69.6	60.7	48.9	92.4	34,900	1,807.0	Yes
0390029	Florida Ga	719.9	3,377.4	87.1	42.3	64.1	96.8	41	1,896.6	No
0390004	Florida De	707.6	3,399.2	74.8	64.1	49.4	98.5	202	1,930.2	No
0910064	Hurlburt Fi	529.7	3,364.7	-103.1	29.6	286.0	107.3	43	2,105.4	No

[a] The approximate center of the SSCE Par East 632.80 km
North 3335.10 km

[b] The modeling area or significant impact area (SIA) f 4.00 km

TABLE 6-9
SUMMARY OF SO_2 SOURCES INCLUDED IN THE AIR MODELING FOR THE AAQS AND PSD CLASS II COMPLIANCE ANALYSES
SSCE PANAMA CITY LIME KILN PETCOKE PROJECT

Facility ID	Facility Name Emission I	EU ID	Model ID Name	UTM Location X (m)	UTM Location Y (m)	Height ft	Height m	Diameter ft	Diameter m	Temperature °F	Temperature K	Velocity ft/s	Velocity m/s	SO_2 Emission Rate (lb/hr)	SO_2 Emission Rate (g/sec)	PSD Consuming PSD Source? (EXP/CON)	Modeled in AAQS	Modeled in PSD Class II
0050001	Arizona Chemical Company - Panama City																	
	Boiler #2	15	ACPCB2	632,925	3,335,214	100.0	30.5	4.0	1.22	380	466.5	57.0	17.37	11.9	1.50	CON	YES	YES
	Thermal O	34	ACPCTO	632,889	3,335,209	120.0	36.6	3.8	1.14	1000	810.9	7.5	2.29	1.3	0.16	CON	YES	YES
0050045	Gulf Terminal Corporation																	
	3 Dual Fue	17	GTCSB	630,510	3,335,230	5.0	1.5	0.4	0.12	72	295.4	5.0	1.52	0.8	0.10	NO	YES	NO
7775294	Anderson Columbia Co Inc - Plant #4																	
	Astech Mo	1	ACPCAP	630,130	3,338,280	30.0	9.1	45.0	13.72	250	394.3	0.5	0.15	15.9	2.00	NO	YES	NO
7770062	C.W. Roberts Contracting Inc - Panama City Plant																	
	CMI Conti	2	CWRPCAF	628,090	3,340,280	44.0	13.4	5.1	1.54	215	374.8	40.6	12.37	20.5	2.58	NO	YES	NO
0050014	Gulf Power Company - Lansing Smith Plant																	
	Boiler #1 -	1	GPLSB1	625,030	3,349,080	199.0	60.7	18.0	5.49	260	399.8	102.7	31.30	4,084.1	514.59	NO	YES	NO
	Boiler #2 -	2	GPLSB2	625,030	3,349,080	199.0	60.7	18.0	5.49	260	399.8	102.7	31.30	6,064.7	764.14	NO	YES	NO
	Combustio	3	GPLSCT	625,030	3,349,080	33.0	10.1	13.7	4.18	1200	922.0	120.9	36.85	263.6	33.21	NO	YES	NO
	Unit #4: 1	4	GPLSU4	625,030	3,349,080	121.0	36.9	16.8	5.12	186	358.7	73.8	22.49	12.7	1.60	NO	YES	NO
	Unit #5: 1	5	GPLSU5	625,030	3,349,080	121.0	36.9	16.8	5.12	186	358.7	73.8	22.49	12.7	1.60	NO	YES	NO
0050031	Bay County Board of County Commissioners																	
	MSW Con	1	BCBCU1	642,400	3,349,500	125.0	38.1	4.5	1.37	400	477.6	58.7	17.89	35.8	4.51	CON	YES	YES
	MSW com	2	BCBCU2	642,400	3,349,500	125.0	38.1	4.5	1.37	400	477.6	58.7	17.89	35.8	4.51	CON	YES	YES
0630014	Gulf Power Company - Scholz Electric Generating Plant																	
	Boiler #1 (	1	GFCB1	702,400	3,395,800	150.0	45.7	13.5	4.11	330	438.7	40.0	12.19	3,984.0	501.98	NO	YES	NO
	Boiler #2 (	2	GFCB2	702,400	3,395,800	150.0	45.7	13.5	4.11	330	438.7	40.0	12.19	3,984.0	501.98	NO	YES	NO

Note:
EXP = PSD expanding source
CON = PSD consuming source
NO = Baseline Source, does not affect PSD increment

TABLE 6-10
SUMMARY OF NO_X EMITTING FACILITIES IN THE VICINITY OF THE SSCE PANAMA CITY LIME KILN PETCOKE PROJECT

Plant ID	Facility Name	UTM Coordinates East (km)	UTM Coordinates North (km)	Relative to SSCE Panama City [a] X (km)	Y (km)	Direction (deg.)	Distance (km)	Maximum NOx Emissions (TPY)	Q, (TPY) Emission Threshold [b,c] (D - SIA) x 20	Include in Modeling Analysis ?
Modeling Area										
0050001	Arizona Chemical Company - Panama City Facility	633.1	3,335.4	0.3	0.3	45.0	0.4	198	NA	Yes
Screening Area										
0050088	Florida Vantage Cremation Svc	636.1	3,336.6	3.3	1.5	65.2	3.6	3	32.5	No
7775294	Anderson Columbia Co, Inc - Plant #4	630.1	3,338.3	-2.7	3.2	320.0	4.2	14	43.0	No
0050081	Wilson Funeral Home	627.5	3,339.1	-5.3	4.0	307.4	6.6	3	93.0	No
7770062	C W Roberts Contracting Inc - Panama City Plant	628.1	3,340.3	-4.7	5.2	317.7	7.0	14	100.0	No
0050024	United States Air Force	635.6	3,326.8	2.8	-8.3	161.4	8.8	70	135.2	No
0050008	G.A.C. Contractors Inc	634.9	3,343.7	2.1	8.6	13.7	8.9	13	137.1	No
0050078	City of Lynn Haven	632.1	3,344.4	-0.7	9.3	355.5	9.3	3	146.6	No
0050014	Gulf Power Company - Lansing Smith Plant	625.0	3,349.1	-7.8	14.0	330.9	16.0	11,645	279.9	Yes
0050031	Bay County Board of County Commissioners	642.4	3,349.5	9.6	14.4	33.7	17.3	236	306.1	No
0050028	SAGE Lumber Company LLC	609.9	3,354.3	-22.9	19.2	310.0	29.9	54	558.5	No
0450001	Premier Chemicals, LLC	664.7	3,302.8	31.9	-32.3	135.4	45.4	38	867.9	No
0450002	Arizona Chemical Company - Port St Joe Facility	661.9	3,299.6	29.1	-35.5	140.7	45.9	62	877.1	No
Extended Screening Area										
0770007	North Florida Lumber	689.5	3,358.9	56.7	23.8	67.3	61.5	29	1,190.4	No
7774815	White Construction Company, Inc - Trawick Pit	633.9	3,397.5	1.1	62.4	1.0	62.4	25	1,207.6	No
1330005	Florida Gas Transmission Company - Station 13	610.6	3,394.2	-22.2	59.1	339.4	63.1	1,109	1,222.6	No
7775118	C W Roberts Contracting Inc - Asphalt Plant 3	584.1	3,377.8	-48.8	42.7	311.2	64.8	19	1,256.3	No
1310019	Perdue Farms Inc	590.1	3,399.3	-42.7	64.2	326.4	77.1	32	1,502.1	No
0770009	CQ Biopower Producers, LLC	709.4	3,358.1	76.6	23.0	73.3	80.0	473	1,559.6	No
0630028	Spanish Train Lumber Co, LLC	681.3	3,399.1	48.5	64.0	37.2	80.3	71	1,566.2	No
7774811	C. W. Roberts Contracting, Inc - Hosford Asphalt Plant	711.0	3,365.2	78.2	30.1	69.0	83.7	12	1,634.8	No
7775017	White Construction Company, Inc - Defuniak Drum Mix Asphalt Plant	579.5	3,400.5	-53.3	65.4	320.8	84.4	25	1,647.4	No
0370008	Franklin County Board of Commissioners	708.6	3,297.1	75.8	-38.0	116.6	84.8	59	1,656.5	No
7770049	White Construction Company, Inc - Jones Pit Facility	657.8	3,417.2	25.0	82.1	16.9	85.8	29	1,676.4	No
0770010	Georgia-Pacific Corp - Hosford OSB Plant	713.5	3,369.5	80.7	34.4	66.9	87.7	417	1,714.5	No
0630045	Waste Management of Leon County, Inc	650.5	3,423.1	17.7	88.0	11.4	89.7	186	1,754.9	No
0630011	Rex Lumber, LLC	639.6	3,425.9	6.8	90.8	4.3	91.0	91	1,780.5	No
0630014	Gulf Power Company - Scholz Electric Generating Plant	702.4	3,395.8	69.6	60.7	48.9	92.4	1,349	1,807.0	No
0910031	United States Air Force	542.6	3,369.6	-90.2	34.5	290.9	96.6	32	1,891.5	No
0390029	Florida Gas Transmission Company - Station 14	719.9	3,377.4	87.1	42.3	64.1	96.8	1,403	1,896.6	No
0390004	Florida Dept of Children & Families	707.6	3,399.2	74.8	64.1	49.4	98.5	84	1,930.2	No
0910064	Hurlburt Field, USAF	529.7	3,364.7	-103.1	29.6	286.0	107.3	47	2,105.4	No

[a] The approximate center of the SSCE Panama City facility is located at UTM Coordinates: 632.80 3335.10

[b] The modeling area or significant impact area (SIA) for the project is estimated to be 2.00

[c] Distance from SSCE Mill to Arizona Chemical Company obtained from Arizona Chemical Co. plot plan.

TABLE 6-11
SUMMARY OF NO_X SOURCES INCLUDED IN THE AIR MODELING FOR THE AAQS AND PSD CLASS II COMPLIANCE ANALYSES
SSCE PANAMA CITY LIME KILN PETCOKE PROJECT

Facility ID	Facility Name / Emission Unit Description	EU ID	CALPUFF ID Name	UTM Location X (m)	UTM Location Y (m)	Stack Parameters: Height ft	Height m	Diameter ft	Diameter m	Temperature °F	Temperature K	Velocity ft/s	Velocity m/s	NO_x Emission Rate (lb/hr)	NO_x Emission Rate (g/sec)	PSD Consuming PSD Source? (EXP/CON)	Modeled in AAQS	Modeled in PSD Class II
0050001	Arizona Chemical Company - Panama City Facility																	
	Boiler #2	15	ACPCB2	633,100	3,335,400	100.0	30.5	4.0	1.22	380	466.5	57.0	17.37	33.1	4.17	No	Yes	No
	Thermal Oxidizer with caustic scrubber	34	ACPCTO	633,100	3,335,400	120.0	36.6	3.8	1.14	1000	810.9	7.5	2.29	1.6	0.20	CON	Yes	Yes
0050014	Gulf Power Company - Lansing Smith Plant																	
	Boiler Number 1 - 1,944.8 MMBtu/hr (Phase II Acid Rain)	1	GPLSB1	625,030	3,349,080	199.0	60.7	18.0	5.49	260	399.8	102.7	31.30	1,205.8	151.93	No	Yes	No
	Boiler Number 2 - 2,246.2 MMBtu/hr (Phase II Acid Rain)	2	GPLSB2	625,030	3,349,080	199.0	60.7	18.0	5.49	260	399.8	102.7	31.30	988.3	124.53	No	Yes	No
	Combustion Turbines A&B - 542 MMBtu/hr Peaking Unit	3	GPLSCTAB	625,030	3,349,080	33.0	10.1	13.7	4.18	1200	922.0	120.9	36.85	378.3	47.67	CON	Yes	Yes
	Unit 4: 170 MW CT1 with HRSG and duct burner	4	GPLSU4	625,030	3,349,080	121.0	36.9	16.8	5.12	186	358.7	73.8	22.49	113.2	14.26	CON	Yes	Yes
	Unit 5: 170 MW CT2 with HRSG and duct burner	5	GPLSU5	625,030	3,349,080	121.0	36.9	16.8	5.12	186	358.7	73.8	22.49	113.2	14.26	CON	Yes	Yes

TABLE 6-12
SSCE MILL BUILDING STRUCTURES CONSIDERED IN THE AIR MODELING ANALYSIS

Structure	Height		Length		Width	
	ft	m	ft	m	ft	m
Future Recover Boiler Building Cases						
Case 1 - Single Wall						
Recovery Boilers 1+2 (upper tier)	173	52.73	100	30.48	92	28.04
Recovery Boilers 1+2 (lower tier)	66	20.12	134	40.84	112	34.14
Recovery Boiler 1 ESP [b]	214	65.23	100	30.48	53	16.15
Recovery Boiler East Wall	173	52.73	134	40.84	0.2	0.06
Case 2 - Full Enclosure						
Recovery Boilers 1+2 [a]	173	52.73	134	40.84	112	34.14
Recovery Boiler 1 ESP [b]	214	65.23	50	15.24	53	16.15
Other Future Buildings						
Bleach Plant	71	21.64	123	37.47	78	23.77
Engineering & Maintenance	35	10.67	315	96.00	55	16.91
Offices/Storeroom	35	10.67	361	110.15	54	16.46
White Liquor Clarifier Tanks	29	8.69	199	60.78	90	27.42
Pulp Mill	83	25.30	352	107.40	193	58.96
Paper Mill	40	12.19	1,396	425.55	235	71.76
Combination Boilers Building	83	25.30	97	29.71	140	42.66
Recovery Boiler Cooling Tower (R)	38	11.58	75	22.95	63	19.12
Pulp Mill Cooling Tower (P)	38	11.58	75	22.95	63	19.13
ClO_2 Cooling Tower (C)	31	9.45	50	15.31	33	9.95
ClO_2 Building	81	24.71	95	29.07	50	15.31
PSD Baseline Only Buildings						
Power Boiler 6 Building [c]	150	45.72	35	10.52	53	16.01
Recovery Boilers 1+2 (upper tier)	173	52.73	100	30.48	92	28.04
Recovery Boilers 1+2 (lower tier)	66	20.12	134	40.84	112	34.14
Recovery Boiler 1 + 2 ESP [b]	214	65.23	100	30.48	53	16.15

Note: For a multiple-shaped structure, the length and width are based on the portion of the structure that has the maximum length or width. Length based on plant axis from southwest to northeast (40 degrees clockwise from north); width based on plant axis from northwest to southeast.

Footnotes:

[a] Reflects planned enclosure of the Recovery Boilers building.

[b] Sits atop the Recovery Boilers building.

[c] Existed during SO_2 baseline (1974) only.

TABLE 6-13
PSD CLASS II SIGNIFICANT IMPACT ANALYSIS FOR LIME KILN PETCOKE PROJECT

Pollutant	Averaging Time	Concentration [a] (µg/m³)	Receptor Location [b] Easting (m)	Northing (m)	Time Period (YYMMDDHH)	EPA Significant Impact Level (µg/m³)
Case 1 - Recovery Boiler Building with 1 Wall to 173'						
SO_2	Annual	2.24	632,835	3,335,216	01123124	1
		2.97	632,835	3,335,216	02123124	
		2.15	632,835	3,335,216	03123124	
		2.42	632,835	3,335,216	04123124	
		2.46	632,835	3,335,216	05123124	
	24-hour	23.4	633,470	3,335,010	01070924	5
		23.2	632,835	3,335,216	02100324	
		24.7	633,470	3,334,910	03071124	
		30.1	633,570	3,334,910	04052524	
		28.0	632,835	3,335,216	05082824	
	3-hour	95.7	633,470	3,334,910	01072403	25
		80.0	633,470	3,334,910	02102121	
		121.3	633,470	3,334,910	03071124	
		143.2	633,570	3,334,910	04052524	
		125.1	633,570	3,334,910	05091803	
NO_2	Annual	3.46	632,835	3,335,216	01123124	1
		4.59	632,835	3,335,216	02123124	
		3.32	632,835	3,335,216	03123124	
		3.74	632,835	3,335,216	04123124	
		3.80	632,835	3,335,216	05123124	
Case 2 - Recovery Boiler Building Fully Enclosed						
SO_2	Annual	2.24	632,835	3,335,216	01123124	1
		2.97	632,835	3,335,216	02123124	
		2.15	632,835	3,335,216	03123124	
		2.41	632,835	3,335,216	04123124	
		2.45	632,835	3,335,216	05123124	
	24-hour	24.1	633,470	3,335,010	01070924	5
		23.2	632,835	3,335,216	02100324	
		25.3	633,470	3,334,910	03071124	
		30.7	633,570	3,334,910	04052524	
		28.0	632,835	3,335,216	05082824	
	3-hour	98.2	633,470	3,334,910	01072403	25
		82.9	633,470	3,334,910	02102121	
		124.0	633,470	3,334,910	03071124	
		145.7	633,570	3,334,910	04052524	
		126.6	633,570	3,334,910	05091803	
NO_2	Annual	3.46	632,835	3,335,216	01123124	1
		4.59	632,835	3,335,216	02123124	
		3.32	632,835	3,335,216	03123124	
		3.73	632,835	3,335,216	04123124	
		3.80	632,835	3,335,216	05123124	

Note: YY = Year; MM = Month; DD = Day; HH = Hour.

[a] Concentrations are predicted with AERMOD model and five years of surface meteorological data from the National Weather Service (NWS) station at Apalachicola Regional Airport and upper air soundings from the NWS station at Tallahasee, 2001 to 2005.

[b] UTM Coordinates in Zone 16, NAD27 Datum.

TABLE 6-14
PSD CLASS I SIGNIFICANT IMPACT ANALYSIS FOR LIME KILN PETCOKE PROJECT

Pollutant	Averaging Time	Concentration[a] (μg/m³) for Year 2001	2002	2003	Proposed EPA Class I Significant Impact Level (μg/m³)
Bradwell Bay NWA					
Sulfur Dioxide	Annual	0.0015	0.0010	0.0014	0.1
	24-hour	0.030	0.019	0.026	0.2
	3-hour	0.090	0.082	0.085	1.0
Nitrogen Dioxide	Annual	0.0022	0.0014	0.0021	0.1
Saint Marks NWA					
Sulfur Dioxide	Annual	0.0011	0.0008	0.0009	0.1
	24-hour	0.022	0.022	0.017	0.2
	3-hour	0.076	0.076	0.057	1.0
Nitrogen Dioxide	Annual	0.0014	0.0011	0.0011	0.1

[a] Based on the CALPUFF (5.711a) model and the 4-km VISTAS Domain for Florida, 2001-2003 .

TABLE 6-15
MAXIMUM SSCE/ACC SO_2 IMPACTS FOR VARIOUS COMBINATION BOILER EMISSION RATES

Combination Boiler Emission Limits (lb/hr)	Averaging Time	Concentration [a] (µg/m^3)	Receptor Location [b] Easting (m)	Receptor Location [b] Northing (m)	Time Period (YYMMDDHH)
Case 1 - Recovery Boilers Building With East Wall to 173'					
CB3 at 24-Hour Maximum					
CB3 - 887	HSH 24-hour	188	632,370	3,335,610	01112724
CB4 - 463		200	632,170	3,335,310	02090724
		200	632,370	3,335,410	03122924
		190	632,270	3,335,410	04101024
		231	632,270	3,335,410	05092324
BB4 at 24-Hour Maximum					
CB3 - 660	HSH 24-hour	187	632,370	3,335,610	01112724
CB4 - 690		206	632,170	3,335,310	02090724
		199	632,370	3,335,410	03122924
		189	632,270	3,335,410	04101024
		235	632,270	3,335,410	05092324
Case 2 - Recovery Boilers Building Fully Enclosed					
CB3 at 24-Hour Maximum					
CB3 - 887	HSH 24-hour	221	632,570	3,335,710	01112524
CB4 - 213		209	632,470	3,335,710	02071124
		230	632,470	3,335,810	03063024
		225	632,570	3,335,710	04012524
		233	632,470	3,335,710	05092524
CB4 at 24-Hour Maximum					
CB3 - 410	HSH 24-hour	202	632,570	3,335,710	01112524
CB4 - 690		203	632,470	3,335,710	02071124
		217	632,470	3,335,810	03063024
		208	632,570	3,335,710	04012524
		229	632,170	3,335,310	05092224
CB3 at 3-Hour Maximum					
CB3 - 887	HSH 3-hour	544	632,370	3,335,910	01041206
CB4 - 463		507	632,570	3,335,610	02092606
		619	632,470	3,335,810	03111809
		548	633,570	3,334,910	04021821
		514	632,470	3,335,810	05122718
CB4 at 3-Hour Maximum					
CB3 - 167	HSH 3-hour	496	632,470	3,335,610	01112412
CB4 - 1183		471	633,470	3,335,110	02060221
		555	632,470	3,335,810	03111809
		543	633,570	3,334,910	04021821
		507	632,370	3,335,710	05111506

Note: YY = Year; MM = Month; DD = Day; HH = Hour.

[a] Concentrations are predicted with AERMOD model and five years of surface meteorological data from the National Weather Service (NWS) station at Apalachicola Regional Airport and upper air soundings from the NWS station at Tallahasee, 2001 to 2005.

[b] UTM Coordinates in Zone 16, NAD27 Datum.

TABLE 6-16
MAXIMUM PREDICTED SO_2 IMPACTS FOR COMPARISON TO AAQS

Rank and Averaging Time	SO_2 Concentration ($\mu g/m^3$) [a] Total	Modeled Sources	Background	Receptor Location [b] Easting (m)	Northing (m)	Time Period (YYMMDDHH)	Florida AAQS ($\mu g/m^3$)
Case 1 - Recovery Boiler Building with 1 Wall to 173'							
Highest Annual	31.5	26.7	4.8	632,370	3,335,510	01123124	60
	32.4	32.4		632,270	3,335,310	02123124	
	27.7	27.7		630,120	3,338,360	03123124	
	27.1	27.1		632,270	3,335,410	04123124	
	29.3	29.3		630,120	3,338,360	05123124	
HSH 24-Hour	211.1	187.1	24	632,370	3,335,610	01112724	260
	207.1	207.1		632,170	3,335,310	02090724	
	199.2	199.2		632,370	3,335,410	03122924	
	190.0	190.0		632,270	3,335,410	04101024	
	235.0	235.0		632,170	3,335,310	05092224	
HSH 3-Hour	834	765	69	632,570	3,335,710	01101215	1,300
	803	803		632,270	3,335,610	02123112	
	898	898		632,270	3,335,510	03083109	
	804	804		632,270	3,335,510	04030518	
	815	815		632,370	3,335,610	05082906	
Case 2 - Recovery Boiler Building Fully Enclosed							
Highest Annual	30.6	25.8	4.8	632,470	3,335,610	01123124	60
	30.8	30.8		632,270	3,335,310	02123124	
	29.2	29.2		632,570	3,335,710	03123124	
	27.1	27.1		632,670	3,335,810	04123124	
	29.0	29.0		630,120	3,338,360	05123124	
HSH 24-Hour	244.9	220.9	24	632,570	3,335,710	01112524	260
	209.0	209.0		632,470	3,335,710	02071124	
	230.5	230.5		632,470	3,335,810	03063024	
	224.9	224.9		632,570	3,335,710	04012524	
	233.4	233.4		632,470	3,335,710	05092524	
HSH 3-Hour	613	544	69	632,370	3,335,910	01041206	1,300
	507	507		632,570	3,335,610	02092606	
	619	619		632,470	3,335,810	03111809	
	548	548		633,570	3,334,910	04021821	
	515	515		632,470	3,335,810	05122718	

Note: YYMMDDHH = Year, Month, Day, Hour Ending
HSH = Highest, Second-Highest

[a] Concentrations are predicted with AERMOD model and five years of surface meteorological data from the National Weather Service (NWS) station at Apalachicola Regional Airport and upper air soundings from the NWS station at Tallahasee, 2001 to 2005.

[b] UTM Coordinates in Zone 16, NAD27 Datum.

TABLE 6-17
MAXIMUM PREDICTED NO_2 IMPACTS FOR COMPARISON TO AAQS

Rank and Averaging Time	NO_2 Concentration ($\mu g/m^3$) [a] Total	Modeled Sources	Background	Receptor Location [b] Easting (m)	Northing (m)	Time Period (YYMMDDHH)	Florida AAQS ($\mu g/m^3$)
Case 2 - Recovery Boiler Building Fully Enclosed							
Highest Annual	29.1	15.1	14	632,470	3,335,610	01123124	100
	32.3	18.3	14	632,370	3,335,310	02123124	
	30.4	16.4	14	632,670	3,335,610	03123124	
	31.4	17.4	14	633,370	3,335,110	04123124	
	30.1	16.1	14	632,670	3,335,610	05123124	

Note: YYMMDDHH = Year, Month, Day, Hour Ending
HSH = Highest, Second-Highest

[a] Concentrations are predicted with AERMOD model and five years of surface meteorological data from the National Weather Service (NWS) station at Apalachicola Regional Airport and upper air soundings from the NWS station at Tallahasee, 2001 to 2005.

[b] UTM Coordinates in Zone 16, NAD27 Datum.

TABLE 6-18

MAXIMUM PREDICTED SO_2 IMPACTS FOR COMPARISON TO PSD CLASS II INCREMENTS

Rank and Averaging Time	Concentration (μg/m³) [a]	Receptor Location [b] Easting (m)	Northing (m)	Time Period (YYMMDDHH)	PSD Class II Increment (μg/m³)
Case 2 - Recovery Boiler Building Fully Enclosed					
Highest Annual	<0	0	0	01123124	20
	<0	0	0	02123124	
	<0	0	0	03123124	
	0.12	632,891	3,335,283	04123124	
	<0	0	0	05123124	
HSH 24-Hour	50.9	632,570	3,335,810	01100524	91
	68.5	632,470	3,335,810	02041524	
	78.0	632,470	3,335,810	03031924	
	68.4	632,470	3,335,810	04022024	
	71.9	632,470	3,335,910	05062724	
HSH 3-Hour	447	632,370	3,335,910	01072621	512
	393	632,470	3,335,810	02031924	
	394	632,470	3,335,910	03102421	
	386	632,470	3,335,810	04112321	
	372	632,470	3,335,810	05073103	

Note: YYMMDDHH = Year, Month, Day, Hour Ending
HSH = Highest, Second-Highest

[a] Concentrations are predicted with AERMOD model and five years of surface meteorological data from the National Weather Service (NWS) station at Apalachicola Regional Airport and upper air soundings from the NWS station at Tallahasee, 2001 to 2005.

[b] UTM Coordinates in Zone 16, NAD27 Datum.

TABLE 6-19
MAXIMUM PREDICTED NO_2 IMPACTS FOR COMPARISON TO PSD CLASS II INCREMENTS

Rank and Averaging Time	Concentration ($\mu g/m^3$) [a]	Receptor Location [b] Easting (m)	Northing (m)	Time Period (YYMMDDHH)	PSD Class II Increment ($\mu g/m^3$)
Case 2 - Recovery Boiler Building Fully Enclosed					
Highest Annual	10.2	632,470	3,335,610	01123124	25
	12.1	632,370	3,335,310	02123124	
	11.1	632,570	3,335,710	03123124	
	12.5	633,370	3,335,110	04123124	
	11.9	633,370	3,335,110	05123124	

Note: YYMMDDHH = Year, Month, Day, Hour Ending
HSH = Highest, Second-Highest

[a] Concentrations are predicted with AERMOD model and five years of surface meteorological data from the National Weather Service (NWS) station at Apalachicola Regional Airport and upper air soundings from the NWS station at Tallahasee, 2001 to 2005.

[b] UTM Coordinates in Zone 16, NAD27 Datum

7.0 ADDITIONAL IMPACT ANALYSIS

7.1 Vicinity of SSCE Panama City Mill

EPA regulations contained in 40 CFR 52.21(o) require an analysis of "additional impacts", i.e., an analysis of the impacts on soils and vegetation, growth, and impairment to visibility that would occur as a result of the project. This section presents the required analysis for the Lime Kiln petcoke project.

7.1.1 Impacts to Vegetation and Soils

The area in the vicinity of the SSCE Panama City Mill is developed and cleared of native vegetation, with the exception of the approximately 10-acre western parcel on SSCE property, which is vegetated with a mixture of native trees and shrubs typical of the Gulf coast.

According to the USDA Soil Survey of Bay County, three soil types are found in the vicinity of the plant: Osier fine sand, Foxworth sand, and urban land. Osier fine sand is poorly drained, with moderately high organic matter content in the upper 6 inches. Foxworth sand is moderately well drained soil with low organic matter content. Urban land consists of areas that are ≥75 percent covered with streets, houses, industrial parks, commercial buildings, and other developments. Soils in these areas typically are comprised of undifferentiated soil material, with inclusions of other soil series that are too small to be mapped separately.

As described in the air quality impact analysis presented in Section 6.0, the maximum predicted SO_2 and NO_2 concentrations in the vicinity of the site as a result of the proposed project are below the AAQS. Since the AAQS are designed to protect the public welfare, including effects on soils and vegetation, no detrimental effects on soils or vegetation should occur in this area due to the proposed project.

7.1.2 Growth Impacts

The proposed petcoke project will not increase employment at the SSCE Panama City Mill. The only noticeable effect will be an increase in truck traffic (approximately 6 trucks per day on average) for the delivery of petcoke. Total pulp production or lime production at the Panama City Mill will not increase due to the proposed project, since it is only a fuel switch. The only new facilities, infrastructure, or support services needed will be the new petcoke storage and transport system. As a result, no significant impacts due to associated growth are expected due to the proposed project.

The potential impacts of SO_2 and NO_2 on soils, vegetation, and visibility in the Bradwell Bay and St. Marks PSD Class I areas are addressed in the following sections.

7.2 PSD Class I Areas

This section focuses on the ecological effects of the proposed facility's impacts on Air Quality Related Values (AQRV), as defined under PSD regulations, in the St. Marks National Wildlife Refuge and Bradwell Bay Wilderness Area. The location of these two Class I areas in relation to the Panama City Mill is shown in Figure 3-1.

The AQRVs are defined as being:

> "All those values possessed by an area except those that are not affected by changes in air quality and include all those assets of an area whose vitality, significance, or integrity is dependent in some way on the air environment. These values include visibility and those scenic, cultural, biological, and recreational resources of an area that are affected by air quality. Important attributes of an area are those values or assets that make an area significant as a monument, preserve, or primitive area. They are the assets that are to be preserved if the area is to achieve the purposes for which it was set aside" (Federal Register, 1978).

The AQRVs include freshwater and coastal wetlands, dominant plant communities, unique and rare plant communities, soils and associated periphyton, and the wildlife dependent on these communities for habitat. Rare, endemic, threatened, and endangered species of the wilderness areas and bioindicators of air pollution (e.g., lichens) are also evaluated.

The predicted increase in ambient concentrations at the Class I areas due to the proposed project were presented in Table 6-14. The increase in emissions used in the modeling analysis was shown in Tables 3-3 and 6-3.

7.2.1 Impacts to Soils

For soils, the potential and hypothesized effects of atmospheric deposition include:

- Increased soil acidification,
- Alteration in cation exchange,
- Loss of base cations, and
- Mobilization of trace metals.

The potential sensitivity of specific soils to atmospheric inputs is related to two factors. First, the physical ability of a soil to conduct water vertically through the soil profile is important in influencing the interaction with deposition. Second, the ability of the soil to resist chemical changes, as measured in terms of pH and soil cation exchange capacity (CEC), is important in determining how a soil responds to atmospheric inputs.

According to the USDA Soil Survey of Wakulla County, the soils of Bradwell Bay Wilderness Area are primarily Croatan-Dorovan mucks, while the primarily soil types in the St. Marks National Wildlife Refuge are Bayvi, Isles, and Estero soils. The Croatan-Dorovan mucks are very poorly drained with very high organic matter content. The Bayvi, Isles, and Estero soils are found in tidal marsh areas, are flooded daily by high tides, and have moderate organic matter content. The soils of both Bradwell Bay and St. Marks are generally classified as histosols. Histosols (peat soils) are organic and have extremely high buffering capacities based on their CEC, base saturation, and bulk density. Therefore, they would be relatively insensitive to atmospheric inputs.

The relatively low sensitivity of the soils to atmospheric inputs coupled with the extremely low ground-level concentrations of contaminants projected for the Bradwell Bay and St. Marks areas due to the SSCE Panama City Mill modification precludes any significant impact on soils.

7.2.2 Impacts to Vegetation

The maximum predicted gaseous concentrations ($\mu g/m^3$) of SO_2 and NO_2 were used in the determination of impacts on vegetation. These compounds are believed to interact predominantly with foliage and this is considered the major route of entry into plants. In this assessment, 100 percent of the compound of interest was assumed to interact with the vegetation.

Sulfur Dioxide

Sulfur is an essential plant nutrient usually taken up as sulfate ions by the roots from the soil solution. When sulfur dioxide in the atmosphere enters the foliage through pores in the leaves, it reacts with water in the leaf interior to form sulfite ions. Sulfite ions are highly toxic. They interact with enzymes, compete with normal metabolites, and interfere with a variety of cellular functions (Horsman and Wellburn, 1976). However, within the leaf, sulfite is oxidized to sulfate ions, which can then be used by the plant as a nutrient. Small amounts of sulfite may be oxidized before they prove harmful.

SO_2 gas at elevated levels has long been known to cause injury to plants. Acute SO_2 injury usually develops within a few hours or days of exposure, and symptoms include marginal, flecked, and/or intercostal necrotic areas that appear water-soaked and dullish green initially. This injury generally occurs to younger leaves. Chronic injury usually is evident by signs of chlorosis, bronzing, premature senescence, reduced growth, and possible tissue necrosis (EPA, 1982). Background levels of SO_2 range from 2.5 to 25 $\mu g/m^3$. Observed SO_2 effect levels for several plant species and plant sensitivity groupings are presented in Tables 7-1 and 7-2, respectively.

Many studies have been conducted to determine the effects of high-concentration, short-term SO_2 exposure on natural community vegetation. Sensitive plants include ragweed, legumes, blackberry, southern pine, and red and black oak. These species are injured by exposure to 3-hour SO_2 concentrations of 790 to 1,570 $\mu g/m^3$. Intermediate plants include locust and sweetgum. These species are injured by exposure to 3-hour SO_2 concentrations of 1,570 to 2,100 $\mu g/m^3$. Resistant species (injured at concentrations above 2,100 $\mu g/m^3$ for 3 hours) include white oak and dogwood (EPA, 1982).

A study of native Floridian species (Woltz and Howe, 1981) demonstrated that cypress, slash pine, live oak, and mangrove exposed to 1,300 $\mu g/m^3$ SO_2 for 8 hours were not visibly damaged. This finding support the levels cited by other researchers on the effects of SO_2 on vegetation. A corroborative study (McLaughlin and Lee, 1974) demonstrated that approximately 20 percent of a cross-section of plants ranging from sensitive to tolerant was visibly injured at 3-hour SO_2 concentrations of 920 $\mu g/m^3$.

Two lichen species indigenous to Florida exhibited signs of SO_2 damage in the form of decreased biomass gain and photosynthetic rate as well as membrane leakage when exposed to concentrations of 200 to 400 $\mu g/m^3$ for 6 hours/week for 10 weeks (Hart et al., 1988).

Both short-term and long-term increases in SO_2 emissions are expected as a result of the project, therefore the maximum predicted SO_2 concentrations were modeled for various averaging times. The maximum increase in 3-hour, 24-hour and annual SO_2 concentrations predicted within the Class I areas due to the project are only 0.09, 0.030, and 0.0015 $\mu g/m^3$, respectively. Regardless of the existing concentrations within the Class I areas, the predicted additional impacts caused by the proposed modification are predicted to be insignificant for SO_2. The modeled annual incremental increase in SO_2 (0.0015μg/m^3) adds only slightly to background levels of this gas and poses no threat to area vegetation.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) in the atmosphere can injure plant tissue, with symptoms usually appearing as irregular white to brown collapsed lesions between the leaf veins and near the margins. Conversely, non-injurious levels of NO_2 can be absorbed by plants, enzymatically transformed into ammonia, and incorporated into plant constituents such as amino acids (Matsumaru et al., 1979).

Plant damage can occur through either acute (short-term, high concentration) or chronic (long-term, relatively low concentration) exposure. For plants that have been determined to be more sensitive to NO_2 exposure than others, acute (1, 4, 8 hours) exposure caused 5 percent predicted foliar injury at concentrations ranging from 3,800 to 15,000 μg/m^3 (Heck and Tingey, 1979). Chronic exposure of selected plants (some considered NO_2-sensitive) to NO_2 concentrations of 2,000 to 4,000 μg/m^3 for 213 to 1,900 hours caused reductions in yield of up to 37 percent and some chlorosis (Zahn, 1975).

Both short-term and long-term increases in NO_2 emissions are expected due to the project, therefore various averaging times were modeled. By comparison of published toxicity values for NO_2 exposure to short-term and long-term (annual averaging time) modeled concentrations, the possibility of plant damage in the Class I areas can be examined for acute and chronic exposure situations. For an acute exposure, the estimated 3-hour maximum NO_2 concentration due to the project only in the Class I areas is 0.13 μg/m^3, based on the annual NO_2 concentration of 0.0022 μg/m^3 and the ratio of 3-hour to annual average SO_2 concentrations from Table 6-14. This concentration is only 0.00003 to 0.00087 percent of the levels that foliar injury to sensitive in plant tissue.

For a chronic exposure, the annual estimated NO_2 concentration due to the project only at the point of maximum impact in the Class I areas (0.0022 μg/m^3) is 0.0001 to 0.0002 percent of the levels that caused minimal yield loss and chlorosis in plant tissue.

Although it has been shown that simultaneous exposure to SO_2 and NO_2 results in synergistic plant injury (Ashenden and Williams, 1980), the magnitude of this response is generally only 3 to 4 times greater than either gas alone, and usually occurs at unnaturally high levels of each gas. Therefore, the predicted increase in concentrations within the Class I areas are still far below the levels that potentially cause plant injury for either acute or chronic exposure.

Summary

In summary, the phytotoxic effects from the increase in emissions due to the proposed project are predicted to be minimal. It is important to note that the concentrations were conservatively modeled with the assumption that 100 percent was available for plant uptake. This is rarely the case in a natural ecosystem.

7.2.3 Impacts to Wildlife

A wide range of physiological and ecological effects to fauna has been reported for gaseous and particulate pollutants (Newman, 1981; Newman and Schreiber, 1988). The most severe of these effects have been observed at concentrations above the secondary ambient air quality standards. Physiological and behavioral effects have been observed in experimental animals at or below these standards. No observable effects to fauna are expected at concentrations below the values reported in Table 7-3.

The major air quality risk to wildlife in the United States is from continuous exposure to pollutants above the National Ambient Air Quality Standards. This occurs in non-attainment areas; e.g., Los Angeles Basin. Risks to wildlife also may occur for wildlife living in the vicinity of an emission source that experiences frequent upsets or episodic conditions resulting from malfunctioning equipment, unique meteorological conditions, or startup operations (Newman and Schreiber, 1988). Under these conditions, chronic effects (e.g., particulate contamination) and acute effects (e.g., injury to health) have been observed (Newman, 1981).

For impacts on wildlife, the lowest threshold values of SO_2, NO_x, and particulates which are reported to cause physiological changes are shown in Table 7-3. These values are up to orders of magnitude larger than the maximum predicted increase in concentrations for the Class I area. No effects on wildlife AQRVs from SO_2 or NO_2 are expected. These results are considered indications of the risk of other air pollutant emissions predicted from the facility.

7.2.4 Impacts on Visibility

The CAA Amendments of 1977 provide for implementation of guidelines to prevent visibility impairment in mandatory Class I areas. The guidelines are intended to protect the aesthetic quality of these pristine areas from reduction in visual range and atmospheric discoloration due to various pollutants. Visibility can take the form of plume blight for nearby areas (i.e., distances within 50 km) or regional haze for long distances (i.e., distances beyond 50 km).

Sources of air pollution can cause visible plumes if emissions of PM_{10} and NO_x are sufficiently large. A plume will be visible if its constituents scatter or absorb sufficient light so that the plume is brighter or darker than its viewing background (e.g., the sky or a terrain feature, such as a mountain). PSD Class I areas, such as national parks and wilderness areas, are afforded special visibility protection designed to prevent plume visual impacts to observers within a Class I area.

Visibility is an AQRV for the St. Marks NWA. Because the nearest distance from the SSCE Mill site to the St. Marks NWA is about 112 km, the change in visibility for the proposed Lime Kiln petcoke project was analyzed as regional haze.

Currently, there are several air quality modeling approaches recommended by the Interagency Workgroup on Air Quality Models (IWAQM) to perform these analyses. The IWAQM consists of EPA and FLM of Class I areas that are responsible for ensuring that AQRVs are not adversely impacted by new and existing sources. These recommendations have been summarized in guidelines required by the 1977 Clean Air Act Amendments and are contained in two documents:

- Interagency Workgroup on Air Quality Models (IWAQM), Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts (EPA, 1998), referred to as the IWAQM Phase 2 report; and
- Federal Land Managers' Air Quality Related Values Workgroup (FLAG), Phase I Report, USFS, NPS, USFWS (December, 2000), referred to as the FLAG document.

The methods and assumptions recommended in these documents were used to assess visibility impairment due to the proposed SSCE project.

Based on the FLAG document, current regional haze guidelines characterize a change in visibility by the change in the light-extinction coefficient (b_{ext}). The b_{ext} is the attenuation of light per unit distance due to the scattering and absorption by gases and particles in the atmosphere. A change in the extinction coefficient produces a perceived visual change. An index that simply quantifies the percent change in visibility due to the operation of a source is calculated as:

$$\Delta\% = (b_{exts} / b_{extb}) \times 100$$

where: b_{exts} is the extinction coefficient calculated for the source, and

b_{extb} is the background extinction coefficient.

The purpose of the visibility analysis is to calculate the extinction at each receptor for each day (24-hour period) of the year due to the proposed Lime Kiln petcoke project emission increases only. The emissions used in the visibility analysis are the same as those shown in Table 6-3 for the proposed project. The criteria to determine if the proposed project's impacts are potentially significant are based on a change in extinction of 5 percent or greater for any day of the year.

Processing of visibility impairment for this study was performed with the CALPUFF model and the CALPUFF post-processing program CALPOST. The analysis was conducted in accordance with the most recent guidance from the FLAG report (December 2000). The CALPUFF postprocessor model CALPOST is used to calculate the combined visibility effects from the different pollutants that are emitted from the proposed project. Daily background extinction coefficients are calculated on an hour-by-hour basis using hourly relative humidity data from CALMET and hygroscopic and non-hygroscopic extinction components specified in the FLAG document. For the Class I area evaluated, the hygroscopic and non-hygroscopic components are 0.9 and 8.5 inverse mega meter (Mm^{-1}). CALPOST then predicts the percent extinction change for each day of the year.

Results

Since visibility is not an AQRV at the Bradwell Bay NWA, the impacts were predicted only at the Saint Marks NWA. The maximum visibility impairment predicted for the proposed project is shown in Table 7-4. Results are presented for Method 2 (hourly relative humidity) with a relative humidity cap of 95 percent, and for the highest predicted concentration from Method 6. As shown in Table 7-4, the maximum predicted 24-hour visibility impairment due to the proposed project is 0.88 percent using Method 2 and 0.44 percent using Method 6. These results are well below the FLM's 5 percent project-only visibility criteria.

Therefore, it is concluded that the proposed project will not pose a significant impact on the visibility at the St. Marks NWR PSD Class I area.

7.2.5 Deposition Methodology

As part of the AQRV analyses, total nitrogen (N) and sulfur (S) deposition rates were predicted at the St. marks and Bradwell Bay Class I areas. The deposition analysis thresholds (DAT) are based on the annual averaging period. The total deposition is estimated in units of kilogram per hectare per year (kg/ha/yr) of nitrogen or sulfur. The CALPUFF model is used to predict wet and dry deposition fluxes of various oxides of these elements.

For N deposition, the species include:

- Particulate ammonium nitrate (from species NO_3), wet and dry deposition;
- Nitric acid (species HNO_3), wet and dry deposition;
- NO_x, dry deposition; and
- Ammonium sulfate (species SO_4), wet and dry deposition.

For S deposition, the species include:

- SO_2, wet and dry deposition; and
- SO_4, wet and dry deposition.

The CALPUFF model produces results in units of $\mu g/m^2/s$. The modeled deposition rates are then converted to N or S deposition in kg/ha, respectively, by using a multiplier equal to the ratio of the molecular weights of the substances (IWAQM Phase II report Section 3.3).

Deposition analysis thresholds (DAT) for nitrogen and sulfur deposition of 0.01 kg/ha/yr were provided by the U.S. Fish and Wildlife Service (USFWS) (January 2002). A DAT is the additional amount of N or S deposition within a Class I area, below which estimated impacts from a new or modified source are considered insignificant. The maximum N and S depositions predicted for the proposed Lime Kiln petcoke project are, therefore, compared to these DAT or significant impact levels.

Results

The maximum predicted N and S depositions due to the proposed project are presented in Table 7-5. The maximum N and S depositions are predicted to be well below the N and S significant impact levels of 0.01 kg/ha/yr, respectively, at each evaluated PSD Class I area.

TABLE 7-1
SO_2 EFFECTS LEVELS FOR VARIOUS PLANT SPECIES

Plant Species	Observed Effect Level (µg/m^3)	Exposure (Time)	Reference
Sensitive to tolerant	920 (20 percent displayed visible injury)	3 hours	McLaughlin and Lee, 1974
Lichens	200-400	6 hr/wk for 10 weeks	Hart *et al.*, 1988
Cypress, slash pine, live oak, mangrove	1,300	8 hours	Woltz and Howe, 1981
Jack pine seedlings	470-520	24 hours	Malhotra and Kahn, 1978
Black oak	1,310	Continuously for 1 week	Carlson, 1979

TABLE 7-2
SENSITIVITY GROUPINGS OF VEGETATION BASED ON VISIBLE INJURY AT DIFFERENT SO_2 EXPOSURES[a]

Sensitivity Grouping	SO_2 Concentration		Plants
	1-Hour	3-Hour	
Sensitive	1,310 - 2,620 µg/m^3 (0.5 - 1.0 ppm)	790 - 1,570 µg/m^3 (0.3 - 0.6 ppm)	Ragweeds Legumes Blackberry Southern pines Red and black oaks White ash Sumacs
Intermediate	2,620 - 5,240 µg/m^3 (1.0 - 2.0 ppm)	1,570 - 2,100 µg/m^3 (0.6 - 0.8 ppm)	Maples Locust Sweetgum Cherry Elms Tuliptree Many crop and garden species
Resistant	>5,240 µg/m^3 (>2.0 ppm)	>2,100 µg/m^3 (>0.8 ppm)	White oaks Potato Upland cotton Corn Dogwood Peach

[a] Based on observations over a 20-year period of visible injury occurring on over 120 species growing in the vicinities of coal-fired power plants in the southeastern United States.

Source: EPA, 1982a.

TABLE 7-3
EXAMPLES OF REPORTED EFFECTS OF AIR POLLUTANTS AT CONCENTRATIONS BELOW NATIONAL SECONDARY AMBIENT AIR QUALITY STANDARDS

Pollutant	Reported Effect	Concentration ($\mu g/m^3$)	Exposure
Sulfur Dioxide[1]	Respiratory stress in guinea pigs	427 to 854	1 hour
	Respiratory stress in rats	267	7 hours/day; 5 day/week for 10 weeks
	Decreased abundance in deer mice	13 to 157	continually for 5 months
Nitrogen Dioxide[2,3]	Respiratory stress in mice	1,917	3 hours
	Respiratory stress in guinea pigs	96 to 958	8 hours/day for 122 days
Particulates[1]	Respiratory stress, reduced respiratory disease defenses	120 PbO_3	continually for 2 months
	Decreased respiratory disease defenses in rats, same with hamsters	100 $NiCl_2$	2 hours

Source: [1]Newman and Schreiber, 1988.
[2]Gardner and Graham, 1976.
[3]Trzeciak et al., 1977.

TABLE 7-4
MAXIMUM 24-HOUR AVERAGE VISIBILITY IMPAIRMENT PREDICTED FOR THE SCCE LIME KILN PETCOKE PROJECT AT THE SAINT MARKS NWA PSD CLASS I AREA

Area	Visibility Impairment (%) [a]			Visibility Impairment Criteria (%)
	2001	2002	2003	
BACKGROUND EXTINCTION CALCULATIONS: METHOD 2 WITH RHMAX = 95 PERCENT				
Saint Marks NWA	0.88	0.59	0.72	5.0
BACKGROUND EXTINCTION CALCULATIONS: METHOD 6 WITH MONTHLY F(RH) FACTORS - HIGHEST				
Saint Marks NWA	0.43	0.30	0.44	5.0

[a] Concentrations are highest predicted using the VISTAS 4-km Florida Domains, 2001 to 2003.
Background extinctions calculated using FLAG Document (December 2000) and stated method
NWA = National Wilderness Area

TABLE 7-5
TOTAL SULFUR AND NITROGEN DEPOSITION RATES PREDICTED FOR THE SCCE LIME KILN PETCOKE PROJECT
AT THE BRADWELL BAY AND SAINT MARKS NWA PSD CLASS I AREAS

	Total Deposition (Wet + Dry) for Year						Deposition Analysis Threshold[b]
	2001		2002		2003		
PSD Class I Area	($g/m^2/s$)	(kg/ha/yr)	($g/m^2/s$)	(kg/ha/yr)	($g/m^2/s$)	(kg/ha/yr)	(kg/ha/yr)
Sulfur Deposition							
Bradwell Bay NWA	5.390E-12	0.0017	3.059E-12	0.0010	4.165E-12	0.0013	0.01
Saint Marks NWA	3.92E-12	0.0012	2.10E-12	0.0007	2.69E-12	0.0008	0.01
Nitrogen Deposition							
Bradwell Bay NWA	4.812E-12	0.0015	2.843E-12	0.0009	4.085E-12	0.0013	0.01
Saint Marks NWA	3.160E-12	0.0010	1.858E-12	0.0006	2.276E-12	0.0007	0.01

[a] Conversion factor is used to convert $g/m^2/s$ to kg/hectare (ha)/yr using following units:

$g/m^2/s$	x	0.001	kg/g
	x	10000	m^2/hectare
	x	3600	sec/hr
	x	8760	hr/yr =kg/ha/yr
	or		
$g/m^2/s$	x	3.1536E+08	= kg/ha/yr

[b] Deposition analysis thresholds (DAT) for nitrogen and sulfur deposition provided by the U.S. Fish and Wildlife Service, January 2002. A DAT is the additional amount of N or S deposition within a Class I area, below which estimated impacts from a proposed new or modified source are considered insignificant.

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APPENDIX A

PAST ACTUAL EMISSION CALCULATIONS FOR THE LIME KILN

TABLE A-1
PAST ACTUAL ANNUAL (1997-2006) EMISSION FACTORS FROM ANNUAL OPERATING REPORTS FOR THE LIME KILN, SSCE PANAMA CITY

Source Description	Annual Operation (hr/yr)	Annual Process/Fuel	Factor Units	Pollutant Emission Factors[A] SO_2	NO_x	CO	PM	PM_{10}	VOC	TRS
Lime Kiln										
1997 Actual Emission Factors										
--*Sulfate (Kraft) Pulping*	8,388	666,002 tons ADUP	lb/ton ADUP	0.300 [B]	1.0 [B]	0.100 [B]			0.250 [B]	
			lb/hr				21.63 [C]	3.63 [D]		
			ppm @ 10% O_2							10.56 [G]
			dscfm							45,000 [F]
--*Lime Manufacture*		168,454 tons Lime								
--*Residual Oil*		5,598.6 10^3 gallons								
--*Natural Gas*		275.1 10^6 ft^3								
1998 Actual Emission Factors										
--*Sulfate (Kraft) Pulping*	5,606	445,364 tons ADUP	lb/ton ADUP	0.300 [B]	1.0 [B]	0.100 [B]			0.250 [B]	
			lb/hr				21.63 [G]	3.63 [G]		
			ppm @ 10% O_2							5.07 [E]
			dscfm							45,000 [F]
--*Lime Manufacture*		98,736 tons Lime								
--*Residual Oil*		4,211.7 10^3 gallons								
--*Natural Gas*		119.8 10^6 ft^3								
1999 Actual Emission Factors										
--*Sulfate (Kraft) Pulping*	8,380	667,877 tons ADUP	lb/ton ADUP	0.300 [B]	1.000 [B]	0.100 [B]			0.250 [B]	
			lb/hr				29.8 [G]	27.8 [G]		
			ppm @ 10% O_2							2.34 [E]
			dscfm							45,000 [F]
--*Lime Manufacture*		135,802 tons Lime								
--*Residual Oil*		7,045.0 10^3 gallons								
--*Natural Gas*		109.7 10^6 ft^3								
2000 Actual Emission Factors										
--*Sulfate (Kraft) Pulping*	7,879	115,415 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]				
			lb/hr				25.3 [G]	22.7 [G]	27.4 [G]	
			ppm @ 10% O_2							2.32 [G]
			dscfm							45,000 [F]
--*Residual Oil*		601,216 tons ADUP								
--*Lime Manufacture*		5,219.0 10^3 gallons								
--*Natural Gas*		302.8 10^6 ft^3								
2001 Actual Emission Factors										
--*Lime Manufacture*	7,959	127,518 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							2.8 [E]
			dscfm							45,000 [F]
--*Sulfate (Kraft) Pulping*		624,401 tons ADUP								
--*Residual Oil*		6,647.0 10^3 gallons								
--*Natural Gas*		99.1 10^6 ft^3								
2002 Actual Emission Factors										
--*Lime Manufacture*	8,208	132,432 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							2.8 [E]
			dscfm							45,000 [F]
--*Sulfate (Kraft) Pulping*		667,776 tons ADUP								
--*Residual Oil*		7,231.0 10^3 gallons								
--*Natural Gas*		30.3 10^6 ft^3								
2003 Actual Emission Factors										
--*Lime Manufacture*	8,608	118,752 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							2.6 [E]
			dscfm							45,000 [F]
--*Sulfate (Kraft) Pulping*		581,367 tons ADUP								
--*Residual Oil*		5,794.7 10^3 gallons								
--*Natural Gas*		11.7 10^6 ft^3								
2004 Actual Emission Factors										
--*Lime Manufacture*	8,128	154,961 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							2.9 [E]
			dscfm							45,000 [F]
--*Sulfate (Kraft) Pulping*		667,898 tons ADUP								
--*Residual Oil*		6,344.1 10^3 gallons								
--*Natural Gas*		19.7 10^6 ft^3								
2005 Actual Emission Factors										
--*Lime Manufacture*	7,997	160,068 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							3.2 [E]
			dscfm							45,000 [F]
--*Sulfate (Kraft) Pulping*		646,729 tons ADUP								
--*Residual Oil*		6,275.6 10^3 gallons								
--*Natural Gas*		9.8 10^6 ft^3								
2006 Actual Emission Factors[H]										
--*Lime Manufacture*	8,143	158,130 tons Lime	lb/ton Lime							
--*Sulfate (Kraft) Pulping*		680,447 tons ADUP								
--*Residual Oil*		6,301.9 10^3 gallons								
--*Natural Gas*		9.5 10^6 ft^3								

[A] SAM, Lead, Mercury, and Fluorides are not reported in the facility Annual Operating Reports (AORs).
[B] Emission factor used in the facility AOR.
[C] Reported in the facility AOR as pounds per hour (lb/hr).
[D] Assumed to be 16.79% of the total PM reported in the facility AOR.
[E] Reported in the facility AOR in ppm from CEM.
[F] Assumed flowrate reported in the facility AOR.
[G] Reported in the facility AOR in tons per year (TPY), and so is divided by the operating hours, and multiplied by 2,000 pounds per ton to get lb/hr.
[H] 2006 facility AORs had not been submitted as of January, 2007.

TABLE A-2
REVISED EMISSION FACTORS USED TO DETERMINE PAST ACTUAL ANNUAL EMISSIONS (1997-2006) FOR THE LIME KILN, SSCE PANAMA CITY

Source Description	Annual Operation (hr/yr)	Annual Process/Fuel	Factor Units	Pollutant Emission Factors SO$_2$	NO$_X$	CO	PM	PM$_{10}$	VOC	TRS	SAM	Lead	Mercury	Fluorides
Lime Kiln														
1997 Actual Emission Factors	8,388	168,454 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				25.48 [G]	22.27 [H]						
			ppm @ 10% O$_2$							10.56 [I]				
			dscfm @ 10% O$_2$							66,284 [J]				
1998 Actual Emission Factors	5,606	98,736 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				26.49 [G]	23.15 [H]						
			ppm @ 10% O$_2$							5.07 [I]				
			dscfm @ 10% O$_2$							66,284 [J]				
1999 Actual Emission Factors	8,380	135,802 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				25.51 [G]	22.30 [H]						
			ppm @ 10% O$_2$							2.34 [I]				
			dscfm @ 10% O$_2$							66,284 [J]				
2000 Actual Emission Factors	7,879	115,415 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				22.24 [G]	19.44 [H]						
			ppm @ 10% O$_2$							2.32 [I]				
			dscfm @ 10% O$_2$							66,284 [J]				
2001 Actual Emission Factors	7,959	127,518 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				20.29 [G]	17.73 [H]						
			ppm @ 10% O$_2$							2.80 [I]				
			dscfm @ 10% O$_2$							66,284 [J]				
2002 Actual Emission Factors	8,208	132,432 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O$_2$							2.80 [I]				
			dscfm @ 10% O$_2$							66,284 [J]				
2003 Actual Emission Factors	8,608	118,752 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O$_2$							2.60 [I]				
			dscfm @ 10% O$_2$							66,284 [J]				
2004 Actual Emission Factors	8,128	154,961 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O$_2$							2.900 [I]				
			dscfm @ 10% O$_2$							66,284 [J]				
2005 Actual Emission Factors	7,997	160,068 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O$_2$							3.20 [I]				
			dscfm @ 10% O$_2$							66,284 [J]				
2006 Actual Emission Factors	8,143	158,130 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O$_2$							4.41 [K]				
			dscfm @ 10% O$_2$							66,284 [J]				

[A] Emission factor used in the facility Annual Operating Report (AOR). See Table A-1.
[B] Emission factor calculated from stack testing performed by Weston Solutions on February 28, 2006.
[C] Emission factor obtained from the NCASI Technical Bulletin No. 884, Table 4.13, mean value.
[D] Emission factor obtained from the NCASI Technical Bulletin No. 858, Table 16A, footnote 3 (mean value for lime kilns firing No. 6 fuel oil and NCGs).
[E] Emission factor obtained from the NCASI Technical Bulletin No. 858, Table 16C, mean value.
[F] No emission factors available for fluorides emitted from kraft lime kilns.
[G] Five year average PM emission value from stack testing. See Table A-5.
[H] Emission factor is 84.7% of PM, obtained from NCASI "Particulate Emission Data for Pulp and Paper Industry-Specific Sources" (August 25, 2006)
[I] Concentration reported in the facility AOR from CEM data. See Table A-1.
[J] Average flue gas flowrate (dscfm) corrected to 10% O$_2$ from the previous ten-year period. See Table A-5.
[K] Concentration reported from CEM data.

TABLE A-3
BASELINE ACTUAL EMISSIONS FROM LIME KILN, SSCE PANAMA CITY MILL

Source Description	EU ID	Pollutant Emission Rate (TPY) [a]										
		SO_2	NO_x	CO	PM	PM_{10}	VOC	TRS	SAM	Lead	Mercury	Fluorides
Lime Kiln	004											
1997 Actual Emissions		24.1	195.1	15.2	106.9	93.4	3.9	15.5	1.77	0.27	5.2E-05	-
1998 Actual Emissions		14.1	114.3	8.9	74.3	64.9	2.3	5.0	1.04	0.16	3.1E-05	-
1999 Actual Emissions		19.4	157.3	12.3	106.9	93.4	3.1	3.4	1.43	0.22	4.2E-05	-
2000 Actual Emissions		16.5	133.7	10.4	87.6	76.6	2.7	3.2	1.21	0.18	3.6E-05	-
2001 Actual Emissions		18.2	147.7	11.5	80.7	70.6	2.9	3.9	1.34	0.20	4.0E-05	-
2002 Actual Emissions		18.9	153.4	12.0	71.5	62.5	3.0	4.0	1.39	0.21	4.1E-05	-
2003 Actual Emissions		17.0	137.5	10.7	75.0	65.5	2.7	3.9	1.25	0.19	3.7E-05	-
2004 Actual Emissions		22.2	179.5	14.0	70.8	61.9	3.6	4.1	1.63	0.25	4.8E-05	-
2005 Actual Emissions		22.9	185.4	14.5	69.7	60.9	3.7	4.5	1.68	0.26	5.0E-05	-
2006 Actual Emissions		22.6	183.1	14.3	70.9	62.0	3.6	6.3	1.66	0.25	4.9E-05	-

TPY = Tons per year.

Notes:
[a] See Table A-2 for emission factors and operating data.

TABLE A-4
SUMMARY OF BASELINE 2-YEAR AVERAGE ACTUAL EMISSIONS FROM LIME KILN, SSCE PANAMA CITY MILL

Source Description	Pollutant Emission Rate (TPY) [a]										
	SO_2	NO_x	CO	PM	PM_{10}	VOC	TRS	SAM	Lead	Mercury	Fluorides
Lime Kiln											
1997 - 1998 Average Emissions	19.1	154.7	12.1	90.6	79.2	3.07	10.3	1.40	0.214	4.14E-05	-
1998 - 1999 Average Emissions	16.8	135.8	10.6	90.6	79.2	2.70	4.2	1.23	0.188	3.64E-05	-
1999 - 2000 Average Emissions	18.0	145.5	11.4	97.3	85.0	2.89	3.3	1.32	0.201	3.89E-05	-
2000 - 2001 Average Emissions	17.4	140.7	11.0	84.2	73.6	2.79	3.6	1.28	0.194	3.77E-05	-
2001 - 2002 Average Emissions	18.6	150.5	11.8	76.1	66.5	2.99	4.0	1.36	0.208	4.03E-05	-
2002 - 2003 Average Emissions	18.0	145.4	11.4	73.3	64.0	2.89	4.0	1.32	0.201	3.89E-05	-
2003 - 2004 Average Emissions	19.6	158.5	12.4	72.9	63.7	3.15	4.0	1.44	0.219	4.24E-05	-
2004 - 2005 Average Emissions	22.5	182.4	14.3	70.2	61.4	3.62	4.3	1.65	0.252	4.88E-05	-
2005 - 2006 Average Emissions	22.8	184.2	14.4	70.3	61.4	3.66	5.4	1.67	0.255	4.93E-05	-
Average Actual Emissions of Highest 2-Year Period											
	'05-'06	'05-'06	'05-'06	'99-'00	'99-'00	'05-'06	'97-'98	'05-'06	'05-'06	'05-'06	--
--Total	**22.8**	**184.2**	**14.4**	**97.3**	**85.0**	**3.66**	**10.3**	**1.67**	**0.255**	**4.93E-05**	-

TPY = Tons per year.

Notes:
[a] See Table A-2 for emission factors.

TABLE A-5
EMISSIONS AND PLANT OPERATING DATA FOR LIME KILN STACK TESTS

Test Date	Flue Gas Temperature (°F)	Flue Gas Flowrate (dscfm)	Flue Gas Flowrate (acfm)	Lime (CaO) Production (ton/hr)	Moisture (%)	Oxygen (%)	Corrected Flue Gas Flowrate @ 10% O_2 (dscfm)	Pollutant	Emission Rate	5-Yr Period	5-Yr Average PM (lb/hr)
1997	--	--	--	--	--	--	--	PM	21.6 lb/hr	1997 - 2001	25.48
1998	163.1	48,887	85,958	--	33.1	6.5	64,442	PM	28.49 lb/hr	1998 - 2002	26.49
								TRS	2.2 ppm @ 10% O_2		
1999	167.9	58,145	104,176	--	34.0	5.6	81,403	PM	28.77 lb/hr	1999 - 2003	25.51
								TRS	0.71 ppm @ 10% O_2		
2000	168.6	49,986	91,109	--	34.7	6.1	67,709	PM	22.72 lb/hr	2000 - 2004	22.24
								TRS	0.94 ppm @ 10% O_2		
2001	167.7	50,982	91,684	--	34.2	6.7	66,277	PM	25.84 lb/hr	2001 - 2005	20.29
								TRS	1.37 ppm @ 10% O_2		
2002	165.4	53,066	93,285	--	32.7	6.6	69,468	PM	26.635 lb/hr	2002 - 2006	17.42
								TRS	2.54 ppm @ 10% O_2		
2002	--	53,159	--	14.07	--	7.2	66,908	SO_2	5.58 lb/hr	--	--
2003	172.1	52,203	105,567	--	40.0	8.3	60,271	PM	23.6 lb/hr	2002 - 2006	17.42
2004	162.3	27,629	48,275	19.54	32.8	8.1	32,401	PM	12.393 lb/hr	2002 - 2006	17.42
								TRS	0.459 ppm @ 10% O_2		
2005	164.0	26,385	48,590	--	35.7	7.6	32,142	PM	12.979 lb/hr	2002 - 2006	17.42
								TRS	7.71 ppm @ 10% O_2		
2006	166.3	44,475	80,958	20.0	34.6	7.2	55,796	PM	11.515 lb/hr	2002 - 2006	17.42
								TRS	3.34 ppm @ 10% O_2		
2006	160.0	52,378	89,526	15.5	31.7	7.5	64,282	SO_2	0.5 lb/hr	--	--
								NO_X	35.6 lb/hr	--	--
Average[a] =	166.4	51,476	92,783		34.4	6.9	66,284				
Maximum[a] =	172.1	58,145	105,567		40.0	8.3	81,403				
Minimum[a] =	160.0	44,475	80,958		31.7	5.6	55,796				

[a] Excluding 2004 and 2005, which appear to be anomalous.

TABLE A-6
PAST ACTUAL OPERATING CONDITIONS OF LIME KILN

					2-Year Average		
Year	Plant Operation (hours)	Heat Input Rate (MMBtu/yr)[a]	Lime Production (ton CaO/yr)	2-Year Period	Plant Operation (hours)	Heat Input Rate (MMBtu/yr)	Lime Production (ton CaO/yr)
1997	8,388	1,114,908	168,454	--	--	--	--
1998	5,606	751,522	98,736	1997 - 1998	6,997	933,215	133,595
1999	8,380	1,166,450	135,802	1998 - 1999	6,993	958,986	117,269
2000	7,879	1,085,650	115,415	1999 - 2000	8,130	1,126,050	125,609
2001	7,959	1,096,170	127,518	2000 - 2001	7,919	1,090,910	121,467
2002	8,208	1,114,920	132,432	2001 - 2002	8,084	1,105,545	129,975
2003	8,608	880,925	118,752	2002 - 2003	8,408	997,923	125,592
2004	8,128	971,355	154,961	2003 - 2004	8,368	926,140	136,857
2005	7,997	951,140	160,068	2004 - 2005	8,063	961,248	157,515
2006	8,143	954,810	158,130	2005 - 2006	8,070	952,975	159,099
				Average Actual Operating Conditions of Highest 2-Year Period			
					'02-'03	**'99-'00**	**'05-'06**
--Total					**8,408**	**1,126,050**	**159,099**

[a] Heat input rates based on 150,000 Btu/gal for fuel oil, and 1,000 Btu/ft^3 for natural gas. See Table A-1 for fuel usage amounts.

-[b] Fuel usage rates for 1997 unavailable

APPENDIX B

POTENTIAL EMISSION CALCULATIONS FOR THE LIME KILN AND OTHER PROJECT-AFFECTED SOURCES

4.12 Lime Kilns

Just as for kraft recovery furnaces, TRS and particulate matter (PM) emissions from lime kilns received all of the attention until recent years, because of their readily observable nature (odor and visibility). Besides these emissions, other significant emissions from the kiln include SO_2, NO_x, and total hydrocarbons (THCs).

4.12.1 *Particulate Emissions*

While passing through the kiln, the combustion gases pick up a good deal of particulate matter both from lime mud dust formation and from alkali vaporization. This PM must be removed before the gases exit to the atmosphere. Mechanical devices such as dust chambers or cyclones are generally used to remove larger particles, which are mainly calcium-containing. A wet scrubber or electrostatic precipitator follows for removal of smaller particulates, which are mainly sodium sulfate and sodium carbonate and have aerodynamic diameters less than 10 μm. The following analysis of speciated particulate matter emissions from one lime kiln equipped with a wet scrubber was obtained (USEPA 1990): 34.68% Na, 47.20% SO_4, 1.3% F, 2.63% Cl, 1.28% K, 10.12 % OC (organic C), 0.39% Ca, rest <0.5% or less. This confirms that a majority of the PM emissions from a lime kiln comprise Na_2SO_4 or Na_2CO_3.

EPA has developed source measurement methods for PM_{10} (Method 201A), $PM_{2.5}$ (a modification of Method 201A) and condensible particulate matter (CPM) (EPA Method 202). However, all these methods were designed primarily for stacks following dry PM control devices. A significant fraction of the stacks on combustion sources in the pulp and paper industry are considered wet sources. Thus, EPA M201A cannot be used to accurately estimate PM_{10} and $PM_{2.5}$ emissions from these sources. O'Connor and Genest (2003a, 2003b) have recently developed a "dilution tunnel sampler" to measure PM_{10} and $PM_{2.5}$ emissions from both wet and dry pulp and paper mill combustion sources.

4.12.2 *SO_2 Emissions*

Sulfur dioxide is formed in lime kilns when fuel oil or petroleum coke is burned as primary fuel. SO_2 will also be formed if NCGs or SOGs containing sulfur are burned in the kiln. Lime muds also contain a small amount of sulfur, which when oxidized, would form SO_2. Median sulfur content of CNCGs and SOGs have been reported as 1.1 and 4.2 lb/ADTP, respectively (NCASI 2002c). Median sulfur contents of 7 lime muds have been reported at 0.2% (NCASI 1999), which translates to about 1.83 lb S/ADTP. Thus, fossil fuels such as fuel oil, kraft mill NCG/SOGs, and soluble sulfides in lime mud can contribute a significant amount of sulfur to the inputs of a lime kiln. However, the regenerated quicklime in the kiln acts as an excellent in situ scrubbing agent, and venturi scrubbers following the kiln can further augment this SO_2 removal process since the scrubbing solution becomes alkaline from the captured lime dust. Consequently, even though the potential for SO_2 formation in a kiln that burns sulfur-containing fuels with or without NCGs/SOGs is high, most lime kilns emit very low levels of SO_2 (~50 ppm). Some kilns do, however, occasionally emit higher levels of SO_2 (50 to 200 ppm). Not much is known about why this happens. Under certain low oxygen conditions, elevated SO_2 levels have been reportedly observed in lime kiln exit gases ahead of the scrubber (Burgess 2001). Another theory proposed is that the SO_2 generated in the kiln is captured exclusively by the sodium salts (Na_2CO_3 and Na_2SO_4) resulting from volatilization of the lime mud Na content and not by the calcium salts (Kiiskila 1990). Thus, when the ratio of total sulfur input to the kiln to the sodium content in lime mud led to the kiln increases beyond 1, either by increasing the sulfur input from fuels, NCGs, etc. or from decreasing lime mud Na levels from better mud washing, the efficiency of SO_2 capture also begins to fall.

Emission test data with corresponding fuel input information for over 30 kilns are summarized in Table A13e of Appendix A. These data show that SO_2 concentrations do not appear to be related to either the fuel type (oil, gas) or the presence or absence of LVHC NCG or SOG burning in the kiln. A preliminary sulfur input-output balance was also carried out on 25 kilns with wet scrubbers and 7 kilns with electrostatic precipitators (ESPs). These kilns had sulfur inputs from fuel oil, NCGs and SOGs, or just lime mud. The results showed over 95% of the SO_2 generated from the oil, NCG/SOGs, or lime mud was captured within the kiln. For these calculations, SO_2 and TRS were considered to be the only S-containing emissions, and an average TRS emission of 10 ppm in the lime kiln stacks was assumed. Average SO_2 emissions from 7 kilns equipped with ESPs were somewhat higher than the average emissions for 25 kilns equipped with wet scrubbers (see Table 4.13).

4.12.3 *NO_x Emissions*

NO_x emissions from lime kilns result mainly from fossil fuel burning (natural gas and fuel oil). A recent NCASI study involving NO_x testing at 15 lime kilns verified that "thermal" NO_x was the sole mechanism operative in gas-fired kilns, while the "fuel" NO_x mechanism was mostly operative in oil-fired kilns (NCASI 2003a). Gas-fired kiln NO_x emissions appeared to be strongly dependent on the dry-end lime temperature. Oxygen availability in the combustion zone was determined to be the key factor in oil-fired kilns. NO_x emissions for gas-fired kilns also exhibited high short-term variability, unlike for oil-fired kilns. Analysis of long-term daily average data from two lime kilns showed no difference in NO_x emissions between days with and without LVHC NCG burning. An earlier NCASI study (NCASI 2002b) had shown that when stripper off-gases (SOGs) containing ammonia were burned in lime kilns, a small fraction of the ammonia, from -1 to 23%, converts to NO_x.

4.12.4 *CO and VOC Emissions*

CO and some VOCs (e.g., formaldehyde) are mainly products of incomplete fuel combustion, and their emission levels are highly variable among kilns. Some volatile organic compounds enter the kiln with the liquid component of lime mud and are released as the mud is heated. Volatile organic compounds present in scrubber make-up water can be stripped by the flue gas exiting the kiln. Methanol has been found to be the dominant organic compound present in lime kiln exhaust gases (NCASI 1994a).

Table 4.13 provides estimates of emissions for VOC, SO_2, NO_x, CO, total PM (TPM), condensible particulate emissions (CPM), PM_{10}, and $PM_{2.5}$ from kraft lime kilns. The data on PM_{10} and $PM_{2.5}$ emissions generated using a dilution tunnel sampler (O'Connor and Genest 2003a, 2003b) for seven kilns equipped with wet scrubbers are also shown summarized in this table. SO_2, PM_{10}, and $PM_{2.5}$ emissions are provided separately for kilns with ESPs and kilns with wet scrubbers. NO_x emissions are provided separately for kilns firing oil and kilns firing natural gas. Detailed data including descriptions for each kiln are provided in Appendix A, Tables A13a, A13b, A13c, A13d, A13e, and A13f.

Table 4.13 VOC[a], SO_2, NO_x, CO, TPM, CPM, PM_{10}, and $PM_{2.5}$ Emissions from Lime Kilns

	No.[b]	Range	Median	Mean
		lb/ton CaO		
VOC[a]	18	ND – 0.298	0.023	0.046
SO_2[d]	7	0.02 – 2.98	0.33	0.80
SO_2[e]	25	0.00 – 3.07	0.064	0.41
NO_x[f]	15	0.30 – 5.90	0.70	1.69
NO_x[g]	8	0.30 – 2.70	1.15	1.18
CO	14	0.002 – 1.23	0.055	0.181
TPM[c,d]	7	0.024 – 0.525	0.089	0.175
TPM[c,e]	31	0.35 – 5.34	1.16	1.59
CPM[h]	4	0.175 – 0.305	0.188	0.214
PM_{10}[d]	6	as % of TPM[c,d]	69.6%	64.2%
PM_{10}[e,i]	6	as % of TPM[c,e]	102.4%	100.8%
$PM_{2.5}$[4]	6	as % of TPM[3,4]	18.6%	23.6%
$PM_{2.5}$[5,9]	7	as % of TPM[3,5]	92.9%	88.1%

[a] measured as C using EPA Method 25A; [b] number of kilns tested; [c] total (filterable) particulate matter; [d] kilns with ESPs; [e] kilns with wet scrubbers; [f] gas-fired kilns; [g] oil-fired kilns; [h] condensible particulate matter for kilns with ESPs; for estimating CPM from kilns with wet scrubbers, use 16% of TPM for such kilns (see footnote 9); [i] primary + condensible PM_{10} and $PM_{2.5}$; if only primary PM_{10} and $PM_{2.5}$ is desired, subtract 16% for average CPM contribution

4.13 Causticizing Area Sources

Slakers are generally vented through a stack to discharge the large amounts of steam generated. The steam contains a considerable amount of particulate matter, which is largely calcium and sodium carbonates and sulfates. Scrubbers are generally employed to capture this particulate matter. Numerous other pieces of equipment in the causticizing area are vented to the atmosphere. These sources are associated with the processing of green liquor (clarifiers, storage and surge tanks, dregs filters); white liquor (causticizer tanks, clarifiers, pressure filters, storage tanks); and lime mud (mix tanks, dilution tanks, storage tanks, pressure filters, precoat filters, filter vacuum pump exhausts). These sources typically have small gas flow rates and very low concentrations of gaseous organic compounds, with methanol being the primary one (NCASI 1994a). The amounts of organic compounds in the vent gases will be a function of the process liquid concentrations, temperature of the process, and vent gas flow rates. Total VOC emissions from all of these sources are on the order of 0.3 lb/ton CaO or less. Table 4.14 provides estimates of emissions for VOCs from several causticizing area sources and TPM emissions from four slakers. Detailed data including descriptions for each source are provided in Appendix A, Tables A14a and A14b.

Lime Kilns

The lime kiln data were obtained from NCASI Technical Bulletins Nos. 852 (NCASI 2002), 884 (NCASI 2004), and 898 (NCASI 2005) and are summarized in Table 3. Detailed data are presented in Table A4 of Appendix A. The emissions data are separated by control device type. The majority of lime kilns in this data set used wet control devices for particulate control. Two of the lime kilns used an ESP for particulate control, followed by a wet scrubber for SO_2 control. The remainder used an ESP for particulate control. Once again, as for SDTs, wet stacks are not amenable to be tested for PM_{10}, $PM_{2.5}$ and CPM by the traditional EPA Methods 201A (PM_{10}), modified 201A ($PM_{2.5}$), CTM 039 (PM_{10}, $PM_{2.5}$) and CTM 040 (PM_{10}, $PM_{2.5}$), which are designed for stacks following dry PM control devices. O'Connor and Geneste (2003) used a modified dilution tunnel method to quantify total PM_{10} and $PM_{2.5}$ emissions from six Canadian kraft lime kilns with wet scrubbers.

The filterable PM data for lime kilns using wet control devices are from 31 sources listed in NCASI Technical Bulletin No. 884 (NCASI 2004), Table A13c. The data for PM_{10} and $PM_{2.5}$ emissions for lime kilns using wet control devices are presented as a percentage fraction of the total PM corresponding to the six Canadian lime kilns tested by O'Connor and Geneste (2003) (see NCASI Technical Bulletin No. 884, Table A13d) for which both PM_{10} and $PM_{2.5}$ data were obtained . In the O'Connor and Geneste (2003) study, lime kiln total PM_{10} and $PM_{2.5}$ emissions were measured using a dilution tunnel followed by size-specific cyclones and quartz filters. To determine the filterable and condensible fractions of total PM_{10} and $PM_{2.5}$ emissions, the filters were heated at 120°C to determine weight loss. The portion remaining after heating was assumed to be the filterable fraction and the portion lost was assumed to equal the condensible fraction of the samples.

The CPM data for lime kilns with wet scrubbers in Table 3 were obtained from NCASI tests (4 units) reported in NCASI Technical Bulletin No. 898 (NCASI 2005) and from the Canadian study (seven kilns) summarized in Technical Bulletin No. 884 (NCASI 2004). The organic CPM, inorganic CPM and sulfate CPM data are from two to three sources listed in Technical Bulletin No. 898 (NCASI 2005).

All of the PM and CPM data for lime kilns using an ESP followed by a wet control device are from two sources listed in NCASI Technical Bulletin No. 898 (NCASI 2005). Unfortunately, no PM_{10} and $PM_{2.5}$ data are available for such sources. However, if one assumes that the wet scrubber played no role in removing or contributing to PM emissions from such sources, which is not an unreasonable assumption, one could use the results for lime kilns using ESPs to estimate the PM_{10} and $PM_{2.5}$ fractions of PM. Total CPM emissions data for two kilns, and organic CPM, inorganic CPM and sulfate CPM emissions for one kiln are obtained from Technical Bulletin No. 898 (NCASI 2005).

The filterable PM data for lime kilns using an ESP alone are from the 7 sources listed in NCASI Technical Bulletin No. 884 (NCASI 2004), Table A13c. The PM_{10} and $PM_{2.5}$ data are from the 6 sources listed in Technical Bulletin No. 884 (NCASI 2004), Table A13d. These data are also presented as a percentage fraction of the filterable PM corresponding to the six lime kilns tested. As discussed earlier for the recovery furnaces, the in-stack total PM data for kilns with ESPs were adjusted by 0.004 gr/dscf to obtain estimated total Method 5 PM values. These adjusted PM values were used to estimate $PM_{2.5}$ and PM_{10} values at percents of EPA Method 5 values. Table 3 also shows the estimated percentages if the total PM value was not adjusted. The CPM data are from 4 sources that are summarized in NCASI Technical Bulletin No. 852 (NCASI 2002). The organic CPM, organic CPM (water soluble) and sulfate CPM data are from two to three sources listed in Technical Bulletins No. 852 (NCASI 2002).

Table 3. Lime Kiln Data Summary

Lime Kilns with Wet Particulate Control Devices

Parameter	Measurement Method	No. of Sources	Range (lb/ton CaO)	Mean (lb/ton CaO)	Mean Percent of PM or CPM
PM	EPA Method 5	31	0.35 – 5.34	1.59	
PM_{10}	Dilution Tunnel	6			84.7[1]
$PM_{2.5}$	Dilution Tunnel	6			76.8[1]
CPM – Total	EPA Method 202	11	0.020 - 0.453	0.155	
CPM - Organic		3			8.3[2]
CPM Inorganic - Sulfate (as H_2SO_4)		2			58.2[2]
CPM Inorganic – non-sulfate[4]		3			33.5[2]

Lime Kilns with a Dry ESP for Particulate Control Followed by a Wet Scrubber

Parameter	Measurement Method	No. of Sources	Range (lb/ton CaO)	Mean (lb/ton CaO)	Mean Percent of PM or CPM
PM	EPA Method 5	2	0.043 - 0.053	0.048	
PM_{10}					No Data[3]
$PM_{2.5}$					No Data[3]
CPM – Total	EPA Method 202	2	0.070 - 0.161	0.116	
CPM - Organic		1			54.9[2]
CPM Inorganic - Sulfate (as H_2SO_4)		1			45.1[2]
CPM Inorganic – non-sulfate[4]		1			0.0[2]

Lime Kilns with a Dry ESP for Particulate Control

Parameter	Measurement Method	No. of Sources	Range (lb/ton CaO)	Mean (lb/ton CaO)	Mean Percent of PM
PM	EPA Method 5	7	0.024 - 0.525	0.175	
PM_{10}	EPA CTM-040	6			30.2[1]
$PM_{2.5}$	EPA CTM-040	6			11.0[1]
CPM – Total	EPA Method 202	4	0.057 - 0.198	0.152	
CPM - Organic		3			31.5[2]
CPM Inorganic - Sulfate (as H_2SO_4)		2			20.8[2]
CPM Inorganic – non-sulfate[4]		3			47.7[2]

[1]filterable PM_{10} and $PM_{2.5}$ values expressed as percent of filterable PM values – note that for lime kilns with ESPs, PM_{10} and $PM_{2.5}$ were calculated as percent of total PM by adding 0.004 gr/dscf to total PM values; average PM_{10} and $PM_{2.5}$ values without such adjustment would be higher (64.2% and 23.6%, respectively); [2]organic and inorganic (sulfate and non-sulfate) CPM values expressed as percent of total CPM values; [3]may be estimated using the fractions for lime kilns with dry ESPs in Table 3; [4]see footnote 3 in Table 1

5.4.4 *Lime Kilns*

CO and some VOCs (e.g., formaldehyde) are mainly products of incomplete fuel combustion, and their emission levels are highly variable among kilns. Some volatile organic compounds enter the kiln with the liquid component of lime mud and are released as the mud is heated. Volatile organic compounds present in scrubber make-up water can be stripped by the flue gas exiting the kiln. Methanol has been found to be the dominant organic compound present in lime kiln exhaust gases (NCASI 1994d).

Trace metals are present in the lime mud that results from clarifying white liquor. The washed lime mud is calcined in the lime kiln by the firing of a fossil fuel such as fuel oil or natural gas. Trace quantities of metals present in the lime mud as well as the fossil fuel will be volatilized and will not be completely captured by the lime kiln particulate collection device (scrubber or ESP). The relationship between trace metals emissions and emissions of total particulate from lime kilns is not well understood.

Table 16A provides summary emissions of several organic 'air toxics,' terpenes, TRS and THCs from 34 kraft lime kilns. Information concerning the specifics of each kiln, such as type of particulate control device, lime production rate, gas flow rates, etc. are presented in Table A-14 of Appendix A. Detailed emissions data for each 'air toxic' at each kiln stack are also given in Table A-14. Twenty-eight of these lime kilns had wet scrubbers (venturi scrubbers) and used fresh water or clean condensate for scrubber make-up solution. Five lime kilns had ESPs for particulate emission control. One lime kiln had a wet scrubber and an ESP. Two lime kilns had mist eliminators instead of venturi scrubbers. Most of these lime kilns used natural gas for fuel; however, a few kilns were tested using oil for fuel, as shown in Table 16A. NCGs are burned in most of these lime kilns; however, several kilns did not burn NCGs. In NCASI Technical Bulletin No. 650 (NCASI 1993), it was shown from limited data that VOC emissions from lime kilns were essentially the same when burning or not burning NCGs. Maintaining conditions for complete combustion is perhaps the key factor in controlling lime kiln emissions of VOCs.

A total of 54 different organic 'air toxics' were identified in the emissions from these lime kilns. Besides individual organic 'air toxics,' Table 16A also provides emissions of H_2S, HCl, H_2SO_4, terpenes, TRS and THCs. Methanol is the most dominant VOC emission from lime kilns, with a mean emission rate of about 0.031 lb/ton CaO (range - ND to 0.98). H_2S was the largest non-organic emission, with a mean of 0.067 lb/ton CaO. Once again, several organic 'air toxics' were measured at only one source, and these values should be used with caution.

Tables 16B and 16C provide summaries of recently compiled (NCASI 2002b) emission data for 4 kilns with ESPs and 13 kilns with venturi scrubbers for the 11 HAP trace metals (Sb, As, Be, Cd, Cr, Co, Pb, Mn, Hg, Ni and Se), respectively. Information concerning the specifics of each kiln, such as type of particulate control device, lime production rate, gas flow rates, simultaneous PM emission rate, etc. is presented in Table A-14A of Appendix A. Detailed emissions data for each trace metal HAP at each kiln stack are also given in Table A-14A. Also provided in Table 16C for kilns with wet scrubbers are summary emissions data for other non-HAP trace metals including Ba, Cu, Ag, Th, Zn, non-metal P and hexavalent Cr (Cr^{+6}). Similar data for kilns with ESPs were unavailable.

An analysis of the emission data for various organic compounds corresponding to three lime kilns with and without concurrent burning of LVHC NCGs showed no discernible impact on the emissions due to the NCG burning (NCASI 1993).

Table 16A. Summary of 'Air Toxic' Emissions from Kraft Lime Kilns

Volatile Organic Compound	No. of Sources	Detects	Emissions, lb/ton CaO				
				NDs > 50%		NDs ≤ 50%	
			Range	NOR-PLOT[b] or SDln[c] avg	Median[1] using ND = 0	Median[2] using ND = ½ DL	Mean[2] using ND = ½ DL
1,1,1-Trichloroethane	21	0			*8.0E-05*	*8.0E-05*	*8.0E-05*[d]
1,1,2-Trichloroethane	17	0			*3.8E-04*	*3.8E-04*	*3.8E-04*[d]
1,2,4-Trichlorobenzene	8	2	ND to 4.7E-02	1.3E-04[c]			
1,2-Dichloroethane	8	0			*3.7E-04*	*3.7E-04*	*3.7E-04*[d]
1,2-Dichloroethylene	8	0			*1.9E-04*	*1.9E-04*	*1.9E-04*[d]
Acetaldehyde	12	8	ND to 1.2E-02		9.6E-04	5.5E-03	5.1E-03[a]
Acetone	22	10	ND to 0.039	8.1E-04[b]			
Acetophenone	15	0			*5.5E-03*	*5.5E-03*	*5.5E-0*[d]
Acrolein	15	3	ND to 2.1E-03	2.1E-05[b]			
Benzaldehyde	2	0			*5.5E-03*	*5.5E-03*	*5.5E-03*[d]
Benzene	25	7	ND to 6.6E-03	3.3E-04[b]			
Bromodichloromethane	3	1	ND to 5.4E-05	8.7E-06[c]			
Bromomethane	1	1	1 to 9 ppb		1.6E-04	1.6E-04	1.6E-04
Carbon Disulfide	5	1	ND to 3.5E-03	2.9E-04[c]			
Carbon Tetrachloride	18	0			*1.5E-03*	*1.5E-03*	*1.5E-0*[d]
Carbonyl Sulfide	5	0			*3.9E-03*	*3.9E-03*	*3.9E-03*[d]
3-Carene	6	0			*1.1E-02*	*1.1E-02*	*1.1E-0*[d]
Chlorobenzene	17	1	ND to 4.6E-04	1.1E-05[c]			
Chloroform	24	1	ND to 2.1E-04	3.6E-06[c]			
Chloromethane	1	1	27 to 187 ppb		1.7E-03	1.7E-03	1.7E-03
m-Cresol	4	0			*9.5E-03*	*9.5E-03*	*9.5E-03*[d]
o-Cresol	13	0			*4.7E-03*	*4.7E-03*	*4.7E-0*[d]
Cumene	15	0			*5.5E-03*	*5.5E-03*	*5.5E-0*[d]
p-Cymene	6	1	ND to 9.6E-05	3.3E-06[c]			
Ethanol	17	2	ND to 5.7E-02	1.1E-02[c]			
Ethyl Benzene	14	0			*3.0E-03*	*3.0E-03*	*3.0E-0*[d]
Formaldehyde	11	6	ND to 4.2E-02		1.5E-03	5.5E-03	8.5E-03[a]
Hexachlorocyclopentadiene	4	0			*1.2E-02*	*1.2E-02*	*1.2E-0*[d]
Hexachloroethane	7	0			*1.0E-02*	*1.0E-02*	*1.0E-0*[d]
n-Hexane	18	2	ND to 4.8E-04	2.1E-05[c]			
Hydrogen Chloride	4	1	ND to 1.9E-03	2.1E-04[c]			
Iodomethane	1	0	ND [1.6E-04]				
Isooctane	1	0	ND [1.6E-04]				
Isopropanol	12	3	ND to 1.5E-02	8.7E-04[b]			
Methanol	28	17	ND to 0.98		8.0E-03	1.2E-02	3.1E-02[a]
Methyl Ethyl Ketone	25	8	ND to 0.174	4.3E-05[b]			
Methyl Isobutyl Ketone	23	3	ND to 1.3E-03	2.0E-04[b]			
Methylene Chloride	22	1	ND to 2.3E-04	4.2E-06[c]			
Naphthalene	2	2	ND to 4.8E-03		1.3E-02	1.3E-02	1.3E-02
Phenol	13	1	ND to 0.016	2.7E-04[c]			

Table 16A (Cont'd). Summary of 'Air Toxic' Emissions from Kraft Lime Kilns

			Emissions, lb/ton CaO				
				NDs > 50%	NDs ≤ 50%		
Volatile Organic Compound	No. of Sources	Detects	Range	NOR-PLOT[b] or SDln[c] avg	Median[1] using ND = 0	Median[2] using ND = ½ DL	Mean[2] using ND = ½ DL
Styrene	8	2	ND to 1.6E-03	5.7E-05[c]			
Sulfuric Acid[3]	2	2	6.8E-07 to 0.021		6.8E-07[3]	6.8E-07[3]	6.8E-07[3]
alpha-Pinene	11	2	ND to 0.16	2.2E-05[c]			
beta-Pinene	11	2	ND to 6.0E-02	9.8E-06[c]			
Terpenes	14	8	ND to 1.0E-01		7.1E-03	2.9E-02	3.2E-02[a]
alpha-Terpineol	5	0			*3.0E-03*	*3.0E-03*	*3.0E-03*[d]
Tetrachloroethylene	8	1	ND to 5.3E-03	2.6E-04[c]			
Toluene	24	7	ND to 2.4E-02	1.5E-05[b]			
Trichloroethylene	17	0			*3.7E-04*	*3.7E-04*	*3.7E-04*[d]
Trichlorofluoromethane	1	1	ND to 8.3E-06		4.2E-05	4.2E-05	4.2E-05
Vinyl Acetate	1	0			*8.0E-05*	*8.0E-05*	*8.0E-05*[d]
m,p-Xylene	25	4	ND to 5.7E-03	6.8E-06[b]			
o-Xylene	25	5	ND to 0.132	2.1E-04[b]			
Total Hydrocarbons[7]	16	15	ND to 0.20		3.2E-02	3.2E-02	5.2E-02
TRS and Reduced Sulfur Compounds							
Dimethyl Disulfide	23	3	ND to 0.068	4.5E-06[b, 5]			
Dimethyl Sulfide	23	3	ND to 0.11	1.6E-06[b, 5]			
Hydrogen Sulfide	9	7	ND to 0.22			5.0E-02[4]	6.7E-02[a, 5]
Methyl Mercaptan	23	4	ND to 0.035	2.4E-05[b, 5]			
Total TRS[6]	23	22	0.0074 to 0.21			4.7E-02	6.3E-02

[1]median based upon assuming all non-detects (NDs) = 0 as in NCASI Technical Bulletin No. 701 (1995)
[2]median/mean based upon assuming ND = ½ detection limit (DL)
[3]6.8E-07 for a gas-fired kiln; 0.021 for a kiln likely burning No. 6 oil and/or NCGs with simultaneous SO_2 measurements of 28 to 96 ppm
[4]from NCASI Technical Bull. No. 849 – all NDs were assumed at ½ the DL when estimating averages
[5]using NOR-PLOT average for DMS, DMDS and CH_3SH and Trimmed Mean for H_2S and data from NCASI Technical Bulletin No. 849
[6]total TRS emissions in lb S/ton CaO
[7]total hydrocarbon emissions in lb C/ton CaO
[a]Trimmed Mean for data sets with 15 to 50% NDs; [b]NOR-PLOT Average; [c]SDln Average; The "NOR-PLOT Average" and "SDln Average" are statistically derived sample averages applicable to all data sets with greater than 50% NDs; [d]when more than 1 source is tested and all observations are ND, averages shown correspond to ½ of the lowest detection limit.
Non-detects are shown in italics at ½ the detection

Table 16B. Summary of Trace Metal Emissions from Kraft Lime Kilns with ESPs

Trace Metal	Reference No.	No. of Sources	Detects	Min	Max	Emissions, lb/ton CaO: NDs > 50%: NOR-PLOT[a] or SDln[b] avg	NDs ≤ 50%: Median[1] using ND = 0	NDs ≤ 50%: Median[2] using ND = ½ DL	NDs ≤ 50%: Mean[2] using ND = ½ DL
PM	1	4	4	0.02	0.39		0.12	0.12	0.04
Sb	1	4	2	*1.4E-06*	3.8E-06		1.5E-06	2.6E-06	2.6E-06
As	1	4	1	*1.4E-06*	3.1E-06	5.4E-07[b]			
Be	1	4	1	*7.4E-07*	1.5E-05	2.6E-06[b]			
Cd	1	4	4	1.9E-06	2.9E-05		1.1E-05	1.1E-05	1.3E-05
Cr	1	4	4	3.8E-06	9.1E-05		3.3E-05	3.3E-05	4.0E-05
Co	1	4	3	*7.4E-07*	3.0E-05		7.7E-06	7.7E-06	1.1E-05
Pb	1	4	4	3.0E-06	5.1E-05		1.5E-05	1.5E-05	2.1E-05
Mn	1	4	4	8.0E-06	1.0E-04		3.3E-05	3.3E-05	4.4E-05
Hg	1	4	2	6.0E-08	9.9E-06		3.0E-08	2.2E-06	3.6E-06
Ni	1	4	4	7.4E-06	2.4E-04		4.1E-05	4.1E-05	8.3E-05
Se	1	3	2	2.8E-07	3.1E-06		2.8E-07	2.1E-06	1.8E-06
P	1	4	3	*5.0E-05*	1.5E-03		5.0E-04	5.0E-04	6.4E-04
Ba								No data	No data
Cu								No data	No data
Zn								No data	No data
Ag								No data	No data
Th								No data	No data
Cr^{+6}								No data	No data

[1]median based upon assuming all non-detects (NDs) = 0 as in NCASI Technical Bulletin No. 701 (1995a)
[2]median/mean based upon assuming ND = ½ detection limit (DL)
[a]NOR-PLOT Average; [b]SDln Average; The "NOR-PLOT Average" and "SDln Average" are statistically derived sample averages applicable to all data sets with >50% NDs.
PM – simultaneous total particulate matter emissions
References: 1 (NCASI 2002b)
Non-detects are shown in italics at ½ the detection limit

Table 16C. Summary of Trace Metal Emissions from Kraft Lime Kilns with Wet Scrubbers

Trace Metal	Reference No.	No. of Sources	Detects	Emissions, lb/ton CaO					
						NDs > 50%	NDs ≤ 50%		
				Min	Max	NOR-PLOT[b] or SDln[c] avg	Median[1] using ND = 0	Median[2] using ND = ½ DL	Mean[2] using ND = ½ DL
PM	1	12	12	0.00	5.34		0.78	0.78	1.52
Sb	1	10	6	*1.5E-06*	1.0E-05		2.1E-06	3.1E-06	3.7E-06[a]
As	1	12	5	1.1E-06	1.2E-04	6.1E-07[b]			
Be	1	13	4	*1.6E-07*	1.0E-05	2.4E-08[b]			
Cd	1	10	9	1.8E-06	3.3E-05		5.8E-06	1.3E-05	1.4E-05
Cr	1	13	12	5.8E-06	9.6E-04		2.0E-04	2.0E-04	2.7E-04
Co	1	11	8	1.9E-06	3.6E-05		2.3E-06	1.0E-05	1.0E-05[a]
Pb	1	12	9	9.0E-06	1.7E-02		2.1E-04	1.6E-04	3.2E-03[a]
Mn	1	13	13	1.0E-04	8.3E-03		3.0E-04	3.0E-04	1.7E-03
Hg	1	6	1	*7.7E-09*	5.2E-06	6.2E-07[c]			
Ni	1	13	12	1.5E-05	1.3E-03		9.5E-05	9.5E-05	3.1E-04
Se	1	12	4	*4.7E-07*	1.2E-04	2.6E-06[b]			
P	1	7	7	2.5E-05	2.9E-03		1.7E-03	1.7E-03	1.5E-03
Ba	1	3	3	3.4E-04	1.2E-03		5.3E-04	5.3E-04	6.8E-04
Cu	1	2	2	2.2E-05	1.8E-04		1.0E-04	1.0E-04	1.0E-04
Zn	1	2	2	6.7E-05	1.0E-04		8.4E-05	8.4E-05	8.4E-05
Ag	1	1	0				*7.8E-07*	*7.8E-07*	*7.8E-07*
Th	2	2	1	*2.3E-05*	7.8E-06		7.8E-06	7.8E-06	2.8E-06
Cr^{+6}	1,2	3	1	*9.1E-06*	7.6E-05	1.8E-05[c]			

[1]median based upon assuming all non-detects (NDs) = 0 as in NCASI Technical Bulletin No. 701 (1995)
[2]median/mean based upon assuming ND = ½ detection limit (DL)
[a]Trimmed Mean for data sets with 15 to 50% NDs; [b]NOR-PLOT Average; [c]SDln Average; The "NOR-PLOT Average" and "SDln Average" are statistically derived sample averages applicable to all data sets with >50% NDs.
PM – simultaneous total particulate matter emissions
References: 1 (NCASI 2002b); 2 (NCASI 1995a)
Non-detects are shown in italics at ½ the detection limit

APPENDIX C

PETCOKE BURNER DATA

COEN
Clean combustion. Powerful results.

November 18, 2006
Smurfit Stones Container Corp.
Po Box 59560
Panama City, FL32412

Quotation #06-50-0016A

Attention: Mr. Kevin Knight

Subject: Coke/Gas/#6 Oil Fired Burners for Lime Recovery Kilns Your RFQ 100

Dear Mr. Knight

This refers to your email inquiry of 11/806 in connection with a proposal for retrofitting the existing lime recovery kiln to coke/gas/oil-fired burner. In response Coen Company Inc., is pleased to give below prices for the equipment.

The attached quote is for the coke/gas/oil-fired burner, optional burner management system (BMS) and CFD modeling. The burner is of proven design utilizing dual (two) air zones for better flame shaping capabilities. One of the largest American pulp & paper manufacturing company has used this design burner for more than five years with very good results saving millions of dollars in operational costs. A number of other paper mills have used our burners in the '80s when the gas prices were very high. Some are still firing coke & alternate fuels. Smurfit Stone, Hodge, LA has very successfully used our burners to fire coke in two kilns and saving several million dollars in fuel costs.

Coen burners are capable of firing coke as **high as 90%.** The burner does not require refractory lining to be changed to higher quality like other make burners may require. Coen gas burners produce almost as radiant a flame as that from oil firing. This means that the gas consumption is 2.5 to 4% less than that with competition's burner for the same production.

We hope you will find the offer in line with your requirements and look forward to working with you for the successful completion of this prestigious project.

Very truly yours,
COEN COMPANY, INCORPORATED
B.K. Wadhwani

B.K. Wadhwani
Product Manager
Process Equipment

OFFER

Coke Firing

Coen has supplied coke/gas fired burners to many pulp mills. One of the mills using coke is the IP Prattville mill where Coen replaced a competition's burner. Coen burner has been in operation for more than five years. With the new burner, IP has been able to fire 40% more coke (up to 90% of the firing rate) than that with the previous burner.

Since most other makes burners have not demonstrated the capability to fire 90% coke with Coen burner you will be able to save approximately 2,200,000/year (based on 75% coke substitution by other make burners).

Refractory Lining

With the old burner IP used to replace refractory every few months. With our burner there is hardly any refractory damage. Thus IP have, possibly, been able to **save more than $8,000,000** in four years in the fuel cost & in the cost of repairs. **That means the return on capital was less than a month.**

For your application the burner is designed not to produce a very high temperature flame. Hence one may not have to upgrade the refractory lining. The competitions' burners will possibly require higher-grade refractory as they produce high intensity flame. We are informed by some of the users of these competition's (from abroad) burners that they had to replace refractory frequently.

Coke Conveying Airflow

We have quoted the burner on the basis of an indirect-fired system. In this system the coke is supplied with approximately 7 to 8% of stoichiometric air (1,130scfm) at 20" wc at the burner.

Coke Particle Classification

For firing 80% plus coke Coen would prefer to have the following particle distribution:

% Passing	Mesh Size
96	120
80	200
68	270
22	325

Primary Air Fan

Primary air required will be approximately 7,520 SCFM at 24"wc at the burner.

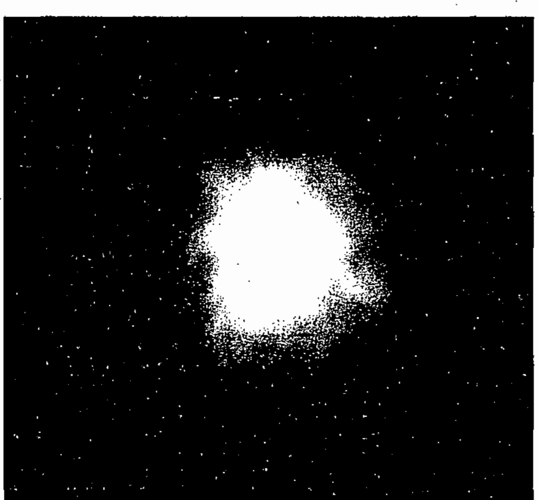
Dual Air Zone Burner

The modern, efficient burner designs have more than one channel through which the fuel and primary air is injected. Coen has offered Dual Air & Gas Zone Burner. In a dual air zone burner primary air is supplied through a central pipe at the firing end of which a spinner is located. The spinner is specifically designed for that particular kiln. Coke is supplied through a concentric pipe (outer zone) to the above pipe. In other words coke flows in the outer channel (or annulus zone). The spinner in the central zone imparts a spin to the air & creates a recirculation zone. The hot gases trap the coke resulting in a stable controlled flame. By changing the amount of the spin air one can manipulate the flame shape to suit the specific kiln. This is especially true for turndown capability.

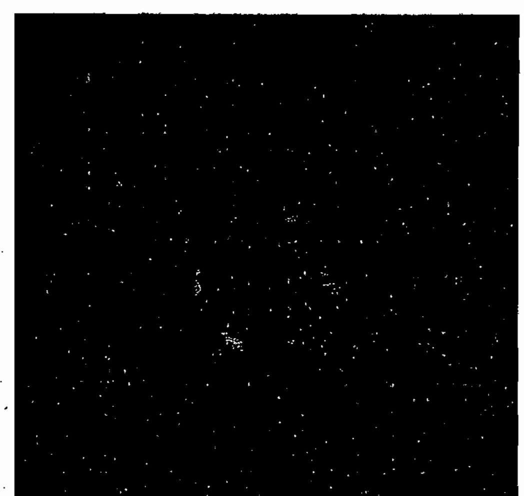
Dual Zone Gas Gun

The gas entering the gun is divided in two zones. The outer (annulus) zone has a ¾" thick tapered stainless steel nozzle with several waves of orifices. Therefore, the gas jets exit the nozzle at an angle. These gas jets mix with the core primary air exiting from the spinner & develop a stable flame at the nozzle.

The other part of the gas comes through the central (core) zone. At the end of this zone the gas exits around an inverted tapered nozzle. The gas exits in a very thin inverted expanding hollow cone. This gas is surrounded by the flame of the annulus gas & does not mix with the core/spinner air. Hence the gas gets heated up & splits in to Carbon (C) & Hydrogen (H_2) elements. These two elements then burn with the secondary air from the cooler. Carbon burning produces a very radiant flame, which almost matches with the radiant flame from burning of oil. As one knows a radiant flame has higher heat transfer coefficient hence Coen dual zone gas gun produces a high radiant flame, which is 4-5% more efficient.



Oil Flame (Radiant)



Gas Flame (Non-Radiant)

Since our competition's design does not split the gas (CH4) in to C & H_2 elements, with Coen gas burner there is approximately 4% savings in the fuel consumption as compared to a competition's burner. In your case this will **translate in to a savings of well over $550,000/yr**.

In addition, there is recirculation produced by the spinner bringing in flue gases (internal flue gas generator) and since the heat is transferred efficiently the flame cools down thereby **reducing the thermal NOx** produced from our burner as compared with any other make burner.

Oil Gun

Coen oil gun with the specially designed multi- air stream spinner produces a stable flame throughout the firing range. Hence you will be able to fire 100% of #6 oil without the need of frequently cleaning the nozzle or change over to costly gas firing. Hence you will achieve further savings in the fuel cost.

Gas/Electric Igniter

Coen gas/electric igniter is a two-stage igniter producing a long, stable flame. The igniter hood is made of stainless steel for kiln application. We locate the igniter 12" - 13" behind the exit end of the air tube, away from the radiation of the kiln, thus giving it a long working life.

The igniter has been used to heat up refractory by designing the igniter to higher capacity. This avoids using the main burner, which needs to started & stopped for a controlled rise of temperature. This main burner produces thermal shocks resulting in reduced refractory life.

Computational Fluid Dynamics Computer Modeling

Coen recommends performing Computational Fluid Dynamics (CFD) modeling of the kiln-burner to see the effects of changes to the spin air and predict the amount of air, its pressure etc. to optimize the flame shape. This is imprtant for kilns firing CNCGs as well. The CFD modeling also predicts the expected flame geometry indicating any hot spots, which may tend to damage the refractory. Thus with this tool we design the system to avoid hot spots etc. Attached is a case study of a coke fired kiln where this tool was used to solve the existing <u>problem of refractory damage was solved</u> in a lime recovery kiln.

Piping Module

We have assumed that the existing valve trains are in good working condition and per the latest NFPA requirements.

Burner Management System

We have shown price for the burner management system with Allen Bradley PLC, 10" PanelView color monitor (model 2711P-K10C681) & IRIS scanners.

OPERATING PARAMETERS

Heat Input, Million Btu/Hr, HHV:	180.
Main Fuels:	Pulverized coke having LHV of 14,600 Btu/#, 90% passing through 200 Mesh, 1% Moisture.
Coke Conveying Air:	1,130 scfm at 20" WC at the burner.
Alternate Fuel:	Natural Gas HHV of 1,010 Btu/cft.
	#6 fuel oil rated at 18,500 Btu/#, oil pressure 150 Psig, 100 SSU Viscosity, at the burner.
	Steam to be supplied at 150 Psig (slightly super heated) at the burner.
Fuel Pressure:	Gas -20 psig at the burner at max firing.
Primary Air:	7,520 SCFM at 24"wc at the burner.
LVHC NCG, Acfm	990 at 120° F at 12" wc.
Cooling Air (for NCG)	1,500 scfm at 8" wc.
Electrical Power:	120 V/ 1PH/60 Cycles.
Site Elevation:	FASL.
Ambient Temperature:	15°F to 105°F.
Area of Classification:	Non-Hazardous NEMA4 (Covered)
Number of Burners:	One (1).

1) **KILN BURNER ASSEMBLY:**

Coen offers a fabricated burner suitable for **Pulverized Coke/Gas/#6 Oil** specially designed for a lime recovery kiln. The burner will consist of the following main components:

a) One (1) Primary Air Tube Assembly designed to achieve the required velocity range with primary air for coke firing. That portion of the primary air tube extending through the kiln hood (approximately 6'-0") will be made from 309 spuncast stainless steel, 1/2" thick. That portion of the air tube extending over operator's floor area will be constructed of carbon steel. Manually lockable primary air dampers will be provided along with pressure gauges, 10 ft. long flexible air hose with stainless steel securing clamps.

b) The coke burner will be fabricated from carbon steel with a deflector plate duly hardened to resist abrasion.

3) Special Gas Gun for firing burner at 50% firing rate with up to 90% coke substitution, add **$9,300**.

Note: Any valves etc. to be supplied by others.

All Equipment prices shown above are FOB Woodland, CA/Point of manufacture..

Emissions:

The users of Coen coke fired kiln burners have informed us that their emissions are within the requirements of NCASI. They have not shared the actual numbers with us. However with 80% coke and 20% gas and operating temperature of 1,800° F to 2,000°F we estimate NOx emission of between 105 to 125 ppm at 10% excess air. However when using #6 oil (FBN 0.3%) the estimated NOx will be approximately 165 to 185 ppm at 10% oxygen, based on HHV, dry basis.

Exclusions:

The following are not included in Coen's proposal

a) Supply of any fuels, Conveying air, primary air etc.
b) Piping trains.
c) Checkout and startup services at jobsite.
d) Freight to job site.
e) Any other equipment not specifically described above.

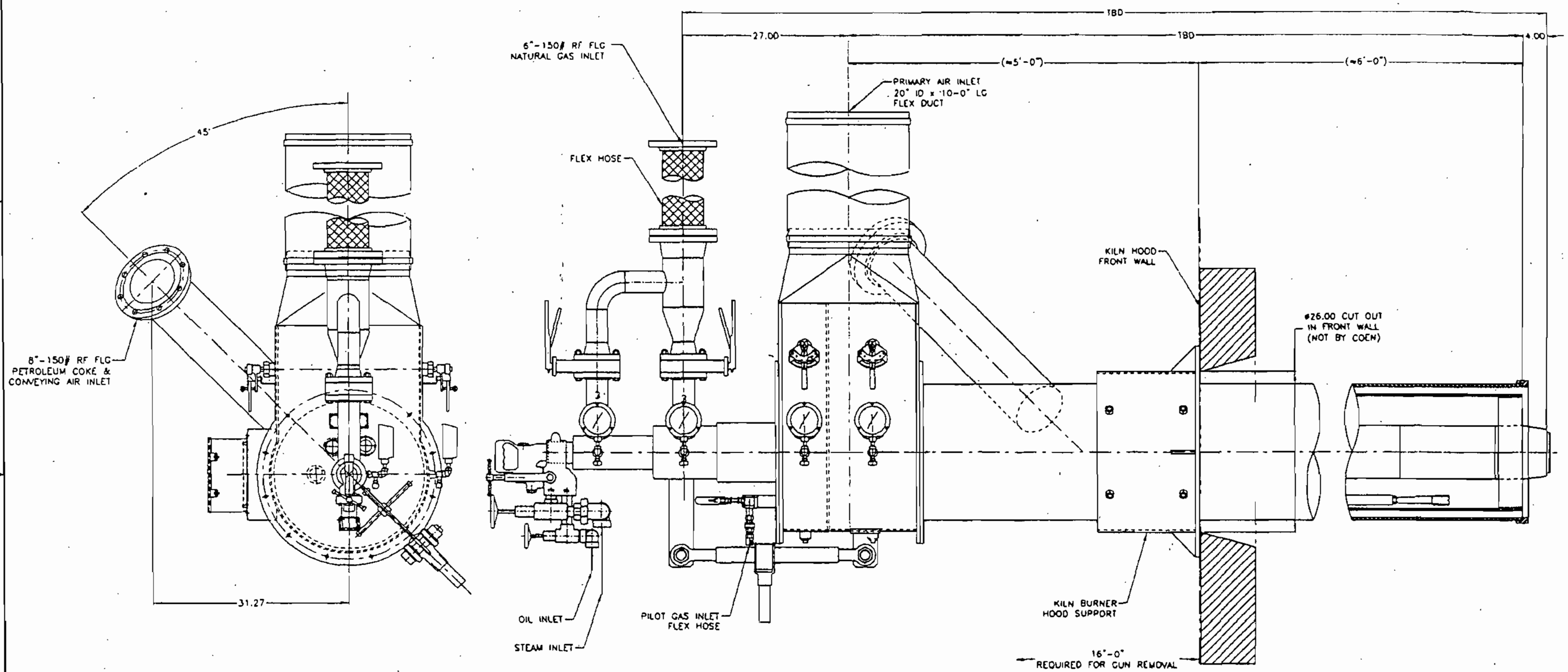
Terms of Payment:

Coen's suggested terms of payment are the following (subject to credit approval, 30 days net):

10% upon receipt of a purchase order.
15% upon the drawing submittal.
35% upon release to fabricate.
40% upon shipment of equipment.

Prices quoted are firm for thirty (30) days. The quoted prices will be held through the normal delivery period or up to ten (10) months from receipt of order. For orders delayed beyond the normal delivery period, or ten (10) months from receipt of order, through no fault of Coen Company, escalation will be applied. Escalation will be figured as the ratio of the Producer (Wholesale) Price Index of the Bureau of Labor Statistics at the end of the day, ten (10) months from receipt of order, to the same index on the day the order is shipped

The attached forms "Coen Company Terms and Conditions of Sale T&C 6-15-2001" and " Domestic Factory Service Conditions and Rates 7-01-2006" are part of this quotation.



APPROX. WT: 2500 LBS.

NOTES:

1. SUPPORT FLEX HOSE AND GAS PIPING IN FIELD, BY OTHERS.
2. INSERTION DEPTH TO BE ADJUSTED AT START-UP AS REQUIRED BY COEN SERVICE.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE: DECIMAL .XX = ±.06 .XXX = ±.031

THIRD ANGLE PROJECTION

DRAWN BY: RRL	DATE: 11/18/06
CHECKED BY: BKW	
APPROVED BY: BKW	
PROPOSAL	

COEN — Clean combustion. Powerful results. www.coen.com

PROPOSED ARRANGEMENT 180 M BTU/H KILN BURNER

PET COKE/GAS/#6 OIL
SSCC PANAMA CITY, FL

SIZE: D | DWG NO. 0001-641 | SCALE 1/8 | SHEET 1 OF 1

TABLE D-1

EMISSION RATE CALCULATIONS FOR LIME KILN

TABLE D-1
EMISSION RATE CALCULATIONS FOR
SMURFIT-STONE CONTAINER ENTERPRISES - PANAMA CITY MILL

EU ID	Source	Emission Factor	Emission Factor Reference	Activity Factor	Emission Rate Short-Term (lb/hr)	Emission Rate Annual (TPY)
NO_x						
001	No. 1 Recovery Boiler	1.09 lb/ton	Ref. 1, Table 4.11	123,700 lb/hr	67.4	295.3
019	No. 2 Recovery Boiler	1.09 lb/ton	Ref. 1, Table 4.11	123,700 lb/hr	67.4	295.3
021	No. 1 Smelt Dissolving Tank	0.020 lb/ton	Ref. 1, Table 4.15	123,700 lb/hr	1.2	5.4
020	No. 2 Smelt Dissolving Tank	0.020 lb/ton	Ref. 1, Table 4.15	123,700 lb/hr	1.2	5.4
004	Lime Kiln	107.8 lb/hr	185 ppmvd @ 10% O_2	81,400 dscfm	107.8	472.2
015	No. 3 Combination Boiler	176.7 lb/hr	Feb. 2006 application[a]	--	176.7	773.9
016	No. 4 Combination Boiler	334.0 lb/hr	Feb. 2006 stack test	--	334.0	1,462.9
SO_2						
001	No. 1 Recovery Boiler	2.29 lb/ton	Ref. 1, Table 4.11	123,700 lb/hr	141.6	620.4
019	No. 2 Recovery Boiler	2.29 lb/ton	Ref. 1, Table 4.11	123,700 lb/hr	141.6	620.4
021	No. 1 Smelt Dissolving Tank	0.005 lb/ton	Ref. 1, Table 4.15	123,700 lb/hr	0.31	1.4
020	No. 2 Smelt Dissolving Tank	0.005 lb/ton	Ref. 1, Table 4.15	123,700 lb/hr	0.31	1.4
004	Lime Kiln	0.183 lb/MMBtu	Footnote "b"	180 MMBtu/hr	32.9	144.3
015	No. 3 Combination Boiler: 3-hr	1,592.4 lb/hr	Feb. 2006 application[c]	--	1,592.4	--
	24-hr	887.0 lb/hr	Current Permit Limit	--	887.0	3,885.1
016	No. 4 Combination Boiler: 3-hr	1,183.0 lb/hr	Permit Limit	--	1,183.0	--
	24-hr	690.0 lb/hr	Proposed BART Limit	--	690.0	3,022.2

CCA = Clean Condensate Alternative

Footnotes:

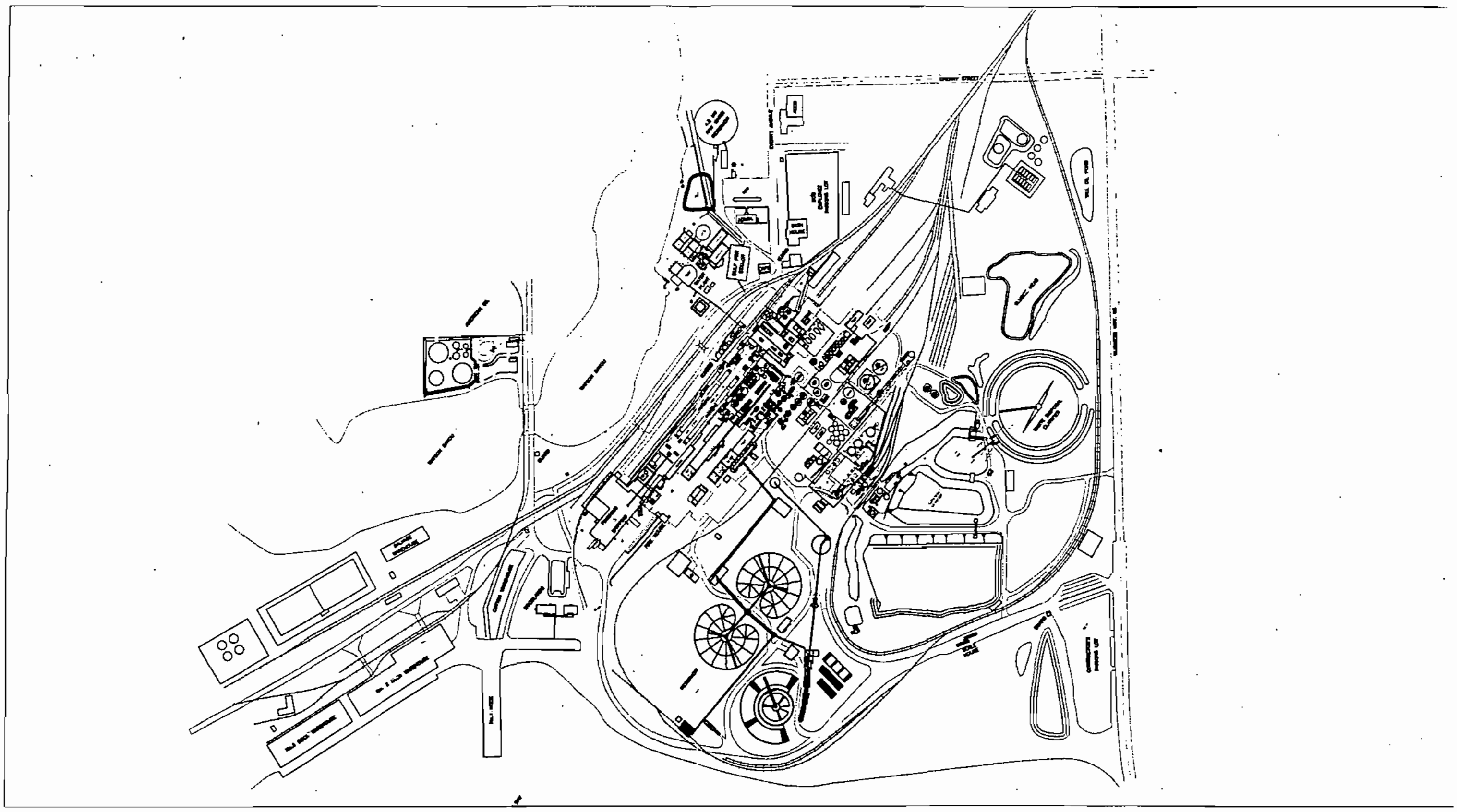
[a] Based on 474 MMBtu/hr wood @ 0.25 lb/MMBtu; 83 MMBtu/hr fuel oil @ 0.25 lb/MMBtu; and 37.4 lb/hr due to stripper offgas burning.

[b] Based on: 1 lb petcoke/15,300 Btu x 7% S/100 x 2 lb SO_2/lb S x 1E06 Btu/MMBtu x (1-0.80) x (1-0.90).

[c] Limit based on modeling analysis conducted in 2004 for CCA application.

References:

1. From *Compilation of Criteria Air Pollutant Emissions Data For Sources At Pulp And Paper Mills Including Boilers*. National Council For Air and Stream Improvement (NCASI), August 2004. Median value used.



ATTACHMENT SSCE-FI-C1a. FACILITY PLOT PLAN

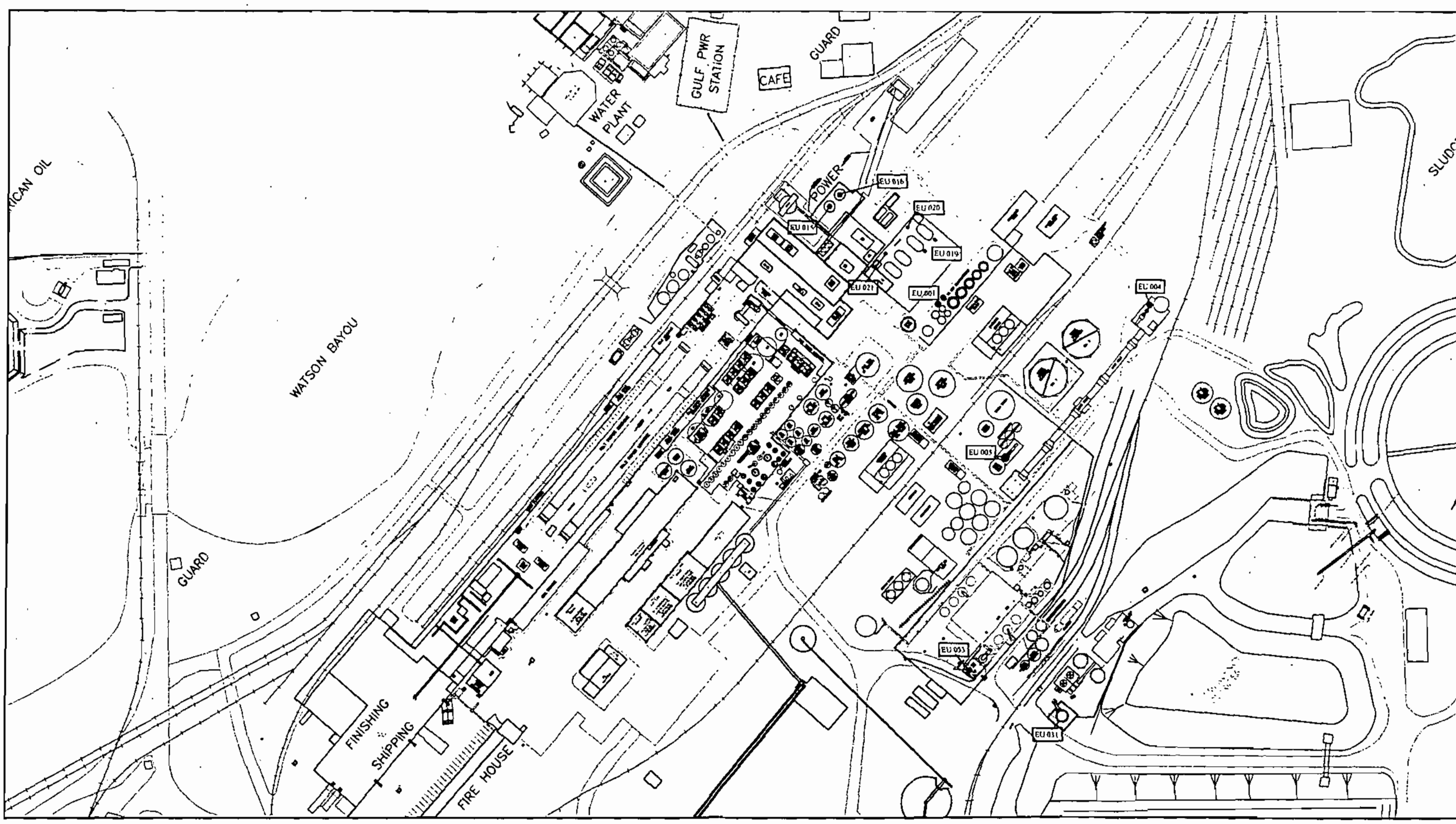
STONE CONTAINER ENTERPRISES, INC.
PANAMA CITY, FL

FILENAME: 0637645/4.4/App Att/SSCE-FI-C1.dwg

LATEST REVISION: 12/02/04

Golder Associates

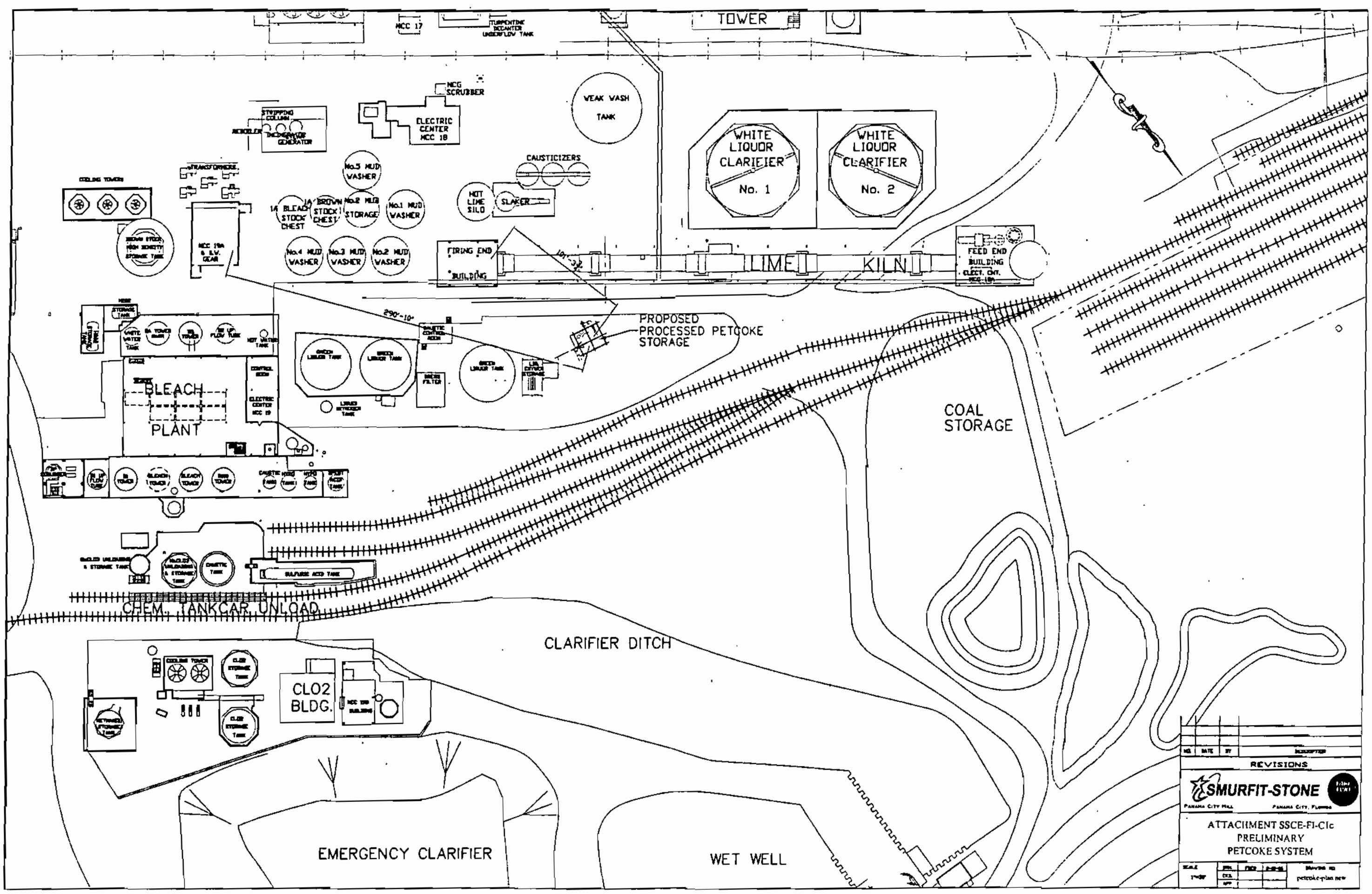
Copies ☺



ATTACHMENT SSCE-FI-C1b. FACILITY PLOT PLAN
(Enlarged to Identify Emission Points)
STONE CONTAINER ENTERPRISES, INC.
PANAMA CITY, FL

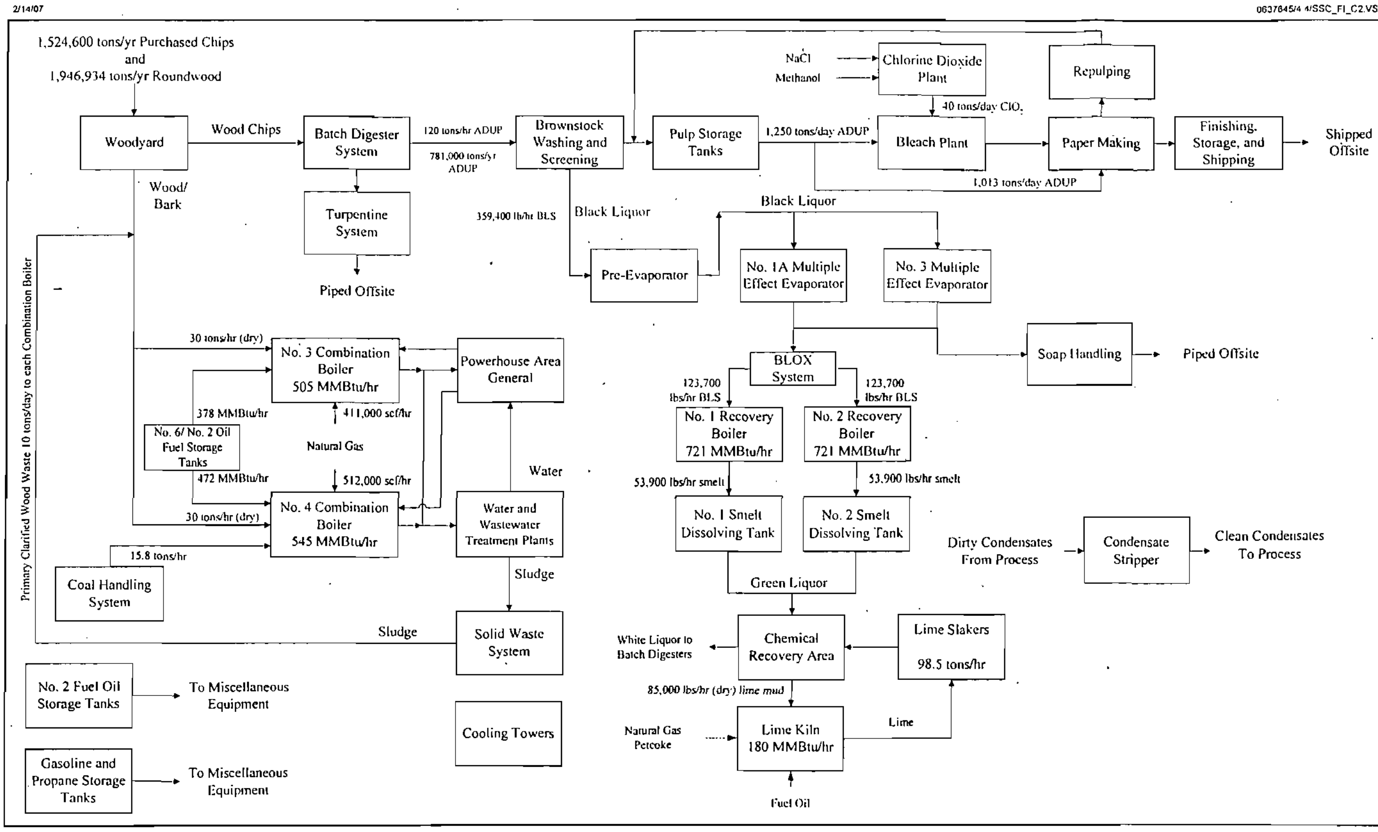
FILENAME:	0637645/4.4/App Att/SSCE-FI-C1.dwg
LATEST REVISION:	12/02/04

Golder Associates


TOWER
NCC 17
WEAK WASH TANK
ELECTRIC CENTER MCC 18
NCG SCRUBBER
CAUSTICIZERS
WHITE LIQUOR CLARIFIER No. 1
WHITE LIQUOR CLARIFIER No. 2
No.5 MUD WASHER
No.1 MUD WASHER
No.2 MUD STORAGE
No.4 MUD WASHER
No.3 MUD WASHER
No.2 MUD WASHER
HOT LIME SILO
SLAKER
COOLING TOWER
TRANSFORMERS
FIRING END BUILDING
LIME KILN
FEED END BUILDING
PROPOSED PROCESSED PETCOKE STORAGE
290'-10"
BLEACH PLANT
COAL STORAGE
CHEM. TANKCAR UNLOAD
CLARIFIER DITCH
CLO2 BLDG.
EMERGENCY CLARIFIER
WET WELL
REVISIONS
SMURFIT-STONE
ATTACHMENT SSCE-FI-C1c
PRELIMINARY
PETCOKE SYSTEM

2/14/07

0637645/4.4/SSC_FI_C2.VSD



Attachment SSCE-FI-C2. Overall Plant Flow Diagram
Stone Container Corporation - Panama City, Florida

Source: Golder, 2007.

Process Flow Legend
Solid/Liquid
Gas
Steam

Golder Associates

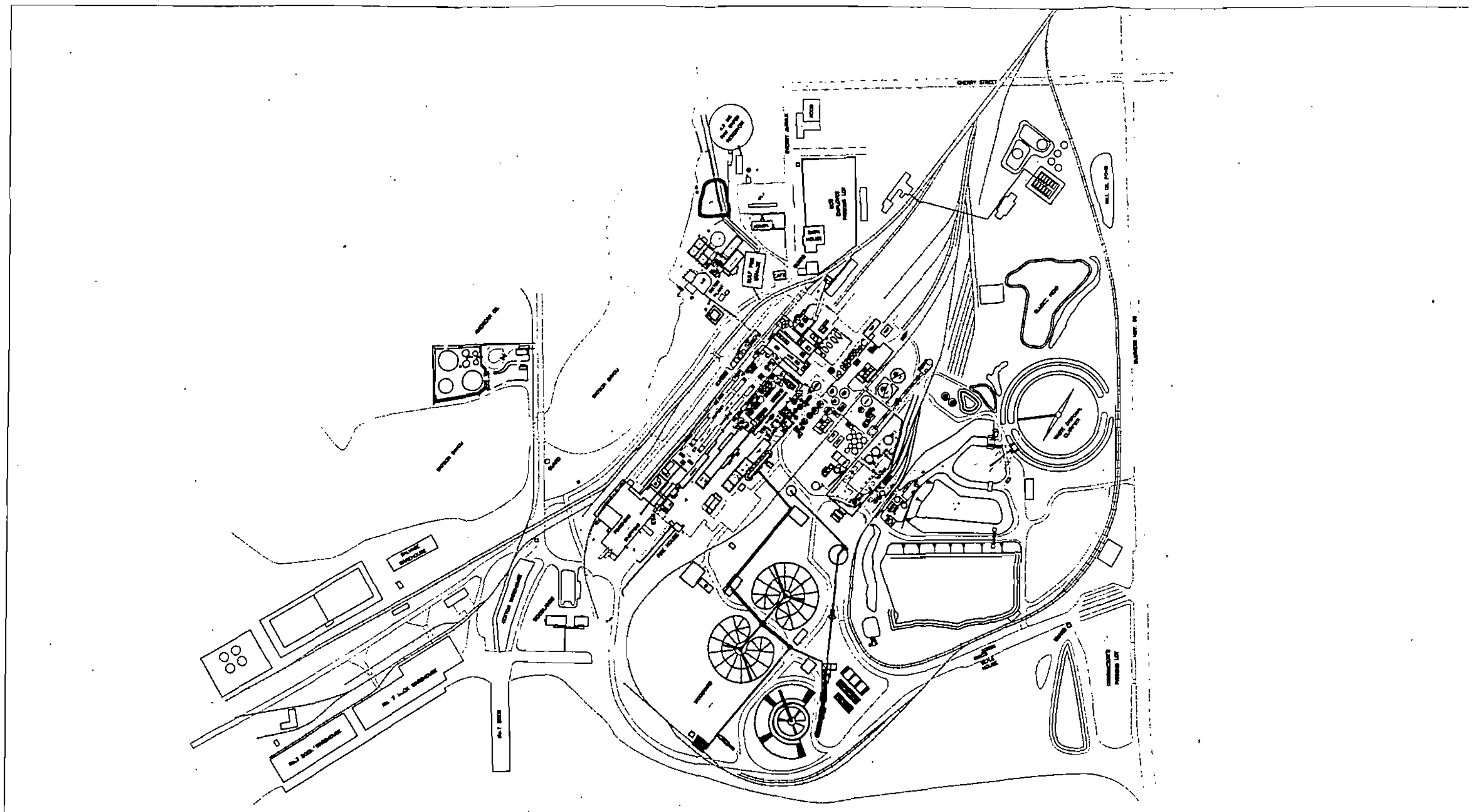


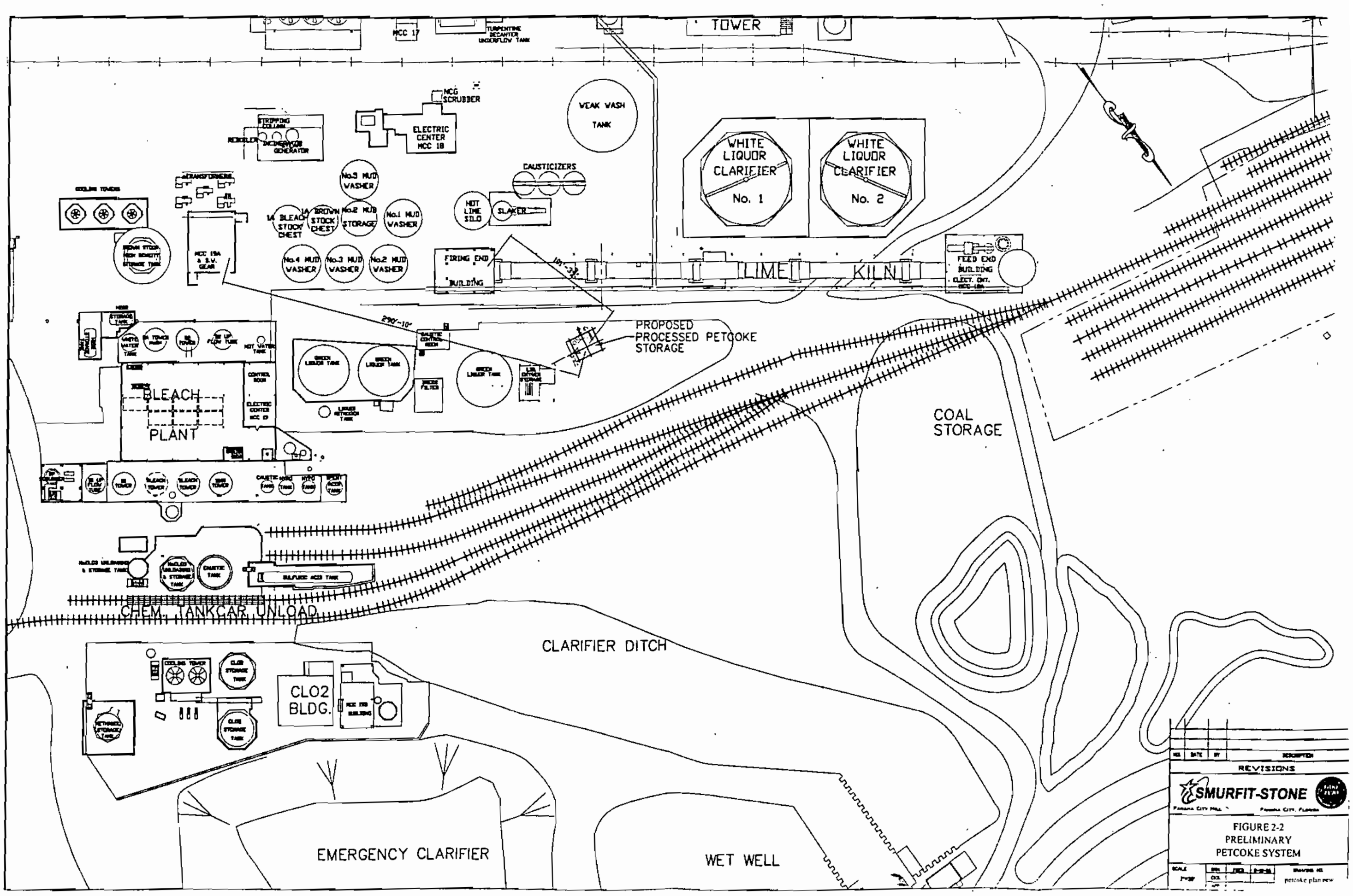
FIGURE 2-1. FACILITY PLOT PLAN

STONE CONTAINER ENTERPRISES, INC.
PANAMA CITY, FL

FILENAME: 0637645/4.4/PSD/FIGURE 2-1

LATEST REVISION: 12/02/04

Golder Associates



TOWER
MCC 17
NCG SCRUBBER
ELECTRIC CENTER MCC 18
WEAK WASH TANK
WHITE LIQUOR CLARIFIER No. 1
WHITE LIQUOR CLARIFIER No. 2
CAUSTICIZERS
No.3 MUD WASHER
No.2 MUD STORAGE
No.1 MUD WASHER
No.4 MUD WASHER
No.3 MUD WASHER
No.2 MUD WASHER
1A BLEACH STOCK CHEST
1A BROWN STOCK CHEST
HOT LIME SILO
SLAKER
MCC 19A & S.V. GEAR
FIRING END BUILDING
LIME KILN
FEED END BUILDING
PROPOSED PROCESSED PETCOKE STORAGE
BLEACH PLANT
COAL STORAGE
CHEM. TANKCAR UNLOAD
CLARIFIER DITCH
CLO2 BLDG.
EMERGENCY CLARIFIER
WET WELL
REVISIONS
SMURFIT-STONE
FIGURE 2-2
PRELIMINARY
PETCOKE SYSTEM

TABLE 3-3
PSD CONTEMPORANEOUS AND PROJECT EMISSIONS NETTING ANALYSIS
LIME KILN PETCOKE PROJECT, SSCE PANAMA CITY

Source Description	Pollutant Emission Rate (TPY)										
	SO_2	NO_x	CO	PM	PM_{10}	VOC	TRS	SAM	Lead	Mercury	Fluoride
Projected Actual Emissions											
Lime Kiln Petcoke Project											
Lime Kiln[a]	103.0	369.1	14.4	111.4	94.3	3.66	15.6	7.57	0.25	4.93E-05	--
Petcoke Storage Silo[b]	--	--	--	0.60	0.60	--	--	--	--	--	--
Petcoke Truck Traffic[c]	--	--	--	1.27	0.25	--	--	--	--	--	--
Total- Projected Actual	103.0	369.1	14.4	113.3	95.2	3.66	15.6	7.57	0.25	4.93E-05	--
Baseline Actual Emissions											
Lime Kiln[d]	22.8	184.2	14.4	97.3	85.0	3.66	10.3	1.67	0.25	4.93E-05	--
Total - Past Actual	22.8	184.3	14.4	97.3	85.0	3.66	10.3	1.67	0.25	4.93E-05	--
Increase Due to Project	80.3	184.8	0.0	16.0	10.2	0.00	5.3	5.90	0.00	0.00E+00	0.00
PSD SIGNIFICANT EMISSION RATE	40	40	100	25	15	40	10.0	7	0.6	0.1	3
Netting Triggered?	Yes	Yes	No	No	No	No	No	No	No	No	No
CONTEMPORANEOUS EMISSION CHANGES[h]											
Pulp Production Increase (09/2002) (Permit No. 0050009-005-AC)											
--Increase Due to Increased Pulp Production	•	•	•	•	•	•	•	•	•	•	--
--Decrease Due to Existing Pulp Production	•	•	•	•	•	•	•	•	•	•	--
--Net Change	•	•	•	•	•	•	•	•	•	•	--
Smelt Dissolving Tanks/MACT II (11/2001) (Permit No. 0050009-007-AC)											
--Increase Due to Future MACT I Sources	0.0	0.0	•	•	•	•	•	•	•	•	--
--Decrease Due to Existing Sources	0.0	0.0	•	•	•	•	•	•	•	•	--
--Net Change	0.0	0.0	•	•	•	•	•	•	•	•	--
MACT I Compliance- Update NOx Emissions (7/2002) (Permit Nos. 0050009-006-AC and -010-AC)											
--Increase Due to Future MACT I Sources	0.0	118.3	•	•	•	•	•	•	•	•	--
--Decrease Due to Existing Sources	0.0	0.0	•	•	•	•	•	•	•	•	--
--Net Change	0.0	118.3 [f]	•	•	•	•	•	•	•	•	--
Methanol Storage Tank (4/2003) (Permit No. 0050009-012-AC)	0.0	0.0	•	•	•	•	•	•	•	•	--
No. 3/No. 4 Comb. Boiler Misc. Amendments (6/2003) (Permit No. 0050009-013-AC)	0.0	0.0	•	•	•	•	•	•	•	•	--
Woodyard Rate Correction (6/2003) (Permit No. 0050009-014-AC)	0.0	0.0	•	•	•	•	•	•	•	•	--
Lime Kiln Fuel Modification (10/2003) (Permit No. 0050009-015-AC)	0.0	0.0	•	•	•	•	•	•	•	•	--
Bleach Plant Softwood Increase (6/2004) (Permit No. 0050009-018-AC)											
--Increase Due to Future Bleach Plant	0.0	0.0	•	•	•	•	•	•	•	•	--
--Decrease Due to Existing Bleach Plant	0.0	0.0	•	•	•	•	•	•	•	•	--
--Net Change	0.0	0.0	•	•	•	•	•	•	•	•	--
Clean Condensate Alternative Project (6/2005) (Permit No. 0050009-016-AC)											
--Increase Due to Future CCA Sources	1,976.6	164.0	•	•	•	•	•	•	•	•	--
--Decrease from Existing CCA Sources	-	-66.9	•	•	•	•	•	•	•	•	--
--Net Change	1,976.6 [f]	97.1 [f]	•	•	•	•	•	•	•	•	--
No. 4 Combination Boiler (11/2005) (Permit No. 0050009-021, -022-AC)											
--Increase Due to Future No. 4 CB	0.0	0.0	•	•	•	•	•	•	•	•	--
--Decrease from Existing No. 4 CB	0.0	0.0	•	•	•	•	•	•	•	•	--
--Net Change	0.0	0.0	•	•	•	•	•	•	•	•	--
No. 3 Combination Boiler (3/2006) (Permit No. 0050009-023-AC)											
--Future Actuals	3,885.1	476.8	•	•	•	•	•	•	•	•	--
--Past Actuals	-3,885.1	-458.9	•	•	•	•	•	•	•	•	--
--Net Change	0.0	17.9	•	•	•	•	•	•	•	•	--
Stripper Off-Gas to No. 4 CB (4/2006) (Permit No. 0050009-024-AC)											
--Increase Due to Future No. 3/No. 4 CB	0.0	0.0	•	•	•	•	•	•	•	•	--
--Decrease from Existing No. 3/No. 4 CB	0.0	0.0	•	•	•	•	•	•	•	•	--
--Net Change	0.0	0.0	•	•	•	•	•	•	•	•	--
Total Contemporaneous Emission Changes		17.9	•	•	•	•	•	•	•	•	NA
TOTAL NET CHANGE	80.3	202.7	0.0	16.0	10.2	0.00	5.3	5.90	0.00	0.00	0.00
PSD SIGNIFICANT EMISSION RATE	40	40	100	25	15	40	10.0	7	0.6	0.1	3
PSD REVIEW TRIGGERED?	Yes	Yes	No	No	No	No	No	No	No	No	No

Footnotes:
[a] See Table 2-2 for projected actual emissions calculations for the Lime Kiln.
[b] Based on 2,000 acfm, and 0.008 grains/ft^3).
[c] Based on calculation in AP-42, Section 13.2.1, for particulate emissions from paved roads, December 2003.
[d] See Table 2-1 for baseline actual emissions from the Lime Kiln.
[e] Pollution Control Project (PCP). Pollutants which triggered PSD review were exempted under the PCP.
[f] Denotes that PSD review was triggered for this pollutant; therefore this, and any previous contemporaneous increases/decreases, are wiped clean.
[g] Since project increase does not exceed PSD significant emission rate, netting is not performed for this pollutant.
[h] The contemporaneous period begins 5 years prior to the projected date of commencement of construction on the Lime Kiln project, which is fall of 2007.

TABLE 5-1
SUMMARY OF BACT DETERMINATIONS FOR NITROGEN OXIDE EMISSIONS FROM LIME KILNS

Company Name	ST	Permit No. / RBLC ID	Permit Issue Date	Emission Unit	Throughput	Fuel	Emission Limit ppm	Emission Limit lb/hr	Emission Limit TPY	Emission Limit lb/ton CaO	Control Equipment
Weyerhaeuser Co. - Red River Mill	LA	•PSD-LA-562(M-2)	5/24/2006	Lime Kiln No. 2	93 MMBtu/hr	Natural Gas	190.0 @ 10% O_2	--	–	–	Proper Kiln Design and Optimized Combustion Practices
					80 MMBtu/hr	Petroleum Coke	190.0 @ 10% O_2	–	–	–	Proper Kiln Design and Optimized Combustion Practices
Georgia Pacific Corp. - Monticello Mill	MS	1500-00007	3/3/2005	Lime Kiln	146 MMBtu/hr	Natural Gas & NCGs	--	95.6	418.5	--	Good Combustion
Pope & Talbot, Inc. - Halsey Pulp Mill	OR	22-0033	1/22/2004	Lime Kiln	78,320 TPY CaO	Natural Gas	112.0 @ 10% O_2 (3-hr avg)	–	241	--	Good Combustion Control
Georgia Pacific Corp. - Monticello Mill	MS	1500-00007	7/9/2003	Lime Kiln	200 MMBtu/hr	Natural Gas & NCGs	–	95.6	418.5	–	Good Combustion Practices and Kiln Design
Weyerhaeuser Co. - Flint River Operations	GA	2631-193-0013-V-01-1	5/28/2003	Rotary Lime Kiln	370 TPD	No. 6 Fuel Oil	175 @ 10% O_2	–	–	--	--
Georgia Pacific Corp. - Port Hudson Operations	LA	PSD-LA-581 (M-2)	1/25/2002	Lime Kiln No. 1	340 TPD	--	--	48.78	213.66	–	Good Equipment Design and Proper Combustion Techniques
				Lime Kiln No. 2	340 TPD	–	–	38.75	169.74	–	Good Equipment Design and Proper Combustion Techniques
Longview Fiber Company	WA	PSD-01-03	12/10/2001	Lime Kilns 1 & 2	140 TPD CaO each	--	340 @ 10% O_2 (24-hr avg)	–	139	–	–
				Lime Kiln 3	240 TPD CaO	--	340 @ 10% O_2 (24-hr avg)	--	238	–	--
				Lime Kiln 4	250 TPD CaO	--	340 @ 10% O_2 (24-hr avg)	--	248	--	–
				Lime Kiln 5	325 TPD CaO	--	275 @ 10% O_2 (24-hr avg)	–	262	–	--
Bowater - Bowater Coated Paper Division	SC	2400-0005-CO-CT	10/31/2001	Lime Kiln No. 2	--	No. 6 Fuel Oil	152 @ 10% O_2	–	--	–	--
Donahue Industries, Inc. - Paper Mill	TX	PSD-TX-437	10/17/2000	Lime Kiln	---	Natural Gas & No. 2 Fuel Oil	–	22.7	96.7	–	--
Weyerhaeuser Co.	MS	1680-00044	9/10/1996	Lime Kiln	504 TPD CaO	--	300 @ 3.6% O_2	–	--	–	Effective Operation of the Kiln
Buckey Florida, L.P.	FL	1230001-004-AC / PSD-FL-232	8/13/1996	Lime Kiln	750 TPD CaO	Natural Gas	--	68.44	–	--	Good Combustion & Burner Modifications
Riverwood International Corp.	GA	2631-011-11958	7/11/1996	Lime Kilns 1 & 2	8.4 ton/hr CaO per kiln	--	--	–	–	3.5	Low NO_X Burners
Apple Grove Pulp & Paper Company, Inc.	WV	R14-11	6/17/1996	Lime Kilns (2)	65,600 lb/hr CaO	Natural Gas	100	21.8	–	–	–
Willamette Industries - Marlboro Mill	SC	1680-0043	4/17/1996	Lime Kiln	450 TPD CaO	Natural Gas	175	44.3	194	--	Good Combustion Control

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, December, 2006.

TABLE 5-4
SUMMARY OF BACT DETERMINATIONS FOR SULFUR DIOXIDE EMISSIONS FROM LIME KILNS

Company Name	ST	Permit No. / RBLC ID	Permit Issue Date	Emission Unit	Throughput	Fuel	Emission Limit ppm	lb/hr	TPY	Control Equipment
Weyerhaeuser Co. - Red River Mill	LA	PSD-LA-562(M-2)	5/24/2006	Lime Kiln No. 2	93 MMBtu/hr	Natural Gas	70 @ 10% O_2	--	--	Flue Gas Desulfurization, Proper Kiln Design and Operation, and Optimized Mud Washing
					80 MMBtu/hr	Petroleum Coke	70 @ 10% O_2	--	--	Flue Gas Desulfurization, Proper Kiln Design and Operation, and Optimized Mud Washing
Georgia Pacific Corp. - Monticello Mill	MS	1500-00007	3/3/2005	Lime Kiln	146 MMBtu/hr	Natural Gas & NCGs	--	23.4	102.5	Wet (Venturi) Scrubber with Optimal Mud Washing
Georgia Pacific Corp. - Monticello Mill	MS	1500-00007	7/9/2003	Lime Kiln	200 MMBtu/hr	Natural Gas & NCGs	--	12.4	54.9	Scrubber
Georgia Pacific Corp. - Port Hudson Operations	LA	PSD-LA-581 (M-2)	1/25/2002	Lime Kiln No. 1	340 TPD	--	--	3.26	14.27	Wet Scrubbers and Optimal Mud Washing
				Lime Kiln No. 2	340 TPD	--	--	2.59	11.33	Wet Scrubbers and Optimal Mud Washing
Longview Fiber Company	WA	PSD-01-03	12/10/2001	Lime Kilns 1 & 2	140 TPD CaO each	--	20 @ 10% O_2 (3-hr avg)	--	16	--
				Lime Kiln 3	240 TPD CaO	--	20 @ 10% O_2 (3-hr avg)	--	27	--
				Lime Kiln 4	250 TPD CaO	--	20 @ 10% O_2 (3-hr avg)	--	28	--
				Lime Kiln 5	325 TPD CaO	--	20 @ 10% O_2 (3-hr avg)	--	28	--
International Paper - Mansfield Mill	LA	PSD-LA-93 (M-6)	8/14/2001	Lime Kiln	142 MMBtu/hr	--	--	8.4	29.3	CaO and Wet Scrubber using Caustic Solution
Donahue Industries, Inc. - Paper Mill	TX	PSD-TX-437	10/17/2000	Lime Kiln	-- --	Natural Gas & No. 2 Fuel Oil	--	5.4	23	Scrubber and Sweet Natural Gas with a Sulfur Content Limit of 0.3%
Weyerhaeuser Co.	MS	1680-00044	9/10/1996	Lime Kiln	504 TPD CaO	--	50 @ 10% O_2	--	--	Continues Use of Low-Sulfur Fuels
Riverwood International Corp.	GA	2631-011-11958	7/11/1996	Lime Kilns 1 & 2	8.4 ton/hr CaO per kiln	--	--	41.6	--	--
Apple Grove Pulp & Paper Company, Inc.	WV	R14-11	6/17/1996	Lime Kilns (2)	65,600 lb/hr CaO	Natural Gas	30	9.1	--	Fabric Filter
Willamette Industries - Marlboro Mill	SC	1680-0043	4/17/1996	Lime Kiln	450 TPD CaO	Natural Gas	30	10.5	46	Kiln Operation

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, December, 2006.

TABLE 6-9
SUMMARY OF SO_2 SOURCES INCLUDED IN THE AIR MODELING FOR THE AAQS AND PSD CLASS II COMPLIANCE ANALYSES
SSCE PANAMA CITY LIME KILN PETCOKE PROJECT

Facility ID	Facility Name Emission Unit	EU ID	Model ID Name	UTM Location X (m)	UTM Location Y (m)	Stack Parameters Height ft	Height m	Diameter ft	Diameter m	Temperature °F	Temperature K	Velocity ft/s	Velocity m/s	SO_2 Emission Rate (lb/hr)	SO_2 Emission Rate (g/sec)	PSD Consuming PSD Source? (EXP/CON)	Modeled in AAQS	Modeled in PSD Class II
0050001	Arizona Chemical Company - Panama City																	
	Boiler #2	15	ACPCB2	632,925	3,335,214	100.0	30.5	4.0	1.22	380	466.5	57.0	17.37	11.9	1.50	CON	YES	YES
	Thermal O	34	ACPCTO	632,889	3,335,209	120.0	36.6	3.8	1.14	1000	810.9	7.5	2.29	1.3	0.16	CON	YES	YES
0050045	Gulf Terminal Corporation																	
	3 Dual Fue	*17*	*GTCSB*	*630,510*	*3,335,230*	*5.0*	*1.5*	*0.4*	*0.12*	*72*	*295.4*	*5.0*	*1.52*	*0.8*	*0.10*	*NO*	YES	*NO*
7775294	Anderson Columbia Co Inc - Plant #4																	
	Astech Mo	1	ACPCAP	630.130	3,338.280	30.0	9.1	45.0	13.72	250	394.3	0.5	0.15	15.9	2.00	NO	YES	NO
7770062	C.W. Roberts Contracting Inc - Panama City Plant																	
	CMI Conti	2	CWRPCAI	628,090	3,340,280	44.0	13.4	5.1	1.54	215	374.8	40.6	12.37	20.5	2.58	NO	YES	NO
0050014	Gulf Power Company - Lansing Smith Plant																	
	Boiler #1 -	1	GPLSB1	625,030	3,349,080	199.0	60.7	18.0	5.49	260	399.8	102.7	31.30	4,084.1	514.59	NO	YES	NO
	Boiler #2 -	2	*GPLSB2*	*625,030*	*3,349,080*	*199.0*	*60.7*	*18.0*	*5.49*	*260*	*399.8*	*102.7*	*31.30*	*6,064.7*	*764.14*	*NO*	*YES*	*NO*
	Combustio	3	GPLSCT	625,030	3,349,080	33.0	10.1	13.7	4.18	1200	922.0	120.9	36.85	263.6	33.21	NO	YES	NO
	Unit #4: 1;	4	GPLSU4	625,030	3,349,080	121.0	36.9	16.8	5.12	186	358.7	73.8	22.49	12.7	1.60	NO	YES	NO
	Unit #5: 1;	*5*	*GPLSU5*	*625,030*	*3,349,080*	*121.0*	*36.9*	*16.8*	*5.12*	*186*	*358.7*	*73.8*	*22.49*	*12.7*	*1.60*	*NO*	YES	*NO*
0050031	Bay County Board of County Commissioners																	
	MSW Con	1	BCBCU1	642,400	3,349,500	125.0	38.1	4.5	1.37	400	477.6	58.7	17.89	35.8	4.51	CON	YES	YES
	MSW com	2	BCBCU2	642,400	3,349,500	125.0	38.1	4.5	1.37	400	477.6	58.7	17.89	35.8	4.51	CON	YES	YES
0630014	Gulf Power Company - Scholz Electric Generating Plant																	
	Boiler #1 (	1	GFCB1	702,400	3,395,800	150.0	45.7	13.5	4.11	330	438.7	40.0	12.19	3,984.0	501.98	NO	YES	NO
	Boiler #2 (	2	GFCB2	702,400	3,395,800	150.0	45.7	13.5	4.11	330	438.7	40.0	12.19	3,984.0	501.98	NO	YES	NO

Note: EXP = PSD expanding source
CON = PSD consuming source
NO = Baseline Source, does not affect PSD increment

TABLE 6-11
SUMMARY OF NO_X SOURCES INCLUDED IN THE AIR MODELING FOR THE AAQS AND PSD CLASS II COMPLIANCE ANALYSES
SSCE PANAMA CITY LIME KILN PETCOKE PROJECT

Facility ID	Facility Name / Emission Unit Description	EU ID	CALPUFF ID Name	UTM Location X (m)	UTM Location Y (m)	Stack Parameters: Height ft	Height m	Diameter ft	Diameter m	Temperature °F	Temperature K	Velocity ft/s	Velocity m/s	NO_x Emission Rate (lb/hr)	NO_x Emission Rate (g/sec)	PSD Consuming PSD Source? (EXP/CON)	Modeled in AAQS	Modeled in PSD Class II
0050001	Arizona Chemical Company - Panama City Facility																	
	Boiler #2	15	ACPCB2	633,100	3,335,400	100.0	30.5	4.0	1.22	380	466.5	57.0	17.37	33.1	4.17	No	Yes	No
	Thermal Oxidizer with caustic scrubber	34	ACPCTO	633,100	3,335,400	120.0	36.6	3.8	1.14	1000	810.9	7.5	2.29	1.6	0.20	CON	Yes	Yes
0050014	Gulf Power Company - Lansing Smith Plant																	
	Boiler Number 1 - 1,944.8 MMBtu/hr (Phase II Acid Rain)	1	GPLSB1	625,030	3,349,080	199.0	60.7	18.0	5.49	260	399.8	102.7	31.30	1,205.8	151.93	No	Yes	No
	Boiler Number 2 - 2,246.2 MMBtu/hr (Phase II Acid Rain)	2	GPLSB2	625,030	3,349,080	199.0	60.7	18.0	5.49	260	399.8	102.7	31.30	988.3	124.53	No	Yes	No
	Combustion Turbines A&B - 542 MMBtu/hr Peaking Unit	3	GPLSCTAB	625,030	3,349,080	33.0	10.1	13.7	4.18	1200	922.0	120.9	36.85	378.3	47.67	CON	Yes	Yes
	Unit 4: 170 MW CT1 with HRSG and duct burner	4	GPLSU4	625,030	3,349,080	121.0	36.9	16.8	5.12	186	358.7	73.8	22.49	113.2	14.26	CON	Yes	Yes
	Unit 5: 170 MW CT2 with HRSG and duct burner	5	GPLSU5	625,030	3,349,080	121.0	36.9	16.8	5.12	186	358.7	73.8	22.49	113.2	14.26	CON	Yes	Yes

TABLE A-1
PAST ACTUAL ANNUAL (1997-2006) EMISSION FACTORS FROM ANNUAL OPERATING REPORTS FOR THE LIME KILN, SSCE PANAMA CITY

Source Description	Annual Operation (hr/yr)	Annual Process/Fuel	Factor Units	Pollutant Emission Factors[A]						
				SO_2	NO_x	CO	PM	PM_{10}	VOC	TRS
Lime Kiln										
1997 Actual Emission Factors										
--Sulfate (Kraft) Pulping	8,388	666,002 tons ADUP	lb/ton ADUP	0.300 [B]	1.0 [B]	0.100 [B]			0.250 [B]	
			lb/hr				21.63 [C]	3.63 [D]		
			ppm @ 10% O_2							10.56 [E]
			dscfm							45,000 [F]
--Lime Manufacture		168,434 tons Lime								
--Residual Oil		5,598.6 10^3 gallons								
--Natural Gas		275.1 10^6 ft^3								
1998 Actual Emission Factors										
--Sulfate (Kraft) Pulping	5,606	445,364 tons ADUP	lb/ton ADUP	0.300 [B]	1.0 [B]	0.100 [B]			0.250 [B]	
			lb/hr				21.63 [G]	3.63 [G]		
			ppm @ 10% O_2							5.07 [E]
			dscfm							45,000 [F]
--Lime Manufacture		98,736 tons Lime								
--Residual Oil		4,211.7 10^3 gallons								
--Natural Gas		119.8 10^6 ft^3								
1999 Actual Emission Factors										
--Sulfate (Kraft) Pulping	8,380	667,877 tons ADUP	lb/ton ADUP	0.300 [B]	1.000 [B]	0.100 [B]			0.250 [B]	
			lb/hr				29.8 [G]	27.8 [G]		
			ppm @ 10% O_2							2.34 [E]
			dscfm							45,000 [F]
--Lime Manufacture		135,802 tons Lime								
--Residual Oil		7,045.0 10^3 gallons								
--Natural Gas		109.7 10^6 ft^3								
2000 Actual Emission Factors										
--Sulfate (Kraft) Pulping	7,879	115,415 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]				
			lb/hr				25.3 [G]	22.7 [G]	27.4 [G]	
			ppm @ 10% O_2							2.32 [E]
			dscfm							45,000 [F]
--Residual Oil		601,216 tons ADUP								
--Lime Manufacture		5,219.0 10^3 gallons								
--Natural Gas		302.8 10^6 ft^3								
2001 Actual Emission Factors										
--Lime Manufacture	7,959	127,518 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							2.8 [E]
			dscfm							45,000 [F]
--Sulfate (Kraft) Pulping		624,401 tons ADUP								
--Residual Oil		6,647.0 10^3 gallons								
--Natural Gas		99.1 10^6 ft^3								
2002 Actual Emission Factors										
--Lime Manufacture	8,208	132,432 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							2.8 [E]
			dscfm							45,000 [F]
--Sulfate (Kraft) Pulping		667,776 tons ADUP								
--Residual Oil		7,231.0 10^3 gallons								
--Natural Gas		30.3 10^6 ft^3								
2003 Actual Emission Factors										
--Lime Manufacture	8,608	118,752 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							2.6 [E]
			dscfm							45,000 [F]
--Sulfate (Kraft) Pulping		581,367 tons ADUP								
--Residual Oil		5,794.7 10^3 gallons								
--Natural Gas		11.7 10^6 ft^3								
2004 Actual Emission Factors										
--Lime Manufacture	8,128	154,961 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							2.9 [E]
			dscfm							45,000 [F]
--Sulfate (Kraft) Pulping		667,898 tons ADUP								
--Residual Oil		6,344.1 10^3 gallons								
--Natural Gas		19.7 10^6 ft^3								
2005 Actual Emission Factors										
--Lime Manufacture	7,997	160,068 tons Lime	lb/ton Lime	0.286 [B]	7.9 [B]	0.386 [B]	1.38 [B]	1.38 [B]	0.236 [B]	
			ppm @ 10% O_2							3.2 [E]
			dscfm							45,000 [F]
--Sulfate (Kraft) Pulping		646,729 tons ADUP								
--Residual Oil		6,275.6 10^3 gallons								
--Natural Gas		9.8 10^6 ft^3								
2006 Actual Emission Factors[H]										
--Lime Manufacture	8,143	158,130 tons Lime	lb/ton Lime							
--Sulfate (Kraft) Pulping		680,447 tons ADUP								
--Residual Oil		6,301.9 10^3 gallons								
--Natural Gas		9.5 10^6 ft^3								

[A] SAM, Lead, Mercury, and Fluorides are not reported in the facility Annual Operating Reports (AORs).
[B] Emission factor used in the facility AOR.
[C] Reported in the facility AOR as pounds per hour (lb/hr).
[D] Assumed to be 16.79% of the total PM reported in the facility AOR.
[E] Reported in the facility AOR in ppm from CEM.
[F] Assumed flowrate reported in the facility AOR.
[G] Reported in the facility AOR in tons per year (TPY), and so is divided by the operating hours, and multiplied by 2,000 pounds per ton to get lb/hr.
[H] 2006 facility AORs had not been submitted as of January, 2007.

TABLE A-2
REVISED EMISSION FACTORS USED TO DETERMINE PAST ACTUAL ANNUAL EMISSIONS (1997-2006) FOR THE LIME KILN, SSCE PANAMA CITY

Source Description	Annual Operation (hr/yr)	Annual Process/Fuel	Factor Units	Pollutant Emission Factors: SO_2	NO_x	CO	PM	PM_{10}	VOC	TRS	SAM	Lead	Mercury	Fluorides
Lime Kiln														
1997 Actual Emission Factors	8,388	168,454 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				25.48 [G]	22.27 [H]						
			ppm @ 10% O_2							10.56 [I]				
			dscfm @ 10% O_2							66,284 [J]				
1998 Actual Emission Factors	5,606	98,736 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				26.49 [G]	23.15 [H]						
			ppm @ 10% O_2							5.07 [I]				
			dscfm @ 10% O_2							66,284 [J]				
1999 Actual Emission Factors	8,380	135,802 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				25.51 [G]	22.30 [H]						
			ppm @ 10% O_2							2.34 [I]				
			dscfm @ 10% O_2							66,284 [J]				
2000 Actual Emission Factors	7,879	115,415 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				22.24 [G]	19.44 [H]						
			ppm @ 10% O_2							2.32 [I]				
			dscfm @ 10% O_2							86,284 [J]				
2001 Actual Emission Factors	7,959	127,518 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				20.29 [G]	17.73 [H]						
			ppm @ 10% O_2							2.80 [I]				
			dscfm @ 10% O_2							66,284 [J]				
2002 Actual Emission Factors	8,208	132,432 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O_2							2.80 [I]				
			dscfm @ 10% O_2							66,284 [J]				
2003 Actual Emission Factors	8,608	118,752 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O_2							7.60 [I]				
			dscfm @ 10% O_2							66,284 [J]				
2004 Actual Emission Factors	8,128	154,961 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O_2							2.900 [I]				
			dscfm @ 10% O_2							66,284 [J]				
2005 Actual Emission Factors	7,997	160,068 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O_2							3.20 [I]				
			dscfm @ 10% O_2							66,284 [J]				
2006 Actual Emission Factors	8,143	158,130 tons Lime	lb/ton Lime	0.286 [A]	2.316 [B]	0.181 [C]			0.046 [C]		0.021 [D]	0.0032 [E]	6.2E-07 [E]	- [F]
			lb/hr				17.42 [G]	15.23 [H]						
			ppm @ 10% O_2							4.41 [K]				
			dscfm @ 10% O_2							66,284 [J]				

[A] Emission factor used in the facility Annual Operating Report (AOR). See Table A-1.
[B] Emission factor calculated from stack testing performed by Weston Solutions on February 28, 2006.
[C] Emission factor obtained from the NCASI Technical Bulletin No. 884, Table 4.13, mean value.
[D] Emission factor obtained from the NCASI Technical Bulletin No. 858, Table 16A, footnote 3 (mean value for lime kilns firing No. 6 fuel oil and NCGs).
[E] Emission factor obtained from the NCASI Technical Bulletin No. 858, Table 16C, mean value.
[F] No emission factors available for fluorides emitted from kraft lime kilns.
[G] Five year average PM emission value from stack testing. See Table A-5.
[H] Emission factor is 84.7% of PM, obtained from NCASI "Particulate Emission Data for Pulp and Paper Industry-Specific Sources" (August 25, 2006).
[I] Concentration reported in the facility AOR from CEM data. See Table A-1.
[J] Average flue gas flowrate (dscfm) corrected to 10% O_2 from the previous ten-year period. See Table A-5.
[K] Concentration reported from CEM data.