2000

continued

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June 14, 2000

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Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attention: Mr. A. A. Linero, P.E.
Administrator, New Source Review Section

RE: FILE NO. 0050009-005-AC (PSD-FL-288)
STONE CONTAINER CORP. PANAMA CITY MILL
PULP PRODUCTION INCREASE

Dear Mr. Linero:

This correspondence is in response to the Department's letter dated May 9, 2000, concerning the above referenced pulp production increase for Stone Container Corp.'s (SCC) Panama City mill. The letter contains five comments by the Department, as well as a letter with comments from the U.S. Fish and Wildlife Service (USFWS). The Department's comment regarding the ISC-PRIME model is also addressed. Responses to each of the comments are presented in the same order as they appear in the referenced letters.

FDEP Comments

1. SCC continues to object to the Department's recent re-interpretation of the Florida PSD rules to require application of best available control technology (BACT) to those emission units for which there is no physical modification or change in the method of operation. Please refer to Attachment A for a discussion of this new interpretation and SCC's response. Counsel for SCC has advised the company that this constitutes adoption of non-rule policy, which is prohibited under the Florida Administrative Procedures Act. Nevertheless, SCC has provided the information requested in Comment 1 of the Department's letter. As explained below, since this application only involves existing units, the emissions limits SCC has proposed in its application are in fact BACT.

   There are several fuel burning sources at the Panama City mill which burn, or are permitted to burn, No. 6 fuel oil with a maximum sulfur content of 2.4 percent. These consist of the two recovery boilers, the two combination boilers, and the lime kiln.

   In the case of the recovery boilers, fuel oil is only burned for startup/shutdown and as an auxiliary fuel. When oil is burned as an auxiliary fuel, in combination with black liquor (with up to 50 percent of total heat input due to fuel oil), NCASI studies have shown that no increase in SO_2 emissions occurs due to high sulfur fuel oil firing. This is due to two reasons. First, the black liquor contains in the range of 4 to 6-percent sulfur. Therefore, firing fuel oil of less than 2.5-percent sulfur results in a reduction in sulfur input to the

furnace. Secondly, the SO_2 generated in the recovery furnace is converted to alkali sulfates that become part of the smelt or the fly ash. Therefore, fuel oil firing would not increase SO_2 emissions except for periods during startup/shutdown conditions when the fuel oil constitutes greater than 50 percent of the total heat input. These conditions occur very infrequently and occur for limited duration.

In the case of the lime kiln, SO_2 emissions are negligible and are minimally affected by the fuel oil sulfur content. This has been demonstrated from source testing of lime kilns, as investigated by NCASI, and shown by other lime kiln test data. This is due to the large SO_2 absorption capacity of lime kilns, resulting from the lime material being processed, which is highly alkaline in nature.

The combination boilers will be controlled through pH monitoring and control of the caustic scrubbing media and/or a continuous SO_2 monitor in order to meet lower SO_2 emission limits proposed in SCC's application. The lower SO_2 emission limits that SCC has proposed will eliminate worst case modeled exceedances of the SO_2 ambient air quality standards (AAQS). SCC has chosen to limit SO_2 emissions through pH monitoring and control of the caustic scrubbing media and/or a continuous SO_2 monitor instead of using lower sulfur fuels. Either method achieves the same results.

The No. 3 Combination Boiler is permitted for fire bark/wood, No. 6 fuel oil, No. 2 oil and natural gas. The No. 4 Combination Boiler is permitted to fire bark/wood, coal, No. 6 fuel oil, No. 2 oil and natural gas. The proposed combined SO_2 emission limit for the two boilers is 525 lb/hr. The current potential SO_2 emissions from the two boilers, based on fuel oil with 2.4-percent sulfur, are as follows:

No. 3 Combination Boiler: 2,520 gal/hr x (157 x 2.4) lb/1000 gal = 950 lb/hr SO_2

No. 4 Combination Boiler: 3,153 gal/hr x (157 x 2.4) lb/1000 gal = 1,188 lb/hr SO_2

Total = 950 lb/hr + 1,188 lb/hr = 2,138 lb/hr SO_2

Fuel oil with a sulfur content of less than 0.7 percent (the minimum for No. 6 fuel oil) cannot be efficiently utilized in the existing fuel oil burners, since the burners are designed for No. 6 fuel oil. If fuel oil with a sulfur content of 0.7 percent were utilized, the potential SO_2 emissions would be 624 lb/hr. Therefore, use of lower sulfur No. 6 fuel oil would not result in lower emissions than those achieved through pH monitoring and control of the caustic scrubbing media (i.e., resulting in SO_2 emissions of 525 lb/hr).

The cost of using lower sulfur fuel oil, assuming <u>all</u> the sulfur in the fuel oil is converted to SO_2, can be calculated based on fuel characteristics and prices of fuel oil. The cost effectiveness calculations and the basis of the calculations are shown in Table A attached. However, as discussed previously, lower sulfur fuel would have little or no effect upon SO_2 emissions from the recovery boilers, the lime kiln, or the combination boilers. Therefore, the actual cost per ton of SO_2 removed would be considerably higher than shown in Table A.

Based on Panama City mill's fuel oil consumption in 1999 (18 million gallons) and current quoted oil prices, the cost of switching to 1.5-percent sulfur oil would be approximately $500,000/yr; switching to 1.0-percent sulfur oil would be $720,000/yr; and switching to 0.5-percent sulfur oil would be $2,300,000/yr. Based on the previous calculation of potential uncontrolled emissions from fuel oil firing, use of 1.5- or 1.0-percent sulfur fuel oil would not lower SO_2 emissions below the already proposed limit of 525 lb/hr for the two combination boilers. Use of 0.5-percent sulfur fuel oil would lower SO_2 emissions to about 445 lb/hr, or about an 80 lb/hr (350 TPY) decrease compared to the proposed limit of 525 lb/hr. Based on the additional cost of 0.5-percent fuel oil ($2,300,000/yr), the cost effectiveness of using 0.5-percent sulfur fuel oil is $6,570/ton of SO_2 removed. This estimate is conservative since SCC attempts to minimize oil burning and maximize coal and bark/wood burning for economic reasons. Additionally, as described above, use of 0.5-percent sulfur fuel oil would necessitate replacement of fuel oil burners, which are currently designed to fire No. 6 fuel oil. This would be an additional significant cost.

Based on the above discussion, the use of lower sulfur fuel oil is not economically feasible.

2. Stack test data for the requested sources for the last two years are attached, as requested. Note that only a limited number of pollutants are required to be tested at Panama City, therefore, data for all PSD affected pollutants are not available.

3. Both FDEP and EPA have generally used a "consecutive" two-year period for determining baseline emissions for PSD applicability unless some other period was deemed more representative of normal full operation. Since 1998 was not a "representative" year of normal operation, due to a 3-month shutdown of the mill, the year 1999 was not used since this would not represent a consecutive 2-year period. Therefore, the most recent consecutive two-year period representative of normal source operation (1996-1997) was selected.

4. The overall mill flow diagram has been corrected and is attached.

5. SCC is addressing, in a separate MACT compliance project application and permit, the potential increases in SO_2 from the No. 3 Combination Boiler when burning HAP/TRS containing gases from the proposed condensate stripper. As discussed in Appendix B, any increase in SO_2 emissions from burning stripper off gases to meet the MACT I requirements should be excluded from PSD review. In any event, the SO_2 emissions will be controlled by limiting the two combination boilers to a total of 525 lb/hr through wet caustic scrubbing and/or a continuous SO_2 monitor. In addition, no changes in the design or sizing of the condensate stripper (500 gallons per minute), as presented in the MACT application and reflected in the MACT construction permit, are needed to accommodate the increased pulp production, and therefore the condensate stripper emissions unit is not "affected" by the proposed modification.

Golder will continue to pursue approval of the ISC-PRIME model with the Department and the U.S. EPA. A revised ambient impact analysis for the Panama City mill has been submitted, which presents the necessary information for approval of the ISC-PRIME model.

USFWS COMMENTS

Golder Associates Inc. (Mr. David A. Buff, P.E.) contacted the USFWS (Ms. Ellen Porter and Ms. Kirsten King) to discuss the USFWS comment letter. It was stated by USFWS that the ambient impact analysis report for the Panama City mill had been received, and this resolved concerns over the PSD Class I increment consumption. Mr. Buff explained that the BACT requirements for emission units other than the digesters was a "state-only" BACT analysis, since EPA rules would not subject these other sources to BACT. After researching this issue, the USFWS stated they agreed that BACT would only apply to the digesters and the control device for the digesters (lime kiln for SO_2 only), and that this resolved their concerns over the BACT analysis.

The USFWS letter presented a table showing the net increase in emissions based on current actual emissions and future potential emissions. The "future potential emissions" used in the permit application were based on the current maximum permitted emission limits in the existing Panama City mill permits. In order to present the ultimate future case, the potential increases in emissions due to the project have been recalculated using the EPA's proposed MACT II limits for combustion sources. Updated tables from the Supplemental Information report submitted by SCC in April 2000, reflecting these changes, are attached. As shown, subtracting the average 1996-1997 actual emissions from the potential emissions for the affected units, the revised calculated net increase in emissions for PM is 264.6 tons per year (TPY), and for PM-10 is 207.4 TPY. These are much lower than the previous estimates of 779 TPY for PM and 624 TPY for PM-10 calculated using the current allowable emissions. Based on the new limits SCC is proposing to meet in accordance with MACT II, we believe that there will be no increase in actual emissions as a result of the increased pulp production.

Best Available Control Technology Review

Based on Mr. David Buff's discussion with USFWS, they now recognize that this is a "state-only" BACT evaluation. Under federal EPA PSD rules, the only emission units required to undergo BACT review are the digesters. While the digesters will not undergo a physical change or a change in the method of operation, they are subject to BACT review because of the PSD production thresholds established for the digesters through the TRS compliance project permits issued in 1989. No other emission units at the facility are undergoing a physical change or change in the method of operation as a result of the pulp production increase. A BACT review is being performed for the other mill sources only as a result of FDEP's stated interpretation of the state PSD regulation.

Recovery Boilers

Again, while we understand that USFWS no longer intends to pursue its BACT comments now that they had better understand what is covered by our permit application, we have nevertheless addressed the substance of their comments. We believe that the recovery boiler limits cited by the USFWS are for new recovery boilers, not existing boilers that have undergone BACT review. Obviously, a new recovery boiler can be cost effectively designed

to meet the 0.021 gr/dscf PM limit suggested by USFWS. However, in order for the SCC recovery boilers to meet such a limit on a continuous basis, new ESPs would be required. This is because it is not possible to upgrade the existing ESPs, because of their physical configuration (i.e., location on the roof of the recovery boiler building, with no ability to add an additional field). New stacks, ductwork and other alterations would also be required.

New ESPs for the SCC recovery boilers have been estimated to cost at least $7.5 million per boiler, excluding any cost of downtime to perform the installation. The annualized cost of just the capital investment for the two boilers is $1.65 million/yr ($15 million x 0.11 capital recovery factor). Potential PM emissions for each recovery boiler at the proposed 0.044 gr/dscf limit are 309.1 TPY. At 0.021 gr/dscf, the level of control suggested by USFWS, potential PM emissions would be 147.5 TPY. Therefore, the reduction in potential PM emissions would be 161.6 TPY for each boiler, or 323.2 TPY for both boilers. Even looking solely at capital cost, it would cost over $5,100 for each additional ton of PM removed. This does not account for any annual operating and maintenance costs, or economic losses due to mill downtime in order to install the new ESP's. This is a very high cost and is ruled out as economically infeasible.

In addition, although SCC agrees to comply with the proposed MACT II PM limit of 0.044 gr/dscf, actual emissions from SCC's recovery boilers are already in the range of 0.015 to 0.025 gr/dscf. Although SCC cannot agree to a limit lower than 0.044 gr/dscf in order to maintain an adequate safety margin above actual emissions, actual emissions are expected to remain below 0.044 gr/dscf in the future.

In regards to add-on NO_x controls, the first step in a BACT analysis is to identify technically feasible alternatives. Technical feasibility is demonstrated through proven operating systems. There are no known SNCR or SCR systems operating on recovery boilers. The EPA's RACT/BACT/LAER Clearinghouse does not list any recovery boilers as having SNCR or SCR determined as BACT for NO_x emissions. Although there may have been advances in such systems, until there are proven operating systems, SCC cannot commit to such a system on an existing recovery boiler. No recovery boiler to date has been required to install these systems as BACT. BACT for all previous determinations has been established as good combustion practices and proper design and operation. Therefore, SNCR/SCR is considered technically infeasible. It is also noted that NO_x emissions from direct contact type recovery boilers are already low (average of 0.1 lb/MMBtu) compared to other fuels, including fossil fuels and carbonaceous fuels. Add-on NO_x controls are ruled out from further consideration.

In regards to TRS control, the cost for converting the existing boilers to low odor design has been estimated at $25 million each boiler, or $50 million total. The annualized capital cost of this investment is $5.5 million/yr. The potential reduction in TRS emissions, from 17.5 ppm to 5 ppm , achievable through low odor design, is 54.2 TPY each boiler (75.9 TPY – 21.7 TPY), or 108 TPY for both boilers combined. The cost is therefore over $51,000/ton of TRS removed. This does not account for any annual operating and maintenance costs, or economic losses due to mill downtime in order to convert the recovery boilers. This option is therefore ruled out based on economic impacts. It is noted that actual TRS emissions from

the two SCC recovery boilers averaged about 10 ppm in 1999, below the current limit of 17.5 ppm.

Due to relatively low emissions of SO_2 from recovery boilers, flue gas desulfurization (FGD) systems have not been applied to recovery boilers. There are no known FGD systems operating on recovery boilers. The EPA's RACT/BACT/LAER Clearinghouse does not list any recovery boilers as having FGD systems required as BACT for SO_2 emissions. BACT for all previous determinations has been established as good combustion practices and proper design and operation.

Nevertheless, a cost analysis for adding a FGD system to the existing recovery boilers is was performed. A dry lime injection system or spray dryer were considered, but were rejected due to limitations on the existing ESPs. The existing ESPs would not be able to handle the additional particulate loading from these systems. As described previously, the existing ESPs cannot be upgraded due to their location on the roof of the recovery boiler building. Replacing the existing ESPs with new ESPs was ruled out as economically infeasible.

An add-on wet limestone FGD system would be the only feasible alternative for SO_2 control. A wet FGD system achieving 90-percent SO_2 removal is estimated to cost $16 million per recovery boiler (NCASI, 1983). The annual cost of the capital investment would be $1.8 million/yr. Annual O&M costs are estimated at least 3 percent of the capital cost (EPRI, 1983), or at least $0.5 million/yr. Therefore, total annual costs are estimated to be at least $2.3 million/yr per boiler. Estimated potential SO_2 emissions for each recovery boiler are 568.4 TPY. At 90 percent reduction, the total SO_2 reduced is 512 TPY. This analysis shows that the cost effectiveness of SO_2 control is at least $4,500/ton for the wet limestone FGD system. This cost is considered economically prohibitive for the existing recovery boilers. In addition, no other recovery boiler, new or existing, has been required to implement flue gas desulfurization.

Lime Kiln

A new ESP for the SCC lime kiln is estimated to cost $3.1 million, based on the actual cost at a similar SCC mill. The annualized cost of just the capital investment is $340,000/yr. Potential PM emissions from the lime kiln at the proposed limit of 29.83 lb/hr are 130.7 TPY. This is equivalent to 0.051 gr/dscf, assuming the maximum estimated air flow rate for the lime kiln. At 0.033 gr/dscf, as suggested by USFWS, potential PM emissions would be 84.6 TPY. Therefore, the reduction in potential PM emissions would be 46.1 TPY. The cost of this reduction is $ 7,375/ton of PM removed. This is a very high cost and is ruled out as economically infeasible.

Smelt Dissolving Tanks

SCC can commit to meeting a PM limit of 0.2 lb/ton BLS for the smelt dissolving tanks, based on the proposed MACT II. Since SCC will be installing new wet scrubbers in order to meet the MACT requirements for PM, the scrubbers could be designed to meet a PM limit of 0.12 lb/ton BLS, as suggested by USFWS. Meeting a limit of 0.12 lb/ton BLS would be more costly; however, the cost impact cannot be quantified at this time. Moreover, there is no compelling reason to implement this requirement prior to the MACT compliance date. As shown from

the ambient impact analysis, all ambient air quality standards will be met based on the proposed maximum PM emissions for the SCC mill.

Bleach Plant

The new scrubber on the Bleach Plant, to meet the MACT requirements, is now being installed at SCC. To comply with the MACT rules, the installation will be completed by April 16, 2001. SCC will be installing equipment to allow up to 100-percent elemental chlorine-free bleaching by this date. SCC currently uses, and will continue to use, hydrogen peroxide in several stages of the bleaching process. Hence, as of April 16, 2001, the bleach plant will be complying with MACT, which is at least as stringent as whatever might be determined to be BACT for an existing facility.

Lime Slaker

The 4 lb/hr limit was proposed by SCC in order to reduce worst case modeled ambient PM impacts using current allowable emissions. Actual PM emissions during the last two compliance tests averaged 1.26 and 0.53 lb/hr, respectively. Therefore, actual emissions are already similar to 0.9 lb/hr, as suggested by USFWS. Given that this is an existing source and the already low rate of emissions, it would not be cost effective to retrofit additional PM control equipment.

Air Quality Related Values Analysis

The ambient impact analysis report, submitted separately by SCC, addresses Class I increments for PM and SO_2.

Please call if you have any questions concerning this information.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

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

DB/jkw

Enclosures

cc: Ed Middleswart, FDEP Pensacola ✓
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ATTACHMENT A

RESPONSE TO FDEP INTERPRETATION OF STATE PSD RULE

EPA's PSD regulations are codified at 40 CFR 52.21. This rule requires, among other things, that BACT be employed to control emissions from a proposed new source or modification. However, the EPA rules governing control technology review state:

> "A major modification shall apply best available control technology for each pollutant subject to regulation under the Act for which it would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit." (40 CFR 52.21 (j)(3)).

Therefore, it is clear that BACT does not apply to an emissions unit at which there is no physical change or change in the method of operation. Further, under the federal PSD rules, a change in the method of operation specifically excludes increased operating hours and production rates, unless prohibited by a federally enforceable NSR/PSD air construction permit condition that was established after January 6, 1975. (40 CFR 52.21(b)(2)(iii)).

Historically, the federal PSD rule has consistently been interpreted in this manner by EPA, through guidance memos, applicability determinations, and the PSD workshop manual (draft). The only exception to the application of the rule was a recent determination for a case where a separate emissions unit served as the control device for an emissions unit undergoing a modification (such as pulp digesters subject to PSD, with a lime kiln used to incinerate TRS emissions). In that case, EPA determined that the control device was to be considered as part of the emissions unit. Hence, if the emissions unit required BACT review, then the associated emissions unit serving as the control device was also required to undergo BACT review for those pollutants that would significantly increase as a result of the modification.

The State of Florida PSD rule was promulgated in the early 1980's, after EPA revised the federal PSD rule. The State of Florida's PSD rules state that:

> "The proposed facility or modification shall apply Best Available Control Technology (BACT) for each pollutant subject to preconstruction review requirements as set forth in Rule 62-212.400(2)(f), F.A.C.". (Rule 62-212.400(5)(c)).

Thus, the state rule is not as clear as the federal rule. Mr. David Buff, P.E., Q.E.P., now of Golder Associates Inc., recalls that at the time of adoption of the state rule, there was no intention to be more stringent than the EPA PSD rule. It was intended that the rule be interpreted and applied in the same manner as the federal rule. This is witnessed by the fact that an economic impact statement was not performed by the State of Florida at the time of rule adoption, nor was there review by the Governor and Cabinet, which would have been required if the rule was more stringent than the EPA rule.

Interpretation of the state PSD rule in the manner, which FDEP is now prescribing, would have severe economic consequences on sources. Being required to apply BACT to multiple emissions units not being physically modified could result in severe economic impacts, and would likely stifle economic growth. Companies would find PSD too costly or too risky to undertake, and therefore would not be as likely to undertake expansion projects. Generally, as EPA intended, when an emission unit is physically modified, or undergoes a change in the method of operation, a capital expenditure is associated with the change. This is the appropriate time to require additional capital expenditure for pollution control purposes, and makes it much easier to justify the additional capital and operating costs as part of an expansion project. However, again, if BACT requirements are expanded to other emissions units that have no associated capital expenditure, the cost impact is much greater.

The state PSD rule states that "The proposed facility or modification shall apply Best Available Control Technology.....". The SCC Panama City pulp production increase is not a "proposed facility", since the facility already exists. The project does include a proposed revision of a permit limit on the annual production rate of existing process equipment (the digesters). Therefore, one must again turn to the definition of "modification" to determine the meaning of this language. The state's definition of modification at Rule 62-210.200(185) is very similar to the federal definition. Specifically, the state definition excludes increases in operating hours or production rates from the term "modification", unless the increase would be prohibited under any federally enforceable NSR/PSD air construction permit condition established after January 6, 1975. Applying this reading directly to the SCC proposed project, the "modification" would not include the emission units which are not being physically modified or for which there is no change in the method of operation (i.e., the recovery boilers, smelt tanks, lime kiln, etc.).

Hence, FDEP should not require BACT to be applied to all emission units for which there is an increase in emissions associated with the "modification" -- in this case an increase in production without a physical change or change in method of operation. FDEP can continue to require emission increases "associated with" the "modification", but not part of the specific modification being requested (in this case, an increase in pulp production from the digesters), to be included in the PSD netting analysis to determine pollutants which trigger PSD review.

The State of Florida has for nearly 20 years applied its PSD regulations in a manner consistent with EPA PSD regulations, guidance and policy. This has set a legal precedent, which now cannot be changed merely by a different interpretation or policy. A formal rule change and economic impact statement would be required. Absent that, such an interpretation constitutes non-rule policy and is invalid under Section 120, Florida Statutes.

ATTACHMENT B

PCP EXCLUSION FOR MACT CONTROL PROJECTS

The applicant believes that the PCP exclusion is available for collateral pollutants generated when burning condensate stripper off-gases (SOG), or other HAP gases containing TRS, ammonia, and other compounds. Florida Administrative Code (F.A.C.), Rule 62-212.400(2)(a)2, Pollution Control Project Exemptions, reads as follows:

> "A significant net increase in the actual emissions of a collateral pollutant that would occur solely as a result of a project undertaken for the purpose of complying with the hazardous air pollutant emission reduction requirements of 40 CFR Part 63, Subpart S, adopted and incorporated by reference at Rule 62-204.800, F.A.C, shall not be subject of the preconstruction review requirements of this rule, provided...."

The wording "solely as a result of a project" is applicable to the Panama City cluster rule compliance project. The "project" includes burning SOG in the No. 3 Combination Boiler. The SOG necessarily contains total reduced sulfur (TRS) compounds and ammonia, which produce SO_2 and NO_x when combusted.

The Department's stated interpretation of the PCP exclusion is that any collateral PSD pollutants generated due to non-HAP pollutants, collected along with HAPs, are not covered under the PCP exclusion. The Department's stated interpretation of the PCP exclusion would render it ineffective. First, it would be extremely difficult to quantify the collateral emissions generated solely from HAPs collected in the stripper off-gases. The SOG contains a large percentage of methanol, but many other HAPs and non-HAPs are also present, as indicated by NCASI Technical Bulletin No. 701. These compounds include many organic species. The HAPs collected would have the potential to generate CO, VOC, and NO_x. But what amount the HAPs would contribute versus the non-HAPs contained in the same SOG is difficult, if not impossible, to determine.

Secondly, the purpose of a pollution control project exclusion is to exempt mandated projects from PSD review that are overall environmentally beneficial, but cause other PSD-regulated emissions. If such an exclusion is not provided for MACT compliance projects, the applicant is faced with not only complying with the MACT rule, but has the added burden of being subject to PSD, and the associated BACT review and other PSD requirements. This is contrary to EPA's stated intent in when it promulgated the MACT I rule.

In the preamble to the final MACT rule for the pulp and paper industry, EPA states (Federal Register, April 15, 1998, pages 18531-18533):

> "To comply with the MACT portion of the pulp and paper cluster rule, mills will route vent gases from specified pulping and condensate emission points to a combustion

control device for destruction. The incineration of these gases at kraft mills has the potential to generate sulfur dioxide and, to a lesser extent, nitrogen oxides."

This clearly indicates that EPA recognized that SO_2 emissions due to TRS compounds in the HAP-containing gas stream would occur, and that NO_x emissions would also be generated. EPA refers to the John S. Seitz memo of July 1, 1994 in its discussion, and states that in this memo EPA specifically identified the combustion of organic toxic pollutants as an example of an add-on control that could be considered a PCP. The preamble states:

> "EPA considers that combustion for the control of HAP emissions from pulping systems and condensate control systems to be a PCP, because the combustion controls are being installed to comply with the MACT and will reduce emissions of hazardous air pollutants. EPA also considers the reduction of these pollutants to represent an environmental benefit. EPA recognizes that the incidental formation of SO_2 and NO_x due to the destruction of HAPs will occur."

The Department adopted the rule allowing the PCP exemption to be applicable to the pulp and paper industry expressly for the purpose of expediting permitting of MACT compliance projects at DEP. The purpose was also to avoid the complex issues being raised in the processing of this permit for SCC Panama City. Based on the Florida rule wording, and EPA's stated purpose, the PCP should be granted for the SCC Panama City MACT control project.

Table A. Fuel Sulfur Content, Fuel Cost and SO_2 Cost Effectiveness

Fuel Type/ Sulfur Content	Unit Cost ($/gal)	Sulfur Content (% by wt.)	Heat Content (Btu/gal)	Density (lb/gal)	Cost Increase ($/gal)	SO_2 Emission Rate[a] (lb/gal)	SO_2 Emission Reduction[b] (lb/gal)	Cost Effectiveness[c] ($/ton SO_2)
No. 6 Fuel Oil								
2.4-percent sulfur	0.59	2.4	150,000	8.00	--	0.384	--	--
1.5-percent sulfur	0.62	1.5	148,000	7.80	0.03	0.234	0.150	400
1.0-percent sulfur	0.63	1.0	146,000	7.60	0.04	0.152	0.232	345
No. 2 Fuel Oil								
0.5-percent sulfur	0.72	0.5	140,000	6.83	0.13	0.068	0.316	824

Note:
1. All prices based on Coastal Fuels Marketing, Inc.'s current prices (FOB)

[a] Based on stochiometric calculation of SO_2 emissions.

[b] As compared to base case of 2.4-percent sulfur fuel oil.

[c] Does not account for any SO_2 reductions inherent in specific emission units (i.e., recovery boiler, lime kiln, etc.)

Table 1-1. 1996-1997 Baseline Emissions, Stone Container Corp., Panama City

Regulated Pollutant	No . 1 Recovery Boiler (TPY)	No . 2 Recovey Boiler (TPY)	No. 1 Smelt Dissolving Tank (TPY)	No. 2 Smelt Dissolving Tank (TPY)	Lime Kiln (TPY)	Bleach Plant (TPY)	Pulping Area (TPY)	Lime Slaker (TPY)	Woodyard (TPY)	Chemical Recovery Area (TPY)	Paper Making (TPY)	No. 3 Combination Boiler (TPY)	TOTAL BASELINE EMISSIONS (TPY)
Particulate (TSP)	185.2	160.9	69.6	97.4	98.5	--	--	1.7	41.3	--	--	--	654.6
Particulate (PM_{10})	143.7	124.9	62.3	87.2	96.8	--	--	1.7	15.0	--	--	--	531.5
Sulfur dioxide	490.4	497.1	3.7	3.8	16.4	--	--	--	--	--	--	--	1,011.4
Nitrogen oxides	272.4	276.2	7.7	7.8	156.0	--	--	--	--	--	--	75.25 [a]	795.4
Carbon monoxide	2,476.8	2,510.6	--	--	15.7	119.9	--	--	--	--	--	--	5,122.9
Volatile organic compds.	158.0	160.2	14.5	14.7	16.8	73.5	57.3	3.1	--	159.5	190.9	3.68 [b]	852.2
Sulfuric acid mist	30.0	14.0	0.23	0.23	1.0	--	--	--	--	--	--	--	45.5
Total Reduced Sulfur	28.4	34.6	2.6	3.1	9.4	4.7	70.0	--	--	14.4	--	--	167.3
Lead	0.020	0.020	0.0040	0.0040	0.271	--	--	--	--	--	--	--	0.32
Mercury	0.015	0.015	4.21E-05	4.26E-05	6.48E-04	--	--	--	--	--	--	--	0.0309
Beryllium	5.18E-04	5.25E-04	3.27E-05	3.32E-05	1.21E-03	--	--	--	--	--	--	--	0.0023
Fluorides	--	--	--	--	--	--	--	--	--	--	--	--	--

[a] Represents emissions due to current permitted pulp production limit of 668,850 TPY ADUP.

[b] Represents VOC emissions due to condensate stripper off-gas at current permitted pulp production limit of 668,850 TPY.

Table 1-2. Maximum Future Potential Emissions at 781,000 TPY Pulp Production, Stone Container Corp., Panama City

Regulated Pollutant	No . 1 Recovery Boiler (TPY)	No . 2 Recovey Boiler (TPY)	No. 1 Smelt Dissolving Tank (TPY)	No. 2 Smelt Dissolving Tank (TPY)	Lime Kiln (TPY)	Bleach Plant (TPY)	Pulping Area (TPY)	Lime Slaker (TPY)	Woodyard (TPY)	Chemical Recovery Area (TPY)	Paper Making (TPY)	No. 3 Combination Boiler (TPY)	TOTAL FUTURE POTENTIAL (TPY)
Particulate (TSP)	309.1	309.1	54.2	54.2	130.7	--	--	17.5	44.6	--	--	--	919.3
Particulate (PM_{10})	239.8	239.8	48.5	48.5	128.4	--	--	17.5	16.4	--	--	--	739.0
Sulfur dioxide	568.4	568.4	4.3	4.3	20.6	--	--	--	--	--	--	--	1,166.1
Nitrogen oxides	315.8	315.8	8.9	8.9	195.7	--	--	--	--	--	--	87.86	933.0
Carbon monoxide	2,872.0	2,872.0	--	--	19.7	177.3	--	--	--	--	--	--	5,941.0
Volatile organic compds.	183.2	183.2	16.8	16.8	21.1	96.7	70.3	5.4	--	193.8	234.3	4.30 [a]	1,025.9
Sulfuric acid mist	34.8	34.8	0.27	0.27	1.3	--	--	--	--	--	--	--	71.4
Total Reduced Sulfur	75.9	75.9	13.0	13.0	31.9	6.3	85.9	--	--	16.4	--	--	318.3
Lead	0.023	0.023	0.0050	0.0050	0.34	--	--	--	--	--	--	--	0.40
Mercury	0.017	0.017	4.90E-05	4.90E-05	8.10E-04	--	--	--	--	--	--	--	0.0349
Beryllium	6.00E-04	6.00E-04	3.80E-05	3.80E-05	1.50E-03	--	--	--	--	--	--	--	0.00278
Fluorides	--	--	--	--	--	--	--	--	--	--	--	--	--

[a] Based on baseline VOC emissions (See Table 1-1) times ratio of 781,000 / 668,850 TPY ADUP.

Table 1-3. Net Change in Emissions Due to Proposed Pulp Production of 781,000 TPY
Stone Container Corp., Panama City

Regulated Pollutant	1996-1997 BASELINE EMISSIONS (TPY)	FUTURE POTENTIAL EMISSIONS (TPY)	NET CHANGE (TPY)	SIGNIFICANT EMISSION RATE (TPY)	PSD REVIEW APPLIES ?
Particulate (TSP)	654.6	919.3	264.6	25	Yes
Particulate (PM_{10})	531.5	739.0	207.4	15	Yes
Sulfur dioxide	1,011.4	1,166.1	154.6	40	Yes
Nitrogen oxides	795.4	933.0	137.6	40	Yes
Carbon monoxide	5,122.9	5,941.0	818.1	100	Yes
Volatile organic compds.	852.2	1,025.9	173.7	40	Yes
Sulfuric acid mist	45.5	71.4	26.0	7	Yes
Total Reduced Sulfur	167.3	318.3	151.0	10	Yes
Lead	0.32	0.40	0.078	0.6	No
Mercury	0.0309	0.0349	0.004	0.1	6.48E-04
Beryllium	0.0005	0.00278	0.00226	0.00040	Yes
Fluorides	--	--	--	3	No

Table A-1. Maximum Emissions from Each Recovery Boiler Nos. 1 and 2 , Stone Container Corporation, Panama City

Regulated Pollutant	Each Recovery Boiler: Emission Factor	Reference	Activity Factor [a]	Hourly Emissions (lb/hr)	Annual Emissions (TPY)
Particulate (PM)	0.044 gr/dscf	1	187,100 dscfm [b]	70.6	309.1
Particulate (PM_{10})	77.6 % of PM	6	--	54.76	239.8
Sulfur dioxide	0.18 lb/MMBtu	3	721 MMBtu/hr	129.78	568.4
Nitrogen oxides	0.10 lb/MMBtu	3	721 MMBtu/hr	72.10	315.8
Carbon monoxide	20 lb/1,000 lb BLS	7	123.7 1,000 lb BLS/hr	2,474	2,872
VOC	0.058 lb C /MMBtu	3	721 MMBtu/hr	41.82	183.2
Sulfuric acid mist	0.011 lb/MMBtu	5	721 MMBtu/hr	7.95	34.8
Total reduced sulfur	17.5 ppmvd	8	187,100 dscfm (b)	17.3	75.9
Lead	7.2E-06 lb/MMBtu	2	721 MMBtu/hr	5.2E-03	2.3E-02
Mercury	5.5E-06 lb/MMBtu	2	721 MMBtu/hr	4.0E-03	1.7E-02
Beryllium	1.9E-07 lb/MMBtu	2	721 MMBtu/hr	1.4E-04	6.0E-04
Fluorides	ND	4	--	--	--

[a] Based on currently permitted maximum operating rate of 123,700 lb virgin BLS/hr, 5,830 Btu/lb BLS, and 8,760 hr/yr.

[b] Based on 1997 compliance testing. Flow rate is corrected to 8-percent oxygen.

References:

1. Proposed MACT standard.
2. Emission factor based on NCASI Bulletin No. 650, Table 11D, direct contact evaporator, average factor used.
3. Emission factor based on NCASI Bulletin No. 646, Tables 8-11, direct contact evaporator with ESP, average factor used.
4. From "Application of Combustion Modifications to Industrial Combustion Equipment" EPA-600/7-79-015a. one test from recovery boiler.
5. Based on similar derivation of sulfuric acid mist from AP-42 for fuel oil. 5 percent of SO_2 becomes SO_3 then take into account the ratio of sulfuric acid mist and gaseous sulfate molecular weights (98/80).
6. Based on AP-42 Tables 10.2-1, 10.2-2, and Figure 10.2-2 for Kraft pulping sources.

8. Currently permitted emission limit.

Table A-4. Maximum Emissions from No. 1 Smelt Dissolving Tank at Stone Container, Panama City.

Regulated Pollutant	Emission Factor	Reference	Activity Factor [a]	Hourly Emissions (lb/hr)	Annual Emissions (TPY)
Particulate (PM)	0.20 lb/ton BLS	1	61.85 tons BLS/hr	12.4	54.2
Particulate (PM_{10})	89.5 % of PM	2	--	11.1	48.5
Sulfur dioxide	0.016 lb/ton BLS	3	61.85 tons BLS/hr	0.99	4.3
Nitrogen oxides	0.033 lb/ton BLS	3	61.85 tons BLS/hr	2.04	8.9
Carbon monoxide	--		--	--	--
VOC	0.062 lb/ton BLS	3	61.85 tons BLS/hr	3.83	16.8
Sulfuric acid mist	5 % of SO2	5	--	0.061	0.3
Total reduced sulfur	0.048 lb/ton BLS	6	61.85 tons BLS/hr	3.0	13.0
Lead	1.7E-05 lb/ton BLS	4	61.85 tons BLS/hr	0.001	4.6E-03
Mercury	1.8E-07 lb/ton BLS	4	61.85 tons BLS/hr	1.1E-05	4.9E-05
Beryllium	1.4E-07 lb/ton BLS	4	61.85 tons BLS/hr	8.7E-06	3.8E-05
Fluorides	--		--	--	--

[a] Based on the currently permitted maximum allowable operating rate of 123,700 lb virgin BLS/hr and 8,760 hr/yr.

References:
1. Proposed MACT standard.
2. AP-42, Table 10.2-7.
3. Data is averages from NCASI Bulletin No. 646, Tables 16-18, for smelt dissolving tanks with scrubbers.
4. Data is averages from NCASI Bulletin No. 650, Tables 14A and 14B, for smelt dissolving tanks with scrubbers.
5. Based on similar derivation of sulfuric acid mist from AP-42 for fuel oil. 5% of SO2 becomes SO3 then take into account the ratio of sulfuric acid mist and gaseous sulfate molecular weights (98/80).
6. Based on Rule 62-296.404(3)(d)1., F.A.C

Table A-5. Maximum Emissions from No. 2 Smelt Dissolving Tank at Stone Container, Panama City.

Regulated Pollutant	Emission Factor	Reference	Activity Factor [a]	Hourly Emissions (lb/hr)	Annual Emissions (TPY)
Particulate (PM)	0.20 lb/ton BLS	1	61.85 tons BLS/hr	12.4	54.2
Particulate (PM_{10})	89.5 % of PM	2	--	11.1	48.5
Sulfur dioxide	0.016 lb/ton BLS	3	61.85 tons BLS/hr	0.99	4.3
Nitrogen oxides	0.033 lb/ton BLS	3	61.85 tons BLS/hr	2.04	8.9
Carbon monoxide	--		--	--	--
VOC	0.062 lb/ton BLS	3	61.85 tons BLS/hr	3.83	16.8
Sulfuric acid mist	5 % of SO2	5	--	0.061	0.3
Total reduced sulfur	0.048 lb/ton BLS	6	61.85 tons BLS/hr	3.0	13.0
Lead	1.7E-05 lb/ton BLS	4	61.85 tons BLS/hr	0.001	4.6E-03
Mercury	1.8E-07 lb/ton BLS	4	61.85 tons BLS/hr	1.1E-05	4.9E-05
Beryllium	1.4E-07 lb/ton BLS	4	61.85 tons BLS/hr	8.7E-06	3.8E-05
Fluorides	--		--	--	--

[a] Based on the currently permitted maximum allowable operating rate of 123,700 lb virgin BLS/hr and 8,760 hr/yr.

References:
1. Proposed MACT standard.
2. AP-42, Table 10.2-7.
3. Data is averages from NCASI Bulletin No. 646, Tables 16-18, for smelt dissolving tanks with scrubbers.
4. Data is averages from NCASI Bulletin No. 650, Tables 14A and 14B, for smelt dissolving tanks with scrubbers.
5. Based on similar derivation of sulfuric acid mist from AP-42 for fuel oil. 5% of SO2 becomes SO3 then take into account the ratio of sulfuric acid mist and gaseous sulfate molecular weights (98/80).
6. Currently permitted emission limit.

Table A-7. Maximum Emissions from Lime Kiln (No. 6 Fuel Oil Fired) at Stone Container, Panama City.

Regulated Pollutant	Emission Factor	Reference	Activity Factor [a]	Hourly Emissions (lb/hr)	Annual Emissions (TPY)
Particulate (PM)	29.83 lb/hr	1	8,760 hr/yr	29.83	130.7
Particulate (PM_{10})	98.3 % of PM	2	--	29.32	128.4
Sulfur dioxide	0.23 lb/ton CaO	4	20.4 ton CaO/hr	4.69	20.6
Nitrogen oxides	2.19 lb/ton CaO	4	20.4 ton CaO/hr	44.68	195.7
Carbon monoxide	0.22 lb/ton CaO	6	20.4 ton CaO/hr	4.49	19.7
VOC	0.24 lb C/ton CaO	4	20.4 ton CaO/hr	4.81	21.1
Sulfuric acid mist	0.014 lb/ton CaO	5	20.4 ton CaO/hr	0.29	1.3
Total reduced sulfur	20 ppmvd [b]	7	68,000 dscfm [c]	7.27	31.9
Lead	3.8E-03 lb/ton CaO	3	20.4 ton CaO/hr	7.8E-02	0.3
Mercury	9.1E-06 lb/ton CaO	3	20.4 ton CaO/hr	1.9E-04	0.0
Beryllium	1.7E-05 lb/ton CaO	3	20.4 ton CaO/hr	3.5E-04	0.0
Fluorides	--		--	--	--

[a] Based on currently permitted operating limit of 18.35 tons CaO/hr plus 10% impurities (20.4 tons/hr), 8,760 hr/yr.

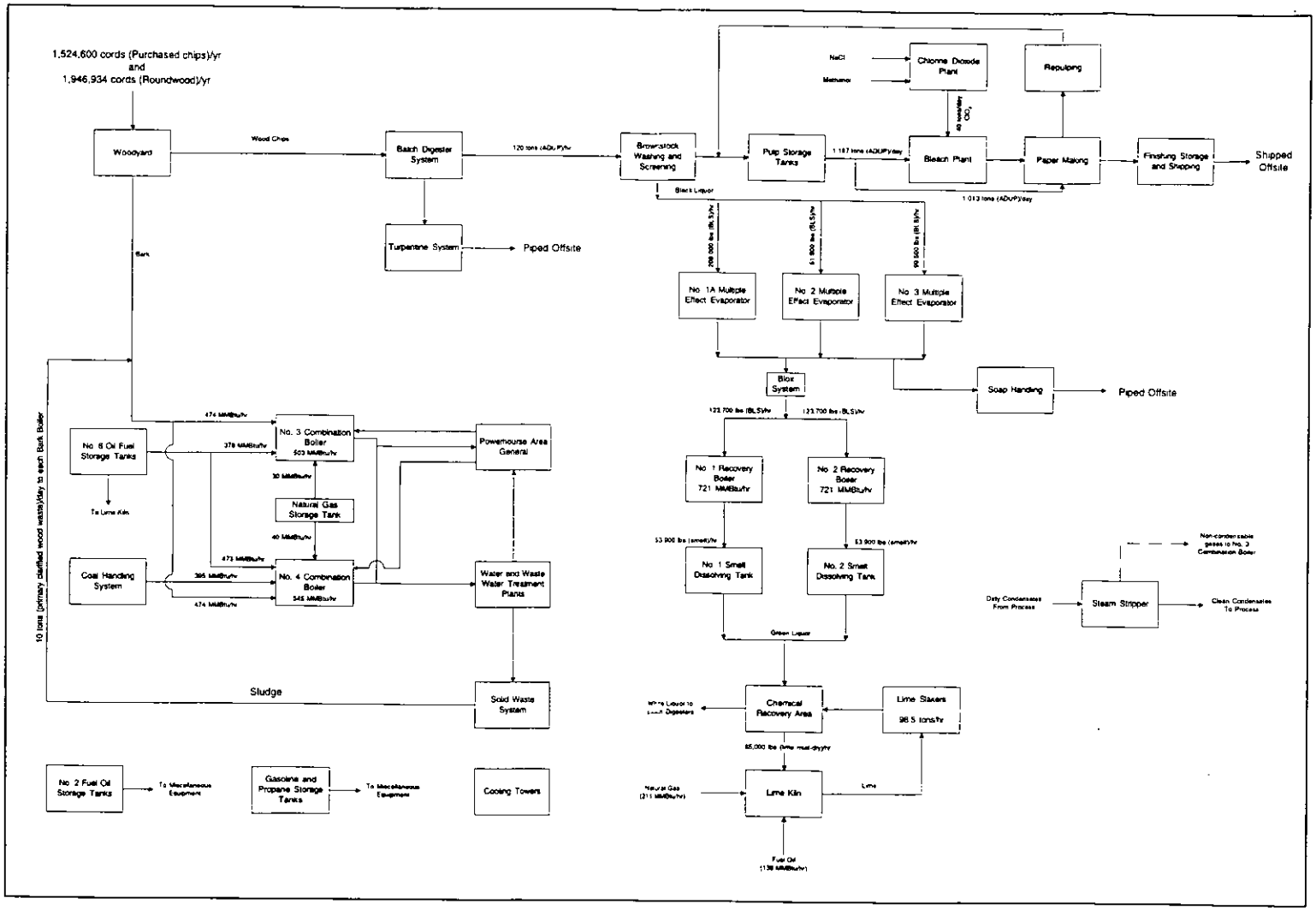
[b] TRS Emission Factor as H2S corrected to 10% O2 as a 12-hour average.

[c] Flow rate corrected to 10% oxygen.

References

1. Based on current permit limit, which is lower than the proposed MACT standard of 0.067gr/dscf @ 10% O_2.
2. Based on AP-42 Section 10.2 and Tables 10.2-1 and 10.2-4.
3. Based on NCASI Technical Bulletin No. 650, Table 13C.
4. Based on NCASI Technical Bulletin No. 646, Tables 12-14.
5. Based on similar derivation of sulfuric acid mist from AP-42 for fuel oil. 5% of [illegible] into account the ratio of sulfuric acid mist and gaseous sulfate molecular wei[illegible]
6. Based on NCASI Technical Bulletin No. 416, Table 6.
7. Currently permitted emission limit.

Why was Table A-7 resubmitted?



Stone Container Corporation		Emission Unit: Facility	
		Process Area: Overall Plant Flow Diagram	
SCC-FI-C3	Panama City, FL	Filename: 9937518Y/F1/WP/SCC-FAC VSD	
		Latest Revision Date: 6/7/00	5:29 PM

Golder Associates

II. Summary and discussion of results

No. 3 BB 1999

Results of the testing are summarized in Table I. Complete emissions data along with supportive field and analytical data are included in Appendices A, B, C, and F.

The No. 3 Bark Boiler was within compliance during the test. The average particulate emissions were 47.62 lbs/hr. The calculated allowable emissions for this source are 75.58 lbs/hr.

The visible emissions average opacity was 5.6%, with an allowable of 30%.

II. Summary And Discussion Of Results

NO. 4 BARK BOILER 1999

Results of these tests are summarized in Tables I through IV. Complete emissions data along with the supporting field and analytical data are included in Appendices A through L.

This unit is within compliance limitations for the required parameters. The allowable emissions and the measured emissions are listed below:

Parameter	Allowable Emissions	Measured Emissions
Particulate Matter	80.64 Lbs/Hr	18.34 Lbs/Hr
Sulfur Dioxide (Wiithout NCG)	772 Lbs/Hr	539.9 Lbs/Hr
Sulfur Dioxide (Wiith NCG)	781 Lbs/Hr	12.15 Lbs/Hr
Total Reduced Sulfur Gases (Wiith NCG)	5.0 PPM	0.03 PPM
Visible Emissions	30%	6.46 %

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Stone Container
LOCATION: Panama City, Fl.

SOURCE: No. 3 Bark Boiler

Date	Run Number	Particulate Emissions GR/SCF	LB/HR	LB/MMBTU	Vol. Flow Rate ACFM	SCFMD	Percent O2	Stack Temp 'F	Percent Isokinetic
11/8/99	1	0.0282	42.01	0.068	219577.0	173806.0	9.1	124.7	92.9
11/8/99	2	0.0368	54.38	0.093	221702.0	172388.0	9.5	127.7	90.1
11/8/99	3	0.0312	46.48	0.075	223789.0	173804.0	8.9	128.4	91.1
	Mean	0.0321	47.62	0.079	221689.3	173332.7	9.2	126.9	91.4

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = 75.58 lbs/hr

LB/MMBTU = (Gr/SCF/7000) x (Fuel Fact.) x [20.9 / (20.9 - %O2)]

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Smurfit-Stone Container Corp.
LOCATION: Panama City, Fl.

SOURCE: No. Bark Boiler

Date	Run Number	Particulate Emissions GR/SCF	LB/HR	LB/MMBTU	Vol. Flow Rate ACFM	SCFMD	Percent O2	Stack Temp 'F	Percent Isokinetic
11/5/99	1	0.0165	23.63	0.036	232844.0	167094.0	7.9	140.2	94.8
11/5/99	2	0.0137	18.54	0.029	223437.0	157881.0	7.5	142.0	98.8
11/5/99	3	0.0097	12.86	0.021	217461.0	154687.0	8.0	141.0	97.7
	Mean	0.0133	18.34	0.029	224580.7	159887.3	7.8	141.1	97.1

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = 80.64 lbs/hr

LB/MMBTU = (Gr/SCF/7000) x (Fuel Fact.) x [20.9 / (20.9 - %O2)]

TABLE II
SULFUR DIOXIDE EMISSION SUMMARY
NO. 4 BARK BOILER WITH NCG
STONE CONTAINER CORPORATION
PANAMA CITY, FLORIDA

DATE	TIME	LEVEL	SULFUR DIOXIDE PPM	VOLUMETRIC FLOW SCFM	MASS EMISSIONS LB/SCF	LB / HR
11/06/99	0930 - 1030	MAX	13.10		2.175E-06	21.495
		MIN	5.50		9.130E-07	9.025
		AVG	8.06	164741	1.339E-06	13.231
11/06/99	1045 - 1145	MAX	16.20		2.689E-06	25.593
		MIN	3.60		5.976E-07	5.687
		AVG	8.32	158614	1.382E-06	13.150
11/06/99	1215 - 1315	MAX	12.20		2.025E-06	19.344
		MIN	1.80		2.988E-07	2.854
		AVG	6.35	159197	1.055E-06	10.075
	MEAN		7.58	160851	1.258E-06	12.152

SCFM = Standard Cubic feet per minute. Standard conditions are dry, 68 F and 29.92 Hg.

LBS / HR = ppm * 1.660E-07 * 60 min / hr * SCFM

TABLE III
SULFUR DIOXIDE EMISSION SUMMARY
NO. 4 BARK BOILER WITHOUT NCG
STONE CONTAINER CORPORATION
PANAMA CITY, FLORIDA

DATE	TIME	LEVEL	SULFUR DIOXIDE PPM	VOLUMETRIC FLOW SCFM	MASS EMISSIONS LB/SCF	LB / HR
11/05/99	0915 - 1015	MAX	454.4		7.543E-05	756.277
		MIN	346.0		5.743E-05	575.812
		AVG	405.8	167094	6.736E-05	675.287
11/05/99	1035 - 1135	MAX	322.5		5.353E-05	507.063
		MIN	301.6		5.007E-05	474.289
		AVG	312.3	157881	5.184E-05	491.056
11/05/99	1225 - 1325	MAX	339.3		5.633E-05	522.807
		MIN	231.3		3.839E-05	356.322
		AVG	294.3	154687	4.885E-05	453.415
	MEAN		337.4	159887	5.602E-05	539.919

SCFM = Standard Cubic feet per minute. Standard conditions are dry, 68 F and 29.92 Hg.

LBS / HR = ppm * 1.660E-07 * 60 min / hr * SCFM

TECHNICAL SERVICES INC.

TABLE IV

TOTAL REDUCED SULFUR GAS EMISSIONS
Bark Boiler No. 4 w/NCG

Smurfit-Stone Container Corporation
Smurfit-Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS, PPM H2S	CH3SH	DMS	DMDS	TRS
11/06/99	1	0900 - 1200	MAX	0.21	0.00	0.00	0.00	0.21
			MIN	0.00	0.00	0.00	0.00	0.00
			AVG	0.04	0.00	0.00	0.00	0.04
11/06/99	2	1200 - 1500	MAX	0.12	0.00	0.00	0.00	0.12
			MIN	0.00	0.00	0.00	0.00	0.00
			AVG	0.04	0.00	0.00	0.00	0.04
11/06/99	3	1500 - 1800	MAX	0.08	0.00	0.00	0.00	0.08
			MIN	0.00	0.00	0.00	0.00	0.00
			AVG	0.01	0.00	0.00	0.00	0.01
			MEAN	0.03	0.00	0.00	0.00	0.03

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

II. Summary And Discussion Of Results

SLAKER VENT 1999

Results of these tests are summarized in Table I. Complete emissions data along with the supporting field and analytical data are included in Appendices A through F.

This unit is within compliance limitations for the required parameters. The allowable emissions and the measured emissions are listed below:

Parameter	Allowable Emissions	Measured Emissions
Particulate Matter	48.52 Lbs/Hr	1.26 Lbs/Hr
Visible Emissions	20%	0.00 %

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Smurfit-Stone Container Corp.
LOCATION: Panama City, Fl

SOURCE: Slaker Vent Stack

Date	Run Number	Particulate Emissions GR/SCF	Particulate Emissions LB/HR	Vol. Flow Rate ACFM	Vol. Flow Rate SCFMD	Percent O2	Stack Temp 'F	Percent H20	Percent Isokinetic
11/4/99	1	0.0404	1.23	7873.0	3566.0	20.9	177.5	46.1	102.4
11/4/99	2	0.0496	1.57	7805.0	3691.0	20.9	174.4	44.0	96.2
11/4/99	3	0.0309	0.96	7838.0	3637.0	20.9	175.0	45.0	98.1
	Mean	0.0403	1.26	7838.7	3631.3	20.9	175.6	45.0	98.9

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = [55 x (Tons/hr)^0.11] - 40 = lbs/hr
= [55 x (75.70 tph^0.11] - 40 = 48.52 lbs/hr

Note: Calculations for the Tons/hr can be found in the process data in Appendix D

II. Summary And Discussion Of Results

LIME KILN 1999

Results of these tests are summarized in Tables I through III. Complete emissions data along with the supporting field and analytical data are included in Appendices A through J.

This unit is within compliance limitations for the required parameters. The allowable emissions and the measured emissions are listed below:

Parameter	Allowable Emissions	Measured Emissions
Particulate Matter	31.63 Lbs/Hr	28.77 Lbs/Hr
Total Reduced Sulfur (TRS)	20 ~~8~~ PPM @ 10% O2	0.71 PPM @ 10% O2
Visible Emissions	20%	0.0 %

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Smurfit-Stone Container Corp.
LOCATION: Panama City, Fl.

SOURCE: Lime Kiln

Date	Run Number	Particulate Emissions GR/SCF	LB/HR	Vol. Flow Rate ACFM	SCFMD	Percent O2	Stack Temp 'F	Percent H20	Percent Isokinetic
11/12/99	1	0.0570	28.18	106539.0	57674.0	6.3	167.2	36.1	95.4
11/12/99	2	0.0539	25.98	100862.0	56230.0	5.6	167.1	34.2	101.7
11/12/99	3	0.0620	32.17	105127.0	60530.0	5.1	169.3	31.8	107.1
	Mean	0.0576	28.77	104176.0	58144.7	5.6	167.9	34.0	101.4

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = 17.31(P)^0.16 = lbs/hr
= 31.63 lbs/hr @ 43.28 tons/hr process feed

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS
LIME KILN

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS, PPM H2S	CH3SH	DMS	DMDS	TRS
11/12/99	1	0900 - 1200	MAX	1.49	0.00	0.00	0.00	1.49
			MIN	0.64	0.00	0.00	0.00	0.64
			AVG	0.98	0.00	0.00	0.00	0.98
11/12/99	2	1200 - 1500	MAX	3.17	0.00	0.00	0.00	3.17
			MIN	0.47	0.00	0.00	0.00	0.47
			AVG	0.85	0.00	0.00	0.00	0.85
11/12/99	3	1500 - 1800	MAX	1.76	0.00	0.00	0.00	1.76
			MIN	0.41	0.00	0.00	0.00	0.41
			AVG	1.20	0.00	0.00	0.00	1.20
			MEAN	1.01	0.00	0.00	0.00	1.01

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
LIME KILN

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
11/12/99	1	0900 - 1200	MAX	6.21	1.49	1.11
			MIN	5.91	0.64	0.46
			AVG	6.06	0.98	0.72
11/12/99	2	1200 - 1500	MAX	5.59	3.17	2.26
			MIN	4.99	0.47	0.33
			AVG	5.36	0.85	0.60
11/12/99	3	1500 - 1800	MAX	5.18	1.76	1.22
			MIN	4.89	0.41	0.28
			AVG	5.05	1.20	0.83
			MEAN	5.49	1.01	0.71

PPM - Parts per million by volume
* Mean determined as arithmetic average of the average results for each of the runs

No. 1 Recovery
1999

II. Summary And Discussion Of Results

Results of these tests are summarized in Tables I through V. Complete emissions data along with the supporting field and analytical data are included in Appendices A through E and H.

Both stacks for this unit are well within compliance limitations. The allowable emissions and the measured emissions are listed below:

Parameter	Allowable Emissions	Measured Emissions
Particulate Matter	3.0 lbs/Ton BLS (Both stacks combined)	0.67 lb/Ton BLS
Total Reduced Sulfur (TRS)	17.5 PPM @ 8% O2	7.20 PPM @ 8% O2 (Stack 1A)
Total Reduced Sulfur (TRS)	17.5 PPM @ 8% O2	3.99 PPM @ 8% O2 (Stack 1B)
Total Reduced Sulfur (TRS)	17.5 PPM @ 8% O2	5.60 PPM @ 8% O2 (Average both stacks)
Visible Emissions	45%	2.50 % (Stack 1A)
Visible Emissions	45%	0.63 % (Stack 1B)

TECHNICAL SERVICES INC.

TABLE IV

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
Recovery Boiler 1B

Smurfit-Stone Container Corporation
Smurfit-Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
11/08/99	1	1300 - 1600	MAX	7.89	4.92	4.88
			MIN	7.85	1.96	1.93
			AVG	7.87	3.38	3.35
11/08/99	2	1600 - 1900	MAX	7.89	4.51	4.48
			MIN	7.57	2.78	2.69
			AVG	7.76	3.48	3.41
11/08/99	3	1900 - 2200	MAX	8.08	11.74	11.80
			MIN	7.72	2.91	2.85
			AVG	7.89	5.24	5.19
			MEAN	7.84	4.03	3.99

PPM - Parts per million by volume
* Mean determined as arithmetic average of the average results for each of the runs

T S I

Volumetric Flow and Emission Output - Table V

FACILITY: Smurfit-Stone Container Corp.
LOCATION: Panama City, Florida

SOURCE: No. 1 Recovery Boiler System

Date	Run Number	Source Recoverys	Particulate Emissions LB/HR	Particulate Emissions LB/Ton BLS	Vol. Flow Rate ACFM	Vol. Flow Rate SCFMD	Black Liquor Firing Rate (Tons/Hr)	Percent Isokinetic
11/2/99	1	1A	19.93	1.02	169506.0	85479.0	39.24 /2	102.4
11/2/99	2	1A	19.13	0.97	169053.0	82369.0	39.41 /2	109.2
11/2/99	3	1A	24.78	1.26	168778.0	86551.0	39.33 /2	107.8
		Mean	21.28	1.08	169112.3	84799.7	39.33 /2	106.5
11/2/99	1	1B	3.52	0.18	153259.0	79053.0	39.32 /2	107.0
11/2/99	2	1B	6.68	0.34	153508.0	79564.0	39.44 /2	106.3
11/2/99	3	1B	5.17	0.26	166369.0	88628.0	39.61 /2	104.3
		Mean	5.13	0.26	157712.0	82415.0	39.46 /2	105.8
		Total	26.41	0.67	326824.3	167214.7	39.39	

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions (Stacks A and B) = 3.0 lbs/Ton Black Liquor Solids
One Ton BLS = 3000 lbs

TECHNICAL SERVICES INC.

TABLE I

TOTAL REDUCED SULFUR GAS EMISSIONS
Recovery Boiler 1A

Smurfit-Stone Container Corp.
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS. PPM H2S	CH3SH	DMS	DMDS	TRS
11/08/99	1	0900 - 1200	MAX	5.15	2.89	0.00	0.65	9.33
			MIN	2.37	1.41	0.00	0.00	3.78
			AVG	4.18	2.55	0.00	0.12	6.97
11/08/99	2	1200 - 1500	MAX	10.22	3.69	0.00	0.49	14.89
			MIN	4.12	2.28	0.00	0.05	6.49
			AVG	5.08	3.04	0.00	0.12	8.36
11/08/99	3	1500 - 1800	MAX	6.96	4.12	0.00	0.09	11.27
			MIN	4.32	2.47	0.00	0.06	6.91
			AVG	5.94	3.39	0.00	0.00	9.33
			MEAN	5.06	2.99	0.00	0.08	8.22

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
Recovery Boiler 1A

Smurfit-Stone Container Corp.
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
11/08/99	1	0900 - 1200	MAX	6.39	9.33	8.30
			MIN	6.33	3.78	3.35
			AVG	6.36	6.97	6.19
11/08/99	2	1200 - 1500	MAX	6.09	14.89	12.98
			MIN	5.99	6.49	5.62
			AVG	6.03	8.36	7.26
11/08/99	3	1500 - 1800	MAX	6.18	11.27	9.89
			MIN	6.04	6.91	6.01
			AVG	6.11	9.33	8.14
			MEAN	6.17	8.22	7.20

PPM - Parts per million by volume
* Mean determined as arithmetic average of the average results for each of the runs

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS
Recovery Boiler 1B

Smurfit-Stone Container Corporation
Smurfit-Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS. PPM H2S	CH3SH	DMS	DMDS	TRS
11/08/99	1	1300 - 1600	MAX	2.01	2.08	0.00	0.42	4.92
			MIN	1.02	0.94	0.00	0.00	1.96
			AVG	1.49	1.68	0.00	0.11	3.38
11/08/99	2	1600 - 1900	MAX	2.14	2.14	0.00	0.11	4.51
			MIN	1.07	1.54	0.00	0.08	2.78
			AVG	1.47	1.82	0.00	0.09	3.48
11/08/99	3	1900 - 2200	MAX	3.99	7.58	0.00	0.08	11.74
			MIN	1.08	1.69	0.00	0.07	2.91
			AVG	2.56	2.67	0.00	0.00	5.24
			MEAN	1.84	2.06	0.00	0.07	4.03

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

No. 2 Recovery
1999

II. Summary And Discussion Of Results

NO. 2 RECOVERY BOILER

Results of these tests are summarized in Tables I through V. Complete emissions data along with the supporting field and analytical data are included in Appendices A through E and H.

Both stacks for this unit are well within compliance limitations. The allowable emissions and the measured emissions are listed below:

Parameter	Allowable Emissions	Measured Emissions
Particulate Matter	3.0 lbs/Ton BLS (Both stacks combined)	0.70 lb/Ton BLS
Total Reduced Sulfur (TRS)	17.5 PPM @ 8% O2	13.79 PPM @ 8% O2 (Stack 2A)
Total Reduced Sulfur (TRS)	17.5 PPM @ 8% O2	14.28 PPM @ 8% O2 (Stack 2B)
Total Reduced Sulfur (TRS)	17.5 PPM @ 8% O2	14.04 PPM @ 8% O2 (Average both stacks)
Visible Emissions	45%	3.75 % (Stack 2A)
Visible Emissions	45%	3.54 % (Stack 2B)

TECHNICAL SERVICES INC.

TABLE I

TOTAL REDUCED SULFUR GAS EMISSIONS
Recovery Boiler 2A

Smurfit-Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS. PPM H2S	CH3SH	DMS	DMDS	TRS
11/09/99	1	1300 - 1600	MAX	16.75	6.29	0.00	0.62	24.28
			MIN	12.10	4.54	0.00	0.00	16.64
			AVG	14.90	5.28	0.00	0.12	20.43
11/09/99	2	1600 - 1900	MAX	11.41	5.01	0.00	0.11	16.64
			MIN	7.81	3.80	0.00	0.00	11.60
			AVG	9.30	4.21	0.00	0.08	13.67
11/09/99	3	1900 - 2200	MAX	24.88	4.21	0.00	0.10	29.28
			MIN	3.94	3.60	0.00	0.00	7.54
			AVG	9.49	3.89	0.00	0.00	13.38
			MEAN	11.23	4.46	0.00	0.07	15.82

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
*** Mean determined as arithmetic average of the average results for each of the runs**

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
Recovery Boiler 2A

Smurfit-Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
11/09/99	1	1300 - 1600	**MAX**	5.90	24.28	20.90
			MIN	5.51	16.64	13.97
			AVG	5.71	20.43	17.36
11/09/99	2	1600 - 1900	**MAX**	6.38	16.64	14.79
			MIN	6.04	11.60	10.08
			AVG	6.24	13.67	12.04
11/09/99	3	1900 - 2200	**MAX**	6.65	29.28	26.52
			MIN	6.28	7.54	6.66
			AVG	6.47	13.38	11.97
			MEAN	6.14	15.82	13.79

PPM - Parts per million by volume
*** Mean determined as arithmetic average of the average results for each of the runs**

TECHNICAL SERVICES INC.

TABLE IV

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
Recovery Boiler 2B

Smurfit-Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
11/10/99	1	1300 - 1600	MAX	5.08	21.60	17.64
			MIN	5.06	9.45	7.71
			AVG	5.07	13.14	10.73
11/10/99	2	1600 - 1900	MAX	5.01	19.31	15.70
			MIN	4.78	11.64	9.32
			AVG	4.90	14.48	11.69
11/10/99	3	1900 - 2200	MAX	5.05	18.13	14.77
			MIN	4.91	4.96	4.01
			AVG	4.96	15.21	12.32
			MEAN	4.98	14.28	11.58

PPM - Parts per million by volume
*** Mean determined as arithmetic average of the average results for each of the runs**

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS
Recovery Boiler 2B

Smurfit-Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS. PPM H2S	CH3SH	DMS	DMDS	TRS
11/10/99	1	1300 - 1600	MAX	16.09	4.30	0.00	0.61	21.60
			MIN	7.45	2.00	0.00	0.00	9.45
			AVG	9.10	3.85	0.00	0.10	13.14
11/10/99	2	1600 - 1900	MAX	12.55	6.54	0.00	0.11	19.31
			MIN	7.52	4.11	0.00	0.00	11.64
			AVG	9.32	5.01	0.00	0.07	14.48
11/10/99	3	1900 - 2200	MAX	11.44	6.46	0.00	0.12	18.13
			MIN	0.00	4.96	0.00	0.00	4.96
			AVG	9.52	5.69	0.00	0.00	15.21
			MEAN	9.32	4.85	0.00	0.06	14.28

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

T S I

Volumetric Flow and Emission Output - Table V

FACILITY: Smurfitt-Stone Container Corp.
LOCATION: Panama City, Florida

SOURCE: No. 2 Recovery Boiler System

Date	Run Number	Source Recoverys	Particulate Emissions LB/HR	Particulate Emissions LB/Ton BLS	Vol. Flow Rate ACFM	Vol. Flow Rate SCFMD	Black Liquor Firing Rate (Tons/Hr)	Percent Isokinetic
11/3/99	1	1A	9.85	0.50	181251.0	90522.0	39.24 /2	108.2
11/3/99	2	1A	22.70	1.15	182535.0	89755.0	39.41 /2	108.8
11/3/99	3	1A	19.46	0.99	177859.0	89010.0	39.33 /2	108.4
		Mean	17.33	0.88	180548.3	89762.3	39.33 /2	108.5
11/3/99	1	1B	10.94	0.56	170877.0	81801.0	39.32 /2	107.9
11/3/99	2	1B	10.55	0.53	173183.0	80970.0	39.44 /2	109.2
11/3/99	3	1B	9.06	0.46	172636.0	81926.0	39.61 /2	108.9
		Mean	10.18	0.52	172232.0	81565.7	39.46 /2	108.6
		Total	27.52	0.70	352780.3	171328.0	39.39	

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions (Stacks A and B) = 3.0 lbs/Ton Black Liquor Solids
One Ton BLS = 3000 lbs

II. Summary And Discussion Of Results

NO. 1 SMELT DISSOLVING TANK 1999

Results of these tests are summarized in Tables I through III. Complete emissions data along with the supporting field and analytical data are included in Appendices A through E and J.

This unit is within compliance limitations for the required parameters. The allowable emissions and the measured emissions are listed below:

Parameter	Allowable Emissions	Measured Emissions
Particulate Matter	27.08 Lbs/Hr	21.54 ~~26.03~~ Lbs/Hr
Total Reduced Sulfur (TRS)	0.048 Lb/Ton DPF	0.0202 Lb/Ton DPF
Visible Emissions	20%	2.50 %

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Smurfit-Stone
LOCATION: Panama City Fl.

SOURCE: No. 1 Smelt Dissolving tank

Date	Run Number	Particulate Emission GR/SCF	LB/HR	Vol. Flow Rate ACFM	SCFMD	Black Liquor Firing Rat (Tons/Hr)(3000 lbs/Ton)	Process Feed Rate (DPF)
11/2/99	1	0.1576	23.99	27852.0	17758.0	37.92	26.17
11/2/99	2	0.1150	17.50	28025.0	17754.0	38.08	26.20
11/2/99	3	0.1512	23.14	28183.0	17854.0	37.62	25.73
	Mean	0.1413	21.54	28020.0	17788.7	37.87	26.03

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = 3.59 (DPF)^0.62

DPF = Dry Process feed rate in Tons/Hr

Run 1 = 26.17 lbs/hr
Run 2 = 26.20 lbs/hr
Run 3 = 25.73lbs/hr
Average = 26.03 lbs/hr

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS
No. 1 Smelt Dissolving Tank Vent

Smurfit-Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS H2S	CH3SH	DMDS	DMS	TRS
11/02/99	1	1000 - 1300	MAX	10.11	2.70	0.00	0.00	12.81
			MIN	1.69	1.46	0.00	0.00	3.15
			AVG	4.61	1.96	0.00	0.00	6.57
11/02/99	2	1300 - 1560	MAX	2.66	1.92	0.00	0.00	4.59
			MIN	1.33	1.39	0.00	0.00	2.71
			AVG	1.85	1.57	0.00	0.00	3.43
11/02/99	3	1600 - 1900	MAX	10.28	4.35	0.00	0.00	14.63
			MIN	1.46	1.70	0.00	0.00	3.16
			AVG	4.36	2.76	0.00	0.00	7.12
			MEAN	3.61	2.10	0.00	0.00	5.71

ppm - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercatan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of three runs

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
No. 1 Smelt Dissolving Tank Vent

Smurfit-Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	TRS PPM	VOL FLOW SCFMD	DPF SOLIDS TONS/HR	TRS MASS EMISSIONS LBS/HR	TRS MASS EMISSIONS LBS/TON DPF
11/02/99	1	1000 - 1300	MAX	12.81			1.2175	0.0474
			MIN	3.15			0.2999	0.0117
			AVG	6.57	17902	25.675	0.6247	0.0243
11/02/99	2	1300 - 1560	MAX	4.59			0.4022	0.0158
			MIN	2.71			0.2381	0.0094
			AVG	3.43	16518	25.450	0.3006	0.0118
11/02/99	3	1600 - 1900	MAX	14.63			1.2830	0.0504
			MIN	3.16			0.2768	0.0109
			AVG	7.12	16149	25.379	0.6247	0.0245
			MEAN	5.71	16856	25.501	0.5166	0.0202

ppm - Parts per million by volume
* Mean determined as arithmetic average of the average results for each of the runs

LBS/HR = 1E-06*PPM*5.31*SCFMD

II. Summary And Discussion Of Results

NO. 2 SMELT DISSOLVING TANK 1999

Results of these tests are summarized in Tables I through III. Complete emissions data along with the supporting field and analytical data are included in Appendices A through J.

This unit is within compliance limitations for the required parameters. The allowable emissions and the measured emissions are listed below:

Parameter	Allowable Emissions	Measured Emissions
Particulate Matter	27.08 Lbs/Hr	16.81 Lbs/Hr
Total Reduced Sulfur (TRS)	0.048 Lb/Ton DPF	0.0151 Lb/Ton DPF
Visible Emissions	20%	4.17 %

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Smurfit-Stone
LOCATION: Panama City Fl.

SOURCE: No. 2 Smelt Dissolving tank

Date	Run Number	Particulate Emissions GR/SCF	LB/HR	Vol. Flow Rate ACFM	SCFMD	Black Liquor Firing Rat (Tons/Hr)(3000 lbs/Ton)	Process Feed Rate (DPF)
11/3/99	**1**	0.1434	16.39	22902.0	13338.0	37.92	26.17
11/3/99	**2**	0.1470	16.93	23257.0	13436.0	38.08	26.20
11/3/99	**3**	0.1508	17.10	22593.0	13228.0	37.62	25.73
	Mean	0.1471	16.81	22917.3	13334.0	37.87	26.03

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = 3.59 (DPF)^0.62

DPF = Dry Process feed rate in Tons/Hr

Run 1 = 27.17 lbs/hr
Run 2 = 27.19 lbs/hr
Run 3 = 26.89 lbs/hr
Average = 27.08 lbs/hr

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS
No. 2 Smelt Dissolving Tank Vent

Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS H2S	CH3SH	DMDS	DMS	TRS
11/03/99	1	1000 - 1300	MAX	0.86	13.72	0.30	0.00	15.17
			MIN	0.00	3.90	0.14	0.00	4.19
			AVG	0.26	6.79	0.19	0.00	7.44
11/03/99	2	1300 - 1600	MAX	0.22	6.77	0.21	0.00	7.42
			MIN	0.00	2.24	0.11	0.00	2.46
			AVG	0.13	3.89	0.15	0.00	4.33
11/03/99	3	1600 - 1900	MAX	1.10	4.17	0.16	0.00	5.60
			MIN	0.00	3.42	0.00	0.00	3.42
			AVG	0.82	3.93	0.01	0.00	4.77
			MEAN	0.41	4.87	0.12	0.00	5.51

ppm - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercatan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
No. 2 Smelt Dissolving Tank Vent

Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	TRS PPM	VOL FLOW SCFMD	DPF SOLIDS TONS/HR	TRS MASS EMISSIONS LBS/HR	TRS MASS EMISSIONS LBS/TON DPF
11/03/99	1	1000 - 1300	MAX	15.17			1.0749	0.0419
			MIN	4.19			0.2969	0.0116
			AVG	7.44	13340	25.675	0.5272	0.0205
11/03/99	2	1300 - 1600	MAX	7.42			0.5165	0.0201
			MIN	2.46			0.1715	0.0067
			AVG	4.33	13117	25.725	0.3015	0.0117
11/03/99	3	1600 - 1900	MAX	5.60			0.3923	0.0153
			MIN	3.42			0.2395	0.0094
			AVG	4.77	13194	25.570	0.3342	0.0131
			MEAN	5.51	13217	25.657	0.3876	0.0151

ppm - Parts per million by volume
*** Mean determined as arithmetic average of the average results for each of the runs**

LBS/HR = 1E-06*PPM*5.31*SCFM

Panama City Mill Test Data
1998

II. Summary and discussion of results

1998

Results of the testing are summarized in Tables I through IV. Complete emissions data along with supportive field and analytical data are included in Appendices A through I, and L.

The No. 3 Bark Boiler was within compliance during the tests. The average particulate emissions were 13.27 lbs/hr. The calculated allowable emissions for this source are 69.73 lbs/hr.

The SO2 (with NCG) emissions averaged 1.87 lbs/hr, with an allowable of 781 lbs/hr.

The SO2 (without NCG) emissions averaged 500.69 lbs/hr, with an allowable of 772 lbs/hr.

The TRS emissions averaged 0.42 ppm, with an allowable of 5.0 ppm.

The visible emissions average opacity was 8.54 %, with an allowable of 30%.

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Smurfit-Stone
LOCATION: Panama City, Florida

SOURCE: No. 4 Bark Boiler

Date	Run Number	Particulate Emissions GR/SCF	LB/HR	Vol. Flow Rate ACFM	SCFMD	Percent O2	Stack Temp 'F	Percent H20
12/06/98	1	0.0103	14.47	254261.0	163924.0	7.2	144.6	26.4
12/06/98	2	0.0088	12.34	251249.0	163561.0	6.9	144.5	25.7
12/06/98	3	0.0094	13.00	247900.0	161362.0	7.3	142.8	25.9
	Mean	0.0095	13.27	251136.7	162949.0	7.1	144.0	26.0

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = 69.73 lbs/hr

TECHNICAL SERVICES INC.

TABLE II

SULFUR DIOXIDE EMISSIONS SUMMARY
No. 4 Bark Boiler with NCG

STONE CONTAINER CORPORATION
PANAMA CITY, FLORIDA

DATE	RUN No.	TIME PERIOD	LEVEL	SO2 PPM	VOLUMETRIC FLOW SCFMD	OXYGEN %	SO2 EMISSIONS LBS/DSCF	SO2 EMISSIONS LB/HR
15/05/98	1	1430 - 1530	MAX	1.77	163419	6.00	2.937E-07	2.8801
			MIN	0.77			1.272E-07	1.2468
			AVG	1.39			2.308E-07	2.2635
15/05/98	2	1540 - 1640	MAX	5.20	160948	5.90	8.637E-07	8.3410
			MIN	1.00			1.661E-07	1.6040
			AVG	1.30			2.155E-07	2.0813
15/05/98	3	1650 - 1750	MAX	8.23	161704	5.90	1.366E-06	13.2539
			MIN	0.30			4.998E-08	0.4849
			AVG	0.79			1.307E-07	1.2685
			MEAN	1.16	162024	5.93	1.924E-07	1.8711

ppm - Parts per million by volume

* Mean determined as arithmetic average of the average results for each of the runs

LBS/HR = 1.660E-07 x PPM x SCFMD x 60

TECHNICAL SERVICES INC.

TABLE III

SULFUR DIOXIDE EMISSIONS SUMMARY
No. 4 Bark Boiler without NCG

STONE CONTAINER CORPORATION
PANAMA CITY, FLORIDA

DATE	RUN No.	TIME PERIOD	LEVEL	SO2 PPM	VOLUMETRIC FLOW SCFMD	OXYGEN %	SO2 EMISSIONS LBS/DSCF	SO2 EMISSIONS LB/HR
12/06/98	1	0930 - 1030	MAX	345.87			5.742E-05	563.4207
			MIN	215.80			3.582E-05	351.5349
			AVG	280.82	163552	7.17	4.662E-05	457.4445
12/06/98	2	1040 - 1140	MAX	324.57			5.388E-05	528.1803
			MIN	246.76			4.096E-05	401.5548
			AVG	297.35	163384	6.89	4.936E-05	483.8819
12/06/98	3	1155 - 1255	MAX	369.40			6.132E-05	594.6556
			MIN	317.40			5.269E-05	510.9380
			AVG	348.33	161625	7.24	5.782E-05	560.7332
			MEAN	308.83	162854	7.10	5.127E-05	500.6866

ppm - Parts per million by volume

* Mean determined as arithmetic average of the average results for each of the runs

LBS/HR = 1.660E-07 x PPM x SCFMD x 60

TECHNICAL SERVICES INC.

TABLE IV

TOTAL REDUCED SULFUR GAS EMISSIONS
Bark Boiler No. 4 w/NCG

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS, PPM H2S	CH3SH	DMS	DMDS	TRS
12/05/98	1	1100 - 1400	MAX	0.72	0.00	0.00	0.00	0.72
			MIN	0.00	0.00	0.00	0.00	0.00
			AVG	0.12	0.00	0.00	0.00	0.12
12/05/98	2	1400 - 1700	MAX	11.49	0.00	0.00	0.00	11.49
			MIN	0.00	0.00	0.00	0.00	0.00
			AVG	1.03	0.00	0.00	0.00	1.03
12/05/98	3	1700 - 2000	MAX	1.77	0.00	0.00	0.00	1.77
			MIN	0.00	0.00	0.00	0.00	0.00
			AVG	0.10	0.00	0.00	0.00	0.10
			MEAN	0.42	0.00	0.00	0.00	0.42

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

II. Summary and discussion of results

1998

Results of the testing are summarized in Table I. Complete emissions data along with supportive field and analytical data are included in Appendices A, B, and C.

The No. 3 Bark Boiler was within compliance during the test. The average particulate emissions were 53.58 lbs/hr. The calculated allowable emissions for this source are 93.14 lbs/hr.

The visible emissions average opacity was 4.2%, with an allowable of 30%.

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Stone Container
LOCATION: Panama City, Fl.

SOURCE: No. 3 Bark Boiler

Date	Run Number	Particulate Emissions GR/SCF	LB/HR	LB/MMBTU	Vol. Flow Rate ACFM	SCFMD	Percent O2	Stack Temp 'F	Percent Isokinetic
12/4/98	1	0.0461	60.97	0.106	231654.0	154307.0	8.4	141.6	101.3
12/4/98	2	0.0416	56.38	0.093	231389.0	158115.0	8.1	141.3	97.8
12/4/98	3	0.0324	43.39	0.079	232025.0	156231.0	9.1	140.8	99.5
	Mean	0.0400	53.58	0.093	231689.3	156217.7	8.5	141.2	99.5

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = 93.14 lbs/hr

LB/MMBTU = (Gr/SCF/7000) x (Fuel Fact.) x [20.9 / (20.9 - %O2)]

II. Summary and discussion of results

1998

Results of the testing are summarized in Table I. Complete emissions data along with supportive field and analytical data are included in Appendices A, B, and C.

The Slaker Vent Stack was well within compliance during the test. The average particulate emissions were 0.53 lb/hr. The calculated allowable emissions for this source are 48.606 lbs/hr.

Due to the high concentration of entrained moisture in the impingers, theoretical moisture had to be used in the flow calculations.

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Stone Container
LOCATION: Panama City, Fl.

SOURCE: Slaker Vent

Date	Run Number	Particulate Emissions GR/SCF	Particulate Emissions LB/HR	Vol. Flow Rate ACFM	Vol. Flow Rate SCFMD	Stack Temp 'F	Percent Moisture (Theoretical)	Percent Isokinetic
12/7/98	1	0.0315	1.08	8442.0	3998.0	172.7	43.5	91.7
12/8/98	2	0.0093	0.30	8295.0	3778.0	175.0	45.5	96.0
12/8/98	3	0.0062	0.20	7989.0	3711.0	174.1	44.5	99.3
	Mean	0.0157	0.53	8242.0	3829.0	173.9	44.5	95.7

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS:

Allowable Emissions (Ea) = [55 x (Tons/hr)^0.11] - 40
Allowable Emissions (Ea) = [55 x (76.34)^0.11] - 40 = 48.606 lbs/hr

Note: Calculations for the tons/hr can be found in the process data in Appendix D

TECHNICAL SERVICES, INC.

SOURCE EMISSIONS TEST SUMMARY

STONE CONTAINER CORPORATION
PANAMA CITY, FLORIDA

EMISSIONS TESTS:

PARTICULATE MATTER
TOTAL REDUCED SULFUR GASES
VISIBLE EMISSIONS

Emissions Tests Performed By: Technical Services, Inc.

SOURCE NAME: LIME KILN 1998

SOURCE ID NO.: 10PCY03000904

PARAMETER	ALLOWABLE EMISSIONS	MEASURED EMISSIONS	REMARKS
PARTICULATE MATTER	30.68 Lbs/Hr.	28.49 Lbs/Hr.	PASS
TOTAL REDUCED SULFUR GASES	20 PPM @ 10% O2	2.20 PPM @ 10% O2	PASS
VISIBLE EMISSIONS	20 % Opacity	0.0 Opacity	PASS

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Stone Container
LOCATION: Panama City, Fl.

SOURCE: Lime Kiln

Date	Run Number	Particulate Emissions GR/SCF	Particulate Emissions LB/HR	Vol. Flow Rate ACFM	Vol. Flow Rate SCFMD	Percent O2	Stack Temp 'F	Percent H20	Percent Isokinetic
12/7/98	1	0.0691	28.60	84967.0	48283.0	6.1	163.0	33.2	99.0
12/7/98	2	0.0570	24.39	87493.0	49921.0	7.2	163.3	32.9	101.4
12/7/98	3	0.0782	32.48	85413.0	48457.0	6.2	163.1	33.3	100.0
	Mean	0.0681	28.49	85957.7	48887.0	6.5	163.1	33.1	100.1

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = 17.31(P)^0.16 = lbs/hr

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS
LIME KILN

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS, PPM H2S	CH3SH	DMS	DMDS	TRS
12/07/98	1	1100 - 1400	MAX	2.98	0.00	0.00	0.00	2.98
			MIN	1.38	0.00	0.00	0.00	1.38
			AVG	2.02	0.00	0.00	0.00	2.02
12/07/98	2	1400 - 1700	MAX	3.32	0.00	0.00	0.00	3.32
			MIN	0.27	0.00	0.00	0.00	0.27
			AVG	2.50	0.00	0.00	0.00	2.50
12/07/98	3	1700 - 2000	MAX	7.42	0.00	0.00	0.00	7.42
			MIN	2.04	0.00	0.00	0.00	2.04
			AVG	4.22	0.00	0.00	0.00	4.22
			MEAN	2.91	0.00	0.00	0.00	2.91

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
*** Mean determined as arithmetic average of the average results for each of the runs**

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
LIME KILN

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
12/07/98	1	1100 - 1400	MAX	6.25	2.98	2.22
			MIN	6.08	1.38	1.02
			AVG	6.17	2.02	1.50
12/07/98	2	1400 - 1700	MAX	10.22	3.32	3.39
			MIN	6.28	0.27	0.20
			AVG	7.71	2.50	2.07
12/07/98	3	1700 - 2000	MAX	5.71	7.42	5.34
			MIN	5.65	2.04	1.46
			AVG	5.68	4.22	3.03
			MEAN	6.52	2.91	2.20

PPM - Parts per million by volume
*** Mean determined as arithmetic average of the average results for each of the runs**

II. Summary and discussion of results

1998

Results of the testing are summarized in Tables I through III. Complete emissions data along with supportive field and analytical data are included in Appendices A through E, G and J.

The No. 2 Smelt Tank was within compliance during the tests. The average particulate emissions were 24.36 lbs/hr. The calculated allowable emissions for this source are 26.83 lbs/hr.

The TRS emissions averaged 0.0338 lb/Ton BLS, with an allowable of 0.048 lb/Ton BLS.

The visible emissions average opacity was 1% , with an allowable of 20%.

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Stone Container Corp.
LOCATION: Panama City Fl.

SOURCE: No. 2 Smelt Dissolving tank

Date	Run Number	Particulate Emissions GR/SCF	LB/HR	Vol. Flow Rate ACFM	SCFMD	Black Liquor Firing Rat (Tons/Hr)(3000 lbs/Ton)	Process Feed Rate (DPF)
11/30/98	1	0.2263	24.13	21091.0	12442.0	37.79	25.58
11/30/98	2	0.2153	24.08	22411.0	13046.0	37.88	25.57
11/30/98	3	0.2222	24.88	22650.0	13061.0	38.29	25.77
	Mean	0.2213	24.36	22050.7	12849.7	37.99	25.64

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS:

DPF = Dry Process feed rate in Tons/Hr

Allowable Emissions = 3.59 (DPF)^0.62

Run 1 = 26.79 lbs/hr
Run 2 = 26.78 lbs/hr
Run 3 = 26.91 lbs/hr
Average = 26.83 lbs/hr

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS
No. 2 Smelt Dissolving Tank Vent

Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS H2S	CH3SH	DMDS	DMS	TRS
12/01/98	1	1000 - 1300	MAX	3.04	16.96	0.22	0.00	20.44
			MIN	1.68	8.16	0.16	0.00	10.16
			AVG	2.17	11.98	0.19	0.00	14.54
12/01/98	2	1300 - 1600	MAX	5.77	11.47	0.19	0.00	17.63
			MIN	1.99	7.17	0.00	0.00	9.15
			AVG	3.72	8.76	0.07	0.00	12.62
12/01/98	3	1600 - 1900	MAX	2.83	11.78	0.00	0.00	14.61
			MIN	1.80	9.65	0.00	0.00	11.44
			AVG	2.18	10.93	0.00	0.00	13.11
			MEAN	2.69	10.56	0.09	0.00	13.42

ppm - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercatan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
*** Mean determined as arithmetic average of the average results for each of the runs**

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
No. 2 Smelt Dissolving Tank Vent

Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	TRS PPM	VOL FLOW SCFMD	DPF SOLIDS TONS/HR	TRS MASS EMISSIONS LBS/HR	LBS/TON DPF
12/01/98	1	1000 - 1300	MAX	20.44			1.3109	0.0511
			MIN	10.16			0.6517	0.0254
			AVG	14.54	12077	25.675	0.9324	0.0363
12/01/98	2	1300 - 1600	MAX	17.63			1.1548	0.0455
			MIN	9.15			0.5998	0.0237
			AVG	12.62	12338	25.360	0.8265	0.0326
12/01/98	3	1600 - 1900	MAX	14.61			0.9271	0.0363
			MIN	11.44			0.7262	0.0285
			AVG	13.11	11952	25.515	0.8320	0.0326
			MEAN	13.42	12122	25.517	0.8637	0.0338

ppm - Parts per million by volume
* Mean determined as arithmetic average of the average results for each of the runs

LBS/HR = 1E-06*PPM*5.31*SCFM

II. Summary and discussion of results

1998

Results of the testing are summarized in Tables I through III. Complete emissions data along with supportive field and analytical data are included in Appendices A through E, G and J.

The No. 1 Smelt Tank was within compliance during the tests. The average particulate emissions were 22.17 lbs/hr. The calculated allowable emissions for this source are 27.08 lbs/hr.

The TRS emissions averaged 0.0399 lb/Ton BLS, with an allowable of 0.048 lb/Ton BLS.

The visible emissions average opacity was 0 %, with an allowable of 20%.

T S I

Volumetric Flow and Emission Output - Table I

FACILITY: Stone Container Corp.
LOCATION: Panama City Fl.

SOURCE: No. 1 Smelt Dissolving tank

Date	Run Number	Particulate Emissions GR/SCF	LB/HR	Vol. Flow Rate ACFM	SCFMD	Liquor Firing Rate (Tons/Hr)(3000 lbs/Ton)	Process Feed Rate (DPF)
12/5/98	1	0.1722	23.18	26762.0	15703.0	37.92	26.17
12/5/98	2	0.1325	18.58	27415.0	16359.0	38.08	26.20
12/5/98	3	0.1701	24.75	27611.0	16972.0	37.62	25.73
	Mean	0.1583	22.17	27262.7	16344.7	37.87	26.03

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions = 3.59 (DPF)^0.62

DPF = Dry Process feed rate in Tons/Hr

Run 1 = 27.17 lbs/hr
Run 2 = 27.19 lbs/hr
Run 3 = 26.89 lbs/hr
Average = 27.08 lbs/hr

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS
No. 1 Smelt Dissolving Tank Vent

Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS H2S	CH3SH	DMDS	DMS	TRS
11/30/98	1	1230 - 1530	MAX	13.32	5.06	0.20	0.00	18.77
			MIN	5.72	2.83	0.00	0.00	8.55
			AVG	8.30	3.73	0.03	0.00	12.10
11/30/98	2	1530 - 1830	MAX	19.00	3.74	0.00	0.00	22.74
			MIN	6.16	3.06	0.00	0.00	9.22
			AVG	7.47	3.35	0.00	0.00	10.82
11/30/98	3	1830 - 2130	MAX	10.81	3.81	0.00	0.00	14.62
			MIN	6.26	3.19	0.00	0.00	9.46
			AVG	8.44	3.50	0.00	0.00	11.94
			MEAN	8.07	3.53	0.01	0.00	11.62

ppm - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercatan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
*** Mean determined as arithmetic average of the average results for each of the runs**

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
No. 1 Smelt Dissolving Tank Vent

Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	TRS PPM	VOL FLOW SCFMD	DPF SOLIDS TONS/HR	TRS MASS EMISSIONS LBS/HR	LBS/TON DPF
11/30/98	1	1230 - 1530	MAX	18.77			1.6775	0.0653
			MIN	8.55			0.7642	0.0298
			AVG	12.10	16828	25.675	1.0809	0.0421
11/30/98	2	1530 - 1830	MAX	22.74			2.0025	0.0785
			MIN	9.22			0.8120	0.0318
			AVG	10.82	16586	25.512	0.9526	0.0373
11/30/98	3	1830 - 2130	MAX	14.62			1.2592	0.0491
			MIN	9.46			0.8142	0.0318
			AVG	11.94	16216	25.624	1.0280	0.0401
			MEAN	11.62	16543.3	25.604	1.0205	0.0399

ppm - Parts per million by volume
* Mean determined as arithmetic average of the average results for each of the runs

LBS/HR = 1E-06*PPM*5.31*SCFMD

II. Summary and discussion of results

No. 2 Recovery 1998

Results of the testing are summarized in Tables I through V. Complete emissions data along with supportive field and analytical data are included in Appendices A through E, and H.

The No.'s 2A and 2B Recovery Boilers were within compliance during the tests. The average particulate emissions combined were 0.52 lb/Ton BLS. The allowable emissions for this source are 3.0 lbs/Ton BLS.

The TRS emissions for the No.'s 2A and 2B Recoverys averaged 14.96 ppm corrected to 8% O2, with an allowable of 17.5 ppm corrected to 8% O2.

The visible emissions opacity was 2.5% for both Recoverys, with an allowable of 45%.

TECHNICAL SERVICES INC.

TABLE I

TOTAL REDUCED SULFUR GAS EMISSIONS
Recovery Boiler 2A

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS. PPM H2S	CH3SH	DMS	DMDS	TRS
12/3-4/98	1	1300 - 1600	MAX	6.31	6.61	0.00	0.00	12.92
			MIN	4.45	3.15	0.00	0.00	7.60
			AVG	5.55	5.66	0.00	0.00	11.22
12/3-4/98	2	1600 - 1900	MAX	6.16	6.14	0.00	0.00	12.31
			MIN	4.54	5.26	0.00	0.00	9.80
			AVG	5.12	5.65	0.00	0.00	10.78
12/3-4/98	3	1900 - 2200	MAX	6.82	6.86	0.00	0.00	13.68
			MIN	3.60	5.19	0.00	0.00	8.79
			AVG	5.39	5.86	0.00	0.00	11.24
			MEAN	5.35	5.72	0.00	0.00	11.08

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
Recovery Boiler 2A

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
12/3-4/98	1	1300 - 1600	MAX	6.74	12.92	11.78
			MIN	6.52	7.60	6.83
			AVG	6.63	11.22	10.15
12/3-4/98	2	1600 - 1900	MAX	7.06	12.31	11.48
			MIN	6.21	9.80	8.62
			AVG	6.61	10.78	9.74
12/3-4/98	3	1900 - 2200	MAX	6.69	13.68	12.43
			MIN	6.12	8.79	7.68
			AVG	6.42	11.24	10.02
			MEAN	6.55	11.08	9.97

PPM - Parts per million by volume
* Mean determined as arithmetic average of the average results for each of the runs

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS
Recovery Boiler 2B

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS. PPM H2S	CH3SH	DMS	DMDS	TRS
12/05/98	1	1300 - 1600	MAX	6.20	24.52	0.00	0.00	30.72
			MIN	3.90	5.85	0.00	0.00	9.75
			AVG	5.04	18.86	0.00	0.00	23.90
12/05/98	2	1600 - 1900	MAX	5.37	19.44	0.00	0.00	24.82
			MIN	3.91	15.64	0.00	0.00	19.55
			AVG	4.65	17.67	0.00	0.00	22.32
12/05/98	3	1900 - 2200	MAX	6.68	23.87	0.00	0.00	30.55
			MIN	3.33	15.30	0.00	0.00	18.63
			AVG	4.19	17.54	0.00	0.00	21.74
			MEAN	4.63	18.03	0.00	0.00	22.65

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

TECHNICAL SERVICES INC.

TABLE IV

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
Recovery Boiler 2B

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
12/05/98	1	1300 - 1600	MAX	6.25	30.72	27.07
			MIN	6.12	9.75	8.52
			AVG	6.19	23.90	20.97
12/05/98	2	1600 - 1900	MAX	6.51	24.82	22.26
			MIN	5.73	19.55	16.64
			AVG	6.12	22.32	19.50
12/05/98	3	1900 - 2200	MAX	6.70	30.55	27.77
			MIN	6.21	18.63	16.37
			AVG	6.44	21.74	19.40
			MEAN	6.25	22.65	19.96

PPM - Parts per million by volume
*** Mean determined as arithmetic average of the average results for each of the runs**

T S I

Volumetric Flow and Emission Output - Table V

FACILITY: Smurfitt-Stone
LOCATION: Panama City, Florida

SOURCE: No. 2 Recovery Boiler System

Date	Run Number	Source Recoverys	Particulate Emissions LB/HR	LB/Ton BL	Vol. Flow Rate ACFM	SCFMD	Black Liquor Firing Rate (Tons/Hr)	Percent Isokinetic
12/01/98	1	2A	5.18	0.26	174172.0	81728.0	39.19 /2	103.5
12/01/98	2	2A	7.07	0.38	167579.0	81612.0	37.68 /2	101.2
12/01/98	3	2A	5.17	0.27	178528.0	87485.0	37.93 /2	97.9
		Mean	5.81	0.30	173426.3	83608.3	38.27 /2	100.9
12/01/98	1	2B	15.11	0.80	162854.0	76965.0	37.79 /2	99.6
12/01/98	2	2B	14.20	0.75	143319.0	70797.0	37.94 /2	95.7
12/01/98	3	2B	12.10	0.64	154223.0	76747.0	37.99 /2	98.6
		Mean	13.80	0.73	153465.3	74836.3	37.91 /2	98.0
		Total	19.61	0.52	326891.7	158444.7	38.09	

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions (Stacks A and B) = 3.0 lbs/Ton Black Liquor Solids
One Ton BLS = 3000 lbs

II. Summary and discussion of results

No. 1 Recovery 1998

Results of the testing are summarized in Tables I through V. Complete emissions data along with supportive field and analytical data are included in Appendices A through E, and H.

The No.'s 1A and 1B Recovery Boilers were within compliance during the tests. The average particulate emissions combined were 0.72 lb/Ton BLS. The allowable emissions for this source are 3.0 lbs/Ton BLS.

The TRS emissions for the No.'s 1A and 1B Recoverys averaged 9.47 ppm corrected to 8% O2, with an allowable of 17.5 ppm corrected to 8% O2.

The visible emissions opacity was 0% for both Recoverys, with an allowable of 45%.

TECHNICAL SERVICES INC.

TABLE I

TOTAL REDUCED SULFUR GAS EMISSIONS
Recovery Boiler 1A

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS. PPM H2S	CH3SH	DMS	DMDS	TRS
12/02/98	1	1030 - 1330	MAX	7.36	4.81	0.00	0.00	12.17
			MIN	5.19	2.67	0.00	0.00	7.87
			AVG	5.97	4.12	0.00	0.00	10.09
12/02/98	2	1330 - 1630	MAX	8.52	5.37	0.00	0.00	13.88
			MIN	5.41	3.20	0.00	0.00	8.61
			AVG	6.71	3.92	0.00	0.00	10.63
12/02/98	3	1630 - 1930	MAX	10.92	5.84	0.00	0.00	16.76
			MIN	6.36	3.53	0.00	0.00	9.89
			AVG	8.41	4.32	0.00	0.00	12.73
			MEAN	7.03	4.12	0.00	0.00	11.15

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

TECHNICAL SERVICES INC.

TABLE II

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
Recovery Boiler 1A

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
12/02/98	1	1030 - 1330	MAX	6.82	12.17	11.16
			MIN	6.56	7.87	7.08
			AVG	6.69	10.09	9.17
12/02/98	2	1330 - 1630	MAX	7.27	13.88	13.15
			MIN	6.95	8.61	7.97
			AVG	7.15	10.63	9.98
12/02/98	3	1630 - 1930	MAX	7.22	16.76	15.82
			MIN	6.98	9.89	9.17
			AVG	7.12	12.73	11.93
			MEAN	6.99	11.15	10.36

PPM - Parts per million by volume
*** Mean determined as arithmetic average of the average results for each of the runs**

TECHNICAL SERVICES INC.

TABLE III

TOTAL REDUCED SULFUR GAS EMISSIONS
Recovery Boiler 1B

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	CONCENTRATIONS. PPM H2S	CH3SH	DMS	DMDS	TRS
12/03/98	1	1300 - 1600	MAX	5.27	6.37	0.00	0.00	11.64
			MIN	0.15	3.13	0.00	0.00	3.29
			AVG	3.98	5.56	0.00	0.00	9.55
12/03/98	2	1600 - 1900	MAX	6.54	8.30	0.00	0.00	14.84
			MIN	2.18	4.05	0.00	0.00	6.23
			AVG	3.96	6.30	0.00	0.00	10.27
12/03/98	3	1900 - 2200	MAX	2.94	4.84	0.00	0.00	7.78
			MIN	1.35	2.79	0.00	0.00	4.14
			AVG	1.90	3.65	0.00	0.00	5.56
			MEAN	3.28	5.17	0.00	0.00	8.46

PPM - Parts per million by volume
H2S - Hydrogen Sulfide
CH3SH - Methyl Mercaptan
DMS - Dimethyl Sulfide
DMDS - Dimethyl Disulfide
TRS - Total Reduced Sulfur Compounds
* Mean determined as arithmetic average of the average results for each of the runs

TECHNICAL SERVICES INC.

TABLE IV

TOTAL REDUCED SULFUR GAS EMISSIONS SUMMARY
Recovery Boiler 1B

Stone Container Corporation
Stone, Panama City
Panama City, Florida

DATE	RUN No.	TIME PERIOD	LEVEL	OXYGEN %	CONCENTRATIONS, PPM TRS	TRS / COR. FOR O2
12/03/98	1	1300 - 1600	MAX	8.25	11.64	11.86
			MIN	8.15	3.29	3.33
			AVG	8.20	9.55	9.69
12/03/98	2	1600 - 1900	MAX	8.53	14.84	15.46
			MIN	7.05	6.23	5.80
			AVG	7.79	10.27	10.10
12/03/98	3	1900 - 2200	MAX	8.85	7.78	8.32
			MIN	8.74	4.14	4.39
			AVG	8.79	5.56	5.92
			MEAN	8.26	8.46	8.57

PPM - Parts per million by volume
* Mean determined as arithmetic average of the average results for each of the runs

T S I

Volumetric Flow and Emission Output - Table V

FACILITY: Smurfitt-Stone
LOCATION: Panama City, Florida

SOURCE: No. 1 Recovery Boiler System

Date	Run Number	Source Recoverys	Particulate Emissions LB/HR	Particulate Emissions LB/Ton BLS	Vol. Flow Rate ACFM	Vol. Flow Rate SCFMD	Black Liquor Firing Rate (Tons/Hr)	Percent Isokinetic
12/02/98	1	1A	20.66	1.05	174218.0	86373.0	39.24 /2	98.6
12/02/98	2	1A	21.04	1.07	177051.0	86731.0	39.41 /2	99.4
12/02/98	3	1A	26.86	1.37	178027.0	87058.0	39.33 /2	99.5
		Mean	22.85	1.16	176432.0	86720.7	39.33 /2	99.1
12/02/98	1	1B	3.73	0.19	149353.0	74997.0	39.32 /2	101.1
12/03/98	2	1B	6.96	0.35	147781.0	74533.0	39.44 /2	101.4
12/03/98	3	1B	5.36	0.27	146627.0	75337.0	39.61 /2	100.5
		Mean	5.35	0.27	147920.3	74955.7	39.46 /2	101.0
		Total	28.20	0.72	324352.3	161676.3	39.39	

Mean determined as arithmetic average of the results for each of the three runs.

REMARKS: Allowable Emissions (Stacks A and B) = 3.0 lbs/Ton Black Liquor Solids
One Ton BLS = 3000 lbs