KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX/377-7158

263-03-10
November 16, 2004

Mr. Al Linero
FDEP
Twin Towers Office Bldg
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

Subject: ***Rinker Materials Corporation***
Miami Cement Plant, Miami, Florida
Production Rate Increase

Dear Al:

The attached materials are submitted in support of the permit application previously submitted to you requesting that the production rate of the Rinker Miami Cement Plant be increased to a preheater feed rate of 267 tons per hour and a corresponding clinker production rate of 162 tons per hour. Along with this request was a request to increase the heat input rate of the plant from 437 mmBTU per hour to 485 mmBTU per hour using presently permitted fuels.

The materials transmitted herewith, in accordance with your requests, include documentation that the plant is physically capable of operating at a preheater feed rate of 267 tons per hour and a clinker production rate of 162 tons per hour, emission data showing that the plant can operate well within permitted emission limiting standards while operating at

90-100 percent of the requested preheater feed rate of 267 tons per hour, and long-term (June-November 2004) production rate data and corresponding emission rate data to demonstrate long-term operating characteristics of the plant.

As previously discussed with you and addressed in the permit application, Rinker is requesting the increased production rate and increased fuel firing rate but will not undertake physical plant modifications to achieve the higher rate. Production rate tests conducted under Department approval have demonstrated that the requested production rate can be achieved with the existing plant.

The one change that will be made, as we've discussed with you, is the replacement of the fan wheel on the main baghouse fan or the fan itself; the fan exhausting the kiln, raw mill, and clinker cooler. This fan was designed and installed to operate at 900 rpm. It was found during the production rate tests, however, that the fan has a resonance problem that begins at a fan speed of approximately 850 rpm. It is anticipated that a replacement fan or fan wheel will be necessary to achieve the designed fan speed of 900 rpm. This will allow the plant to operate at the higher requested production rate in a more reliable manner. As we've discussed, Rinker is of the opinion that the replacement of the fan or fan wheel is not a modification; it is the replacement of a defective piece of equipment with a like-kind piece of equipment without a defect.

Another project that Rinker may elect to undertake as part of the production rate increase is the injection of high carbon (40-50 percent carbon) flyash directly into the

precalciner. Flyash is presently one of the raw materials used in the preparation of the preheater feed. It is presently ground with the other raw materials and introduced at the top of the preheater. By introducing the flyash directly into the precalciner, two benefits are realized. First the material feed rate through the preheater is reduced. This allows Rinker to operate at the requested higher clinker production rate while maintaining a substantial margin of safety in the feed rate of raw material through the preheater. It should be noted that the injection of flyash into the precalciner is not a prerequisite of achieving the requested production rate increase. Secondly, the injection of fly ash directly into the precalciner allows the use of high carbon flyash, a commodity that is becoming much more prevalent as power plants strive to reduce their emissions, without the potential of increased CO and/or VOC emissions. By introducing the high carbon flyash directly into the precalciner, Rinker can take advantage of the heating value of the flyash and also minimize the potential CO and/or VOC emissions that might occur if the high carbon flyash was introduced into the preheater.

The other permit modification requested along with the production rate increase, as previously addressed in the permit application, is the increased heat input rate to the kiln. Rinker is not requesting approval to use any fuels other than presently permitted fuels to achieve this increased heat input rate.

The attached supplemental material that you have requested to support the permit application includes:

- Documentation from F.L. Smidth, the plant designer and Mike Aller, the

Rinker Production Manager commenting on the capability of the plant to operate at the requested production rate,

- A summary of emission measurements conducted in August 2004 demonstrating compliance with all permitted emission limiting standards while the plant was operating within 90-100 percent of the requested production rate, and
- Long-term production rate data and emission rate data (from continuous monitors) demonstrating the long-term operating and emission characteristics of the plant while operating at approved production rates above the presently permitted rate.

I appreciate your attention to this matter. If additionally information is required or if there are questions regarding the information provided herein, please do not hesitate to contact me.

Sincerely,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK/lt

Attachment 1

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

F.L.Smidth Inc.
2040 Avenue C • Bethlehem, PA 18017-2188 • USA
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PRELIMINARY TECHNICAL ASSESSMENT
Production Increase Evaluation

CSR RINKER MATERIALS CORPORATION
MIAMI, FLORIDA

October 11, 2004

F.L.Smidth Inc.
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FLSmidth

BACKGROUND

The kiln system supplied by F.L.Smidth in 1997, under contract # 97-20179, was rated for a clinker production of 2,755 STPD. Rinker Materials is currently evaluating the feasibility for a permanent clinker production rate increase to 3,500 STPD or more by conducting a continuous production capacity test program at the Miami Cement Plant through October 31, 2004.

Currently the plant is operating under Title V Operation Permit which limits the preheater feed rate to 220 tons per hour and the clinker production rate to 137 tons per hour on a 24-hour basis (3,288 STPD). Rinker is in the process of conducting short-term production capacity tests at production rates higher than 3,288 STPD in an attempt to determine the actual production limitations of the kiln system.

The following preliminary technical assessment is taken with respect to the physical size of the original equipment supply only. It specifically excludes any commentary on process (e.g. system stability, burnability, adequacy of the auxiliary equipment, etc.) and the pound per hour emissions limits. It is important that the emissions at the higher capacity be continuously monitored and recorded during the production capacity test program.

KILN PRODUCTION CAPACITY

The kiln has already been producing clinker at its authorized production limit of 3,288 short tons per day. Although this is well above the rated capacity of 2,755 STPD, F.L.Smidth typically provides for additional capacity above and beyond the guarantees provided by the manufacturer.

F.L.Smidth provides reasonable assurance that the kiln system can physically produce substantially more clinker than allowed by the present production limitations. Apart from the inherent "over design" of the original configuration, F.L.Smidth provides reasonable assurance that the kiln system is physically capable of being fed at a preheater feed rate of up to 267 short tons per hour without major structural failure to the kiln, cooler and preheater, proper.

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FLSmidth

Rotary Kiln, Size ø4.15m x 48m:

- Considering the kiln structure: Provided that the kiln will be operated at a higher speed than originally designed, by maintaining a constant feed/speed ratio, the actual load of material in the kiln will not change. In fact, the kiln was designed using a material load corresponding to 10% fill and the back end of the kiln has an opening corresponding to 8%, so the kiln cannot be overloaded with material. This means the stresses in the shell, riding rings, supports, etc. will not exceed those originally calculated due to this capacity increase.

- Considering the main drive: The main drive has a 400 HP motor, which was sized based on the original capacity of 2,750 STPD. The actual calculated motor size required for 3,500 STPD clinker would be 368 HP (184 HP brake) so there was an extra cushion of 8.5% on the motor size. For 3,500 STPD, F.L.Smidth's calculated motor size is 467 HP (234 HP brake). When the motor is taken over speed to increase the kiln speed, the power output remains constant while the available torque reduces proportionately as the speed increases. This means the extra margin in the motor size compared to the brake power required will be lessened with the increased capacity. Rinker will necessarily have somewhat less safety margin on the motor power, an expected draw of 234 HP compared to 400 HP motor power. In other words, the power draw will be ~59% of the available motor power compared to the standard 50% ratio used for new designs. This is not too much of a concern since this is a two-support kiln, so misalignment cannot cause extra power draw, which is one of the main reasons for having margin on the motor power. Since the torque of the motor will not exceed the original maximum design figure and the drive components are designed for that amount, the components of the drive will not be more heavily loaded than original design. There is no concern here.

- Considering the kiln drive: The 100% speed of the kiln is 3.11 rpm. Rinker reports they have already taken their kiln to a speed of 3.7 rpm or so and can take it up over 4 rpm.

- Aside: As mentioned above, this review of the physical equipment specifically excludes any commentary on process stability of the system. It is noted, however, that the kiln has an internal volume of 530 m^3 inside brick, which gives a specific loading of 6.0 mtpd/m^3, which, from a process stability standpoint, would make it one of the heaviest loaded kilns in the world.

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FLSmidth

Clinker Cooler, Size 807CIS – 1014 CFG – 1006 RFT / 1025 RFT:

- Considering the cooler structure: Provided that the cooler drives will be operated at a higher speed (strokes per minute) than originally designed, by increasing the drive speeds in proportion to the capacity increase, the actual load of material in the cooler will not change. That is, apart from the higher heat load, the stresses in the cooler will not exceed those originally calculated due to this capacity increase as long as the cooler's bed height is maintained. However, due to the increased strokes per minute, there will necessarily be reduced longevity of the wear components. The inlet width loading remains reasonable at 1079 MTPD/m, and therefore the grate speed would still run at acceptable levels. The higher heat load into the cooler will necessarily result in higher clinker discharge temperatures resulting from the diminished retention time of the material in the cooler.

- Considering the cooler drives: An investigation of the current hydraulic drive to support the increased speed should be made to determine mechanical modifications which may be required to the power unit. Increased motor sizes may be indicated.

Preheater, Size ø5.7 m Stages 1 & 2, ø6.0 m Stages 3, 4, & 5, ILC Calciner ø6.9 m x 16.0 m:

- Considering the preheater structure: The existing cyclones could support 3,500 STPD, but this will come at the cost of higher velocities and pressure drop. The expected operating pressure at the inlet to the I.D. fan will be well over -800 mmwg (-31.5 inwg) at the higher production.

- Considering the calciner structure: The retention time in the existing calciner will decrease to approximately 2.6 seconds at 3,500 STPD. As a result, the pound per hour CO emissions should be carefully monitored to ensure continued compliance within the established emissions limits.

Brian P. Keefe
Vice President of Engineering

Attachment 2

KOOGLER & ASSOCIATES
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Summary of Emission Rates While Operating at Targeted Increased Production Rate
Rinker Materials Corporation
Miami Cement Plant

In August 2004, emission measurements were conducted at the Rinker Miami Cement Plant to demonstrate compliance with permitted emission limiting standards while operating within 90-100 percent of the targeted increased production rate of 267 tons per hour preheater feed and 162 tons per hour of clinker. The emission measurements also satisfied the compliance demonstration requirement for the plant for fiscal year 2003-2004.

The emission measurements were conducted during the period August 4-8, 2004 while the plant was operating at a nominal preheater feed rate of 245 tons per hour and a nominal clinker production rate of 147 tons per hour. The results of the measurements have previously been submitted to Miami-Dade County DERM and to FDEP. The results of the measurements are summarized herein in Table 1.

The emission measurements were conducted while the plant was operating at approximately 92 percent of the requested increased production rate of 267 tons per hour of preheater feed. The measured emission rates of regulated pollutants show that the plant operated at emission rates (expressed as pounds per ton of preheater feed or clinker) ranging from approximately 21-56 percent of the permitted emission rates for particulate matter, NOx, CO, sulfuric acid mist, mercury and lead; at less than two percent of the permitted SO_2 emission rate; and at 75 percent of the permitted VOC emission rate. Dioxin/furan measurements were also conducted with the raw mill running and with the raw mill offline. These measurements demonstrated that the plant operated in compliance with the permitted emission limits for these pollutants. The mass emission rates (pounds per hour) of all pollutants were also well below the permitted mass emission rates.

Also summarized in Table 1 are emission rates of several pollutants measured during compliance testing in September 2003 while the plant operated at a preheater feed rate of approximately 210 tons per hour and a clinker production rate of approximately 128 tons per

hour. These rates are within 90-100 percent of the currently permitted preheater feed rate and clinker production rate. It is interesting to note that there was no substantial change in emissions (expressed as pounds per ton of feed or clinker) between the two test periods; one with the plant operating at a preheater feed rate of 210 tons per hour and the other with the plant operating at a preheater feed rate of 245 tons per hour.

Both the 2003 and 2004 emission measurements demonstrate that the plant routinely operates well within emission limiting standards. The 2004 measurements demonstrate that pollutant emission rates are not a limiting factor in increasing the production rate to 267 tons per hour of preheater feed and 162 tons per hour of clinker.

A separate attachment summarizes long-term emission rate data and production rate data for the Rinker Miami Cement Plant. These data generally cover periods when the plant was operating at approved production rates above the currently permitted rates.

Test Date: August 2004

Nominal Rate:

Preheater Feed - 245 tph
Clinker Production - 147 tph

Pollutant	(lb/hr)		(lb/ton)		2003 Measured (lb/ton)
	Measured	Limit	Measured	Limit	
PM10 (1)	9.2/15.1	37.4	0.04/0.07	0.17 (2)	0.04 (2)
SO_2	4.3	306	0.03	2.23 (3)	0.16 (3)
NOx	346	671	2.35	4.9 (3)	2.29 (3)
CO	249	412	1.69	3.01 (3)	1.84 (3)
VOC	13.4	16.4	0.09	0.12 (3)	0.09 (3)
SAM	0.44	1.92	0.003	0.014 (3)	
Hg	0.0010	0.0033	0.7 E-05	2.4 E-05 (3)	
Pb	0.0026	0.0100	1.8 E-05	7.5 E-05 (3)	
D/F			0.122/0.113 (4)	0.4/0.2 (4)	

(1) Total PM reported as PM10 with Raw Mill Up/Raw Mill Down
(2) lb/ton feed
(3) lb/ton clinker
(4) ng/dscm @ 7% O_2

11/16/04

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Attachment 3

24-HOUR NOx AVERAGES
JUNE 7 – NOV 10, 2004

26-Jun-04	Average Nox	N/A	lb/ton clinker
6-Jul-04	Average Nox	N/A	lb/ton clinker
7-Jul-04	Average Nox	N/A	lb/ton clinker
8-Jul-04	Average Nox	N/A	lb/ton clinker
19-Aug-04	Average Nox	N/A	lb/ton clinker
12-Sep-04	Average Nox	N/A	lb/ton clinker
15-Oct-04	Average Nox	N/A	lb/ton clinker
16-Oct-04	Average Nox	N/A	lb/ton clinker
17-Oct-04	Average Nox	N/A	lb/ton clinker
18-Oct-04	Average Nox	N/A	lb/ton clinker
19-Oct-04	Average Nox	N/A	lb/ton clinker
20-Oct-04	Average Nox	N/A	lb/ton clinker
1-Nov-04	Average Nox	N/A	lb/ton clinker
14-Jul-04	Average Nox	5.89	lb/ton clinker
21-Oct-04	Average Nox	4.35	lb/ton clinker
13-Sep-04	Average Nox	4.04	lb/ton clinker
22-Oct-04	Average Nox	3.89	lb/ton clinker
20-Sep-04	Average Nox	3.79	lb/ton clinker
9-Jul-04	Average Nox	3.66	lb/ton clinker
11-Oct-04	Average Nox	3.66	lb/ton clinker
10-Jul-04	Average Nox	3.59	lb/ton clinker
13-Jul-04	Average Nox	3.59	lb/ton clinker
4-Nov-04	Average Nox	3.58	lb/ton clinker
12-Jul-04	Average Nox	3.56	lb/ton clinker
24-Oct-04	Average Nox	3.54	lb/ton clinker
4-Sep-04	Average Nox	3.52	lb/ton clinker
10-Oct-04	Average Nox	3.51	lb/ton clinker
11-Jul-04	Average Nox	3.51	lb/ton clinker
27-Jun-04	Average Nox	3.49	lb/ton clinker
21-Sep-04	Average Nox	3.48	lb/ton clinker
23-Oct-04	Average Nox	3.47	lb/ton clinker
20-Aug-04	Average Nox	3.45	lb/ton clinker
5-Nov-04	Average Nox	3.40	lb/ton clinker
22-Sep-04	Average Nox	3.34	lb/ton clinker
7-Jun-04	Average Nox	3.32	lb/ton clinker
3-Nov-04	Average Nox	3.30	lb/ton clinker
10-Sep-04	Average Nox	3.30	lb/ton clinker
14-Sep-04	Average Nox	3.29	lb/ton clinker
6-Nov-04	Average Nox	3.28	lb/ton clinker
12-Jun-04	Average Nox	3.27	lb/ton clinker
5-Jul-04	Average Nox	3.25	lb/ton clinker
31-Oct-04	Average Nox	3.25	lb/ton clinker
28-Oct-04	Average Nox	3.23	lb/ton clinker
9-Jun-04	Average Nox	3.22	lb/ton clinker
30-Jun-04	Average Nox	3.19	lb/ton clinker
14-Jun-04	Average Nox	3.16	lb/ton clinker

25-Oct-04	Average Nox	3.16	lb/ton clinker
18-Jun-04	Average Nox	3.13	lb/ton clinker
29-Oct-04	Average Nox	3.10	lb/ton clinker
16-Jun-04	Average Nox	3.09	lb/ton clinker
8-Nov-04	Average Nox	3.08	lb/ton clinker
11-Jun-04	Average Nox	3.07	lb/ton clinker
17-Jun-04	Average Nox	3.05	lb/ton clinker
8-Jun-04	Average Nox	3.05	lb/ton clinker
15-Jun-04	Average Nox	3.04	lb/ton clinker
20-Jun-04	Average Nox	3.04	lb/ton clinker
13-Jun-04	Average Nox	3.04	lb/ton clinker
29-Aug-04	Average Nox	3.03	lb/ton clinker
3-Oct-04	Average Nox	3.02	lb/ton clinker
27-Oct-04	Average Nox	3.02	lb/ton clinker
21-Jul-04	Average Nox	3.02	lb/ton clinker
17-Jul-04	Average Nox	2.95	lb/ton clinker
5-Oct-04	Average Nox	2.95	lb/ton clinker
5-Sep-04	Average Nox	2.95	lb/ton clinker
10-Jun-04	Average Nox	2.93	lb/ton clinker
9-Sep-04	Average Nox	2.92	lb/ton clinker
20-Jul-04	Average Nox	2.91	lb/ton clinker
19-Jun-04	Average Nox	2.90	lb/ton clinker
26-Oct-04	Average Nox	2.90	lb/ton clinker
29-Jun-04	Average Nox	2.87	lb/ton clinker
17-Sep-04	Average Nox	2.86	lb/ton clinker
18-Jul-04	Average Nox	2.85	lb/ton clinker
10-Nov-04	Average Nox	2.82	lb/ton clinker
7-Nov-04	Average Nox	2.80	lb/ton clinker
15-Sep-04	Average Nox	2.79	lb/ton clinker
9-Oct-04	Average Nox	2.79	lb/ton clinker
28-Sep-04	Average Nox	2.78	lb/ton clinker
12-Oct-04	Average Nox	2.78	lb/ton clinker
30-Aug-04	Average Nox	2.78	lb/ton clinker
2-Oct-04	Average Nox	2.76	lb/ton clinker
16-Jul-04	Average Nox	2.75	lb/ton clinker
22-Jul-04	Average Nox	2.73	lb/ton clinker
1-Jul-04	Average Nox	2.73	lb/ton clinker
2-Nov-04	Average Nox	2.71	lb/ton clinker
30-Jul-04	Average Nox	2.70	lb/ton clinker
23-Sep-04	Average Nox	2.69	lb/ton clinker
30-Oct-04	Average Nox	2.67	lb/ton clinker
28-Jun-04	Average Nox	2.65	lb/ton clinker
15-Jul-04	Average Nox	2.64	lb/ton clinker
1-Aug-04	Average Nox	2.63	lb/ton clinker
31-Aug-04	Average Nox	2.62	lb/ton clinker
15-Aug-04	Average Nox	2.61	lb/ton clinker
19-Jul-04	Average Nox	2.61	lb/ton clinker
19-Sep-04	Average Nox	2.59	lb/ton clinker
1-Sep-04	Average Nox	2.59	lb/ton clinker
4-Oct-04	Average Nox	2.57	lb/ton clinker

27-Sep-04	Average Nox	2.57	lb/ton clinker
2-Sep-04	Average Nox	2.56	lb/ton clinker
18-Sep-04	Average Nox	2.55	lb/ton clinker
9-Nov-04	Average Nox	2.54	lb/ton clinker
23-Jun-04	Average Nox	2.53	lb/ton clinker
26-Jul-04	Average Nox	2.52	lb/ton clinker
1-Oct-04	Average Nox	2.52	lb/ton clinker
21-Aug-04	Average Nox	2.51	lb/ton clinker
24-Sep-04	Average Nox	2.51	lb/ton clinker
25-Sep-04	Average Nox	2.50	lb/ton clinker
26-Sep-04	Average Nox	2.50	lb/ton clinker
25-Jun-04	Average Nox	2.49	lb/ton clinker
7-Sep-04	Average Nox	2.49	lb/ton clinker
6-Sep-04	Average Nox	2.48	lb/ton clinker
29-Sep-04	Average Nox	2.48	lb/ton clinker
30-Sep-04	Average Nox	2.44	lb/ton clinker
8-Oct-04	Average Nox	2.44	lb/ton clinker
23-Jul-04	Average Nox	2.44	lb/ton clinker
10-Aug-04	Average Nox	2.44	lb/ton clinker
7-Oct-04	Average Nox	2.43	lb/ton clinker
24-Aug-04	Average Nox	2.42	lb/ton clinker
4-Jul-04	Average Nox	2.41	lb/ton clinker
2-Jul-04	Average Nox	2.40	lb/ton clinker
8-Sep-04	Average Nox	2.38	lb/ton clinker
13-Oct-04	Average Nox	2.37	lb/ton clinker
18-Aug-04	Average Nox	2.35	lb/ton clinker
29-Jul-04	Average Nox	2.35	lb/ton clinker
27-Aug-04	Average Nox	2.34	lb/ton clinker
14-Oct-04	Average Nox	2.34	lb/ton clinker
11-Aug-04	Average Nox	2.31	lb/ton clinker
22-Aug-04	Average Nox	2.30	lb/ton clinker
16-Aug-04	Average Nox	2.28	lb/ton clinker
21-Jun-04	Average Nox	2.27	lb/ton clinker
6-Aug-04	Average Nox	2.26	lb/ton clinker
22-Jun-04	Average Nox	2.25	lb/ton clinker
16-Sep-04	Average Nox	2.24	lb/ton clinker
7-Aug-04	Average Nox	2.24	lb/ton clinker
27-Jul-04	Average Nox	2.22	lb/ton clinker
31-Jul-04	Average Nox	2.20	lb/ton clinker
9-Aug-04	Average Nox	2.18	lb/ton clinker
24-Jun-04	Average Nox	2.17	lb/ton clinker
24-Jul-04	Average Nox	2.16	lb/ton clinker
13-Aug-04	Average Nox	2.15	lb/ton clinker
28-Jul-04	Average Nox	2.15	lb/ton clinker
6-Oct-04	Average Nox	2.14	lb/ton clinker
14-Aug-04	Average Nox	2.13	lb/ton clinker
3-Jul-04	Average Nox	2.10	lb/ton clinker
11-Sep-04	Average Nox	2.10	lb/ton clinker
12-Aug-04	Average Nox	2.08	lb/ton clinker
3-Aug-04	Average Nox	2.08	lb/ton clinker

2-Aug-04	Average Nox	2.07	lb/ton clinker
25-Aug-04	Average Nox	2.05	lb/ton clinker
23-Aug-04	Average Nox	1.99	lb/ton clinker
17-Aug-04	Average Nox	1.98	lb/ton clinker
4-Aug-04	Average Nox	1.97	lb/ton clinker
25-Jul-04	Average Nox	1.93	lb/ton clinker
3-Sep-04	Average Nox	1.93	lb/ton clinker
8-Aug-04	Average Nox	1.92	lb/ton clinker
5-Aug-04	Average Nox	1.91	lb/ton clinker
26-Aug-04	Average Nox	1.89	lb/ton clinker
28-Aug-04	Average Nox	1.80	lb/ton clinker
	AVG =	**2.77**	**lb/ton clinker**

24-HOUR SO2 AVERAGES
JUNE 7 – NOV 10, 2004

26-Jun-04ave SO2	N/A	lbs/ton Clinker
1-Nov-04ave SO2	N/A	lbs/ton Clinker
25-Jun-04ave SO2	0.1784	lbs/ton Clinker
3-Jul-04ave SO2	0.0718	lbs/ton Clinker
24-Jun-04ave SO2	0.0600	lbs/ton Clinker
5-Jul-04ave SO2	0.0546	lbs/ton Clinker
4-Jul-04ave SO2	0.0509	lbs/ton Clinker
1-Jul-04ave SO2	0.0424	lbs/ton Clinker
8-Aug-04ave SO2	0.0380	lbs/ton Clinker
2-Jul-04ave SO2	0.0146	lbs/ton Clinker
30-Sep-04ave SO2	0.0138	lbs/ton Clinker
14-Jun-04ave SO2	0.0137	lbs/ton Clinker
11-Jul-04ave SO2	0.0128	lbs/ton Clinker
10-Jul-04ave SO2	0.0120	lbs/ton Clinker
14-Jul-04ave SO2	0.0118	lbs/ton Clinker
12-Jul-04ave SO2	0.0117	lbs/ton Clinker
20-Jul-04ave SO2	0.0117	lbs/ton Clinker
6-Aug-04ave SO2	0.0117	lbs/ton Clinker
27-Jun-04ave SO2	0.0115	lbs/ton Clinker
19-Jul-04ave SO2	0.0114	lbs/ton Clinker
29-Jun-04ave SO2	0.0113	lbs/ton Clinker
20-Aug-04ave SO2	0.0112	lbs/ton Clinker
30-Jun-04ave SO2	0.0111	lbs/ton Clinker
21-Jul-04ave SO2	0.0108	lbs/ton Clinker
28-Jun-04ave SO2	0.0103	lbs/ton Clinker
5-Aug-04ave SO2	0.0100	lbs/ton Clinker
10-Nov-04ave SO2	0.0097	lbs/ton Clinker
2-Aug-04ave SO2	0.0096	lbs/ton Clinker
1-Oct-04ave SO2	0.0095	lbs/ton Clinker
16-Jul-04ave SO2	0.0094	lbs/ton Clinker
9-Jun-04ave SO2	0.0094	lbs/ton Clinker
21-Aug-04ave SO2	0.0091	lbs/ton Clinker
23-Sep-04ave SO2	0.0091	lbs/ton Clinker
26-Oct-04ave SO2	0.0085	lbs/ton Clinker
21-Sep-04ave SO2	0.0084	lbs/ton Clinker
25-Sep-04ave SO2	0.0081	lbs/ton Clinker
5-Nov-04ave SO2	0.0080	lbs/ton Clinker
22-Aug-04ave SO2	0.0080	lbs/ton Clinker
7-Jun-04ave SO2	0.0080	lbs/ton Clinker
22-Sep-04ave SO2	0.0079	lbs/ton Clinker
24-Sep-04ave SO2	0.0079	lbs/ton Clinker
17-Jul-04ave SO2	0.0079	lbs/ton Clinker
23-Jul-04ave SO2	0.0078	lbs/ton Clinker
15-Jun-04ave SO2	0.0077	lbs/ton Clinker

13-Oct-04	ave SO2	0.0077 lbs/ton Clinker
18-Jul-04	ave SO2	0.0076 lbs/ton Clinker
27-Jul-04	ave SO2	0.0073 lbs/ton Clinker
18-Sep-04	ave SO2	0.0072 lbs/ton Clinker
4-Sep-04	ave SO2	0.0071 lbs/ton Clinker
24-Jul-04	ave SO2	0.0070 lbs/ton Clinker
9-Nov-04	ave SO2	0.0069 lbs/ton Clinker
17-Sep-04	ave SO2	0.0068 lbs/ton Clinker
5-Sep-04	ave SO2	0.0068 lbs/ton Clinker
10-Sep-04	ave SO2	0.0066 lbs/ton Clinker
25-Jul-04	ave SO2	0.0064 lbs/ton Clinker
8-Jun-04	ave SO2	0.0063 lbs/ton Clinker
15-Jul-04	ave SO2	0.0063 lbs/ton Clinker
7-Nov-04	ave SO2	0.0063 lbs/ton Clinker
7-Oct-04	ave SO2	0.0063 lbs/ton Clinker
13-Jun-04	ave SO2	0.0062 lbs/ton Clinker
3-Aug-04	ave SO2	0.0059 lbs/ton Clinker
22-Jul-04	ave SO2	0.0058 lbs/ton Clinker
4-Nov-04	ave SO2	0.0058 lbs/ton Clinker
26-Jul-04	ave SO2	0.0057 lbs/ton Clinker
24-Oct-04	ave SO2	0.0056 lbs/ton Clinker
13-Jul-04	ave SO2	0.0056 lbs/ton Clinker
14-Oct-04	ave SO2	0.0055 lbs/ton Clinker
4-Aug-04	ave SO2	0.0055 lbs/ton Clinker
6-Nov-04	ave SO2	0.0054 lbs/ton Clinker
29-Sep-04	ave SO2	0.0054 lbs/ton Clinker
27-Aug-04	ave SO2	0.0054 lbs/ton Clinker
12-Jun-04	ave SO2	0.0054 lbs/ton Clinker
26-Aug-04	ave SO2	0.0053 lbs/ton Clinker
2-Oct-04	ave SO2	0.0053 lbs/ton Clinker
10-Jun-04	ave SO2	0.0052 lbs/ton Clinker
20-Sep-04	ave SO2	0.0052 lbs/ton Clinker
26-Sep-04	ave SO2	0.0052 lbs/ton Clinker
28-Jul-04	ave SO2	0.0051 lbs/ton Clinker
27-Oct-04	ave SO2	0.0050 lbs/ton Clinker
23-Aug-04	ave SO2	0.0050 lbs/ton Clinker
31-Jul-04	ave SO2	0.0049 lbs/ton Clinker
1-Sep-04	ave SO2	0.0049 lbs/ton Clinker
9-Sep-04	ave SO2	0.0047 lbs/ton Clinker
1-Aug-04	ave SO2	0.0047 lbs/ton Clinker
9-Jul-04	ave SO2	0.0044 lbs/ton Clinker
11-Sep-04	ave SO2	0.0044 lbs/ton Clinker
7-Aug-04	ave SO2	0.0044 lbs/ton Clinker
19-Sep-04	ave SO2	0.0044 lbs/ton Clinker
25-Oct-04	ave SO2	0.0043 lbs/ton Clinker
29-Jul-04	ave SO2	0.0042 lbs/ton Clinker
25-Aug-04	ave SO2	0.0041 lbs/ton Clinker
30-Jul-04	ave SO2	0.0041 lbs/ton Clinker
11-Jun-04	ave SO2	0.0041 lbs/ton Clinker
22-Oct-04	ave SO2	0.0039 lbs/ton Clinker

22-Jun-04ave SO2	0.0037	lbs/ton Clinker
8-Oct-04ave SO2	0.0037	lbs/ton Clinker
4-Oct-04ave SO2	0.0036	lbs/ton Clinker
23-Oct-04ave SO2	0.0035	lbs/ton Clinker
21-Oct-04ave SO2	0.0033	lbs/ton Clinker
6-Oct-04ave SO2	0.0032	lbs/ton Clinker
2-Sep-04ave SO2	0.0031	lbs/ton Clinker
21-Jun-04ave SO2	0.0031	lbs/ton Clinker
20-Jun-04ave SO2	0.0030	lbs/ton Clinker
29-Oct-04ave SO2	0.0029	lbs/ton Clinker
31-Aug-04ave SO2	0.0028	lbs/ton Clinker
30-Oct-04ave SO2	0.0028	lbs/ton Clinker
8-Nov-04ave SO2	0.0027	lbs/ton Clinker
16-Jun-04ave SO2	0.0026	lbs/ton Clinker
18-Jun-04ave SO2	0.0024	lbs/ton Clinker
7-Sep-04ave SO2	0.0022	lbs/ton Clinker
19-Jun-04ave SO2	0.0021	lbs/ton Clinker
3-Oct-04ave SO2	0.0021	lbs/ton Clinker
27-Sep-04ave SO2	0.0021	lbs/ton Clinker
17-Jun-04ave SO2	0.0020	lbs/ton Clinker
28-Aug-04ave SO2	0.0020	lbs/ton Clinker
6-Sep-04ave SO2	0.0018	lbs/ton Clinker
31-Oct-04ave SO2	0.0018	lbs/ton Clinker
11-Aug-04ave SO2	0.0017	lbs/ton Clinker
5-Oct-04ave SO2	0.0017	lbs/ton Clinker
16-Sep-04ave SO2	0.0016	lbs/ton Clinker
28-Oct-04ave SO2	0.0016	lbs/ton Clinker
24-Aug-04ave SO2	0.0015	lbs/ton Clinker
9-Aug-04ave SO2	0.0015	lbs/ton Clinker
10-Aug-04ave SO2	0.0015	lbs/ton Clinker
15-Aug-04ave SO2	0.0014	lbs/ton Clinker
8-Sep-04ave SO2	0.0012	lbs/ton Clinker
15-Sep-04ave SO2	0.0011	lbs/ton Clinker
29-Aug-04ave SO2	0.0011	lbs/ton Clinker
16-Aug-04ave SO2	0.0010	lbs/ton Clinker
17-Aug-04ave SO2	0.0009	lbs/ton Clinker
9-Oct-04ave SO2	0.0009	lbs/ton Clinker
12-Aug-04ave SO2	0.0009	lbs/ton Clinker
14-Aug-04ave SO2	0.0008	lbs/ton Clinker
28-Sep-04ave SO2	0.0008	lbs/ton Clinker
12-Oct-04ave SO2	0.0007	lbs/ton Clinker
14-Sep-04ave SO2	0.0007	lbs/ton Clinker
2-Nov-04ave SO2	0.0007	lbs/ton Clinker
13-Aug-04ave SO2	0.0006	lbs/ton Clinker
10-Oct-04ave SO2	0.0005	lbs/ton Clinker
18-Aug-04ave SO2	0.0005	lbs/ton Clinker
3-Nov-04ave SO2	0.0004	lbs/ton Clinker
30-Aug-04ave SO2	0.0003	lbs/ton Clinker
3-Sep-04ave SO2	0.0003	lbs/ton Clinker
11-Oct-04ave SO2	0.0001	lbs/ton Clinker

13-Sep-04	ave SO2	0.0000	lbs/ton Clinker
23-Jun-04	ave SO2	0.0000	lbs/ton Clinker
6-Jul-04	ave SO2	0.0000	lbs/ton Clinker
7-Jul-04	ave SO2	0.0000	lbs/ton Clinker
8-Jul-04	ave SO2	0.0000	lbs/ton Clinker
19-Aug-04	ave SO2	0.0000	lbs/ton Clinker
12-Sep-04	ave SO2	0.0000	lbs/ton Clinker
15-Oct-04	ave SO2	0.0000	lbs/ton Clinker
16-Oct-04	ave SO2	0.0000	lbs/ton Clinker
17-Oct-04	ave SO2	0.0000	lbs/ton Clinker
18-Oct-04	ave SO2	0.0000	lbs/ton Clinker
19-Oct-04	ave SO2	0.0000	lbs/ton Clinker
20-Oct-04	ave SO2	0.0000	lbs/ton Clinker
	AVG =	**0.0079**	**lbs/ton Clinker**

24 – HOUR VOC AVERAGES
JUNE 7 – NOV 10, 2004

26-Jun-04	ave. VOC	N/A lb/ton clinker
6-Jul-04	ave. VOC	N/A lb/ton clinker
7-Jul-04	ave. VOC	N/A lb/ton clinker
8-Jul-04	ave. VOC	N/A lb/ton clinker
19-Aug-04	ave. VOC	N/A lb/ton clinker
15-Oct-04	ave. VOC	N/A lb/ton clinker
16-Oct-04	ave. VOC	N/A lb/ton clinker
17-Oct-04	ave. VOC	N/A lb/ton clinker
18-Oct-04	ave. VOC	N/A lb/ton clinker
19-Oct-04	ave. VOC	N/A lb/ton clinker
20-Oct-04	ave. VOC	N/A lb/ton clinker
1-Nov-04	ave. VOC	N/A lb/ton clinker
21-Oct-04	ave. VOC	0.111 lb/ton clinker
22-Oct-04	ave. VOC	0.109 lb/ton clinker
10-Oct-04	ave. VOC	0.108 lb/ton clinker
23-Oct-04	ave. VOC	0.106 lb/ton clinker
31-Oct-04	ave. VOC	0.105 lb/ton clinker
14-Oct-04	ave. VOC	0.105 lb/ton clinker
25-Oct-04	ave. VOC	0.103 lb/ton clinker
16-Jul-04	ave. VOC	0.102 lb/ton clinker
24-Oct-04	ave. VOC	0.102 lb/ton clinker
17-Jul-04	ave. VOC	0.102 lb/ton clinker
13-Oct-04	ave. VOC	0.100 lb/ton clinker
26-Oct-04	ave. VOC	0.099 lb/ton clinker
4-Nov-04	ave. VOC	0.097 lb/ton clinker
18-Jul-04	ave. VOC	0.096 lb/ton clinker
12-Oct-04	ave. VOC	0.096 lb/ton clinker
19-Jul-04	ave. VOC	0.095 lb/ton clinker
7-Sep-04	ave. VOC	0.095 lb/ton clinker
22-Jul-04	ave. VOC	0.095 lb/ton clinker
9-Sep-04	ave. VOC	0.094 lb/ton clinker
21-Jul-04	ave. VOC	0.094 lb/ton clinker
11-Oct-04	ave. VOC	0.093 lb/ton clinker
19-Sep-04	ave. VOC	0.092 lb/ton clinker
20-Jul-04	ave. VOC	0.092 lb/ton clinker
6-Sep-04	ave. VOC	0.092 lb/ton clinker
3-Nov-04	ave. VOC	0.092 lb/ton clinker
10-Nov-04	ave. VOC	0.091 lb/ton clinker
7-Oct-04	ave. VOC	0.091 lb/ton clinker
30-Oct-04	ave. VOC	0.090 lb/ton clinker
23-Jul-04	ave. VOC	0.090 lb/ton clinker
6-Oct-04	ave. VOC	0.089 lb/ton clinker

18-Sep-04	ave. VOC	0.089	lb/ton clinker
10-Sep-04	ave. VOC	0.089	lb/ton clinker
5-Oct-04	ave. VOC	0.089	lb/ton clinker
22-Sep-04	ave. VOC	0.089	lb/ton clinker
20-Sep-04	ave. VOC	0.088	lb/ton clinker
17-Sep-04	ave. VOC	0.088	lb/ton clinker
7-Aug-04	ave. VOC	0.088	lb/ton clinker
29-Oct-04	ave. VOC	0.088	lb/ton clinker
9-Oct-04	ave. VOC	0.088	lb/ton clinker
8-Oct-04	ave. VOC	0.088	lb/ton clinker
3-Oct-04	ave. VOC	0.087	lb/ton clinker
24-Sep-04	ave. VOC	0.087	lb/ton clinker
8-Sep-04	ave. VOC	0.086	lb/ton clinker
2-Oct-04	ave. VOC	0.086	lb/ton clinker
4-Oct-04	ave. VOC	0.086	lb/ton clinker
2-Nov-04	ave. VOC	0.085	lb/ton clinker
23-Sep-04	ave. VOC	0.085	lb/ton clinker
15-Jul-04	ave. VOC	0.085	lb/ton clinker
27-Oct-04	ave. VOC	0.085	lb/ton clinker
28-Oct-04	ave. VOC	0.084	lb/ton clinker
24-Jul-04	ave. VOC	0.084	lb/ton clinker
12-Jul-04	ave. VOC	0.084	lb/ton clinker
12-Sep-04	ave. VOC	0.083	lb/ton clinker
9-Jul-04	ave. VOC	0.083	lb/ton clinker
30-Jul-04	ave. VOC	0.082	lb/ton clinker
21-Sep-04	ave. VOC	0.082	lb/ton clinker
5-Nov-04	ave. VOC	0.082	lb/ton clinker
6-Aug-04	ave. VOC	0.082	lb/ton clinker
8-Aug-04	ave. VOC	0.082	lb/ton clinker
25-Sep-04	ave. VOC	0.081	lb/ton clinker
23-Jun-04	ave. VOC	0.080	lb/ton clinker
13-Sep-04	ave. VOC	0.080	lb/ton clinker
27-Sep-04	ave. VOC	0.080	lb/ton clinker
9-Nov-04	ave. VOC	0.079	lb/ton clinker
1-Oct-04	ave. VOC	0.079	lb/ton clinker
6-Nov-04	ave. VOC	0.079	lb/ton clinker
16-Sep-04	ave. VOC	0.079	lb/ton clinker
27-Jul-04	ave. VOC	0.079	lb/ton clinker
5-Aug-04	ave. VOC	0.078	lb/ton clinker
31-Jul-04	ave. VOC	0.076	lb/ton clinker
10-Jun-04	ave. VOC	0.076	lb/ton clinker
11-Jul-04	ave. VOC	0.075	lb/ton clinker
28-Sep-04	ave. VOC	0.075	lb/ton clinker
15-Sep-04	ave. VOC	0.075	lb/ton clinker
4-Aug-04	ave. VOC	0.075	lb/ton clinker
7-Nov-04	ave. VOC	0.075	lb/ton clinker
8-Jun-04	ave. VOC	0.074	lb/ton clinker
9-Aug-04	ave. VOC	0.073	lb/ton clinker
14-Sep-04	ave. VOC	0.073	lb/ton clinker
13-Jul-04	ave. VOC	0.073	lb/ton clinker

10-Jul-04	ave. VOC	0.073	lb/ton clinker
11-Sep-04	ave. VOC	0.072	lb/ton clinker
9-Jun-04	ave. VOC	0.071	lb/ton clinker
14-Jul-04	ave. VOC	0.071	lb/ton clinker
1-Aug-04	ave. VOC	0.071	lb/ton clinker
4-Sep-04	ave. VOC	0.071	lb/ton clinker
29-Sep-04	ave. VOC	0.071	lb/ton clinker
8-Nov-04	ave. VOC	0.071	lb/ton clinker
12-Jun-04	ave. VOC	0.070	lb/ton clinker
26-Sep-04	ave. VOC	0.070	lb/ton clinker
2-Aug-04	ave. VOC	0.069	lb/ton clinker
3-Sep-04	ave. VOC	0.069	lb/ton clinker
20-Aug-04	ave. VOC	0.069	lb/ton clinker
30-Sep-04	ave. VOC	0.068	lb/ton clinker
24-Jun-04	ave. VOC	0.068	lb/ton clinker
3-Aug-04	ave. VOC	0.067	lb/ton clinker
21-Aug-04	ave. VOC	0.067	lb/ton clinker
2-Sep-04	ave. VOC	0.067	lb/ton clinker
5-Sep-04	ave. VOC	0.067	lb/ton clinker
7-Jun-04	ave. VOC	0.066	lb/ton clinker
14-Jun-04	ave. VOC	0.066	lb/ton clinker
10-Aug-04	ave. VOC	0.066	lb/ton clinker
15-Jun-04	ave. VOC	0.066	lb/ton clinker
13-Jun-04	ave. VOC	0.064	lb/ton clinker
1-Sep-04	ave. VOC	0.064	lb/ton clinker
24-Aug-04	ave. VOC	0.064	lb/ton clinker
29-Jun-04	ave. VOC	0.064	lb/ton clinker
26-Aug-04	ave. VOC	0.063	lb/ton clinker
22-Aug-04	ave. VOC	0.063	lb/ton clinker
16-Jun-04	ave. VOC	0.062	lb/ton clinker
18-Aug-04	ave. VOC	0.062	lb/ton clinker
1-Jul-04	ave. VOC	0.061	lb/ton clinker
27-Aug-04	ave. VOC	0.061	lb/ton clinker
29-Aug-04	ave. VOC	0.061	lb/ton clinker
23-Aug-04	ave. VOC	0.061	lb/ton clinker
25-Jul-04	ave. VOC	0.061	lb/ton clinker
16-Aug-04	ave. VOC	0.060	lb/ton clinker
25-Aug-04	ave. VOC	0.060	lb/ton clinker
12-Aug-04	ave. VOC	0.060	lb/ton clinker
25-Jun-04	ave. VOC	0.060	lb/ton clinker
21-Jun-04	ave. VOC	0.059	lb/ton clinker
17-Jun-04	ave. VOC	0.059	lb/ton clinker
31-Aug-04	ave. VOC	0.059	lb/ton clinker
28-Jul-04	ave. VOC	0.059	lb/ton clinker
15-Aug-04	ave. VOC	0.059	lb/ton clinker
4-Jul-04	ave. VOC	0.059	lb/ton clinker
22-Jun-04	ave. VOC	0.058	lb/ton clinker
2-Jul-04	ave. VOC	0.058	lb/ton clinker
28-Jun-04	ave. VOC	0.058	lb/ton clinker
11-Aug-04	ave. VOC	0.058	lb/ton clinker

17-Aug-04	ave. VOC	0.058	lb/ton clinker
28-Aug-04	ave. VOC	0.057	lb/ton clinker
20-Jun-04	ave. VOC	0.057	lb/ton clinker
30-Aug-04	ave. VOC	0.056	lb/ton clinker
30-Jun-04	ave. VOC	0.055	lb/ton clinker
13-Aug-04	ave. VOC	0.054	lb/ton clinker
5-Jul-04	ave. VOC	0.054	lb/ton clinker
14-Aug-04	ave. VOC	0.054	lb/ton clinker
3-Jul-04	ave. VOC	0.053	lb/ton clinker
19-Jun-04	ave. VOC	0.053	lb/ton clinker
18-Jun-04	ave. VOC	0.052	lb/ton clinker
27-Jun-04	ave. VOC	0.052	lb/ton clinker
11-Jun-04	ave. VOC	0.052	lb/ton clinker
29-Jul-04	ave. VOC	0.047	lb/ton clinker
26-Jul-04	ave. VOC	0.030	lb/ton clinker
	AVG =	**0.076**	**lb/ton clinker**