



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
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RECEIVED
JUN 17 1996
BUREAU OF
AIR REGULATION

MEMORANDUM

VIA FAX

TO: Teresa Heron
FDEP

FROM: John B. Koogler / Pradeep Raval

DATE: June 5, 1996

SUBJECT: Southdown, Inc. d/b/a
Florida Mining & Materials
Permitting History
Kilns 1 and 2 and Clinker Coolers 1 and 2

In accordance with your request during our meeting on April 25, 1996, enclosed is a historical summary of permitting actions for Kilns 1 and 2 and Clinker Coolers 1 and 2 based on available information.

If you have any questions, please do not hesitate to contact us.

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Effective date of NSPS 8/17/71	0.30 lb/ton kiln feed	-	-	-	-	20%	
AC27-2251 Issued 12/18/73 Expired 3/1/76 Extended	Test requirement	-	-	-	-	Test requirement	No specific limits in permit for kiln feed or PM or VE.
January 6, 1975 PSD rules effective	-	-	-	-	-	-	No major modification or construction after this date without PSD permit.
AO27-20213 Issued 8/13/79 Modified 8/22/79 Expired 8/7/84 Replaced AC27-2251	Test requirement	-	-	-	-	Test requirement 10% limit	No specific limits in permit for kiln feed or PM.
AO27-89814 Issued 10/5/84 Expired 10/3/89 Replaced AO27-20213	0.3 lb/ton 36.0 lb/hr	-	-	-	-	10%	Reference made to NSPS applicability and to 120 tph feed rate.
AO27-169616 Issued 1/23/90 Expired 1/18/95 Replaced AO27-89814	0.3 lb/ton 36.0 lb/hr 151.2 tpy	-	-	-	-	10%	<i>Kiln Feed</i> -120 tph (no reference to wet or dry) <i>Fuel</i> -coal or No. 6 oil <i>Baghouse</i> -16 separate vents

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Application to Modify Permit AO27-169616 Filed 9/5/89 Complete 11/1/89	-	-	-	-	-	-	To use Flolite 250 hr/yr during start-up
Intent to Issue AC27-169616 Dated 1/9/90 Proposed expiration 9/30/90 (PERMIT NOT ISSUED)	0.3 lb/ton 33.0 lb/hr 130.7 tpy	-	-	-	-	10%	To use Flolite <i>Hours-7920/yr</i> <i>Kiln Feed-120 tph (wet basis)</i> <i>Clinker-71 tph (dry basis)</i> <i>Heat Input-208.1 MMBtu/hr except during start-up</i> <i>Coal-16800 lb/hr @ 1.0% S and 12387 Btu/lb</i> <i>Flolite-250 hr/yr</i> <i>Heat input 7.62 MMBtu/hr</i> <i>Sulfur - 1.0%</i> <i>No. 6 Oil-0.77% sulfur</i>
Application to Modify Permit AO27-169616 Filed 9/24/90 Complete 1/10/91	-	-	-	-	-	-	To use Flolite at rate of 2069 gal/hr for 250 hr/yr.

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NO _x	SO ₂	CO	VOC	VE	
Technical Evaluation and Prel. Determination Application 9/24/90 Complete 1/10/91 TE&PD 1/18/91 Proposed Expiration 12/31/91	0.30 lb/ton 39.0 lb/hr 169.8 tpy	-	-	-	-	20%	To use Flolite during start-up/ idle/fuel supplement for 250 hr/yr ----- AC27-2255 issued 12/18/73, therefore plant subject to NSPS No AC issued after 1/6/75 (PSD applicability date), therefore this permit will establish federally enforceable conditions for Kiln No. 1 ----- <i>Hours-8760/yr</i> <i>Kiln Feed-130 tph (wet basis)</i> <i>Clinker-79.6 tph (dry basis)</i> <i>Heat Input-300 MMBtu/hr</i> <i>Coal-24000 lb/hr @ 1.0% S and</i> <i>12500 Btu/lb</i> <i>Flolite-250 hr/yr</i> <i>-2069 gal/hr @ 1.0% S</i> <i>No. 6 Oil-1974 gal/hr @ 0.77%S</i> <i>Sulfur/Heat Ratio-0.83 lb/SO₂</i> <i>per MMBtu heat input</i>
AC27-186923 Issued 3/8/91 Expired 12/31/91 Extended 5/31/92 Extended 5/31/93							Same conditions as above

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Stack Replacement Initial Request 6/4/91 FDER Approval 6/25/91	-	-	-	-	-	-	Replaced existing 16 individual baghouse vents with single 150-foot stack.
Request to Amend AC27-186923 8/10/92 (NO ACTION)	-	-	-	-	-	-	Delete limit on clinker production
Amendment to AC27-182923 Intent to Issue 4/9/91 (NO ACTION)	-	-	-	-	-	-	Allow testing while burning TDF. Conditions of AC27-186923 remain unchanged.
AO27-213207 Issued 6/16/92 Expired 6/15/97 Supersedes AC27-186923	NSPS 0.3 lb/ton 39.0 lb/hr 169.8 tpy	-	-	-	-	NSPS 20%	<i>Hours-8760/yr</i> <i>Kiln Feed-130 tph</i> <i>Clinker-79.6 tph, 30 day average</i> <i>Heat Input-300 MMBtu/hr</i> <i>Coal-24000 lb/hr @ 1.0% S and 12500 Btu/lb</i> <i>-Sulfur/heat ratio 0.83 lb SO₂ per MMBtu</i> <i>Flolite-2069 gal/hr @ 1.0%S for 250 hr/hr</i> <i>-Start-up/Idle/fuel supplement</i>

PERMITTING HISTORY OF KILN NO. 1

**SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NO _x	SO ₂	CO	VOC	VE	
Requested Amendment AO27-213207 1/22/92	-	-	-	-	-	-	Allow testing while burning TDF as fuel supplement.
Intent to Issue Amendment to AO27-213207 12/17/92	-	-	-	-	-	-	Allow testing with TDF
Amendment to AO27-213207 2/5/93	-	-	-	-	-	-	Approval to conduct tests while burning TDF.
AC27-240349 Issued 4/15/94 Expired 12/31/94	-	-	-	57.7 lb/hr 234.4 tpy (limits when burning TDF only)	-	-	Allows use of TDF to provide 20% of heat input 8760 hr/yr. TDF also limited to 2.14 tph. ----- All conditions of AC27-186923 and AO27-213207 are incorporated by reference. ----- Thallium monitoring in baghouse dust required.

PERMITTING HISTORY OF KILN NO. 1

**SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NO _x	SO ₂	CO	VOC	VE	
AO27-254098 Issued (?) Expires 10/31/99 Replaces AO27-213207 and AC27-240349	0.30 lb/ton 39.0 lb/hr 169.8 tpy	-	-	57.7 lb/hr 234.4 tpy (while burning TDF only)	-	20%	<i>Hours-8760/yr</i> <i>Kiln Feed-130 tph</i> <i>Clinker-79.6 tph, 30 day average</i> <i>Heat Input-300 MMBtu/hr, except</i> <i>during start-up</i> <i>Coal-24000 lb/hr @ 1.0%S and</i> <i>12500 Btu/lb</i> <i>-Sulfur/heat ratio 0.83 lb SO₂</i> <i>per MMBtu</i> <i>Flolite-2069 gal/hr @ 1.0%S for</i> <i>250 hr/hr</i> <i>TDF-20% of heat input or 2.14 tph</i> Thallium monitoring of baghouse dust

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment																								
	PM	NO _x	SO ₂	CO	VOC	VE																									
AC27-258571 Issued 8/3/95 Expired 3/31/96 Extended by Title V Replaces AC27-186923 and AO27-254098	0.30 lb/ton kiln feed on dry basis	-	15.0 lb/hr in lieu of fuel sulfur limits	57.7 lb/hr 234.4 tpy while burning TDF only	-	20%	Deletes use of Flolite and adds natural gas as primary fuel and No. 2-6 oils as stand-by fuels ----- <i>Hours-8760/yr</i> <i>Preheater feed-145 tph)</i> <i>Kiln feed -130 tph) 30-day avg</i> <i>Clinker -79.6 tph)</i> <i>Preheater fuel-165 tph)</i> <i>Kiln feed -148 tph) Max 1-hr</i> <i>Clinker - 90 tph)</i> <i>Heat Input-300 MMBtu/hr</i> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"><u>Fuels</u></th> <th style="text-align: center;"><u>Firing Rate</u> <u>(-/hr)</u></th> <th style="text-align: center;"><u>Heat Value</u> <u>(Btu/-)</u></th> </tr> </thead> <tbody> <tr> <td>Coal</td> <td style="text-align: center;">24,000 lb</td> <td style="text-align: center;">12,500 lb</td> </tr> <tr> <td>No. 2</td> <td style="text-align: center;">2,116 gal</td> <td style="text-align: center;">141,300 gal</td> </tr> <tr> <td>No. 4</td> <td style="text-align: center;">2,060 gal</td> <td style="text-align: center;">145,600 gal</td> </tr> <tr> <td>No. 5</td> <td style="text-align: center;">2,016 gal</td> <td style="text-align: center;">148,800 gal</td> </tr> <tr> <td>No. 6</td> <td style="text-align: center;">1,982 gal</td> <td style="text-align: center;">151,300 gal</td> </tr> <tr> <td>Gas</td> <td style="text-align: center;">292,683 ft³</td> <td style="text-align: center;">1,025 ft³</td> </tr> <tr> <td>TDF</td> <td colspan="2" style="text-align: center;">2.14 ton (or 20% of heat input for 8760 hr/yr)</td> </tr> </tbody> </table> Thallium monitoring of baghouse dust.	<u>Fuels</u>	<u>Firing Rate</u> <u>(-/hr)</u>	<u>Heat Value</u> <u>(Btu/-)</u>	Coal	24,000 lb	12,500 lb	No. 2	2,116 gal	141,300 gal	No. 4	2,060 gal	145,600 gal	No. 5	2,016 gal	148,800 gal	No. 6	1,982 gal	151,300 gal	Gas	292,683 ft ³	1,025 ft ³	TDF	2.14 ton (or 20% of heat input for 8760 hr/yr)	
<u>Fuels</u>	<u>Firing Rate</u> <u>(-/hr)</u>	<u>Heat Value</u> <u>(Btu/-)</u>																													
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Gas	292,683 ft ³	1,025 ft ³																													
TDF	2.14 ton (or 20% of heat input for 8760 hr/yr)																														

PERMITTING HISTORY OF KILN NO. 2

**SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit	Permit Limit							
	Emissions					Kiln Feed Rate TPH	Clinker Production TPH	Oper. Hrs
	TSP	NOx	SO2	CO	VOC			
Construction Permit AC27-30450 and Final Determination, (PSD-FL-063) Issued 7/25/80 Expired 12/31/83	21.6 lb/hr ⁽¹⁾ VE = 10% ----- 24.0 lb/hr ⁽²⁾ 94.5 tpy	(3), (4) 195.3 lb/hr 771.0 tpy	(3), (4) 3.0 lb/hr 11.8 tpy	(3), (4) 8.9 lb/hr 35.1 tpy	(3), (4) 2.7 lb/hr 10.7 tpy	120 tph wet @ 9.8% moist ⁽¹⁾ ----- 120 tph ⁽²⁾		7,896
Operating Permit AO27-65207 Issued 8/29/83 Expired 8/16/88 Replaces AC27-30450)	24.0 lb/hr 94.5 tpy	195.3 lb/hr 771.0 tpy	3.0 lb/hr 11.8 tpy	8.9 lb/hr 35.1 tpy	2.7 lb/hr 10.7 tpy	120 tph		7,896
Comments: <ul style="list-style-type: none"> · The plant consistently met particulate emissions (see Exhibit A, memo dated 5/15/91). · From 1984 to 1987, the limits for SO2 and NOx were "unreasonably low" and Kiln No. 2 consistently had problems meeting the limits (see Exhibit A). · Based upon exceedances, compliance testing and, in particular, as agreed upon in Consent Orders issued by DER in 1987, the limits of SO2 and NOx emissions were increased (see Exhibit B, Consent Orders). In 1986, compliance testing demonstrated NO2 emissions rates of 403 lbs/hr and 244 lb/hr. FMM stated that the most probable cause of the exceedance was the flyash coming from Tampa Electric and agreed to limit this particular flyash. FDER ordered FMM to submit application for a construction permit to increase the allowable emissions. 								

(1) EPA Permit PSD-FL-063 (3/2/581).

(2) Based on BACT of 0.2 lb/ton of feed and 120 tph; 0.3 lb/ton (36.0 lb/hr) requested in application (AC27-30450).

(3) Limit in AC27-30450 and PSD-FL-063.

(4) BACT dated 6/6/80. BACT limit was proposed by applicant.

PERMITTING HISTORY OF KILN NO. 2

**SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit	Permit Limit								
	Emissions					Kiln Feed Rate TPH	Clinker Production TPH	Oper. Hrs.	Heat Input
	TSP	NOx	SO2	CO	VOC				
Application for construction permit application to increase SO2 and NOx emission limits Submitted 8/8/87	24.0 lb/hr 90.7 tpy	330.0 lb/hr ⁽⁵⁾ 1247.4 tpy	20.0 lb/hr ⁽⁵⁾ 75.6 tpy	10.0 lb/hr 37.8 tpy	3.0 lb/hr 11.3 tpy				
BACT Determination, issued by Florida DER 11/3/88 (see Exhibit C, BACT)		250.0 lb/hr	12.0 lb/hr						
Construction Permit AC27-138850 and Final Determination, PSD-FL-124 Issued 11/3/88 Expired 6/1/89 Extended 4/1/90	21.6 lb/hr 85.3 tpy ----- VE = 10%	250.0 lb/hr 987.0 tpy	12.0 lb/hr 47.4 tpy	8.9 lb/hr 35.1 tpy	2.7 lb/hr 10.7 tpy	120 tph wet feed	71 tph, clinker	7,896	213.6 MMBtu/hr (coal @ 1%S)
Comments: <ul style="list-style-type: none"> On October 20, 1989, FMM met with FDER and advised the plant was having difficulty in complying with the stringent air permit limitation. FDER indicated that if the plant could demonstrate a lower emissions factor for the pounds of production at the higher production rate, it could avoid PSD. FDER indicated that the plant could increase the permitted hours of operation without triggering PSD if it could show a lower pounds per hour of emissions. 									

(5) Requested emission limits in application.

PERMITTING HISTORY OF KILN NO. 2

**SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit	Permit Limit							
	Emissions					Kiln Feed Rate TPH	Clinker Production TPH	Oper. Hrs.
	TSP	NOx	SO2	CO	VOC			
Application to amend Permit AC27-138850 to increase production rate Submitted 12/1/89	21.6 lb/hr 90.72 tpy	244.0 lb/hr 1025 tpy	12.0 lb/hr 50.4 tpy	79.2 lb/hr 332.6 tpy	7.44 lb/hr 31.3 tpy	130		8,400
Addendum - Application to amend Permit AC27-138850 Submitted 3/21/90 (Based on actual emission rates)	21.0 lb/hr	247.0 lb/hr	12.0 lb/hr	79.2 lb/hr	7.44 lb/hr			8,200
<p>Comments:</p> <ul style="list-style-type: none"> · Allowable emissions for SO2 and NOx have been established by BACT determination as stated in existing construction permit. · On January 10, 1990, EPA Region IV advised the netting calculations performed by applicant was incorrect. FMM used permitted allowable emissions as actual emissions rather than using existing emissions based on previous two years of data. · On March 21, 1990, FMM submitted application Addendum to FDER in response to EPA comments and accepted the emission calculations in the manner suggested. The annual hours of operation were revised from 8,400 to 8,200. 								

PERMITTING HISTORY OF KILN NO. 2

**SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit	Permit Limit									
	Emissions						Kiln Feed Rate TPH	Clinker Production TPH	Oper. Hrs.	Heat Input (MMBtu/hr)
	TSP	NO _x	SO ₂	CO	VOC	VE				
Construction Permit AC27-173474 (Supersedes AC27-138850) Issued 7/20/90 Expired 12/31/91	Requested: 21.0 lb/hr 86.1 tpy ----- Permit: 13.5 lb/hr 55.3 tpy	Requested: 247.0 lb/hr 1012.7 tpy ----- Permit: 162.3 lb/hr 665.3 tpy	Requested: 12.0 lb/hr 49.2 tpy ----- Permit: 11.5 lb/hr 47.0 tpy	Requested: 79.2 lb/hr 324.7 tpy ----- Permit: 64.0 lb/hr 262.2 tpy	Requested: 7.4 lb/hr 30.5 tpy ----- Permit: 7.4 lb/hr 31.2 tpy	10%	130	79.6 30-day avg. production period	8,200	300 (24,219 lb/hr coal @ 1%S & 12,387 Btu/lb)
Operating Permit AO27-194660 (Replaces AC27-173474) Issued 5/9/91 Expires 4/30/96	13.5 lb/hr 55.3 tpy	162.3 lb/hr 665.3 tpy	11.5 lb/hr 47.0 tpy	64.0 lb/hr 262.2 tpy	7.4 lb/hr 31.2 tpy	10%	130	79.6 30-day avg. production period	8,200	300 MMBtu/hr Coal @ 1%S Flolite @ 1%S 250 hr/yr

Comments:

- FDER issued construction permit and based upon the highest two 1989 stack test results, concluded that the new allowable NO_x limit should be 162.3 lb/hr.
- On May 21, 1990, in a meeting with FDER, FMM advised the new proposed limit on NO_x of 162.3 lb/hr are severely restrictive and difficult to achieve. FMM advised that the 250 lb/hr limit will be pursued with EPA Region IV.
- FDER advised that EPA's policy on netting calculations will not allow an increase in the proposed limit. To obtain a higher limit, the application would have to be refiled under the PSD rule.
- The new 1990 SO₂ emission limit of 11.5 lb/hr is still an extremely low figure. Its only equivalent to 0.142 lbs of SO₂ per ton of clinker (per Exhibit A).
- In 1991, we demonstrated that Kiln No. 2 could be operated with less than 1/10 of the permitted SO₂ emission. We demonstrated compliance with NO_x emission limit of 162 lb/hr with a 110 lb/hr emission rate. The permit limit of 162 lb/hr represents 2 lb/ton of clinker. This may be the lowest NO_x limit for a cement kiln in the country (see Exhibit A).

PERMITTING HISTORY OF KILN NO. 2

**SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Request to Amend AO27-194660 4/21/92	-	250 lb/hr from 162.3 lb/hr	-	-	-	-	
AC27-212252 PSD-FL-188 Issued 1/26/93 Expired 12/31/93 Supersedes AC27-173474 and AO27-194660	13.5 lb/hr 55.4 tpy	250 lb/hr 30-day avg 1025.0 tpy BACT dated 1/26/93	11.5 lb/hr 47.2 tpy	64.0 lb/hr 262.4 tpy	7.4 lb/hr 30.3 tpy	10%	<i>Hours-8200/yr Kiln Feed-130 tph (wet basis) Clinker-79.6 tph, 30-day avg Heat Input-300 MMBtu/hr Coal-1.0%S Flolite-1.0%S for start-up and fuel supplement</i> ----- Emission limits except NOx established by AC27-173474 (PSD-FL-124A) issued 7/20/90
AO27-234710A Issued 10/12/93 Amended 11/4/93 Expires 10/15/98 Replaces AC27-212252 and AO27-194660	13.5 lb/hr 55.4 tpy	250 lb/hr 30-day avg 1025 tpy	11.5 lb/hr 47.2 tpy	64.0 lb/hr 262.4 tpy	7.4 lb/hr 30.3 tpy	10%	<i>Hours-8200/yr Preheater Feed (in description of system)-145 tph Kiln Feed-130 tph Clinker-79.6 tph Heat Input-300 MMBtu/hr Coal-1.0%S Flolite-1.0%S for 250 hr/yr -2069 gal/hr</i>

**PERMITTING HISTORY OF KILN NO. 2
SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit or Action Taken	Emission Limits						Permit Limit or Comment																								
	PM	NOx	SO2	CO	VOC	VE																									
AO27-234710B Issued 10/12/93 Amended 11/4/93 Amended 2/11/94 Expires 10/15/98 Replaces AC27-212252 AO27-194660 AO27-234710 AO27-234710A							Adds additional constituent limits to Flolite.																								
AC27-258571 Issued 8/3/95 Expired 3/31/96 Extended by Title V Replaces AC27-234710B AC27-138850 AC27-212252 are incorporated by reference	13.5 lb/ton 55.4 tpy	250 lb/hr 30 day avg 1025.0 tpy	15.0 lb/hr 61.5 tpy	64.0 lb/hr 262.4 tpy	7.4 lb/hr 30.3 tpy	10%	<p>Deletes Flolite and adds natural gas as primary fuel and No. 2-6 virgin oils as stand-by fuels</p> <p>-----</p> <p>Imposes 15.0 lb/hr SO2 limit in lieu of fuel sulfur limits</p> <p>-----</p> <p><i>Hours-8200/yr</i></p> <p><i>Preheater feed -145 tph)</i></p> <p><i>Kiln -130 tph) 30-day avg</i></p> <p><i>Clinker -79.6 tph)</i></p> <p> </p> <p><i>Preheater fuel -165 tph)</i></p> <p><i>Kiln -148 tph) Max 1-hr</i></p> <p><i>Clinker - 90 tph)</i></p> <p> </p> <p><i>Heat Input-300 MMBtu/hr</i></p> <table border="0" style="margin-left: 40px;"> <thead> <tr> <th></th> <th style="text-align: center;">Firing Rate</th> <th style="text-align: center;">Heat Value</th> </tr> <tr> <th style="text-align: left;"><u>Fuels</u></th> <th style="text-align: center;"><u>(-/hr)</u></th> <th style="text-align: center;"><u>(Btu/-)</u></th> </tr> </thead> <tbody> <tr> <td>Coal</td> <td style="text-align: center;">24,000 lb</td> <td style="text-align: center;">12,500 lb</td> </tr> <tr> <td>No. 2</td> <td style="text-align: center;">2,116 gal</td> <td style="text-align: center;">141,300 gal</td> </tr> <tr> <td>No. 4</td> <td style="text-align: center;">2,060 gal</td> <td style="text-align: center;">145,600 gal</td> </tr> <tr> <td>No. 5</td> <td style="text-align: center;">2,016 gal</td> <td style="text-align: center;">148,800 gal</td> </tr> <tr> <td>No. 6</td> <td style="text-align: center;">1,982 gal</td> <td style="text-align: center;">151,300 gal</td> </tr> <tr> <td>Gas</td> <td style="text-align: center;">292,683 ft3</td> <td style="text-align: center;">1,025 ft3</td> </tr> </tbody> </table>		Firing Rate	Heat Value	<u>Fuels</u>	<u>(-/hr)</u>	<u>(Btu/-)</u>	Coal	24,000 lb	12,500 lb	No. 2	2,116 gal	141,300 gal	No. 4	2,060 gal	145,600 gal	No. 5	2,016 gal	148,800 gal	No. 6	1,982 gal	151,300 gal	Gas	292,683 ft3	1,025 ft3
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**PERMITTING HISTORY
CLINKER COOLER NO. 1**

**SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
Effective date of NSPS 8/1/71	0.10 lb/hr kiln feed	10%	
Initial Construction Permit Issued ~12/18/73			Permit not available.
January 6, 1975 PSD rules effective			No major modification or construction after this date without PSD permit.
AC27-186923 Issued 3/8/91 Expired 12/31/91 Extended 5/31/92 Extended 5/31/93			Permit issued for Kiln No. 1 to establish federally enforceable permit limits. ----- <i>Kiln Feed - 130 tph (wet basis)</i> <i>Clinker Production - 79.6 tph (dry basis)</i> <i>Hours - 8760/yr</i>
Application to Modify No. 1 System Auxiliary sources to be consistent with AC27-186923 Filed 1/18/91			

**PERMITTING HISTORY
CLINKER COOLER NO. 1**

**SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
AC27-191611 Issued 12/31/91 Expired ?			Permit not available ----- Clinker throughput - 84 tph ----- Permit AC27-186923 for Kiln No. 1 as proposed (1/18/91) had PM limits for Clinker Cooler No. 1 of 0.1 lb/ton kiln feed, 13.0 lb/hr and 56.6 tpy (8700 hr/yr). Applicant requested these limits be removed because of ongoing amendments to Cooler No. 1 permit. Emission limits in subsequent AO27-201252 are similar to Cooler No. 2 limits in AC27-185906 (1/25/91). Cooler No. 2 limits were established to avoid PSD review. This is probably the reason for limits in AO27-201252.
AO27-201252 Issued 1/23/92 Expires 1/19/97 Amended 2/12/92 Replaces AC27-191611	7.13 lb/hr 28.14 tpy	10%	Clinker throughput - 84 tph Hours - 7896/yr (issued) Hours - 8760/yr (amended)
AC27-258569 Issued ~ 4/95 Expired 3/31/96 Extended by Title V Replaces AO27-210252	7.13 lb/hr 28.14 tpy	10%	Clinker throughput -90 tph; maximum 1-hour 84 tph, 30-day average Hours - 8760/yr

**PERMITTING HISTORY
CLINKER COOLER NO. 2**

**SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
Initial Construction Permit Application 5/15/80	7.1 lb/hr 28.0 tpy	10%	Requested emission limits based on NSPS limit of 0.1 lb PM/ton kiln feed. However, clinker production of 71 tph was used to calculate mass emission rate rather than kiln feed rate of 120 tph. ----- Hours - 7896/yr
Permit AC27-30449 Issued 7/25/80 Expired 12/31/83	7.1 lb/hr 28.0 tpy	10%	Cooler throughput - 71 tph Hours - 7896/yr
PSD-FL-063 3/25/81	7.1 lb/hr	10%	EPA calculated mass emission rate as 71 tph kiln feed @ 9.8% moisture x 0.066 lb PM/ton dry kiln feed
AO27-65210 Issued 4/21/83 Expired 4/5/88 Supersedes AC27-30449			Permit not available.

**PERMITTING HISTORY
CLINKER COOLER NO. 2**

**SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
AO27-143885 Issued 4/5/88 Expired 4/1/93 Replaced AC27-65210			Permit not available.
Application to Modify AC27-30449 and AO27-143885 Filed 8/30/90	5.0 lb/hr 20.5 tpy	10%	Clinker throughput - 84 tph Hours - 8200 hr/yr ----- Emission limit based on actual emissions of 3.8 lb/hr. Intent was to avoid PSD review.
Permit AC27-185906 Issued 1/25/91 Expired 12/31/91 Replaced AC27-30449 and AO27-143885	5.0 lb/hr 20.5 tpy	10%	Clinker throughput - 84 tph Hours - 8200/yr

**PERMITTING HISTORY
CLINKER COOLER NO. 2**

**SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT**

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
AO27-194670 Issued ? Expired 4/30/96 Supersedes AC27-185906	5.0 lb/hr 20.5 tpy	10%	Clinker throughput - 84 tph Hours - 8200/yr
Permit AC27-258570 Issued ? Expired 3/31/96 Extended by Title V Replaced AC27-185906 and AO27-194670	5.0 lb/hr 20.5 tpy	10%	Clinker throughput - 90 tph maximum 1-hour 84 tph 30-day average Hours - 8200/yr

6/4/96 - End