

Part 70 Operating Permit Amendment

Permit Amendment No.: 3255-261-0047-V-04-9 **Effective Date:**

Facility Name: **C-E Minerals Plant 2**
Highway 195
Andersonville, Georgia 31711 (Sumter County)

Mailing Address: P.O. Box 37
Andersonville, Georgia 31711

Parent/Holding Company: IMERYS

Facility AIRS Number: 04-13-261-00047

In accordance with the provisions of the Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq and the Georgia Rules for Air Quality Control, Chapter 391-3-1, adopted pursuant to and in effect under the Act, the Permittee described above is issued a construction permit for:

Construction and operation of a direct coal-fired kaolin processing Kiln (ID No. 6K) and Caustic Scrubber (ID No. SC06).

This Permit Amendment is conditioned upon compliance with all provisions of The Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq, the Rules, Chapter 391-3-1, adopted and in effect under that Act, or any other condition of this Permit Amendment and Permit No. 3255-261-0047-V-04-0. Unless modified or revoked, this Permit Amendment expires upon issuance of the next Part 70 Permit for this source.

This Permit Amendment may be subject to revocation, suspension, modification or amendment by the Director for cause including evidence of noncompliance with any of the above; or for any misrepresentation made in Application No. 17595 dated August 9, 2007; any other applications upon which this Permit Amendment or Permit No. 3255-261-0047-V-04-0 are based; supporting data entered therein or attached thereto; or any subsequent submittal or supporting data; or for any alterations affecting the emissions from this source.

This Permit Amendment is further subject to and conditioned upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached **9** pages.

Director
Environmental Protection Division

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PART 1.0 FACILITY DESCRIPTION**1.3 Process Description of Modification**

Kaolin ore is the primary raw material processed in the direct coal-fired rotary kiln. The ore is first extruded into pellets and dried. These pellets are fed to the direct coal-fired rotary kiln where hot air flows counter current to the material's direction of travel. The pellets are discharged from the kiln into a kiln cooler. Emissions from the direct coal-fired rotary kiln will be vented to the high efficiency caustic scrubber for the control of PM₁₀, SO₂, and HCl.

PART 3.0 REQUIREMENTS FOR EMISSION UNITS

3.1.1 Additional Emission Units

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements / Standards	Corresponding Permit Conditions	ID No.	Description
6K	Kiln No. 6	40CFR Part 60 UUU 40 CFR Part 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(p) 391-3-1-.02(2)(g)	3.3.2, 3.2.10, 3.2.11, 3.2.12, 3.2.13, 3.4.1, 3.4.2, 3.4.3, 4.2.4, 4.2.5, 5.2.7, 5.2.8, 5.2.18, 5.2.19, 5.2.20, 6.1.4, 6.1.7, 6.2.5, 6.2.16, 6.2.17, 6.2.18, 6.2.19, 6.2.20	SC06	Caustic Scrubber

* Generally applicable requirements contained in this permit may also apply to emission units listed above.

3.2 Equipment Emission Caps and Operating Limits

- 3.2.10 The Permittee shall not discharge, or cause the discharge, into the atmosphere nitrogen oxide (NO_x) emissions in an amount exceeding 110 pounds per hour from Kiln No. 6 (Emission Unit ID No. 6K).
[40 CFR 52.21(j)]
- 3.2.11 The Permittee shall not discharge, or cause the discharge, into the atmosphere particulate matter (PM/PM₁₀) less than 10 microns emissions in an amount exceeding 11.2 pounds per hour from Kiln No. 6 (Emission Unit ID No. 6K).
[40 CFR 52.21(j)]
- 3.2.12 The Permittee shall not discharge, or cause the discharge, into the atmosphere sulfur dioxide (SO₂) emissions from Kiln No. 6 (Emission Unit ID No. 6K) in an amount exceeding 39.0 tons per any twelve-month rolling period.
[Avoidance of 40 CFR 52.21]
- 3.2.13 The Permittee shall not discharge, or cause the discharge, into the atmosphere hydrogen chloride (HCl) emissions from Kiln No.6 (Emission Unit ID No.6K) in an amount exceeding 9.9 tons per any twelve-month rolling period.
[Avoidance of 112(g)]
- 3.2.14 The Permittee shall not discharge, or cause the discharge, into the atmosphere particulate matter (PM/PM₁₀) less than 10 microns emissions in an amount exceeding 20.0 pounds per hour from Apron Dryer #3 (Emission Unit ID No. APD3).
[391-3-1-.02(1)(c)]
- 3.2.15 Visible emissions from the stack of the Apron Dryer #3 (Stack ID 31) shall not exceed 10 percent opacity with opacity data reduction accomplished utilizing EPA Method 9, as published in the Federal Register (6 minutes average).
[391-3-1-.02(1)(c)]

PART 4.0 REQUIREMENTS FOR TESTING**4.1 General Testing Requirements**

- 4.1.3 Performance and compliance tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division's Procedures for Testing and Monitoring Sources of Air Pollutants. The methods for the determination of compliance with emission limits listed under Sections 3.2, 3.3, 3.4 and 3.5 are as follows:
- a. Method 1 for the determination of sample point locations,
 - b. Method 2 for the determination of flow rate,
 - c. Method 3 or 3A for the determination of stack gas molecular weight,
 - d. Method 4 for the determination of stack gas moisture,
 - e. Method 5 or Method 17, as applicable, for the determination of Particulate Matter emissions, the minimum sampling volume for each run shall be at least 1.70 dscm (60 dscf) and M-5 in conjunction with M-202 for PM-10,
 - f. Method 6 or 6C for the determination of Sulfur Dioxide concentration,
 - g. Method 9 and the procedures contained in Section 1.3 of the above reference document for the determination of opacity,
 - h. Method 22 for the visual determination of fugitive emissions,
 - i. Method 7E for the determination of nitrogen oxides emissions,
 - j. Method 202 for the determination of condensable particulate matter.

Minor changes in methodology may be specified or approved by the Director or his designee when necessitated by process variables, changes in facility design, or improvement or corrections that, in his opinion, render those methods or procedures, or portions thereof, more reliable.

[391-3-1-.02(3)(a)]

4.2 Specific Testing Requirements

- 4.2.4 The Permittee shall conduct, or cause to be conducted a performance test to determine NO_x and particulate matter emissions in order to determine compliance with Condition Nos. 3.2.10 and 3.2.11, respectively. The tests shall be conducted within 180 days of startup of Kiln No. 6. The tests shall be conducted at the maximum anticipated production rate.
[40 CFR 70.6(a)(3)(i)(B) and 391-3-1-.02(3)]
- 4.2.5 The Permittee shall conduct, or cause to be conducted a performance test to determine the SO₂ and HCl control efficiency of the caustic scrubber (APCD ID No. SC06) and the hourly emissions rate of HCl in units of pounds per hour. The tests shall be conducted within 180 days of startup of Kiln No. 6. The tests shall be conducted at the maximum anticipated production rate.
[40 CFR 70.6(a)(3)(i)(B) and 391-3-1-.02(3)]
- 4.2.6 The Permittee shall conduct, or cause to be conducted particulate matter and visible emissions performance test for Apron Dryer #3 to determine compliance with Condition Nos. 3.2.14 and 3.2.15, respectively. The tests shall be conducted within 180 days of startup of Kiln No. 6. The tests shall be conducted at the maximum anticipated production rate.

PART 5.0 REQUIREMENTS FOR MONITORING (Related to Data Collection)**5.2 Specific Monitoring Requirements**

5.2.18 The Permittee shall install, calibrate, maintain, and operate a system to continuously monitor and record the indicated parameters on the following equipment. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.

[391-3-1-.02(6)(b)1, 40 CFR 70.6(a)(3)(i), and 40 CFR 60.734(d)]

- a. Scrubbant flow rate for the Caustic Scrubber (APCD ID No. SC06) during operation of Kiln No. 6.
- b. Pressure drop across the Caustic Scrubber (APCD ID No. SC06) during operation of Kiln No. 6.

The pressure gauge monitoring device must be certified to be accurate within 5 percent of water column gauge pressure at the level of operation. The scrubbant liquid monitoring device must be accurate within 5 percent of design scrubbing liquid flow rate.

5.2.19 The Permittee shall install, calibrate, maintain, and operate a system to monitor the pH of the scrubbant in the caustic scrubber and record the value no less than once per calendar day of operation of Kiln No. 6. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.

[391-3-1-.02(6)(b)1, 40 CFR 70.6(a)(3)(i), and 40 CFR 60.734(d)]

5.2.20 The Permittee shall install, calibrate, maintain, and operate a system to monitor the SO₂ concentrations in parts per million (ppm) of the scrubbant in the caustic scrubber and record the value no less than once per calendar week of operation of Kiln No. 6. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.

[391-3-1-.02(6)(b)1, 40 CFR 70.6(a)(3)(i), and 40 CFR 60.734(d)]

PART 6.0 OTHER RECORD KEEPING AND REPORTING REQUIREMENTS**6.1 General Record Keeping and Reporting Requirements****Revised**

6.1.7 For the purpose of reporting excess emissions, exceedances or excursions in the report required in Condition 6.1.4, the following excess emissions, exceedances, and excursions shall be reported:

[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

- a. Excess emissions: (means for the purpose of this Condition and Condition 6.1.4, any condition that is detected by monitoring or record keeping which is specifically defined, or stated to be, excess emissions by an applicable requirement)
 - i. None required to be reported in accordance with Condition 6.1.4.
- b. Exceedances: (means for the purpose of this Condition and Condition 6.1.4, any condition that is detected by monitoring or record keeping that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) do not meet the applicable emission limitation or standard consistent with the averaging period specified for averaging the results of the monitoring)
 - i. Any 12-consecutive month period during which fuel oil was fired in the Rotary Dryer (BD2) more than 1,200 hours.
 - ii. Deleted
 - iii. Deleted
 - iv. Deleted
 - v. Deleted
 - vi. Deleted
 - vii. Deleted
 - viii. Deleted
 - ix. Deleted
 - x. Deleted
 - xi. Any time when fuel other than natural gas, propane, or No. 2 fuel is fired in the Rotary Dryer (BD2).
 - xii. Any time when coal fired in a Rotary Kiln (K1, K2, K3, K4 or K5) contains more than 2.5% sulfur by weight.
 - xiii. Any time when fuel oil is fired that does not meet the definition of distillate oil as specified in Condition 6.2.4.
 - xiv. Any time when Baghouse CBH4 is not operated while processing dry kaolin, dry bauxitic, meta kaolin, or meta bauxitic clays in Cooler (K1) or Cooler (K4).
 - xv. **Any twelve-month rolling total SO₂ emissions from Kiln No. 6 exceeding 39.0 tons.**

- c. Excursions: (means for the purpose of this Condition and Condition 6.1.4, any departure from an indicator range or value established for monitoring consistent with any averaging period specified for averaging the results of the monitoring)
- i. Any two consecutive required daily determinations of visible emissions requiring action by Condition 5.2.2 a. or b. from the same source.
 - ii. Any visible emissions or mechanical failure or malfunction discovered by the walk through described in Condition 5.2.6 that are not eliminated or corrected within 24 hours of first discovering the visible emissions or mechanical failure or malfunction.
 - iii. Each occurrence when the temperature at the inlet of any baghouse specified in Condition 5.2.4 exceeds the filter bag design temperature or the equivalent filter bag design temperature recorded in accordance with Condition 5.2.4.
 - iv. Any average SO₂ concentration, measured in accordance with Condition 5.2.7, which is greater than 450 ppm.
 - v. Any pH measurement below 5.0, measured in accordance with Condition 5.2.8.
 - vi. Any two-hour average of the wet scrubber pressure loss required by Condition 5.2.1 that is less than 10.8 inches of water column for each scrubber (1KZ, 2KZ, 3KZ, 4KZ, and 5KZ).
 - vii. Any two-hour average of the wet scrubber liquid flow rate required by Condition 5.2.1 that is less than 344 gallons per minute or greater than 516 gallons per minute for each scrubber (1KZ, 2KZ, 3KZ, 4KZ, and 5KZ).
 - viii. For scrubber CMD2, any two-hour block average of the wet scrubber pressure loss that is less than 90 percent of the value established in Condition 5.2.10. For the purposes of this permit, a two-hour block average shall be defined as any one of the eight consecutive two-hour time periods between 12:00 midnight and the following midnight.
 - ix. For scrubber CMD2, any two-hour block average of the wet scrubber liquid flow rate that is less than 80 percent or more than 120 percent of the value established in condition 5.2.11. For the purposes of this permit, a two-hour block average shall be defined as any one of the eight consecutive two-hour time periods between 12:00 midnight and the following midnight.
 - x. **Any daily recorded pH of the scrubbant in the caustic scrubber below 5.0 standard units during operation of Kiln No. 6.**
 - xi. **Any daily 2-hour average of the caustic scrubber pressure drop that is less than 90 percent of the average value recorded during the performance test required per Condition No. 4.2.5.**
 - xii. **Each daily caustic scrubber liquid flow rate that is less than 80 percent or greater than 120 percent of the average value recorded during the performance test required per Condition No. 4.2.5.**
- d. In addition to the excess emissions, exceedances and excursions specified above, the following should also be included with the report required in Condition 6.1.4:
- i. Deleted.
 - ii. The report shall contain fuel supplier certifications and a certified statement from a Responsible Official that the records of fuel supplier certifications submitted represent all of the fuel oil combusted during the semiannual period.

- If no fuel oil was combusted during the semiannual period, the report should so state.
- iii. The report shall contain coal supplier records and a certified statement from a Responsible Official that the records of fuel supplier analyses submitted represent all of the coal combusted during the semiannual period. If no coal was combusted during the semiannual period, the report should so state.
 - iv. The report shall contain a certified statement from a Responsible Official showing all fuels that were fired in the Rotary Dryer (BD2) during the reporting period.
 - v. A report, prepared from the records required by Condition 6.2.7, of start and end times for the operation of Baghouse CBH4 and operations of Coolers K1 and K4, which represent each day or portion of each day dry kaolin, dry bauxitic, meta kaolin, or meta bauxitic clay is processed.
 - vi. A report, prepared from the records required by Condition 6.2.8 for Rotary Dryer (ID No. BD2). The report shall consist of six 12-consecutive month totals (a total for each month in the semiannual reporting period) of the hours of operation of the dryer on No. 2 fuel oil. A 12-consecutive month total shall be defined as the sum of the hours of operation for a month plus the total hours of operation for the previous 11 consecutive months.
 - vii. The 12-month rolling total SO₂ emissions from Kiln No. 6 for each calendar month.**
 - viii. The 12-month rolling total HCl emissions from Kiln No. 6 for each calendar month.**

6.2 Specific Record Keeping and Reporting Requirements

6.2.16 The Permittee shall maintain records of the following for each calendar month.
[391-3-1-.02(6)(b)1, 391-3-1.03(2)(c)]

- a. The amount of coal combusted in Kiln No. 6 utilizing the records maintained per Condition No. 6.2.5.
- b. The weight percent sulfur of the coal combusted in Kiln No. 6 utilizing the records maintained per Condition No. 6.2.5.

6.2.17 The Permittee shall use the records required in Condition 6.2.16 and the equation below to calculate monthly SO₂ emissions from Kiln No. 6 (Emission Unit ID No. 6K).
[391-3-1-.02(6)(b)1, 391-3-1.03(2)(c)]

$$\text{SO}_2 (\text{tons emitted month}) = (\text{APEF}) * (\text{C}) * (1 - \text{CE}) / 2,000$$

Where,

- APEF = The appropriate AP-42 emission factor for the coal combusted in Kiln No. 6, lbs SO₂/ton coal combusted
- C = The amount of coal combusted in Kiln No. 6 each calendar month, tons
- CE = SO₂ control efficiency for the caustic scrubber (APCD ID No. SC06) as determined from the performance test specified in Condition No. 4.2.4 or the most recent performance test.

All demonstration calculations, including any Division-approved emission factor, control efficiency used in the calculations, shall be kept as part of the records required in Condition 6.2.16. The Permittee shall notify the Division in writing if the combined total monthly SO₂ emissions from Kiln No. 6 exceed 3.25 tons during any calendar month. This notification shall be postmarked by the thirtieth day of the following month and shall include an explanation of how the Permittee intends to maintain compliance with the emission limit in Condition 3.2.12.

- 6.2.18 The Permittee shall use the monthly SO₂ emission data required in Condition 6.2.17 to calculate the combined 12-month rolling total of SO₂ emissions from Kiln No. 6 (Emission Unit ID No. 6K) for each calendar month. The Permittee shall notify the Division in writing if the combined 12-month rolling total of SO₂ emissions from Kiln No. 6 exceeds 39.0 tons. This notification shall be postmarked by the thirtieth day of the following month and shall include an explanation of how the Permittee intends to attain compliance with the emission limit in Condition No. 3.2.12.

[391-3-1-.02(6)(b)1, 391-3-1.03(2)(c)]

- 6.2.19 The Permittee shall use the records required in Condition 6.2.16 and the equation below to calculate monthly HCl emissions from Kiln No. 6 (Emission Unit ID No. 6K).

$$\text{HCl (tons emitted month)} = (\text{APEF}) * (\text{C}) * (1 - \text{CE}) / 2,000$$

Where,

APEF = The appropriate AP-42 emission factor for the coal combusted in Kiln No. 6, lbs HCl/ton coal combusted

C = The amount of coal combusted in Kiln No. 6 each calendar month, tons

CE = HCl control efficiency for the caustic scrubber (APCD ID No. SC06) as determined from the performance test specified in Condition No. 4.2.4.

All demonstration calculations, including any Division-approved emission factor, control efficiency used in the calculations, shall be kept as part of the records required in Condition 6.2.16. The Permittee shall notify the Division in writing if the combined total monthly HCl emissions from Kiln No. 6 exceed 0.825 tons during any calendar month. This notification shall be postmarked by the thirtieth day of the following month and shall include an explanation of how the Permittee intends to maintain compliance with the emission limit in Condition 3.2.13.

[391-3-1-.02(6)(b)1, 391-3-1.03(2)(c)]

- 6.2.20 The Permittee shall use the monthly HCl emission data required in Condition 6.2.19 to calculate the combined 12-month rolling total of HCl emissions from Kiln No. 6 (Emission Unit ID No. 6K) for each calendar month. The Permittee shall notify the Division in writing if the combined 12-month rolling total of HCl emissions from Kiln No. 6 exceeds 9.9 tons. This notification shall be postmarked by the thirtieth day of the following month and shall include an explanation of how the Permittee intends to attain compliance with the emission limit in Condition No. 3.2.13.

[391-3-1-.02(6)(b)1, 391-3-1.03(2)(c)]