

April 2, 1997

SCANNED

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Sheryl Corrigan
3M Environmental Technology & Services
879 East 7th Street
Building 41-01-05
P.O. Box 33331
St. Paul, MN 55133-3331

Re: Consent Order #97-029-W
General Electric Company/Minnesota Mining and Manufacturing Company
Laurens County

Dear Ms. Corrigan:

Enclosed is the fully executed Consent Order #97-029-W affecting General Electric Company/Minnesota Mining and Manufacturing Company. The Order is considered issued on March 28, 1997.

If you have any questions in this matter, please call me at (803) 734-5304.

Sincerely,



Frank Lupini
Environmental Quality Manager
Water Enforcement Division

cc: Jack Butler, General Electric Company
David Graves, w/o enclosure
Tom Knight, w/enclosure
Stacey Hunter-Shaw, w/enclosure
Upper Savannah District Office, w/enclosure

**THE STATE OF SOUTH CAROLINA
BEFORE THE DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL**

**IN RE: General Electric Company
Minnesota Mining and Manufacturing Company
Laurens County**

**CONSENT AGREEMENT
97-029-W**

In June 1990, General Electric Company (GE) and the South Carolina Department of Health and Environmental Control (Department) entered into Settlement Agreement 90-34-W under which GE agreed to undertake certain investigative and remedial actions at the Alsimag facility formerly owned by it, in Laurens County, South Carolina. Minnesota Mining and Manufacturing Company (3M) owned the Alsimag facility prior to ownership by GE. 3M and GE have jointly undertaken the activities required under Settlement Agreement 90-34-W. The actions of 3M and GE under Settlement Agreement 90-34-W have been voluntary, and undertaken with the approval of the Department.

In accordance with approved procedures, and in order to provide further assessment of remedial alternatives at the Facility, all parties have agreed to the issuance of this Consent Agreement, without adjudication of any fact or conclusion of law, and without any admission of any violation of law or liability by either 3M or GE including the following Findings of Fact and Conclusions of Law. This Agreement supersedes Settlement Agreement 90-34-W.

FINDINGS OF FACT

1. The Facility is located approximately two miles northwest of the Town of Laurens, South Carolina on the south side of State Road 14 at the intersection with State Road 24. The property encompasses 242 acres.
2. Initial construction of the Facility took place during the period 1960 - 1961. The Facility began operation in 1961, as part of American Lava Company, a subsidiary of 3M. In 1975, the business was operated as the Technical Ceramics Products Division of 3M. In 1983, General Electric Ceramics Inc. (GECI) purchased the Facility. GECI sold the Facility in March 1988 to Great American Industrial Group. The Great American Industrial Group transferred the Facility to Eagle Industries which sold the Facility to AlSiMag Technical Ceramics, Inc. (AlSiMag) in 1991. AlSiMag is the current owner and operator of the Facility.
3. The Facility is engaged in the manufacture of various ceramic products, primarily for the textile and electronics industries. Manufacturing operations have occurred in two buildings at the Facility known as Plants One and Two. The Facility formerly utilized three wastewater settling ponds identified as Plant One - Pond One, Plant Two - Pond One and Plant Two - Pond Two. Effluent from the Facility was discharged from the ponds to the Laurens County Wastewater Treatment System.
4. An industrial waste landfill was also operated on the Facility near the western property boundary approximately 1300 feet from State Route 14. In 1983, GE excavated 11 truck loads of material from this landfill. The excavated material was shipped under manifest to a permitted landfill in Emelle, Alabama.

5. GE performed both a Phase I Preliminary Environmental Assessment (PEA) and a Phase II Assessment of the Facility. A copy of the Phase II Assessment was submitted to the Department on April 13, 1990. The Phase I and Phase II Assessments confirmed the existence of volatile organic compounds (VOCs) in groundwater beneath the facility. As a part of the Phase II Assessment, GE collected groundwater samples from nearby residential supply wells (Grant and Kinard). One of these wells indicated the presence of VOCs (Grant). Although the source of VOCs in this well were not known, GE proceeded to connect this residence to a public water supply on April 3, 1989. The Department also sampled several nearby residential supply wells in June 1989, and found no detectable levels of VOCs.
6. Subsequent to comments having been received from the Department on the aforementioned Phase II Assessment in May of 1991, a comprehensive groundwater, surface water and well water sampling and analysis program was conducted in September and October of 1991. The purpose of these studies was to provide data on the concentration of selected VOC constituents in surface water and groundwater at the Facility. Additionally, this activity was designed to assist in the development of a conceptual hydrogeologic model and included a historical record review, an aerial photographic review, and a fracture trace analysis.
7. The well water sampling conducted in September 1991 indicated that one residential well (Kinard) contained concentrations of VOCs below drinking water standards. GE and 3M promptly installed carbon filters which successfully removed the VOCs from the Kinard residential well water. This residence and two other nearby residences (Kinard rental

trailer and the Fulbright residence) were routinely sampled by 3M and GE for VOC analysis until such time as all three residences were connected to a public water supply by 3M and GE.

8. As approved by the Department, various additional site characterization activities took place at the Facility from 1992-1996. These activities included the installation of 34 monitoring wells, soil, soil gas groundwater and surface water sampling (over 400 samples taken and analyzed), oriented coring, fracture trace analyses, geophysical investigation of selected areas, pump testing, long-term water level monitoring, and extensive computer analysis/modeling of the Facility hydrogeologic setting. These efforts led to the generation of a three-dimensional conceptualization of the site, which was used to complete the assessment. As a result of the assessment activities, the following facts and conclusions have been confirmed:
 - A. Analysis of groundwater samples taken to the east of Plant Two on property formerly owned by Hester indicated low levels of VOCs.
 - B. The receptor of any groundwater contamination emanating from the Plant Two area (including the former Hester property) is an unnamed tributary of Reedy Fork Creek. This unnamed tributary is located to the east of the Facility. VOCs discharged into this water body quickly dissipate through natural attenuation to nondetectable levels, as confirmed by surface water samples collected from 1991 through 1996.
9. In 1996, 3M purchased property owned by Hester in fee and also purchased easements from Fulbright and Kinard restricting the use of groundwater at those properties.

10. Pursuant to Settlement Agreement 90-34-W, 3M and GE have pursued development of an interim groundwater recovery system in the area adjacent to Plant Two. Approval of this activity was received from Laurens County in August 1995 and from the Department in March and December 1995. On April 17, 1996, 3M and GE presented the data outlined in paragraph 8(B) above to the Department. At that time the Department agreed that implementation of a groundwater pump and treat remedial system at Plant Two was not needed for plume control and would not be undertaken.
11. Closure of the two wastewater treatment ponds at Plant Two and the wastewater treatment pond at Plant One was completed in 1995 in accordance with a Closure Plan dated August 1994 and approved with certain modifications by the Department in 1995. The Closure Report for the wastewater ponds was submitted to the Department in February 1996.
12. A comprehensive inventory of residential water supply wells in the vicinity of the Facility was conducted by 3M and GE and presented to the Department in February 1995, with a proposal for selective sampling. Pursuant to Department approval, six residential wells were jointly sampled by 3M/GE and the Department in May 1995. Both the 3M/GE and the Department results showed no detectable levels of VOCs in any of the sampled residential wells.

CONCLUSIONS OF LAW

1. The Pollution Control Act, S.C. Code § 48-1-20 (1987), states that "the Department has the authority to abate, control and prevent pollution."

2. Code §§ 48-1-50(3) and (11) enumerate the powers of the Department and specify the Department's authority to make, revoke or modify orders and administer penalties for violation of the Chapter, respectively.

THEREFORE, IT IS CONSENTED TO AND AGREED, that 3M and GE shall, without admitting liability, accomplish the requirements detailed below. Upon receipt of any submission required under this Agreement, the Department shall expeditiously review and notify 3M and GE in writing whether the submission is approved. If the submission is unacceptable the notification will specify the reasons why approval cannot be granted. Upon Department approval of submittals and schedules contemplated by this Agreement, such submittals and schedules shall become a part of this Agreement.

PHASE I

Confirmatory Sampling

1. Within forty-five (45) days of the effective date of this Agreement, 3M and GE shall present the Department with a Work Plan for the confirmatory sampling in the area of Plant Two (Plant Two Work Plan) to confirm the conclusions of Paragraph 8(B) above.
2. Within thirty (30) days of Department approval of the Plant Two Work Plan, 3M and GE shall initiate the activity specified therein in accordance with the schedule contained in that work plan.

3. Within ninety (90) days of completion of work under the Plant Two Work Plan, 3M and GE shall present to the Department a Remedial Option Evaluation and Implementation Plan (ROE/IP) which will analyze options and define any remedial activity necessary for plume control in the Plant Two Area.

Source Control Alternative Analysis

1. Within forty-five (45) days of the effective date of this Agreement, 3M and GE shall present to the Department a Work Plan for source control alternative analysis (SCAA) in the Plant Two Area.
2. Within ninety (90) days of Department approval of the Plant Two SCAA, 3M and GE shall begin implementation of same in accordance with the schedule contained therein.

Landfill Closure

1. Within ninety (90) days of the effective date of this Agreement, 3M and GE shall present to the Department a Work Plan for the closure of the Landfill (Landfill Closure Plan).
2. Within thirty (30) days of receipt of Department approval of the Landfill Closure Plan, and agreement of the parties, 3M and GE shall begin implementation of same and complete the work specified in the Landfill Closure Plan in accordance with the schedule contained in that Plan.

PHASE II

Landfill Groundwater Assessment

1. Within forty-five (45) days of the approval of the Plant Two ROE/IP of this Agreement, 3M and GE shall present to the Department a Work Plan for additional groundwater characterization in the area of the Landfill. (Landfill Groundwater Assessment Work Plan).
2. Within thirty (30) days of receipt of Department approval of the Landfill Groundwater Assessment Work Plan, 3M and GE shall begin implementation of same and shall complete same in accordance with the schedule contained therein.
3. Within ninety (90) days of completion of the Groundwater Assessment of the Landfill area, 3M and GE shall present to the Department an ROE/IP report outlining any remedial measures that may be necessary for the Landfill area.

Plant 1 Groundwater Assessment

1. Within forty-five (45) days of acceptance of the Plant Two ROE/IP and completion of the Plant Two SCAA, 3M and GE shall present to the Department a Work Plan for the investigation of groundwater in the Plant One area. (Plant One Groundwater Assessment Work Plan).
2. Within thirty (30) days of approval of the Plant One Groundwater Assessment Work Plan by the Department, 3M and GE shall begin implementation of same and shall complete the Assessment in accordance with the schedule contained in the work plan.
3. Within ninety (90) days of completion of the groundwater assessment activities for the Plant One Area, 3M and GE shall present to the Department an ROE/IP and an SCAA outlining any remedial measures that may be necessary for the Plant One

Area (Plant One ROE/IP and SCAA). If remedial measures are necessary the ROE/IP and SCAA will contain a schedule for completion of additional work.

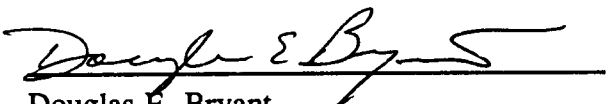
IT IS FURTHER UNDERSTOOD AND AGREED, that if any event occurs which causes or may cause a delay in meeting any of the above scheduled dates for completion of any specified activity, notify the Department in writing at least one (1) week before the scheduled date, describing in detail the anticipated length of the delay, the precise cause or causes of delay, if ascertainable, the measures taken or to be taken to prevent or minimize the delay, and the timetable by which those measures will be implemented.

The Department shall provide written notice as soon as practicable that a specified extension of time has been granted or that no extension has been granted. An extension shall be granted for any scheduled activity delayed by an event of *force majeure*, which shall mean any event arising from causes beyond the control of the Respondent 3M and GE that causes a delay in or prevents the performance of any of the conditions under this Consent Order including, but not limited to: a) acts of God, fire, war, insurrection, civil disturbance, explosion; b) adverse weather condition that could not be reasonably anticipated causing unusual delay in transportation and/or field work activities, c) restraint by court order or order of public authority; d) inability to obtain, after exercise of reasonable diligence and timely submittal of all applicable applications, any necessary authorizations, approvals, permits, or licenses due to action or inaction of any governmental agency or authority; and e) delays caused by compliance with applicable statutes or regulations governing contracting, procurement or acquisition procedures, despite the exercise of reasonable diligence by the Respondent 3M and GE.

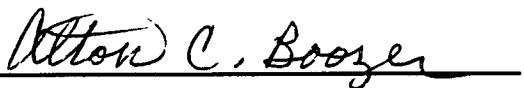
Events which are not *force majeure* include by example, but are not limited to, unanticipated or increase costs of performance, changed economic circumstances, normal precipitation events, or any person's failure to exercise due diligence in obtaining governmental permits of fulfilling contractual duties. Such determination will be made in the sole discretion of the Department. Any extension shall be incorporated by reference as an enforceable part of this Consent Order and thereafter be referred to as an attachment to the Consent Order.

IT IS FURTHER AGREED, that failure to comply with any provision of this Agreement may be grounds for further sanctions and enforcement.

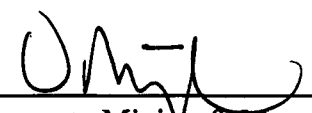
THE SOUTH CAROLINA DEPARTMENT OF
HEALTH AND ENVIRONMENTAL CONTROL

BY: 
Douglas E. Bryant
Commissioner

DATE: 3/20/97

BY: 
Alton C. Boozer, Chief
Bureau of Water

WE CONSENT:


Minnesota Mining & Manufacturing

DATE: 2/11/97

Jane W. Gardner.
General Electric Company

DATE: 3-5-97

Clyde Porter
Attorney for Department

DATE: 3-27-97

Valerie A. Betterton
Valerie A. Betterton, Director
Water Enforcement Division

DATE: 3/20/97

P 053 412 399

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FEL/B. Glenn

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3. Article Addressed to:

Sheryl Corrigan
3M Environmental Technology & Serv
879 East 7th St., Bldg. 41-01-05
PO Box 33331
St. Paul, MN 55133-3331

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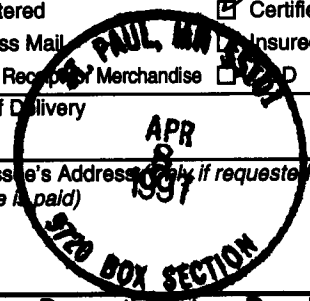
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PS Form 3811, December 1994

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