

Good Neighbor Campaign

Citizens' Audit of Eramet Marietta Marietta, Ohio

June 1, 2006



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Summary of Audit Findings

Many residents of the Mid-Ohio Valley believe the air quality in the area is unacceptable, poses a risk to their health and diminishes their quality of life. Over the past thirty years emissions have been reduced considerably, but our air remains among the unhealthiest in the United States. Eramet Marietta is a top polluter in the region, and there is a long history of citizen complaints about the plant. This audit was done to learn as much as possible about Eramet. We tracked the history of citizen involvement with the plant, the history and most recent information about their pollution, finances, permits, regulators, violations and incidents to better understand the impact Eramet has on our community. Through the audit process we discovered key findings:

Eramet Marietta's operations are unique in the United States and Canada. Their air permit was issued by the Ohio Environmental Protection Agency based on control technology that was in place in the late 1980's and they are currently allowed to release substantial amounts of manganese dust into the air as part of their routine operation. *Recent dust samples taken in the community found the presence of manganese in all sampling locations in Washington and Wood Counties.* In 2004 an analysis of data from air monitoring conducted by consultants with the Agency for Toxic Substances and Disease Registry (ATSDR) concluded that metals in the air, particularly arsenic, manganese, chromium and cadmium potentially pose a threat to residents close to the Eramet facility because they exceeded health-based screening values. Since the ATSDR sampling was done at a single location the magnitude of the exposure and the threat to public health remains uncertain.

The lack of comparable benchmark facilities in the domestic ferroalloy industry makes it more difficult to assess the performance of their control technology and set expectations for improvement. **However, Eramet owns comparable plants in Norway that put out significantly less pollution than their plant in Marietta.** In 2004, Eramet Marietta released 10 times the quantity of manganese-containing dust as similar plants operated by Eramet in Norway. Very few pounds of solid waste were discharged into the Norwegian waters in contrast to tens of thousands of pounds discharged into the Ohio River

Eramet Marietta also releases large amounts of fugitive ammonia into the air. These air emissions are currently not subject to regulation by Ohio Environmental Protection Agency. *There appears to be a pattern connecting the strong odor experienced by neighbors to the uncontained ammonia in the air.* Citizens' complaints about Eramet's pollution have dropped off in the last three years. Our interviews with citizens show they have given up complaining not because the problems have disappeared, but due to lack of response from Ohio EPA.

Southeast District office of Ohio EPA has experienced turnover in agency staff responsible for the Eramet facility. *EPA files are unorganized and lacking in documentation regarding pollution incidents, citizen complaints and violations.* Southeast District Office has the largest jurisdiction in the state of Ohio with 23 counties. The Logan office is 70 miles from Marietta. Given the distance, inspections by the Ohio Environmental Protection Agency are infrequent and enforcement appears to be lax. Eramet self reports accidents and malfunctions to the agency.

Eramet Marietta legally discharges ammonia and solids containing manganese and chromium into the Ohio River. The permit that expired March 31, 1999 contained exemptions for storm-water runoff which allowed large quantities of solids to be released. Eramet was recently fined \$3.25 million for violating those water regulations. *There is no current water permit available to be reviewed by the public and it is unclear what permit Eramet is currently operating under.*

Recommendations

We commend Eramet for the reductions of emissions they have made thus far in Marietta. We believe that further significant reductions are necessary and feasible. We recommend that the decision makers at Eramet Marietta work with citizens, agencies and the Eramet corporate headquarters to make the changes necessary to be a good neighbor.

Eramet Good Neighbor Campaign

Neighbors for Clean Air and Ohio Citizen Action launched a Good Neighbor Campaign focused on Eramet Marietta on March 1, 2006. This campaign's goals are to:

- Educate and activate citizens about pollution in their community
- Work with Eramet decision makers to reduce the pollution from their facility
- Improve communication and relationships between Eramet and its neighbors

The Neighbors for Clean Air (NCA) is a group of citizens in Washington County, Ohio and Wood County, West Virginia working to protect their families' health, air quality and environment. In February 2006 a community meeting on the subject of air pollution and Eramet was attended by approximately 50 people. Most of the attendees complained of the extreme odors from the plant and a metallic taste in the air. Many complained about the visible brown pollution coming from the facility. All agreed strongly that there was a major air pollution problem from Eramet. Almost everyone expressed frustration with the company, the Ohio EPA, the Ohio Department of Health and wanted to do something about the problem. All were disturbed by the recent AP report identifying Washington and Wood Counties among the worst in the nation in terms of risk to long-term health from industrial air pollution and naming Eramet as the largest contributor.

Neighbors for Clean Air formed with support from Ohio Citizen Action to work on reducing pollution levels in the valley. Identifying Eramet as the biggest polluter in Washington County, committees were formed to look at several aspects of the company. Members of the group have raised awareness of the pollution problem through letters to the local paper, canvassing neighborhoods surrounding the plant, and downtown "walk & talk" events. Others in the group have started measuring air pollution levels using portable gas analyzers and by collecting "swipe" samples. All citizens are encouraged to log pollution events, documenting the date and time of smells and visible pollution and send to the Neighbors for Clean Air PO box for entry into a database.

Ohio Citizen Action is Ohio's largest environmental organization with 100,000 dues paying members. Ohio Citizen Action supports local communities and companies in their efforts to prevent pollution. This campaign model has been used throughout the state and has successfully led to changes far beyond what federal or state regulations would require.

What is the Citizens' Audit?

The Citizens' Audit is a comprehensive report of the information collected by Neighbors for Clean Air and Ohio Citizen Action on what can be found in public records, from company management and workers and from citizens themselves, about pollution threats and nuisances from a factory. Questions asked in the audit come from citizens, addressing issues of importance to them and evaluating government and industry performance according to the citizens' standards.

Many of the fundamental questions include: What is known about potential environmental and public health threats? What laws does industry have to follow and are those laws being enforced? Are the laws effective? The Citizens' Audit puts all this information in one resource for community members, company decision makers and employees, agency personnel, health researchers, members of the media and anyone interested in Eramet's pollution.

Research included extensive file reviews at the Southeast District Office of the Ohio Environmental Protection Agency (OEPA), the websites of the United States Environmental Protection Agency (EPA), the Agency for Toxic Substances and Disease Registry (ATSDR), and Eramet. Other sources used were the Encyclopedia of Chemical Technology and citizens' own records.

1. Who is Eramet Marietta?

The facility now known as Eramet Marietta has produced manganese and special metal products used by the steel industry since 1951, when Union Carbide built the original plant on Route 7 about 4½ miles southwest of Marietta on the Ohio River. Union Carbide sold the ferroalloy plant to the Norwegian company, Elkem AIS in 1981. In 1999, the plant was sold again to Eramet SA, a French mining and metallurgical company. Presently Eramet Marietta employs about 400 workers. The facility complex is currently occupied by four companies including: Eramet Marietta, Eveready Battery, Solvay Advanced Polymers, and Chevron-Phillips Chemical Company. The power plant located across Route 7 from the complex, currently owned by American Municipal Power, was originally built to provide power to Union Carbide.

What do they do?

This plant is one of the world's largest manganese ferroalloys production sites and is the only producer of manganese ferroalloys in the United States and Canada. Ferroalloy products, combining iron with other metals, are used world-wide in steel production as an efficient way to improve hardness and abrasion resistance. The Marietta plant has three electric submerged arc furnaces housed in the large buildings visible along Route 7, south of the railroad tracks. The melting of the ore in the furnaces and the repeated grinding, crushing and conveying operations are responsible for the manganese-containing particulate emissions that are being spread by air currents throughout the valley. The plant is permitted for these emissions under both Ohio and Federal EPA regulations.

Eramet Marietta also makes high-purity chromium metal in buildings to the north side of the railroad tracks. They utilize a unique chemical process to refine chromium metal to an ultra-pure state. The ultra-pure chromium is used to produce superalloys required in high-performance gas-turbine engines for jet aircraft, ship propulsion, natural gas transmission, and electrical power generation. See the Appendix for detailed descriptions and process flow diagrams.

Who is Eramet SA?

Eramet SA is an integrated French mining and metallurgical company producing high-purity metals, ferroalloys and chemical derivatives. Eramet's global activities are spread across three business divisions with differing business cycles. Eramet Nickel is a world leader in nickel production, with mines in New Caledonia, holding 25% of the world's known nickel resources. The Alloys division, Eramet Alliances, includes Aubert & Duval and Erasteel, specializing in the production of high-speed steels and forged parts for aerospace and power generation. Eramet Manganese is the world's second largest producer of manganese alloys and consists of three subdivisions: Eramet Norway, Eramet Marietta and Comilog. Eramet Norway and Eramet Marietta refine ores supplied by Comilog. Comilog owns high grade manganese ore deposits in partnership with the state of Gabon in Africa.

In 2005 Eramet SA showed solid growth due to increased global consumption of carbon and stainless steels, especially by China. The global demand for manganese increased 6% in 2005 due to the increased production of carbon steel worldwide. The company plans to increase production of manganese ore through capacity expansion of Comilog. The company has advanced their timetable for construction of a new plant in China to produce electrolytic manganese dioxide for alkaline batteries.

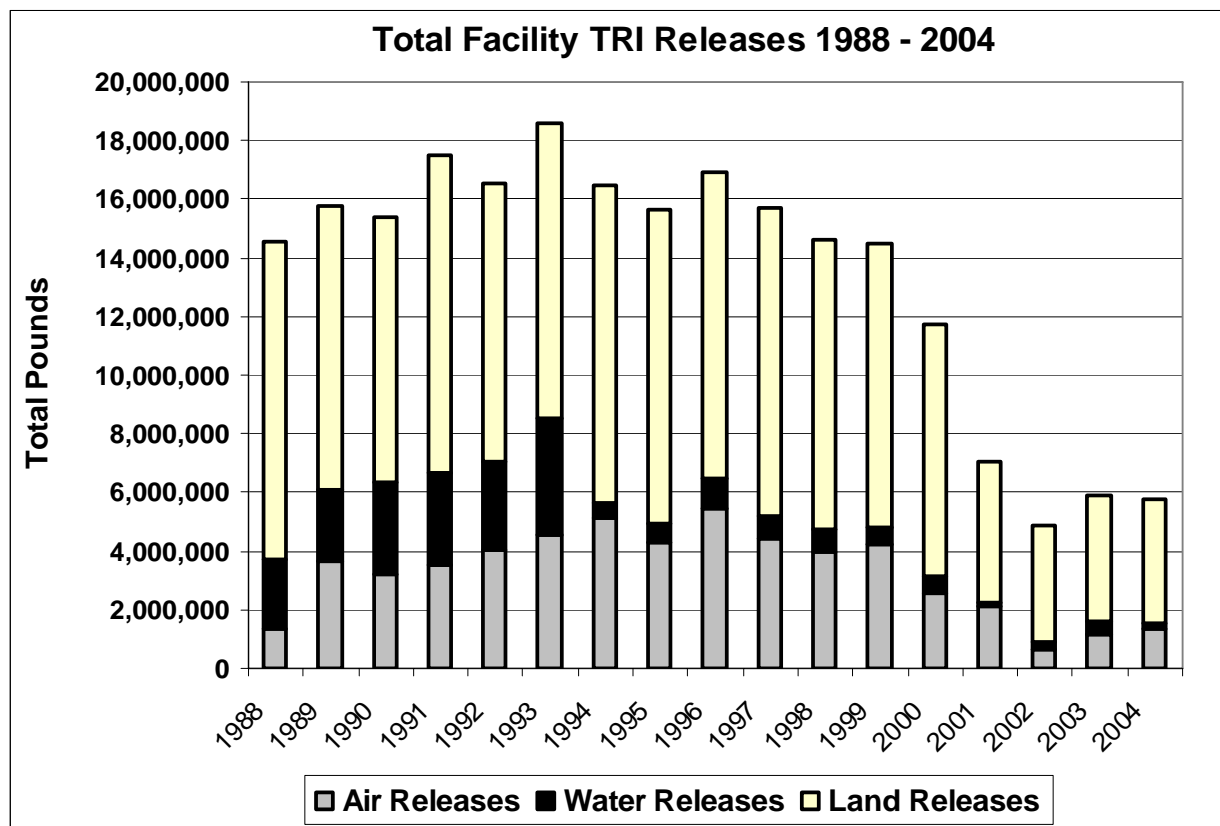
From 2001-2003 the ferroalloys industry struggled against a combination of market oversupply and increasing costs for raw material and power. While Eramet's stock values were depressed during this time, they have risen from a low of €14 in October 2002 to a high of €133 in April of this year.

2. Toxic Release Inventory (TRI) Emissions

The Toxic Release Inventory program was initiated after the Emergency Planning and Community Right-to-Know Act passed in 1986 in response to the chemical disaster in Bhopal, India. Certain manufacturing facilities are required to report the toxic chemicals that they store, transfer, use on-site or release to the environment. This information is submitted to the United States Environmental Protection Agency (EPA) and compiled in an annual report. The EPA tracks 650 chemicals that are designated as

toxic. The purpose of TRI data is to inform workers, community members and local governments of the hazardous chemicals in their area. The TRI can also be used to track trends in the amount of toxic materials used and released at a facility.

The first year that companies had to report their toxics inventory was 1988. EPA released the information to the public in 1990. The latest TRI data available to the public is for 2004.



The reported total amounts of toxic releases to air, water and land from the Marietta facility show a significant reduction, as much as two-thirds, since Eramet's purchase in 1999. The biggest reductions were in air and water releases; the on-site releases to land (surface impoundments) remain the most significant quantity at roughly four million pounds per year.

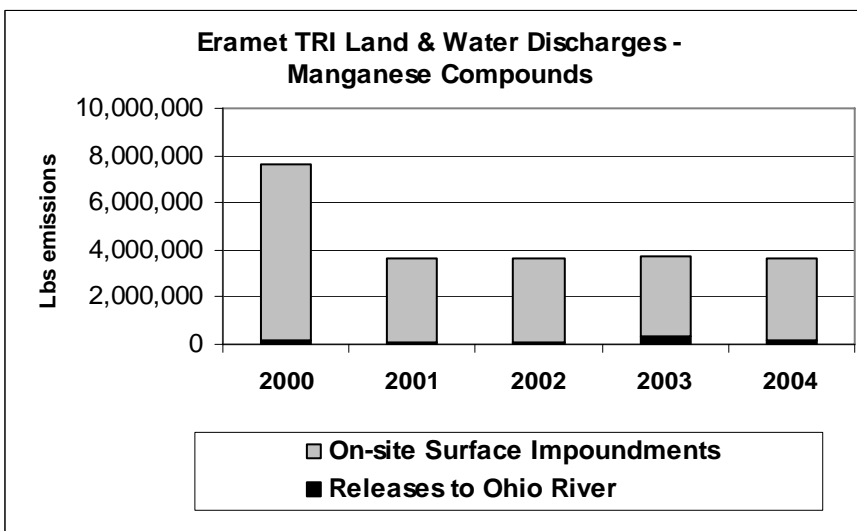
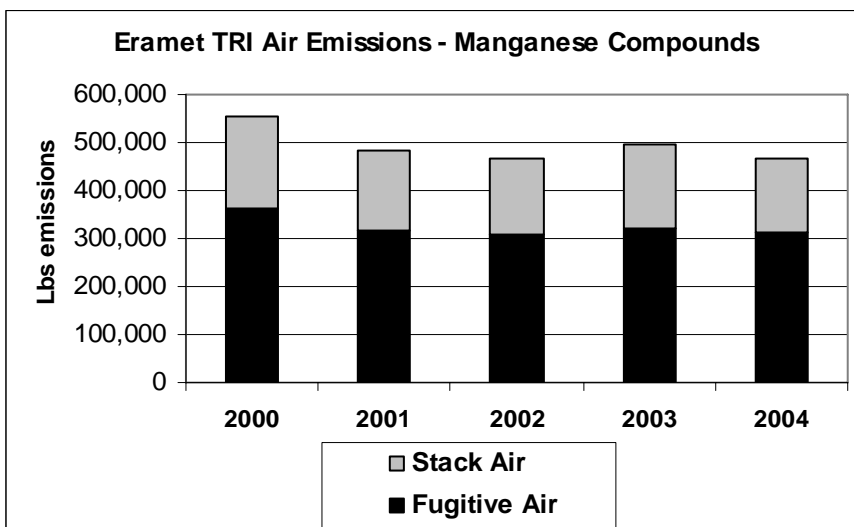
When the releases are broken down according to the type of toxics being released the majority of the releases are manganese compounds, chromium compounds and ammonia. The recent trend for these key releases is analyzed in more detail in the following section along with the health risk associated with each of them.

Air emissions from a point source, also referred to as stack emissions, are those that occur through confined air streams such as stacks, vents, ducts or pipes.

All releases to air that are not released through a confined air stream are referred to as fugitive air emissions. Fugitive air emissions include leaky equipment, evaporative losses from surface impoundments, spills, un-captured emissions from grinding, crushing and conveying processes and releases from building ventilation systems.

Discharges to streams, rivers, lakes, and other bodies of water are referred to as surface water discharges. This includes releases from industrial outflow pipes or trenches. Releases due to runoff, including storm water runoff, are also reportable to TRI.

Toxic Release Inventory (TRI) Reporting 2000 – 2004 Details of Eramet Manganese Releases

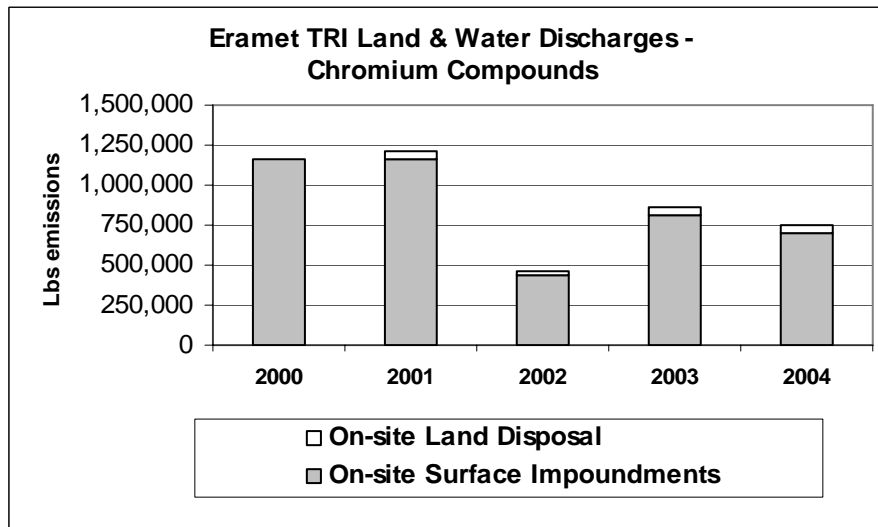
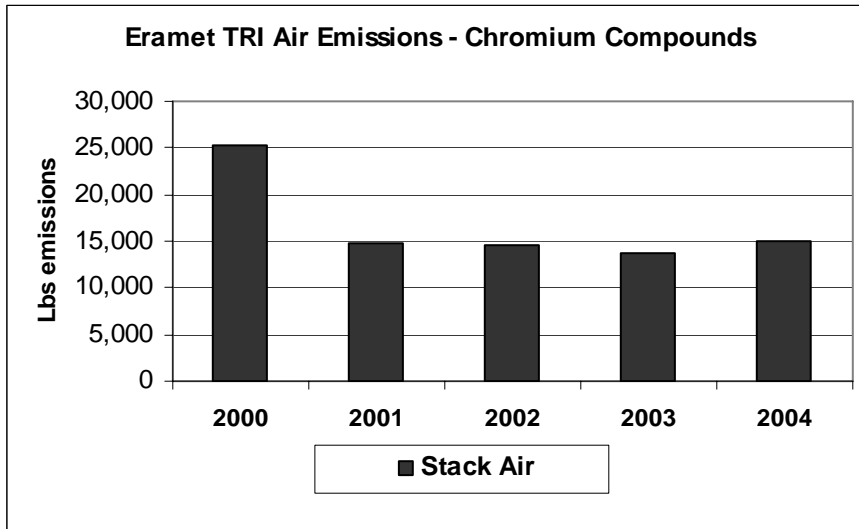


The reduction of on-site discharges in 2001 is due to the shut-down of the Electrolytic Manganese process in October 2000.

Manganese compounds are solids that do not evaporate; the small dust particles can become suspended in air. The health problems which can be caused by breathing manganese dust are most significant when the particle size is small, as found with the fumes emitted from the Eramet furnaces. Long term exposure to manganese by inhalation can affect the central nervous system and brain, and people may develop problems that look like Parkinson's disease. This syndrome is called "manganism." Symptoms include a general feeling of weakness, slow, clumsy movements with "heavy" arms and legs. Early symptoms also include slow or halting speech without tone or inflection, and a dull and emotionless expression. Other symptoms include anorexia, muscle pain, nervousness, irritability, headaches and loss of libido.

Unease about the high levels of manganese released from the Eramet facility was heightened by the results of air monitoring conducted in 2001-2002 at a site several miles north of the plant that showed average concentrations of manganese in the air were 4 times higher than the guidelines set by the EPA for long-term exposure to manganese.

Toxic Release Inventory (TRI) Reporting 2000 – 2004
Details of Eramet Chromium Releases

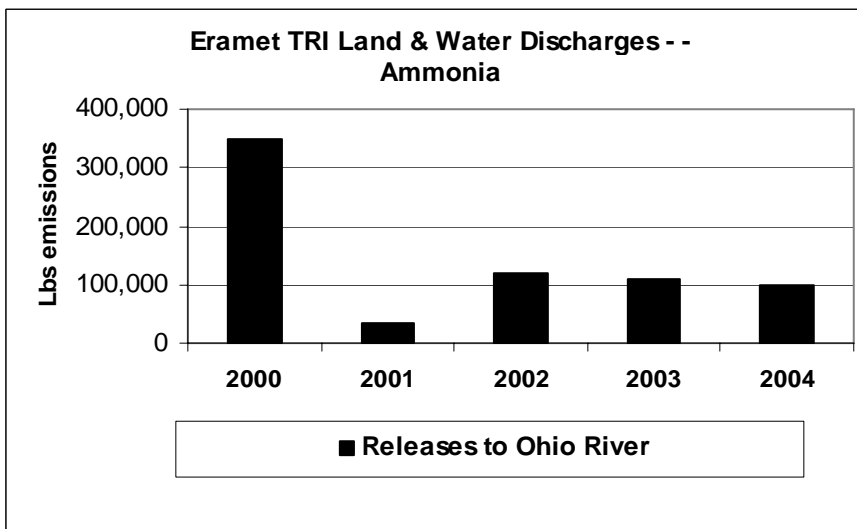
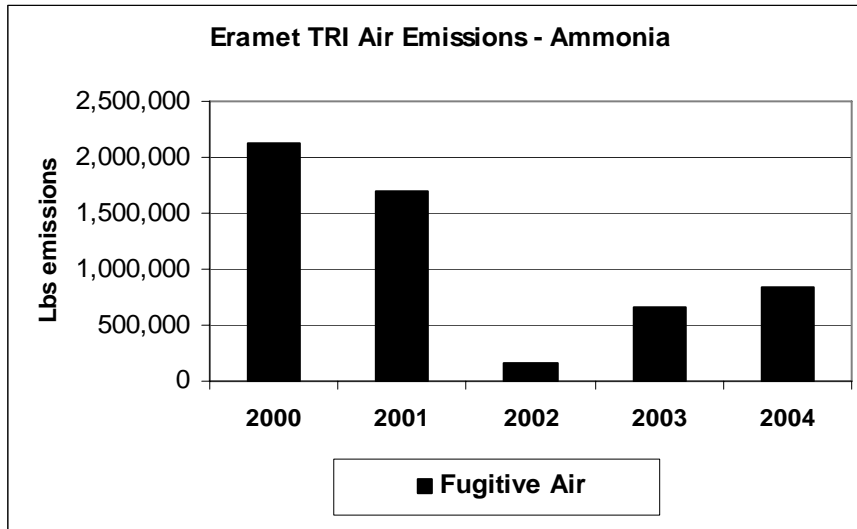


Air emissions of chromium compounds have remained fairly stable at around 15,000 pounds per year. Most of the chromium released is discharged from the electrolytic chromium process into surface impoundments, ranging from half a million to over a million pounds per year.

In air, chromium compounds are present mostly as fine dust particles which eventually settle over land and water. Chromium forms a large number of compounds in both the chromium (III) and the chromium (VI) forms. Air emissions of chromium are predominantly of chromium (III) in the form of small particles. Chromium can strongly attach to soil and small amounts can dissolve in water and move deeper in the soil to underground water.

The respiratory tract is the major target organ for chromium (VI) following inhalation exposure in humans. Epidemiological studies of workers have clearly established that inhaled chromium is a human carcinogen, resulting in an increased risk of lung cancer.

Toxic Release Inventory (TRI) Reporting 2000 – 2004 Details of Eramet Ammonia Releases



A substantial amount of ammonia by-product from the chromium purification process is released to the air as a fugitive air emission. Recent reductions in ammonia discharges from historical values were due to process changes developed after extensive laboratory and pilot plant testing by Elkem in the early 1990s.

Ammonia released to the air does not last very long in the environment. It is rapidly taken up by plants, bacteria, and animals. No health effects have been found in humans exposed to low concentrations of ammonia. Exposure to high levels of ammonia can cause irritation and serious burns on the skin and in the mouth, throat, lungs, and eyes. Some people with asthma may be more sensitive to breathing ammonia than others.

3. Comparison of Marietta to similar Eramet facilities

Eramet SA publishes annually a Reference Document (the French equivalent to an Annual Report) containing a summary of yearly production and emissions data for all of their facilities. This provides us with a common set of data to compare their operations. Eramet SA owns two ferroalloy plants in Norway which they purchased from Elkem at the same time they purchased the Marietta plant. The plants in Norway are located in Sauda and Porsgrunn and were built in the 1920's, identified below as the P&S plants. Both plants produce ferromanganese alloys in electric furnaces, and the Porsgrunn plant also produces silicomanganese.

The 2004 data is shown as annual totals in pounds (converted from kilograms or metric tons in the original report). In the table below emissions of chromium are omitted since that operation is unique to Marietta. The annual production from the electric furnaces is closely related to their electric power consumption; by this measure the plants in Norway and Marietta are comparable in size.

	<u>P&S Norway</u>	<u>Marietta</u>
Number of furnaces	4	3
Energy consumption, MWh	1,088,000	819,000
Water Discharges, pounds/year		
Lead	57	240
Manganese	735	36,344
Suspended solids	6	28,600
Air Emissions, pounds/year		
Total dust	97,000	1,146,000
Carbon dioxide	862,000	295,000

Despite the similarity in size, Eramet Marietta's discharges to surface water are dramatically greater than the Norway plants. The total manganese-containing dust emissions from Eramet Marietta are ten times greater than the sites in Norway.

4. Operating Permits

Title V of the 1990 Clean Air Act Amendment requires all facilities that have the potential to emit 10 tons/year of a single hazardous air pollutant or 25 tons per year or more of a combination of pollutants to obtain an operating permit. Air quality permits are legally binding documents that include enforceable conditions that the facility must comply. A Title V permit includes all air pollution requirements that apply to the facility including which pollutants are being emitted, how much may be released, what methods are used to reduce emissions, monitoring, record keeping and reporting. It also requires that the facility report its compliance status to the permitting authority. Although the 1990 Clean Air Act is a federal law covering the entire country, the states agencies administer the Act and issue permits.

Ohio Title V Air Permit

A copy of the Title V permit for Eramet Marietta was obtained from the Ohio EPA website. The document of 121 pages is divided into sections for each of the 20 areas of the plant designated as significant emissions units; a summary table appears in the Appendix. Eramet is regulated by the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Ferroalloys Production: Ferromanganese and Silicomanganese. The emissions from the open submerged arc furnaces are to be controlled by a combination of scrubber systems and bag houses. The amount of particulates given off by these types of furnaces is not constant and is somewhat dependent on the amount of electrical load passing through the electrodes, and so the maximum permissible amounts of particulate matter emissions have ranges dependent on the load that each furnace is operating under: 22–30 pounds per hour for Ferromanganese and 27–36 pounds per hour for Silicomanganese.

These standards for particulate emissions from the furnaces also require Eramet to monitor and keep records on the operation of scrubber systems and bag houses to ensure that they are operating in a manner to provide maximum achievable control technology (MACT). With three furnaces running at

roughly 25 pounds per hour for 300 days per year the permitted stack emissions from the furnace stacks and bag houses could total 500,000 pounds per year.

The operation of open submerged arc furnaces is a complicated process and the operating conditions can be expected to fluctuate significantly due to variations in raw material charge rates and quality, reaction "hot spots", gas build-ups and variation in electrode positioning. These large short-term fluctuations make it difficult for the existing equipment to control particulate emissions and so the NESHAP requires Eramet to monitor the amount of visible particulate emissions and report significant events and incidents. The standards are written in terms of opacity measurements, which is a way of estimating how thick the "smoke" of particles appears. This type of measurement cannot be used for quantitative estimation of the total pounds of particulates being released. The NESHAP also includes exemptions from the opacity standard for some of the routine operations of the furnace such as maintenance, sampling the furnace contents, or burning down the electrodes. It is therefore common and permitted under the current regulations to see visible clouds of dust emitted from the three buildings housing the submerged arc furnaces.

The other area with regulated stack emissions is Vacuum Furnace 50, where the electrolytic chromium is purified under conditions of high vacuum and high temperature. The emissions of carbon monoxide must not exceed 2.8 pounds per hour and the total particulate emissions must be less than 1.33 pounds per hour.

Water Permit

Growing public awareness about water pollution led to enactment of the Federal Water Pollution Control Act of 1972. As amended in 1977, this law became commonly known as the Clean Water Act (CWA). The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. To protect Ohio's water resources, Ohio EPA issues National Pollutant Discharge Elimination System (NPDES) permits. These permits authorize the discharge of substances at levels that meet water quality standards.

Solid waste in the form of scrubber sludge is generated by the ferroalloy furnace buildings. The sludge water is sent to settling ponds, and the sludge which settles is scraped off the bottom and dumped into on-site impoundments. The sludge wastes disposed on site are managed in surface impoundments along the Ohio River and in a larger surface impoundment created by the dam north of the plant.

Lead sludge is generated as a by-product of the electrolytic chromium process and deposited onto the plating tank frames. This sludge is washed off the frames and managed on site as hazardous waste.

The acidic waste stream containing the ferrous ammonium sulfate (FAS) from the ferrochromium leach process is sent to the UNOX waste water treatment plant. The UNOX process is a well-established method using bacteria assisted with oxygen to treat wastewater; the "bugs" in the pond eat organic pollutants. Fugitive ammonia emissions are released from the UNOX treatment plant as a result of treating the FAS waste stream. The Eveready battery plant is also permitted to send their waste to the Eramet UNOX basin. The treated water from the UNOX basin then passes through the system of settling ponds. There are several outfalls where water from the settling ponds is discharged into the Ohio River, which are regulated under permit administered by the Ohio EPA.

The original NPDES permit was issued by the state in November 1974. Eramet Marietta had been operating under a permit originally issued to Elkem Metals Company, which expired on March 31, 1999. A copy of the current NPDES permit is unavailable on the Ohio EPA's website. OEPA and Eramet have been negotiating a new permit; at issue is a significant reduction in ammonia releases. Under the previous expired permit Eramet was allowed to release an average of 323 lb/day of ammonia or roughly 100,000 pounds per year into the Ohio River, and an average of 1,800 lb/day of suspended solids or roughly 500,000 pounds per year of solid waste into the Ohio River.

5. Violations, Accidents and permit non-compliance

When companies pollute more than they are regulated for, they are issued a notice of violation by the regulating authority (local, state or federal government agency). This pollution can happen from an accident at the plant or can be discovered by agency investigators on site.

From 2000-May 2006, Eramet has self reported 48 incidents to Ohio EPA. Incidents at the plant include accidents, explosions, leaks, spills, maintenance problems, and equipment repair. Incidents can be in direct violation of the permit, deviations of the permit, malfunctions or simply reporting a problem before it gets any bigger. We believe 48 incidents to be incomplete based on the size of the facility, our experience with other facilities, the informality of reporting, and the high turnover of Ohio EPA staff.

Of the 48 incidents, only one incident reported the amount and type of emissions released (15-25 pounds of sulfur dioxide released on February 2, 2000; this caused employees to be evacuated). Thirteen incidents noted excessive fuming, leaks, and spills, but did not tell what was released or how much was released. Over half of the incidents reported furnace #18 as the source of the problem, including an explosion on November 30, 2000. Eramet has had two explosions this year; the most recent explosion was reported in furnace number one, on April 27, 2006.

The EPA Enforcement & Compliance History Online (ECHO) website tracks inspections of the facilities and violations of permits. Eramet has been cited for 15 violations from June 2003-May 2006. Major violations include exceeding permitted limits of particulates in 2003, for which Eramet paid \$13,200 in fines. They also spent \$40,000 to repair bag houses designed to control the emissions. Recently Eramet paid another \$9,600 for failing to properly mark and store hazardous waste materials.

Eramet Marietta recently reached a settlement with the US Dept. of Justice for violations of the Clean Water Act dating from July 1997 through 2002. According to the Marietta Times, "Eramet officials denied all liability for the allegations in the settlement and under the consent decree did not admit any liability for the loss of wildlife". The total fine paid by Eramet was \$3.25 million; a little over \$2 million of this is earmarked for the restoration plan for the mussels and wildlife that were affected by the wastewater discharges.

In February 2005, a meeting was held between Ohio EPA & Eramet Marietta to look at potential options for reduction of the wastewater discharges of ammonia being released into the Ohio River.

6. History of Citizen Involvement

There is a long history of neighbors of the Eramet plant registering complaints about overpowering odors coming from the plant. Neighbors in the area are worried about the impact the Route 7 industrial complex has on air quality and their health. Over the years neighbors have reported a variety of symptoms including: headaches, burning eyes, nausea, difficulty breathing, fatigue, muscle aches, tremors, sinus problems, bloody noses, a metallic taste in their mouths, a bitter metallic taste in their throats, an ammonia smell, and sore throats.

Timeline of key events:

1971 Ralph Nader highlighted pollution in the US and brought a decade of local residents' complaints into the national spotlight with a visit to the Union Carbide power plant at Marietta. The following year US EPA required Union Carbide to reduce sulfur dioxide emissions by 40%.

1985 Complaints about chemical residue falling on cars parked in nearby lots. Anecdotal comments about Elkem washing cars and purchasing car covers to protect vehicles.

1997 RECOVER (Regional Coalition for Ohio Valley Environmental Restoration); a local environmental group had formed to address concerns about health impacts from poor air quality in the Valley. Membership comprised of individuals from the community and industry, it set out to investigate odor complaints by local citizens. Neighbors began meeting with Eramet representatives, trying to identify the source of the odor.

1998 "Stink Club" formed. Neighbors began talking again about the odors that come into their homes and make them feel ill. Individuals started keeping diaries and logs of incidents of bad air and smells. Comparison study of children in Marietta and Athens was conducted by Dick Wittberg.

2000 The Odor Task Force was formed with environmental representatives from four area companies, including Eramet. Air testing was done with Draeger tubes, "bucket" samples and SUMMA canisters.

Numerous citizen complaints were called in to Ohio EPA at the end of 2000 reporting frequent strong odors and dark smoke clouds being released from the Eramet buildings along Route 7. An air monitor was installed at Washington County Career Center in response.

2001 Ohio EPA held a meeting to collect comments on proposed consolidation of Eramet's permits under the Federal Clean Air Act. About 100 citizens attended. The new permit improved the way the pollution is monitored and reported, but maintained permitted levels.

2002 The Federal Agency for Toxic Substances and Disease Registry (ATSDR) met with residents.

2003 U.S. Department of Health and Human Services released a study showing levels of manganese in the air, as measured at the Washington County Career Center, were three to 10 times higher than the level that is considered safe for continuous exposure.

2004 ATSDR released a report based on computer models of factory emissions, weather patterns and other factors indicating manganese levels warranted additional monitoring.

2005 Associated Press report on health risk showed Mid-Ohio Valley neighborhoods among the worst in the nation in terms of risk to long-term health from industrial air pollution according to their analysis of federal pollution, health and census data. Eramet was named as the largest contributor.

2006 Launch of Neighbors for Clean Air group, affiliated with Ohio Citizen Action, to address industrial pollution, specifically targeting Eramet. Over 3,000 letters have been written to Eramet since March by residents of Ohio, requesting Eramet to reduce pollution and operate a clean and safe plant.

The lack of response from Ohio EPA to the numerous complaints about Eramet's pollution over the years has led to an increased level of frustration with the agency. The issue still remains; citizens simply stopped complaining when they perceived no response.

7. Monitoring and Studies

Air Monitoring for Potential Health Effects from Particulates

In May 2000, the Agency for Toxic Substances and Disease Registry (ATSDR) was petitioned by US Senator Mike DeWine (Ohio) to evaluate the health impacts from air pollution on residents of Marietta and the surrounding area. In March 2002, ATSDR staff finally met with residents about their exposure to emissions from the complex. As a result of this meeting, ATSDR set up an air monitoring station at the Washington County Career Center which is still collecting data. In 2004 an analysis of data from air monitoring conducted by the ATSDR concluded that metals in the air, particularly arsenic, manganese, chromium and cadmium potentially pose a threat to residents close to the Eramet facility because they exceeded health-based screening values. Since the sampling was done at a single location the magnitude of the exposure and the threat to public health remained uncertain.

ATSDR established a second monitoring site on Blue Knob Road in close proximity to the Eramet facility. The community is awaiting analysis of the results from this station by ATSDR and EPA and a determination of the level of additional air sampling needed. Based on results from current sampling sites and possible additional sites, a community health study might be undertaken.

Health Studies

In a report carried by Associated Press in late 2005, Dick Wittberg, executive director of the Mid-Ohio Valley Health Department, continued to urge the government to conduct a comprehensive health study on children in Marietta, Ohio, after his own studies raised questions about exposure to nearby industrial pollutants. Wittberg conducted a study to compare fourth-grade children in Marietta to children in Athens, Ohio, about 50 miles away. He postulated that if manganese is a harmful neurotoxin, its effects would first be seen in children. Using a test the EPA employs to measure neurotoxin exposure (visual acuity, balance and learning disabilities), he found that the children from Marietta tended to perform statistically worse. Wittberg has asked that a more formal study be done; EPA and ATSDR have begun

developing a protocol to conduct such a study but it is not known whether the study will be funded. Meanwhile numerous years have passed; no action has been taken.

The Associated Press analyzed the health risk posed by toxic air releases by mapping the health risk assessment calculated by the EPA against census data. In this analysis Washington County, OH and Wood County, WV had the highest potential health risk in the nation from industrial pollution in 2000, and the facility whose emissions created the greatest risk in the area was Eramet.

Neighbors for Clean Air

The Neighbors for Clean Air group has re-started air monitoring studies to try to identify the source of the unpleasant odors, affectionately known as “the Eramet stink”. Previous attempts were unable to identify the source of the odors.

The group has encouraged residents to track incidents of unpleasant odors or tastes and visible pollution on “pollution logs”. They will be compiled to further examine patterns and the extent of the problem.

The group has recently completed a first round of “swipe” sampling to test for particulate matter around the valley, looking for the same metal contaminants that were seen in the ATSDR study. The initial results confirmed the presence of manganese in all samples, and chromium at seven out of eight locations. Based on these results, some members of Neighbors for Clean Air plan to get their blood tested for manganese.

CEREX Environmental Services loaned Neighbors for Clean Air and Ohio Citizen Action a portable real time air monitor in April 2006. This monitor analyzes gases in the air using UV light, detecting down to very low levels of contaminants. We are still analyzing the results and plan to conduct follow-up confirmation testing in the near future. The observations to date from the Cerex monitoring are:

- There was very little evidence of ammonia release during daylight hours
- There was a pattern of increasing ammonia release after midnight which is detected most strongly along the portion of Hanna Road which overlooks the north Eramet impoundment
- The trend toward increasing ammonia release as detected by the Cerex monitor correlated with an increase in the strong, unpleasant odor identified in the previous complaints and “stink logs” by neighbors
- The concentration of ammonia detected in the air was below the odor threshold for ammonia, implying that unidentified compounds causing the odor are moving off-site with the ammonia

The emissions of ammonia are thought to come from the Eramet electrolytic chromium process, and possibly the treatment of the acidic leachate solution in the UNOX basin. This suggests that the odor is a by-product either of the electrolytic process itself or a by-product of the bacterial action in the activated sludge of the UNOX basin. We are continuing to analyze the Cerex data for the presence of UV-active, sulfur-containing compounds previously detected in air samples such as carbon disulfide or carbonyl sulfide.

8. Questions

- The majority of Eramet's manganese air emissions are fugitive or uncontained, yet opacity measurements are not quantitative in terms of pounds per hour of particulates. How does Eramet estimate the TRI releases of fugitive emissions?
- Has Eramet made any decisions regarding implementation of technology to recover a substantial portion of the fugitive ammonia emissions?
- What data has Eramet collected regarding potential odor-causing compounds being generated or released from the electrolytic chromium process?
- What data has Eramet collected regarding compounds other than carbon monoxide which are being released from the stacks of the vacuum furnace?
- What is Eramet's plan to address the 12 consecutive quarters of MACT violations?
- Given the many problems cited with furnace #18, what is the status of the project to replace the furnace (as noted in the June 2002 permit to install application)?
- What are Eramet's plans for future investments in the Marietta facility to improve the stability of the operation and reduce emissions to a level comparable to that being achieved by Eramet's plants in Norway?
- Significant quantities of solids containing manganese and chromium are being disposed on-site every year. What data has Eramet collected from test wells or modeling studies which estimate the impact on water supplies?
- Has Eramet speciated the chromium release into the impoundments for Cr (III) vs. Cr (VI)?
- What is the status of Eramet and OEPA negotiations on their water permit?
- What is Eramet's response to all the citizen letters received this year?
- Would Eramet be willing to let interested citizens tour the plant?
- Will Eramet decision makers discuss the Citizens' Audit with Neighbors for Clean Air and Ohio Citizen Action?

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References

- Agency for Toxic Substances and Disease Registry www.atsdr.cdc.gov
Health Consultation, Washington County Air Quality (a/k/a Marietta Air Emissions)
Marietta, Warren Township Cistern Sampling Investigation Results
ToxFAQs™
- Associated Press: *More Blacks Live With Pollution*, David Pace, December 14, 2005
www.sfgate.com/cgi-bin/article.cgi?f=/n/a/2005/12/13/national/a093744S97.DTL&type=health
- Cerex Environmental Services, Inc. 739 Trabert Avenue, Building 2 Suite D, Atlanta, GA
- Eramet SA www.eramet.fr/us
Shareholders - 2004 Reference Document, pages 196-197
- Eramet Marietta Special Products www.emspecialproducts.com
- Federal Register, 40 CFR Parts 9 and 63, EPA Air Toxics Standard for Ferroalloy Production:
Ferromanganese and Ferrosilicon
- Kirk-Othmer *Encyclopedia of Chemical Technology*, Third Edition, John Wiley & Sons
- Marietta Times: *Eramet settles water pollution case*, Kevin Pierson, March 1, 2006
- National Academies Press, *High-Purity Chromium Metal: Supply Issues for Gas-Turbine Superalloys*
(1995) National Materials Advisory Board (NMAB) www.nap.edu/books/NX006001/html/R9.html
- National Center for Biotechnology Information www.ncbi.nlm.nih.gov
- National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards
- Ohio Citizen Action www.ohiocitizen.org
- Ohio Environmental Protection Agency www.epa.state.oh.us Ohio Title V permit 0684020006apa1
Scorecard, The Pollution Information Site, www.scorecard.org
- US Environmental Protection Agency (USEPA) www.epa.gov
Enforcement & Compliance History Online (ECHO)
Integrated Risk Information System (IRIS)
Metallurgical Industry/Ferroalloy Production Emissions Factors, 10/86
"Locating and Estimating Air Emissions from Sources of Manganese", EPA-450/4-84-007H, 3/84
Technology Transfer Network, Air Toxics
Toxics Release Inventory (TRI) Program
- US Dept. of Justice www.usdoj.gov/opa/pr/2006/February/06_enrd_101%20%20%20.html

Appendix

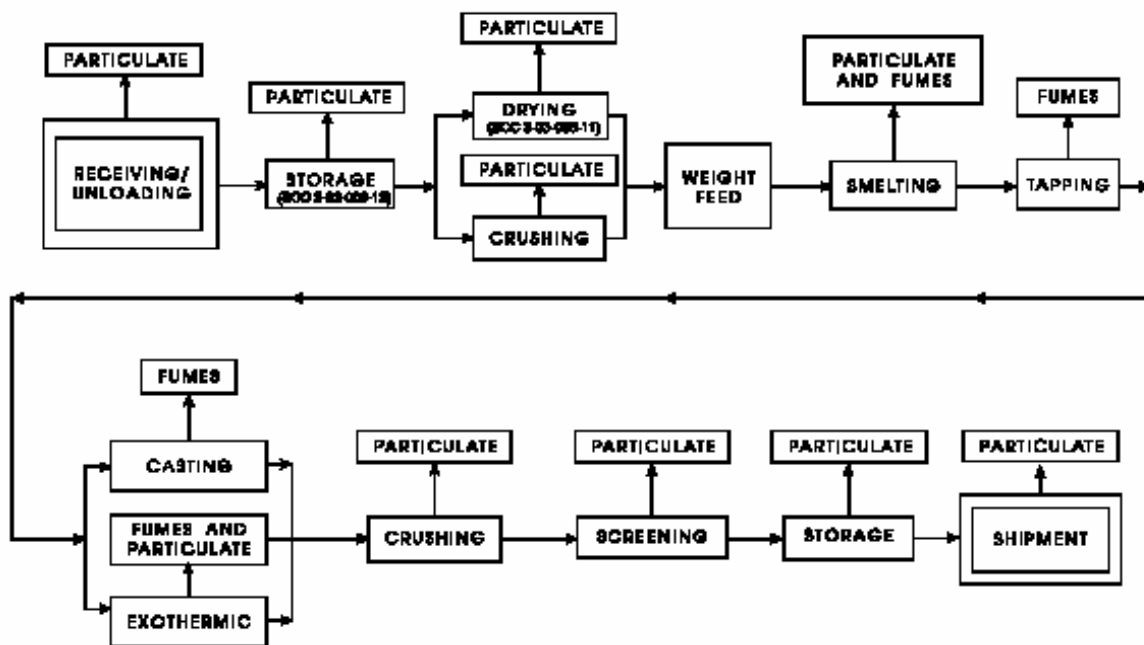
- A. Process Descriptions
(Descriptions from National Academies Press publication and EPA Metallurgical Industry documents)
- B. TRI Data Tables
(Facility data compiled from EPA Toxics Release Inventory Program)
- C. Map of Facility (Copy from OEPA files)
- D. Title V Summary (Copy from OEPA website)
- E. Incidents & Malfunctions (Collected from OEPA files)
- F. Violations (Collected from OEPA files)
- G. Citizen Complaints (Collected from OEPA files)

Appendix

A. Process Descriptions

The Ferromanganese Operation at Eramet Marietta is one of the world's largest manganese ferroalloys production sites. The Marietta plant has three electric, submerged arc furnaces south of the railroad tracks that divide the site. A 30-megawatt furnace produces silicomanganese, a low-carbon source. The plant's two other furnaces are rated at 16 and 22 megawatts and produce high carbon ferromanganese by adding coke.

The submerged arc process is a reduction smelting operation which uses electric arcs to heat the furnace to about 3,000°F. The reactants consist of metallic ores (ferrous oxides, silicon oxides, manganese oxides, chrome oxides, etc.) and a carbon-source reducing agent, usually in the form of coke, charcoal, high- and low-volatility coal, or wood chips. Limestone may also be added as a flux material. Raw materials are crushed, sized, and, in some cases, dried, and then conveyed to a mix house for weighing and blending. Most of the alloy is further refined by treatment with high purity oxygen to remove carbon and silicon. Once the desired chemistry is reached the refined molten alloy is cooled, solidified, crushed and screened for shipment.



The submerged-arc furnaces and the repeated grinding, crushing and conveying operations generate large quantities of particulate emissions, with fumes from the electric arc furnaces accounting for the majority of these emissions. Large amounts of carbon monoxide and organic materials also are emitted by submerged electric arc furnaces. Carbon monoxide is formed as a byproduct of the chemical reaction between oxygen in the metal oxides of the charge and carbon contained in the reducing agent (coke, coal, etc.). Reduction gases containing organic compounds and carbon monoxide continuously rise from the high-temperature reaction zone, entraining fine particles and fume precursors. A combination of fabric filters and scrubbers are used to control these emissions.

The particulate emissions from ferroalloy furnaces have been characterized in EPA studies; they are very fine and contain a high level of manganese. One micron is about 100 times smaller than the width of a human hair.

	Silicomanganese	Ferromanganese
Particle size, microns		
Maximum	0.75	0.75
Typical range	0.2 – 0.4	0.05 – 0.4
Chemical analysis, wt%		
SiO ₂	15.6	25.5
FeO	6.8	6.0
MgO	1.1	1.0
CaO	-	2.2
MnO	31.3	33.6
Al ₂ O ₃	5.6	8.4

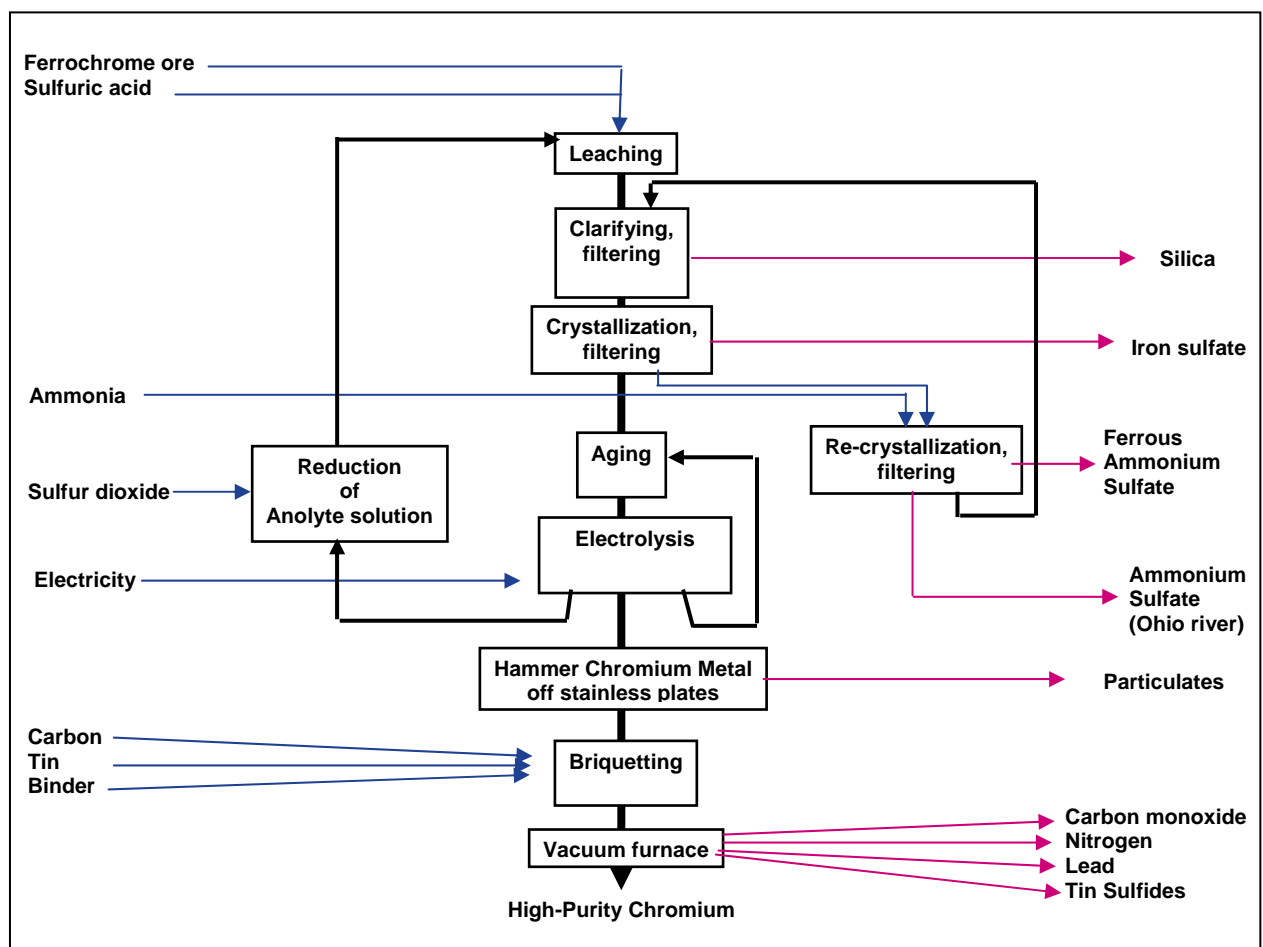
The Special Products Operation at Eramet Marietta, which is often referred to as Electrolytic Chromium or El Chrome, is located on the north side of the railroad tracks. Eramet utilizes a unique process to refine chromium metal for high purity superalloys, and is the only producer of electrolytic chromium metal and vacuum processed low-gas metal chromium in North America. A detailed audit of this process was carried out in 1995 by a panel formed by the National Academy of Sciences.

High-carbon ferrochromium ore is treated with sulfuric acid to leach out the chromium, which also releases a large volume of hydrogen gas. The leachate is treated with ammonium sulfate and conditioned to remove ferrous ammonium sulfate and produce a chrome alum for feed to the electrolysis cells. By-product ferrous ammonium sulfate waste is deposited on-site in the impoundment lake which is responsible for the large quantity of ammonia which is emitted; some excess ammonium sulfate is discharged under permit into the Ohio River.

The crude chrome alum is fed to an electrolysis cell where pure chromium metal is deposited onto stainless steel plates in a complex electrochemical process. The electrolysis cells must be well ventilated to reduce ambient hydrogen and chromium (VI) concentrations in the cell rooms. The brittle chromium metal is then chipped off of the plates by hammering and milling, which releases fine chromium particles into the air. The bulk of the electrolysis solutions are recycled but must be treated with ammonia and sulfur dioxide to regenerate them.

The chromium metal powder is formed into briquettes by adding carbon, tin and polymeric binders and then fed to a vacuum furnace where it is slowly heated to 2,600°F over a period of about a week under very high vacuum to remove unwanted impurities as gases. The furnace emissions are primarily carbon monoxide, and we can expect that impurities of nitrogen, lead and tin sulfides will also be emitted.

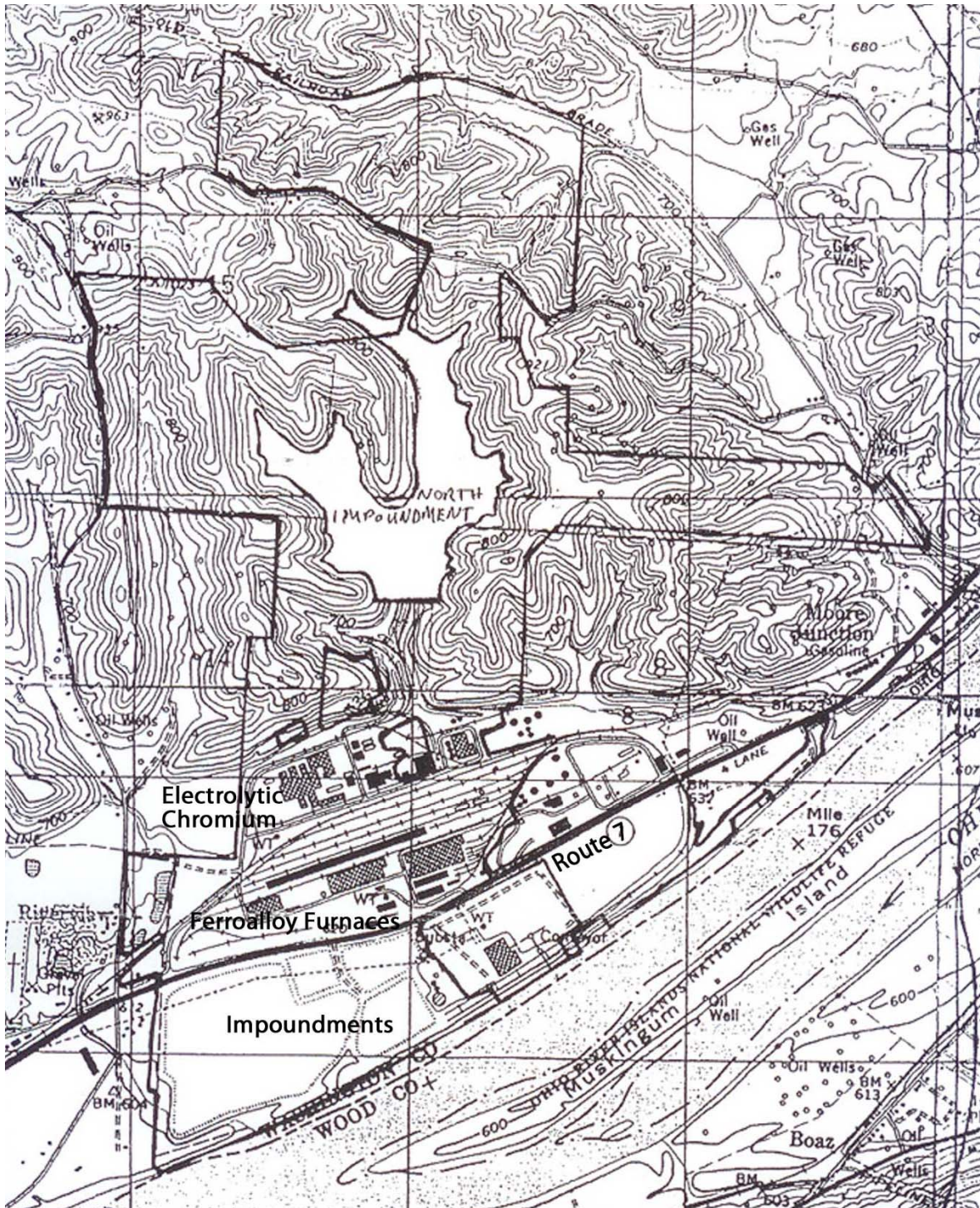
Eramet Marietta Special Products Operation



B. Toxics Release Inventory
2000-2004 Eramet Marietta
(Quantities reported in pounds)

	ERAMET MARIETTA INC	On-site Fugitive Air	On-site Stack Air	Total On-site Air Emissions	On-site Surface Water Discharges	Total On-site Surface Impoundments	On-site Other Land Disposal	Total On-site Disposal or Other Releases	Total Off-site Disposal or Other Releases	Total On- and Off-site Disposal or Other Releases
2000	AMMONIA	2,118,200	0	2,118,200	347,300	0	0	2,465,500	0	2,465,500
2000	ARSENIC	0	16	16	.	0	0	16	0	16
2000	CHROMIUM COMPOUNDS	0	25,200	25,200	10,000	1,160,600	0	1,195,800	28,000	1,223,800
2000	LEAD	0	0	0	400	1,800	0	2,200	28,100	30,300
2000	MANGANESE COMPOUNDS	361,900	191,700	553,600	200,300	7,454,900	0	8,208,800	.	8,208,800
2000	MERCURY COMPOUNDS	0	653	653	.	174	0	827	.	827
2000	NICKEL	0	14	14	.	0	0	14	0	14
2000	POLYCYCLIC AROMATICS	250	0	250	.	0	0	250	0	250
2000	SULFURIC ACID	499	0	499	.	0	0	499	0	499
2000	TOTAL	2,480,849	217,583	2,698,432	558,000	8,617,474	0	11,873,906	56,100	11,930,006
2001	AMMONIA	1,696,600	0	1,696,600	35,800	0	0	1,732,400	0	1,732,400
2001	ARSENIC	0	17	17	.	0	0	17	0	17
2001	CHROMIUM COMPOUNDS	0	14,800	14,800	10,000	1,161,700	48,200	1,234,700	14,300	1,249,000
2001	LEAD	0	0	0	421	7,600	0	8,021	34,100	42,121
2001	MANGANESE COMPOUNDS	315,300	166,700	482,000	101,800	3,575,000	0	4,158,800	.	4,158,800
2001	MERCURY COMPOUNDS	0	608	608	.	162	0	770	0	770
2001	NICKEL	0	14	14	.	0	0	14	0	14
2001	POLYCYCLIC AROMATICS	250	0	250	.	0	0	250	0	250
2001	SULFURIC ACID	250	0	250	.	0	0	250	0	250
2001	TOTAL	2,012,400	182,139	2,194,539	148,021	4,744,462	48,200	7,135,222	48,400	7,183,622
2002	AMMONIA	168,300	0	168,300	120,800	0	0	289,100	0	289,100
2002	ARSENIC	0	17	17	.	0	0	17	0	17
2002	CHROMIUM COMPOUNDS	0	14,600	14,600	10,000	442,300	25,200	492,100	38,600	530,700
2002	LEAD	0	0	0	241	0	0	241	29,800	30,041
2002	MANGANESE COMPOUNDS	307,200	159,300	466,500	113,400	3,526,700	0	4,106,600	0	4,106,600
2002	MERCURY COMPOUNDS	0	527	527	.	140	0	667	0	667
2002	NICKEL	0	15	15	.	0	0	15	0	15
2002	POLYCYCLIC AROMATICS	250	0	250	.	0	0	250	0	250
2002	SULFURIC ACID	250	0	250	.	0	0	250	0	250
2002	TOTAL	476,000	174,459	650,459	244,441	3,969,140	25,200	4,889,240	68,400	4,957,640
2003	AMMONIA	661,400	0	661,400	108,700	0	0	770,100	0	770,100
2003	ARSENIC	0	15	15	.	0	0	15	0	15
2003	CHROMIUM COMPOUNDS	0	13,700	13,700	10,000	807,300	60,500	891,500	18,200	909,700
2003	LEAD	0	0	0	405	0	0	405	22,436	22,841
2003	MANGANESE COMPOUNDS	319,900	175,400	495,300	316,300	3,450,800	0	4,262,400	0	4,262,400
2003	MERCURY COMPOUNDS	0	440	440	.	117	0	557	0	557
2003	NICKEL	0	13	13	.	0	0	13	0	13
2003	POLYCYCLIC AROMATICS	250	0	250	.	0	0	250	0	250
2003	SULFURIC ACID	250	0	250	.	0	0	250	0	250
2003	TOTAL	981,800	189,568	1,171,368	435,405	4,258,217	60,500	5,925,490	40,636	5,966,126
2004	AMMONIA	842,000	0	842,000	99,800	0	0	941,800	0	941,800
2004	ARSENIC	0	13	13	.	0	0	13	0	13
2004	CHROMIUM COMPOUNDS	0	14,900	14,900	10,000	705,100	42,300	772,300	24,500	796,800
2004	LEAD	0	0	0	241	0	0	241	25,067	25,308
2004	MANGANESE COMPOUNDS	312,700	152,800	465,500	129,600	3,476,300	0	4,071,400	0	4,071,400
2004	MERCURY COMPOUNDS	0	112	112	.	30	0	142	0	142
2004	NICKEL	0	11	11	.	0	0	11	0	11
2004	POLYCYCLIC AROMATICS	250	0	250	.	0	0	250	0	250
2004	SULFURIC ACID	250	0	250	.	0	0	250	0	250
2004	TOTAL	1,155,200	167,836	1,323,036	239,641	4,181,430	42,300	5,786,407	49,567	5,835,974

C. Map of Eramet Facility



D. Summary of Title V Air Permit

Code	Description	Performance criteria	Comments
B005	Grizzly diesel generator	1.04 tpy particulates	
F001	Roads & parking	no vis particulates except 6/60	must make reasonable efforts to control fugitive dust
F002	Storage piles	no vis particulates except 13/60	must submit fugitive dust control plan per 40CFR Part 63.6
F007	Furnace 1 casting	exempt	must submit fugitive dust control plan per 40CFR Part 63.6
F008	Furnace 12 casting	exempt	must submit fugitive dust control plan per 40CFR Part 63.6
F009	Furnace 18 casting	exempt	must submit fugitive dust control plan per 40CFR Part 63.6
F010	Grizzly sizing	<20% opacity 3-min average	must submit fugitive dust control plan per 40CFR Part 63.6
F012	Met Oxy red process	<20% opacity 3-min average fugitive dust .030 grain particulates per SCF exhaust from baghouse per 40CFR Part 63.6 Maintain pressure drop in baghouse 3-12 inches of water <20% opacity 6-min avg from any stack	must submit fugitive dust control plan per 40CFR Part 63.6 Measure, record & report on regular basis
F013	Bldg 52 crusher	<20% opacity 3-min average fugitive dust .030 grain particulates per SCF exhaust from baghouse per 40CFR Part 63.6 <20% opacity 6-min avg from any stack	must submit fugitive dust control plan per 40CFR Part 63.6
F014	crushiing, sizing,packing	<20% opacity 3-min average fugitive dust .030 grain particulates per SCF exhaust from baghouse per 40CFR Part 63.6 <20% opacity 6-min avg from any stack	must submit fugitive dust control plan per 40CFR Part 63.6
F016	Compactor for metal powders	<20% opacity 3-min average fugitive dust .030 grain particulates per SCF exhaust from baghouse per 40CFR Part 63.6 <20% opacity 6-min avg from any stack	must submit fugitive dust control plan per 40CFR Part 63.6
F017	Simplex mill, furnace & packing	<20% opacity 3-min average fugitive dust .030 grain particulates per SCF exhaust from baghouse per 40CFR Part 63.6	perform weekly checks, record visible emissions
P018	Vacuum furnace 50	Carbon monoxide emissions < 2.8 lbs/hr Visible particulate emissions <20% opacity 6-min avg Particulate emissions <1.33 lb/hr	submit report of all days with visible emissions from stack
P020	EI Mang process	<20% opacity 6-min avg from any stack <20% opacity 3-min average fugitive dust .030 grain particulates per SCF exhaust from baghouse	perform weekly checks, record & report visible emissions
P022	EI Chrome process, including plate blaster, vented to 2 baghouses	Visible particulate emissions <20% opacity 6-min avg from any stack <20% opacity 3-min average fugitive dust	perform weekly checks, record & report visible emissions

P025	EM briquetting, vented to cyclone	<20% opacity 3-min average fugitive dust	
		.030 grain particulates per SCF exhaust or no visible emissions, whichever is more stringent	perform weekly checks, record & report visible emissions
P901	#1 submerged arc furnace, vented to venturi wet scrubber for control of tapping, charging & melting emissions	Visible fugitive particulates <20% opacity 6-min avg, except during blowing or lancing tap hole	less stringent than in 40CFR Part 63
		max 35.9 lb/hr particulates from silicomanganese production when furnace load more than 25MW	must submit fugitive dust control plan per 40CFR Part 63.6
		max 27.2 lb/hr particulates from silicomanganese production when furnace load less than 25MW	
		max 29.8 lb/hr particulates from ferromanganese production when furnace load more than 22MW	
		max 21.7 lb/hr particulates from ferromanganese production when furnace load less than 22MW	
		Maintain pressure drop in baghouse 5-15 inches of water	Measure, record & report on regular basis
		maintain venturi scrubber pressure drop at at least 40 inches of water	
P908	#12 submerged arc furnace, vented to venturi wet scrubber for control of tapping, charging & melting emissions	Visible fugitive particulates <20% opacity 6-min avg, except during blowing or lancing tap hole	
		max 35.9 lb/hr particulates from silicomanganese production when furnace load more than 25MW	must submit fugitive dust control plan per 40CFR Part 63.6
		max 27.2 lb/hr particulates from silicomanganese production when furnace load less than 25MW	
		max 29.8 lb/hr particulates from ferromanganese production when furnace load more than 22MW	
		max 21.7 lb/hr particulates from ferromanganese production when furnace load less than 22MW	
		Maintain pressure drop in baghouse 5-15 inches of water	Measure, record & report on regular basis
		maintain venturi scrubber pressure drop at at least 40 inches of water	
P909	#18 submerged arc furnace, vented to venturi wet scrubber for control of charging & melting emissions and MOR baghouse for control of tapping emissions	Particulate emissions less than 24.7 lb/hr	
		Visible fugitive particulates <20% opacity 6-min avg, except during blowing or lancing tap hole	must submit fugitive dust control plan per 40CFR Part 63.6
		maintain venturi scrubber pressure drop at at least 60 inches of water	
		Monitoring & record keeping for baghouse as described in F012	
Z911	C2P alloy crushing and sizing, vented to baghouse	<20% opacity 3-min average fugitive dust	must submit fugitive dust control plan per 40CFR Part 63.6
		.030 grain particulates per SCF exhaust from baghouse	must record & report all days when any visible particulate emissions observed from the stack or any windows or egress points around building

E. Eramet Marietta: Incidents and Malfunctions (self-reported)

Affiliation	Date	Cause	Reason	Source	Remarks
Federal	02/02/2000	Discharge/Bypass Treatment	Deliberate Action		USEPA received a complaint of Eramet releasing a strong ammonia odor. USEPA will assist as needed.
Company	02/02/2000	Discharge/Bypass Treatment	Break or Broken		Approx 15-25 lbs. of SO2 released from a ruptured process line. Employees were evacuated from the building. Building vented. No injuries noted. Company advised to notify the NRC and LEPC.
Env. Supervisor	04/26/2000	Deliberate Action	Deteriorated equipment being repaired	Furnace 18	Furnace #18 was tapped with no tap hole collection while a casting fan inside (which deteriorated to the point it was falling apart) was being repaired.
Env. Manager	05/01/2000	Equipment Malfunction	Maintenance Failure	Furnace 18	Furnace #18 spill into air as a result of the furnace operated at a very low load
Foreman	06/29/2000	Permit Violation	Equipment being repaired	Furnace 18	Company reporting equipment failure causing MnO release. Number 18 furnace was having problems.
Foreman	07/17/2000	DA/ cut or break	Maintenance Failure	Furnace 18	Dust and smoke release to air due to a "stubbed a phase on furnace 18". Minimal amount released.
Env. Supervisor	07/17/2000	Equipment Malfunction	Broken electrode	Furnace 18	Furnace #18 spill due to electrode "A" malfunction - maintenance process will be complete 8 pm
Env. Supervisor	07/28/2000	Equipment Malfunction	Maintenance outage of furnace	Furnace 18	Furnace # 18 spill - it was taken out for 1 day maintenance outage on 7/26/00, when turned on 7/27/00 it began to fume
Env. Supervisor	08/24/2000	Equipment Malfunction	Unknown	Furnace 18	Furnace #18 emission - computer could not move "A" phase electrode to correct position - unknown reason.
Env. Supervisor	08/30/2000	Deliberate Action	Deliberate Action	Furnace 18	Furnace #18 burndown to sound electrodes 8:30 pm (8/30) - 6:30 am next day.
Env. Manager	10/13/2000	Unknown	Unknown		Continuous release notification required under CERCLA from surface impoundment area. Reported yearly. Dan Rosendale is site contact.
Env. Supervisor	11/30/2000	Equipment Explosion	Unknown	Furnace 18	Furnace # 18 exploded in a Class C Blow - most serious class of furnace eruption, led to complete loss of furnace power
Env. Coordinator	08/09/2001	Sludge pipeline spill	Unknown		Spill from Elkem Metals sludge pipeline on property of Eveready Battery Co.
Env. Supervisor	11/05/2001	New equipment installed	Equip. malfunction	Furnace 1	Furnace #1 - new scrubber installed is causing water loss - leading to spill
Env. Supervisor	11/06/2001	New equipment installed	Unknown	Furnace 1	Furnace #1 - new scrubber installed is causing water loss - leading to spill, *spills continued until 11/8/01
Env. Manager	03/19/2002	Deliberate burning of mix	Deliberate Action	Furnace 1	Furnace #18 - mix was burned down in order to lower mix burden to shove in the mix banks
Env. Manager	04/16/2002	Equipment Malfunction	Maintenance Failure		Malfunction which affected the results of compliance test.
Manager	05/05/2002	Discharge/Bypass Treatment	Deliberate Action		Routine burn down to check electrodes.
Env. Manager	05/07/2002	Equipment Malfunction	Malfunction	Furnace 18	Furnace #18 had a spill - it caused an explosion first time it was tapped after a week long maintenance outage. The cause of explosion was the "B" phase that broke on 5/6/02. Venturi fan broke and "B" phase stubbed again
Env. Manager	05/30/2002	Equipment Malfunction	Malfunction	Furnace 18	Furnace #18 had a spill for unknown reasons - mix or electrode problems are suspected. Occurred at 8:20 am and furnace should return to normal at 8 am next morning.
Env. Supervisor	06/10/2002	Equipment Malfunction	Malfunction	Furnace 18	Furnace # 18 spill due to fluting of electrodes

Env. Manager	06/30/2002	Equipment Malfunction	Damage by Crane	Furnace 18	Furnace #18 had a spill because a joint in the taphole collection duct was damaged - possibly due to a crane removing a ladle. Occurred at 9 pm and repairs completed at 9 am 07/01/2002.
Env. Manager	08/19/2002	Equipment Malfunction	Deliberate Action	Furnace 18	Furnace #18 had a spill resulting in an opacity exceedance of manganese fumes.
Env. Manager	09/03/2002	Equipment Malfunction	Deliberate Action	Furnace 18	Furnace #18 has water on cover. Burn down necessary to repair/find leak.
Env. Manager	10/09/2002	Equipment Malfunction	Deliberate Action	Furnace 18	Furnace #18 will continue to fume until 5:00 pm as opposed to original 9:00 am
Env. Manager	10/16/2002	Equipment Malfunction	Deliberate Action	Furnace 1	Furnace #1 is operated at levels between 260-250 amp; Eramet requested the range be 250-293 amps.
Env. Supervisor	10/23/2002	Equipment Malfunction	Unknown	Furnace 18	Furnace #18 spill possibly due to electrode problem - they don't know why, continued until 8 pm 10/24/02
Env. Manager	Oct-02	Equipment Malfunction	Deliberate Action	Furnace 18	Furnace #18 developed problem overnight that caused excessive fuming.
Env. Supervisor	10/24/2002	Standard Procedure	Standard Procedure	Furnace 18	Furnace #18 being tapped - XXX observed excessive fumes and called EPA - Eramet says they had excessive 48 points in the furnace
Foreman	02/15/2003	Other	Deliberate Action		Eramet in Marietta reported that they had a scheduled burn-down planned. The approximate length of time for the burn down was to be 8 hours.
Env. Manager	05/20/2003	Equipment Malfunction	Malfunction	Furnace 18	Furnace #18 stubbed an electrode causing excessive emissions. Occurred at 9:30 am and should be fixed by noon.
Env. Manager	05/27/2003	Equipment Malfunction	Malfunction	Furnace 1	Furnace #1 caused emissions when one of recirculation pumps failed. Excess emissions began at 3:45 p.m. and equipment was fixed by 6 p.m.
Env. Manager	07/09/2003	Permit Violation	Equipment being repaired		Furnace found exceeding allowable rate of emission. Eramet believes that the bags in some compartments may not have been secured properly. Nation Filter Media informed EMI that the bags were not fitting properly and new bags are to be installed within two weeks.
Env. Manager	08/03/2003	Equipment Malfunction	Malfunction	Furnace 1	Furnace #1's had a spill because its baghouse fan would not start. The problem was a failed breaker and a new one was installed on August 4th.
Env. Supervisor	09/30/2003	Deliberate action	Preparation for maintenance outage	Furnace 18	Furnace #18 burndown in preparation for maintenance outage -excess emissions 10pm (Sep 30)-1am (Oct 1)
Env. Supervisor	10/29/2003	Deliberate Action	Malfunction	Furnace 12	Furnace #12 burndown - excess emissions between 10:30 pm (Nov 29)-4:30 am (Nov 30), all 3 electrodes must be in same position but one of them slipped further inside and had to be pulled back to right position.
Env. Supervisor	04/23/2004	Deliberate Action	Deliberate Action	Furnace 12	Furnace # 12 burndown (also called lowering of mix in furnace)
Env. Manager	09/07/2004	Equipment Malfunction	Deliberate Action	Furnace 18	Furnace #18 experienced spill to the air, cause is believed to be due to a stubbed electrode.
Env. Manager	10/20/2004	Equipment Malfunction	Deliberate Action	Furnace 18	Furnace #18 had reportable spill:stub on B phase following a power failure.
Env. Manager	10/25/2004	Equipment Malfunction	Deliberate Action	Furnace 18	Furnace # 18 had stubbed electrode causing excess opacity.
Plant Foreman	03/16/2005	Deliberate action	Deliberate Action	Furnace 18	Furnace # 18 burndown leading to MnO emissions; between 2am-6:30am
Env. Supervisor	08/17/2005	Deliberate action	Deliberate Action		Emission from burning down of furnaces - supposedly exempt by OEPA
Company	12/04/2005	Permit Violation	Equip. being repaired		Company reporting a burn down of the mixing furnace until 2300 hrs.
Env. Supervisor	01/06/2006	Equipment Malfunction	Broken electrode	Furnace 18	Furnace #18 spill due to broken electrode, 1 am - 9:30 am
Env. Manager	02/28/2006	Other	Equip. being repaired		Fall of '06 possible shut down of furnace and replace with transformers.
Foreman	28-Feb	Permit Violation	Maintenance Failure		Opacity violation, 15% above normal volume.
Env. Manager	03/03/2006	Other	Maintenance Failure	Furnace 18	Furnace #18 experienced spill into air as a result of the furnace operated at a very low load for the weekend due to crane problems.
Env. Engineer	04/27/2006	Furnace Explosion	Broken waterline	Furnace 1	Furnace 1 exploded after water from a broken waterline came in contact with the furnace. Fixing the furnace requires emergency asbestos removal. The furnace exploded at 3:33 am (4/27/06) and repairs will take 5-6 days.

F. Eramet Violations Cited by OEPA

<u>Violation</u>	<u>Description of rule violated</u>	<u>Date</u>	<u>Potential for Harm</u>	<u>Extent of deviation</u>	<u>Total Penalty</u>	<u>Violations Abated?</u>	<u>Notes</u>
Hazardous Waste Determination, OAC 3745-52-11	Must determine if waste generated is hazardous	5/21/06	.	.	N/A	No	Waste sludge material observed in the drain adjacent to sludge container. Did not determine if it was hazardous
Personnel Training, OAC 3745-65-16	Personnel must complete classroom safety training	5/21/06	.	.	N/A	No	Eramet claimed that it trained employees but could not provide signatures.
Testing and Maintenance of Equipment, OAC 3745-65-33(A)(B)		5/21/06	.	.	N/A	Yes	
Inspections, OAC 3745-66-74(A)(B)		5/21/06	.	.	N/A	Yes	
OAC rules 3745-54-31 and 3745-65-31	Operate facility in a way that minimizes possibility of a fire, explosion or unplanned release of hazardous waste	3/16/05 3/17/05 3/22/05	.	.	.	?	Failed to maintain and operate the Facility in a manner which minimizes the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to the air, soil or surface water.
OAC rules 3745-55-73(A) and 3745-66-73(A)	Hazardous waste containers must be closed	3/16/05 3/17/05 3/22/05	.	.	.	?	Failed to ensure that containers of hazardous waste are closed, except when adding or removing hazardous waste
OAC rules 3745-54-52(A,C,D,F) and 3745-65-52(A,C,D,F)	Hazardous waste contingency plan must contain emergency action info in response to accidents	3/16/05 3/17/05 3/22/05	Major	Major	\$10,000 +\$2,500	No	*Fine increased for lack of good faith efforts to comply. Hazardous waste contingency plan lacks: emergency actions in response to fires, explosions, or unplanned releases of hazardous waste, documentation demonstrating that arrangements exist with local authorities to respond to emergencies at the Facility, a Facility evacuation plan, and updates which reflect changes to Facility and personnel change.
OAC rules 3745-52-34(A)(3), 3745-55-73(A), 3745-66-73(A)	Hazardous waste containers must be kept closed and labeled	3/16/05 3/17/05 3/22/05	Moderate	Moderate	\$3,200	No	Failure to mark each container holding hazardous waste with the words, "Hazardous Waste". Failure to ensure that containers of hazardous waste are closed, except when adding or removing hazardous waste.
OAC rule 3745-279-22(C) and OAC rule 3745-279-22(D)	"Used Oil" containers must be kept closed and used oil releases must be cleaned up	3/16/05 3/17/05 3/22/05	Moderate	Moderate	\$3,200	No	Failure to clean up releases of used oil and failure to properly label containers of used oil with the words "Used Oil".
OAC rules 3745-273-13(D), 3745-273-14, 3745-273-15	Universal waste lamp containers must be closed, labeled, time stored must be documented	3/16/05 3/17/05 3/22/05	Moderate	Moderate	\$3,200	No	Failure to keep containers with universal waste lamps closed and labeled, and failure to document length of time that bulbs were stored at Facility

Section 112 of Clean Air Act, 42 U.S.C. § 7412 OR National Emission Standards for Hazardous Air Pollutants (NESHAP) for Ferroalloys production: Ferromanganese and silicomanganese at 40 C.F.R. § 63.1656 (C,2)	Not allowed to discharge more than 35.9 lb/hr of exhaust gases containing particulate matter from open submerged arc furnace processing silicomanganese	6/12/03			\$13,200		Eramet's open submerged arc furnace #1 exceeded its allowable emission of 35.9 lbs/hr of silicomanganese pm, the stack test showed that it emits 39.14 lbs/hr of pm
Section 309(b)(d) of Clean Water Act, 33 U.S.C. § 1319 (b)(d) and National Pollutant Discharge Elimination System permit for Elkem Metals					\$225,000	No	Released hazardous material into Ohio River in 1999 and 2000
Section 309(b)(d) of Clean Water Act, 33 U.S.C. § 1319 (b)(d) and National Pollutant Discharge Elimination System permit for Eramet					\$525,000		Released hazardous material into Ohio River in 1999 and 2000
Section 107(a) of CERCLA, 42 U.S.C. § 9607(a) for Elkem Metals and Eramet					\$3,250,000*		Released hazardous material into Ohio River in 1999 and 2000
					*\$2,040,000 (CERCLA) + \$750,000 (CWA) + \$427,500 (US Dept. of Interior) + \$32,500 (Ohio)		

G. Citizen Complaints

Date	Suspected Spiller	Cause	Remark
12/21/2000	Eramet	Odors	NRC Report of strong chemical odors coming from business. Chronic problem.
12/22/2000	Eramet	Discharge/Bypass Treatment Sys	Eramet is discharging unk. material to air, Ongo. for three years.
12/23/2000	Eramet	Odors	Complaint of terrible odors coming from company. Chronic problem.
12/24/2000	Eramet	Discharge/Bypass Treatment System	Caller indicated that a strong chemical odor is coming from eramet. Odor woke her up at 0000 Hrs. Caller has respiratory issues. Information was forwarded to the duty room
12/25/2000	Eramet	Odors	Complaint of chronic ammonia odors in Marietta. Very stinky situation.
12/26/2000	Eramet	Unknown	Strong ammonia odor noted in the caller home and outside. Smell is constant and occurs about every three days. Info forwarded to duty room from opp.
12/27/2000	Eramet	Odors	Complaint of terrible odors coming from company. Chronic problem.
12/28/2000	Eramet	Odors	Complaint of chronic ammonia odors in Marietta. Very stinky situation.
12/29/2000	Eramet	Unknown	Strong ammonia odor noted in the caller home and outside. Smell is constant and occurs about every three days. Info forwarded to duty room from opp
12/30/2000	Eramet	Discharge/Bypass Treatment System	Caller indicated that a strong chemical odor is coming from Eramet. Odor woke her up at 0000 Hrs. Caller has respiratory issues. Information was forwarded to the duty room
12/31/2000	Eramet	Discharge	Caller indicated that Eramet chronically releases very strong ammonia odor. Odor today is very strong.
01/01/2001	Elkem Metals	Discharge/Bypass Treatment System	Caller very concerned about chronic odors and pollution possible discharging from Elkem Metals. Pollution is very chronic and usually during the evening and early morning hours. Caller has notified SEDO of situation several times.
01/02/2001	Eramet	Unknown	Strong ammonia odor noted near 103 Pine St. Odor is strong every night. Caller is experiencing upper respiratory issues.
01/03/2001	Unknown	Unknown	Citizen concerned about chronic odor problem. Advised that he talk to SEDO APC during the week and to USEPA Region 5 Air. He already had name and number @ Region 5
01/04/2001	Eramet	Unknown	Caller reported that there is something in the air from Eramet and it is burning his lungs. Caller reported that he lives five miles from the facility.
01/05/2001	Eramet	Unknown	Complainant stated that yesterday (08-11-05) morning around 4 or 5 a.m. the air smelt like rotten eggs and the air burnt his eyes and throat. He believes it is coming from Eramet. He lives 4 1/2 miles behind the facility. He asked that his information not be given out. He said that the smell generally happens 3 or 4 time a week, always at night. It usually happens around 10:30 or 11 p.m. at night and gets worse. He has spoken to some people that work there and he said that they are "turning up their stacks" at night.
01/06/2001	Eramet	Unknown	Heavy blanket of odor at night.
01/07/2001	Elkem Metals	Unknown	XXX called complaining that Elkem was stinking. As I talked to him he referenced the "big stack" and even went on to suggest they were burning trash with their coal. He also complained about the smoke at night and the smell also. He also stated it did not smell like sulfur.
01/08/2001	AMP	Odors	Citizen has reported this in the past. Elken Metals may also be responsible, or DuPont. Worse in late afternoon/ early evening. Brownish/black smoke. Can trace it back to these companies.
01/09/2001	Eramet	Odors	NRC Report of strong chemical odors coming from business. Chronic problem.

01/10/2001	Unknown	Odors	Citizen complaint of Marietta stinking every weekend. Odor of unknown chemicals.
01/11/2001	Unknown	Unknown	Citizen concerned about chronic odor problem. Advised that he talk to SEDO APC during the week and to USEPA Region 5 Air. He already had name and number @ Region 5
01/12/2001	Elkem Metals	Odors	He was vey upset, had called the answering service twice, XXX said he calls EPA every two weeks and no one will call him back. I told him that the office said to tell anyone calling about the odors in Washington that EPA was aware of the odors and was working on it. XXX was not satisfied with that answer. I called Mark Stello, he said he would give the report to the air supervisor in the morning. I told Mark that XXX wanted the name of someone in the district. He said it was okay to give him Fred Klingelhafer's name.
01/13/2001	Elkem Metals	Odors	Citizen complaint of a black smoke odor coming from the facility.
01/14/2001	Elkem Metals	Odors	Citizen complaint of a black smoke odor coming from the facility.
01/15/2001	Eramet	Odors	Citizen complaint of a chronic odor in the air. Citizen noted strange chemical smell.
01/16/2001	Eramet	Odors	Citizen complaint of a chronic odor in the air. Citizen noted strange chemical smell.
01/17/2001	Eramet	Unknown	Caller noted unknown odor in above area.
01/18/2001	Eramet	Unknown	Caller noted unknown odor in above area.
01/19/2001	Eramet	Discharge/Bypass Treatment Sys	Strong odor is currently discharging from Eramet.
01/20/2001	Eramet	Discharge/Bypass Treatment Sys	Unusual odor in area coming from Eramet.
01/21/2001	Eramet	Discharge/Bypass Treatment Sys	Foul odor noted in area. Caller believes Eramet is cause of smell.
01/22/2001	Eramet	Odors	Citizen complaint of a large brown clouds leaving company stack and entering WV. Citizen noted the cloud smells of manganese? Chronic problem in the evening.
01/23/2001	Eramet	Odors	Caller reported that there is a strong odor coming from the company due to a release. Caller stated that the complany only release at night and particulate monitors have been placed at various location but the caller wants someone to go on the roof and monitor for what is coming out of the stack. Caller stated that the odor is sometime so strong that it burns your throat and burns your eyes.
01/24/2001	Unknown	Odors	Caller reported that there is a strong chemical odor coming from unknown facility. Called caller a few times and the line was busy. Lives 3-5 miles from Eramet, usually smells like ammonia in the evening.
01/25/2001	Eramet	Odors	Caller reported that there is an odor in the air from Eramet. Caller stated that this is an ongoing problem and that there is a strong chemical odor. Caller stated that the FD and SO are on the scene.
01/26/2001	Eramet	Discharge/Bypass Treatment System	XXX was coming home (Marietta) from college today and as he drove past Eramet he noticed a large amount of red fugitive dust emissions exiting the middle furnance building at Eramet. He stated that he had to turn on his wipers to clear his windshield
01/27/2001	Unknown	Particulate Fallout	Air pollution fallout in parking lot caused grey mottling effect on car finish while parked in the parking lot, required buffing to remove graying.
01/28/2001	Eramet	Emissions	Wanted to report excessing emissions from the Eramet facility (According to him the "largest" polluter in Ohio). Emissions are bright yellow and coming from the southern most building. Covers approximately 20-30 acres.
01/29/2001	Eramet	Unknown	Works for contracted at Eramet removing furnances that were build in the 50's and have possible asbestos and lead. Concerned about own employees as well as plant employees.
01/30/2001	Elkem Metals	Particulate Fallout	"Not only is this fallout ruining the finish and chrome on our vehicles, but also the quality of the air. Some people who may live in this fallout area, may still be using cisterns for drinking purposes. I don't feel that people living or working in this area should be subjected to having to drink or breathe this corrosive filth."
01/31/2001	Elkem Metals	Particulate Fallout	Believes Elkem Metals as the probable contributor to a bad fallout problem in adj.area.