Smoke and Mirrors:

Mittal Steel's Playbook to Cover Up Their Pollution

Citizens' Audit of Mittal Steel Cleveland Works

January 3, 2007

Photo by Stefanie Spear

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Summary of Audit Findings

Neighbors of Mittal Steel's Cleveland Works don't need a citizens' audit to know that they are suffering from the effects of pollution from Mittal Steel. Metal flakes on their homes, cars, and children; headaches from rotten egg smells; zinc and manganese found on and inside their homes; and doctors telling them to move away for the sake of their health are certainly enough.

But Mittal Steel Cleveland uses smoke and mirrors to act as though their pollution is not a problem. Here are some of the methods in Mittal Steel's playbook for covering up their pollution:

- Mittal Steel reports the pollution from its blast furnaces using 1986 "emissions factors" — generic figures not related to the actual equipment or performance at Mittal Steel's Cleveland Works. By using these "average" emissions factors to estimate pollution, Mittal Steel is assuming that its pollution is also average. U.S. EPA's emissions factors for blast furnaces are based on limited data from facilities that have more control equipment in place than Mittal Steel.[1]

- Though Mittal Steel's blast furnaces are the biggest sources of fine and coarse particle pollution, sulfur dioxide, carbon monoxide, volatile organic compounds, and organic chemicals,[2] Mittal has never taken stack tests on these units.

- Mittal Steel tells the public: "There is no technology available that would do anything more than is already being done."[3] But a U.S. EPA document shows that the emissions rate of the casthouses at Mittal could be cut seven times by installing controls similar to Wheeling-Pittsburgh's mill in Mingo Junction, Ohio.[4]

- Mittal Steel lists "flaring" as a pollution control device for its blast furnace casthouses. However, flares are usually installed for emergencies only and actually increase emissions: when the blast furnace is flaring, it sends uncontrolled particles directly into the air.[5]

- Mittal Steel refuses to tell neighbors what investments they have made to reduce air emissions at the Cleveland plant. Instead they report sums that confuse LTV, ISG, and Mittal spending; that confuse pollution control (maintaining levels that are not satisfactory) and pollution prevention (actually reducing emissions); and that mix up spending water pollution control and air pollution control.

- Mittal Steel reports investing in environmental projects without disclosing the budget, timetable, or ways they will measure the effectiveness of such projects.

- When cited for violations by the Cleveland Division of Air Quality, Mittal Steel tells the Division that if they look at the permits differently or look at different permits, then they are not in violation.

Acknowledgements

Thank you to the contributors to the Citizens' Audit: Rachael Belz, Ruth Breech, Sandy Buchanan, Matthew Chasney, Denise Denham, Dr. Kathy Fagan, Stephen Gabor, Arlene Green, Stu Greenberg, Adam Harvey, Scott Hedrick, Connie Ho, Hilton Kelley, Holly Koch, Denny Larson, Donna Levandowski, Jessica Metcalf, Angela Oster, Dana Paris, Becca Riker, Ryan Rittenhouse, Ina Roth, Stefanie Spear, Michelle Taphorn, Renee Vaughan, the phone and field staffs at Ohio Citizen Action, and to those who helped with its release: Pastor Rich Bartley, Michelle Davis, Josh Durocher-Jones, Christa Ebert, Stephen Gabor, Joey Leyva, Angela Oster, Judith Pindell, and Scott Rosenstein. Thanks are also due to the neighbors in northeast Ohio, who have written letters, signed petitions, and made contributions on the Good Neighbor Campaign with Mittal Steel, to improve the air quality in the greater Cleveland area.

Thanks to the foundations who have supported Ohio Citizen Action Education Fund's work on the good neighbor campaign: George Gund Foundation, Ostara Foundation of the Jewish Community Federation, and Mt. Sinai Health Care Foundation.

Neighbor Testimonial, Slavic Village:
Denise Denham and Donna Levandowski

"We've grown up in this house next to the Cleveland Works our entire lives, but something has been very different in the past five years. It's not just our own personal health problems that we notice or the damage that pollution causes to our house and cars, but our children are sick, too.

The oldest of our three kids is Denise's son, Craig, age ten. He developed asthma about five years ago. It gets bad when the air is bad, and so he'll have to use his breathing treatments.6 You can usually tell by the way he's breathing. Sometimes his asthma gets so bad he'll have to take steroids. He has constant ear infections too, and if you don't get rid of them fast enough, they'll aggravate his asthma. Craig has allergies and eczema, too.

Donna's two-year-old son Jimmy also has eczema. And, every time he comes in from playing out in the grass he has a blotchy skin rash. The cream we use on him is so strong, the doctors said what it does is literally thin his skin out. Jimmy has asthma and allergies. For Jimmy's asthma he has to take his breathing treatments two to three times a day.[7]

Donna's daughter Joie is seven years old. She's got the allergies and asthma just like the boys. She also gets real bad headaches. One time back in the spring Donna took her to the emergency room because her head hurt so badly.

That's what we suffer from the most too – migraine headaches. We're both on migraine medication for the rest of our lives. Donna has tried to get off hers before but she ended up in the emergency room. Her medications are real strong too; they cause some memory loss and her pulmonary function test has come back high from taking them. We both started having asthma in the past five to six years. It's induced asthma. Denise has problems with her sinuses and nausea too.

We've taken ourselves and our kids to see the doctors at an environmental health clinic. They recommended that our children shouldn't play outside because of the heavy metals in the grass and soil. Our urine tests came back with some high levels for copper, arsenic, manganese, lead, zinc, mercury, and alkaline phosphates. These are the same pollutants coming from the mill.

The doctors asked if we were going to relocate our families, because their health is more important than this house. We sure wish we could but we can't afford to, and we know the steel mill won't pay for it.

Instead we're here dealing with the health problems, and all the extra cleaning too. One time their dust turned the front of our house orange. You can tell they let a lot of stuff - metal flakes and red smoke - out at night, because you'll notice it on your cars in the morning.

The other big problem is the noise pollution. Fire trucks with their sirens and coke[8] trucks are always rumbling past our house. When they're working behind our house it shakes. For the past eight or nine months the noise will wake us up at all hours of the night, though they're not supposed to work past 7pm. We'll have to call their security and sometimes we're able to get them to stop. A few nights later they'll wake us up at 3am again."

Background

For the last century, the giant Cleveland steel mill has been the worst polluter in town. Mittal Steel continues that tradition as the biggest polluter to both the air and the water in Cuyahoga County.[9] The facility itself is known to most Clevelanders as the former LTV Steel, a company that left many workers and retirees without pensions, health care, and jobs after filing for bankruptcy in 2000.

The Cleveland steel mill is not in the same situation today. Ownership of the mill by the world's largest privately-owned steelmaker and fifth richest man in the world[10] creates a different economic situation.

The bankrupt LTV closed the West Side Works in June 2001 and the East Side Works in December 2001. Wilbur Ross and his company, WL Ross and Company, bought LTV's assets in 2002 and then created ISG to operate them. Because the entire plant was closed for five months, neighbors now know what it is like to live both with and without the pollution from the steel mill. ISG reopened the East Side Works in May 2002 and the West Side Works in May 2004. Neighbors reported that the pollution seemed *even worse* after the reopening of the West Side Works.

Ohio Citizen Action, a neighbor-based environmental organization, launched the Good Neighbor Campaign with ISG in July 2004. Good Neighbor Campaigns use the power of community organizing to cause major polluters to prevent pollution at their facilities. The Cleveland Works plant has been under the ownership of Mittal Steel since April 2005. Ohio Citizen Action members have sent 24,500 personal, handwritten letters and petitions to Mittal Steel's Cleveland management, the bulk of which went to plant manager Terry Fedor. Mr. Fedor has not responded.

Mittal Steel can afford to reduce emissions and to be a good neighbor. In fact, it has a moral obligation to do so. According to the 1993 Harvard Six Cities Study, cities with heavy industry and fine particle pollution have higher mortality rates, especially from lung cancer, lung disease, and heart disease. Medical studies conducted since the Six Cities Study have reaffirmed the lethal relationship between particulates and cardiovascular mortality.[11]

What is the Mittal Steel Cleveland Works?

The Mittal Steel Cleveland Works facility has a long history of steel production in Cleveland. The complex was built 90 years ago and has had eight owners. The original owners on the east bank of the Cuyahoga River were Corrigan, McKinney and Company, followed by Republic Steel, LTV Steel, and International Steel Group (ISG). Plants on the west bank were owned by Otis Steel, Jones & Laughlin Steel, Ling-Temco-Vought (renamed LTV Steel), and International Steel Group (ISG). In April 2005, Mittal Steel Cleveland Works was formed after the $4.5 billion merger between ISG, Ispat International, and LNM Holdings.

The Cleveland Works facility at its peak employed 15,000 workers.[12] After the bankruptcy of LTV Steel, and the rebirth of the mill by ISG in 2002, the facility currently employs 1,598 workers under Mittal Steel.[13]

The Cleveland Works complex straddles the Cuyahoga River in the valley of Cleveland known as The Flats. **Mittal Steel Cleveland Works has more neighbors than any other steel mill in the country: 392,276 residents and half of Cleveland public schools are within five miles of the plant.[14]** Of these residents, 59.6% identify themselves as members of a minority group: 48.9% African American and 7.5% of Hispanic origin.[15] With the steel mill in the valley and resident homes on surrounding hills, many neighbors find themselves level with the tops of the smokestacks. Of the households surrounding the mill, 31.9% earn less than $15,000 per year.[16] Many neighbors say they want to move away from Mittal Steel but cannot afford to do so.

Unknown to most Clevelanders, Mittal Steel's owner Lakshmi Mittal is a London-based billionaire and the 5th richest man in the world.[17] Mr. Mittal's $125 million dollar home is the most expensive residence in the world and includes a jewel-encrusted swimming pool.[18] He spent $60 million on his daughter Vanisha's wedding in 2004, making it the most expensive wedding in history. This is nearly the same amount invested by AK Steel in Middletown, Ohio, on state-of-the-art pollution control equipment.[19]

What does the Cleveland Works do?

Mittal's main line is for flat-rolled steel products. It is one of the largest flat roll steel plants in North America.[20] Cleveland Works produces the following types of steel:

Hot rolled– steel slab is reheated before it enters the hot mill and is rolled as a hot strip.
Cold rolled full-hard – hot rolled strip is rolled again as a cold strip.
Cold rolled full-finished – hot rolled strip is rolled again as a cold strip and then softened.
Electro-galvanized sheet - thin layer of zinc is applied to protect steel from corrosion.
Semi-finished – slabs of steel that have not been rolled.

These steel products are used in the auto industry, service centers, converters, plate slabs and tubular applications. With two blast furnaces, the Cleveland Works has the capacity to produce up to 3.8 million tons of raw steel annually.[21]

A new galvanizing line, formed by conversion of an old line used to heat steel for softening, opened the last week of April 2006. Started by ISG eight months before the merger with Mittal Steel was complete, the galvanizing line adds the capacity to roll 700,000 tons of galvanized hot-dip steel for the auto industry.

Mittal Steel claims that the Cleveland Works facility is the most productive steel mill in the world, measured by tons produced per worker hour.[22] This means that Mittal is providing very few jobs for Clevelanders - 90% fewer than the same complex used to provide. Marsha Harris, Human Resources Manager at Mittal Steel Cleveland refers to this as "lean manufacturing."[23]

What is Mittal's global status?

Arcelor Mittal

Mittal Steel succeeded in buying Arcelor SA, the second largest privately-owned steelmaker in the world, on June 26, 2006. The $33.4 billion merger made Arcelor Mittal the largest privately-owned steel company in the world. Arcelor rejected Mittal Steel's initial offer of $26 billion in January 2006, resulting in a five month dispute and a war of words from Arcelor's CEO, Guy Dollé.

Mr. Mittal has been named the new CEO of Arcelor Mittal and his son Aditya is its Chief Financial Officer. The merger is expected to be final in the spring of 2007 and will expand Mittal's "industrial presence" to a total of 27 countries in Europe, the Americas, Asia, and Africa.

Arcelor SA and Mittal Steel Company NM earned combined revenue of $77.5 billion in 2005.[24] The combined operations account for approximately 10% of the world's steel production.[25] With fewer steelmakers to compete with, Arcelor Mittal will have more control in setting the price of steel.

Mittal's shortcomings are not limited to Cleveland.

Rather than modernizing the facilities he already owns, owner and CEO Lakshmi Mittal has built his steel empire by purchasing old facilities and running them without significant investments. Organizations across the globe are working to shed light on Mittal's operations and the impact they have in their countries:

- Global Witness is bringing attention to Mittal's questionable purchase of iron ore reserves in the impoverished African country of Liberia.[26]
- In Kazakhstan, thousands of steelworkers joined striking miners who were protesting for higher wages and safer working conditions after a mine explosion that killed 41 workers.[27]
- The National Union of Metalworkers of South Africa has staged several protests against Mittal's "excessive pricing," which threatens jobs in industries that consume steel.[28]
- Mittal Steel also faces a South African court after two gold mining companies complained of overpricing. Harmony Gold spokesperson Philip Kotze said that "…although Mittal Steel produced steel locally, it charged international prices, factoring in costs such as transport and taxes."[29]
- Also in South Africa, the organizations Groundwork and Centre for Civil Society awarded Mittal Steel one of nine "Corpse" awards in 2005. Mini coffins and the *Sustainable Catastrophe Award* were presented to the company for "worst corporate practice in producing environmental injustice."
- Human Resources Development Minister Bandhu Tirkey has come out against a proposed Mittal steel venture in India. As his reasoning Minister Tirkey states that they have to protect the interests of the local people.[30]
- The French government was strongly opposed to Mittal's takeover of Arcelor because they "…infringed all the rules of conduct, the grammar of international finance."[31]
- Several trade unions in Poland are protesting Arcelor Mittal for failing to provide promised social package provisions. Some unions have even gone on hunger strikes.[32]
- The Polish and South African trade unions have teamed up, globalizing their efforts to combat the globalized Mittal Steel.

The pattern of Mittal Steel's management approach worldwide is to set its standards for health and safety and workers' benefits to the lowest level it thinks it can get away with in each country.

Blast Furnaces at Mittal Steel

Mittal Steel Cleveland has two blast furnaces on site that convert raw materials into molten iron (see Appendix for Steelmaking Process). Blast furnace C5 and blast furnace C6 are Mittal's two biggest sources of fine and coarse particle pollution, sulfur dioxide, carbon monoxide, volatile organic compounds, and organic chemicals.[33]

According to the U.S. EPA, "The major emissions of interest [from a blast furnace] occur from the casthouse during tapping when molten iron and slag are removed from the furnace."[34] These emissions are created at the taphole "trough" (a container that molten iron and slag are poured into), at the "runners" that transport the iron and slag, and at the ladle that receives the molten iron. Metal flakes are released at these points as the carbon-saturated metal cools, along with metal oxide fumes that form when metals in the molten iron react with oxygen in the air.

In reference to upgrading Mittal Steel's pollution control equipment, Mittal spokesperson Chuck Glazer says, "There is no technology available that would do anything more than is already being done."[35] This statement is not true.[36]

Casthouses with the lowest emissions evaluated by the U.S. EPA were controlled by fabric filtration systems commonly called baghouses. **The U.S. EPA's background document shows that the emissions rate of the casthouses at Mittal could be cut seven times by installing controls similar to Wheeling-Pittsburgh's mill in Mingo Junction, Ohio.[37]** According to 2005 reporting, this would be a reduction of 267,943 pounds of particle pollution released from the blast furnace casthouses each year.[38]

Casthouse Controls

Mittal Steel lists the controls in place at its blast furnace casthouses as "miscellaneous control devices" dating back to 1972.[39] The U.S. EPA's background document lists these devices as covered runners (enclosing the container that transports molten iron and slag) and flame suppression (blowing natural gas over the covered runners to suppress the formation of emissions). At the blast furnace C6 there is an additional hood for fume suppression at its taphole. Emissions that escape these control methods vent inside the casthouse where workers are stationed and then leave the building uncontrolled.

Additional casthouse controls used at other steel mills reviewed by the U.S. EPA route the emissions to a separate control device, usually a baghouse, where emissions can be contained and filtered. These controls include:

- Evacuated runners – covered runners that are vented to a control device.
- Localized hooding – hoods are placed to capture emissions at the taphole, trough, and sometimes from the torpedo car (transport), and are vented to a control device.
- Air curtain – a device that contains emissions in a designated area of the casthouse. The emissions are then captured by a hood and vented to a control device.

These additional casthouse controls can be used in combination. At the Wheeling-Pittsburgh Ohio mill, a hood in the casthouse roof at blast furnace 5S traps emissions from tapping with an air curtain and vents them to a baghouse. Localized hooding is used over the torpedo car to trap and vent emissions to a baghouse as well. These controls are used in addition to covered runners and flame suppression found at Mittal Steel.

Flaring

Flares are also listed as pollution control devices for the blast furnaces, though they are installed to be used in the case of emergency when excess blast furnace gas becomes dangerous. Normally this gas should be reused as a source of energy for steelmaking. Burning blast furnace gas through flaring is an energy loss for the company, and increases emissions as well: **when the blast furnace is flaring, it sends uncontrolled particles directly into the air.**[40] In addition to soot, carbon monoxide, nitrogen oxides, sulfur dioxide, unburned hydrocarbons, and partially burned and altered hydrocarbons are released during flaring. Flare use is based on the unrealistic assumption that flares are always operated correctly. In fact, factors such as the amount of assist gas added to the waste gas, separation of the flame from the burner tip, and weather conditions such as heavy winds can reduce the amount of time the waste gas is burned for proper breakdown of emissions and can reduce its overall combustion efficiency.

Neighbors of Mittal Steel report that blast furnace flares are used frequently. The uncontrolled emissions from flaring are likely to exceed mass emissions limitations at the blast furnaces.

Estimating Blast Furnaces Emissions

Though stack tests are conducted on other units at Mittal Steel that are significant sources of emissions, Mittal Steel has not conducted stack tests at the two blast furnace casthouses. Mittal Steel only conducts visible emissions readings, where human eyesight is used to record the percentage of sunlight that is blocked by emissions "opacity." Mittal took no stack tests at the blast furnace casthouses because the new U.S. EPA standards did not require them.[41]

At a press conference held by Mittal Steel on October 11, 2006, Mittal spokesperson Chuck Glazer said, "We always do not just what is required, but we do what is right." **Conducting representative stack tests[42] on the two units that pollute the most would constitute doing what is right.**

Instead, pollution reported from Mittal's two blast furnaces continues to be estimated based on *emissions factors* compiled for iron and steel production in1986.[43] Emissions factors are used to estimate uncontrolled emissions from Mittal Steel using the equation: E = A x EF, where emissions = activity rate x emissions factor. If emissions control equipment is in place, an *emissions reduction factor* is entered into the equation.

The problem with using emissions factors and emissions reduction factors is *where these numbers come from*. The U.S. EPA explains: "In most cases, these factors are simply averages of all available data of acceptable quality, and are generally assumed to be representative of long-term averages for all facilities in the source category (i.e., a population average)."[44] In other words, initial estimates of the amount of pollution at factories are made and assumed to be average. **Thus, by using this equation to calculate emissions at Mittal Steel, the emissions are assumed to be average.**

The U.S. EPA's introduction on emissions factors shows flaws in assuming emissions at different facilities to be the same. **They explain that depending on the process, control system, and type of pollutant, average emissions even among similar individual sources can differ significantly.**[45] Though these variables are known to cause a difference in total emissions, the U.S. EPA states that "this type of information is seldom included in emission test reports used to develop AP-42 [emission] factors." What's more, according to the U.S. EPA, even when these major variables are accounted for, the source tests that are averaged to develop emissions factors may still differ by five or more other variables.

The emissions factors used at blast furnace operations are a good example of these flaws. First of all, **the U.S. EPA states that these factors are calculated from limited data.** Secondly, the data is taken from tests at casthouses where emissions are "entirely vented to a control device."[46] Mittal Steel does not have equipment in place to vent emissions to a control device. **Thus these factors are based on testing at facilities that have more control equipment in place than at Mittal Steel.** Thirdly, there is little data available on the effectiveness of covers and flame suppression. Emissions reduction factors, developed based on this limited data, are also a part of calculating the total emissions from a blast furnace.

The apparent haphazard use of emissions factors can best be illustrated by comparing Mittal Steel's Cleveland blast furnace C5 and Mittal Steel's East Chicago blast furnace No. 7. The same emissions factor was submitted to the U.S. EPA for these two units. However, while Cleveland's blast furnace C5 has only covered runners and flame suppression in place, East Chicago's blast furnace No. 7 has the following equipment:

> There are covers over the runners for the molten metal and slag as well as canopies over the tapholes, which are evacuated to route the emissions to the baghouse. The casthouse is controlled by two baghouses, a new baghouse with computerized control that can concentrate on specific sources during the various phases of operating practice, and an older general baghouse that serves as back-up.[47]

Since the Cleveland area does not meet national air quality standards for fine particle pollution, failure to test, apply, and enforce emissions limitations is a failure by the Cleveland Division of Air Quality and Ohio EPA to protect human heath and welfare.

Mittal Steel's Investments at the Cleveland Works

Despite repeated inquiry, Mittal Steel management has yet to give a straightforward answer to the question – What investments has Mittal Steel made to *reduce* air emissions at the Cleveland plant?

Instead, Mittal has made a variety of statements about their expenditures at the Cleveland Works. The statements often lump together expenditures for operations and maintenance, new equipment, and upgrading of their facilities. For example, Mittal spokesman Dave Allen said his company "…gives its customers fair value and that the real test will be whether steel companies can recover the cost of their capital investments over the course of a business cycle. In Cleveland alone, ISG and its successor Mittal have invested $164 million primarily in production and environmental projects since 2002. Those investments include a new [electro galvanizing] line for producing corrosion-resistant steel that will go into autos."48 In other news articles, Mittal has cited a figure of $40 million for the new electro galvanizing facility, which involved upgrading an older part of the plant.

In order to hold Mittal Steel accountable, it is important for the community to know what *investments* for *prevention of air pollution* have been made by Mittal Steel since they took over the facility in April 2005. This will show what they have done to make the facility they purchased better, and what kind of commitment the current ownership is making to the community. When reviewing figures cited by Mittal Steel, a few distinctions must be made:

- ISG vs. Mittal: Anything invested in the facility by ISG shows what the plant was like when Mittal bought it. While it would be beneficial to know more of the details of ISG's investments, *they should not be claimed by Mittal Steel*.

- Spending vs. investment: Spending is buying something to be consumed today. For example, buying the paper to print Mittal's community newsletter is spending. An investment is buying something to be used for future gain. For example, buying a new, more efficient piece of equipment is an investment.

- Pollution control vs. pollution prevention: Pollution control is working to contain the pollution that has already been created. Pollution prevention is working to create less pollution in the first place.

- Water pollution vs. air pollution: Neighbors of Mittal Steel continue to complain of the problems that Mittal's air pollution creates for them. Investments to reduce water pollution are important but do not address the issues of air quality at hand.

Mittal's community newsletter, in its inaugural issue published in October 2006, states:
"In recent years, $90 million has been invested in environmental equipment, technology, services, and maintenance." In response to repeated inquiries from Ohio Citizen Action about the basis for Mittal's claims about expenditures, Mittal spokesperson Charles Glazer also cited a figure of $90 million in an email sent in March 2006, breaking it down as follows:

- $85 million between 2002-2005 for operations and maintenance, including "much of $85 million for maintaining and operating eight water treatment plants, and other portions in maintaining and operating the advanced air emissions control equipment;"
- $5 million total for a variety of projects including upgrading suppressed combustion scrubber control system-BOF #2; upgrading water treatment neutralization control systems; upgrading water treatment de-chlorination control systems; transferring of slag handling operations from outdoors to indoors; installing low NOx burners; installing CEM systems at five low NOx boilers; improving cooling towers at the hot strip mill; rebuilding two water treatment plant clarifiers; installing a sump overflow alarm system, cameras and dikes to improve oil spill prevention measures
- $1.3 million to improve slag handling operations.

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Of the $85 million cited for operations and maintenance, Mr. Glazer specifies that $45 million was spent by ISG between 2002 and June 2004. This must be subtracted from the $85 million, leaving $40 million remaining. Of the remaining sum, Mr. Glazer does not specify how much was spent by ISG from June 2004 until Mittal took over in April 2005. Thus the amount spent by Mittal on operations and maintenance from April 2005 to present is not specified.

What's more, there are several reasons why figures for "operations and maintenance" should not be included in an accurate assessment of the plant's investments in environmental improvements. First, operations and maintenance is not an investment - it is a cost of doing business, just like meeting the payroll or transporting the fuel into the plant. It is spending.

Second, the cost of operations and maintenance is not a good indicator of the effectiveness of the plant or equipment. Clearly, all equipment needs to be operated and maintained, or it will not function. Older equipment can often be more expensive to maintain. Newer equipment tends to be more energy efficient and may be less apt to break down. **What's more, neighbors are not asking Mittal Steel to simply maintain the current levels of pollution. They are asking the company to *reduce* emissions.**

Thus, a more accurate figure of recent investments in environmental projects at the Cleveland Works would be $5 million for the projects included above, plus $1.5 million for changes in slag handling. These investments were made from 2002-2005, again overlapping ISG and Mittal. This raises the question as to which of the $5 million in environmental investments were made by ISG (April 2002 – March 2005) and which were made by Mittal (April 2005 – Dec 2005). In addition, most of the projects relate to wastewater control, rather than air pollution.

Mittal did not supply individual figures for these projects, so we do not know how much was spent on each. Priced out on today's market, this claim is unrealistic. It therefore raises the following questions:

- Were all of the projects done, and was the wrong sum given?
- Were only some of the projects done, and if so, which ones?
- Is Mittal trying to claim credit for things that LTV or ISG did?
- Is Mittal giving us operations and maintenance figures for previously installed equipment?
- Why are lump sums cited rather than details of the type and quality of investments for environmental projects?
- Is the Mittal Cleveland management taking the community seriously when, though asked repeatedly, they fail to provide specifics?

Failing to provide specifics was illustrated as recently as October 2006, when Mittal's "Good Neighbor Matter Response Team" announced the planting of native shrubs and grasses and a 10-foot tall acoustical fence. The planting and fence were reported to community members as "meaningful steps" to "help keep dust and noise from reaching neighbors."[49] When asked for more specifics by members of the press Mittal spokesperson Dave Allen said, **"the company has no clear plan on how many acres will be planted. It also has no specific budget set aside for the planting, and no timetable.** Planting will be done incrementally based on what survives."[50] Not only are budgets and timetables important for the credibility of a project, a plan to measure its effectiveness is necessary as well.

Outdated Pollution Control Devices

Mittal Steel's pollution control devices are outdated. The oldest device still used today was installed in 1943. The newest device still used today was installed in 1990. Most of the devices were installed in the 1970's and 1980's. Of Mittal Steel's six boilers in operation, only Boiler Three has a pollution control device in place.

The charts titled "Pollution Control Equipment" and "Pollution Control Equipment Continued" found on pages 32 and 33 of the Appendix or online at http://www.ohiocitizen.org/campaigns/isg/ISG_control_equipment2.xls show the 15 major unit sources of air pollution from the Mittal Cleveland Works plant, as reported to the Ohio EPA in 2006 . The chart lists the eight main air pollutants that are required to be reported from these sources, including particulate matter, invisible particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, organic chemicals, volatile organic chemicals, and lead. If the emissions unit at the plant has a control method installed to reduce pollution, the process, device installed, and year of installation are listed. If an emissions source does not have a device that reduces the air pollution, then the chart lists "No Controls." The bold faced words mean that during a certain process, more than 2,000 pounds of that pollutant were emitted in one year.

If no new technology has been developed since the installation of some of the pollution control devices, Mittal Steel needs to demonstrate that for the community.

Air Pollution and Human Health

Summary of Emissions

The 1990 federal Clean Air Act Amendments established new operating permits for air emissions and emissions fees based on tons emitted. Most recent data for Mittal Steel shows 2005 emissions as follows: 1,150,480 pounds of particle pollution, 1,439,540 pounds of sulfur dioxide, 3,601,380 pounds of nitrogen oxides, 34,541,000 pounds of carbon monoxide, 181,400 pounds of organic chemicals, and 181,400 pounds of volatile organic compounds.[51]

In addition, Mittal Steel is required under the Toxics Release Inventory to report emissions to the air, land, and water of a specific list of toxic compounds. Mittal Steel reported releasing 25,940 pounds of zinc, 956 pounds of hydrochloric acid, 3,951 pounds of manganese, 396 pounds of lead, 125 pounds of vanadium, 103 pounds of chromium, 51 pounds of copper, 28 pounds of cadmium, and .12 pounds of mercury into Cleveland's air in 2005.

Harm to Health

Fine particle pollution (PM2.5) is defined by the U.S. EPA as those particles having a diameter of 2.5 micrometers or less. This pollution cannot be seen with the naked eye. It is so small that it passes through the body's natural defenses, penetrating the lung tissue and even entering the bloodstream. **Scientists now report that fine particle pollution is the most dangerous health risk caused by air pollution.[52]**

Fine particles cause lung damage, aggravated asthma, heart disease, bronchitis, irregular heartbeat, nonfatal heart attacks, and premature death for people with heart or lung disease. Children, the elderly, and people with existing heart or lung disease are most sensitive to exposure to fine particles. In addition, exercising outdoors in particle pollution can *decrease* lung capacity.

The Clean Air Scientific Advisory Committee – created to provide scientific advice to the U.S. EPA on national air quality standards – has recommended stricter standards for fine particle pollution to protect public health and welfare. Based on these recommendations, the U.S. EPA cut the national

particle standards, but also the advice from “virtually every major medical association and public health organization that provided their input to the [U.S. EPA].”[53]

Sulfur dioxide is formed as metals are extracted from the iron ore used in steelmaking. The molten iron produced in a blast furnace will go through desulphurization before it is made into molten steel in the basic oxygen furnace shops.

Sulfur dioxide constricts airways, inhibits breathing, and triggers asthma. People with asthma are particularly affected by high levels of sulfur dioxide emitted over a short period of time. Other groups sensitive to sulfur dioxide pollution are children, the elderly, and those with heart and lung diseases.

Sulfur dioxide also reacts with other chemicals and substances in the air to form sulfate particles and acid rain. When water molecules and sulfur dioxide meet, they form sulfuric acid. Since there are water molecules in the lungs, breathing sulfur dioxide creates sulfuric acid in the lungs. Sulfuric acid is associated with aggravated lung problems and premature death. Acid rain damages lakes and trees.

Manganese is used as an alloying element to produce the exact type of steel desired. Manganese, along with nickel, chromium, and vanadium, are added to molten steel in the ladle metallurgy facility.

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. Exposure to high levels of manganese over long periods of time can damage the central nervous system and the brain, causing the disease “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. Exposure to manganese may also cause damage to the liver, kidneys, and the developing fetus, and may lead to respiratory problems.

Noise and Harm to Health

Mittal Steel neighbors deal with noise every day. In pollution logs, neighbor testimonials, and registered complaints with the City of Cleveland, neighbors report low-frequency vibrations, a loudspeaker being used at all hours of the day, frequent noise from large trucks, noises that sound like “jet airplanes”, and booming noises likened to explosions.

Noise causes higher blood pressure, digestive problems, frequent headaches, general fatigue, susceptibility to minor accidents, and diseases such as colds and influenza.54 The noise also keeps neighbors up at night, making them groggy, agitated, and tempted to take sedatives or sleeping pills.

Harm to Steelworkers’ Health

There are very few recent studies on the health impacts for American steelworkers. More medical studies need to be done conducted on American steelworkers. However, there are clearly two areas where some groups of steelworkers have increased risk.

First, there is an increased risk of cancer, particularly lung cancer, in some groups of steelworkers. A study conducted by the Korean Occupational Safety and Health Agency revealed that cancer morbidity rates were significantly higher for maintenance workers compared to office workers at a steel mill.[55]

Second, steelworkers have poor lung function on breathing tests. They have more problems with shortness of breath, cough, and wheezing. This is clearly because they are exposed to dusts and metal fumes in the plant.[56]

Of course, steelworkers also risk injury due to the heavy work and dangerous conditions (heat, molten metal, dangerous equipment, working at heights, noise, fumes, carbon monoxide). The rate of occupational injury and illness per 100 full-time workers in 2003 was 7.0 in iron and steel mills. This rate is higher than both the rate for the entire private sector and the rate for all of manufacturing.[57]

Neighbor Testimonial, Tremont:
Adam Harvey

"I've lived in Tremont since November of 2004. I live on the south bluff overlooking I-490, so I'm one of the first people to smell the steel mill, and I'm in a prime position to see the flares. In the time I've lived here I've seen "snowfalls" of particulate matter, and have had to deal with large amounts of dirt covering everything from my car, to my grill, to blowing in my apartment. I've woken up at night, mainly during the summer, because the sulfurous smell was so strong. I've also gotten headaches from the smell. There are also significant amounts of noise pollution. I can hear their loudspeaker on a regular basis and sometimes feel low frequency vibrations from whatever is going on down in the valley. I've talked with many neighbors, comparing notes of our experiences with the steel mill, and although the soot isn't as obvious as it was in old days, you can still see its effects on flags and siding in the neighborhood."

Swipe Sample Results

Mittal Steel reports air, water, and land releases of eight heavy metals to the Ohio EPA (Toxics Release Inventory), including cadmium, chromium, copper, manganese, vanadium, lead, mercury, and zinc. Ohio Citizen Action took a total of 20 swipe samples from May 2005 to November 2006, at homes and public places in the neighborhoods surrounding Mittal Steel. These samples were tested at Cardinal Laboratories in Youngstown, Ohio. The results were compared both to clean swipe samples and to the Ohio EPA Inventory that Mittal reports every year.

After choosing the location, a swipe sample is taken using a four inch wide and four inch tall square. An unscented baby wipe is used to rub three times across, three times from the top to the bottom, and three times diagonally within the square. The baby wipe is placed in a plastic bag and labeled to show where the sample was taken. A clean baby wipe must be placed in a separate plastic bag so that the lab can compare it to the sample taken. "Chain of custody" paperwork must be filled out as well, which includes the date, time, and location of the swipe sample, along with the name of the person taking the sample.

The metals Mittal Steel releases in the highest amounts were found in the highest concentrations at sample locations around the mill. Mittal Steel reportedly released 25,940 pounds of zinc and 3,951 pounds of manganese to the air in 2005. These are the two highest releases reported on the Ohio EPA Inventory. Zinc was found to be the metal of highest concentration in 18 of the 20 samples. In the remaining two samples, manganese was the metal of highest concentration and zinc was the second-highest. Manganese was also the metal of second-highest concentration in 13 of the 20 samples.

The highest sample concentrations of zinc compounds were found in the swipe samples taken on March 7, 2006, on Independence Road following a "metal shower" on March 3, 2006. Arlene Green

reported her home being covered in soot and described the “metal shower” as follows: “It looked like a snow storm. There were big flakes out there. You could feel them hitting your face.”[58] A review of the Cleveland Division of Air Quality’s records show that neighbors on W. 11th Street and Jewett Avenue also complained about aluminum shavings and silver flakes falling from the sky from March 3 to March 4, 2006.

The highest sample concentrations of manganese compounds were found in the swipe samples taken from a baby stroller on Independence Road, a porch railing in Tremont, and from the *inside* of a home, taken on June 3, 2006, on Independence Road.

Not only do the compounds released in the highest amounts show up in the highest concentrations in samples taken around Mittal Steel, several of the remaining compounds released by Mittal Steel show up in the samples as well (lead and mercury were not tested for). In addition, iron - one of the main raw materials used in steel production - was found in all eight samples that tested for it. Questions remain as to what negative health effects are caused by the levels of these heavy metals that are found in neighborhoods around Mittal Steel. These swipe sample results show the “fingerprint” of Mittal’s air pollution on (and in) neighbors’ homes and property.

Air Sample Results

Denny Larson of Global Community Monitor and Hilton Kelley of Community In-power and Development Association took a “bucket sample” of the air on Mittal Steel’s property at 6:39am on March 22, 2006. An air-sampling bucket is an independent tool used by many communities to test the air in their neighborhoods. This EPA-certified piece of equipment is made up of a 5 gallon plastic bucket, an inlet, an outlet, and a vacuum pump. This device works exactly like a human lung, except the plastic bag inside the bucket can be sent in to a lab to be tested. A “chain of custody” form is started with the person conducting the test, and then passed off to each person that transports the sample until it is processed at a lab. This assures there are not any gaps of time allowed for tampering with the bag.

The air sample was taken around seven minutes after peak levels of sulfur dioxide were detected using mobile air monitoring equipment called a UV Hound. Mr. Larson reported that the air at the site of the bucket sample smelled of boiled eggs and sulfur, and that while taking the sample his eyes burned and his throat felt raw. The smell of boiled eggs and sulfur is a common complaint from the neighbors of Mittal Steel (see Results of Neighborhood Surveys).

Hydrogen sulfide was detected in the air sample. Hydrogen sulfide is a flammable, colorless gas with a characteristic odor of rotten eggs. People can smell it even at low levels. Exposure to these low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics.

City of Cleveland’s Regulation of Mittal’s Air Pollution

The City of Cleveland Division of Air Quality, part of the City of Cleveland’s Department of Public Health, is responsible for enforcing the federal Clean Air Act in Cuyahoga County, under contract with the Ohio EPA. The Commissioner of the Division, Richard Nemeth, is familiar with the Cleveland Works, since he served as Manager of Environmental Control at the plant for LTV until it closed in 2001.

When ISG reopened the LTV facility, it inherited all of LTV’s environmental permits. ISG worked with the Division on various revisions of ISG’s “Title V” air permit, the comprehensive air pollution permit required under the Clean Air Act. The permit was issued on November 5, 2004, and lasts for five years.[59]

Ohio EPA and U.S. EPA issued notices of violations to ISG in the late summer and fall of 2004:

August 13, 2004: The Division conducted visible emissions readings and notified ISG of violations of opacity limits (the percent that emissions block out sunlight) at the C5 blast furnace. ISG responded by taking action to reduce limits to below acceptable levels, and advised the Division it was replacing the lid or "bell" on the C5 blast furnace. The Division accepted this as a corrective action.[60]

September 28, 2004: The U.S. EPA issued a notice of violation for exceeding opacity limits at the No. 1 Basic Oxygen Furnace shop on four days in May 2004, based on continuous opacity monitoring data provided by the company. The company responded by supplying monitoring data for one year after the citation, and the U.S. EPA decided to use its "enforcement discretion" and not pursue any penalties.[61]

May 2005: The Division inspected Mittal Steel as it is required to do every three years under the provisions of the Clean Air Act. Cleveland residents may have the impression that city inspections involve independent testing of emissions from the mill. However, a review of the documents and discussions with the Division's chief inspector in 2005, Andrew Shroads, established the following:

- The Division does not have any mobile equipment to conduct independent tests of stack emissions or ambient air emissions;
- As part of the inspection, the Division is supposed to conduct "visible emissions monitoring," where employees, trained in "Method 9" monitoring, look at an emissions source for one minute and record how much sunlight is blocked by the emissions. However, in the case of the Mittal inspection, the city inspectors did not perform the visible emissions monitoring themselves. Instead, when they learned that Mittal had hired a firm called Four Star Design Services to "look over the city's shoulder," the city did not conduct the tests themselves. Instead they asked Four Star Design Services for their results, which were then inserted into the city's report.[62] The firm found no violations.
- At the time of the May 2005 inspection, Mittal's West Side works was not operating, though it went back on line later in the year. **When asked whether the Division would go back to inspect the West Side Works when it began operating again, Shroads said there would be no point doing an in-person inspection since the Division has no independent testing ability and would just accept whatever documentation they were given by the company.**

After the inspection, the Division issued several Notices of Violation to Mittal Steel with the following results:

- **June 28, 2005**: The Division cited Mittal for exceeding allowable limits of particulate emissions at its tundish pre-heaters, tundish repair, and the continuous caster. Mittal responded that they had included too many units in one emissions category in their Title V (Clean Air Act permit), and said they would revise their permit to call some of these emissions "insignificant sources."[63] The Division told Mittal that this solution would be acceptable to them.[64]

- **October 10 and November 2, 2005**: The Division cited Mittal for exceeding allowable particulate emissions limits at the materials handling operations at its blast furnaces (C5 and C6), as well as for coke thawing and unloading and coke handling at the blast furnaces. Mittal responded that the Division had misread the limits in the permit.[65] The Division told Mittal the issue was resolved.[66]

Results of Neighborhood Surveys

On July 10, 2005, Ohio Citizen Action volunteers interviewed Mittal Steel's neighbors living in Tremont and Slavic Village. Residents were asked to describe any recent problems they had experienced with odors, visible air pollution, and noise pollution. They were also asked if they had noticed a difference in air quality during the time the Cleveland Works was not operating (East Side Works closed December 2001-May 2002; West Side Works closed June 2001-May 2004), and after ISG re-started the East Side Works in 2002. Below are the tallied responses from neighbors along with some of their comments.

Tremont: 56 residents interviewed July 10, 2005

Smell	**Physical**	**Noise**	**Shutdown**
51 total complaints	48 total complaints	30 total complaints	21 noticed
23 sulfur or egg	30 soot or flakes		a difference

Slavic Village: 46 residents interviewed July 10, 2005

Smell	**Physical**	**Noise**	**Shutdown**
39 total complaints	43 total complaints	20 total complaints	15 noticed
18 sulfur or egg	26 soot or flakes		a difference

In both areas there was a distinct pattern of complaints associated with pollution that the plant emits: sulfur or a rotten egg smell, black soot, white, silver and/or metallic flakes, clouds of smoke or smog, as well as loud noises. People in all areas said that the pollution or smells were worse in bad weather.

Several neighbors related bad headaches and sinus problems to the odors. Others who would get new siding or windows reported it would be dirty with black soot within a very short amount of time. Many of the neighbors noticed a difference from when LTV shut down and when the East Side Works started back up. They noticed a difference again, when the West Side Works started back up. Some people say that it is still less than when LTV was running, but it is all definitely worse now that the plant is running again.

Neighbor Testimonial, Old Brooklyn: Ina Roth

"Old Brooklyn has been my home base for the last twenty-eight years. It is a tree-lined and quiet neighborhood, affordable for a single woman.

Mittal Steel is about an air mile away from where I live. They are allowed to put out an enormous amount of air pollution per the Ohio EPA, but they are not installing the proper pollution equipment.

Parts of the fall-out are known carcinogens and asthma inducers. On days when I can smell the chemicals (they will give me an instant headache), I feel very helpless and angry. Why is Mittal Steel allowed to impact 300,000 people in the Cleveland area?

I retired in May 2006 after working forty years in the medical field. My work brought me in contact with many cancer patients. I had cancer six years ago and went through surgery, chemotherapy, and radiation. The American Cancer Society predicts approximately 59,000 new cases of cancer for the year 2006. Cancer needs to be prevented, not just treated.

Once a year I have to wash down my house (white siding) to get rid of the black soot. **If it sits on my house, it also sits in our lungs.** It is a known fact that asthma is on the rise because of industrial pollution.

There is a young family living next to me. The young woman is pregnant and has a two-year-old boy. Looking at them on bad days when the smell of Mittal Steel lingers over our neighborhood, I feel it is our civil duty to do everything to persuade Mittal Steel to install the needed equipment for better quality of life for all of us and a safe and healthy future for all children."

How has Mittal Steel faced up to its pollution problems in Cleveland?

As soon as the sale of ISG to Mittal Steel became final in April 2005, the neighbors of the Cleveland Works sent personal invitations to Lakshmi Mittal and Mittal Steel USA CEO Louis Schorsch to come to Cleveland to meet with them. Neither man ever bothered to reply.

Since then, Ohio Citizen Action members have sent 24,500 personal, handwritten letters and petitions to Louis Schorsch and Mittal's Plant Manager Terry Fedor.

An Ohio Citizen Action volunteer also hand delivered 458 drinking straws to Mr. Mittal's London headquarters in June 2005. Messages on the straws read: "'Dear Mr. Mittal, Please breathe through this straw for 60 seconds to see what it is like to have asthma. Pollutants from the Mittal Cleveland Works aggravate asthma for the 390,000 residents who live within five miles of the plant. Did you know that this plant's emissions of sulfur dioxide and small particulates, which can trigger asthma, increased by 38% from 2003 to 2004? It's time for you to invest in modernizing the Cleveland Works Plant to prevent pollution."

The package also included a letter from Tremont community leaders inviting Lakshmi Mittal to meet with them. None of the Tremont leaders ever heard back from Mr. Mittal.

On April 6, 2006, at a meeting at Cleveland's Village Grace Mission Center on Independence Road, Tremont neighbor Becca Riker asked Mittal attorney David Nash whether the steel mill would invest in a $40,000 real-time air monitor for the neighborhood. Mr. Nash replied that neither he nor Mr. Glazer, Mittal's public relations manager (who was also present at the meeting), had the authority to spend $40,000. When asked who did have that authority, he replied, "Mr. Mittal."

Sandy Buchanan, Executive Director of Ohio Citizen Action, mailed a copy of the organization's *Good Neighbor Campaign Handbook* to Mr. Mittal in the summer of 2006, again inviting him to meet. Cleveland neighbors sent personal letters to Mr. Mittal and drawings from Cleveland-area schoolchildren in September 2006. Mr. Mittal has never replied.

On only one occasion has Lakshmi Mittal implicitly acknowledged his pollution problems in Cleveland. It followed a February 17, 2006, letter from Sandy Buchanan to Neelie Kroes, Commissioner for Competition at the European Commission in Brussels, Belgium. Kroes was soon to consider the proposed Arcelor merger, and Buchanan applied to be heard in the proceedings:

> *More specifically, we invite you to visit Cleveland to speak with the neighbors of Mittal Steel's Cleveland Works, and to see, smell, and feel the pollution pouring out of the complex. This first-hand experience may lead you to agree that Mr. Mittal needs to learn how to manage the factories he already owns before he continues his buying spree.*

Buchanan included evidence of trouble at Mittal plants in Cleveland, Kazakhstan, South Africa, and at a proposed Mittal site in India.[67]

Buchanan's letter prompted Lakshmi Mittal to act, according to an inside source. Within three days, he had arranged for his son Aditya to lead a delegation of top European business reporters to

Chicago, not Cleveland. Once there, they heard Mittal executives say their pollution record is good and, on February 27, they were led on a tour of Mittal's Burns Harbor plant in East Chicago, Indiana.

Of course, the flights to and from Chicago might have passed over the Cleveland Works where the problems are. If so, and if any of the reporters had window seats and looked out at the right moment, this is what the Cleveland Works would have looked like from their cruising altitude of 32,000 feet:

At the same time, Mittal Steel also started hiring public relations intermediaries in Cleveland to shield the company executives from their neighbors and naming its activities after the Good Neighbor campaign, such as the "Good Neighbor Matters Voice Message Hotline."[68]

What Mittal didn't do is what he should have done. To this date, no Mittal Steel executive with decision-making authority has spoken with Mittal's neighbors in Cleveland.

19th century management won't work in the 21st century

If Mittal Steel's strength is in acquiring steel plants, its weakness is in managing the plants once it owns them.

This is because Lakshmi Mittal's approach to doing business comes straight out of the 19th century, specifically the Gilded Age after the American Civil War.

Some of the characteristics of Gilded Age capitalism are the following:

> (1) Centralization of power in a single person, who exercises authority over the smallest details, and a tight hold on ownership and top positions – often extending to outright nepotism.
>
> (2) A drive to expand market share at all costs.
>
> (3) Obscene displays of wealth to gain entry into the circles of high society where they otherwise would not be welcome.
>
> (4) An appalling toll in injury, illness and death.

Let's examine each one:

(1) *Centralization of power in a single person, who exercises authority over the smallest details, and a tight hold on ownership and top positions – often extending to outright nepotism.*

- Lakshmi Mittal had sole control of Mittal Steel, but as part of the negotiations over the Arcelor merger, he agreed to share power with his new partners. In June, *Business Week* concluded, "[Mittal] will no longer be at the steering wheel. Instead, professional executives, many of them from Arcelor, are likely to have the whip hand rather than the Indian-born, London-based entrepreneur." 69 The most prominent sign of this change was the August appointment of Arcelor's Senior Vice President, Roland Junck, as Chief Executive Officer of the merged company. Lakshmi Mittal's tolerance for sharing power lasted only until November, when he ousted Junck and became CEO himself, as well as Board President. [70]

- Terry Fedor's title is General Manager, Mittal Steel Cleveland. It is an open secret that he has not been given the decision-making authority and scope of initiative required to actually perform the function of plant manager. Such decisions are not made in Cleveland, or even in Chicago at the Mittal Steel USA headquarters. Decisions are made in London.
- Before the Arcelor merger, the Mittal family owned 88% of Mittal Steel.[71] Even after the merger, the family still has 43.5% of the shares of the much larger combined company. "The Mittal family has agreed not to increase its shareholding beyond 45% for five years." [72]
- Lakshmi Mittal gave his son, Aditya, the title of President of the Mittal Steel. After the merger, Aditya Mittal was named Chief Financial Officer of Arcelor Mittal. Lakshmi Mittal's daughter, Vanisha Mittal Bhatia, is a member of the board of directors.

(2) *A drive to expand market share at all costs.*

- Calling it "market consolidation," Mittal makes market share the theme of every speech, and repeats his ambition to become a new Henry Ford.

  (Mittal has some distance to go to catch Ford. In 1921, Henry Ford supplied 60% of the world market for new cars.[73] Mittal Steel and its new acquisition, Arcelor, have a combined 9.7% of the world steel market. This makes them a distant second to China, which accounts for 30.9% of world steel production.[74] Nevertheless, Mittal says he owns "the world's number one steel company," an assertion that depends on either pretending that China's companies are not centrally coordinated or having some other criterion than production in mind).[75]

- Clevelanders know what "expansion at all costs" means because of the example of a local boy, John D. Rockefeller, who controlled 85% of the world's refined oil in 1882. The 88 refineries then in Cleveland created enormous pollution, both into the air and into the Cuyahoga River, which many of them used as an open sewer. Rockefeller acquired other companies as a predator, driving them to the wall with hardball monopoly tactics, only some of which were legal.

  Unlike Mr. Rockefeller, "predatory" is not the term to describe Lakshmi Mittal's approach, since "prey" refers to living animals hunted for food. **Until the Arcelor merger, Mittal's specialty has been scavenging for dead steel plants.** The way he scavenges, however, harms living human beings:

  - ❖ He only buys the physical assets of the dead steel plants. That means that the people who built the plant and worked in it for years or decades can forget about retirement pensions or health insurance. The business men and women to whom the bankrupt company owed debts can forget about being repaid.

  - ❖ He buys the physical assets at a nominal price, and only after he is assured of concessions by taxing and environmental authorities and labor unions. The federal government chips in by raising tariffs to boost steel prices at the expense of consumers.

  - ❖ Once the plant is running, he uses the profits to fund further acquisitions elsewhere, rather than modernize the plants he already owns. Neighbors of the Mittal plants are left to breathe the consequences of this neglect.

(3) *Obscene displays of wealth to gain entry into the circles of high society where they otherwise would not be welcome.*

- Lakshmi Mittal's flaunting of his wealth has been so well covered by the press that it hardly needs recounting here.[76]

(4) *An appalling toll in injury, illness and death.*

Consider the following recent article:

> ALMATY, Kazakhstan — The Kazakh president's influential daughter said her party had drafted a bill to toughen punishment for labor violations in response to a blast that killed 41 workers at a Mittal Steel-owned mine, according to an article published Friday.
> Lawmaker Dariga Nazarbayeva, President Nursultan Nazarbayev's eldest daughter, said the September explosion had resulted from neglect of safety rules, and criticized the government for failing to stand up to foreign corporations in the article published in *Caravan* magazine.
>
> "Kazakhstan should not act like an obedient colony that bows to yet another foreign master listed in *Forbes* magazine," Nazarbayeva said in a reference to Mittal's multibillionaire owner, Lakshmi Mittal. Nazarbayeva said her party, Asar, has already drafted amendments to the labor code that envisage "draconian" punishment for employers violating the labor legislation. The methane gas explosion at Mittal's Lenin mine was caused by a breach of safety rules, authorities concluded. The miners held a weeklong strike in early October demanding better working conditions and higher wages. . . ."[77]

Would this tragedy have happened if Lakshmi Mittal had found experienced leaders for their Kazakh operations and given them the authority to do their jobs? Would it have happened if he were not funneling profits from existing plants into new acquisitions elsewhere? Would it have happened if he were not preoccupied with planning the next lavish tribute to himself?

Of course, the Gilded Age had to come to an end. Its highly personal, anything-goes form of capitalism was too wasteful and unstable. And what was wrong for the beginning of the 20th century is wildly wrong for the beginning of the 21st century.

All this could change, of course. Mr. Mittal could adjust his management approach to that of the present day. He is undoubtedly capable of it, but it will be better for everyone - including him - if it happens soon.

Questions for Mittal Steel

- What investments has Mittal Steel made to reduce air emissions from the Cleveland plant?
- Why are neighbors' houses shaking in the middle of the night?
- What are the orange clouds seen by neighbors?
- What are the black smoke clouds seen by neighbors?
- How will Mittal report malfunctions to the community?
- Will Mittal Steel make phone logs from the "Good Neighbor Matters Voice Message Line," installed in the spring of 2006, public information?
- Why have coke trucks been seen recently by neighbors on Independence Road when the company promised to re-route these trucks?
- How will the planting of grasses and shrubs be measured for its effectiveness in managing fugitive windborne emissions?
- Why are blast furnace flares that are installed for emergency frequently seen in use at the Cleveland Works?
- Will Mittal decision-makers discuss the Citizens' Audit with neighbors of the Cleveland Works facility and Ohio Citizen Action?

APPENDIX

What goes on at the Cleveland Works?

The Cleveland Works facility is an integrated steel mill. At an integrated mill all processes involved in primary steel production are carried out on site. These include iron making, steelmaking, casting, and rolling.

Iron Making

Molten iron is made from iron ore brought on site in the form of pellets. Iron ore is primarily iron oxide; essentially lumpy rust mixed with dirt. This process of smelting iron ore to produce crude iron (also known as pig iron) takes place in the blast furnace. Here unwanted materials contained in the raw iron ore are removed. More specifically, iron oxides are *reduced* – oxygen in iron oxides is removed through a series of chemical reactions. The primary reaction is oxygen in the ore combining with carbon.

Along with iron ore, coke and limestone are loaded at the top of each blast furnace. Coke - coal that has been baked at high temperatures in the absence of air - is no longer produced at Cleveland Works. Instead it is brought in by truck. Coke is used both as a fuel source and a *reducing* agent within the blast furnace. As preheated air is blasted through the base of the furnace, the coke burns, giving off carbon monoxide and hydrogen gases. These gases then combine with (reduce) unwanted iron oxides found in the ore. Coke is to coal what charcoal is to wood.

With high temperatures reached in the furnace, limestone ($CaCO_3$) breaks down into calcium oxide (CaO) and carbon dioxide (CO_2). The calcium oxide reacts with silica (silica is basically dirt, chemically it's primarily SiO_2, silicon dioxide), an impurity in the iron, to form slag. Slag forms at many points during the process of steel production. It is a gathering of impurities in the steel that are then removed when the slag is dumped or skimmed. The liquid slag trickles through the coke bed to the bottom of the furnace. Because the slag is less dense than the liquid iron it floats on top of the liquid iron, serving as a protective coating as well.

The liquid slag and liquid iron are drained throughout the day at regular intervals from the blast furnace. As the liquid iron is drained into a huge container called a ladle, the slag is skimmed off and prevented from entering the ladle with the iron. Instead it is poured into slag pots for cooling and disposal. In addition to slag, excess gases and particle pollution are other by-products from the blast furnace. Particulate matter should be removed by Venturi scrubbers at the top of the furnace. The hot, dirty gases are cooled and used for fuel in stoves and boilers. According to Mittal Steel's numbers on the Title V Emissions Fee Report, the two blast furnaces at the Cleveland Works site emitted 246,000 pounds of fine particle pollution, 768,000 pounds of sulfur dioxide, 180,000 pounds of nitrogen oxide, 56,000 pounds of organic chemicals, and 56,000 pounds of volatile organic compounds in 2005.

Steelmaking

Remaining impurities in the pig iron from the blast furnace are removed in the basic oxygen furnace shops. Calcium oxide (CaO) and magnesium oxide (MgO) are added to the ladle for desulphurization. Sulfur is released as sulfur dioxide during this process. Before the molten iron is poured into the basic oxygen furnace, slag is skimmed off again. The furnace is first charged or filled with steel scrap and the molten iron is then poured on top of the steel scrap. Both fumes and metal flakes from the carbon saturated hot metal are emitted at this point from the mouth of the basic oxygen furnace. Next pure oxygen is blown directly into the molten iron, reducing concentrations of carbon, silicon, and metal impurities such as manganese and phosphorus, and creating noise that can sound like a rocket. Here carbon is released as carbon monoxide gas. At the time that oxygen is blown into the molten steel, lime and dolomite (58% CaO, 39% MgO) are added to the furnace to form slag with silica in the oxidized hot metal. Again the slag removes impurities such as sulfur and

phosphorous from the liquid metal. Mittal Steel's Title V Emissions Fee Report shows 312,000 pounds of total particulate emissions, 130,000 pounds of which are fine particles, from their two basic oxygen furnaces in 2005. In addition, these furnaces released 428,000 pounds of nitrogen oxide.

When the steel reaches its desired composition, the basic oxygen furnace is tapped or tilted to pour liquid steel into a giant ladle. After the steel has been removed from the furnace, the slag is dumped into slag pots and cooled.

Secondary refinement of the liquid steel takes place in the Ladle Metallurgy Facility. Various metals, such as manganese, nickel, chromium, and vanadium are added to produce the exact type of steel desired. Whenever refining occurs, there is always a by-product. In this case manganese, chromium, and vanadium are released into the air, water, and land. These emissions are reported on Cleveland Works' Toxic Release Inventory.

Casting and Rolling

From the ladle metallurgy facility the molten steel is transported to a continuous slab caster. It is solidified in a mold and sent on to become a finished product. The slab is reheated before it enters the hot mill and is rolled as a hot strip. Next, the pickling and oiling line is used to remove rust, dirt, oil, and oxide *scales*. *Scales* form on the outside of steel when iron in the steel reacts with oxygen in the air, producing iron oxide. Deep bath tanks with concentrations of hydrochloric acid are used to chemically remove the iron oxide scales. In 2005, Mittal Steel's Cleveland Works released 956 pounds of hydrochloric acid into the air and 956 onto the land, an improvement from both 2003 and 2004 according to the Toxic Release Inventory.

After its acid bath the hot rolled strip of steel is rolled again as a cold strip before it is sent through the annealing process. In the annealing process the steel undergoes a heating and cooling treatment, which prepares it for shaping. The steel is rolled once more before it is either coated on the galvanizing line or packaged as a finished product. Through a process called hot-dip galvanizing, a thin layer of zinc is applied to the steel slabs to protect them from corrosion. Mittal Steel released 25,940 pounds of zinc compounds into the air in 2005, along with 1,781 pounds into the Cuyahoga River, and 4,842,295 pounds into the land, according to numbers they report on Cleveland Works' Toxic Release Inventory.

OHIO CITIZEN ACTION SWIPE SAMPLE RESULTS
Analyzed by Cardinal Laboratories, Youngstown, OH - Measured in micrograms (ug)/16"wipe - BDL = Below Detection Levels

	Cadmium	Chromium	Copper	Iron*	Manganese	Vanadium	Zinc	
5/9/05- 3488 Independence Rd - Baby Stroller	BDL	1.30	3.10		120.00	0.50	61.60	
5/9/05- 3488 Independence Rd- Awning	BDL	1.50	5.30		8.30	0.30	43.40	
5/10/05- 1309 Buhrer Tremont- Houses' Siding	BDL	2.10	17.10		6.10	BDL	57.20	
5/10/05- Rockefeller Ave & Independence Rd - Car Hood		BDL	2.10	11.40		35.30	0.90	48.30
5/17/05- Clark Fields-Metal Top of Garbage Can	BDL	0.80	5.50		3.20	BDL	38.80	
3/7/06- 3477 Independence Rd - Taken following "Metal Shower" on 3/3/06:								
Window- Glass	BDL	3.43	11.10		6.31	1.07		201.00
Window- Screen	BDL	2.90	9.01		5.86	1.11		208.00
Grill Cover	0.93	14.70	26.90		3.03	6.74		646.00
Chair on Porch	0.51	7.47	13.60		17.50	3.50		436.00
3/29/06- 2952 W.14th Tremont- Window sill	BDL	11.40	45.00		84.60	2.52	126.00	
3/29/06- 2952 W.14th Tremont- Porch Railing	BDL	11.30	59.40		100.00	3.07	178.00	
3/29/06- 2952 W.14th Tremont- Front Porch	BDL	7.33	33.10		61.60	BDL	336.00	
5/24/06- 3488 Independence Rd- Pillar Front Porch	BDL	BDL	7.76	643.00	21.70	BDL	104.00	
5/24/06- 3488 Independence Rd.- Front Steps	BDL	3.77	9.16	11300.00	61.60	BDL	48.80	
5/24/06- 3488 Independence Rd- Awning	BDL	BDL	6.06	419.00	8.34	BDL	36.70	
6/3/06- 3477 Independence Rd. - *Inside Home*	BDL	5.25	13.60	1650.00	92.50	2.06	95.40	
11/28/06 - 3488 Independence Rd. - Car trunk	BDL	3.28	7.40	279.00	23.40	BDL	123.00	
11/28/06 - 3488 Independence Rd. - Car roof	BDL	3.64	8.58	400.00	36.00	BDL	95.40	
11/28/06 - 3488 Independence Rd. - Plastic Snowman	BDL	2.26	6.78	496.00	22.40	BDL	204.00	
11/28/06 - 3488 Independence Rd. - Grill Cover	BDL	4.10	5.56	728.00	49.00	1.06	165.00	

Toxic Release Inventory: Air discharges (numbers listed in pounds; metals are listed as "compounds")

Total 2003	20.00	51.00	29.00	1,656.00	52.00	6,438.00
Total 2004	35.00	125.00	57.00	2,953.00	86.00	24,730.00
Total 2005	28.00	103.00	51.00	3,951.00	125.00	25,940.00

*Iron is the main raw material used in steelmaking. It is not reported as a toxic metal compound to the Ohio EPA.
The West Side Works did not reopen until 2004, so 2003 figures do not include the emissions figures from that part of the facility.

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Bold faced words = more than 2,000 pounds of that pollutant per year.

Code	Source	Particulate matter (total and 2.5) Equipment - Year	Sulfur Dioxide Equipment	Nitrogen Oxide Equipment	Carbon monoxide Equipment - Year	Organic chemicals Volatile org comp Equipment - Year	Lead Equipment - Year
B001	Boiler A						
	Boiler over 100 MMBtu/Hr.	**No Controls**	**NoControls**	**NoControls**	**No Controls**	No Controls	No Controls
	Boiler over 100 MMBtu/Hr.	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
	Boiler over 100 MMBtu/Hr.	**No Controls**	**NoControls**	**NoControls**	**No Controls**	**No Controls**	
B002	Boiler B						
	Boiler over 100 MMBtu/Hr.	No Controls	No Controls	No Controls	No Controls	No Controls	No Controls
	Boiler over 100 MMBtu/Hr.	No Controls	No Controls	No Controls	No Controls	No Controls	
	Boiler over 100 MMBtu/Hr.	No Controls	No Controls	No Controls	**No Controls**	No Controls	
B003	Boiler C						
	Boiler over 100 MMBtu/Hr.	**No Controls**	**NoControls**	**NoControls**	**No Controls**	No Controls	No Controls
	Boiler over 100 MMBtu/Hr.	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
	Boiler over 100 MMBtu/Hr.	**No Controls**	**NoControls**	**NoControls**	**No Controls**	**No Controls**	
B005	Boiler 1						
	Boiler over 100 MMBtu/Hr.	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
	Boiler over 100 MMBtu/Hr.	**No Controls**	**NoControls**	**NoControls**	**No Controls**	**No Controls**	
B006	Boiler 2						
	Boiler over 100 MMBtu/Hr.	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
	Boiler over 100 MMBtu/Hr.	**No Controls**	**NoControls**	**NoControls**	**No Controls**	**No Controls**	
B007	Boiler 3						
	Boiler over 100 MMBtu/Hr.	ESP - 1976	No Controls		No Controls	No Controls	ESP - 1976
	Boiler over 100 MMBtu/Hr.	No Controls	No Controls	**NoControls**	**No Controls**	**No Controls**	(Electrostatic
	Boiler over 100 MMBtu/Hr.	**No Controls**	**NoControls**	**NoControls**	**No Controls**	**No Controls**	Precipitator)
F011	Basic Oxygen Furnace #2						
	Hot metal transfer	**Fabric Filter High Temp.- 1983**				**No Controls**	
	Desulfurization	**Fabric Filter High Temp.- 1983**					
	Slag raking	Fabric Filter High Temp. - 1983					
P905	BOF#2., Vessel #1	(BOF=Basic Oxygen Furnace)					
	Oxygen Blowing	**Wet Scrubber - 1977**		**NoControls**	**Flaring - 1977**	No Controls	Wet Scrubber- 1977
	Charging	**Fabric Filter Med. Temp. - 1983**				No Controls	
	Tapping	**Fabric Filter Med. Temp. - 1983**					
	Ladle Preheater	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
	Slag Dumping	**Process Enclosed - 1990**					
	Flare	No Controls	No Controls	No Controls	No Controls	No Controls	
P906	BOF#2., Vessel #2	(BOF=Basic Oxygen Furnace)					
	Oxygen Blowing - Closed	**Wet Scrubber High Eff. - 1977**		**NoControls**	**Flaring - 1977**	No Controls	Wet Scrubber -1977

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Bold faced words = more than 2,000 pounds of that pollutant per year.

Code	Source	Particulate matter (total and 2.5) Equipment - Year	Sulfur Dioxide Equipment	Nitrogen Oxide Equipment	Carbon monoxide Equipment - Year	Organic chemicals Volatile org comp Equipment - Year	Lead Equipment - Year
P906	BOF#2., Vessel #2	(BOF=Basic Oxygen Furnace)					
	Charging	**Fabric Filter Med. Temp. - 1983**				No Controls	
	Tapping	**Fabric Filter Med. Temp. - 1983**					
	Ladle Preheater	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
	Slag Dumping	**Process Enclosed - 1990**					
	Flare	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
P046-7-8	Reheat furnaces (1,2,&3)						
	Burner over 100 MMBtu/Hr.	**No Controls**	No Controls	**NoControls**	**No Controls**	**No Controls**	
	Burner over 100 MMBtu/Hr.	**No Controls**	No Controls	**NoControls**	**No Controls**	**No Controls**	
	Burner over 100 MMBtu/Hr.	No Controls	No Controls	**NoControls**	**No Controls**	**No Controls**	
P903	Blast Furnace C-5	(BFG=Blast Furnace Gas)					
	BFG use at Heating Stoves	**No Controls**	No Controls	No Controls	**No Controls**	No Controls	No Controls
	BFG Bleeder	**No Controls**	**NoControls**	**NoControls**	**Flaring - 1943**	**No Controls**	
	Casthouse	**Misc Devices - 1972**	**NoControls**	**NoControls**	No Controls	No Controls	
	Furnace Charges	**No Controls**	**NoControls**		**No Controls**	**No Controls**	
P904	Blast Furnace C-6	(BFG=Blast Furnace Gas)					
	BFG use at Heating Stoves	**No Controls**	No Controls	No Controls	**No Controls**	No Controls	No Controls
	BFG Bleeder	**No Controls**	**NoControls**	**NoControls**	**Flaring - 1943**	**No Controls**	
	Casthouse	**Misc Devices - 1972**	**NoControls**	**NoControls**	No Controls	**No Controls**	
	Furnace Charging	**No Controls**	**NoControls**		**No Controls**	**No Controls**	
P049-50	84" anneal						
	Burner over 100 MMBtu/Hr.	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
	Burner over 100 MMBtu/Hr.	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
P925	BOF #94 (W.Side)	(BOF=Basic Oxygen Furnace)					
	Oxygen Blowing- Open	**ESP Medium efficiency – 1961**		**NoControls**	**ESP Medium - 1961**	No Controls	ESP Medium - 1961
	Charging	Fabric Filter Med. Temp. – 1975				No Controls	(Electrostatic
	Tapping	**Fabric Filter Med. Temp. – 1975**					Precipitator)
	Ladle Preheater	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
	Slag Dumping	**Process Enclosed – 1990**					
P926	BOF #95 (W. Side)	(BOF=Basic Oxygen Furnace)					
	Oxygen Blowing- Open	**ESP Med. Efficiency - 1961**		**NoControls**	**ESP Medium - 1961**	No Controls	ESP - 1961
	Charging	Fabric Filter Medium Temp.				No Controls	(Electrostatic
	Tapping	**Fabric Filter Med. Temp. - 1975**					Precipitator)
	Ladle Preheater	No Controls	No Controls	**NoControls**	**No Controls**	No Controls	
	Slag Dumping	**Process Enclosed – 1990**					

Notes

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26 http://www.globalwitness.org/reports/index.php?section=oil
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33 EPA Title V Emissions Fee Report, April 2006.
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35Lisa Ann Pinkerton, “Adding Green to the Mittal Steel Landscape,” *WCPN Radio 90.3*, October 12, 2006.
36 New U.S. EPA standards finalized in 2004 would have likely required installation of additional controls at the blast furnace casthouses. However, a revision to the final rule for integrated iron and steel made in 2006 included additional language. This revision exempts casthouses that have controls that vent inside the building (like the systems at Mittal Cleveland) from meeting the new emissions limitation (0.01 grains per dry standard cubic foot (gr/dscf)). The language added to Table 1 of revised EPA standards (Subpart FFFFF) follows: This concentration limit (gr/dscf) for a control device does not apply to discharges inside a building or structure housing the discharge end at an existing sinter plant, inside a casthouse at an existing blast furnace, or inside an existing BOPF shop if the control device was installed before August 30, 2005.
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59 A copy of the complete permit can be found at http://www.epa.state.oh.us/dapc/title_v/permits/1318001613f.pdf.
60 Letter to the Cleveland Division of Air Quality, December 6, 2004.
61 Conversation with R. Bagherian, U.S. EPA, October 19, 2006.
62 Conversation with Andrew Shroads, Chief Inspector Cleveland Division of Air Quality, November 9, 2005.
63 Letter to the Cleveland Division of Air Quality, July 18, 2005.
64 Letter to Mittal Steel, August 2, 2005.
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66 Letter to Mittal Steel, December 8, 2005.
67 http://www.ohiocitizen.org/campaigns/isg/europa.doc
68 One of the new public relations projects was an October 2006 Mittal community newsletter (http://www.ohiocitizen.org/campaigns/isg/mittalnews.pdf). It includes an article about a joint effort by the Sierra Club and the United Steelworkers union on the global warming issue. Mittal’s newsletter doesn’t mention that the company is not supporting the effort, and is itself a major emitter of global warming pollution.
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