

PUBLIC COMMENT RELEASE

HEALTH CONSULTATION

CONTINENTAL ALUMINUM CORPORATION

NEW HUDSON, OAKLAND COUNTY, MICHIGAN

August 28, 2002

Comment Period End Date: October 14, 2004

Prepared by

Michigan Department of Community Health
Under a Cooperative Agreement with
Agency for Toxic Substance and Disease Registry

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Abbreviations and Acronyms

$\mu\text{g}/\text{m}^3$	microgram per cubic meter (air concentration units)
μm	micrometer (one one-thousandth of a millimeter)
AQD	Air Quality Division
ATSDR	Agency for Toxic Substances and Disease Registry
COPD	chronic obstructive pulmonary disease
CV	Comparison Value
EMEG	Environmental Media Evaluation Guide
IRIS	Integrated Risk Information System
ITSL	Initial Threshold Screening Level
MDCH	Michigan Department of Community Health
MDEQ	Michigan Department of Environmental Quality
MIOSHA	Michigan Occupational Safety and Health Administration
NAAQS	National Ambient Air Quality Standard
OSHA	Occupational Safety and Health Administration
PAI	Predicted Ambient Impact
PEL	Permissible Exposure Limit
PM	particulate matter
RfC	Reference Concentration
RO furnace	rotary furnace
RV furnace	reverberatory furnace
U.S. EPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

Summary

The Agency for Toxic Substances and Disease Registry (ATSDR) received a petition requesting a public health assessment of the emissions from the Continental Aluminum Corporation, an aluminum recycling foundry in New Hudson, Oakland County, Michigan. Although air dispersion modeling performed by the Michigan Department of Environmental Quality (MDEQ) indicates that emissions of chlorine, hydrogen chloride, and hydrogen fluoride are not above state screening levels, neighbors of the facility allege that they are experiencing adverse health effects and attribute those effects to process emissions. There are also concerns about noise and surface runoff from the facility. Based on the available stack testing data and community health concerns, the public health hazard is indeterminate. Further characterization of stack emissions during odor events is necessary to determine any correlation with health effects reported by the community.

Purpose and Health Issues

The purpose of this health consultation is to respond to petitioners' requests for ATSDR to conduct a public health assessment to determine if emissions from Continental Aluminum pose a health hazard. The decision criteria the Agency uses when considering petitions are based on the following questions:

- Are the location, concentration, and toxicity of the hazardous substances related to releases from the petition site possibly of public health concern?
- Is there an exposed or potentially exposed population as indicated in the petition and as determined by evaluating the human exposure pathways for the hazardous substance release(s)?
- Is there a plausible relationship between possible human exposure to a release of hazardous substances and community health concerns or adverse health outcomes?

The Background section of this document shows the history of Continental Aluminum and the steps taken by ATSDR and the Michigan Department of Community Health (MDCH) in response to the petition.

The Discussion section of this document provides an overview of the chemicals that were included in the air dispersion modeling for the company's operating permit and monitored for in stack tests. A toxicological evaluation of those chemicals is included in this section. Chemicals *not* monitored for in the stack tests, but of potential interest, are mentioned in this section but are not discussed due to lack of site-specific data.

Health issues raised by the petitioners focused primarily on respiratory effects experienced by neighbors of the facility; however, the petitioners also expressed concern for the workers within the plant and subsurface utility workers. More detailed discussion of these issues is in the Community Health Concerns section.

Background

Continental Aluminum is a secondary aluminum refinery, which recycled scrap aluminum, provided alloys for the automotive industry, and provided deoxidizing products to the steel industry. It is currently located on Milford Road in New Hudson, Oakland County, Michigan (Figure 1). It moved to this site in 1996 from its Detroit location, where it had been located since

the late 1980s. Residential communities are located north, northeast, and southwest of the plant. The population of Lyon Township is 11,041 according to the 2000 census. Dolson Elementary School is located one-half mile northeast of the site. To the east and west of the plant is agricultural/open land. The Oakland Southwest Airport is northwest of the site, and several businesses and light industry are immediately to the south.

Aluminum scrap is visually inspected when it is received at the plant to determine what type of processing is required. Examples of the items received for recycling include materials resulting from machining and cutting operations, window frames and doorframes, siding, pots and pans, traffic signs, aluminum auto parts, and radiators. Some of the scrap is shredded. Iron scrap is removed by a magnetic separator. Non-metallics are separated by an eddy-current separator (a magnetic rotor rotating over 3,000 rpm, creating a repelling force on the charged particle). There is a baghouse associated with the shredder that discharges internally (RMT Inc. 2000a). A baghouse is an air pollution control device that uses fabric tubes or cartridges in capturing, separating or filtering dust. At Continental Aluminum, the baghouses collect dust, lime, and other particulates before discharging the filtered emissions to outside the plant.

Continental Aluminum operates two reverberatory (RV) furnaces and one rotary (RO) furnace. The RV furnaces are composed of a main combustion chamber and a charge well where the aluminum scrap is added (Figure 2). Flux containing sodium chloride, potash and “fluorspar” (sodium-aluminum-fluoride) is added to the charge to remove dirt and prevent oxidation of (too much oxygen being incorporated into) the melt. The furnace hearths are periodically cleaned during their run to remove iron by raking across the top of the aluminum bath. In the RV-2 furnace, aluminum is alloyed with other metals to meet certain product specifications. The magnesium content of the aluminum is reduced (“demagged”) by injecting chlorine gas. A one-ton cylinder of chlorine is located at the plant. A chlorine monitor is located near the chlorine storage area to detect chlorine leaks. Aluminum fluoride can be used instead of chlorine for the demagging operation (RMT Inc. 2000b).

Each RV furnace has a holding well that is kept hot by natural gas burners. The burners’ exhausts are directed to the plant’s two 53-foot combustion stacks without the use of any air-pollution control equipment. There is a ventilation system throughout the plant to control indoor dust; this system is ducted to a baghouse that vents to outside the plant. Emissions from the charging wells of each RV furnace are directed to a dedicated lime-injected baghouse. (Lime neutralizes any acidic emissions.) An exhaust hood that is ducted to a third lime-injected baghouse is used for emissions from the RO furnace (RMT Inc. 2000b).

Water used for aluminum shot production is recycled and reused; filtrate from the treatment process is removed by a wastewater collection and treatment company when replacement is required.

The ATSDR received a letter dated December 26, 2001 petitioning for a public health assessment. Specifically, the petitioners requested a public health assessment for Lyon Township, focusing on air, water, and soil contamination. The source of the alleged contamination was thought to be Continental Aluminum. The petitioners felt that adverse health effects experienced by the residents near and around the facility were due to the facility’s

emissions. The petition letter listed a number of chemicals of interest in the waste products from the foundry (aluminum, chlorine gas, hydrogen chloride, hydrogen fluoride, lime, magnesium, particulate matter, polycyclic organic matter, and volatile organic compounds) being released to the air directly and to surface waters and soil indirectly. The letter also listed concerns about potentially contaminated locally grown commercial produce, worker safety violations, complaints issued through local and state agencies, and the involvement of political representatives. A Significant Date Chronology was included with the petition under a separate cover (Appendix A), which documents events at Continental Aluminum's Michigan plants from the mid-1990s to the present.

Upon receipt of the petition, ATSDR inquired of MDCH whether the state agency had previously conducted a public health assessment of emissions from Continental Aluminum. On March 21, 2000, the regional Air Quality Division (AQD) office for MDEQ had referred New Hudson residents' concerns to MDCH, but a health assessment had not been conducted.

On March 26, 2002, ATSDR and MDCH staff traveled to New Hudson, Michigan to conduct a site visit at Continental Aluminum and to meet informally with several community members. Plant officials gave the staff a tour of the facility, discussed the smelter's processes, and expressed their desire to bridge the rift between the plant and the community. The community meeting was attended by eight local residents and two local government officials. The citizens described the health effects they or their families were experiencing and expressed their distrust of the company, MDEQ, and the U.S. Environmental Protection Agency (U.S. EPA).

Discussion

Environmental Contamination

Modeling performed by the Modeling and Meteorology Unit of MDEQ-AQD of the Predicted Ambient Impact (PAI) of chlorine, hydrogen chloride, and hydrogen fluoride emissions from Continental Aluminum showed the PAI to be well under the Initial Threshold Screening Level (ITSL) set by AQD (Table 1). An ITSL is a health-based screening level of an air concentration of a toxicant at which adverse (noncarcinogenic) health effects are not expected to occur.

Stack tests were performed in October 1998, March and November 1999, and July 2000. The results are shown in Tables 2-4. Not all stacks were tested nor all emissions tested for on each date. Emissions were measured from the baghouse stacks, unless otherwise indicated. The numbers shown represent the average of three runs, except for the test on RV-2 in October 1998, when a burner malfunctioned. In that case, the values are the average of two runs. (When all three runs were considered for that test date, there were no exceedances of permitted emissions.) Following testing which showed violations of permitted emission levels, Continental Aluminum made changes to their process, as required by MDEQ-AQD. For the most part, these changes improved results.

There was no apparent correlation between cleanliness of scrap and emissions of hydrogen chloride, according to MDEQ-AQD. During the November 1999 testing on RV-2, hydrogen chloride emissions from both stacks (baghouse and combustion) were greatest during the start-up run, not when dirty scrap was fed (run 2; MDEQ 2000a). During the third run for RV-2 in the July 2000 testing, the combustion stack emitted about four times more hydrogen chloride than

the baghouse stack, due to the addition of chlorine during the process. Although the exhaust from the charge well, before pollution control, was significantly more polluted than the exhaust from the combustion stack (MDEQ 2000b), the majority of the hydrogen chloride emitted to the atmosphere was from the combustion stack, thus indicating that the lime injection appropriately reduced acidic emissions from the charge well. Because there are no pollution-control devices on the combustion stack, emissions from this stack could cause adverse health effects if levels are high enough.

When dirty scrap was charged to RV-2 during the November 1999 testing, baghouse stack emissions of particulate matter nearly doubled whereas those from the combustion stack remained about the same. Particulate matter emissions also were believed to have increased as a result of hearth cleaning prior to the run, when a rake was dragged across the top of the aluminum bath to remove aluminum oxide. Overall on this test date, however, particulate matter emissions from the combustion stack were much greater than those from the baghouse stack (MDEQ 2000a). As mentioned previously, because there are no pollution-control devices on the combustion stack, excessive emissions could cause adverse health effects. There is no explanation for the particulate matter exceedance reported in the test results for RV-1 in July 2000. It may be necessary that further measures should be taken to ensure compliance. A continuous opacity monitor was installed in June 2002 on the baghouse stack for RV-2 and will be used to track particulate emissions (T. Maza, MDEQ-AQD Southeast Division, personal communication, 2002).

Emissions from secondary aluminum processing facilities can include aluminum dusts, volatile organic compounds (VOCs), and dioxins and furans. However, stack testing has not yet been performed at this site for these compounds. Testing for VOCs, dioxins, and furans is scheduled for late 2002 (T. Maza, MDEQ-AQD Southeast Division, personal communication, 2002). Particulates from secondary aluminum processing facilities are typically composed of metals, salts, and organic compounds.¹ The particulate emissions from Continental Aluminum, have not been characterized.

Currently there is no information available on soil or water contamination. Modeling has shown that a stack height of 45 feet would keep emissions levels within compliance, but the existing height (80 feet) allows for better air dispersion and decreases any local ground level impact. Nonetheless, there may be times when a process malfunction occurs and operations must shut down, causing local deposition to be increased. Therefore, information regarding levels of chemicals of interest in soil and water sources around Continental Aluminum is necessary to completely assess any public health impact.

Human Exposure Pathways

To determine whether nearby residents are, have been, or are likely to be exposed to contaminants associated with a property, ATSDR and MDCH evaluate the environmental and

¹ Particulates from secondary aluminum processing facilities are typically composed of: aluminum, antimony, arsenic, barium, bromine, cadmium, calcium, chlorine, chromium, cobalt, copper, iron, lead, manganese, nickel, nitrates, organic carbon, phosphorus, potassium, rubidium, selenium, silicon, silver, strontium, sulfates, sulfur, tin, titanium, vanadium, zinc, and zirconium. The organic carbon portion is typically made up of aniline, 4-methaniline, methene dianiline, methene bis(4)dianiline, and phenyl isocyanate (MDEQ-AQD-MMU 2002).

human components that lead to human exposure. An exposure pathway contains five major elements: 1) a source of contamination, 2) contaminant transport through an environmental medium, 3) a point of exposure, 4) a route of human exposure, and 5) an exposed population. An exposure pathway is considered a complete pathway if there is evidence that all five of these elements are, have been, or will be present at the property. Alternatively, an exposure pathway is considered complete if there is a high probability of exposure. It is considered a potential pathway if there is no evidence that at least one of the elements above are, have been, or will be present at the property, or that there is a lower probability of exposure. The table below lists the complete and potential pathways for human exposure to the chemicals of interest at Continental Aluminum.

Source	Environmental Transport and Media	Chemicals of Interest	Exposure Point	Exposure Route	Exposed Population	Time Frame	Status
Stack emissions	Air	Chlorine, hydrogen chloride, hydrogen fluoride, particulate matter, VOCs	Ambient and indoor air	Inhalation	Residents of Lyon Township, employees of facility and neighboring businesses	Past Present Future	Potential Complete Potential
Stack emissions	Air (deposition on or transpiration between plant and air)	Particulate matter, VOCs	Locally grown produce	Ingestion	Consumers of locally grown private or commercial produce	Past Present Future	Potential Potential Potential
Stack emissions	Surface soil	Aluminum, lime, magnesium, particulate matter, polycyclic organic matter	Nearby residential soils	Direct contact, incidental ingestion, inhalation	Residents of Lyon Township	Past Present Future	Potential Potential Potential
Stack emissions	Surface soil (root uptake)	Aluminum, magnesium, other metals	Locally grown produce	Ingestion	Consumers of locally grown private or commercial produce	Past Present Future	Potential Potential Potential
Stack emissions, runoff from facility	Groundwater	Aluminum, magnesium, other metals	Private wells	Direct contact, ingestion, inhalation	Residents of Lyon Township, underground utility workers	Past Present Future	Potential Potential Potential
Stack emissions, runoff from facility	Surface water	Aluminum, lime, magnesium, other metals, particulate matter, polycyclic organic matter	Drainage ditch	Direct contact, incidental ingestion	Residents of Lyon Township	Past Present Future	Potential Potential Potential
NOTE: THE PRESENCE OF AN EXPOSURE PATHWAY IN THIS TABLE DOES NOT IMPLY THAT AN EXPOSURE WOULD BE SUBSTANTIVE OR THAT AN ADVERSE HEALTH EFFECT WOULD OCCUR							

The prevailing winds in the area are out of the southwest quadrant, indicating that Dolson Elementary School, to the northeast, and the community of New Hudson, to the north, could be impacted by emissions from the plant (Figure 1).

Toxicological Evaluation

The Occupational Safety and Health Administration (OSHA) Permissible Exposure Level (PEL) for chlorine in the workplace is 3,000 µg/m³ (NIOSH 1997a). PELs are time-weighted average concentrations that must not be exceeded during any 8-hour workshift of a 40-hour workweek.

The ATSDR uses Comparison Values (CVs), media-specific concentrations, to select environmental contaminants for further evaluation. If a CV is exceeded, that does not mean that adverse health effects will occur. When a CV is not available, the chemical of interest is automatically evaluated further. The ATSDR does not have a CV for screening chlorine concentrations. The U.S. EPA establishes Reference Concentrations (RfCs) to determine acceptable air concentrations of chemicals. An RfC is a 24-hour air concentration that, with uncertainty spanning perhaps an order of magnitude, is not expected to cause adverse health effects over a person's lifetime. The U.S. EPA does not have an RfC for chlorine on its Integrated Risk Information System (IRIS) database.

Concentrations of chlorine as low as $42 \mu\text{g}/\text{m}^3$ can elicit health effects. Inhalation exposure to chlorine can cause eye and mucous membrane irritation, cough, and sore throat. Other symptoms of exposure are tearing of the eyes, substernal (center of chest) pain, nausea, vomiting, headache, dizziness, and pulmonary edema (fluid in the lungs). Chronic exposure, as seen in the workplace, is associated with an increased risk of chronic obstructive pulmonary disease (COPD). A pungent, irritating odor can be detected at $1,000 \mu\text{g}/\text{m}^3$ (NIOSH 1997a, U.S. EPA 2002a).

The OSHA PEL for hydrogen chloride is $7,460 \mu\text{g}/\text{m}^3$. There is no ATSDR CV for this chemical. The RfC is $20 \mu\text{g}/\text{m}^3$. Hydrogen chloride is also an irritant to the mucous membranes of the nose, throat, and respiratory tract. Chronic exposure to hydrogen chloride gas above the PEL has been associated with changes in pulmonary function, chronic inflammation of the bronchi, and nasal irritation. A sharp, choking odor can be detected at $7,000 \mu\text{g}/\text{m}^3$ (NIOSH 1997b, U.S. EPA 2002b).

Chlorine and hydrogen chloride are heavier than air and can collect in low-lying areas. It is possible that during times of calm, heavy air, the emissions from Continental Aluminum might not disperse as would normally be expected, causing odor events or acute symptoms in exposed populations if levels are high enough.

The OSHA PEL for hydrogen fluoride is $2,500 \mu\text{g}/\text{m}^3$. The ATSDR Environmental Media Evaluation Guide (EMEG) for intermediate exposure (greater than two weeks but less than one year) is $16.36 \mu\text{g}/\text{m}^3$. The EMEG for acute exposure (less than two weeks) is $24.54 \mu\text{g}/\text{m}^3$. There is no RfC available for hydrogen fluoride. Exposure to this chemical at the PEL can result in eye and throat irritation. At higher concentrations, it is extremely corrosive, and exposure can result in skin burns and chronic lung disease. A disagreeable, pungent odor can be detected at $34 \mu\text{g}/\text{m}^3$ (NIOSH 1997c, U.S. EPA 2002c).

“Particulate matter” (PM) is a broad term that encompasses thousands of chemical species and refers to a mixture of solid and liquid particles suspended in the air. These particles are categorized into two groups: PM_{10} , particles less than 10 micrometers (μm) in diameter, and $\text{PM}_{2.5}$, those less than 2.5 μm . Particles ranging from 2.5-10 μm in size include resuspended road dust (soil particles, engine oil including metals, tire particles, sulfate, and nitrate), construction and wind-blown dust, silicon, titanium, aluminum, iron, sodium, and chlorine. Particles less than 2.5 μm include combustion, condensation, and coagulation products of gases

and ultrafine particles; carbon; lead; vanadium; bromine; and sulfur and nitrogen oxides (Bascom et al. 1996).

Because of the vast array of compounds that can make up PM, there are no screening levels to which measured particulate emissions can be compared. Rather, the U.S. EPA has set the National Ambient Air Quality Standard (NAAQS) as 150 $\mu\text{g}/\text{m}^3$ over a 24-hour period for PM_{10} and 65 $\mu\text{g}/\text{m}^3$ over a 24-hour period for $\text{PM}_{2.5}$. To evaluate the toxicity of site-specific PM, it is necessary to speciate it (determine its components) and compare the components of the PM to their respective screening levels.

ATSDR Child Health Initiative

Children may be at greater risk than adults from exposure to hazardous substances at sites of environmental contamination. They engage in activities such as playing outdoors and hand-to-mouth behaviors that may increase their intake of hazardous substances. They are shorter than most adults, and therefore they breathe dust, soil, and vapors closer to the ground. Their lower body weight and higher intake rate results in a greater dose of hazardous substance per unit of body weight. The developing body systems of children can sustain permanent damage if toxic exposures are high enough during critical growth stages. Even before birth, children are forming the body organs they need to last a lifetime. Injury during key periods of growth and development may lead to malformation of organs (teratogenesis), disruption of function, and premature death. Exposure of the mother may lead to exposure of the fetus, via the placenta, or may affect the fetus because of injury or illness sustained by the mother (ATSDR 1998). In addition, teenagers may accidentally wander or deliberately trespass onto or into restricted locations. The obvious implication for environmental health is that children can experience substantially greater "doses" than adults to toxicants that are present in soil, water, or air.

According to the 2000 census, 29 percent of the population of Lyon Township is under the age of 18 years. Children who live downwind from the Continental Aluminum site and/or who attend Dolson Elementary School might be exposed to acidic gases, metals, particulates, or VOCs emitted by the plant.

Community Health Concerns

The most frequently reported health effects appeared to be episodic in nature, possibly occurring during a breach of the pollution control devices of Continental Aluminum. Irritation to the mucous membranes such as nose bleeds, coughing, difficulty in breathing, and burning eyes have been reported by the residents near the plant. As well, a "tin can" or "varnish" taste in the mouth and a "burnt plastic" odor have been reported during alleged odor events attributed to the facility. Other symptoms included headache and nausea. There has been no systematic approach to documenting adverse health effects in the community. Odor complaints are submitted to the township office, which then submits them to MDEQ-AQD. Many residents reported that they would leave their homes in order to avoid the ill effects associated with the odors, and that some family members were living away from the community because of the health impacts. Underlying medical conditions may be exacerbated by the emissions, including respiratory diseases such as asthma, pneumonia, and COPD. Dealing with the odor events and the noise from the facility has led to mental aggravation and stress. In general, the residents have reported a decrease in the quality of life.

During the informal community meeting on March 26, 2002, one resident mentioned that he had seen subsurface utility workers performing maintenance along Milford Road by Continental Aluminum. The workers emerged from the excavation complaining of nosebleeds, bleeding from the eyes and rashes. This event has not yet been substantiated.

Conclusions

The health hazard presented by emissions from Continental Aluminum is indeterminate. The decision criteria questions posed in the Purpose and Health Issues section of this document are answered below:

- It is possible that the location, concentration, and toxicity of the hazardous substances related to the site are of public health concern. However, levels of the chemicals of interest during odor events are not known.
- There is a potentially exposed population as indicated in the petition and as determined by evaluating the human exposure pathways for the hazardous substances: neighboring residents and businesses as well as children at a nearby school
- There may be a relationship between possible human exposure to a release of hazardous substances and community health concerns or adverse health outcomes.

Air dispersion modeling and stack testing for the chemicals of interest indicate that emissions are within the established health-based screening levels. However, the modeling and stack data represent concentrations averaged over periods of time longer than those that can elicit an adverse health effect. A continuous air-monitoring program would provide more useful information to determine if intermittent peaks in chemicals of interest may be associated with the health complaints in the community. At the very least, real-time monitoring during odor events would provide a clearer picture of what chemicals at what concentrations are present in the emissions at those times.

Also, a systematic method of detailing odor events and associated health effects is necessary to provide consistent and better-quality data to determine any correlation between emissions and reported health effects. Comparing when residents detect odors to what processes were occurring at the plant at that time might elucidate any problems that can be corrected through operating or system changes. Access to the company's daily records on what kind of scrap was used in which process might provide useful information.

Recommendations

In order to better ascertain any public health impact of emissions from Continental Aluminum, MDCH is making the following recommendations:

- ▶ An Exposure Investigation should be conducted. A local person or team can be trained to take air samples during odor events. These samples would be analyzed for a greater array of chemicals of interest than those currently tested for in the stack tests. Based on the data gathered from this sampling, MDCH and ATSDR may recommend stack testing for chemicals not previously measured.
- ▶ During the Exposure Investigation, the residents should keep odor diaries. The format of these diaries would be determined by MDCH and ATSDR. Information to be gathered would include time of day of the odor event, weather variables, description of the odor, and description

of any accompanying health effects. The diaries would be submitted to MDCH in order to assist with the investigation.

▶ Also during the Exposure Investigation, Continental Aluminum should make available its records on each day's processes. Information to be gathered would include what type of scrap was used, which furnace was used, whether chlorine was added or the aluminum bath raked during the process, etc.

▶ MDEQ should continue to monitor Continental Aluminum's emissions to be sure that the company is in compliance with its permit.

▶ The Michigan Occupational Safety and Health Administration (MIOSHA) should continue inspecting the plant, as per its mandate.

Public Health Action Plan

● MDCH and ATSDR will provide health effects information regarding the chemicals of interest to the community.

● MDCH will provide information in response to concerns regarding cancers and birth defects in the area.

● MIOSHA should partner with ATSDR, MDCH, and the Oakland County Health Department in any future exposure investigations that may involve worker safety and health.

● As necessary, ATSDR, MDCH, and the Oakland County Health Department will attend meetings with the community to relay any findings, answer questions, or gather additional information.

If any citizen has additional information or health concerns regarding this health consultation, please contact the Michigan Department of Community Health, Environmental and Occupational Epidemiology Division, at 1-800-648-6942.

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Table 1. Predicted Ambient Impact of Emissions from Continental Aluminum

<u>Chemical</u>	<u>ITSL^A</u>	<u>Averaging Time</u>	<u>PAI^A</u>	<u>Percent of ITSL</u>
Chlorine	15	8 hr	0.41	2.7
Hydrogen chloride	20	24 hr	3.47	17.4
Hydrogen fluoride	26	1 hr	4.04	15.5

Reference: MDEQ-AQD-MMU 2000

ITSL Initial Threshold Screening Level

PAI Predicted Ambient Impact

Notes:

A Units are $\mu\text{g}/\text{m}^3$.

Table 2. Rotary Furnace Stack Testing Results

<u>Emission Tested For</u>	<u>Permitted Limit^A</u>	<u>October 1998 Results^A</u>
Particulate matter	2.0	0.14
Hydrogen chloride	0.62	ND ^B
Chlorine	0.10	ND ^C
Hydrogen fluoride	0.5	ND ^D

Reference: MDEQ-AQD Review of Source Emission Test Results 1999a

Notes:

- A Emission units are lb/hr except for hydrogen fluoride, which is ton/yr.
- B Maximum detection limit of 0.056 lb/hr
- C Maximum detection limit of 0.03 lb/hr
- D Maximum detection limit of 0.02 ton/yr

Table 3. Reverberatory Furnace #1 Stack Testing Results

Emission Tested For	Permitted Limit ^A	October 1998 Results ^A	March 1999 Results ^A	July 2000 Results ^{A,B}	July 2000 Results ^{A,C}
Particulate matter	2.0	1.6	NT	0.22	2.28
Hydrogen chloride	1.95	11.70	0.16	0.15	0.19
Chlorine	0.10	0.33	0.06	ND ^D	ND ^E
Hydrogen fluoride	0.5	ND^F	NT	NT	NT

Reference: MDEQ-AQD Review of Source Emission Test Results 1999a, 1999b, 2000a

ND Not detected

NT Not tested for

Notes:

A Emission units are lb/hr except for hydrogen fluoride, which is ton/yr.

B Results from baghouse stack

C Results from combustion stack

D Maximum detection limit of 0.05 lb/hr

E Maximum detection limit of 0.02 lb/hr

F Maximum detection limit of 1.66 ton/yr

Table 4. Reverberatory Furnace #2 Stack Testing Results

Emission Tested for	Permitted Limit ^A	October 1998 Results ^{A,B}	March 1999 Results ^A	November 1999 Results ^{A,C}	November 1999 Results ^{A,D}	July 2000 Results ^{A,C}	July 2000 Results ^{A,D}
Particulate matter	2.0	0.02	NT	0.16	1.14	0.39	0.40
Hydrogen chloride	1.95	2.29	0.93	0.28	1.65	0.14	0.21
Chlorine	0.10	0.02	0.03	ND ^E	0.05	ND ^F	ND ^E
Hydrogen fluoride	0.5	ND ^G	NT	NT	NT	NT	NT

Reference: MDEQ-AQD Review of Source Emission Test Results 1999a, 1999b, 2000a, 2000b

ND Not detected

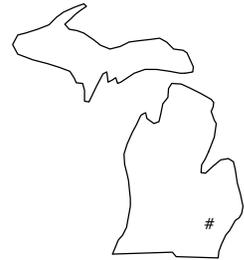
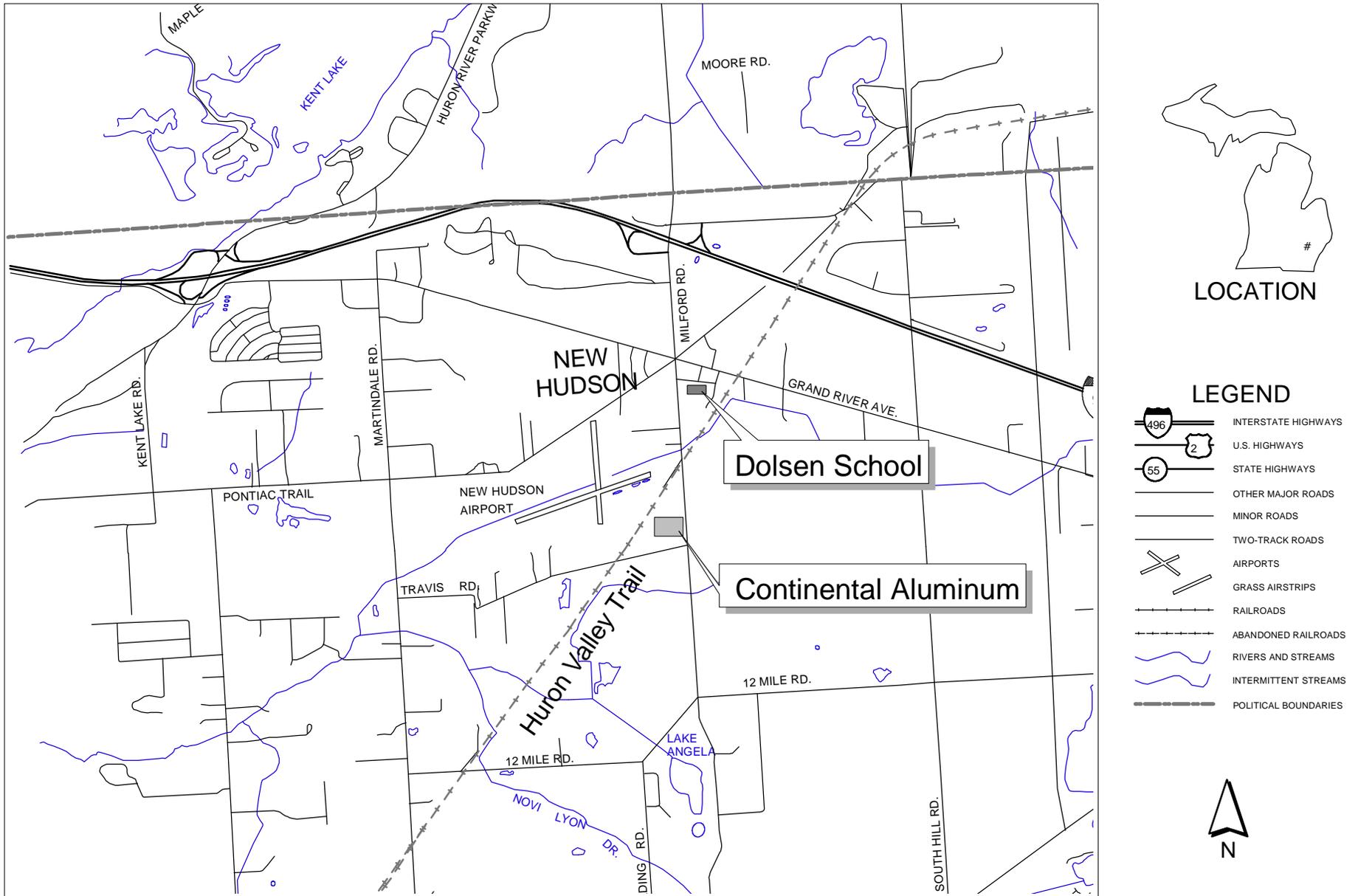
NT Not tested for

Notes:

- A Emission units are lb/hr except for hydrogen fluoride, which is ton/yr.
- B Values are based on the average of two runs, due to a burner malfunction during a third run.
- C Results from baghouse stack
- D Results from combustion stack
- E Maximum detection limit of 0.02 lb/hr
- F Maximum detection limit of 0.05 lb/hr
- G Maximum detection limit of 0.35 ton/yr

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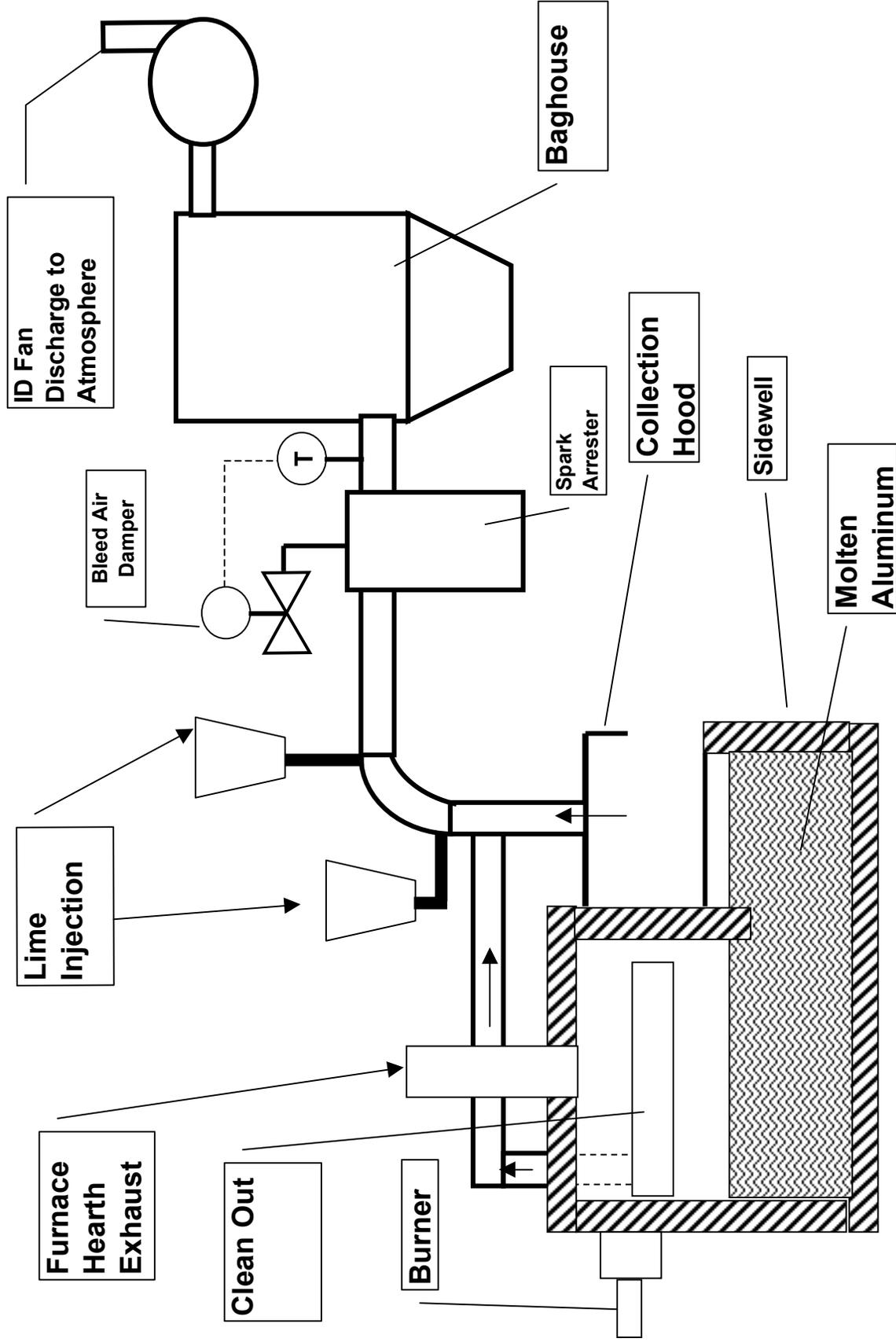
LEGEND

- INTERSTATE HIGHWAYS
- U.S. HIGHWAYS
- STATE HIGHWAYS
- OTHER MAJOR ROADS
- MINOR ROADS
- TWO-TRACK ROADS
- AIRPORTS
- GRASS AIRSTRIPS
- RAILROADS
- ABANDONED RAILROADS
- RIVERS AND STREAMS
- INTERMITTENT STREAMS
- POLITICAL BOUNDARIES



Figure 1.

Figure 2. Sidewell Reverberatory Furnace Diagram



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Appendix A. Significant Date Chronology

(compiled by a South Lyon citizen from public and FOIA'd information; as of 7/15/02)

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Continental Aluminum, Inc. melts down used aluminum and produces ingots. Continental Aluminum handler ID MIR000101436 and EPA Facility ID MI0001941699 (EPA, 07-24-01).

“The plant’s pre-treatment operations for incoming aluminum scrap consist of shredding, but not other operations described in AP-42, such as sweating, roasting, or drying. There are two reverberatory furnaces (RV-1 Deox and RV-2 Alloy) and a rotary furnace (RO-1). . . RV-1 is operated in a continuous mode. . . RV-2 is operated as a batch furnace. . . Magnesium content of the aluminum is reduced by injecting chlorine gas into RV-2. . . Emissions associated with secondary aluminum smelting include particulates, chlorine, hydrogen chloride, hydrogen fluoride, and volatile organic compounds (VOC). At Continental Aluminum, the chlorine emissions would be caused in part by the chlorine injection at RV-2. . . These emissions, which escape primarily from the charging wells of each furnace, are directed to one of three lime-injected baghouses. . . Each furnace has a dedicated baghouse. The use of lime injection helps to neutralize these hazardous compounds. . . The associated combustion by-products are directed to the plant’s two “combustion stacks” without the use of any air pollution control equipment. The rotary furnace is a likely source of VOCs since the aluminum turnings processed in this furnace contain cutting oils. Other scrap materials fed to RV-1 and RV-2 may also have contaminated that would release VOCs upon exposure to furnace heat.” (EPA, 05/11/00)

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- 05/16/02 On May 16, 2002, Fire Chief L. Cash stated that Continental is documented as storing 1 ton of chlorine on site.
- 05/15/02 Richard Fairfield Lyon Township Hall reported a bleach or ammonia type odor; (248) 437-2240. (Lyon Twp, 05/15/02)
- 05/13/02 Bob Moody 57245 Travis Road reported a chemical odor on a scale of 4. (Lyon Twp, 05/13/02)
- 05/09/02 Paul Lovell 29509 Milford Road reported an odor on a scale of 5; (248) 437-6164. (Lyon Twp, 05/09/02)
- 05/06/02 Paul Lovell 29509 Milford Road reported an odor on a scale of 4. The odor caused breathing problems and he had to seek medical attention; (248) 437-6164. (Lyon Twp, 05/06/02)
- 04/18/02 Rose Case 58000 Grand River reported a very strong burnt wire smell at the Township Hall. It smelled like an electrical fire. (248) 437-2240 (Lyon Twp, 04/18/02)
- 04/12/02 Paul Lovell 29509 Milford, reported a burn plastic odor; not heavy but constant. (Lyon Twp, 04/12/02)
- 04/11/02 Paul Lovell 29509 Milford reported a horrible odor. (Lyon Twp, 04/11/02)
- 04/08/02 Paul Lovell 29509 Milford reported an odor so bad they can't breathe and are coughing. (Lyon Twp, 04/08/02)
- 04/08/02 Krista Mckeji 29993 Homedale reported a citrus fruit sweet smell odor on a scale of 3. (248) 437-1706 (Lyon Twp, 04/08/02)
- 03/28/02 Paul Lovell 29509 Milford, reported an odor on the scale of 4 at 9:06 am. It had a characteristic of burnt metallic smell. (248) 437-6164 (Lyon Twp, 03/28/02)
- 03/28/02 Bill on Cash Street reported an odor on the scale of 5+. It had a characteristic of

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acid smell. Bill also stated, "Has smelled bad all day now is so bad can't stay outside at all. Please do something." (248) 437-2276 (Lyon Twp, 03/28/02)

03/27/02 Paul Lovell 29509 Milford, reported an odor on the scale of 5 from 9:00 to 10:00 pm. It had a characteristic of burnt wire. Paul also stated, "Odor was so bad by 9:30 it filled the whole house." (248) 437-6164 (Lyon Twp, 03/27/02)

03/26/02 The ATSDR held a meeting on March 26, 2002, from 2 - 5 PM at the Township hall. The following people from the state or federal government attended the meeting:

Christina Bush, Toxicologist, Michigan Department of Community Health Division of Environmental and Occupational Epidemiology Toxicology and Response Section, P.O. Box 30195, Lansing, MI 48909, BUSHCR@michigan.gov;

Brandon Boyle, Michigan Department of Community Health Division of Environmental and Occupational Epidemiology Toxicology and Response Section, P.O. Box 30195, Lansing, MI 48909, Boyleb@michigan.gov;

Mark Johnson, ATSDR Senior Environmental Health Scientist Region V, johnson.mark@epa.gov; and

Michelle Waters, Environmental Medicine.

Linda Larson of the Department of Environmental Medicine in Lansing.

Prior to the meeting, these four people toured Continental Aluminum. It was a scheduled visit.

03/21/02 MacDermid Inc. 29111 Milford Road, New Hudson, reported an odor on the scale of 2. Also a huge quantity of white gray smoke was reported coming from back south stack. (248) 437-8161 (Lyon Twp, 03/21/02)

03/18/02 Lisa Prochazka 28733 Hovey Lane reported an odor on a scale of 3-4. It had a characteristic of burnt chemical. (248) 486-5877 (Lyon Twp, 03/18/02)

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- 03/18/02 Harold Grove 28735 Hovey Lane, reported an odor on the scale of 4. It had a characteristic of burning plastic – chemical like. Harold also stated, “Whatever they claim to have done to improve the situation has not had any effect!” (248) 486-6920 (Lyon Twp, 03/18/02)
- 03/13/02 Marcia Lovell 29509 Milford reported a metallic very strong odor on the scale of 5. Smelled like burning wire. (Lyon Twp, 03/13/02)
- 03/11/02 Al Steward 29881 Milford Road reported an odor on the scale of a high 4. It’s a burnt musty-moldy odor. (Lyon Twp, 03/11/02)
- 03/07/02 Robin and Ronda Allen 28550 Tindale Trail reported an odor of the scale of 5+. It’s a strong odor that burns the nose and eyes. (Lyon Twp, 03/07/02)
- 02/20/02 Pam Crook 30010 Helene reported an odor of the scale of 4. It was burnt-paint odor; stinks more than usual this morning. (Lyon Twp, 02/20/02)
- 02/20/02 Pat Borowski 58000 Grand River reported an extremely strong paint-like chemical odor on an odor scale of 4. (Lyon Twp, 02/20/02)
- 02/20/02 Paul Lovell 29509 Milford Road reported an odor beginning at 10:00 am and lasting the rest of the day. The odor was terrible from 1:00 to 1:30 pm. Workmen had to leave their job due to the odor. (Lyon Twp, 02/20/02)
- 02/19/02 Paul Lovell 29509 Milford Road reported strong odor all day. Also exhaust fans now on building. Smoke turns from white to black. (Lyon Twp, 02/19/02)
- 02/18/02 Paul Lovell 29509 Milford Road reported smoke blowing out of stacks all day. He detected an odor on the scale of 5 and that workers left the job site due to odor. (Lyon Twp, 02/18/02)
- 02/08/02 Diana & Phil Mitchell 27541 Hicks Ct, reported a noise violation. Continental produced a loud droaning noise all night long. (248) 486-8332. (Lyon Twp, 02/08/02)
- 01/31/02 Harold L. Grove 28735 Hovey Lane New Hudson reported an odor on the scale of 3 all day. It was a chemical type odor; definitely noticeable when in driveway

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while clearing snow; (248) 486-6920. (Lyon Twp. 01/31/02)

- 01/30/02 Harold L. Grove 28735 Hovey Lane New Hudson reported an odor on the odor scale of 3 at 7:30 & 11:15 am and 3:45 & 7:20 pm. It was a chemical type odor and bothersome; (248) 486-6920. (Lyon Twp, 01/30/02)
- 01/30/02 Robin and Ronda Allen 28550 Tindale Trail reported an odor on the scale of 2; (248) 437-6753. (Lyon Twp, 01/30/02)
- 01/29/02 Robin and Ronda Allen 28550 Tindale Trail reported an odor on the scale of 2; (248) 437-6753. (Lyon Twp, 01/29/02)
- 01/29/02 John Berger 58075 Travis Road reported an odor to Lyon Township stating “Do something about this odor.” (Lyon Twp, 01/29/02)
- 01/29/02 Harold L. Grove 28735 Hovey Lane New Hudson reported an odor on the odor scale of 3 all day. It was a chemical type odor and was immediately noticeable upon going outdoors; (248) 486-6920. (Lyon Twp, 01/29/02)
- 01/29/02 Harold L. Grove 28735 Hovey Lane New Hudson, reported a noise violation. Continental’s blower motors create a droning sound that disturb the peace and quite of the neighborhood. (248) 486-6920. (Lyon Twp, 01/29/02)
- 01/22/02 Paul Lovell 29509 Milford Road reported a terrible odor on a scale of 5 from 5 am to 12 noon; (248) 437-6164. (Lyon Twp, 01/22/02)
- 01/20/02 Matthew New 28940 Fletcher Lane reported a disturbing the peace violation to Lyon Township. The violation consisted of “Constant low droning sound coming from Continental’s baghouse.” (Lyon Twp, 01/20/02)
- 01/17/02 Lisa Prochazka 28795 Hovey Lane reported a “terrible odor” to Lyon Township. (Lyon Twp, 01/17/02)
- 01/16/02 Paul and Marcia Lovell 29509 Milford Road reported and odor on a scale of 5. It had a characteristic of burned aluminum. They could not tolerate it and had to leave house. Smoke was poring out of all three stacks; (248) 437-6164. (Lyon Twp, 01/16/02)

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- 12/27/01 A QD staff, Rem Pinga, conducted a complaint Investigation between 1830 and 1910 hours. No odors of opacity was observed. The facility was not operating. The complaint was resolved. (Refer to AQD A-SE-00159, 12/28/01)
- 12/20/01 Dennis Drake AQD Chief, signed Stipulation for Entry of Final order by consent, Final Order AQD No. 52-2001
- On December 20, 2001, Dennis Drake, Chief of AQD, signed the Stipulation for Entry of Final Order by Consent, AQD No. 52-2001 (Consent Order). However, the Consent Order fails to state the source(s) of emissions for the combustion stacks. In addition, it does not address or mandate pollution control devices for the combustion stacks. These emissions are merely included in the amended permit.
 - It requires additional controls for fugitive dust and particulates emanating from the interior of the facility. However, no additional controls for hydrogen chloride and chlorine were included for the combustion stacks.
 - By May 1, 2002, Continental shall monitor and record visible emissions from stack SVBH RVRB#B on a continuous basis. However, no provision was included to deal with the results.
 - It constitutes a full settlement and satisfaction of all previous violations issued to Continental.
 - Continental shall pay a settlement amount of \$33,000.
 - Continental shall not cause the emissions of any odor on and after the effective date of this Consent Order.
 - It shall remain in full force and effect for a period of at least three years. (Refer to AQD file 12/20/01)
- 12/20/01 Dennis Drake letter to Interested Party (Refer to AQD file 12/20/01)
- 12/07/01 A QD staff conducted a compliant investigation for odors detected near Dolsen. No odors were detected by AQD staff. It appeared that the company was not operating that morning. (Refer to AQD A-SE-00148 12/07/01)
- 12/07/01 Doug Pakkala issued an odor complaint log no. C-02SE-0127 for a burnt paint smell at Dolsen around 7:30am. It “. . . was so bad it would be impossible to stay outside for any length of time” (Refer to AQD Complaint Log 12/07/01)

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- 12/05/01 A QD Staff, Rem Pinga, conducted an odor complaint investigation from 1655 to 1730 hours. No odors were detected; no visible emissions were detected from the stacks. The complaint was resolved. (Refer to AQD A-SE-00156 & A-SE-00159, 12/05/01)
- 12/05/01 Dolsen Elementary School issued Complaint Log C-02SE-0132 resulting from a parent's (Kristin Johnston) complaint of strong odors observed in the parking lot during dismissal around 1530 hours. (Refer to AQD C-02SE-0132, 12/05/01)
- 09/19/01 DEQ letter signed by Jim Sygo, chief WMD to Wayne Perry regarding notice of violation and proposed consent order. It concludes "The DEQ has sufficient information to believe that CAI has violated part 111 and part 121 of the NREPA and the rules promulgated thereunder. A person who violates part 111 and part 212 or the rules promulgated thereunder is subject to state and federal civil and criminal sanctions." (Refer to DEQ-WMD file letter dated 09/19/01)
- 08/16/01 Jane E. Ratcliffe of Information Management Section, EPA Region 5 response letter to Robin Allen stated that she couldn't find any information for the aluminum melting industry listed. (EPA, 08/16/01)
- 07/24/01 Jeffrey L. Woolstrum of Honigman et al letter to Tim Sonnenberg of DEQ-WMD regarding June 11, 2001 letter to Wayne Perry. Analytical results of a sample of used mineral spirits generated by Continental indicate that the sample does not exhibit the characteristic of toxicity based on the concentration of metals. (Refer to DEQ-WMD file letter dated 07/24/01)
- 07/11/01 Jeffrey L. Woolstrum letter to Tim Sonnenberg of DEQ-WMD regarding June 11, 2001 letter to Wayne Perry. (Refer to DEQ-WMD file letter dated 07/11/01)
- 07/05/01 Lillian Woolley, AQD District Supervisor, Sent a FOIA request to Lyon Twp. She requested a copy of any notes, correspondence, videotapes, etc. related to a meeting at Lyon Twp. On May 22, 2001. (AQD, 07/05/01)
- 06/29/01 Dennis Drake of DEQ issued a response letter to State Senator Bill Bullard and State Representative Nancy Cassis regarded inquiry made on June 6, 2001 at the public hearing. The response letter stated that AQD-DEQ is the division

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responsible for monitoring the compliance of the Federal Clean Air Act and Part 55, Air Pollution Control, of the Michigan Resources and Environmental Protection Act, 1994 PA 451, as amended, and the rules promulgated thereunder. The person within the AQD with specific responsibility for monitoring compliance of Continental is Ms. Lillian Woolley.

The Enforcement Unit of the AQD is charged with working in cooperation with the district field inspectors to oversee the operation to insure the compliance with the terms of a consent order. (Correspond, 06/29/01)

- 06/29/01 State Representative Nancy Cassis forwarded Dennis Drake's letter of 06/29/01 to Lyon Township Supervisor Joseph Shigley. (Correspond, 06/29/01)
- 06/28/01 Rem Pinga, AQD Staff, conducted a complaint investigation for odor/opacity observations. No visible emissions were observed. A slight to no odor was observed. Rem Pinga resolved the complaint. After the complaint investigation, an on-site meeting was conducted ". . . to address some issues raised during the public hearing. . ." (AQD, 06/28/01)
- 06/27/01 State Representative Nancy Cassis letter to Russ Harding of DEQ. Nancy reminded Mr. Harding that the DEQ missed the deadline of June 15, 2001 to respond to Senator Bullard's & her questions presented during the June 6, 2001 Public Hearing. Nancy wrote, "This lack of effort from your department to serving the individuals of Lyon Township during this process has been very disturbing." (Correspond, 06/27/01)
- 06/27/01 Rem Pinga, AQD Staff, conducted a complaint investigation for odor/opacity observations. No visible emissions were observed. A slight to no odor was observed. Rem Pinga resolved the complaint. (AQD, 06/28/01)
- 06/26/01 Lyon Twp. residents, Paul Lovell, Heide Opris, and Dolores Allen issued separate odor complaints with the AQD-DEQ. (AQD, 06/26/01)
- 06/26/01 Lyon Twp. Board Member Paul Fransway letter to Jennifer Granholm State Attorney General. Mr Fransway, ". . . asked the question of whether their proposed move was motivated by any enforcement actions taken against them in the community where they currently operated. Contrary to the true state of affairs where there had been considerable local enforcement action including a \$50,000

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fine, the president of the company denied any problems or violations, asserting only that the move was motivated by the fact that their location no longer suited their operations. . . it was an outright lie. . . the MDEQ has repeatedly cited Continental Aluminum for many significant violations of air quality and it appears that there is not end in sight. . . the State of Michigan was supporting the move of Continental Aluminum to our community with tax exempt bond financing and the construction of major road improvements and also knowing that air quality regulation of businesses like Continental was under the control the Michigan Department of Environmental Quality was significant to me. . . [Paul Fransway then requested Jennifer to] review the applications for any grants given to Continental Aluminum to determine if they truthfully and completely disclosed all relevant facts in obtaining their grant requests. . . [and] advise us whether any state laws were violated when the officers of Continental Aluminum provided false responses to local officials. . .” (Correspond, 06/26/01)

- 06/26/01 Paul Fransway letter to Robin Allen. Paul stated that he had previously called their (Attorney General) offices and that he just wrote to the Attorney General regarding Continental’s deception. (Correspond, 06/26/01)
- 06/25/01 Lyon Twp. resident, Dave Grimm, issued an odor and opacity complaint to the PEAS operator. It was forwarded to the AQD. (AQD, 06/25/01)
- 06/15/01 Lillian Woolley, Air Quality Division Supervisor, sent and interoffice communication to Bruce Waldo, Geological Survey Division Supervisor. AQD informed GSD that an oil/gas well located near Continental has been operating without the required control equipment (the flare installed to control emission from the well has not been lit). AQD stated that odors associated with the oil/gas well may have been attributed to Continental. (AQD, 06/15/01)
- 06/15/01 Dan Cash, Lyon Twp. Fire Chief, faxed Lillian Woolley a Lyon Twp. Fire Department incident report. On June 14, 2001 the Lyon Township Fire Department: received an alarm at 11:42 AM and arrived at Continental at 11:46 AM. At 11:59 the issue was controlled and at 12:06 PM the last unit was cleared. No water was used. (AQD, 06/15/01)
- 06/14/01 At 11:37 AM, Wayne Perry called AQD and reported a baghouse malfunction. In addition, Marie Sheery, Lyon Township Assistant Suprvisor, reported black

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smoke emitting from Continental and requested an AQD staff to be sent to investigate. Around 12:30 PM Chris Ethridge and Francis Lim, AQD Staff, arrived in the area of Continental to conduct a complaint investigation for odor/opacity observations. No black smoke or visible emissions were observed. A slight to no odor was observed. Wayne Perry stated that “. . . a baghouse malfunction occurred around 11:35 AM . . . the baghouse was shutdown for approximately 4 minutes. It took an additional 10-15 minutes to clear smoke from the facility . . . baghouse shutdown because of extreme temperatures in the exhaust gas. Mr. Perry . . . will fill out a malfunction notification for AQD staff.” Rem Pinga resolved the complaint. (AQD, 06/28/01 & 06/14/01 Activity Rpt)

- 06/14/01 Lyon Township’s building official, board member, and sheriff, went to investigate the black smoke at Continental. In addition, the South Lyon fire department responded to complaints. (AQD, 06/14/01 Activity Rpt & Complaint Log)
- 06/14/01 Michelle Cash, Lyon Twp. resident, reported an opacity complaint to AQD. (AQD, 06/14/01 Complaint log)
- 06/14/01 At 11:30 a.m. Continental’s deox baghouse reached in excess of 290 degrees F which caused the baghouse to shutdown (to prevent the destruction of the bags and a potential fire). “Charging immediately ceased and flux was added to extinguish any further burning.” The furnace was shut down. “When the baghouse shutdown, smoke did escape the collection hood and move through the plant.” The baghouse was restarted 4 minutes after furnace shutdown. The plant was clear and fully operational in 25 minutes. (AQD, 06/15/01)
- 06/13/01 Rem Pinga and Chris Ethridge conducted an odor compliant investigation for complaints (C-01LV-0140 and C-01LV-0142). AQD Staff noted, “. . . a very slight burnt odor that lasted for about 30 seconds twice.” No visible emissions were observed. They spoke with Dan and Michelle Cash (Lyon Twp. residents) for about 1 hour. The Lyon Twp. residents, “. . . mentioned that they observed odors at certain times and days and the strongest odor would linger for about an hour or so.” Rem Pinga resolved the complaints. (AQD A-LV-04565, 06/13/01)
- 06/13/01 Dave Grimm, Lyon Twp. Resident, reported a strong odor complaint (C-01LV-0142) to Rem Pinga, AQD Staff. (AQD, 06/13/01)

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- 06/11/01 DEQ letter to Wayne Perry regarding Mir 000 101 436. DEQ staff determined Continental was in violation of the following: 1. “The MSDS sheet submitted as the characterization for the mineral spirit waste is not adequate . . .
- 06/09/01 Melissa Lenbrecht, Lyon Twp. Resident, reported strong odors observed from Continental (C-01LV-0140) to Gerald Avery, AQD Staff. (AQD, 06/09/01)
- 06/06/01 MDEQ Public Hearing regarding Continental’s Consent Order representative provided testimony against Continental and on behalf of the Residents and Township. (S.L. Heard).
- Senator Bullard and State Representative Nancy Cassis gave a joint statement that is summarized as follows: we are here tonight to express our concerns regarding a company which has repeatedly violated environmental laws and endangered local citizens. We and other state officials have received numerous complaints from Lyon Township residents whose lives have been disturbed by the sounds and smells. They are associating the plant’s emissions with genuine health problems, including nausea, headaches, burning eyes and breath disorders that did not exist before the plant. Continental had a history of safety violations at its former Detroit plant. The MDEQ has responded with seven notices in the past three years for violations ranging from odor to permit violations. Bullard and Cassis requested a written answer to two questions by June 15, 2001: 1) Who is the person and division for monitoring compliance in the Consent Order and permit? 2) Who’s responsible and what are the procedures for enforcement of the Consent Order and permit?
(Correspond, 06/06/01)
 - Melissa O’Rear, Field Representative for U.S. Congressman Joe Knollenberg’s office
- 06/05/01 At 9:00 AM Paul Lovell, Lyon Twp. resident reported odor complaint no. C-01LV-0137.
At 9:45 AM Chris Ethridge, AQD Staff, conducted complaint investigation no. A-LV-04555 to determine if odors violated Rule 901. The facility was operating. The odors noticed down wind were very faint. Rem Pinga resolved the complaint as stated in his Activity Report Complaint Investigation A-LV-04558. (AQD, 06/05/01)
- 06/04/01 At 6:05 AM Lillian Woolley conducted an odor surveillance. The facility was not

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operating, but baghouse fans were on. Plant personnel said plant operations were start later that day. No odor was detected. (AQD, 06/04/01)

- 06/02/01 At 1:50 pm Lillian Woolley, AQD District Supervisor, conducted an odor surveillance. Lillian stated the following: the Lime Logs looked ok, the separator was down for maintenance, the rotary was down, and RV1 & RV2 were operating. She spoke with a number of residents who said the plant was not operating. No odors were detected, only steam was observed. (AQD, 06/02/01)
- 06/01/01 At 2:35 PM Richard Hunt of Taft Grinding reported opacity complaint no. C-01LV-0136. Heavy blue smoke originating from Continental was visible for at least 3/4 of a mile.
At 3:25 PM Robin Allen, Lyon Twp. resident, reported odor complaint no. C-01LV-0135.
At 4:16 PM Lillian Woolley, AQD District Supervisor, conducted an odor opacity surveillance.
At 4:30 PM Lillian observed black smoke for 2-3 minutes during the cleaning of RV-1. She stated that rotary furnace was down for “regr out” and that the lime logs for today showed about 550# and for yesterday about 600#. (AQD, 06/01/01)
- 05/31/01 CJM, AQD Staff, conducted an odor & opacity surveillance. Neither were observed. (AQD, 05/31/01)
- 05/30/01 Heide Oprisiu, Lyon. Twp resident, reported odor & opacity complaint log no. C-01LV-0134. (AQD, 05/30/01)
Rem Pinga, AQD Staff, conducted odor and opacity complaint investigation A-LV-04557. “I [Rem] observed an occasional whip of a burnt odor. However, the odors I observed did not constitute a violation of AQD Rule 901.” Rem resolved the complaint. (AQD, 05/30/01)
- 05/25/01 Heide Oprisiu Lyon. Twp resident, reported odor complaint log no. C-01LV-0133. She stated that the odor had a burning plastic metallic taste and she was unable to enjoy the yard directly outside her front door due to the odor coming from Continental’s plant. (AQD, 05/25/01)
-] 05/22/01 Rem Pinga, AQD Staff, conducted odor and opacity complaint investigation no.

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- A-LV-04557. He did not observe a violation of AQD Rule 901.” Rem resolved the complaint. (AQD, 05/30/01)
Lyon Twp. and AQD-DEQ held a meeting at the Lyon Twp. hall regarding Continental.
- 05/21/01 Lyon Township reported odor complaint log no. C-01LV-0132.
At 5:30 PM, Dolores Allen reported a strong plastic odor. (AQD, 05/21/01)
- 05/18/01 Rem Pinga, AQD Staff, conducted odor and opacity complaint investigation no. (A-LV-04557. He did not observe a violation of AQD Rule 901.” Rem resolved the complaint. (AQD, 05/30/01)
- 05/16/01 Rem Pinga, AQD Staff, faxed Sondra Gardner, MDEQ-Detroit Staff, the report for the complaint investigations she inquired about. (AQD, 05/16/01)
- 05/15/01 D/SGT. Sondra Gardner, MDEQ-Detroit Staff, faxed Rem Pinga a request to “. . . review and provide findings and status of compl.” (AQD, 05/15/01)
- 05/13/01 At 8:30 AM, Harold Grove reported a chemical like burining plastic odor to Lyon Twp.
Lyon Twp forward the reported odor complaints of May 12 & 13 log no. C-01LV-0125 to AQD. (AQD, 05/21/01)
- 05/12/01 At 7:35AM Harold Grove reported a chemical like burining plastic odor to Lyon Twp. (AQD, 05/13/01)
- 05/10/01 Wayne Perry letter to Lester Cash, Lyon Twp. Fire Chief, re: Continental Hazardous Waste Contingency Plan. The letter states that Continental has determined that it qualifies as “large quantity generator” of hazardous waste, as that term is defined in regulations promulgated under Part 111 of the Natural Resources and Environmental Protection Act. Accordingly, Continental is required to prepare a “Contingency Plan” and make arrangements with local law enforcement agencies and fire departments to implement this plan in the event of an emergency. (Refer to DEQ-WMD file, letter dated 05/10/01)
- 05/07/01 MDEQ Staff Activity Report was issued. (AQD, 05/07/01)

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- 05/06/01 At 7:30, 8:53, & 11:20 AM, Harold Grove reported a chemical like burning plastic odor. (AQD, 05/06/01)
- 04/27/01 Lyon Twp forward the reported odor complaint log no. C-01LV-0111 of Marsha Lovell to AQD. At 5:05 PM she detected a strong odor in the hallways of Dolsen Elementary.
- AQD District staff conducted complaint investigation no. A-LV-04507 in the vicinity of Continental to determine if a Rule 901 violation occurred. Odor was detected several times, but no LOV was issued. (AQD, 04/27/01)
- 04/26/01 At 10:00 AM Dolores Allen, Lyon Twp resident, detected a plastic odor. (AQD, 04/26/01)
- 04/25/01 Barbara Wilcox, Departmental Technician of Permit Section AQD, requested the Oakland Press and the South Lyon Herald to publish a legal notice on May 3, 2001 to comply with state and federal law. (AQD, 04/25/01)
- 04/23/01 At 2:15 PM, Tom McLaughlin, Lyon Twp resident, reported odor that “. . . has become exceedingly worse as day wears on.”
At 6:30 PM, Dolores Allen, Lyon Twp resident, reported the odor was so bad that she became sick to her stomach. She documented that the odor had been bad all day. (AQD, 04/23/01)
- 04/22/01 At 7:10 & 10:30 AM, Harold Grove reported a burining plastic chemical smell. (AQD, 04/22/01)
- 04/21/00 AQD staff was called at home by PEAS Operator to report complaint log nos. C-01LV-0108 and C-01LV-0109. The first was issued at 2:00 PM Robin Allen, Lyon Twp resident. Robin stated that a cloud of smoke and odor was hanging at ground level and it has been really bad since noon of today. The second complaint was issued by Paul Lovell, Lyon Twp resident, at 2:05 PM.
“Complainant, Paul Lovell, stated there is a cloud from a stack and big bay doors; Smoke is covering his house - - hanging on floors to the east of his house. It has been happening since 7:00AM today.” (AQD, 04/21/01)

missing 04/06/01?

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- 04/16/01 MDEQ-SWQD sent a letter to Continental stating that the Company has had difficulty in determining and implementing its surface water regulatory compliance responsibilities despite the fact that it has been in operation for several years at the New Hudson location.
- 04/16/01 Company sent a letter of acceptance for the current draft of the Consent Order and the conditions of the draft permit (504-96A).
Stipulation for Entry of Final Order by Consent
1. Continental has emitted HCl and chlorine from its combustion stacks instead of its permitted baghouse stack, contrary to conditions specified in PTI 504-96A.
 2. Continental has violated the Michigan Administrative Code (MAC), Rule 203 by “. . . failing to provide adequate information on permit application No. 504-96A to enable proper review before issuance.”
 3. Violated MAC “Rule 901” as alleged in LOVs issued to Continental by MDEQ on 09/17/99, 12/08/99, 03/20/00, and 05/03/00.
 9. An “Amended permit” will be issued. Nuisance orders as defined by “Rule 901” shall be controlled.
- 11A The Company shall comply with the amended permit.
11B The Company shall not cause the emission of any odor from the facility in violation of AACS R336.1901 (“Rule 901”).
- 12 & 13 The company shall comply with the Startup, Shutdown and Malfunction Plan and the Scrap Inspection Plan to AQD 10/2000.
14. The company shall conduct stack testing for all stacks located at the facility to determine compliance with the emission limitations specified in PTI 504-96B.
 15. The company shall provide notification and a report of any abnormalities or malfunctions.
 16. Company can’t install or change any process or process equipment with out MDEQ approval.
 17. The company shall Pay \$30,000.
 18. If the company fails to comply with paragraph 11A.2, 11.B, 12, or 13 they shall pay 3,000 per violation per day; with paragraphs 14 and 15 they shall be fined 1,000 per violation per day; with paragraph 16, they will be fined \$10,000 per violation; and with any other provision they shall be fined \$500 per violation per day.

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Supplement to Permit No. 5044-96B dated 04/16/01 summary:
General Conditions

4. The Department may revoke this PTI if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit.
6. "Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property."
7. Continental shall provide notice of an abnormal condition that results in hazardous or toxic emissions in excess of standards > 1 hour and of air contaminant emissions > 2 hours. Notice shall be provided not later than 2 business days.
- 11A. Shall not discharge a visible emission greater than 6-minute average of 20% opacity, except for on 6 minute average per 1 hour of not more than 27% opacity.
12. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R336.1370(2)[R336.1370].
14. The department may require the applicant to conduct acceptable performance tests.
19. The AQD is precluded from seeking both a stipulated fine under this consent order and statutory fine for the same violation.
20. The company shall pay an interest penalty each time it fails to make a complete or timely payment under this consent order.
23. The consent order shall remain in full force and effect for a period of 3 at least years.

All Emission Unit

1. Total aluminum charge rate in FGRV1 & FGRV2 shall not exceed 48,000 tons/year.
3. Applicant shall conduct a stack test to verify particulate, HCl, hydrogen fluoride, & chlorine emission rates. Test results shall be submitted in a complete report.
9. Fabric filter inlet temperature for BH-3 shall be maintained at or below 400 degrees F.
12. BH-3 shall be equipped with a no-flow alarm system.
15. Exhaust gases from FGRV1 shall be discharged unobstructed vertically

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upwards to the ambient air from two stacks: SVBHRVRB#1 at an exit point 80 feet above ground level and SVHTR RVRB#1 at an exit point 53 feet above ground level.

16. FGRV1 damper shall be closed during cleaning of the hearth.
- 17 & 18 A written record shall be kept and available to AQD of daily reactive flux usage rate, reactive flux composition, and of chlorine.
19. If an excess baghouse inlet temperature alarm occurs during the operation of lime-injected baghouse BH-3, a written record and actions shall be taken.
20. 180 days after commencement of trial operation, verification of emission rates complete report of the test results.
(AQD, 04/16/01)

- 04/14/00 Wayne Perry notified AQD of a baghouse malfunction. According to Mr. Perry, the baghouse was shutdown for approximately 4 minutes due to extreme temperatures in the exhaust gas. It then took approximately 10-15 minutes to clear smoke from the facility. In addition, South Lyon Fire Department responded. (AQD, 06/14/01)
- 04/12/01 AQD District staff conducted a complaint investigation at Continental in order to observe possible odors and smoke emanating from Continental. Odors were detected, but no LOV was issued. (AQD, 04/12/01)
- 04/11/01 Patrick Dugan of Eastern Michigan Landfills, letter to Tim Sonnenberg of DEQ-WMD. Patrick enclosed documents concerning Continental's baghouse dust waste stream which has been received at their Sauk Trail Hills facility approximately 1 per week since June 1999. The documents state that the baghouse dust is disposed of as non-hazardous special waste. (Refer to DEQ-WMD file letter dated 04/11/01)
- 04/10/01 Marie Sheery, Lyon Twp. Deputy Supervisor, letter and information packet to Lt. Governor Dick Posthumus. The information was provided to help him investigate the problems of Continental. (Lyon Twp, 04/10/01)
- 04/09/01 Kathy Tait of Tait Grinding Service, Inc., 57401 Travis Road, New Hudson, MI 48165, (248) 437-5100. On April 9, 2001, she wrote the Township that "... our employees have complained about nauseating odors that make them not even want the doors and windows open. They have also noticed

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large hazes and smoke coming from Continental's building. This usually occurs very early in the morning . . . between 4:30 a.m. and 7:30 a.m."

- 04/09/01 John and Dian Noel of Classic Window Builders Supply, Inc., 57245 Travis Road, New Hudson, Mi 48165, (248) 437-5861. On April 9, 2001, John and Diane Noel wrote to the Township regarding, ". . . the awful smell that we get at our place of business when the wind conditions are out of the north or northwest . . . My husband has had chemical pneumonia a number of times in the last couple of years . . . we often wonder if Continental Aluminum may be one of the causes."
- 04/09/01 Joseph Bonadeo of Ammar Corp., 57425 Travis Road, New Hudson, MI (248) 446-3790. Joseph stated, ". . . my employees have noticed a foul odor . . . We are concerned that this could be detrimental to our health."
- 04/09/01 Jim and Lisa Prochazka, 28795 Hovey Lane, New Hudson, MI (248) 486-5877. On April 9, 2001, they reported to the AQD-DEQ that Continental was emitting a chemical like burnt odor.
- Missing
04/09/01 Mrs. & Mr. Allen letter to Lt. Governor Dick Posthumus. Find all the people adversely impacted.
- missing 04/16/01?
- 04/06/01 Letter MDEQ-SWQD to CAC. It stated that ". . . the company has had difficulty in determining and implementing its surface water regulatory compliance responsibilities despite the fact that it has been in operation for several years at the New Hudson Location.
- 04/06/01 An April 6, 2001, letter from Hae-Jin Yoon, District Supervisor of SWQD Southeastern Michigan District Office, to Mr. Wayne Perry, President of Continental. This letter states, " During the inspection, staff observed an excessive amount of ash, fuel and oil, and aluminum chips on the grounds of the facility. The poor housekeeping activities that were observed at the site contribute such materials to storm water runoff. This includes improper storage of ash collection bags and lack of proper containment for fuel and oil tanks. Two areas of washout were present where contaminated storm water runoff was lost to the area surrounding the property, as well as a culvert that is diverted off-site from the collection basin. Located in the nearby vicinity, approximately 100

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yards south west of the facility, is a large wetland area, which drains into surface waters of the state. The wetland area is vulnerable to the contaminated storm water runoff from Continental Aluminum. The inspection did not include a walk through the inside of the facility. However, Continental Aluminum is reminded that floor drains located inside buildings that are connected to a storm sewer system are considered an illicit connection . . . “ As of January 4, 2002, Continental still had not obtained a NPDES permit. Refer to SWQD Notice Letter NL-04-01-01-010D dated April 6, 2001.

- 04/03/01 Harold L. Grove, 28735 Hovey Lane, New Hudson, MI 48165, (248) 486-6920. On April 3, 2001, He informed the AQD-DEQ that Continental was emitting a chemical smell that lasted several hours.
- 01/22/01 Dave and Angel Grimm, 57209 Cash Street, New Hudson, MI 48165 (248) 437-2276. On January 22, 2001, Dave notified the MDEQ of “Very Bad Odor”; he listed Continental as the source.
- 01/22/01 Gayle Henderson, 27530 Henry, New Hudson MI (248) 437-7335. On January 22, 2001, She informed the DEQ-AQD the Continental was producing a “very loud humming noise; very irritating.”
- 12/2000 EPA’s Chicago investigators requested Continental Aluminum’s records for review to investigate reported chronic air pollution. However, Continental requested an extension. “We’re [EPA] obviously concerned. We do have the option of taking a company to court to force them to comply” (Detroit News 02/18/00). The EPA received these files in February 2000.
- 11/28/00 Rem Pinga collected particulate samples from Paul Lovell’s residence on 29509 Milford Road. Then conducted odor and opacity observations. Both were detected, but no LOVs were issued. (AQD, 11/28/00)
- 11/17/00 The Detroit News reported that Continental, “. . . releases of dust-like emissions exceed its permit limits by as much as 25%. . .” Jeff Gahrns of the U.S. EPA stated, “We do have evidence of a violation -- we do have enough to respond”. (Detroit News, 11/17/00)
- 10/2000 The company submitted a Draft Startup, Shutdown, and Malfunction Plan and a

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Draft Scrap Inspection Plan to the AQD. They have been approved (AQD Consent Order, 2001).

- 09/2000 AQD issued an LOV to Continental based on further stack testing that showed an exceedance of the permitted particulate limit.
- 09/28/00 83 Local air pollution violations were dismissed in Oakland County District Court by Judge Michael Batchik. Is was dismissed due to a lack of expert testimony. (Detroit News, 11/17/00)
- 09/11/00 “State investigators have been called to the plant at least 44 times since 1999, according to DEQ records.” (Detroit News, 09/11/00)
When? DEQ recently decided to halt 24-hour smoke stack testing. Also a Class Action law suit was filed included 113 plaintiffs in Wayne and Oakland Counties. (Detroit News, 09/11/00)
- 08/29/00 Rem Pinga conducted complaint investigation for odor and opacity. No opacity was observed. However, odor was detected, but no LOV was issued. (AQD, 08/29/00)
- 08/28/00 Rem Pinga and Tom Maza conducted a complaint investigation for odor and opacity. Neither were detected. (AQD, 08/28/00)
- 08/24/00 Gerald E Thurswell, a Southfield Attorney, represented residents in a Class Action Suit. Gerald E. Thurswell. Jeffrey L. Gahrns, EPA Region V.
- 08/11/00 Rem Pinga conducted a complaint investigation by leaving a voice mail message for Wayne Perry. Rem requested the side doors be closed. Rem then resolved the complaint for opacity. (AQD, 08/11/00)
- 08/10/00 Rem Pinga conducted a complaint investigation. He observed emissions from tapping lines for RV1, but determined it was steam. He also detected odor. No violations were issued. (AQD, 08/10/00)
- 08/09/00 Chris Ethridge, AQD District Staff conducted odor observations. No violations were observed. (AQD, 08/10/00)

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- 08/01/01 Chris Ethridge, AQD District Staff, responded to odor and smoke complaints. No opacity was observed, but some odors were observed. No 5 rule 901 violations were issued (AQD, 08/01/00)
- 07/27/00 The Company submitted to AQD a complete application to amend the current air PTI No.504-96A for the aluminum smelting process to include emission limits of HCl and chlorine from the combustion stacks of furnaces RV-1 and RV-2 under the limits of that permit. (AQD Consent Order, 2001)
- 07/20&21/00 Stack tests were conducted for HCl, chlorine, & particulate matter. The baghouse and combustion stacks of the reverberatory furnaces were tested concurrently. Mr. Perry gave AQD a) revised Scrap Inspection Plan and b) a report of plant air pressure, revised plant equipment and operation since the last test in November of 1999; it also described typical plant operation. Continental plant equipment and process charges since the last test include ADD MORE. (AQD, 07/21/00)
“Depending on those results, federal action may be appropriate. That could mean fines and criminal charges” said Jeffrey L. Gahrns of the EPA. (Detroit News, 09/11/00)
- 07/12/00 Carl Levin wrote Mr. Harding expressing concerns of the residents that hoped the EPA and DEQ will resolve the apparent health threats. (Correspond, 07/12/00)
- 05/2000 Separate negotiations on the Consent Order and the permit modifications began to take place.
- 05/16/00 AQD and Company attend first scheduled escalated enforcement meeting.
- 05/11/00 Jeff Gahrns of EPA documented an announced inspection of CA on March 29, 2000. Wayne Perry of CA, Tom Heirman of CA, Rem Pinga and Chris Ethridge of DEQ Livonia District, and Jeff Gahrns of U.S. EPA were present. Jeff Gahrns stated the following:
- no opacity was observed
 - a steady drone of fan noise from air pollution control equipment was present
 - a roll-up door at the rear of the plant was open before and after entering the building. Mr. Gahrns indicated that the breeze from the open doorway could affect the draft into the hood of the RV-2 furnace charging well. Mr. Perry agreed that was a potential problem.

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- Gahris noted bales of aluminum scrap appeared to be mostly sheet metal, much of it coated with white paint.
 - Gahris noted a slight odor and a haze throughout the plant. Mr. Perry attributed the haze to chain lubricant spilling onto hot conveyerized molds.
 - The charging records are not organized to allow a determination of charging rates on an hourly basis, as required by the construction permit.
 - Mr. Gahris noted a load of dross in a truck that had a noticeable ammonia odor when he stood close to it.
 - About one half million pounds of charge per month are processed in the rotary furnace. Dross makes up at least 60 percent of the total charge into the rotary. This metal contains 4 percent lubricating oils. The melting point of aluminum is 1100 deg F, which may not be hot enough to destroy emissions of organic compounds that would volatile from this oil as they are charged into the furnace.
 - The water recirculation basin appears oily. Crystal Flash, a wastewater collection and treatment company, WILL BE contracted to haul away the contaminated water. Gahris and Perry discussed the potential that water used to cool the cones was still contaminated by previously used chain lubricants.
 - Mr. Perry said 200 lbs of lime are used in their operations every 24 hours.
 - Mr. Gahris expressed concern about emissions from the combustion stacks, as evidenced by recent stack testing. Mr. Perry asserted that the chlorine emissions were not anticipated during the permitting process.
 - “Mr. Perry indicated that there was an event on a recent Friday, at 7:30 p.m., at which time a “brief but bad salt plume.”
(EPA, 05/11/00)
- 05/11/00 As stated in the May 11, 2000 letter of Jeffrey L. Gahris, Environmental Engineer, to the file, “Emissions associated with secondary aluminum smelting include particulates, chlorine, hydrogen chloride, hydrogen fluoride, and volatile organic compounds (VOC).” (EPA, ??)
- 04/2000 MCDS received 9 faxed complaints forwarded from Lyon Twp. (AQD Staff Rpt, 04/11/00)
- 04/28/00 Ronald Pollom AQD-DEQ Enforcement Unit sent a letter to Wayne Perry President of Continental. It was in response to Mr. Perry’s 04/04/00 Letter to Mr. Pinga. Mr. Pollom’s letter stated that AQD, “... continues to believe that Continental Aluminum, Inc. is operating in violation of Permit to Install No. 504-

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96A, special conditions 13 and 14 and Rule 203.” Because HCl or chlorine are being emitted from the RV2 stacks and should not be. PTI No. 504-96A, “. . . emissions were based on the information provided by Continental Aluminum, Inc.’s permit application. . . significant amounts of toxic (HCl & Cl₂) pollutants are exhausted through the combustion flue gas stack uncontrolled . . . [AQD staff] is requiring that Continental Aluminum conduct HCl and chlorine stack testing on the stacks associated with RV1, similar to the stack tests conducted on the RV2 baghouse and combustion stacks on November 23, 1999.” Continental has been put on the EPA’s Significant Violators List (SVL). DEQ requested Continental, “. . . to meet to discussed resolution at the state level through the entry of an administrative consent order.” It will include a compliance schedule and an appropriate monetary penalty. A meeting was scheduled for May 11, 2000. (AQD, 04/28/00)

AQD Enforcement staff notified the company that they had been placed on the EPA’s High Priority Violators List and began escalating enforcement against Continental. (S.L. Herald, 06/14/01)

04/13/00 McDermid faxed particulate results to Rem Pinga. (AQD, 04/13/00)

04/11/00 “Each of the Reverberatory furnaces is composed of a main combustion chamber and a side well chamber. The side well chamber is open and contains a top hood to capture emissions from the well. Emissions from the side well for each of the Reverberatory furnaces are controlled by individual lime injected baghouse systems. Each Reverberatory furnace has a separate combustion burner stack. Both burner stacks exhaust emissions from the main combustion chamber directly to the atmosphere. The rotary furnace does not have a separate combustion and side well chambers. A hood that is ducted to a third lime injected baghouse system controls the emissions from the rotary furnace. PTI No. 504-96A contains limits on total suspended particulate (TSP), hydrogen chloride, hydrogen fluoride, and chlorine. The purpose of the three-baghouse systems, when installed and operating properly is to control the emissions from the furnaces to achieve compliance with the permit limits.” (AQD Staff Rpt, 04/11/00)

The AQD-DEQ Enforcement Unit and the Livonia District office, agreed to escalate enforcement against Continental. Between 07/24/98 to 04/11/00, Continental had received a total of 4 outstanding LOVs; 3 Rule 901 LOVs and 1 Rule 203 LOV, and Permit to Install 504-96A S.C. 13 & 14 (AQD Memo,

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- 04/11/00). The Rule 901 are LOVs of the Air Pollution Control Provisions of PA 451.
- 04/05/00 Law offices of Honigman, Miller, Schwartz, and Cohn responded to the 03/20/00 LOV disputing all the violations contained in the letter. The letter proposed to further investigate the cause of air contaminant emissions and to meet with AQD to discuss the issues. No target dates or details were provided. (AQD Staff Rpt, 04/11/00)
AQD Livonia District staff continues to conduct odor observations at least one per week in regards to Continental.
- 04/01/00 C&K scheduled to change deox bags & do monthly checks. (EPA, 05/11/00)
- 03/31/00 On March 31, 2000, construction employees (sewage workers) working across the street from Continental Aluminum complained of strong odors. AQD staff observed odors as well as opacity emitting from the middle stack farthest from Milford Road where the baghouses are located. Opacity was between 15-20% at times. AQD resolved the complaint. Refer to AQD Activity Report A-LV-04012.
- 03/29/00 “Mr. Gahrns and I [Rem Pinga] expressed our concern that the emissions from these belts [conveyor belts for product retrieval] may not only be scrap and that it may cause opacity problems in the future.” Refer to AQD Activity Report A-LV-04002.
- 03/25/00 Continental purchased 10 pails of synthetic chain lubricant from Patco. (EPA, 05/11/00)
- 03/23/00 New MACT standards for the secondary aluminum industry were published in the Federal Register (65 Fed. Reg 15690). “Existing affected sources must comply with these standards by March 23, 2003. (EPA, 05/11/00)
Environmental Protection Agency 40CFR Part 63 [FRL-6513-8] RIN2060-AE77. National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production, Final Rule. The regulation is effective March 23, 2000. “Hazardous air pollutants (HAPs) emitted by the facilities that would be regulated by this final rule include organic HAPs, inorganic gaseous HAPs (hydrogen chloride, hydrogen fluoride, and chlorine), and particulate HAP metals. Some of

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these pollutants. . . are known or suspected carcinogens and all can cause toxic effects in humans following sufficient exposure.” Section I Background and public participation documents states, “ The CAA (Section 101(b)(I)) was created in part ‘to protect and enhance the quality of the nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” Refer to EPA final rule

- 03/2000 MCDS received 12 faxed complaints forwarded from Lyon Twp. (AQD Staff Rpt, 04/11/00)
- 03/20/00 AQD issued an LOV to Continental. The LOV was issued for Rule 203 and PTI 504-96A special condition numbers 13 and 14 violations based on the 11/23/99 stack test results RV1 and RV2. Both had uncontrolled hydrogen chloride and chlorine emissions from their respective combustion stacks. Permit staff indicated that RV1 and RV2 stacks were not included in the original PTI application for permit 504-96. The write up for the PTI 504-96A permit revision application did not mention the combustion stacks except that a floor plan was included indicating the inclusion of the two combustion stacks. In addition, AQD district concluded that Rule 203 was violated because the applicant did not provide adequate information to enable proper review of the permit application PTI 504-96A (AQD Staff Rpt 04/11/00).
- 03/17/00 Continental purchased 4 pails of synthetic chain lubricant from Patco (EPA, 05/11/00)
- 03/14/00 Continental Aluminum was scheduled to present a waste risk plan to Lyon Township at a public hearing. Companies are required by federal law to have a waste risk plan when storing 2,500 pounds or more of chlorine. Even though Wayne Perry said, “It’s a well-thought-out plan,” Continental failed to present the waste risk plan to Lyon Township. Their justifications for canceling the meeting was that it was not longer legally necessary because Continental reduced the amount of chlorine stored on site (Detroit News, 03/13/00 & 03/15/00)
- 03/14/00 Continental purchased 8 pails of synthetic chain lubricant from Patco. (EPA, 05/11/00)
- 03/01/00 Dave Riddle’s, Permit Engineer, indicated that RV-1 and RV-2 stacks were not

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included in the original PTI application for Permit 504-96. Also, PTI permit application included a floor plan with the combustion stacks and indicated the inclusion of the two combustion stacks (AQD Staff Rpt, 04/11/00).

Oakland County Department of Human Services informed AQD-DEQ that even though they have no direct authority to regulate or control Continental, they requested DEQ to keep them apprised of any development and progress. A DEQ hand note on the letter states "looks likes we should request testing of RV-1 for baghouse and combustion stacks for at least HCl and particulate." (AQD, 03/01/00)

- 02/2000 MCDS received 12 faxed complaints forwarded from Lyon Twp. (AQD Staff Rpt, 04/11/00)
- 02/29/00 Continental purchased 11 pails of synthetic chain lubricant from Patco and returned 3 pails of high temperature chain lubricant. (EPA, 05/11/00)
- 02/27/00 C&K prepared to conduct baghouse & spark arrester inspections. Ended up having to shake down all cells - plugged. Changed 18 super sacks - full.
Spark Arresters cleaned
Rotary 5% plugged
Deox 10% plugged
Alloy 60% plugged
12 bags leaking with bad abrasions - changed. (EPA, 05/11/00)
- 02/23/00 AQD staff determined that the 11/23/99 stack test results submitted by the company showed compliance with permit limits based on the average of three runs. The main burner stack showed a 1.65 lbs/hr average HCl emissions while the baghouse stack only showed an average of 0.28lb/hr HCl emission (AQD Staff Rpt, 04/11/00).
- 02/05/00 C&K Industries went through and checked all baghouses. Deox bags were bad. Plan is to replace them first part of April. (EPA, 05/11/00)
- 01/2000 MCDS received 3 faxed complaints forwarded from Lyon Twp. (AQD Staff Rpt, 04/11/00)
- 01/26/00 Continental purchased 4 pails of high temperature chain lubricant from Patco.

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(EPA, 05/11/00)

- 01/08/00 C&K Industries cleaned all 3 spark arresters and checked all baghouses. Rotary - poor condition. Took out 8 bags of dirt - packed in hoppers & cleaned slide gates. Spark Arresters - 5% plugged. Alley - Spark arresters - 90% plugged. Removed approximately 1000 pieces of a gummy material. Slide gate on arrester frozen. Deox - 5/A only 5% plugged. (EPA, 05/11/00)
- 01/07/00 Mr. Wayne Perry sent to Rem Pinga of AQD-DEQ a formal response letter to the LOV received on 12/08/99. It stated that the “deox” furnace hood was replaced during the holiday shutdown (AQD Staff Rpt, 04/11/00).
- 01/03/00 Margaret Guerrieo, Acting Director of Air and Radiation of Region 5 EPA, issued an information request to Continental to determine if Continental is in compliance with applicable provisions of the Michigan state implementation plan. The letter states the following:
- Continental is the owner or operator of an emission source as specified in Section 114(a) of the Clean Air Act 42 U.S.C. 7414(a). (EPA, 01/03/00 & 01/07/00).
 - Continental must submit this information within 30 days.
 - Failure to comply with the terms of this request for information may subject Continental to enforcement action pursuant to Section 113 of the Act 42 U.S.A. 7413.
- A brief summary of Appendix A (the requested information) is as follows:
1. Description of each process.
 2. Description of each point emission of air pollutants, estimates of typical emission rates.
 3. A description of air pollution controls.
 4. Preventative maintenance and malfunction abatement plans.
 5. Flux usage rates and composition records.
 6. Aluminum charge rate records.
 7. Results of testing and monitoring air pollutant emission rates.
 8. Description of any known exceedances and if they were reported for releases of 1 hour or more.
 9. Description of steps taken to minimize risk of any exceedances.
 10. Description of releases of air pollutants that have lead to injuries of plant personnel.

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(EPA, 01/03/00)

- 12/1999 MCDS received 9 faxed complaints forwarded from Lyon Twp (AQD Staff Rpt, 04/11/00).
- 12/18/99 C&K Industries went through all baghouses - checked for leaks and tightened bags. They also installed a hood over the alloy furnace south door to help capture mag. Chloride fumes. (EPA, 05/11/00)
- 12/15/99 Oakland County Sheriff Depart Narrative Report Regarding Traffic Stop of a gravel hauler. It was hauling smoking scrap aluminum that had an odor of ammonia. The source was from Continental where the loaders wore respirators. The truck did not have a hazardous placard on it and the driver did not have a hazardous CDL endorsement. The driver stated the aluminum was hot and wet. (Refer to DEQ-WMD file, Narrative Report dated 12/15/99)
- 12/08/99 Rem Pinga AQD staff sent the Company a Rule 901 LOV for strong odors verified on 12/03/99 (AQD Staff Rpt, 04/11/00; and S.L. Herald, 06/14/01).
- 12/03/99 Strong odors were verified as a result of several complaints filed with the district office. AQD staff called Mr. Wayne Perry, Continental President to inform him about the observation and the observed violation. Mr. Perry acknowledged that the hood of the “deox” furnace for RV1 warped, thus causing the escape of smoke emissions inside the plant. Mr. Perry indicated that this might be the cause of the odor and that the hoods will be replaced during the Christmas shutdown. (AQD Staff Rpt, 04/11/00)
- 11/23/99 Due to concerns raised by AQD at the 10/25/99 inspection on potential emissions from the Reverberatory furnace main burner stacks. Company conducted tests for HCl and chlorine emissions on RV2 for both the main burner stack and the baghouse stack. Stack test on the RV2 stacks (both combustion and process gas stacks) showed that HCl and chlorine were being emitted from the combustion flue gas stack. “There should be no HCl or chlorine emitted from this (combustion flue gas stack).” (AQD, 04/28/00)
- 11/22/99 Law office of Honigman, Miller, Schwartz and Cohn responded to the 10/29/99 AQD LOV. It stated that Dave Riddle, AQD Permit Engineer, who processed

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- PTI 504-96A, “. . . was allegedly not a concern due to natural gas fuel usage.” Honigman’s letter stated that the lime injected baghouse was MACT and that an “eddicurrent” separator should be completed by 04/01/00. It will separate out non-metal combustibles in order to eliminated major causes of odor. (AQD, 04/11/00)
- 11/21/99 C&K Industries went through all cells of alloy and deox baghouse - tightened bags and checked for leaks. (EPA, 05/11/00)
- 11/19/99 Law office of Honigman Miller Schwartz and Cohn letter to Remilando Pinga of the AQD. Regarding Letter of Violation issued on 07/24/98. Mr. Wickers stated “. . . none of the emission limits in the permit were intended to apply to emissions from the roof vents, stacks 4 and 5, for RV (reverb) furnaces 1 and 2.” This letter also responded to the DEQ letter dated 09/17/99. Mr. Wickers stated that “. . . the company’s existing air emission controls are essentially the maximum available control technology (MACT) for this type of facility.” The company is planning experimental and untried applications. (AQD, 11/19/99)
- 11/19/99 MCDS received 10 faxed complaints forwarded from Lyon Twp (AQD Staff Rpt, 04/11/00).
- 11/19/99 SME reported the results of noise monitoring. SME concluded that sound levels resulting from Continental exceeded Lyon Twp. Standard of 50 ? For nighttime hours. SME stated that if “. . . additional engineering contorts are not feasible, administrative contorts such as restricting the plant’s operations to daytime hours may be required to solve the noise problem.”
- 11/18/99 Continental purchased 11 pails of high temperature chain lubricant from Patco (EPA, 05/11/00)
- 10/1999 MCDS received 5 faxed complaints forwarded from Lyon Twp (AQD Staff Rpt, 04/11/00).
- 10/30/99 C&K Industries changed bags in Cell #1 - alloy furnace and checked all chips - 6 replaced. Cell was pretreated with dolomite. (EPA, 05/11/00)
- 10/29/99 AQD Livonia sent a letter to Wayne Perry formally responding to the company’s

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10/12/99 LOV response letter requesting an action plan and implementation dates. (AQD, 10/29/99)

10/25/99 AQD staff conducted an annual inspection at Continental. The AQD staff discussed concerns about the 03/11/99 stack test results for RV2. The AQD staff also discussed with the Company their file review process concerns. The concerns were that the main burner stack/stack emissions for RV1 and RV2 were not included in either the permit and in the stack testing for determining compliance with permit limits. "Mr. Bruce Bergeson, company Vice President, mentioned that only combustion gases were being emitted at the main burners stacks" (AQD, 04/11/00).

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- 10/19/99 Robin Allen wrote to Mr. James Entzinger of U.S. EPA. It is Robins understanding that 4 tons of chlorine are on the site. This amount of chloride exceeds the 2,500 lbs limit of the risk management program. (Correspond, 10/19/99)
- 10/18/99 C&K Industries maintenance record indicated Bill Pettibows group trained on deox shakedown procedures. (EPA, 05/11/00)
- 10/17/99 C&K Industries changed 57 clips in cells #2&3 - all bags checked. A lot of gunk witnessed in deox ductwork. (EPA, 05/11/00)
- 10/12/99 Ms. Lisa Scapelli of AQD-DEQ received a letter from Wayne Perry in response to the 09/17/99 LOV. It states Continental "...has not yet had the opportunity to review the information upon which the referenced "Notice of Violation is based..." It addressed community concerns related to smoke and noise abatements. AQD deemed the response letter inadequate proposals for odor abatement. (AQD, 10/12/99)
- 10/10/99 C&K Industries maintenance record:
C&K changed bags - Cell #2 alloy baghouse both cells were pretreated with dolomite and started up - AP = 1/2" on both
(EPA, 05/11/00)
- 10/09/99 C&K Industries maintenance record:
C&K changing bags - Cell #1 alloy baghouse 2 hours delay because of high CO levels - slide gate on main duck work from alloy furnace wont' close - fixed @ 10:00
(EPA, 05/11/00)
- 09/99 - 01/99 MCDS received 28 faxed complaints forwarded from Lyon Twp (AQD Staff Rpt, 04/11/00).
- 09/29/99 Larry Phillips, Lyon Township Building Inspector, experienced an acute eye injury, corneal abrasions, after he was overcome by plant emissions immediately south of Continental. (EPA, 10/19/99; and Detroit News, 02/18/00)

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- 09/27/99 Dan Cash, Lyon Township Trustee, 57097 Cash Street, New Hudson, MI (248) 437-8644; on September 27, 1999, he reported a very strong burning plastic and paint smell that burned the eyes and throat coming from Continental.
- 09/24/99 Richard Tabone, 27560 Milford Road, New Hudson, MI (248) 437-0894; On September 24, 1999, he reported a burnt odor like electrical wiring coming from Continental.
- 09/21/99 Mr. Rem Pinga of AQD-DEQ Livonia was assigned to the contact person for Continental.
- 09/19/99 C&K Industries maintenance record:
Rotary baghouse smoking - seems as if too much time between shake downs. The AP gets too high and won't shake down all the way.
(EPA, 05/11/00)
- 09/17/99 Ms. Lisa Scapelli of AQD Livonia District Supervisor, sent a LOV (Rule 901) to Continental for strong odors that were verified by AQD district staff. (S.L Herald, 06/14/01)
- 09/12/99 C&K Industries maintenance record:
C&K finished rebagging rotary cells #2&3
check on cell#1 - poor - also needs to be rebagged - bags ordered: 350 double bead & 600 single bead.
(EPA, 05/11/00)
- 09/11/99 C&K Industries maintenance record:
C&K rebagged the rotary collector - cells #1&2 (352 bags each). The condition of the baghouse was poor - super sack had come off discharge - dirt all over ground. C&K spent the 1st hour shaking down bags and cleaning up.
(EPA, 05/11/00)
- 09/10/99 Autumn Stewart, 57165 Cash Street, New Hudson, MI (248) 486-4281; She reported that she was pregnant and the burnt plastic smell from Continental was bothering her. Also that Continental was very loud all night.
- 09/10/99 Dolores Allen, 29393 S. Milford Road, New Hudson MI (248) 437-1074; she stated that on September 10, 1999 at 3 a.m. a loud noise came from the

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Continental building sounded like something very heavy being dropped.

- 09/09/99 Mike Nichols of MCDermid, Inc., 29111 Milford Road, Hudson, MI 48165; (248) 437-8161; On September 9, 1999 he stated a half mile patch of white fog was resulting from Continental.
- 09/08/99 C&K Industries maintenance record:
Still having trouble with certain charge materials causing binding - Deox baghouse has a noticeable oily residue. Appears to come from GM Brazingmate. (EPA, 05/11/00)
- 09/04/99 C&K Industries maintenance record:
C&K rebagged deox cells #1&2 (288 bags each cell).
Cell #1 - used a heavy knapp bag style
Cell #2 - used BHA poly bags - not enough to do all cells. All bags are pretreated with diatomacross earth. (EPA, 05/11/00)
- 09/02/99 Claude Phifer, 57450 Travis Road, New Hudson, MI 48165, (248) 486-0439. On September 2, 1999, Claude reported complaint no. C-99LV-0236 regarding odors coming from Continental.
- 09/01/99 C&K Industries maintenance record:
C&K requested change out on balance of deox cells. (EPA, 05/11/00):
- 08/13/99 C&K Industries maintenance record:
Neighbors complains of strong smell and smoke at 7:40 am and at 9:45 am. (EPA, 05/11/00)
- 08/12/99 C&K Industries maintenance record:
Deox baghouse bing better, but still gets an occasional dose of something that causes binding; it can only recover to a 4-5" AP after shaking. Within 3 hours it backup to 13: AP. (EPA, 05/11/00)
- 08/08/99 C&K Industries maintenance record:
Cell #3 pretreated new BHA bags with 25 lbs of ? (blank)
Prior to changing - shook bags 7 times and removed 1 ½ super sacks of dirt

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start up pressure difference Cell #1 1 ½"; Cell #2 2" Cell #3 ½" (EPA, 05/11/00)

08/04/99 C&K Industries maintenance record:
Recovery of bags is poor in all cells - recommend change out. (EPA, 05/11/00)

07/25/99 Deox C&K Industries maintenance record:
Cell #2 massaged all 288 bags
no bags down
oily film present
clinging dirt inside bags
Cell #3 2 bags down
very dirty - approx 3-400 lbs of dirt shoveled out
replaced 24 bags - some broken & some not sealing & some with
double bead scat - changed to single bead.
All magnehelic gages read at 1 ½ - 2 ½
(EPA, 05/11/00)

07/24/99 Rotary Baghouse C&K Industries maintenance record:
Cell #3 massaged all 352 bags
2 bags down - put back up
approx ½ all bags too loose - tightened
Deox C&K Industries maintenance record:
Cell #1 massaged all 288 bags
no bags down
oily film present
clinging dirt inside bags
(EPA, 05/11/00)

07/23/99 Rotary Baghouse C&K Industries maintenance record:
Cell #1 massaged bead ring style
15 bags down - put back up
approx ½ all bags too loose to be shaken properly - tightened all bags
1 bag had come loose from tub sheet
Cell #2 massaged all 352 bags
8 bags down - put back up
approx ½ all bags loose - tightened all bags
1 bag had come loose from tub sheet

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(EPA, 05/11/00)

- 07/09/99 Michigan Department of Consumer & Industry Services issued a Citation and Notification of Penalty to Continental. The following citations were issued:
- “Citation 1 Item 1 Type of Violation: Serious; date by which violation must be abated 07/27/99. 29 CFR 1910.119(j)(4)(iii), adopted by R325.18302: The employer did not perform inspections and tests on process equipment at a frequency consistent with applicable manufacturer’s recommendations. Inspections and tests of gas pressure reducing valves and chlorine gas leak detectors were not done monthly in accordance with applicable manufacturer’s recommendations.”
 - “Citation 1 Item 2 Type of Violation: Serious; date by which violation must be abated 07/19/99. 29 CFR 1910.134(h)(3)(iii), adopted by R325.600052: The employer did not maintain an air and oxygen cylinder for a self contained breathing apparatus in a fully charged state.”
 - “Citation 1 Item 3 Type of Violation: Serious; date by which violation must be abated 07/15/99. Rule 4401(3): The employer did not provide suitable facilities for quick drenching or flushing of the eyes and body within work area for immediate emergency use, where the eyes or body of any person may be exposed to injurious corrosive materials. Maintenance employees were exposed to chlorine when performing maintenance of the chlorine system in the chlorine room.”
 - “Citation 2 Item 1 Type of Violation: Others; date by which violation must be abated 07/27/99. 29 CFR 1910.119(g)(3), adopted by R325.18302: The employer did not prepare a training record which included the means used to verify that the employees understood the training for each employee involved in operating the chlorine process.”
 - “Citation 2 Item 2 Type of Violation: Other; date by which violation must be abated 08/11/99. Rule 420(1)(c)(I): The employer did not maintain a place of employment clean to the extent that the nature of the work allows. The employer did not maintain the men’s restroom facilities in a sanitary condition.”
(MI Dept of Consumer & Industry Services, 07/09/99)
- 05/28/99 Thomas Maza, AQD staff, letter to Mr. Bruce Bergeson of Continental requested retesting on RV2 to determine compliance with permit limits of HCl and chlorine while operating at maximum charge rate levels. (AQD, 05/28/99)

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- 05/04/99 The Bureau of Safety and Regulation Occupational Health Division initiated and inspection at Continental. The inspection determined violations of the “Occupational Health Standards for General Industry”. It was not a comprehensive inspection of the entire facility. The inspection determined Continental used chlorine in excess of the threshold quantity as specified in the process safety management standard. Chlorine was stored in liquid form in one ton tanks located in the chlorine room. (Bureau of Safety and Regulation Occupational Health Division, 07/09/99)
- 04/21/99 Robin Allen informed Mr. James Entzminger of U.S. EPA that the U.S. Chemical Safety and Hazardous Investigation Board (CSB) released an analysis of chemical incidents called “ The 600K Report.” In addition, Mr. Allen reminded Mr. Entzminger that his agency has the responsibility for enforcement of Community Right to Know Laws such as SARA Title III. And that Continental appears to be in violation of 40 CFR 355.30 and 40 CFR 355.40. (Correspond, 04/21/99)
- 04/05/99 William Wickers of Honigman Miller letter to Lyon Twp Board of Trustees.
- 03 or 04/99 Mr. Beeson of Continental informed Mr. Riddle of DEQ that the reverberatory furnaces would separate vents for combustion gases. According to Mr. Wickers, Mr. Riddle responded that it “... Wouldn’t be necessary to regulate the combustion gas exhaust vent separately in the final permit.”
- 03/15/99 Larry Phillips, Building Inspector of Lyon Township, reported Complaint No. C-99LV-0103 on March 15, 1999; regarding noise and odor coming from Continental.
- 03/11/99 At Continental another stack test was conducted on the baghouse stacks serving RV-1, RV-2, and RO-1 for HCl and chlorine emissions. Test reports submitted by the Company showed compliance with permit limits. However, stack test results for RV-2, which showed results for HCl and chlorine close to permit limits at below maximum charge rate conditions. Because the Company could not attain maximum charge rate for RV-2 during testing. (AQD Activity Rpt, 03/11/99)
- 03/09/99 John Berger, 58075 Traverse Road, New Hudson, MI, (248) 437-7182. On March 9, 1999, John reported complaint number C-99LV-0102 regarding odor from Continental.

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- 03/01/099 James Defoe, 58245 Traverse Road, New Hudson, MI. On March 1, 1999, James reported to AQD staff, Nakazi Ntlabati, an odor coming from Continental. Complaint No. C-99LV-0101
- 02/24/99 Ms. Nakazi Ntlabati, AQD Environmental Engineer, issued a LOV for the exceedance of hydrogen chloride and chlorine for PTI 504-96A during a stack test of RV-1 conducted on 10/06/98. (AQD Staff Rpt, 04/11/00; and S.L. Herald, 06/14/01).
- 02/16/99 AQD received a stack test report for tests conducted on 10/06/98. The report stated that the chlorine and HCl limits were exceeded in RV-1.
- 02/11/99 US EPA 40 CFR Part 63. National Emission Standards forProposed Rule. Page 7 1st full paragraph
- 01/27/99 Nakazi Ntlabati, AQD staff, sent A LOV to Continental for exceeding HCl emission limit for RV-2 on 10/06/98 when the lime-injected system was plugged. The LOV was for a permit violation and failure to submit stack test report (for tests conducted on 10/06/98) for RV-1 to AQD-DEQ. (S.L. Herald, 06/14/01)
- 01/1999 AQD District staff Ms. Nakazi Ntlabati was assigned to Continental (AQD Staff Rpt, 04/11/00).
- 1998 MCDS received 19 faxed complaints forwarded from Lyon Twp (AQD Staff Rpt, 04/11/00).
- 1998 Wendy Barrott became the new director of Wayne County Air Pollution control Division.
- 1998 Since Continental commenced operations at the New Hudson location in 1998, AQD Livonia District office started getting odor complaints (AQD Staff Rpt, 04/11/00).
- 12/31/98 EPA is proposing a rule to reduce hazardous air pollutants emitted from secondary aluminum plants. Hazardous air pollutants (air toxics) are known or suspected to cause cancer or other serious health and environmental effects.

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These air toxics may include up to eleven hazardous air pollutant metals, organics such as dioxin/furans and acid gases such as hydrogen chloride and chlorine. Health effects include cancer, respiratory irritation, and damage to the nervous system. The proposed rule would reduce air toxics by 75%. (EPA, 12/31/98)

- 11/09/98 Mr. Don Martz of Environmental Permit Specialists (EPS) conducted stack modeling for Continental.
- 10/19/98 Stephen Rothblatt of EPA said, "Inhaling high concentrations of particles can affect children, the elderly, and people with heart and lung diseases the most." (EPA, 10/19/98). Allied Metal Co., an aluminum recycling plant, was required under the agreement to install and maintain monitoring equipment to make visible emission observations for opacity on the roof vents.
- 10/06/98 Company tested the baghouse stacks of RO1, RV1, and RV2
1. RO1 - test results met permit limits.
 2. RV1- the lime-injected system plugged up and no report was sent to the MDEQ.
 3. RV2 - Breakdown during testing. Average of all runs below permit level limit.
- 08/07/98 Continental sent a letter in response to the LOV issued on 07/24/98. It stated that Continental hired "O'Brien & Gere Engineers" to conduct evaluation of the ventilation system and determine the cause of the odor violation.
- 07/23/98 Mr. Henry Szybowicz reported to Sandra McGlew, AQD Staff, the presence of odors.
- 07/24/98 Sandra McGlew, AQD Staff, issued an odor Rule 901(b) to Continental as a result of strong molten odors detected at nearby residences. DEQ required a report by August 10, 1998. Explaining the cause of odors, remedial action taken, and steps to prevent a reoccurrence. (AQD Staff Rpt, 04/11/00; and S.L Herald, 06/14/01)
- 05/28/98 Bruce Bergeson & Nakazi Ntlabati, AQD Staff, conducted a scheduled investigation to 1) observe the installation and operation of equipment and to 2) follow-up several odor and smoke complaints. RV-1 furnace began operating in January 1998 and fully in March 1998. It has one stack and bag house. The RV-

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2 furnace purpose is for drying out the refractory lining. Chlorine gas will be used in the second furnace to remove magnesium from the molten aluminum. Its services by the south stack at center of the building, the middle baghouse and stack at the rear of the building. The baghouse is divided into sections which clean themselves (“shake”) about three times/shift or every four hours per section.” The baghouse bags are expected to last six months or so. “Bags are inspected quarterly. “One incident of smoke was attributed to a bag that had fallen off a hanger.” Soil scrap is processed once per shift. The salt cake / aluminum oxide is collected 4 times per shift. “If dross gets into the furnace, it may cause smoke and odor. The dross is either sent to a Wayne County Landfill or sold to a refiner in another state...” (AQD Activity Rpt, 05/29/98)

- 03/20/98 Thomas Vincent of Wayne County Department of Environmental Air Quality Management Division (WCAQMD) inspected Continental 1610 Algonquin site. “Survey of site reveals site is closed. Gate is closed, no personnel at the site at time of inspection. Baghouse is still at the site and ductwork is still attached.” (WCAQMD, 03/20/98)
- 03/02/98 Continental’s 1610 Algonquin Street site was permanently shut down at the end of February 1998. Permits 7917; 8061 - Reverberatory Furnace and Fabric Filter. The equipment is being removed. The company agrees to pay \$50,000 to WCAQD within 90 days after the effective date of the Consent Order. The operation will continue in New Hudson, Michigan, outside of Wayne County. (WCAQMD, 03/02/98)
- 03/1998 Continental began full operation of RV-1 furnace at New Hudson location.
- 01/1998 Continental began operation of Reverberatory No. 1 (RV1) furnace at New Hudson location.
- 01/03/98 F. Floweres of 1592 Gray Street, Detroit, made an odor and susp. health effects complaint to WCAQMD. Inspection revealed the 1610 Algonquin plant was not operating. Possible infrequent operating schedule due to plant shut down date approaching. (WCAQMD, 01/03/98)
- 12/16/97 Wayne County entered a Consent Order with Continental Aluminum (dated October 7, 1997 #WCAQMD 0027-97). Consent Order was signed by Jon

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Taylor, President of Continental Aluminum on this date of 12/16/97.
(WCAQMD, 03/02/98)

- 10/08/97 MDEQ voided PTI No. 504-96. MDEQ issued PTI No. 504-96A (revising PTI No. 504-96). PTI No. 504-96A is a permit to install two natural gas-fired Reverberatory aluminum melting furnaces and one natural gas-fired reverberatory aluminum melting furnace, each with a lime-injected baghouse for emission control. RV1 and RV2 were each rated at 10,000 lbs/hr and RO1 was rated at 20,000 lbs/2hr.
General Condition No.6 “Rule 201(8) and Section 5510 of Act 451, P.A. 1994 - The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department’s rules of the Clean Air Act.
General Condition No.8 “Rule 901- operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property.” (AQD, 100897)
- 10/07/97 WCAQMD No. 0027-97 Stipulation for Entry of Final Order of Consent. Continental at 1610 Algonquin Street in Detroit Wayne County Michigan has emitted visible emissions in excess of allowable limits and conditions specified in PTI C-8061 and in violation of the MAC 1985 AACS, R 336.1301 and 1980 AACS R 336.1901(b), and Wayne County Air Pollution Control Ordinance Section 801(A) by charging the reverberatory furnace with aluminum scrap mixed with excess combustible materials. The Consent Order has the following sections:
Stipulation; Allegation; Compliance Program; Notification; and General Provisions. It is signed by Jon Taylor, President of Continental on 12/16/97. This consent order does not require shut down. It requires Continental to be compliant by the following summary:
5. This Consent Order becomes effective on the date of execution by the Director.
6. Unpermitted and excessive visible emissions from the reverberatory furnace shall be abated and the Company shall achieve compliance.
7. The WCAQMD lists allegations through seven Notices of Violations.

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8. Company shall renovate and permanently repair the canopy hood over the furnace charging well, and provide supplemental smoke containment area.
9. Company shall develop, maintain and adhere to an aluminum scrap quality criteria for scrap purchases.
10. Company shall evaluate scrap before purchase.
11. Company shall not charge scrap to the reverberatory furnace unless it has been inspected by the Company for excess combustibles.
12. By January 1, 1998, the Company shall develop and implement a reverberatory furnace operator training program.
13. Company shall inspect the control system fan on a weekly basis to ensure the control system fan is operating at normal capacity.
14. Company shall monitor and record the static pressure drop across the bag house to ensure that it is within normal operation parameters.
15. Company shall not operate the reverberatory furnace unless the control system fan and bag house are installed and operating properly.
16. By January 1, 1998, the Company shall notify the WCAQMD in writing of the permanent shut-down date of the reverberatory furnace such date not to be past May 1, 1998.
17. By June 1, 1998, the Company shall request, in writing, cancellation of PTI No. C-8061, previously issued by the WCAQMD.
18. Company shall fully comply with the terms and conditions of PTI No. C-8061, which is made an enforceable part of this Consent Order.
19. Company shall provide notification of any abnormal conditions, start-up, shutdown, or malfunctions of process and/or control equipment.
20. Company shall not substitute any fuels, coatings or raw materials for those authorized nor make changes to processing or processing equipment.
21. Company shall not install, construct, reconstruct, relocate, alter or modify any processing or processing equipment unless PTI authorizes such action.
22. Company shall pay to the WCAQMD \$50,0000.
(WCAQMD, 10/07/97)

09/19/97

U.S. EPA Fact Sheet states that polycyclic organic matter and hydrogen fluoride are released during the production of molten aluminum metal. Polycyclic organic matter is strongly suspected of causing cancer and other serious health effects in humans. Exposure to hydrogen fluoride can cause serious respiratory damage.

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Exposure to particulate matter has been linked with adverse health effects, including aggravation of existing respiratory and cardiovascular disease and increased risk of premature death. Polycyclic organic matter is one of fifteen pollutants of concern because of its persistence in the environment, potential to accumulate, and toxicity to humans and the environment. (EPA, 09/19/97)

- 08/06/97 Mr. Beeson of Continental submitted a Supplement to Construction Permit No. 504-96 to Mr. Dave Riddle, AQD Permit Engineer. Purpose:
1. Add a third baghouse and a third stack with a 45,000 scfm fan.
 2. Reduce the fan ratings on previously approved baghouses 1 and 2 from 68,000 and 60,000 scfm respectively to 45,000 scfm.
 3. Increase the burner ratings on reverberatory furnaces (2 burners /furnace) from 9.5 MMBTU/hr to 12/MMBTU/hr each.
 4. Increase the burner rating on the rotary furnace from 10.0 MMBTU/hr to 20.0 MMBTU/hr.
- 04/29/97 Thomas Vincent conducted an odor complaint investigation and determined the following: the Company caused or permitted the operation of Reverberatory Furnace Stack in such a manner or at such a rate that Permit C-7917 was violated. This condition is #20, "Visible emissions from the subject reverberatory furnace controlled by the fabric filter collector shall not exceed 10 percent opacity." (WCAQMD, 10/07/97 & 04/29/97)
- 03/27/97 MDEQ issued to Continental its first permit at the New Hudson Location Permit to Install (PTI) No. 504-96 was issued for two Reverberatory furnaces (RV1 & RV2) and a Rotary furnace (RO1).
- 02/20/97 WCAQMD issued Continental a Violation for visible emissions noted on 01/23/97 in accordance with Visible Emissions, Section 501, Part A, Inc., State Rule 301. (WCAQMD, 01/23/97)
- 01/23/97 Between 2:09 p.m. and 2:11 p.m., the visible emissions from Continental's (Detroit facility) roof were noticed. The emissions resulted from the capture hood over the Reverberatory furnace was ineffective and incapable of meeting emission requirements. (WCAQMD, 10/07/97 & 01/23/97)

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- 11/1996 Fugitive emissions from roof
- 10/08/96 Continental filed the original Air Quality Permit application with the AQD-DEQ for the New Hudson location. (AQD, 10/08/96)
- 08/1996 James Shanahan, Continental's President, went before the Lyon Township Planning Commission. (S.L Herald, 06/14/01)
- 05/02/96 WCAQMD issued a Violation for visible emissions on 04-29-96 as per Air Contaminants Health Nuisance: 801, Part A, Incorporated, State Rule 901(b). (WCAQMD, 04-29-96)
- 04/30/96 The two particulate samples collected on 04-29-96 were taken to WCAQMD lab. (WCAQMD, 04/29/96)
- 04/29/96 The Company caused or permitted the emission of an air contaminant in such a quantity that caused unreasonable interference with the comfortable enjoyment life and property. Fugitive emissions were confirmed. Blue smoke was emitted from the roof of the facility from 12:14 p.m. to 12:26 p.m. Two particulate samples were collected (WCAQMD, 10/07/97 & 04/30/97)
- 04/11/96 The Company caused or permitted the emission of an air contaminant in such a quantity that caused unreasonable interference with the comfortable enjoyment life and property. Fugitive emissions were confirmed from the facility. Black smoke was emitted from the roof. (WCAQMD, 10/07/97)
- 12/18/95 Between 12:31 p.m. and 12:37 p.m., the visible emissions from the roof exceeded a six-minute average of 20% opacity (one six-minute average per hour of 27% opacity is the exception). (WCAQMD, 10/07/97)
- 12/14/95 The Company caused or permitted the emission of an air contaminant in such a quantity that caused unreasonable interference with the comfortable enjoyment life and property. The reverberatory furnace was operated in such a manner that Visible Emissions were exhausted through the roof. (WCAQMD, 10/07/97)
- 11/03/95 The Company caused or permitted the operation of their fabric filter in such a manner or at such a rate that the condition of PTI C-8061 May ;15, 1989 was

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violated. This Condition 318 - "There shall be no visible emissions from the Fabric Filter Dust Collector that controls the Reverberatory Furnace."
(WCAQMD, 10/07/97)

- 11/1995 Defective capture hood
- 01/05/92 On Sunday, Continental placed hot dross over a natural gas line inside of the dross building. Some Michigan Con. Gas Co. lines were being worked on inside the building. The fire department sprayed water on the hot dross, thus preventing a natural gas explosion or a fire. The watery mix caused an ammonia release resulting in a Level II Hazardous materials odor. During this incident Detroit firefighters were exposed to deadly ammonia gas. In addition, calcium fluoride (Fluorspar) ran off into drains and possible sewer contamination (Detroit News, 11/17/00; and WCAQMD, 01/05/92)
- 05/15/89 Installation Permit No. C-8061 was signed. (WCAQMD, 10/07/97)
- 05/89 Hydrogen Chloride hazard summary:
- Hydrogen chloride can affect you when breathed in.
 - Breathing the vapor can irritate the lungs, and cause bronchitis. Higher exposures can cause a build up of fluid in the lungs (pulmonary edema), a medical emergency.
 - Continued contact with dilute solutions may cause a skin rash or irritation.
 - Hydrogen chloride is a corrosive chemical and contact can cause eye damage that could lead to blindness. It can also cause severe skin burns.
 - Exposure can irritate the mouth, nose, and throat. Long-term exposure may cause erosion to the teeth.
 - Chronic toxic effects may include shortened lifespan, reproductive problems, lower fertility, and changes in appearance or behavior. Chronic effects can be seen long after first exposure(s).
(Reference: TRIFacts sheet)
- 12/27/88 Golec v Metal Exchange Corp, 453 Mich. 149 (1996)
- On the night of December 27 & 28, 1988, plaintiff Stanislaw Golec was assigned to load furnace number 2 with wet scrap metal that had aerosol cans mixed in. The plaintiff used a tractor with out a splashguard and alleged he was not provided with protective clothing other than a helmet and a mask. At about 11:00

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- P.M., a minor explosion occurred, splashing plaintiff with molten aluminum. The plaintiff suffered burns to his left hand and immediately reported the explosion. At about 3:00 A.M. another explosion occurred severely burning the plaintiff over thirty percent of his body.
- The Michigan Supreme Court held “. . . plaintiff Golec has alleged facts sufficient to create an issue for the jury regarding whether supervisory personnel of defendant Metal Exchange Corporation possessed actual knowledge that an injury was certain to occur, and willfully disregarded that knowledge. . . Golec has shown that defendant Rziemkowski may have acted with the intent to injure.” “Golec affirmed in part and remanded for further proceedings.

WHENAs a result of a settlement resulting from air pollution violations, Continental paid \$50,000 to Wayne County. In addition, Continental had 19 city fire and county violations. (Detroit News, 11/17/00)

““We are evaluating those records and coordinating with Michigan officials to decide what we’ll be doing about this,” said Jeffrey L Gahris, an EPA environmental engineer” (Detroit News, 03/15/00)

Continental has been cited for air violations at least six times by local officials and twice by the MDEQ. “. . . Lyon Township has filed a lawsuit over six local citations that the township says represent an unrelenting pollution problem.” (Detroit News, 02/18/00)

Certification

This Continental Aluminum Corporation Health Consultation was prepared by the Michigan Department of Community Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was begun.

Technical Project Officer, SPS, SSAB, DHAC, ATSDR

The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.

Chief, State Program Section, SSAB, DHAC, ATSDR