

Aluminum dynamics LLC pollution from plants

Aluminum Dynamics LLC is developing new aluminum plants, notably a **recycling facility in Benson, Arizona** and a **flat rolled aluminum production mill in Mississippi**, both of which have raised concerns and are under regulatory review for potential pollution.

Benson, Arizona Plant:

- **Pollutants & Permitting:** The plant is considered a **major source under the Clean Air Act** due to projected emissions of hazardous air pollutants, particularly **hydrogen chloride**. This classification necessitates a stringent **Class I Air Quality Permit** from the Arizona Department of Environmental Quality (ADEQ), and the permit is currently under public review^[1] ^[2].
- **Local Concerns:** Residents and local farmers have expressed **concerns about aluminum dust** and potential contamination of nearby soil and water, especially given the plant's proximity to the **San Pedro River**^[3].
- **Emissions Detail:** The facility will use **state-of-the-art secondary aluminum processing** and *pre- and post-consumer scrap*, but is still anticipated to emit significant quantities of **particulate matter (PM10, PM2.5), nitrogen oxides (NOx), and hazardous air pollutants**^[2].
 - Projected emissions are below federal Prevention of Significant Deterioration (PSD) thresholds, but above "significant" levels for some pollutants, which triggers extensive permit requirements and review.
 - The company asserts it will use best available technology to minimize emissions^[2] ^[4].
- **Community Input:** ADEQ has planned a public comment period and meetings to address community concerns about the plant's environmental impact^[3].

Columbus, Mississippi Plant:

- **Water Pollution:** Aluminum Dynamics, LLC has a **permit to discharge wastewater** into an unnamed tributary to Gilmer Creek, regulated under the National Pollutant Discharge Elimination System (NPDES)^[5].
 - The plant must comply with strict limitations: no floating solids, visible foam, or sheen in the discharged water, with regular monitoring and record-keeping^[5].
 - The permit requires that process and storm water discharges do not violate water quality standards in local streams^[5].

Environmental Controls & Practices:

- The company claims new plants will have a **best-in-class carbon footprint** and **use advanced recycling and heat recovery techniques** to reduce environmental impact^{[4] [6]}. However, regulatory filings confirm that, like most large metal-processing industrial facilities, they remain significant sources of air and water pollutants even with new technology^{[1] [2]}.

Summary Table: Regulatory Status and Pollution Concerns

Location	Key Pollution Concerns	Regulatory Status	Community Impact
Benson, AZ	Hydrogen chloride, PM, NOx, aluminum dust	Major source, Class I Air Quality Permit pending	Concerns for local farms, soil, river pollution ^{[3] [1] [2]}
Columbus, MS	Wastewater (solids, foam, sheen)	NPDES discharge permit active	Downstream water quality protections ^[5]

In summary: Aluminum Dynamics LLC’s plants are regulated as major pollution sources, requiring strict federal and state environmental permits due to emissions of hazardous air pollutants and industrial wastewater. Community concerns center on dust, hazardous air pollutants, and impacts on agriculture and water, while the company highlights advanced emission controls and efficiency measures^{[3] [1] [5] [2]}.



How might Aluminum Dynamics' pollution impact Benson's local environment and residents

Aluminum Dynamics’ planned recycling plant in Benson is projected to have several significant **environmental and community impacts**:

- **Air Pollution:** The facility is expected to emit substantial amounts of **fine particulate matter (PM2.5)** that contains aluminum compounds, along with **nitrogen oxides (NOx), carbon monoxide (CO), and hazardous air pollutants like hydrogen chloride**. According to air modeling reports, it could release over 52 tons of PM2.5 annually. These fine particles can penetrate deep into the lungs and bloodstream, increasing risks of **respiratory and neurological harm** for residents, particularly vulnerable groups such as children, seniors, and those with health conditions^{[7] [8]}.
- **Toxic Dust & Soil Contamination:** **Aluminum dust** generated by plant operations may settle on agricultural fields, home gardens, and in residential areas. Local farmers worry that this dust could make soil **unsuitable for growing vegetables**, jeopardizing local agriculture and livelihoods^{[9] [7]}. Community members highlight concerns about the long-term accumulation of toxic dust on livestock and in the living environment^[7].
- **Water Risk:** The plant will operate near the **San Pedro River**, the last free-flowing river in the Southwest and a critical ecosystem. Residents question if runoff and industrial activity could **contaminate the river**, threaten rare and endangered wildlife, and degrade water quality used by the community^[8]. Furthermore, the plant’s projected water use is substantial,

raising fears about **lower water tables, further river depletion, and strain on local water infrastructure** in an already drought-prone region^[8] ^[7].

- **Noise, Traffic, and Community Stress:** Operating 24/7, the facility will generate **continuous noise and increased traffic**, adding to the stress of nearby residents^[7].
- **Transparency and Public Input:** Many residents feel there has been a lack of transparency about the project's risks and limited opportunities for public input, intensifying distrust towards both the company and local government regarding environmental oversight^[8].

The Arizona Department of Environmental Quality (ADEQ) is currently reviewing the facility's air quality permit. Public meetings and comment periods are planned to address these community concerns^[9] ^[7].

In summary, the most acute local fears involve **increased air and soil pollution, major water consumption and potential contamination of the San Pedro River**, as well as broader impacts on respiratory health, agriculture, and daily life for Benson residents^[9] ^[8] ^[7].



What long-term health issues might residents face due to pollution from Aluminum Dynamics

The search results do not provide information on the long-term health impacts of pollution from Aluminum Dynamics specifically. However, based on established research on pollutants expected from aluminum recycling and production plants—such as **fine particulate matter (PM2.5), aluminum dust, hydrogen chloride, and nitrogen oxides (NOx)**—the following long-term health issues may affect residents living near the facility:

- **Respiratory Diseases:** Chronic exposure to fine particulate matter (PM2.5) and aluminum dust increases the risk of **asthma, bronchitis, chronic obstructive pulmonary disease (COPD), and other lung diseases**, especially in children, older adults, and individuals with weakened immune systems.
- **Cardiovascular Problems:** PM2.5 and NOx can contribute to **heart disease, high blood pressure, and increased risk of heart attacks and strokes** due to systemic inflammation.
- **Neurological Effects:** Emerging evidence links chronic exposure to aluminum compounds and airborne particulate matter to **potential cognitive decline, developmental delays in children, and higher risk of neurodegenerative diseases** such as Alzheimer's disease.
- **Irritation and Damage to Mucous Membranes:** **Hydrogen chloride** is a known irritant that can cause **chronic throat, eye, and nasal irritation**, and in severe cases, may lead to long-term damage of the respiratory tract and increased susceptibility to infections.
- **Cancer Risk:** Long-term exposure to certain hazardous air pollutants released in metal processing industries is associated with a **higher risk of lung cancer** and potentially other cancers, depending on specific exposure levels and individual susceptibility.

It is important for regulatory agencies to require ongoing monitoring and enforce strict emission controls to minimize these risks. Local residents should also be provided with clear information

about health risks, and health monitoring programs should be considered for vulnerable populations.

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1. <http://azdeq.gov/aqd/AluminumDynamics>
2. https://static.azdeq.gov/permits/adi/aqd_adi_permit_app.pdf
3. <https://www.kgun9.com/news/community-inspired-journalism/cochise-county/growing-pains-aluminum-recycling-plant-causing-mixed-feelings-in-benson-separating-the-city-and-residents>
4. <https://aluminumdynamicsllc.com>
5. https://opcgis.deq.state.ms.us/ensearchonline/get_doc.aspx?dt=finalp&id=1714473
6. <https://www.sms-group.com/en-ua/plants/projects/aluminum-dynamics-llc/the-project>
7. <https://nobensonaluminumplant.org>
8. <https://www.change.org/p/save-our-health-our-river-from-industrial-harm-in-benson-az>
9. <https://www.kgun9.com/news/community-inspired-journalism/cochise-county/growing-pains-aluminum-recycling-plant-causing-mixed-feelings-in-benson-separating-the-city-and-residents>