Introduction
The Amalgamated Sugar Co. LLC (TASCO)
Nampa, Idaho Facility

- Over the last 5 years, significant environmental and legal effort to address EPA regional haze requirements for one coal-fired industrial boiler
- Efforts have focused on negotiating reasonable boiler $SO_2$ and $NO_x$ emissions controls or approved alternatives
Overview
Regional Haze Regulations & Plans
Background

EPA Regional Haze Requirements

- 1977 Clean Air Act Amendments – Require protection of visibility and regional haze in national parks and wilderness areas (Class I Areas)

- 156 parks and wilderness areas in the U.S.

- 1999 EPA Regional Haze Rules (40 CFR Part 51)
  - States required develop detailed plans including emissions reduction measures
  - In 60 years, improve visibility to natural background
Hells Canyon Wilderness, Oregon

**Best Days**
- 17.3 Mm⁻¹
- 5.5 dv’s

**Worst Days**
- 64.2 Mm⁻¹
- 18.6 dv’s
State Regional Haze Plans
(40 CFR 51.308)

- Includes a detailed assessment of pollutants, emissions sources, impact analysis and control measures

- Emissions Sources:
  - Natural fires
  - Mobile sources (automobiles & trucks)
  - Wind blown dust
  - Point sources (power plants & industrial sources)
Haze Causing Pollutants & Sources

- Organic carbon – Forest Fires
- Nitrates – Fossil fuels (mobile sources, fires, power plants, industry)
- Sulfates – Fossil fuels (power plants, industry, fires)
- Soil – Wind blown dust
- Water Vapor – Fog, precipitation events
Idaho (IDEQ)
Regional Haze Plan

- Regional Haze Plan submitted to EPA for approval in October 2010
- Plan requires visibility impact evaluation within Idaho and in neighboring states
- Five (5) Wilderness Areas
- Idaho is part of Western Region Air Partnership (WRAP)
Idaho Statewide Emissions Inventory

- Natural Fire – 31%
- Area – 34%
- Mobile – 18%
- Dust – 13%
- Industry – 4%
<table>
<thead>
<tr>
<th>States</th>
<th>%</th>
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<tbody>
<tr>
<td>Bordering States (^a)</td>
<td>91</td>
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<tr>
<td>Idaho</td>
<td>9</td>
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<tr>
<td>Riley Boiler</td>
<td>0.12</td>
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\(^a\) Washington, Oregon, Nevada, Utah, Wyoming, Utah
Idaho Regional Haze Plan
2018 Emissions Reduction Measures

- Industrial emissions controls
- Federal Motor Vehicle Control Program
- Burning control programs – Crops and prescribed forestry
- Many other existing regulations
Emissions Control Evaluation

Riley Boiler
The Amalgamated Sugar Company LLC
Nampa Facility
Emission Control Evaluation
Power Plants and Industrial Sources

- Best Available Retrofit Technology (BART) Determination (40 CFR 51.308e)
- EPA BART Guidelines (Appendix Y to Part 51) developed for large coal-fired power plants
- BART determinations focus on reducing \( \text{SO}_2 \) and \( \text{NO}_x \) emissions
EPA BART Evaluation

Key Criteria

- Identify feasible control technologies
- Cost
- Degree of visibility improvements as determined by computer modeling (not actual measurements)
Figure 1. BART eligible sources and Class 1 areas in the northwest.
Riley Boiler
TASCO Nampa Facility

- 250,000 lb steam per hour industrial boiler with a baghouse
- Fired by pulverized coal or natural gas
- Estimated emissions
  - $\text{NO}_x$ 1000 tons/y
  - $\text{SO}_2$ 1500 tons/y
Predicted Visibility Impacts
Riley Boiler

- Computer modeling predicts impacts at 3 wilderness areas in Oregon
- Areas over located 100 miles upwind of the facility
- Model predicts highest impacts during winter time periods
Number of Days > 0.5 $\Delta dv$ in 3 yrs
Due to TASCO Nampa Riley Boiler

From IDEQ
BART Determination

Riley Boiler SO$_2$ & NO$_x$ Controls

- Amalgamated’s BART determination submitted to IDEQ in November 2007 and revised in February 2009

- Cost/benefit for SO$_2$ and NO$_x$ controls not justified

- BART alternatives presented
TASCO Proposal
Riley Boiler BART Controls

- Combination of three (3) alternatives
- Alternative #1 – Install low NO$_x$ burners on the Riley Boiler (50% NO$_x$ reduction)
- Alternative #2 – Credit for shutdown of coal-fired pulp dryers in 2007 (50% NO$_x$ reduction & other AQ benefits)
- Alternative #3 – Credit for shutdown of coal-fired boilers(3) and pulp dryers(3) at the Nyssa, Oregon facility in 2005 (74% reduction in SO$_2$, 111% reduction in NO$_x$)
IDEQ Requirements
Riley Boiler BART Controls

- Permit issued on September 7, 2010
- For SO$_2$, install Spray dryer flue gas desulfurization
  - 80 % emissions reduction
  - Capital cost $13 million
IDEQ Requirements
Riley Boiler BART Controls (Cont.)

- For NO\textsubscript{x} install Low NO\textsubscript{x} Burners
  - 50% reduction
  - $4 million capital cost

- For NO\textsubscript{x} credit for shutdown of coal-fired pulp dryers
  - 50% reduction
Major Negotiation Issues

- IDEQ’s requirement to install SO2 emissions controls on the Riley boiler at a capital cost of $13 million

- No emissions reduction credit for the shutdown of the Nyssa, Oregon facility

- IDEQ has not recognized that there are no other sugar beet processing facilities subject to BART capital cost expenditures
BART Determination
Concerns

1) The significant cost of mandated controls for no reasonably anticipated benefit in visibility

2) State agencies and EPA continue to mandate millions of dollars in expenditures for emissions controls based on non calibrated computer models and not actual measurements.
BART Determination
Concerns

3) State agencies and EPA continue to:

- Ignore the largest sources impacting visibility

- Mandate costly emissions controls for industrial sources which account for a small fraction of the total emissions
Questions ???