Essar Steel Minnesota LLC

Supplemental Environmental Impact Statement
Notice of Preparation - Public Information Meeting

25 March 2010

Project Scoping and Environmental Studies

Project Scoping / Design

- Mine Plan
- Tailings Basin Design
- Building and Equipment Details
- Water Balancing

Environmental Study Areas

- **Air Quality**
  - Air Emissions Inventory
  - Air Quality Modeling
  - Pelletizing Furnace Air Pollution Control
- **Water Management**
  - Zero Liquid Discharge
  - Water Appropriations
  - Tailings Basin Stability
  - Wetlands
  - Wild Rice
- **Other**
  - Permit to Mine
  - GHG Emissions Inventory
  - Mercury Emissions Inventory
  - HHSRA
  - Cumulative Effects
  - Infrastructure

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Proposed Modification - Essar Design

- 6.5 mtpa pellets
- 15 year mine plan
- No change to DRI or Steel Making

Proposed Modification Summary

- Increase taconite pellet production by mining same ore at faster rate while simultaneously maintaining and/or enhancing key environmental features of the project

- Equipment / Process Changes
  - Larger mining trucks (ie. 240 vs 200 ton)
  - One additional secondary crusher
  - Slightly larger fine and coarse ore storage areas
  - One additional concentrating line
  - 744 m2 indurating furnace (same width but 70 meters longer)

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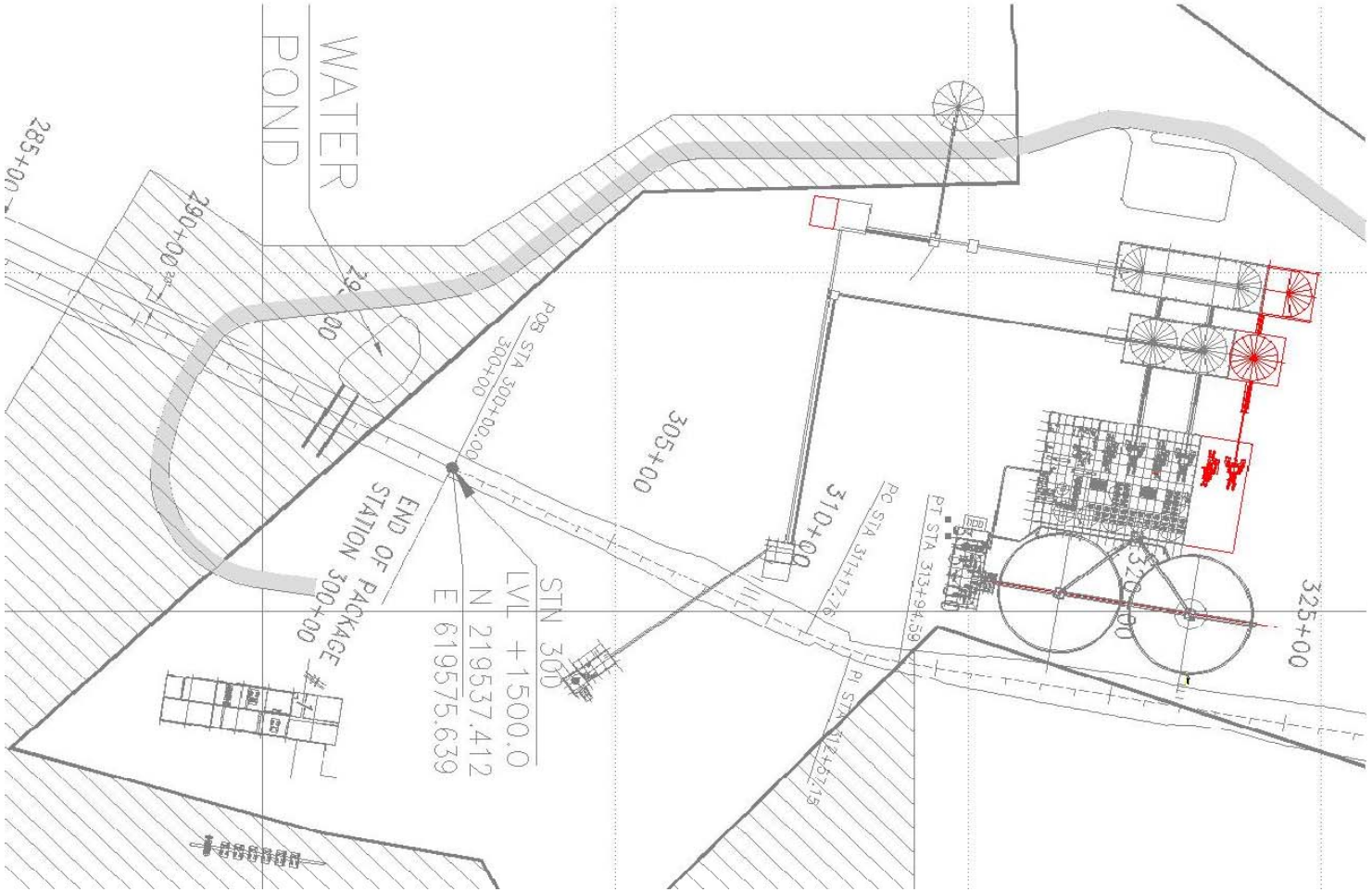
LAYOUT OF CRUSHER, CONCENTRATOR



Red – Add'l Capacity

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Indurating Furnace for “Essar Design”

- **744 m2**
  - Detailed engineering designs already exist within Essar
  - Will initially be operated at 4.1 mtpa but provides the capability to increase pellet capacity to 6.5 mtpa so raw material is available for steel making at Essar Steel Minnesota and Essar Steel Algoma
  - Standardization of design at 744 m2 saves capital and shortens project execution schedule

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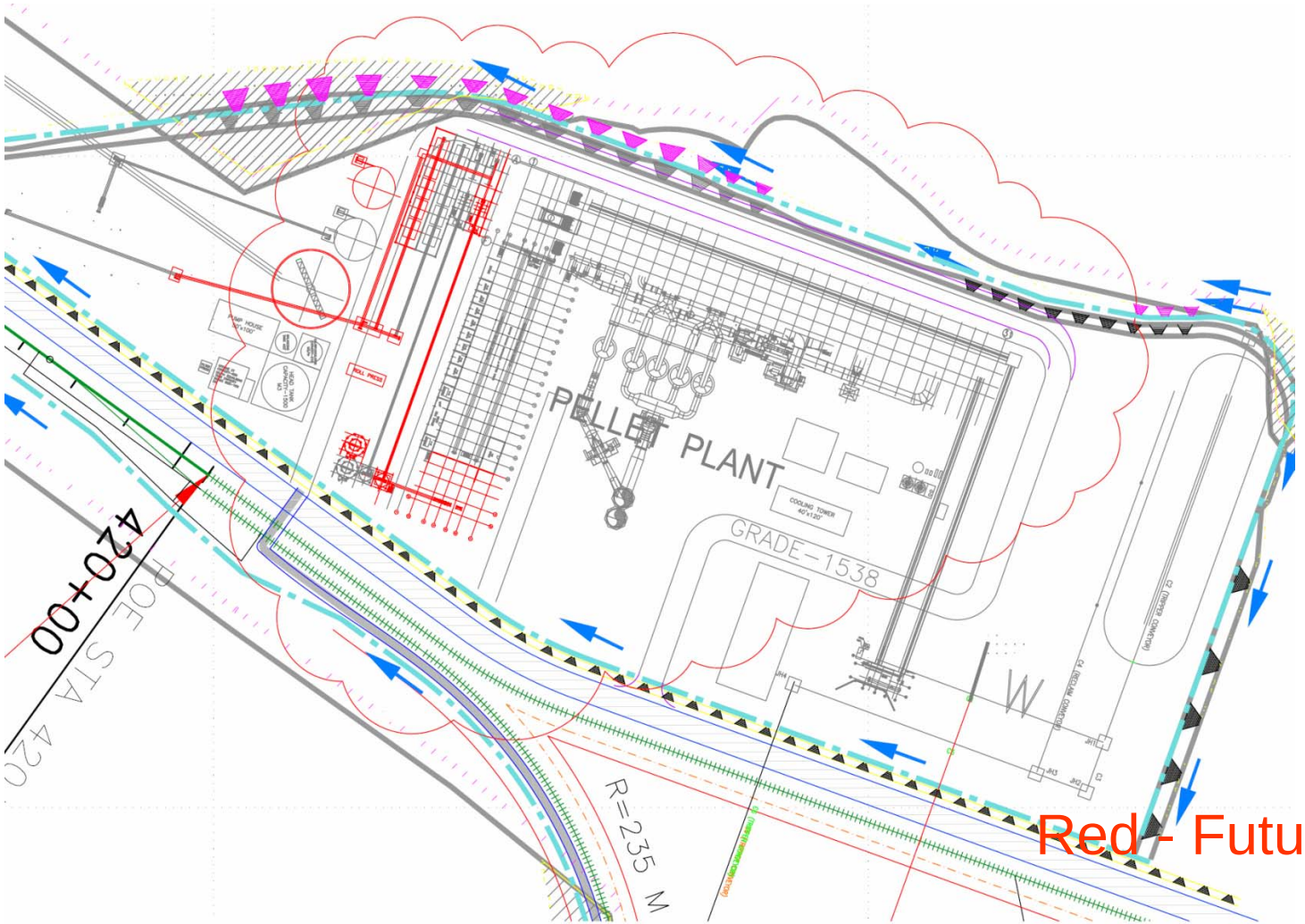
LAYOUT OF PELLET PLANT



Environmental Improvements / Mitigations

- Mine Road Fugitive Dust
- Tailings Basin Design
- Pelletizing Furnace Air Emissions
  - NOx
  - Particulate / SO2
  - Mercury
- Water Availability
- Wetlands

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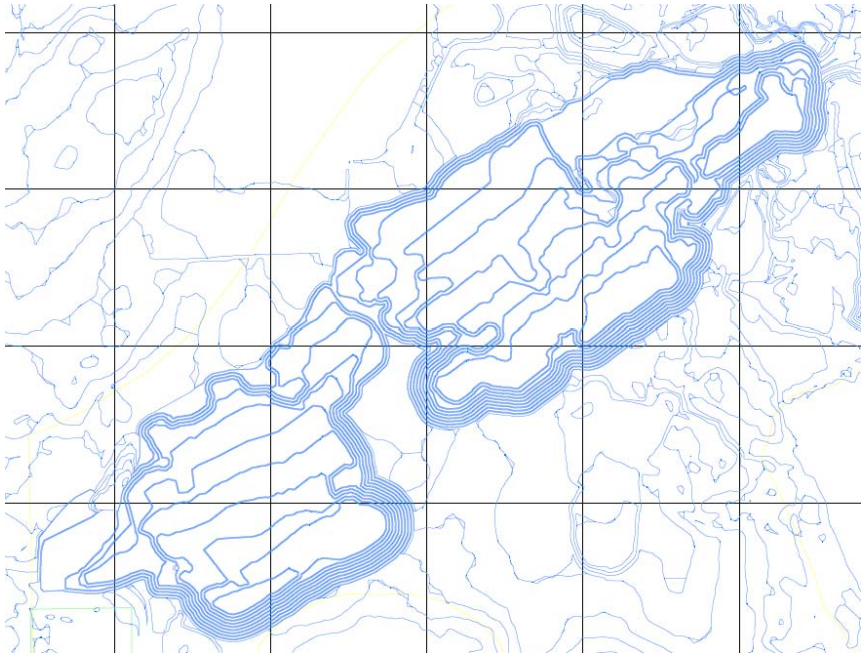
Mining

- Fugitive Dust Emissions
  - Increase to 240 ton trucks
  - Optimized haul road route
  - Despite increase in pellet capacity, ~50% reduction in vehicle miles traveled compared to original project



Tailings Basin

- Current Tailings Basin design can accommodate the increase in volumetric throughput associated with increased rate of concentrate and tailings production.

- Design already includes storage capacity based on probable maximum precipitation

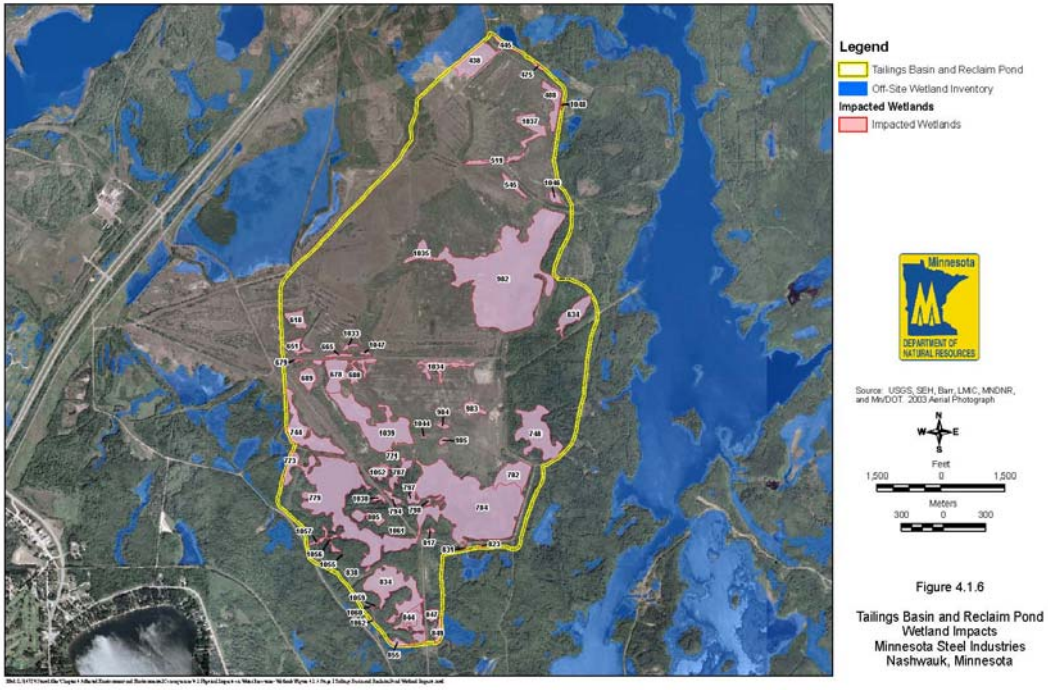


Figure 4.1.6

Tailings Basin and Reclaim Pond
Wetland Impacts
Minnesota Steel Industries
Nashwauk, Minnesota

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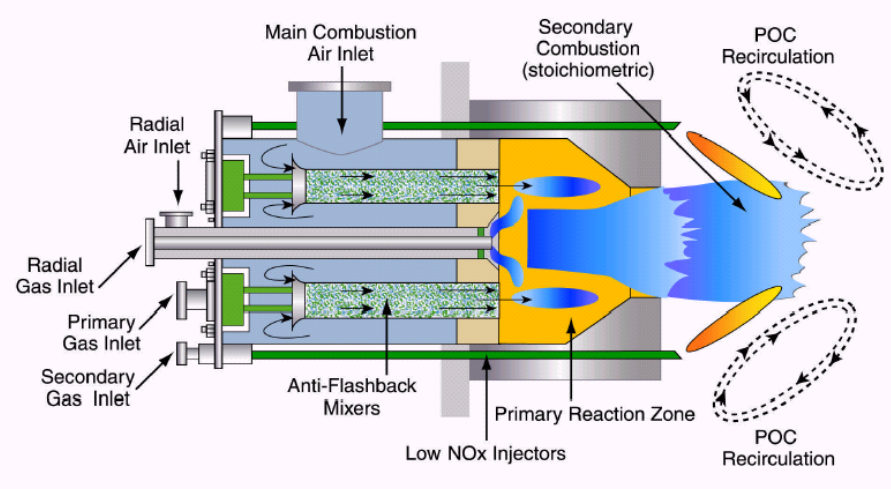
Pelletizing Environmental Impact Mitigation

- Low NOx LE Burners and customized combustion chamber
  - 80 to 90% reduction in NOx emissions compared to standard inspirating burners.
  - Despite increase in pellet capacity, able to hold NOx emissions from pelletizing furnace to same or lower level than original project.



Furnace Air Pollution Control

- Currently in Design Phase for Multi-Stage Pollution Control for removal of:
  - PM / PM_{10} / $PM_{2.5}$
  - SO_2
  - Mercury

- Likely design will include:
  - Activated Carbon Injection (ACI)
  - Wet or Dry Scrubbing
  - Wet or Dry ESP

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Mercury Reduction Plan for New or Expanding Sources

- Installation of activated carbon injection system on indurating furnace that is expected to achieve between 50 and 80% control efficiency
- Mercury Mass Balance

	Potential Mercury Emissions lb/yr @ 4.1 mtpa	Potential Mercury Emissions lb/yr @ 6.5 mtpa
No control	66	104
ACI @ 50 % CE	-----	52
ACI @ 80% CE	-----	21

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Water Balancing

- Studies indicate that at 6.5 mtpa:
  - Zero surface liquid discharge will be maintained with installation of water recycling and reuse system
  - No additional water appropriation is required

	4.1 mtpa Normal Weather Years 1-10	6.5 mtpa Normal Weather Years 1-10
Water Demand (gpm)	4,281	4,749
Water Sources (gpm)	5,041	4,883
Difference (gpm)	760	134

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Existing Plans that are Not Changing

- Project “footprints” for mining, process areas and tailings basin
- Natural gas for heat supply
- Integrated mining thru steel making process
- Environmental review and permitting does not impact the schedule for engineering, procurement or construction. Construction of currently permitted facilities will proceed on schedule
- Infrastructure plans

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Summary

- Essar Steel Minnesota seeks to increase pellet production from the 4.1 million tons per year originally permitted to 6.5 million tons per year so the company can provide pellets to Essar Steel Algoma in addition to supplying its on-site steel making needs.

- Essar will essentially mine the same ore currently permitted but in 15 years instead of 20. As a result, no additional wetlands will impacted by the project and Essar will be engaged in environmental review and permitting for future phases of site development in 15 years instead of 20.

- The pellet capacity increase will not change plans to produce direct reduced iron pellets or steel at Essar Steel Minnesota.

Summary

- More detailed engineering and design indicate that the pellet increase can be achieved while maintaining most current permit limits and reducing emissions of some pollutants, like mercury, fugitive dust and nitrogen oxides (NOx).

- The proposed project modification requires development of a State Supplemental EIS and air permit and permit to mine amendments; however, it does not require additional Federal environmental review.

- Essar Steel Minnesota is committed to working with all interested governments and stakeholders through the states' Supplemental Environmental Impact Statement process.