

6 Dec 2004

# Newcastle Pilot Plant Upgrade

**AUSTPAC**  
RESOURCES N.L.

Old Pilot Plant



# Pilot Plant History

- In 1997, Austpac moved its equipment from Newcastle University into an existing process tower on Kooragang Island
- **ERMS & LTR** roasting, **ERMS SR & EARS** acid regeneration technologies have all evolved and been trialled here
- Most equipment now needs repair, is obsolete or is superfluous to our future requirements
- The existing facility is not integrated, and its capacity needs expanding to reduce the technology scale-up risk for a commercial ERMS SR plant

# THE PLAN

We are establishing a fully integrated ERMS SR facility capable of producing 1,500 tpa of high grade synthetic rutile, including:

- Ilmenite roasters – up to 400 kg/h capacity
- Continuous leach vessel – up to 400 kg/h feed
- Filter/wash/calcine – up to 200 kg/h ERMS SR final product
- EARS acid regeneration – 900 L/h 25% HCl & 150 kg/h iron pellets
- Once commissioned, the plant will confirm essential process parameters for the 30,000 tpa commercial ERMS SR plant
- This is an essential precursor to the detailed feasibility study
- The scale-up factor to the commercial plant is only ~20:1, so the technology risk will be minimal

**Sketch of proposed 1,500 tpa Pilot Plant (November 04)**

**Continuous Leach**

**ERMS SR**

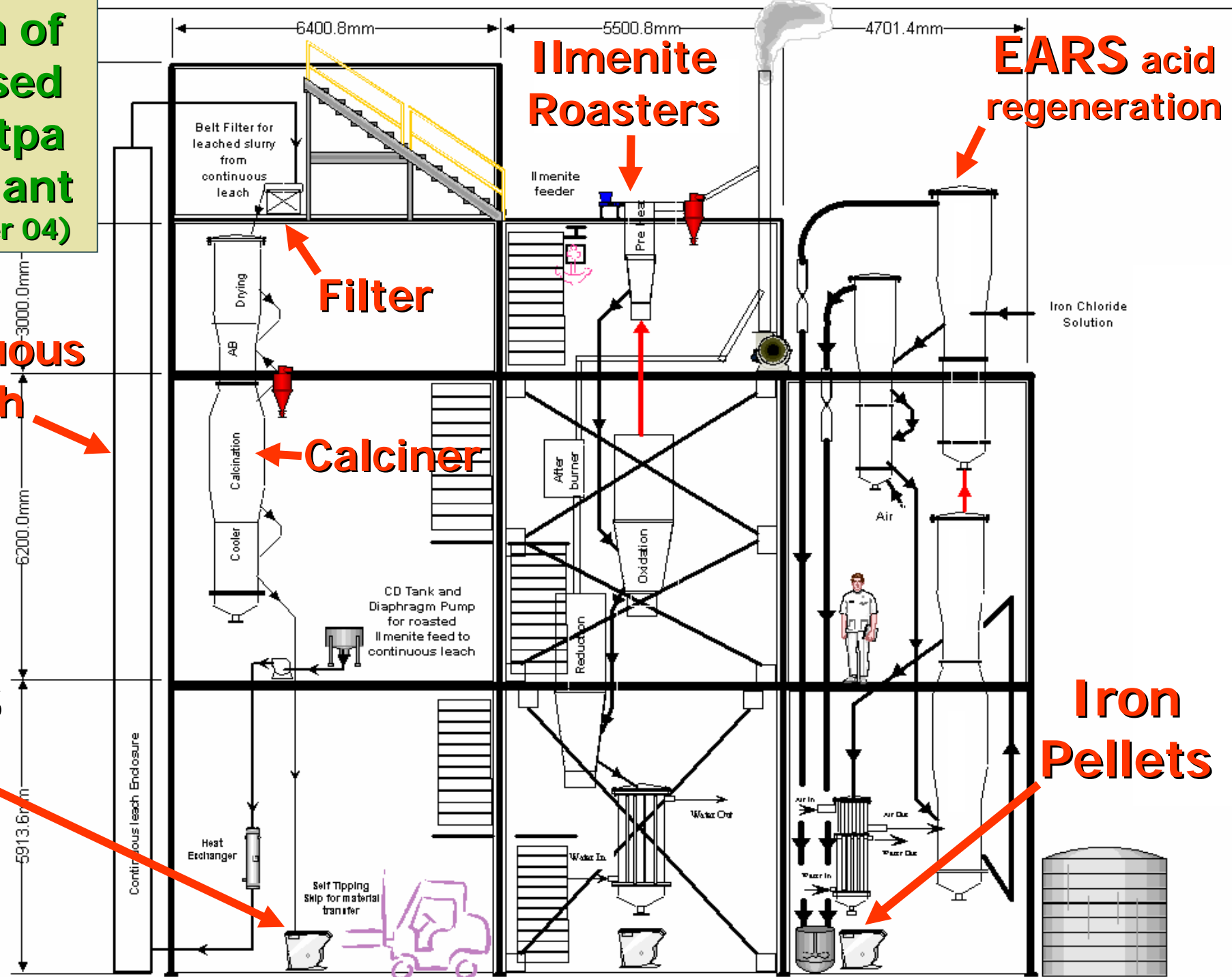
**Ilmenite Roasters**

**EARS acid regeneration**

**Filter**

**Calciner**

**Iron Pellets**



# Equipment Removal

November 2004





November 2004

**Obsolete  
Equipment**



November 2004

# Old Fluid Bed Roasters





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# Process Tower Refurbishment

# Reduction Roaster Construction

November 2004



November 2004

# Completed Reduction Roaster





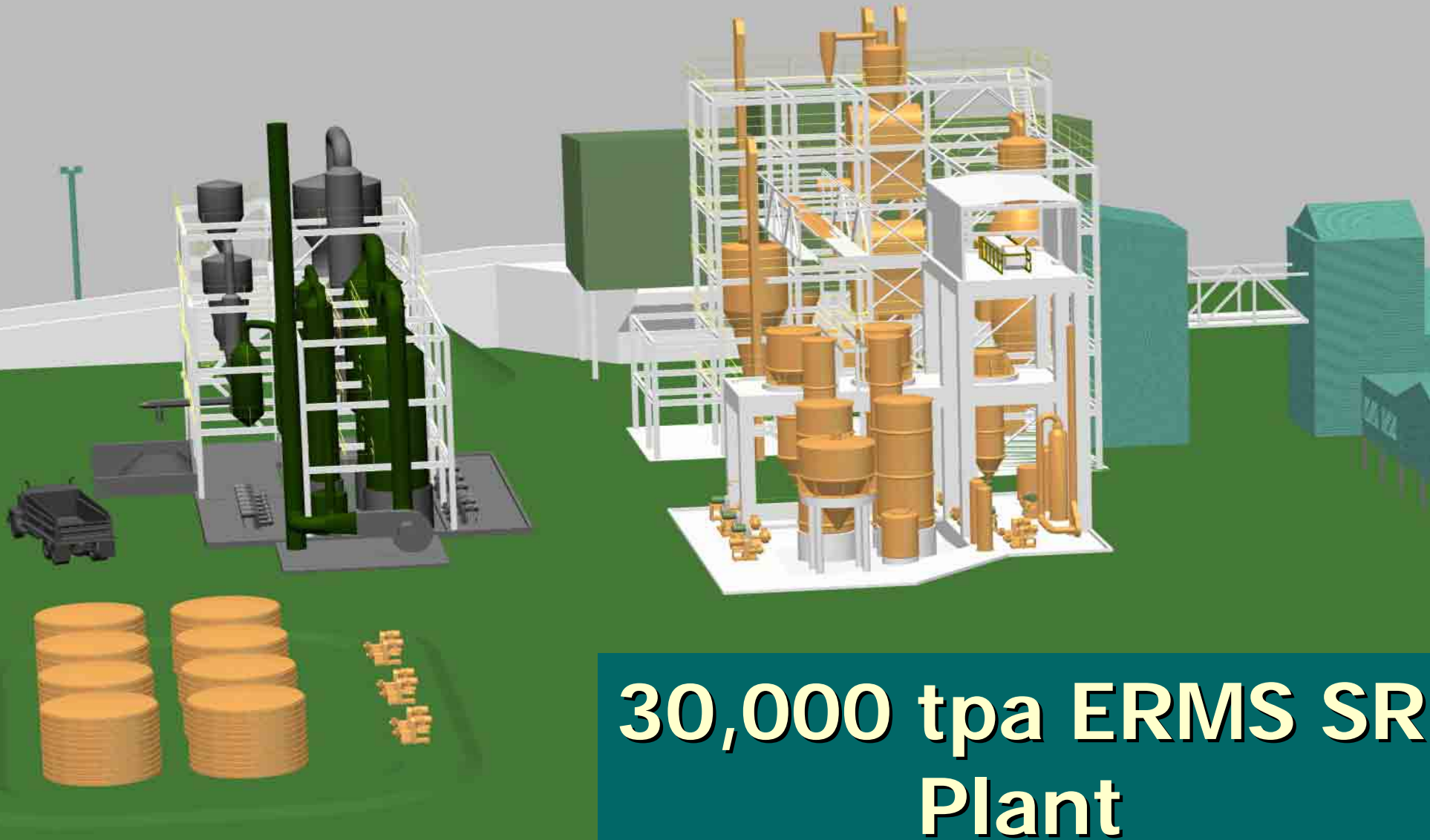
November 2004

**New Services  
Building**

# Upgrade Progress (6 Dec 2004)

ITEM	ACTIVITY	COMPLETE
Process Tower	Old/obsolete equipment removed, repairs & painting well advanced	60%
Ilmenite Roasters	Reduction roaster complete, oxidation roaster in construction, preheater & cooler in design	20%
Continuous Leach Reactor	Fluid flow modeling complete, design underway	5%
Filter/Calciner	Filter sourced (hire), calciner in design	5%
EARS section	Mass & energy balance complete, design underway	5%
Ancillary/Services	Services building complete, boiler installation underway	20%

# Austpac's Objective:



**30,000 tpa ERMS SR  
Plant**