
Updated
1 February 2005
Newcastle
Pilot Plant
Upgrade
AUSTPAC
RESOURCES N.L.

Old Pilot Plant

Pilot Plant History

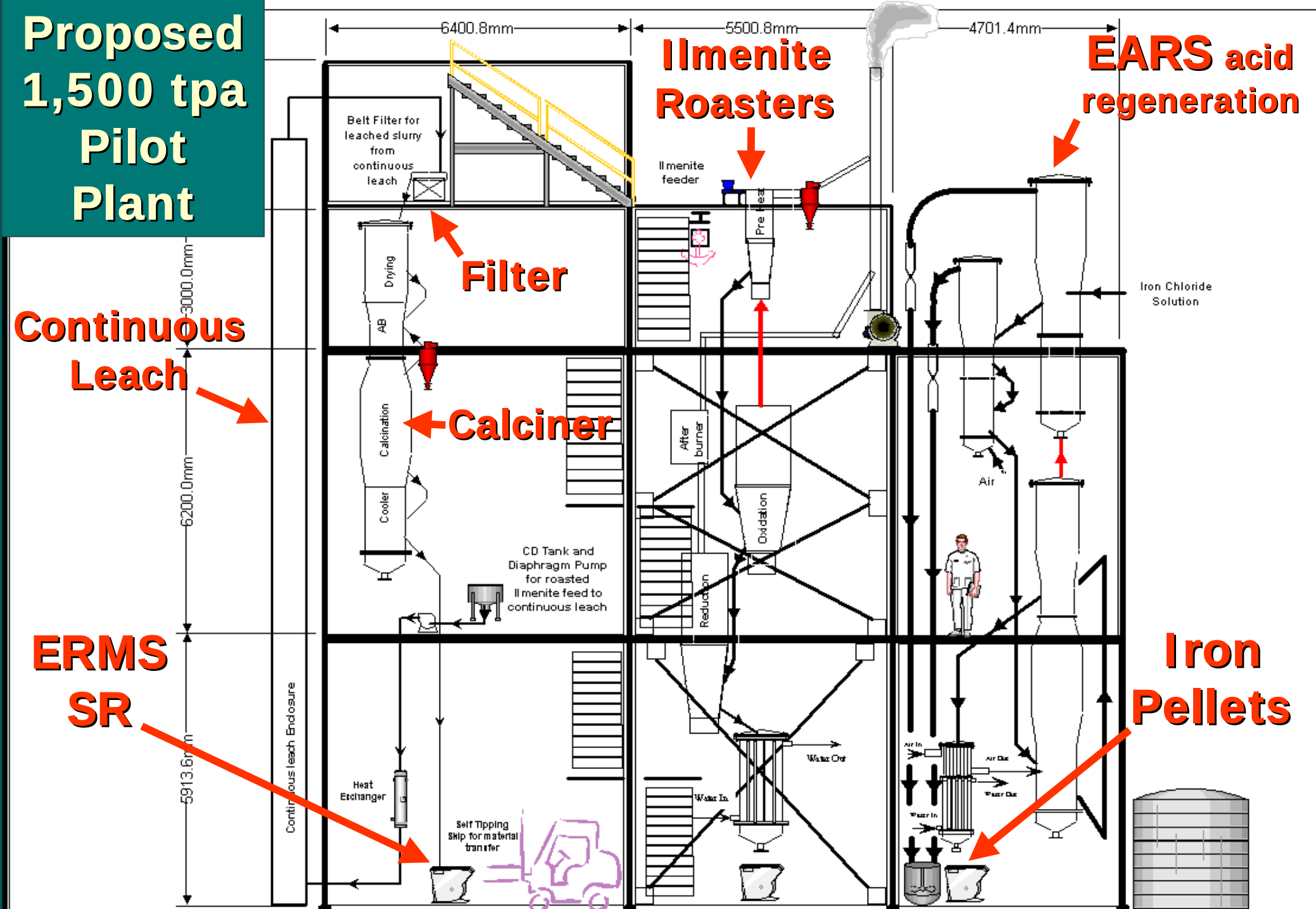
- In 1997, Austpac moved its equipment from Newcastle University into an existing process tower on Kooragang Island
- ERMS & LTR roasting, ERMS SR & EARS acid regeneration technologies have all evolved and been trialled here
- Most equipment needed repair, or was superfluous to our future requirements
- The former facility was not integrated, and required an expansion in capacity 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
- Acid regeneration – 900 L/h 25% HCl & 150 kg/h iron pellets

- Once commissioned, the plant will confirm essential process parameters for a 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


Proposed 1,500 tpa Pilot Plant
6400.8mm
5500.8mm
4701.4mm
Ilmenite Roasters
EARS acid regeneration
Belt Filter for leached slurry from continuous leach
Ilmenite feeder
Filter
Drying
AB
Continuous Leach
Calciner
Calcination
Cooler
Pre Heat
After burner
Oxidation
Reduction
Iron Chloride Solution
Air
CD Tank and Diaphragm Pump for roasted Ilmenite feed to continuous leach
3000.0mm
6200.0mm
5913.6mm
ERMS SR
Iron Pellets
Continuous leach Enclosure
Heat Exchanger
Self Tipping Skip for material transfer
Water In
Water Out
Air In
Air Out
Water In
Water Out

Equipment Removal

November / December 2004

December 2004

Process Tower Refurbishment

Completed Oxidation Roaster

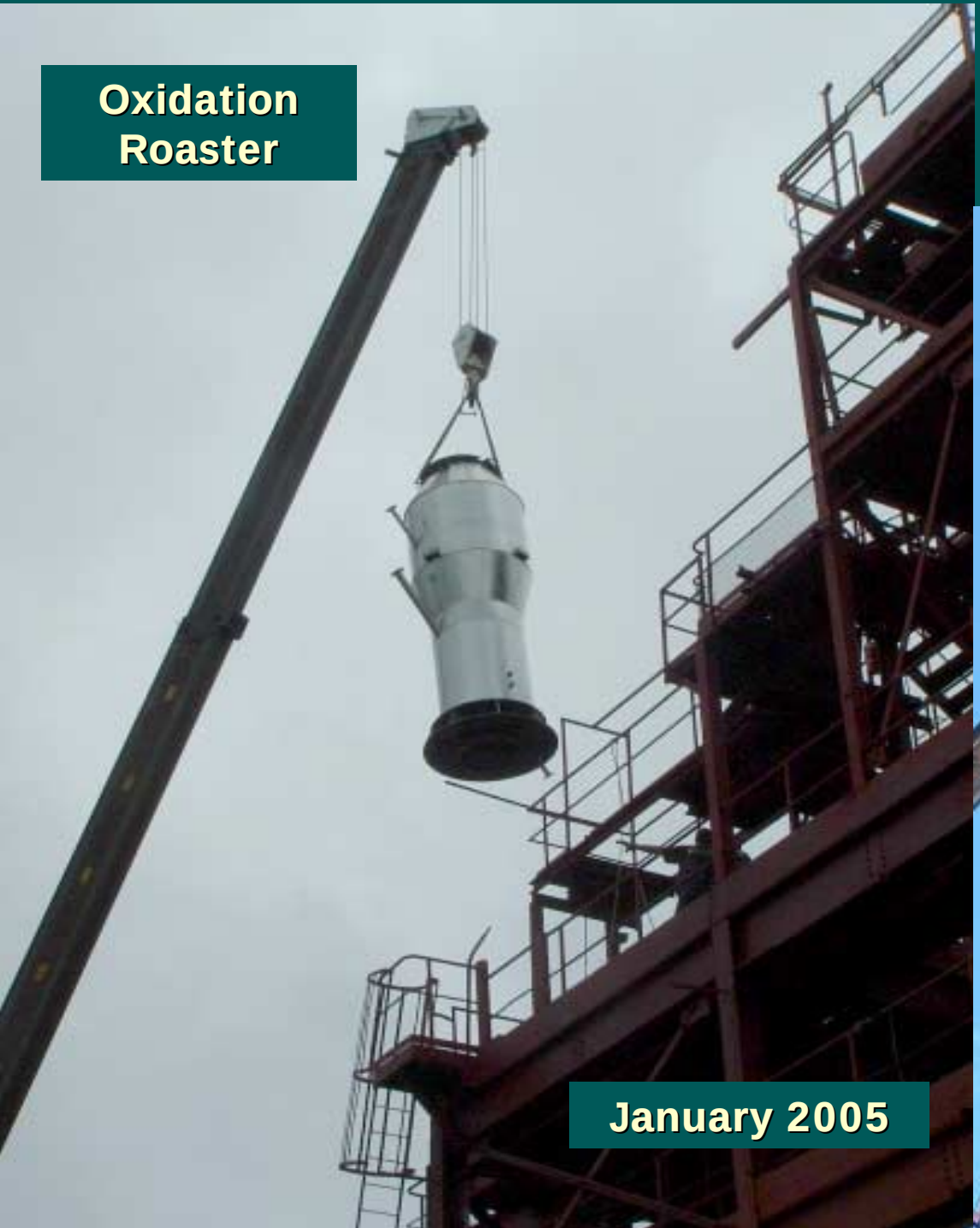
November 2004

Completed Reduction Roaster

Installation of Roaster

January 2005

Installation



Services Building

Construction of Magnetic Separation Enclosure

Upgrade Progress (1 Feb 2005)

ITEM	ACTIVITY	COMPLETE
Process Tower	Obsolete equipment removed, painting completed, structural modifications well advanced	95%
Ilmenite Roasters	Oxidation/Reduction roaster & Preheater complete, fabrication of Cooler & Afterburner underway, roaster installation commenced	55%
Continuous Leach Reactor	Fluid flow modelling complete, design complete, detailed package for tender in preparation	15%
Filter/Calciner	Filter sourced, calciner designed and awaiting quotation	20%
EARS Section	Mass & energy balance complete, roasters designed, gas absorption system awaiting quotation, storage tank farm designed	10%
Ancillary/Services	Services building complete, magnetic separation enclosure under construction, control room designed	20%

Austpac's Objective:

Commercial ERMS SR Plant