

GLENCORE



**Westside Open Cut
rehabilitation and Oceanic Coal complex
mine closure update**

March 2017

Outline

- History and rehabilitation of Westside Open Cut
- Final void status of Westside Open Cut
- Overall Oceanic Coal complex mine closure update



History and rehabilitation of Westside Open Cut

- Mining completed in 2012
- Rehabilitation complete
- Rainfall filling final void (34 Ha), current water depth of 17m
- By 2029 the final void is expected to be full (24.5m deep)
- Spill way installed to Cockle creek
- Expect to relinquish lease and security deposit progressively with full relinquishment in 2027
- Future land use:-
 - Bushland
 - Industrial use of workshop/hard stand facility

History and rehabilitation of Westside Open Cut



1999



2003

History and rehabilitation of Westside Open Cut



History and rehabilitation of Westside Open Cut



2007

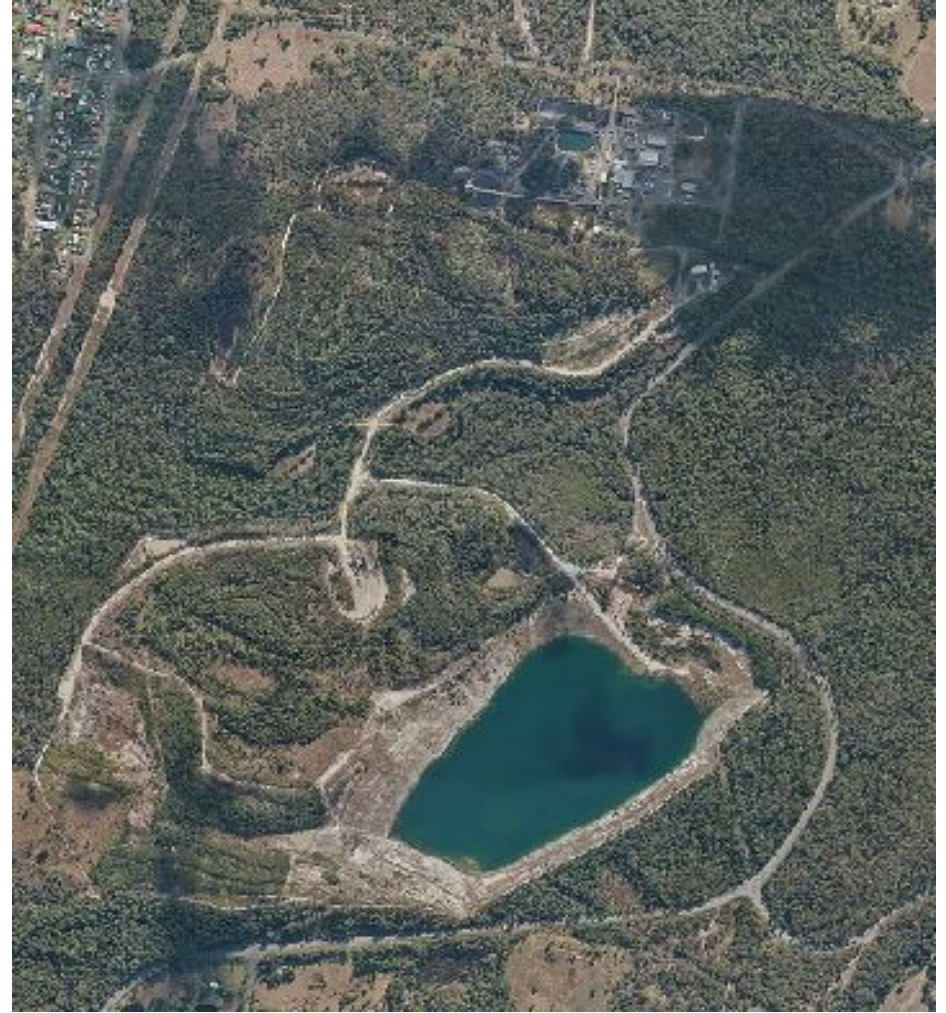


2010

History and rehabilitation of Westside Open Cut



2012



2016

History and rehabilitation of Westside Open Cut

Rehabilitation

- Standard rehabilitation practices were used i.e. bulk shaping, contour drains, topsoil spreading, ameliorants and direct seeding with natives species
- Annual flora and fauna monitoring following rehab with corrective actions implemented as required i.e. reseedling, weed control etc.



History and rehabilitation of Westside Open Cut

Rehab monitoring

Monitoring progress towards achieving completion criteria including,

- Soil profile development
- Second generation seedlings present
- Regeneration of all strata including juvenile species
- Majority healthy trees, with the exception of natural acacia die off
- No significant weed infestation
- Fauna 'generally rehab sites have similar, or higher species diversity then remnant areas.
- 69 different fauna species

Scientific name	Common name	Site 1	Site 2	Site 5	Site 9	Site 10	Site 12
<i>Galyptorhynchus lathami</i>	Glossy black-cockatoo					+	
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat		+				
<i>Miniopterus australis</i>	Little Bent-winged Bat	+	+	+	+	+	+
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bent-winged Bat	+	+	+	+	+	+
<i>Mormopterus norfolkensis</i>	Eastern Coastal Free-tailed Bat	+	+	+	+		+
<i>Myotis macropus</i>	Southern Myotis			+	+		
<i>Ninox strenua</i>	Powerful Owl		+		+		+
<i>Petaurus norfolcensis</i>	Squirrel Glider		+				
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	+	+	+	+	+	+
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	+	+	+	+	+	+
<i>Tyto novaehollandiae</i>	Masked Owl						+
<i>Vespadelus troughtoni</i>	Eastern Cave Bat			+			

April 2007



November 2008



June 2009



March 2017



April 2007



November 2008



June 2009



March 2017



April 2007



November 2008



June 2009



March 2017



April 2007



November 2008



June 2009



March 2017



Final void status of Westside Open Cut



Completed in 2012

The 'highwall' of the final void has overburden placed against it

- Reduces long term safety risks
- Reduces long term geotech risks

Final void status of Westside Open Cut

Water monitoring

- Previously surface water monitoring only with consistent results well within Environmental Protection licence parameters for discharge
- Monitoring regime increased to include stratification sampling which did show slightly different water quality at deepest part of void



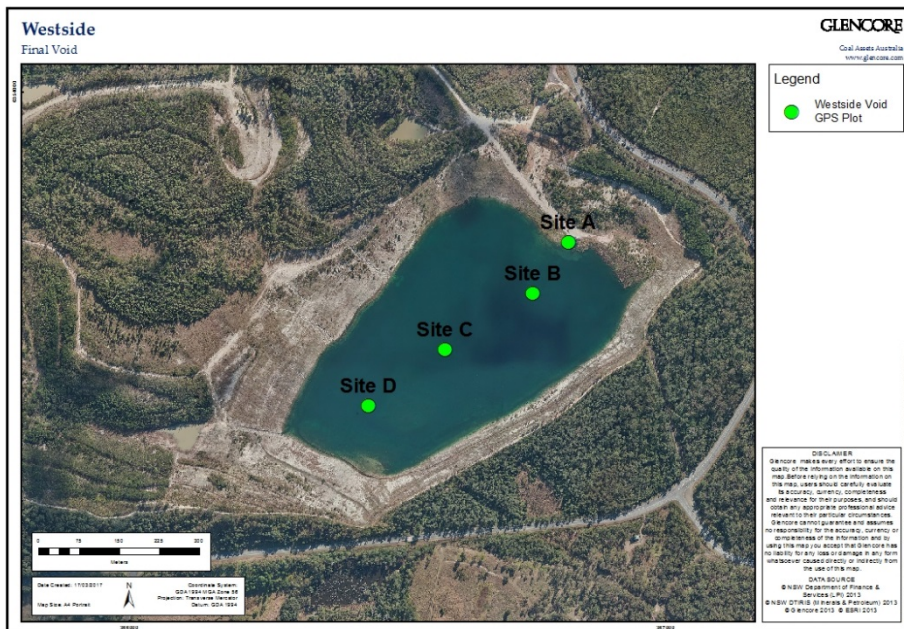
April 2016

NSWMC Pit Lake Monitoring Guidance Note

Submitted to:
New South Wales Minerals Council (NSWMC)



Report Number: 147648015-012-R-Rev0
Distribution:
1 Electronic Copy - NSWMC
1 Electronic Copy - Golder Associates Pty Ltd



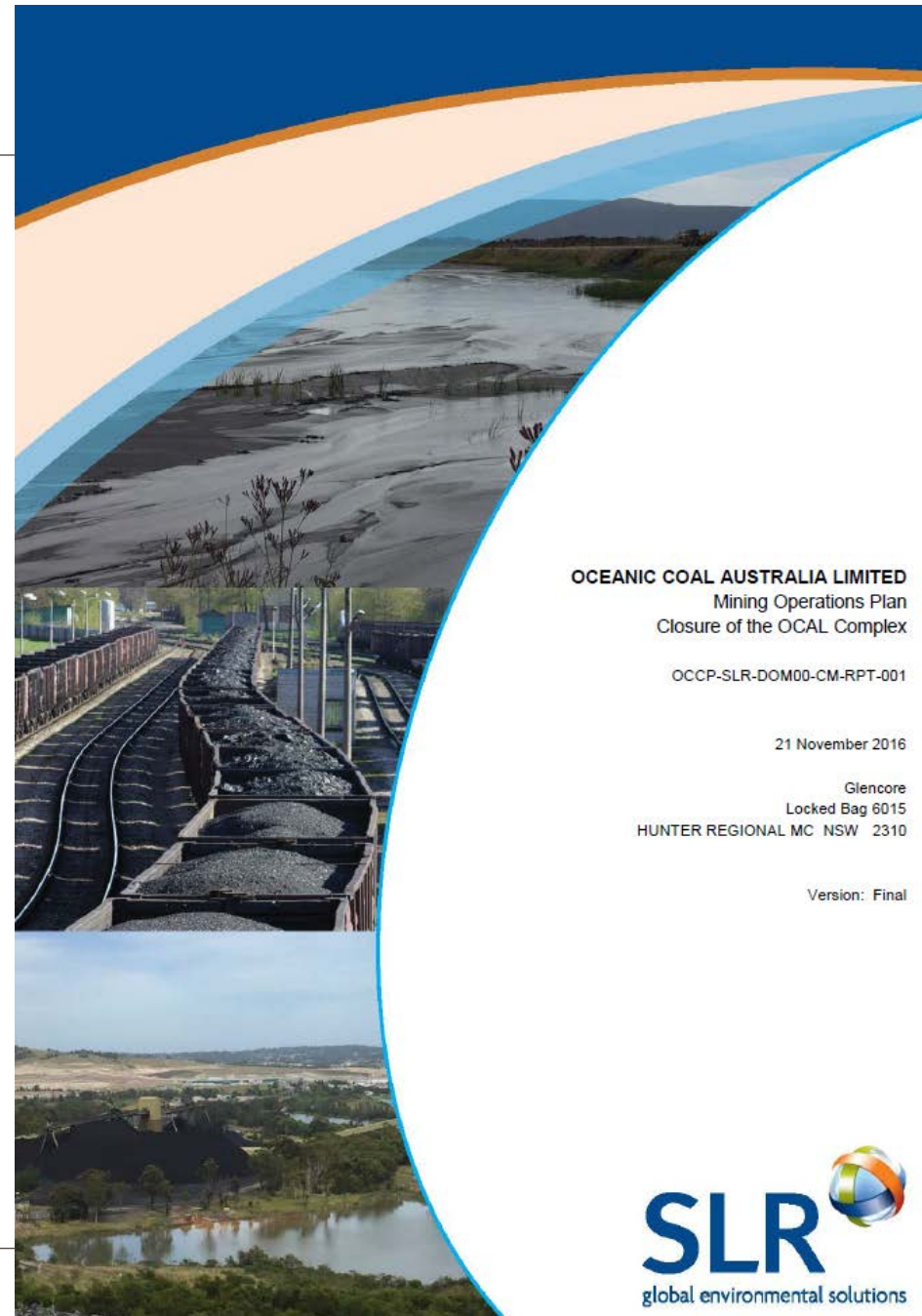
Final void status of Westside Open Cut

- Current water volume 1696ML (Reduced level of 5m)
- Regular survey and water quality monitoring
- Increase in RL to 12.5 (7.5m higher then current)
- Final volume of 3.4 GL
- Periodically spill from 2029 (estimate) to Cockle creek
- Water quality expected to meet Environmental Protection Licence discharge criteria



Overall Oceanic Coal complex mine closure update

- Mining at Oceanic complex was completed in 2016
 - Detailed mine closure plan required by DRE, conditions of consent and Glencore protocol
 - ‘Reverse’ Environmental Assessment in scope, timing and cost
 - Several thousand pages of documentation
 - Copy of document available from www.westwallsendcolliery.com.au
-



Studies Completed

- Socio-Economic Baseline and Impact Mitigation;
- Post Mining Land Use;
- Geotechnical Constraints;
- Biodiversity Constraints and Opportunities & Buffer Land Management;
- Archaeological Constraints and Opportunities;
- Legal & Governance Register and Approvals Strategy;
- Geochemistry Report;
- Closure Risk Assessments;
- Reject Emplacement Area Landform & Tailings Capping Plan;
- Sealing;
- Rehabilitation & Closure Criteria;
- Hazardous Materials;
- Demolition Plan;
- Waste Disposal Strategy;
- Contamination Site Assessment;
- Surface Water Management;
- Underground Water Management;
- Subsidence;
- Methane Management;
- Environment & Rehabilitation Monitoring;
- Post Closure Management;
- Relinquishment;

West Wallsend Number 3 Shaft



Teralba Number 3 & 4 Shafts



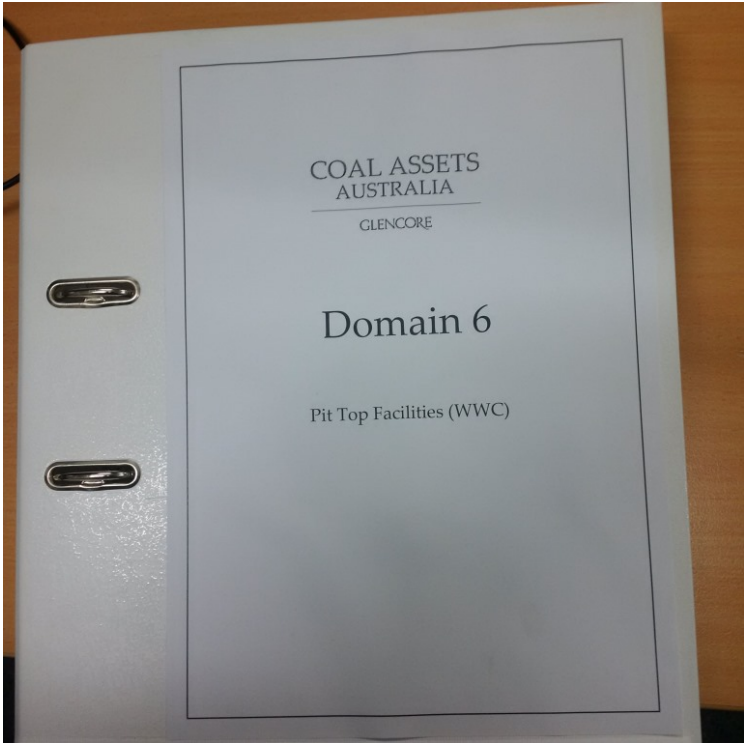
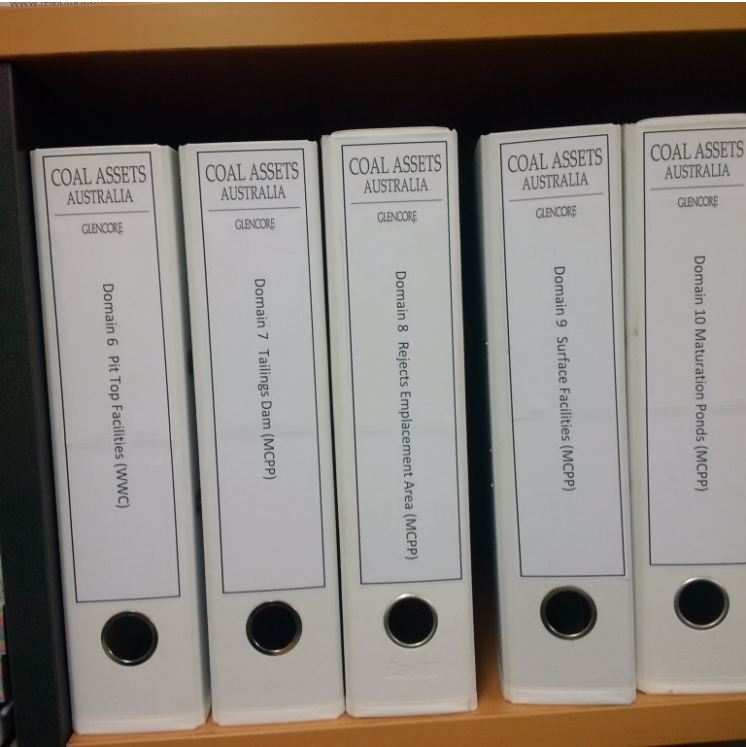
Final void spillway



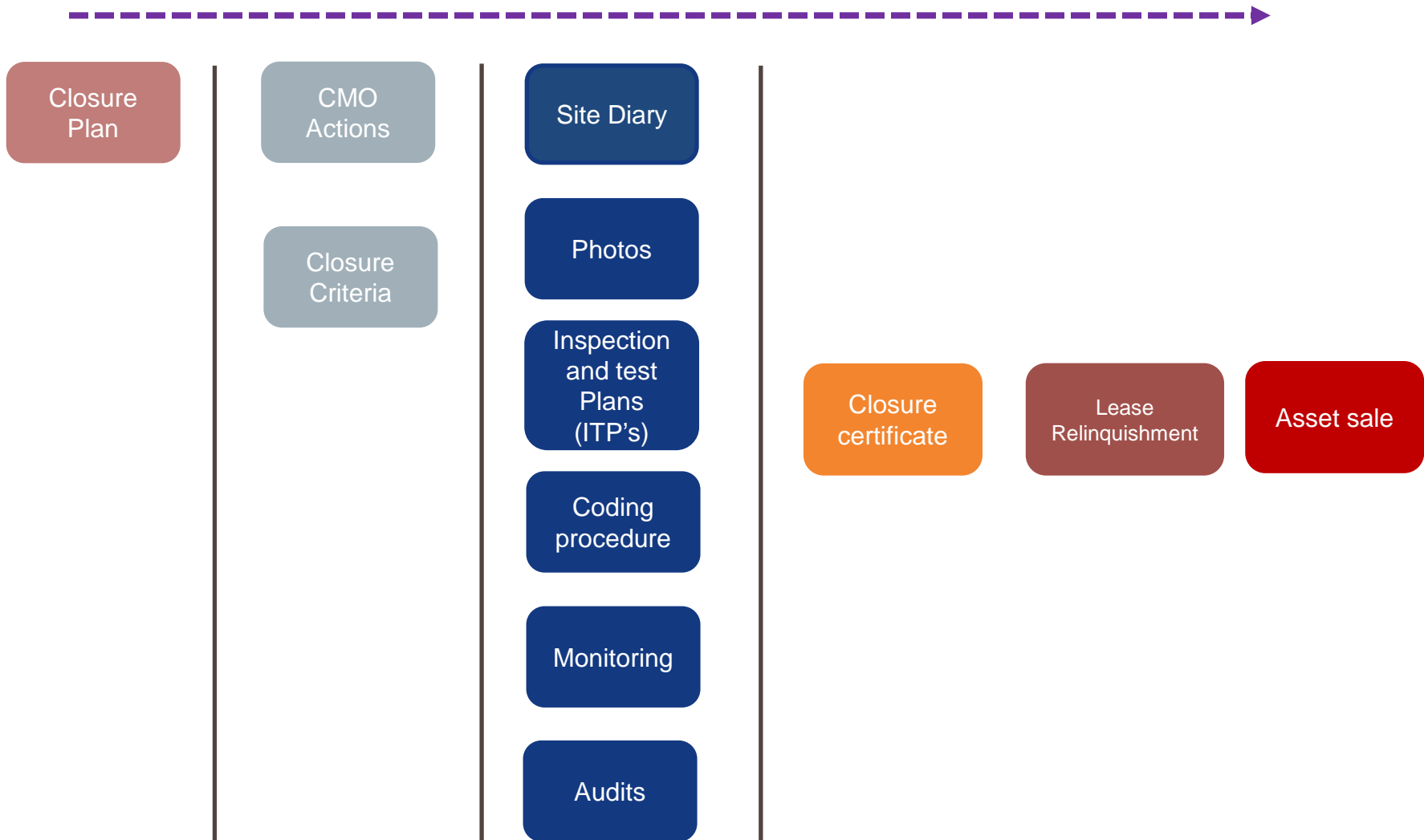
Tailings dam – CPTu testing



Closure quality plan



Closure quality plan



Mine Closure works to date

- Last coal railed in October 2016
- West Wallsend Underground shafts and drift sealed
- Westside rehab and final void spill way complete
- Initial tailings dam testing complete
- 'Make safe' works undertaken
- Progressive removal of equipment in lay down areas

Questions
