

Duralie Coal CCC Meeting

Presentation –
Company Report &
Overview of Activities

February 2019

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Environment & Community Superintendent

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1. Progress at the Mine

Mining 4th Quarter 2018

- Overburden mined 2,280 BCM
- ROM Coal mined 3,280 tonnes

- Mining completed in Weismantel pit early October 2018. Last ROM coal railed on 4 October 2018.
- Rehandle of PAF material to Clareval Pit continued up to December 2018.
- Bulk shaping and rehabilitation of waste emplacements continued up to December 2018.

2. Environmental Reporting & Regulators

Management Area	Project	Status
Reporting	<ul style="list-style-type: none"> Yancoal Environmental Assurance Audit – Stratford & Duralie 	<ul style="list-style-type: none"> Yancoal runs a program of environmental assurance audits across its operations to assess the management of key environmental risks. The Stratford and Duralie sites were audited during February 2019. Audit reports are currently being prepared.
Regulator	<ul style="list-style-type: none"> Environmental Management Plans MidCoast Council site visit 	<ul style="list-style-type: none"> The revised Biodiversity Management Plan was approved by DoEE and DPE during November 2018 and January 2019 respectively. Changes to the BMP were discussed in the previous CCC meeting. Representatives from MidCoast Council visited the Duralie Mine Site in November 2018 to discuss biodiversity conservation projects and the potential for integration with projects currently being implemented by MCC. The site visit included the Duralie rehabilitation areas and the biodiversity offset areas.

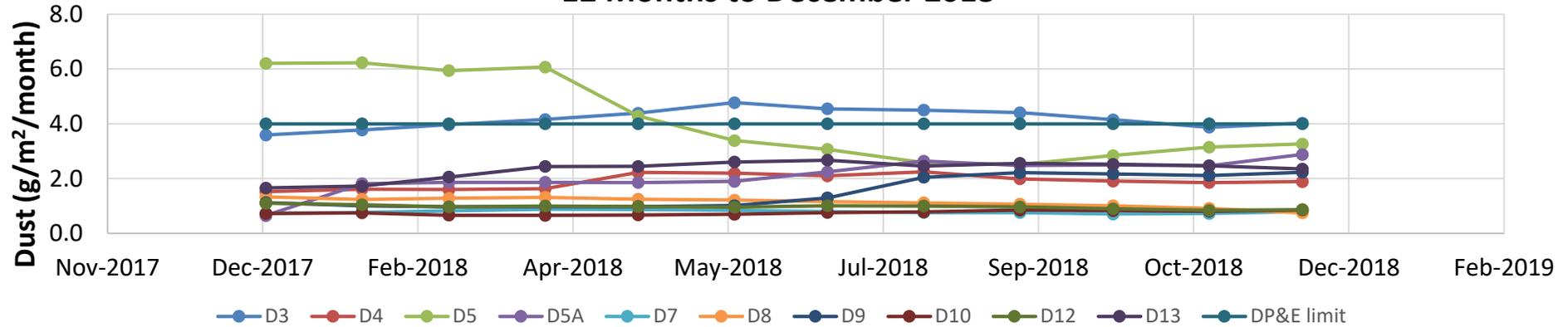
3. Environmental Management Plans & Monitoring

- a) Air Quality Management
- b) Blast Management
- c) Noise Management
- d) Water Management
- e) Rehabilitation Management
- f) Biodiversity Management
- g) Mine Closure Planning



3a. Air Quality Management

**Duralie Dust Deposition - Annual Rolling Average
12 Months to December 2018**



- Mar-18** D3 – 6.4 Very Heavy - 30% Dirt, 0% Coal, 0% Vegetation, 10% Insects, 60% Polysaccharide Slime. D13 – 5.2 Very Heavy - 30% Dirt, 0% Coal, 0% Vegetation, 0% Insects, 70% Polysaccharide Slime
- Apr-18** D13 – 4.9 Very Heavy - 50% Dirt, 0% Coal, 0% Vegetation, 0% Insects, 50% Polysaccharide Slime
- May-18** D3- 4.3 Heavy - 40% Dirt, 0% Coal, 0% Vegetation, 0% Insects, 60% Polysaccharide Slime. D4- 10.6 Very Heavy - 10% Dirt, 0% Coal, 0% Vegetation, 0% Insects, 90% Polysaccharide Slime
- Jun-18** D3 – 9.5 Very Heavy - 10% Dirt, 90% Polysaccharide Slime. D13 – 4.4 Very Heavy - 40% Dirt, 60% Polysaccharide Slime
- Jul-18** D5- Very Heavy - 60% Dirt, 40% Polysaccharide Slime. D5A- Very Heavy - 60% Dirt, 40% Polysaccharide Slime
- Aug-18** D9 - Insects, bird droppings and vegetation. Medium - 30% Dirt, 10% Vegetation, 10% Insects, 50% Polysaccharide Slime
- Oct-18** D3 - Medium - 20% Dirt, 10% Vegetation, 10% Insects and 60% Polysaccharide Slime

Guide to Descriptions used by Laboratory

Coal: Black sharp angled grains with glossy conchoidal fractures or dull with cellular features.

Dirt/Minerals: Subhedral to euhedral crystalline grains including fine sand, clay and other fine mineral particulates.

Insects: Whole insects such as spiders, ants, moths or outer parts of insects including wings, legs and exoskeletons.

Vegetation: Plant debris and algae including trichomes, decomposed organic matter and charred particulates showing characteristic cellular plant structures.

Polysaccharide Slime: Slimy gelatinous material including decomposed soft body parts of insects and vegetation.

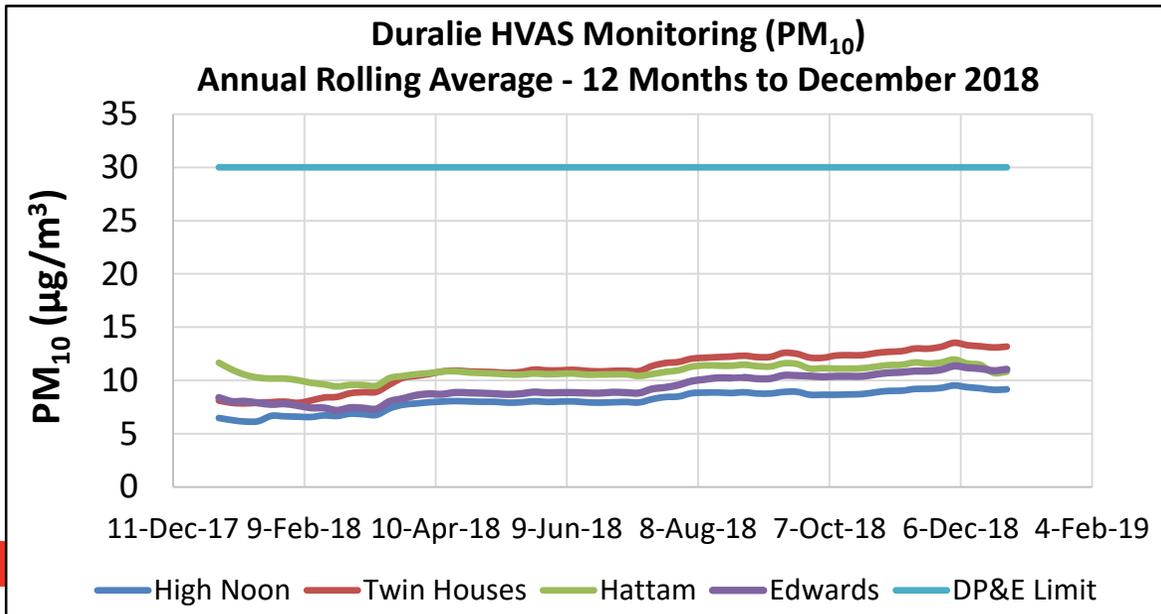
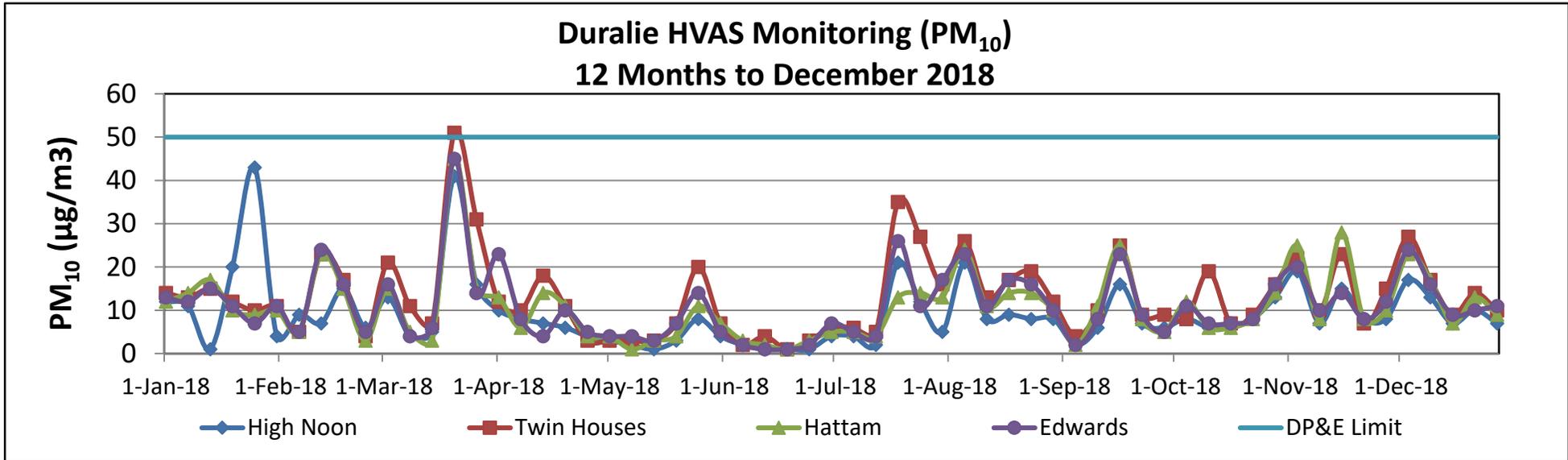
Copper Sludge: Blue-green subhedral to euhedral crystalline salts, commonly precipitated from the copper sulphate algaecide solution.

Contamination: Gelatinous material such as bird droppings

- High levels in D3 and D5 due to contamination of multiple samples. Additional site D5A installed for comparison.
- Due to frequent contamination of dust gauges the HVAS results should also be used when interpreting results



3a. Air Quality Management



- All sites below DP&E limit. Typically low results during winter and higher during spring/ summer.
- High results across all monitors on 20-Mar-18 due to hazy conditions across valley following a southerly change and prolonged dry weather.
- Minor increasing trend over previous 12 months.
- HVAS results provide more reliable data compared to dust deposition results and should be referred to when interpreting dust emissions.



3b. Blast Management

Management Area	Project	Status
Blasting	<ul style="list-style-type: none">Blast monitoring	<ul style="list-style-type: none">Blast activities at the DCM were completed on 17 August 2018. No further blasting is proposed until further notice.

- Note: Blast Compliance: No more than 5% of total blasts for annual monitoring period to exceed an overpressure of 115 dBL or ground vibration of 5 mm/s. No blast is to exceed an overpressure of 120 dBL or ground vibration of 10 mm/s.*
- Note: Where no trigger is recorded the results indicate <0.22mm/s and <110.0dBL corresponding to the blast monitor settings.*

3c. Noise Management

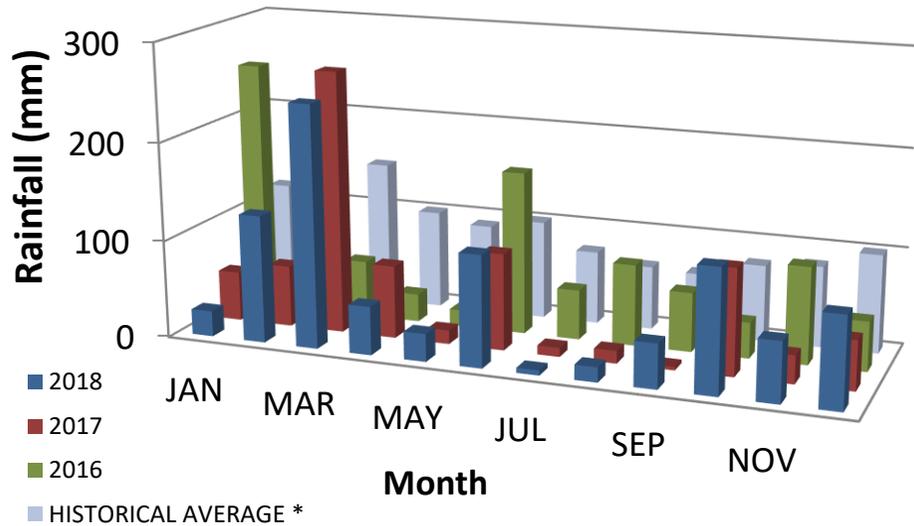
Management Area	Project	Status
Noise Monitoring	<ul style="list-style-type: none">Routine Monitoring	<ul style="list-style-type: none">Routine quarterly monitoring of operations was undertaken in January 2019. Noise monitoring results have remained below the noise criteria. No operations were being undertaken at the time of the monitoring. Noise reports are made available on the Duralie Coal website.
Noise Management Plan	<ul style="list-style-type: none">Noise Management Plan revision	<ul style="list-style-type: none">The Noise Management Plan has been updated to amend the noise monitoring program during times when no operations are occurring. The revised NMP clarifies that noise monitoring is only required to be undertaken at times when operations are occurring.
	<ul style="list-style-type: none">Real-Time Noise Management	<ul style="list-style-type: none">During Q4 2018 the operations the Duralie Mine ceased. A dayshift crew is expected to return to Duralie during 2019.In accordance with the revised NMP real-time noise monitoring has now ceased whilst no evening or night-time operations are undertaken.

3d. Water Management

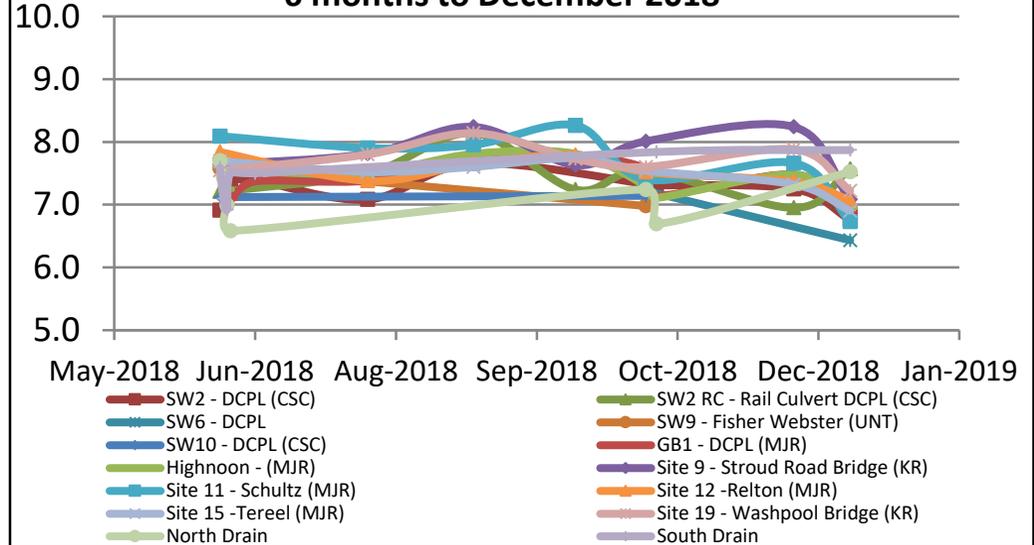
Management Area	Project	Status
Site Water Management	<ul style="list-style-type: none"> Annual water balance review. 	<ul style="list-style-type: none"> The annual site water balance review is currently being prepared. A summary will be included in the Annual Review.
Surface Water	<ul style="list-style-type: none"> Routine monitoring Aquatic Ecology - Macroinvertebrates 	<ul style="list-style-type: none"> Sporadic and low rainfall conditions persisted through spring/summer 2018. Routine surface water monitoring completed. All sites generally within Duralie water quality performance indicators. No obvious trending towards performance indicators. Macroinvertebrates monitoring was undertaken in February 2019. The monitoring continues to indicate negligible impacts associated with mining activities. The results reflected the extended dry period during the previous year and low flow conditions.
Irrigation	<ul style="list-style-type: none"> Irrigation Annual monitoring 	<ul style="list-style-type: none"> Monitoring of soil and pasture condition in the irrigation area is scheduled again in 2019. No irrigation is currently being undertaken in the first flush areas. Irrigation has continued on the PAF waste emplacement.
Groundwater	<ul style="list-style-type: none"> Routine monitor 	<ul style="list-style-type: none"> Routine monitoring has been completed and the results continue to indicate consistency with the model trends in the Environmental Assessment.

3d. Water Management

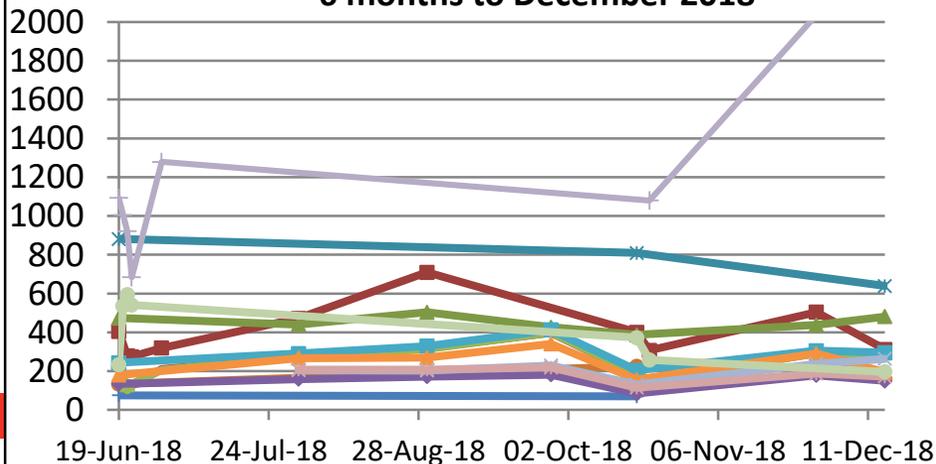
Duralie Mine Site - Monthly Rainfall



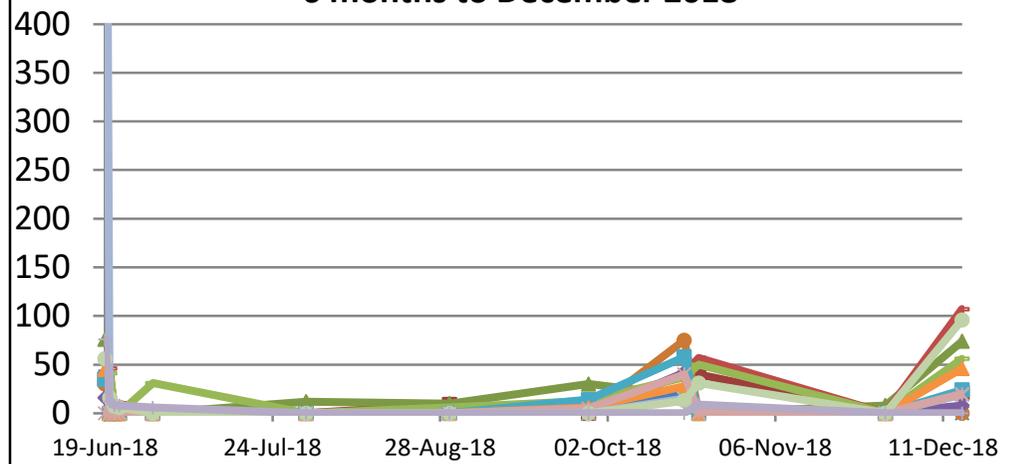
Duralie Surface Water Monitoring - pH 6 months to December 2018



Duralie Surface Water Monitoring - EC ($\mu\text{S}/\text{cm}$) 6 months to December 2018



Duralie Surface Water Monitoring - TSS (mg/L) 6 months to December 2018



3e. Rehabilitation Management

Management Area	Project	Status
Rehabilitated Waste emplacements	<ul style="list-style-type: none"> • Final landforms designs • Bulk Shaping • Rehabilitation Works • Rehabilitation maintenance 	<ul style="list-style-type: none"> • Final landform designs have been progressed for the waste emplacement areas in Clareval and Weismantel. • A D11 Dozer has continued bulk shaping works on the Weismantel waste emplacement during Q4 2018. Approximately 60ha completed in 2018. • Rehabilitation of 35ha was completed during Q4 2018, including topsoil spreading, ground preparation and seeding. Approximately 15 hectares of native vegetation and 20 hectares of pasture rehabilitation was planted. • During December 2018 20 ha of pasture rehabilitation was slashed and turkey litter applied.



Photo: Completed native rehabilitation on the Weismantel waste emplacement Dec 2018.



Photo: Native tree germination, Dec 2018.



Photo: Completed pasture rehabilitation on the Weismantel waste emplacement Dec 2018.

3e. Rehabilitation Management

Management Area	Project	Status
Rehabilitation Monitoring	<ul style="list-style-type: none">Vegetation Monitoring - Ecosystem Function Analysis	<ul style="list-style-type: none">Rehabilitation monitoring is scheduled for May 2019.



3f. Biodiversity Management

Management Area	Project	Status
BMP	<ul style="list-style-type: none">Biodiversity Management Plan revisionAnnual Biodiversity Report	<ul style="list-style-type: none">A revision of the Biodiversity Management Plan has been prepared following the first 5 years of implementation. A summary of the biodiversity offset works completed and the changes to the BMP is included in the Annual Biodiversity Report.A summary of the work undertaken in relation to the biodiversity offsets in 2018 has been prepared and is attached to the Annual Review 2018.
Biodiversity Offset	<ul style="list-style-type: none">Revegetation works	<ul style="list-style-type: none">An additional 15,000 tubestock are currently being grown to make up for the short fall in 2018. These tubestock are proposed to be planted during April 2019 in the offset areas.



Photo: Preparation of tubestock for planting in 2019.

3f. Biodiversity Management

Management Area	Project	Status
Flora/Fauna	<ul style="list-style-type: none">Nest Box Program	<ul style="list-style-type: none">Annual monitoring of nest boxes was undertaken in September 2018. A summary of the nest box progress will be included in the next Annual Review.The program now includes 211 nest boxes. The 2018 report is currently being prepared.
Pest Control	<ul style="list-style-type: none">Wild Dog control program	<ul style="list-style-type: none">Wild dog and fox trapping is proposed to recommence in April 2019.
Bushfire Management	<ul style="list-style-type: none">Bushfire Management	<ul style="list-style-type: none">No further bushfire management activities with the exception of slashing have been undertaken during Q4 2018.Slashing of all access tracks and fire breaks was completed in January 2019.



Photo: Masked Owl in a nest box in the offset area recorded during fauna monitoring.



3g. Mine Closure Planning

Note: *Refer to Duralie Mining Operations Plan & Rehabilitation Management Plan Table 14 Mine Closure Planning Schedule.
*Further detail on mine closure planning progress is included in the Annual Review 2018.

Management Area	Project	Status
Mine Closure Planning General	<ul style="list-style-type: none"> Stakeholder engagement 	<ul style="list-style-type: none"> Communications with the community consultative committee (CCC) have been established regarding mine closure planning. This presentation will continue to be updated to provide relevant information through the CCC forum.
Rehabilitated Landforms	<ul style="list-style-type: none"> Landform design and stability 	<ul style="list-style-type: none"> DCPL have continued to prepare the detailed final landform designs. Preparation of a geotechnical assessment and specifications for the final void design have continued to ensure the long-term void is safe and stable.
Final Voids	<ul style="list-style-type: none"> Water management and final void water balance 	<ul style="list-style-type: none"> Review of the final void site water balance has commenced to ensure the balance incorporates the final landform design, surface water inflows and outflows to/from final void.
	<ul style="list-style-type: none"> Groundwater Model 	<ul style="list-style-type: none"> Post-mining groundwater model verification has commenced to incorporate final void design. This work is undertaken in conjunction with the final void water balance.
Rehabilitation Resources	<ul style="list-style-type: none"> Topsoil Resources 	<ul style="list-style-type: none"> A topsoil stockpile update has been prepared in 2018 to ensure adequate topsoil is available for rehabilitation. The use of topsoil continues to be tracked.
Water Management	<ul style="list-style-type: none"> Mine Water Dams 	<ul style="list-style-type: none"> Preparation of a strategy for decommissioning of the mine water dams has commenced. DCPL has engaged an independent dams engineer to assist with preparing plans for the decommissioning of the prescribed dams Auxiliary Dam 1 has been dewatered. Preparations have commenced for pumping mine water to the Clareval void.
Coal Shaft Creek	<ul style="list-style-type: none"> CSC reconstruction 	<ul style="list-style-type: none"> Re-construction of the lower reaches of Coal Shaft Creek is required following the completion of mining activities. A conceptual Coal Shaft Creek Reconstruction Plan was prepared in 2012. A consultant has been engaged to prepare the detailed design for the reconstruction of Coal Shaft Creek. Removal of the ROM coal stockpile in the CSC corridor has been completed. Bulk shaping of the final creek landform has commenced.
Final land use	<ul style="list-style-type: none"> Potential final land-use planning 	<ul style="list-style-type: none"> Draft plan prepared in 2017.

4. Community Complaints

Duralie Complaint Summary Period: 1/10/2018 - 31/12/2018

Period: 3 Months

Total No. of Complaints: 1 (0 noise, 0 blast, 1 air quality, 0 other)

Total No. of Complainants: 1

Date/Time of Complaint	Complainant Location	Method of Complaint	Nature of Complaint	Investigation/Outcome
7/11/2018 12:00hrs	Not advised	EPA hotline	Odours	<p>EPA Hotline Incident Description: Complainant would like to know what's happening at Duralie Coal on Bucketts Way near Stroud. They have driven past a number of times in past weeks and guess its their overburden pile that is smouldering and water cannons have been trying to put it out. Complainant would like to know if this safe; what causes it and when should it be under control? How long has it been burning? It is concerning and has many people in the surrounding communities talking</p> <ul style="list-style-type: none"> • Response to EPA: <p>The management of self-heating (potentially acid forming) material has been ongoing during mining operations at the Duralie Coal Mine. We have previously undertaken consultation with both neighbours and community members following receipt of any complaints. DCPL has also had ongoing dialogue through our Community Consultative Committee forums.</p> <p>There is currently no spontaneous combustion on the waste emplacements or in the open cut. There are several areas of heating material which DCPL are continuing to manage by dozing and capping. DCPL have also undertaken watering prior to re-handling any hot material to control the potential for spon comm or odours.</p>

5. Community Programs

Management Area	Project	Status
Support Programs	Stratford Coal Community Support Program	<ul style="list-style-type: none">• The Stratford Coal Community Support Program for 2019 has now closed. Advertising was undertaken during December 2018 and applications closed at the end of January 2019.• SCPL received a very good response from many community organisations. All applications are currently being reviewed and SCPL aims to have the funding finalised by March 2019.
	<ul style="list-style-type: none">• Stratford Coal Education Support Fund	<ul style="list-style-type: none">• The Stratford Coal Education Support Fund for 2019 has now closed. Advertising was undertaken during December 2018 and applications closed at the end of January 2019.• The Education Support Fund Committee will review the applications and finalise the funding by February 2019.