

Duralie Coal CCC Meeting

Presentation –
Company Report &
Overview of Activities

November 2017

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Environment & Community Superintendent

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1. Progress at the Mine

Mining 3rd Quarter 2017

- Overburden mined 575,000 BCM
- ROM Coal mined 425,000 tonnes

- Mining completed in Clareval pit during October 2017.
- Mining continuing in Weismantel pit.

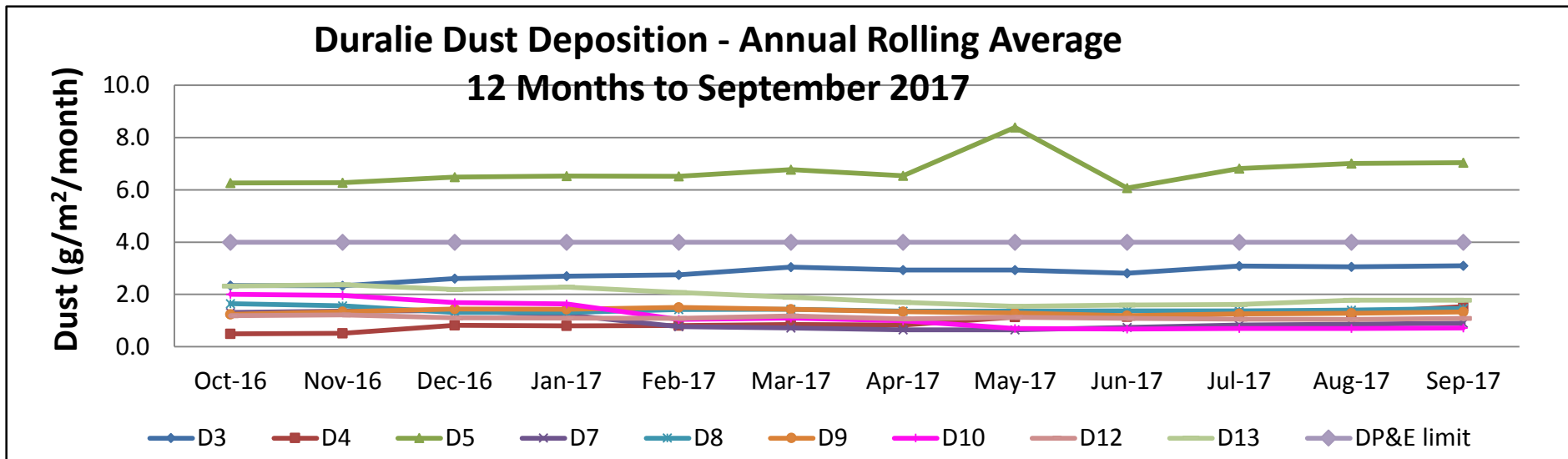
2. Environmental Reporting & Regulators

Management Area	Project	Status
Reporting	<ul style="list-style-type: none"> • DCM Annual Review 2017 • EPL 11701 Annual Return • National Pollutant Inventory & National Greenhouse Emissions Reporting 	<ul style="list-style-type: none"> • The Annual Review for 2016/17 has been completed and submitted in September 2017. Copies of the Annual Review will be provided to the CCC members and made available on the Duralie Coal website. • The 2017 EPL 11701 Annual Return has been completed and submitted to the EPA during October 2017. • The annual NPI and NGER reports for the 2016/17 FY have been completed.
Regulator	<ul style="list-style-type: none"> • DRG site visit. • Mine Closure Planning and Mining Operations Plan Amendment • Environmental Management Plans • PIRMP 	<ul style="list-style-type: none"> • A site visit was undertaken by DRG on 20-Oct-2017 following submission of the Annual Review. • A MOP amendment was prepared and submitted in August 2017 to include a schedule for mine closure planning. DRG has requested further information which will be submitted during November 2017. • Department of Planning & Environment have approved the revised Duralie management plans including Water, Noise, Biodiversity and Giant Barred Frog. All plans are available on the Duralie website. • Revisions to the Environmental Management Strategy and Blast Management Plan have been submitted to DPE in September 2017. • The Pollution Incident Response Management Plan has been updated and submitted to the EPA.

3. Environmental Management Plans & Monitoring

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

3a. Air Quality Management



- Mar-17** D3 – 4.1 Medium - 10% dirt, 0% coal, 10% vegetation, 30% insects and 50% polysaccharide slime.
D5 – 6.7 Heavy - 20% dirt, 0% coal, 10% vegetation, 10% insects, 60% polysaccharide slime.
- May-17** D4 – 4.1 Medium - 20% Dirt, 10% Coal, 0% Vegetation, 0% Insects, 70% Polysaccharide slime.
D5 – 25.2 Heavy - 70% dirt, 0% coal, 0% vegetation, 0% insects, 30% polysaccharide slime.
- Jun-17** D3 – 4.9 Heavy - 30% dirt, 0% coal, 0% vegetation, 20% insects, 50% polysaccharide slime.
D5 – 12.8 Heavy - 80% dirt, 0% coal, 0% vegetation, 0% insects, 20% polysaccharide slime.
- Aug-18** D5 – 8.8 Very heavy - 30% dirt, 0% coal, 0% vegetation, 0% insects, 70% 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 algacide solution.

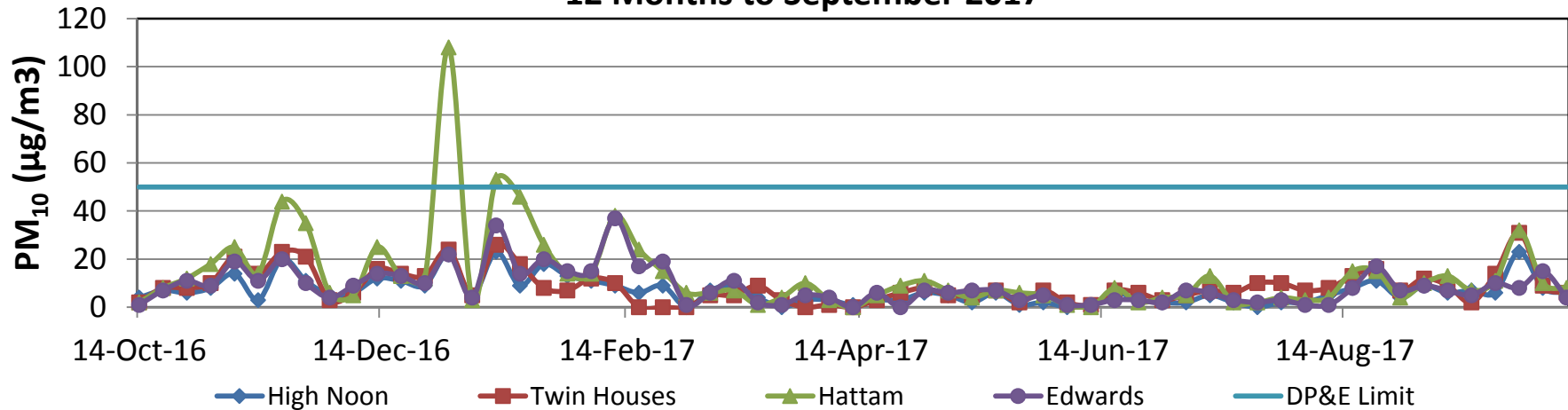
Contamination: Gelatinous material such as bird droppings

- High levels in D5 due to contamination of multiple samples.
- Due to frequent contamination of dust gauges the HVAS results should also be used when interpreting results.

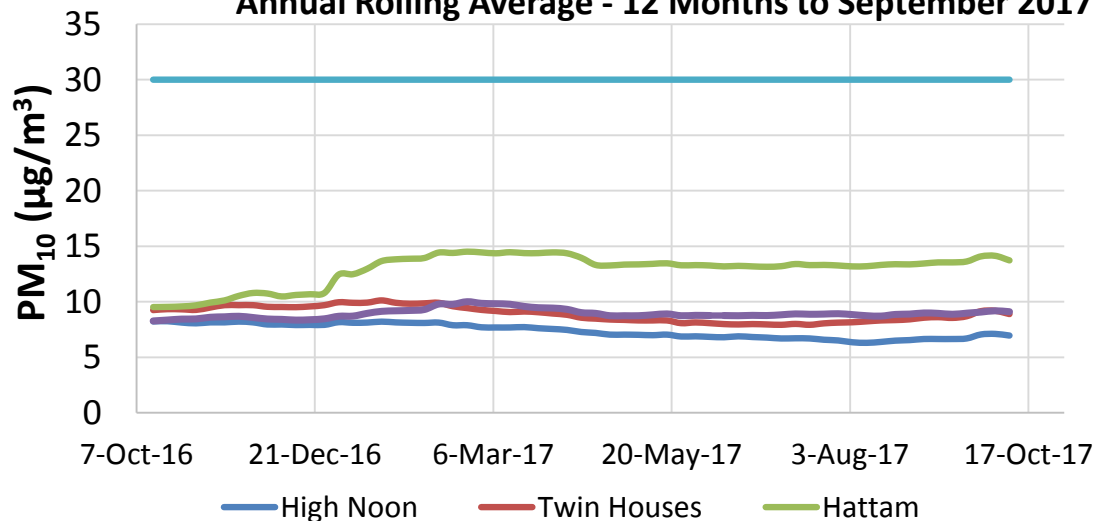


3a. Air Quality Management

**Duralie HVAS Monitoring (PM₁₀)
12 Months to September 2017**



**Duralie HVAS Monitoring (PM₁₀)
Annual Rolling Average - 12 Months to September 2017**



- All sites below DP&E limit. Typically low results during winter and higher during spring/summer.
- Two abnormal high results recorded at Hattam on 31 December 2016 and 12 January 2017. Investigation concluded not related to mine activities.
- Flat 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"> No blasts exceeded 115dB(L) or 5mm/s during the quarter. Total remained below 5% for the reporting period (ending 4-Sep-2017). No blasts recorded any level of fume..

Location	Date	Time	Schultz (AB1)		Fisher-Webster (AAAB3)		Moylan (AAAB4)		Weismantel Inn	Overpressure Site Exceedance ¹	Overpressure "Cumulative Exceedance" ¹	Monitored Blasts ¹	Fume Rating
		24hr	mm/s	dBL	mm/s	dBL	mm/s	dBL	mm/s	%			
Clareval Block 7	24-Jul-17	11:36:00	<0.22	<110.0	<0.22	<110.0	<0.22	<110.0	0.37	1.9%	1	52	Nil
Clareval Block 7	25-Jul-17	16:41:00	<0.22	<110.0	<0.22	<110.0	<0.22	<110.0	0.26	1.9%	1	53	Nil
Clareval Block 7	27-Jul-17	11:38:00	<0.22	<110.0	<0.22	<110.0	0.35	104.6	<0.22	1.9%	1	54	Nil
Weismantel Strip 16	04-Aug-17	11:45:00	<0.22	<110.0	0.46	102.1	0.29	101.5	0.66	1.8%	1	55	Nil
Clareval Block 7	11-Aug-17	15:30:00	<0.22	<110.0	<0.22	<110.0	0.34	97.5	0.66	1.8%	1	56	Nil
Weismantel Strip 16	17-Aug-17	11:31:00	<0.22	<110.0	0.37	105.3	0.29	103.5	0.4	1.8%	1	57	Nil
Clareval Block 7	18-Aug-17	15:10:00	<0.22	<110.0	<0.22	<110.0	0.3	103.5	0.89	1.7%	1	58	Nil
Weismantel Strip 16	23-Aug-17	12:01:00	<0.22	<110.0	<0.22	<110.0	<0.22	<110.0	0.54	1.7%	1	59	Nil
Weismantel Strip 16	01-Sep-17	11:38:00	<0.22	<110.0	0.57	105.7	0.3	102.8	1.01	1.7%	1	60	Nil
Weismantel Strip 16	08-Sep-17	12:11:00	<0.22	<110.0	0.43	105.7	0.26	98.9	0.71	0.0%	0	1	Nil
Clareval Ramp 2	14-Sep-17	11:40:00	<0.22	<110.0	<0.22	<110.0	<0.22	<110.0	<0.22	0.0%	0	2	Nil
Weismantel Strip 16	15-Sep-17	12:09:00	<0.22	<110.0	0.39	112.3	0.28	98.2	0.78	0.0%	0	3	Nil
Weismantel Strip 16	28-Sep-17	11:27:00	<0.22	<110.0	0.47	108.3	<0.22	<110.0	0.49	0.0%	0	4	Nil
Weismantel Strip 16	06-Oct-17	11:34:00	<0.22	<110.0	0.56	109.5	<0.22	<110.0	0.87	0.0%	0	5	Nil
Weismantel Strip 16	12-Oct-17	12:05:00	<0.22	<110.0	0.53	111.5	<0.22	<110.0	0.82	0.0%	0	6	Nil

- 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

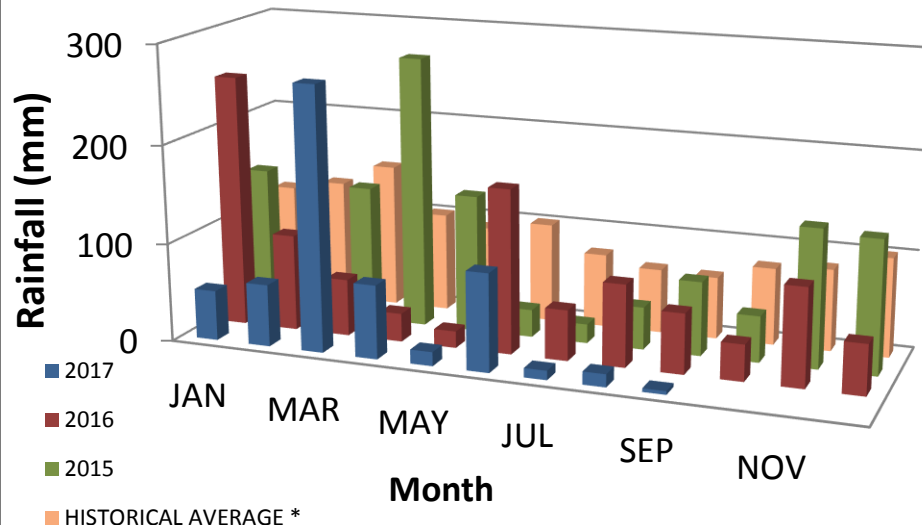
Management Area	Project	Status
Noise	<ul style="list-style-type: none">Routine Monitoring	<ul style="list-style-type: none">Routine quarterly monitoring of operations and train noise was undertaken in October 2017. Noise monitoring results have remained below the noise criteria. Typically the operations have been inaudible or slightly audible during the monitoring. Noise reports are made available on the Duralie Coal website.
	<ul style="list-style-type: none">Real-Time Noise Management	<ul style="list-style-type: none">Real-time noise monitoring profiles continue to be monitored and generally indicate no exceedence of the performance criteria due to mining operations. Occasional noise alarms were received during the quarter and were due meteorological conditions or external noise sources.Operations have been ongoing in the Clareval pit and recently relocated to the Weismantel Pit.

3d. Water Management

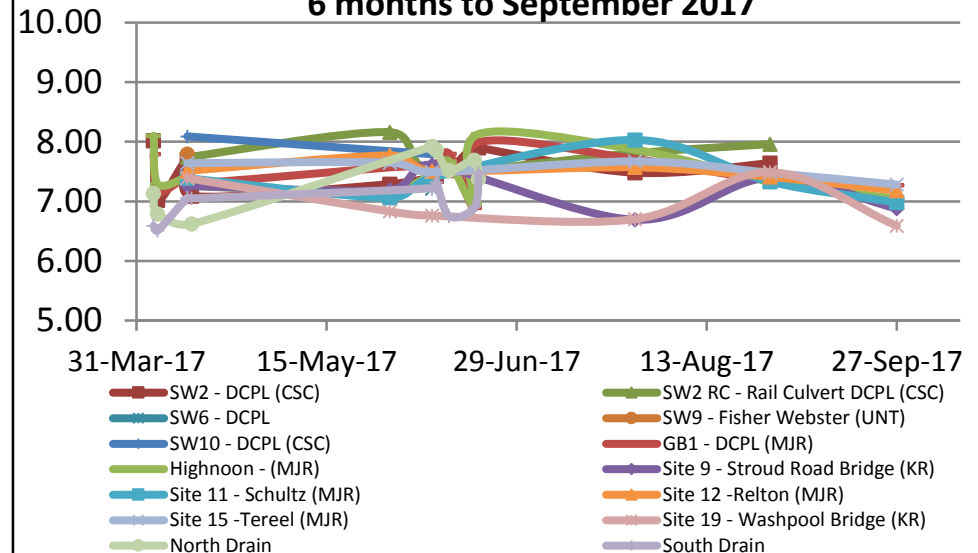
Management Area	Project	Status
Site Water Management	<ul style="list-style-type: none"> Annual water balance review. 	<ul style="list-style-type: none"> A revised water balance forecast was undertaken during April 2017. Additionally, a revision of the final void water balance is being undertaken and verification of the groundwater model.
Surface Water	<ul style="list-style-type: none"> Routine monitoring Irrigation Aquatic Ecology - Macroinvertebrates 	<ul style="list-style-type: none"> Sporadic and low rainfall conditions through Winter-Spring 2017. Routine surface water monitoring completed. All sites generally within DEP water quality performance indicators. No obvious trending towards performance indicators. Following the cessation of mining in the Clareval pit the void space is now available for additional water storage. This has allowed the use of evaporative spray irrigation to be ceased. Irrigation will continue via the automated fixed spray system. Macroinvertebrates monitoring was undertaken in September 2017. The monitoring continues to indicate negligible impacts associated with mining activities. The results reflected the extended dry period during winter and low flow condition.
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

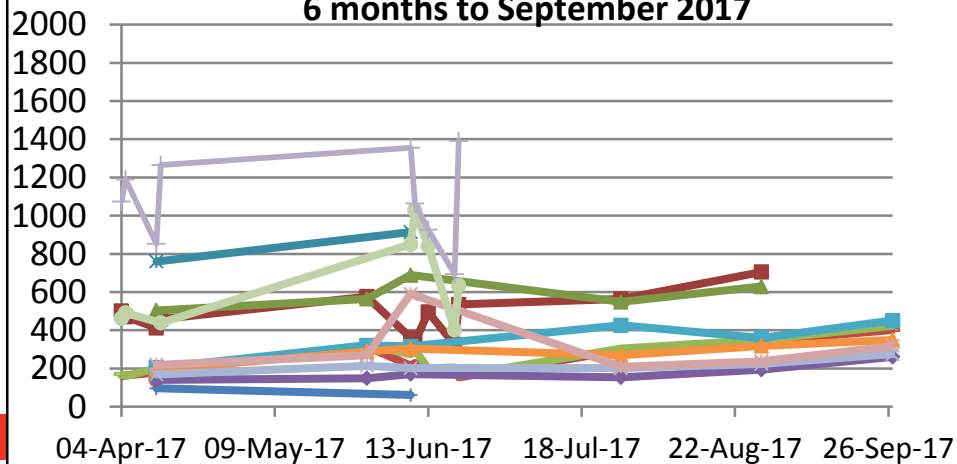
Duralie Mine Site - Monthly Rainfall



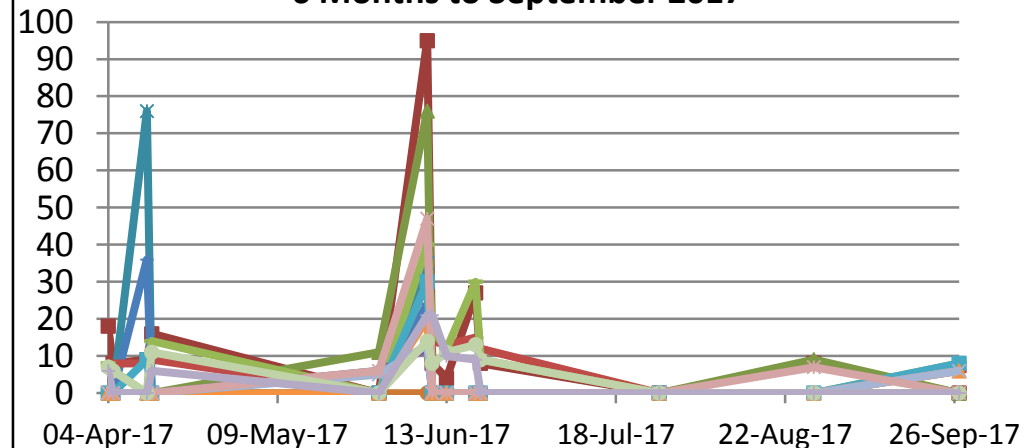
**Duralie Surface Water Monitoring - pH
6 months to September 2017**



**Duralie Surface Water Monitoring - EC ($\mu\text{S}/\text{cm}$)
6 months to September 2017**



**Duralie Surface Water Monitoring - TSS (mg/L)
6 Months to September 2017**



3e. Rehabilitation Management

Management Area	Project	Status
Rehabilitated Waste emplacements	<ul style="list-style-type: none">Annual Rehabilitation Monitoring - Landscape Function Analysis	<ul style="list-style-type: none">Annual monitoring of the rehabilitation areas was undertaken during June 2017. A summary of the results has been included in the Annual Review 2017. The monitoring includes Landscape Function Analysis, vegetation dynamics and observational recordings.The monitoring continues to indicate good development of the native rehabilitation with increasing diversity and structure.
Waste emplacements	<ul style="list-style-type: none">Final landforms designs	<ul style="list-style-type: none">Final landform designs have been progressed for the waste emplacement areas in Clareval and Weismantel. Bulk shaping works are expected to commence during October 2017 and continue through 2018.



Photo: Brown Falcon in rehabilitation area June 2017.

3f. Biodiversity Management

Management Area	Project	Status
Biodiversity Offset	<ul style="list-style-type: none"> Revegetation works 	<ul style="list-style-type: none"> Back burning of 60 hectares in the biodiversity offset was completed on 13 August 2017. Following the burn the area was direct seeded with native tree and shrub species as required by the Biodiversity Management Plan. Preparation has commenced for further tubestock planting in the biodiversity offset area during Autumn 2018.
	<ul style="list-style-type: none"> Nest box program 	<ul style="list-style-type: none"> Annual monitoring of nest boxes was undertaken in September 2017. A summary of the nest box progress is included in the Annual Review 2017. The program now includes 211 nest boxes. A total of 20 species have been observed using the boxes including mammals, birds and reptiles. Two threatened species have been observed, the squirrel glider and phascogale.
	<ul style="list-style-type: none"> Annual Biodiversity Report 	<ul style="list-style-type: none"> An annual report on biodiversity management at Duralie Coal Mine has been prepared and is included as an appendix to the Annual Review 2017.
Flora/Fauna	<ul style="list-style-type: none"> Weed Control Feral Animal Monitoring Wild Dog Control Program 2017 	<ul style="list-style-type: none"> Weeds spraying will recommence during Summer 2017/18 on Mining Leases, Offset areas and Yancoal property. A feral animal monitoring program was undertaken during April 2017 across the Stratford and Duralie Mining Leases and surrounding properties. The results of the monitoring have been included in the Annual Review 2017. A wild dog control program was undertaken during in April 2017. The program included trapping and shooting of wild dogs and foxes on the Stratford and Duralie Mining Leases and the biodiversity offset areas. A total of 17 dogs and foxes were captured. The wild dog program was run again during October 2017 with another 11 dogs and foxes caught.

3f. Biodiversity Management

Management Area	Project	Status
Bushfire Management	<ul style="list-style-type: none">Bushfire Management	<ul style="list-style-type: none">A hazard reduction burn was undertaken along Johnsons Creek Road on 13 August 2017. The burn was undertaken by the RFS and coordinated by John Ryan. DCPL greatly appreciate the time and resources provided by the RFS to implement a successful and safe burn.Following the hazard reduction burn the RFS have requested permission to undertake 4WD driver training on Yancoal land to which Yancoal has accepted.



Photo: Hazard reduction burning at Duralie Mine on 13 August 2017.

4. Community Complaints

Duralie Complaint Summary

Period: 1/7/2017 - 30/09/2017

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
28/07/2017 13:10hrs	4km North of Mine	Community hotline	Odour from mine	<p>Complaint, Stated: Very large cloud of gas gone through house, feeling sick.</p> <ul style="list-style-type: none">• DCPL representative called back at 10:30am 31/7/17. Complainant explained they had seen a steam cloud from Duralie during the morning driving south. At their house at 12:30pm they could smell strong odours which appeared to be from the mine.• DCPL discussed the pumping of water on to PAF rock prior to rehandling which contributed to the steam. There had been a southerly change at approximately 12:30pm which may have contributed to the odour. The complainant advised the odour had generally improved although it was bad at this time.• The complainant asked if there was value in lodging complaints. DCPL advised they would encourage them to continue contacting the mine so they can be aware of any issues and take appropriate follow-up actions.

5. Community Programs

Management Area	Project	Status
Community Engagement	<ul style="list-style-type: none"> Chatham Clontarf Academy Work Placement 	<ul style="list-style-type: none"> Students and staff from the Chatham High School Clontarf Academy visited Duralie during September 2017 for a tour of the operations. DCPL staff attended the Clontarf Employment forum in Port Macquarie on 30 August 2017 which assists preparing students for life after school. Students from Gloucester High School have been undertaking work placement at the Duralie and Stratford mines during August and October 2017 gaining experience across all areas of the mining operation.



Photo: Chatham Clontarf Academy – Duralie Mine site visit.

