Surface Water – Surface Facilities Area

Metropolitan Coal monitors the water management system at the mine's major surface facilities area. The site water management system comprises a series of collection dams, sumps and treatment systems. The system is operated to avoid mixing of clean water runoff and mine water, minimise off-site release of site runoff, and to provide water supply requirements on-site.

Water Use

Flow meters at key points in the water management system monitor flow rates using an electronic system and manual (weekly) readings.

Metropolitan Coal used approximately 388 megalitres (ML) of potable town water (as recorded by the Sydney Water meter) during 2014 (a monthly average of approximately 32.4 ML). The amount of town water used over the reporting period is shown in Chart 1. Metropolitan Coal also sourced approximately 77 ML of water from Camp Gully during the reporting period.
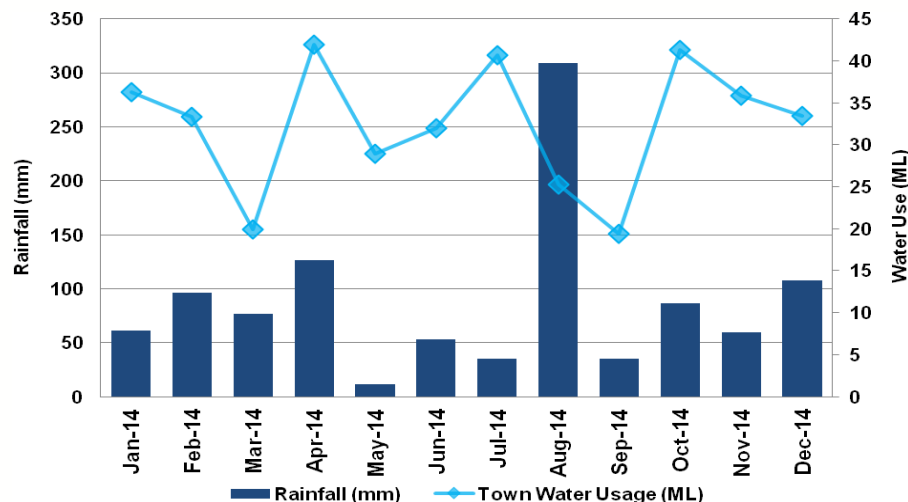

Chart 1   Rainfall and Town Water Use from January to December 2014

Licensed Discharge

Water discharged from the Water Treatment Plant to Camp Gully is monitored in accordance with Environment Protection Licence (EPL) No. 767, which requires Metropolitan Coal to continuously monitor the volume (kilolitres per day) of water discharged from the clean water tank in the Water Treatment Plant to Camp Gully.

The total amount of water discharged from the Water Treatment Plant to Camp Gully during the reporting period was 109 ML.

Water Quality

Surface water quality monitoring is conducted at EPL No. 767 monitoring point 9 (clean water tank of the Water Treatment Plant), if discharge is occurring to Camp Gully. No water was discharged to Camp Gully in January, April, May or July 2014. Water quality parameters for EPL No. 767 monitoring point 9 include: pH (pH units), oil and grease (milligrams per litre [mg/L]) and total suspended solids (mg/L).

The monitoring results indicate:

- pH ranged from pH 7.8 to 8.5 (Table 1).

- Oil and grease concentrations ranged from less than the detection limit (<2 mg/L) to 7 mg/L (Table 1).

- Total suspended solids ranged from <2 mg/L to 15 mg/L (Table 1).

The site water management system continuously monitors total suspended solids and prevents discharges of water that exceeds the criteria. Water that exceeds the criteria is treated further to ensure that only water which meets the acceptable criteria is discharged.

Surface water quality monitoring is also conducted on Camp Gully. Water quality parameters sampled include: pH (pH units), electrical conductivity (microSiemens per centimetre), oil and grease (mg/L), total suspended solids (mg/L), dissolved oxygen (percent Saturation and mg/L) and oxygen reduction potential (milliVolts).

Table 1
Summary of Monitoring Results at EPL No. 767 Monitoring Point 9

Month	pH (pH units)	Oil and Grease (mg/L)	Total Suspended Solids (mg/L)
January	No discharge	No discharge	No discharge
February	8.4	<2	<2
March	8.3	6	<2
April	No discharge	No discharge	No discharge
May	No discharge	No discharge	No discharge
June	8.4	6	15
July	No discharge	No discharge	No discharge
August	8.1	<2	2
September	8.3	4	4
October	8.5	2	<2
November	8.4	4	<2
December	7.8	7	12

Mine Water Make

Mine water make is monitored by Metropolitan Coal. The monitoring is described in the Groundwater section of this Environmental Monitoring Summary.

Overall System Integrity

Water management items are visually inspected and reported in accordance with the mine's maintenance system to assess the overall integrity of the water management system. This includes inspections to assess the:

- Integrity of all water management system pipelines and pumps for leaks and general serviceability (daily inspection).

- Integrity of all concrete bunded areas (hydrocarbon storages) for integrity and signs of leakage (daily inspection).

- Integrity of main water storages (i.e. Turkey's Nest Dam, Sediment Pond and Taj Mahal) and status of sediment accumulation (daily inspection).

- Signs of discharge of site runoff to Camp Gully or Helensburgh Gully, other than via licensed discharge points (daily inspection).

- Integrity of upslope diversions at site perimeter (weekly inspection).

- Integrity and effectiveness of erosion control measures (weekly inspection).

The Water Treatment Plant is also checked daily by the site's maintenance personnel under the direction of the Safety and Environmental Services Manager.

The Safety and Environmental Services Manager (or their delegate) also inspects the site weekly.

Management and Mitigation Measures

During the reporting period Metropolitan Coal augmented existing water storage infrastructure to maximise mine water storage capacity. Metropolitan Coal completed a major upgrade of the Turkey's Nest Dams during the reporting period. Turkey's Nest Dam 1 was decommissioned in February 2014 and Turkey's Nest Dam 2 (now referred to as the Turkey's Nest Dam) was upgraded.

Metropolitan Coal will continue to investigate the potential for improvements to the re-use of site water and site water management over the next reporting period.

Assessment of Environmental Performance

The performance of surface facilities water management has been assessed against the performance indicators detailed in the Metropolitan Coal Surface Facilities Water Management Plan. The assessment indicated:

- The use of potable water (i.e. megalitres of town water used per tonne of coal produced) has not increased over time, after taking into consideration climatic conditions.

- Potable water has not been used in circumstances where there has been a viable alternative.

- Inspections of the major surface facilities area and ventilation shaft(s) indicated the measures implemented were effectively controlling erosion.

- Effective containment and/or isolation measures have been in place for potential contaminants on site.

- Surface water discharges have complied with the requirements of EPL No. 767.

- Inspections of system components have indicated no maintenance or additional management measures were required to be implemented.