INDEX – MORANBAH

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Department Interest: Water

Authorised releases

W1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.

W2 The release of contaminants to waters must only occur from the release points specified in *Table 1: Discharge Locations* and depicted in *Attachment A: Figure 1* attached to this environmental authority.

Table 1: Discharge Locations

Release Point	Latitude (GDA94)	Longitude (GDA94)	Contaminant Source and Location	Monitoring Point	Receiving waters description
RP 1	147 59 2	-21 52 49	Dam 3, Dam 4 and Production Dam via pipeline	Sampling tap in pipeline to Isaac River	Isaac River
RP 2	147 59 49	-21 53 41	Dam 4 spillway via pipeline	End of pipe	Isaac River
RP 3	148 0 27	-21 54 25	Dam 1, Dam 2 and Dam via pipeline	Sampling tap in pipeline to Isaac River	Isaac River

W3 The release of contaminants to waters must not exceed the release limits in *Table 2: Contaminant Release Limits* when measured at the monitoring points specified in *Table 1: Discharge Locations* for each quality characteristic.

Table 2: Contaminant Release Limits

Quality characteristic	Interim Release Limits for all mines (limits apply from the date of issue)	Future Release Limits from 31 December 2011	Monitoring frequency	Comments
Electrical Conductivity (µS/cm)	1500 µS/cm (Maximum)	1,000 µS/cm (Maximum) in the receiving waters (Must have natural flow i.e. the 20th percentile flow trigger and achieve a 1:4 dilution)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
pH (pH Units)	6.5 (minimum) 9.0 (maximum)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
Turbidity (NTU)	80th percentile[1] of reference[2]	*	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impacts and provide instantaneous results.
Suspended Solids	NA*	*		
Sulphate (SO_4^{2-})(mg/L)	250	250		

[1] 80th percentiles are calculated using ANZECC (2000) methodology (section 7.4.4.1)

[2] Reference sites are defined in *Table 8: Receiving Water Upstream Background Sites and Downstream Monitoring Points*. For 'end of pipe' monitoring for Release Points RP1, RP2, RP3 the associated reference point is Reference Monitoring Point 1.

* Limit to be determined based on receiving water reference data and achievable best practice sedimentation control and treatment. These Future Release Limits are to be submitted to the administering authority in accordance with condition **W41.**

W4 The release of contaminants to waters from the release points must be monitored at the locations specified in *Table 1: Discharge Locations* for each quality characteristics and at the frequency specified in *Table 2: Contaminant Release Limits* and *Table 3: Release Contaminant Trigger Investigation Levels.*

Table 3: Release Contaminant Trigger Investigation Levels

Quality characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	100	For aquatic ecosystem protection, based on LOR for ICPMS.	Commencement of release and thereafter weekly during release.
Arsenic	13	For aquatic ecosystem protection, based on SMD guideline.	
Cadmium	0.2	For aquatic ecosystem protection, based on SMD guideline.	
Chromium	1	For aquatic ecosystem protection, based on SMD guideline.	
Copper	2	For aquatic ecosystem protection, based on LOR for ICPMS.	
Iron	300	For aquatic ecosystem protection, based on low reliability guideline.	
Lead	10	For aquatic ecosystem protection, based on LOR for ICPMS.	
Mercury	0.2	For aquatic ecosystem protection, based on LOR for CV FIMS.	
Nickel	11	For aquatic ecosystem protection, based on SMD guideline.	
Zinc	8	For aquatic ecosystem protection, based on SMD guideline.	
Boron	370	*For aquatic ecosystem protection, based on SMD guideline*	
Cobalt	90	*For aquatic ecosystem protection, based on low reliability guideline*	
Manganese	1900	*For aquatic ecosystem protection, based on SMD guideline*	
Molybdenum	34	*For aquatic ecosystem protection, based on low reliability guideline*	
Selenium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Silver	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Uranium	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Vanadium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Ammonia	900	*For aquatic ecosystem protection, based on SMD guideline*	
Nitrate	1100	*For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN*	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000	*Protection of livestock and short term irrigation guideline*	

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
2. The list of quality characteristics required to be monitored as per *Table 3: Release Contaminant Investigation Trigger Levels* will be reviewed once the results of the monitoring data is gathered for the interim period until 31 December 2011 or an earlier date if the data is, or becomes, available and if it is determined that there is no need to monitor for certain individual quality characteristics these can be removed from *Table 3: Release Contaminant Investigation Trigger Levels*.
3. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).
4. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

W5 If quality characteristics of the release exceed any of the trigger levels specified in *Table 3: Release Contaminant Trigger Investigation Levels* during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in *Table 3: Release Contaminant Trigger Investigation Levels* and:

1. where the trigger values are not exceeded then no action is to be taken; or
2. where the downstream results exceed the trigger values specified *Table 3: Release Contaminant Trigger Investigation Levels* for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and;
   a) if the result is less than the background monitoring site data, then no action is to be taken; or
   b) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:
      i. details of the investigations carried out; and
      ii. actions taken to prevent environmental harm.

NOTE: Where an exceedence of a trigger level has occurred and is being investigated, in accordance with **W5 2. b) ii.** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

W6 If an exceedence in accordance with condition **W5 2. b) ii.** is identified, the holder of the authority must notify the administering authority within fourteen (14) days of receiving the result.

Contaminant release events

W7 The holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each Release Point as specified in *Table 4: Contaminant Release Events* for any receiving water into which a release occurs.

W8 Notwithstanding any other condition of this environmental authority, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in *Table 4: Contaminant Release Events* for the contaminant release point(s) specified in *Table 1: Discharge Locations*.

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Table 4: Contaminant Release Events

Receiving water description	Release Point	Gauging station description	Latitude (GDA94)	Longitude (GDA94)	Minimum Flow in Receiving Water Required for a Release Event	Flow recording Frequency
Isaac River	RP1 RP2 RP3 RP4	Upstream Automated Water Station	147 58 12	-21 52 4	> or = 5 m^3/sec	Continuous (minimum daily)

W9 Contaminant release flow rate must not exceed twenty (20) percent (%) of receiving water flow rate.

W10 The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in *Table 1: Discharge Locations*.

W11 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

Notification of release event

W12 The authority holder must notify the administering authority as soon as practicable (no later than six (6) hours of having commenced releasing mine affected water to the receiving environment). Notification must include the submission of written verification to the administering authority of the following information:

a) release commencement date/time;
b) expected release cessation date/time;
c) release points;
d) release volume (estimated);
e) receiving waters including the natural flow rate; and
f) any details (including available data) regarding likely impacts on the receiving water(s).

NOTE: Notification to the administering authority must be addressed to the Manager and Project Manager of the local administering authority via email or facsimile.

W13 The authority holder must notify the administering authority as soon as practicable, (nominally within twenty-four (24) hours after cessation of a release) of the cessation of a release notified under condition **W12** and within twenty-eight (28) days provide the following information in writing:

a) release cessation date/time;
b) natural flow volume in receiving water;
c) volume of water released;
d) details regarding the compliance of the release with the conditions of Department Interest: Water of this environmental authority (i.e. contamination limits, natural flow, discharge volume);
e) all in-situ water quality monitoring results; and
f) any other matters pertinent to the water release event.

Notification of release event exceedence

W14 If the release limits defined in *Table 2: Contaminant Release Limits* are exceeded, the holder of the environmental authority must notify the administering authority within twenty-four (24) hours of receiving the results.

W15 The authority holder must, within twenty-eight (28) days of a release that exceeds the conditions of this authority, provide a report to the administering authority detailing:

a) the reason for the release;
b) the location of the release;
c) all water quality monitoring results;
d) any general observations;
e) all calculations; and
f) any other matters pertinent to the water release event.

Monitoring of water storage quality

W16 Water storages stated in *Table 5: Water Storage Monitoring* which are associated with the release points must be monitored for the water quality characteristics specified in *Table 6: Onsite Water Storage Contaminant Limits* at the monitoring locations and at the monitoring frequency specified in *Table 5: Water Storage Monitoring.*

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Table 5: Water Storage Monitoring

Water Storage Description	Latitude (GDA94)	Longitude (GDA94)	Monitoring Location	Frequency of Monitoring
Dam 4	147 59 51 148 00 01 147 59 56 147 59 46	-21 53 22 -21 53 27 -21 53 36 -21 53 31	Adjacent to spillway	Quarterly
Environmental Dam	147 58 6 147 58 9 147 58 4 147 58 0 147 58 2	-21 52 25 -21 52 27 -21 52 33 -21 52 37 -21 52 30	Western end of dam wall	Quarterly
Production Dam	147 55 57 147 58 5 147 57 51 147 57 47 147 57 50	-21 52 37 -21 52 39 -21 52 54 -21 52 51 -21 55 47	From pump pontoon.	Quarterly
Dam 1	147 59 10 147 59 17 147 59 8 147 59 1	-21 55 17 -21 55 27 -21 55 33 -21 55 23	South western corner	Quarterly
Dam 2	147 59 17 147 59 22 147 59 13 147 59 8	-21 55 27 -21 55 34 -21 55 40 -21 55 33	North western corner	Quarterly

W17 In the event that waters storages defined in *Table 5: Water Storage Monitoring* exceed the contaminant limits defined in *Table 6: Onsite Water Storage Contaminant Limits*, the holder of the environmental authority must implement measures to prevent access to waters by all livestock.

Table 6: Onsite Water Storage Contaminant Limits

Quality Characteristic	Test Value	Contaminant Limit
pH (pH unit)	Range	Greater than 4, less than 9[2]
EC (µS/cm)	Maximum	5970[1]
Sulphate (mg/L)	Maximum	1000[1]
Fluoride (mg/L)	Maximum	2[1]
Aluminium (mg/L)	Maximum	5[1]
Arsenic (mg/L)	Maximum	0.5[1]
Cadmium (mg/L)	Maximum	0.01[1]
Cobalt (mg/L)	Maximum	1[1]
Copper (mg/L)	Maximum	1[1]
Lead (mg/L)	Maximum	0.1[1]
Nickel (mg/L)	Maximum	1[1]
Zinc (mg/L)	Maximum	20[1]

[1] Contaminant limit based on ANZECC & ARMCANZ (2000) stock water quality guidelines.
[2] Page 4.2-15 of ANZECC & ARMCANZ (2000) "Soil and animal health will not generally be affected by water with pH in the range of 4–9".
NOTE: Total measurements (unfiltered) must be taken and analysed

Receiving environment monitoring and contaminant trigger levels

W18 The quality of the receiving waters must be monitored at the locations specified in *Table 8: Receiving Water Upstream Background Sites and Downstream Monitoring Points* for each quality characteristic and at the monitoring frequency stated in *Table 7: Receiving Waters Contaminant Trigger Levels*.

Table 7: Receiving Waters Contaminant Trigger Levels

Quality Characteristic	Trigger Level	Monitoring Frequency	Comments
pH	6.5 – 8.0	Daily during the release	See Table 2 comments
Electrical Conductivity (µS/cm)	1000		
Suspended solids (mg/L)	80th percentile[1] of reference[2]		
Sulphate (SO_4^{2-}) (mg/L)	250		

[1] 80th percentiles are calculated using ANZECC (2000) methodology (section 7.4.4.1).

[2] Reference sites are defined in *Table 8: Receiving Water Upstream Background Sites and Downstream Monitoring Points* as 'Upstream Background Monitoring Points'. For Impact Monitoring Point 1 the associated reference point is Reference Monitoring Point 1.

Table 8: Receiving Water Upstream Background Sites and Downstream Monitoring Points

Monitoring Points	Receiving Waters Location Description	Latitude (GDA94)	Longitude (GDA94)
Upstream Background Monitoring Points			
Reference Monitoring Point 1	Upstream Isaac River – Automated Water Station. Reference Monitoring Point 1 is the reference site for: Impact Monitoring Point 1	147 58 12	-21 52 4
Downstream Monitoring Points			
Impact Monitoring Point 1	Impact Monitoring Point 1 is located on downstream Isaac River – Automated Water Station.	148 0 58	-21 55 18

NOTE: The data from background monitoring points must not be used where they are affected by releases from other mines.

W19 If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in *Table 7: Receiving Waters Contaminant Trigger Levels* during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and:

a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; or

b) where the downstream results exceed the upstream results, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:

i. details of the investigations carried out; and

ii. actions taken to prevent environmental harm.

Note: Where an exceedence of a trigger level has occurred and is being investigated, in accordance with W19 b) ii. of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

Receiving environment monitoring program (REMP)

W20 A REMP must be developed and implemented by **11 March 2010** to monitor and record the effects of the release of contaminants on the receiving environment periodically and whilst contaminants are being discharged from the site, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority.

For the purposes of the REMP, the receiving environment is the Isaac River and connected waterways within 10km downstream of the release.

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W21 The REMP must address (but not necessarily be limited to) the following:

a) Description of potentially affected receiving waters including key communities and background water quality characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality);

b) Description of applicable environmental values and water quality objectives to be achieved (i.e. as scheduled pursuant to the *Environmental Protection (Water) Policy 1997*);

c) Any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed;

d) Water quality targets within the receiving environment to be achieved, and clarification of contaminant concentrations or levels indicating adverse environmental impacts during the REMP;

e) Monitoring for any potential adverse environmental impacts caused by the release;

f) Monitoring of stream flow and hydrology;

g) Monitoring of toxicants should consider the indicators specified in *Table 3: Release Contaminant Trigger Investigation Levels* to assess the extent of the compliance of concentrations with water quality objectives and/or the ANZECC & ARMCANZ 2000 guidelines for slightly to moderately disturbed ecosystems;

h) Monitoring of physical chemical parameters as a minimum those specified in *Table 2: Contaminant Release Limits* (in addition to dissolved oxygen saturation and temperature);

i) Monitoring biological indicators (for macroinvertebrates in accordance with the AusRivas methodology) and metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 *Guidance on Sampling of Bottom Sediments*) for permanent, semi-permanent water holes and water storages;

j) The locations of monitoring points (including the locations specified in *Table 8: Receiving Water Upstream Background Sites and Downstream Monitoring Points* which are background and downstream impacted sites for each release point);

k) The frequency or scheduling of sampling and analysis sufficient to determine water quality objectives and to derive site specific reference values within 2 years (depending on wet season flows) in accordance with the *Queensland Water Quality Guidelines* 2006. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges;

l) Specify sampling and analysis methods and quality assurance and control;

m) Any historical datasets to be relied upon;

n) Description of the statistical basis on which conclusions are drawn; and

o) Any spatial and temporal controls to exclude potential confounding factors.

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W22 A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with condition **W20** must be prepared and submitted in writing to the administering authority by **1 October 2011**. This should include an assessment of background water quality, any assimilative capacity of those contaminants monitored and the suitability of current discharge limits to protect downstream environment values.

Water reuse

W23 Water contaminated by mining activity may be piped or trucked or transferred by some other means that does not contravene the conditions of this authority during periods of dry weather for the purpose of supplying stock water to properties directly adjoining properties owned by the environmental authority holder or a third party and subject to compliance with the quality release limits specified in *Table 9: Stock Water Release Limits*.

Table 9: Stock Water Release Limits

Quality characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	N/A	5000

W24 Water contaminated by mining activity may be piped or trucked or transferred by some other means that does not contravene the conditions of this authority during periods of dry weather for the purpose of supplying irrigation water to properties directly adjoining properties owned by the environmental authority holder or a third party and subject to compliance with quality release limits in *Table 10: Irrigation Water Release Limits*.

Table 10: Irrigation Water Release Limits

Quality characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	N/A	Site specific value to be determined in accordance with ANZECC & ARMCANZ (2000) Irrigation Guidelines and provided through an amendment process.

W25 Water contaminated by mining activity may be piped or trucked off the mining lease for the purpose of supplying water to a third party for purpose of construction and/or road maintenance in accordance with the conditions of this environmental authority.

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W26 If the responsibility of water contaminated by mining activities (the water) is given or transferred to another person in accordance with conditions **W23, W24** or **W25:**

a) the responsibility of the water must only be given or transferred in accordance with a written agreement (the third party agreement); and

b) include in the third party agreement a commitment from the person utilising the water to use water in such a way as to prevent environmental harm or public health incidences and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the *Environmental Protection Act 1994*, environmental sustainability of the water disposal and protection of environmental values of waters.

Water general

W27 All determinations of water quality must be:

a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements;

b) made in accordance with methods prescribed in the latest edition of the administering authority's Water Quality Sampling Manual;

c) collected from the monitoring locations identified within this environmental authority, within five (5) hours of each other where possible;

d) carried out on representative samples; and

e) laboratory testing must be undertaken using a laboratory accredited (e.g. NATA) for the method of analysis being used;

NOTE: Condition W27 requires the Water Quality Manual to be followed and where it is not followed because of exceptional circumstances this should be explained and reported with the results.

W28 The release of contaminants directly or indirectly to waters:

a) must not produce any visible discolouration of receiving waters; and

b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.

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Annual water monitoring reporting

W29 The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return:

a) the date on which the sample was taken;
b) the time at which the sample was taken;
c) the monitoring point at which the sample was taken;
d) the measured or estimated daily quantity of the contaminants released from all release points;
e) the release flow rate at the time of sampling for each release point;
f) the results of all monitoring and details of any exceedences with the conditions of this environmental authority; and
g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

Temporary interference with waterways

W30 Temporarily destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with Department of Natural Resources and Water *Guideline - Activities in a Watercourse, Lake or Spring associated with Mining Activities*.

Water management plan

W31 A Water Management Plan must be developed and implemented by **11 March 2010** that provides for the proper and effective management of the actual and potential environmental impacts resulting from the mining activity and to ensure compliance with the conditions of this environmental authority.

W32 The Water Management Plan must be developed in accordance with Department of Environment and Resource Management *Guideline for Preparation of water management plans for mining activities* or any updates that become available from time to time and must include at least the following components:

a) Contaminant Source Study;
b) Site Water Balance and Model;
c) Water Management System;
d) Saline Drainage Prevention and Management Measures;
e) Acid Rock Drainage Prevention and Management Measures (if applicable);
f) Emergency and Contingency Planning; and
g) Monitoring and Review.

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W33 Each year the holder of the environmental authority must undertake a review of the Water Management Plan prior to the wet season (i.e. by 1 November) and a further review following the wet season (i.e. by 1 May the following year) to ensure that proper and effective measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.

W34 A copy of the Water Management Plan and/or a review of the Water Management Plan must be provided to the administering authority on request.

Saline drainage

W35 The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage.

Acid rock drainage

W36 The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.

Stormwater and water sediment controls

W37 An Erosion and Sediment Control Plan must be developed by a suitably qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to waters and contamination of stormwater.

W38 The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any waters.

W39 Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or waters.

Fitzroy river basin study

W40 The administering authority and the holder of this environmental authority both acknowledge that the conditions for release of contaminants to the Isaac River in this environmental authority have been calculated without the benefit of the findings of projects proposed to be undertaken as per recommendations 2 and 3 of the *Study of cumulative impacts on water quality of mining activities in the Fitzroy River Basin* (April 2009). The administering authority may, based on the information provided in the study report when it becomes available, all relevant information available at the time and the regulatory framework applicable at that time, consult with the holder of this environmental authority about the conditions in the environmental authority concerning the treatment and disposal of waste water.

The aim of the consultation shall be the meaningful review of the contaminant release limits imposed in this authority having regard to:

a) the study results;
b) near field monitoring results;
c) Queensland Water Quality Guidelines; and
d) best practice environmental management.

If this review leads to a change in the requirements on this environmental authority holder, this shall be advanced by way of an authority amendment or a Transitional Environmental Program and as is necessary or desirable.

Additional water release requirements

W41 In addition to the quality characteristic limits specified in *Table 2: Contaminant Release Limits*, process water and stormwater contaminated by mining activities and released in accordance with conditions **W2** and **W3**, must not have any properties nor contain any organisms in concentrations that are capable of causing environmental harm.

Groundwater

W42 Groundwater affected by the mining activities must be monitored at the locations and frequencies defined in *Table 11: Groundwater monitoring locations and frequency*.

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Table 11: Groundwater monitoring locations and frequencies

Monitoring Points	Easting (GDA94)	Northing (GDA94)	Frequency
Tertiary Basalt			
PZ-003	599382	7580369	Quarterly
PZ-004	599382	7580366	Quarterly
RDH513	599939	7579520	Quarterly
RDH124	600761	7577655	Quarterly
RDH21C	599745	7580822	Quarterly
Tertiary Gravel/Alluvial Sands			
PZ-001	599093	7579860	Quarterly
PZ-002	599092	7579859	Quarterly
SML1	602396	7574917	Quarterly
SML2	603092	7574917	Quarterly
GM Coal Seam			
DDH004	601417	7579849	Quarterly
DDH080	603499	7574500	Quarterly
DDH072	601539	7575544	Quarterly
RDH287	603500	7576999	Quarterly
RDH121	600826	7577031	Quarterly

W43 If the groundwater investigation trigger levels defined in *Table 12: Groundwater investigation trigger levels* are exceeded then the environmental authority holder must complete an investigation into the potential for environmental harm and notify the administering authority within twenty-eight (28) days of receiving the analysis results.

Table 12: Groundwater investigation trigger levels

Parameter	Unit	Trigger Levels			Limit Type
		Tertiary Basalt[1]	Tertiary Gravel/Alluvial Sands[2]	GM Coal Seam[3]	
pH	pH Units	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	Minimum - Maximum
Electrical Conductivity	µS/cm	15790	19230	17480	Maximum
Total Dissolved Solids	mg/L	10274	13976	12652	Maximum
Calcium	mg/L	245	400	335	Maximum
Magnesium	mg/L	330	518	420	Maximum
Sodium	mg/L	3050	4050	3150	Maximum
Potassium	mg/L	38	102	47	Maximum
Chloride	mg/L	4872	6070	5509	Maximum
Sulphate	mg/L	1061	946	402	Maximum
Carbon Trioxide (CO_3)	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	Maximum
Bicarbonate (HCO_3)	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	Maximum
Iron	mg/L	2.16	45	12	Maximum
Aluminium	mg/L	0.73	0.84	2.7	Maximum
Arsenic	mg/L	0.006	0.007	0.006	Maximum
Mercury	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	Maximum
Antimony	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	Maximum
Molybdenum	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	To be provided as per condition W48.	Maximum
Selenium	mg/L	0.01	0.01	0.008	Maximum
Total Petroleum Hydrocarbons (C6-C9)	µg/L	20	20	20	Maximum
Total Petroleum Hydrocarbons (C10-C36)	µg/L	100	100	100	Maximum

[1] Tertiary Basalt groundwater monitoring points are identified in *Table 11: Groundwater monitoring locations and frequencies* as PZ-003, PZ-004, RDH21C, RDH513 and RDH124.
[2] Tertiary Gravel/Alluvial Sands groundwater monitoring points are identified in *Table 11: Groundwater monitoring locations and frequencies* as PZ-001, PZ-002, SML1 and SML2.
[3] GM Coal Seam groundwater monitoring points are identified in *Table 11: Groundwater monitoring locations and frequencies* as DDH004, DDH072, DDH080, RDH121 and RDH287.

W44 Groundwater levels, affected by the mining activities must be monitored at the locations and frequencies defined in *Table 13: Groundwater levels*.

Table 13: Groundwater levels

Monitoring Points	Easting (GDA94)	Northing (GDA94)	Surface RL (m)	Frequency
PZ-003	599382	7580369	19.1	Monthly
PZ-004	599382	7580366	2.02	Monthly
RDH513	599939	7579520	57.4	Monthly
RDH124	600761	7577655	64.2	Monthly
RDH21C	599745	7580822	15.5	Monthly
PZ-001	599093	7579860	21.4	Monthly
PZ-002	599092	7579859	3.1	Monthly
SML1	602396	7574917	80.1	Monthly
SML2	603092	7574917	61.9	Monthly
DDH004	601417	7579849	43.8	Monthly
DDH080	603499	7574500	95.9	Monthly
DDH072	601539	7575544	133.8	Monthly
RDH287	603500	7576999	65.23	Monthly
RDH121	600826	7577031	117.6	Monthly

W45 Groundwater levels and groundwater drawdown fluctuations in excess of 2m per year, not resulting from the pumping of licensed bores, must be notified within seven (7) days to the administering authority following completion of monitoring.

Groundwater monitoring program

W46 The groundwater monitoring data must be reviewed on an annual basis. The review must include the assessment of groundwater levels and quality data, and the suitability of the monitoring network. The assessment must be submitted to the administering authority within twenty-eight (28) days of receiving the report.

W47 A background groundwater monitoring program must be undertaken at the locations defined in *Table 10: Groundwater monitoring locations and frequencies* to provide the following:

a) at least twelve (12) sampling events (monthly sampling) to determine background groundwater quality for Carbonate Trioxide (CO_3), Bicarbonate (HCO_3), Mercury, Antimony and Molybdenum; and

b) the final groundwater contaminant parameters and trigger levels required at each location for Carbonate Trioxide (CO_3), Bicarbonate (HCO_3), Mercury, Antimony and Molybdenum must be provided for condition **W42**.

W48 Groundwater contaminant trigger levels for Carbonate Trioxide (CO_3), Bicarbonate (HCO_3), Mercury, Antimony and Molybdenum as per *Table 11: Groundwater investigation trigger levels* must be finalised based on a background groundwater monitoring program defined in condition **W47** and submitted to the administering authority by **1 March 2010**.

Groundwater monitoring

W49 The following information must be recorded in relation to all groundwater water sampling:

a) the date on which the sample was taken;

b) the time at which the sample was taken;

c) the monitoring point at which the sample was taken; and

d) the results of all monitoring.

W50 The method of water sampling required by this environmental authority must comply with that set out in the latest edition of the administering authority's *Water Quality Sampling Manual*.

Sewage treatment

W51 The daily operation of the sewage treatment plant and pollution control equipment must be carried out by a person(s) with appropriate experience and/or qualifications to ensure the effective operation of that treatment system and control equipment.

W52 The only contaminants permitted to be released to land are treated effluent to the areas shown in *Table 16: Treated effluent discharge locations*, in compliance with the limits levels stated in *Table 14: Contaminant release limits to land* and the conditions of this authority.

Table 14: Contaminant release limits to land

	Release Limit		
Quality characteristic	Minimum	Median	Maximum
5 Day BOD			50 mg/L
Faecal Coliform (FC)		1000 cfu/100mL[2]	
Suspended Solids			30 mg/L
Electrical Conductivity		1600 µS/cm	
pH	6.5		8.5
Total Nitrogen			40 mg/L
Total Phosphorus as P			8 mg/L
Residual Cl_2			1 mg/l
Oil and Grease			10 mg/l

W53 Monitoring must be undertaken and records kept of a monitoring program of contaminant releases to the irrigation area at the monitoring points, frequency, and for the parameters specified in *Table 15: Monitoring program.*

Table 15: Monitoring program

Monitoring point	Quality characteristic	Units	Frequency
Effluent Monitoring Point 1 (effluent irrigation line)	5 Day BOD	mg/L	Monthly
	Faecal Coliform	cfu/100mL[2]	Monthly
	Suspended Solids	mg/L	Monthly
	Electrical Conductivity	µS/cm	Monthly
	pH	pH Units	Weekly
	Total Nitrogen	mg/L	Monthly
	Total Phosphorus	mg/L	Monthly
	Residual Cl_2	mg/L	Monthly
	Oil and Grease	mg/L	Monthly

W54 Treated effluent from the sewage treatment plant must only be discharged from the authorised discharge points, as specified in *Table 16: Treated effluent discharge locations.*

Table 16: Treated Effluent Discharge locations

Authorised Discharge Points	Location	Latitude (GDA94) (Bounds)	Longitude (GDA94) (Bounds)
Effluent Discharge Point	Effluent irrigation area	X1: 147 57 59 X1: 147 58 4	Y1: -21 52 55 Y2: -21 52 53

W55 Notwithstanding the quality characteristic release limits specified in *Table 14: Contaminant release limits to land*, releases of effluent must not have any properties nor contain any organisms or other contaminants in concentrations that are capable of causing environmental harm.

W56 Treated effluent must not be released from the site to any waters or the bed and banks of any waters.

W57 Water or stormwater contaminated by sewage treatment activities must not be released to any waters or the bed and banks of any waters.

W58 The irrigation of effluent must be carried out in a manner such that:

a) vegetation is not damaged;
b) soil erosion and soil structure damage is avoided;
c) there is no surface ponding of effluent;
d) percolation of effluent beyond the plant root zone is minimised;
e) the capacity of the land to assimilate nitrogen, phosphorus, salts, organic matter as measured by oxygen demand and water is note exceeded; and
f) the quality of groundwater is not adversely affected.

W59 Notices must be prominently displayed on areas undergoing effluent irrigation, warning the public that the area is irrigated with effluent and not to use or drink the effluent. These notices must be maintained in a visible and legible condition.

W60 The daily volume of contaminants released to land must be determined or estimated by an appropriate method, for example a flow meter, and records kept of such determinations and estimates.

W61 When conditions prevent the irrigation of treated effluent to land (such as during or following rain events), the contaminants must be directed to a wet weather storage or alternative measures must be taken to store/lawfully dispose of effluent (such as wet weather storage or tanking off site to another treatment plant or sewer). A record must be kept of any removal or discharge off site, including destination, transporter, dates and volumes.

W62 Pipelines and fittings associated with the effluent irrigation system must be clearly identified. Lockable valves or removable handles must be fitted to all release pipelines situated in public access areas.

W63 Conduct and keep records of any monitoring programs of contaminant releases from the treatment plant at the monitoring points, frequency, and for the parameters specified in *Table 14: Contaminant release limits to land*, *Table 15: Monitoring program* and *Table 16: Treated effluent discharge locations*.

W64 The following information must be recorded in relation to all sampling:

a) the date on which the sample was taken;
b) the time at which the sample was taken;
c) the monitoring point at which the sample was taken;
d) the measured or estimated daily flow of effluent at the time of sampling; and
e) the results of all monitoring.

W65 All ponds used for the storage or treatment of contaminants, sewage or wastes at or on the authorised place must be constructed, installed and maintained:

a) so as to minimise the likelihood of any release of effluent through the bed or banks of the pond to any waters (including groundwater);
b) so that a freeboard of not less than 0.5 metres is maintained at all times, except in emergencies; and
c) so as to ensure the stability of the pond construction.

W66 Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from entering any ponds or other structures used for the storage or treatment of contaminants or wastes.

W67 Biosolids produced by the activity for re-use must be:

a) sampled, analysed, graded and classified according to the procedures specified in the administering authority's systems and standards; and
b) re-used under an Environmental Management Program or other environmentally relevant activity with the administering authority's approval.

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W68 If the responsibility of the treated effluent is given or transferred to another person:

a) the responsibility of such effluent must only be given or transferred in accordance with a written agreement (the third party agreement);

b) include in the third party agreement a commitment from the person utilising the effluent to use effluent in such a way as to prevent environmental harm or public health incidences and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the *Environmental Protection Act 1994*, environmental sustainability of any effluent disposal and protection of environmental values of waters; and

c) upon being notified or otherwise becoming aware that the person's use of effluent is causing or threatens to cause environmental harm or is posing a human health risk, and if the person does not rectify the situation upon written request, the giving and transferring responsibility for such effluent must cease.

Department Interest: Noise and vibration

Noise nuisance

D1 Noise from activities must not cause an environmental nuisance at any noise sensitive or commercial place.

D2 All noise from activities must not exceed the levels specified in *Table 17: Noise limits* at any noise affected place.

Noise monitoring

D3 When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of noise nuisance, and the results notified within fourteen (14) days to the administering authority. Monitoring must include:

a) $L_{A\ 10,\ adj,\ 10\ mins}$

b) $L_{A\ 1,\ adj,\ 10\ mins}$

c) the level and frequency of occurrence of impulsive or tonal noise;

d) atmospheric conditions including wind speed and direction;

e) effects due to extraneous factors such as traffic noise; and

f) location date and time of recording.

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D4 Noise is not considered to be a nuisance under condition **D1** if monitoring shows that noise does not exceed the following levels in the time periods specified in *Table 17: Noise limits*.

Table 17: Noise limits

Noise level dB(A)	Monday to Saturday			Sundays and public holidays		
	7am - 6pm	6pm - 10pm	10pm - 7am	9am - 6pm	6pm - 10pm	10pm - 9am
	Noise measured at a 'Noise sensitive place'					
$L_{A10,\ adj\ 10\ mins}$	B/g + 5	B/g + 5	B/g + 0	B/g + 5	B/g + 5	B/g + 0
$L_{A1,\ adj\ 10\ mins}$	B/g + 10	B/g + 10	B/g + 5	B/g + 10	B/g + 10	B/g + 5
	Noise measured at a 'Commercial place'					
$L_{A10,\ adj\ 10\ mins}$	B/g + 10	B/g + 10	B/g + 5	B/g + 10	B/g + 10	B/g + 5
$L_{A1,\ adj\ 10\ mins}$	B/g + 15	B/g + 15	B/g + 10	B/g + 15	B/g + 15	B/g + 10

D5 The method of measurement and reporting of noise monitoring must comply with the current edition of the administering authority's *Noise Measurement Manual*.

D6 If monitoring indicates exceedence of the relevant limits in Condition **D4**, then the environmental authority holder must:

a) address the complaint including the use of appropriate dispute resolution if required; and

b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.

Vibration nuisance

D7 Vibration from the licensed activities must not cause an environmental nuisance, at any sensitive or commercial place.

D8 When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.

ANGLO AMERICAN

20th December 2010

Moranbah North Mine/SHE Department

Michael Rodgerson
Environmental Superintendent

[redacted]

Dear Rebecca,

I am writing to request an Emergency Direction to discharge water from Dam 4 discharge point, identified in our environmental authority as RP 2 (Dam 4 spillway via pipeline). Moranbah North Mine is currently discharging via the Worked Water TEP through the Environmental Dam spillway and from the Production Dam to the Isaac River via pipe under the Emergency Direction provided yesterday.

The current situation is we are still trying to stabilise the Production and Environmental Dams which are significantly above capacity due to the large amount of inflow. We are not able to wash coal (and consume water) currently due to water cutting off one co-disposal pump and the railway loop inundation.

The persistent rainfall over recent times has also increased the amount of recharge and water inflow to the pit. To stop pit inundation 6-8ML is pumped to Dam 4. Dam 4 has a current freeboard of 45.8 to MRL and 64.8 to spill. There is the potential for uncontrolled discharge from Dam 4 spillway within the next ten days.

The Isaac River is currently flowing at ~320m^3/sec. If rainfall continues as predicted there is no ability to pump to the Production Dam and unlicensed discharge will occur. Proposed discharge via pump from Dam 4 would be at 0.1m^3/sec. Electrical conductivity at Dam 4 was at 7662µm/cm and pH 8.6 on 15 December. Inflows monitored daily at the upstream monitoring point (MP1) from 12 December have averaged to 237µm/cm. The calculation to mitigate environmental harm provided a maximum potential input of 1:27 units or 185l/sec (or 0.185m^3/sec) at flow of 5m^3/sec, comparably to the 0.1m^3/sec pump capacity to meet a value of 500µm/cm 500m downstream of release. The pumps would be turned off when flow decreased to 5m^3/sec.

The mines intention is to continue to develop a secondary TEP to address the additional discharge points and provide as soon as possible, however more rain is predicted daily, with potentially significant falls from Wednesday through to Sunday. Given the current high flow and expectation of this continuing for some days we would appreciate your consideration of our proposal.

Please feel free to contact me for any questions on (07) 4968 8633.

Yours sincerely,

[redacted]

Michael Rodgerson

Queensland Government

Department of
Environment and Resource Management

File/Ref EMD136

20 December 2010

Mr Daniel Yates
Health, Safety and Environment Superintendent
Moranbah North Coal Mine
Moranbah North Coal Pty Ltd
1164 Goonyella Road
Moranbah Qld 4744

Attention: Mr Michael Rodgerson (Environmental Superintendent)

Dear Mr Yates

Emergency Direction for release of water from Dam 4, Moranbah North Coal Mine

The Department of Environment and Resource Management (the department) refers to correspondence received 11:12am, 20 December 2010, requesting permission to discharge contaminated water from Dam 4 located at the Moranbah North Coal Mine. The administering authority is issuing an emergency direction to Moranbah North Coal Pty Ltd to discharge contaminated water from Dam 4 located on Mining Lease 70108. The department considers the request to issue an emergency direction to discharge the contaminated water is:

- necessary and reasonable because it is an emergency; and
- there are no practical alternatives to the release.

Accordingly the following is authorised under s468 of the *Environmental Protection Act 1994*:

- water contaminated by mining activities may be released to the Isaac River from the Discharge Point 2, as nominated within Environmental Authority MIN100557107 and not in accordance with contaminant release limits specified in condition W3 of Environmental Authority MIN100557107.

Under s468(b) of the *Environmental Protection Act 1994*, the administering authority has imposed conditions on this direction that Moranbah North Coal Pty Ltd must comply with (attached).

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99 Hospital Road
PO Box 19
Emerald Qld 4720
Telephone 07 4980 6200
Facsimile 07 4982 2568
Website www.derm.qld.gov.au
ABN 46 640 294 485

You are reminded that section 319 of the Environmental Protection Act 1994, which sets out the general environmental duty, requires anyone who carries out an activity that causes or is likely to cause environmental harm to take all reasonable and practicable measures to prevent or minimise the harm. In that regard, you are encouraged to actively identify all of the environmental risks associated with the activities conducted on the site on an ongoing bases, and to implement strategies to effectively address them.

This Emergency direction remains in effect until **25 December 2010**.

Should you have any further enquiries, please do not hesitate to contact Ms Rebecca Blades, Principal Environmental Officer of the department on telephone [redacted]

Yours sincerely,

[redacted]

Christopher Loveday
Manager (Environmental Services – Mining)
Central West Region

Conditions imposed under section 468 of the *Environmental Protection Act 1994* on Emergency Direction, issued to Moranbah North Coal Pty Ltd on 20 December 2010 for the release of mine affected water from Dam 4 on Mining Lease 70108.

In carrying out this Emergency Direction, Moranbah North Coal Pty Ltd must comply with the following conditions.

Release of contaminants

1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under this Emergency Direction, unless otherwise authorised to under the *Environmental Protection Act 1994*.

2 The release of contaminants to waters must only occur from the release points specified in Table 1 of this Emergency Direction.

3 The release of contaminants to waters must not exceed the release limits stated in Table 3 at the monitoring points specified in Table 2 of this Emergency Direction.

4 The release of contaminants to waters from the release points must be monitored at the locations specified in Table 2 for each quality characteristic and at the frequency specified in Table 3 of this Emergency Direction.

Contaminant Release Events

5 Moranbah North Coal Pty Ltd must monitor the departments stream flow gauging station, site identification number 130414A to determine and record stream flows at the locations upstream of each release point specified in Table 1 for any receiving waters into which a release occurs.

6 The release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in Table 4 for the contaminant release point(s) specified in Table 2.

7 Contaminant release flow rate must not exceed a release ratio of 1 (release of mine effected water from Dam 4) to 39 (receiving flow in the Isaac River).

8 The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Table 2.

Erosions and Sediment Control

9 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

Notification of Release Events

10 Moranbah North Coal Pty Ltd must notify the administering authority within 6 hours of having commenced releasing mine affected water to the receiving environment. Notification must include the submission of written verification to the administering authority (either via facsimile [redacted] or email to [redacted] of the following information:

a) release commencement date/time
b) expected release cessation date/time
c) release point/s
d) release volume (estimated)
e) receiving water/s including the natural flow rate
f) any details (including available data) regarding likely impacts on the receiving water(s).

11 Moranbah North Coal Pty Ltd must provide the administering authority daily during the release of mine affected water, in writing (either via facsimile [redacted] or email to [redacted] of the following information:
a) all in situ monitoring data for that day
b) the receiving water flow rate
c) the release flow rate.

12 Moranbah North Coal Pty Ltd must notify the administering authority as soon as practicable, (no later than within 6 hours after cessation of a release) of the cessation of a release notified under condition 10 and within 28 days provide the following information in writing:
a) release cessation date/time
b) natural flow volume in receiving water
c) volume of water released
d) details regarding the compliance of the release with the conditions of this Emergency Direction (i.e. contamination limits, natural flow, discharge volume)
e) all in-situ water quality monitoring results
f) any other matters pertinent to the water release event.

Notification of release event exceedence

13 If the release limits defined in Table 3 are exceeded, Moranbah North Coal Pty Ltd must notify the administering authority within 24 hours of receiving the results.

14 Moranbah North Coal Pty Ltd must, within 28 days of a release that exceeds the conditions of this Moranbah North Coal Pty Ltd, provide a report to the administering authority detailing:
a) the reason for the release
a) the location of the release
b) all water quality monitoring results
c) any general observations
d) all calculations
e) any other matters pertinent to the water release event.

Requirements to cease the release of mine affected water

15 The release of mine affected waters must cease immediately if any water quality limit as specified in Table 2 is exceeded.

16 The release of mine affected waters must cease immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

17 The release of mine affected waters must cease immediately if Moranbah North Coal Pty Ltd is directed to do so by the administering authority.

18 The release of mine affected waters authorised under this Emergency Direction must cease by **24 December 2010**.

Monitoring Requirements

23 Where monitoring is a requirement of this Emergency Direction, Moranbah North Coal Pty Ltd must ensure that a competent person(s) conducts all monitoring.

24 All monitoring undertaken as a requirement of this Emergency Direction must be undertaken in accordance with the administering authority's Water Sampling Manual.

Table 1 - Contaminant release points, sources and receiving waters

Release point (ED RP)	Longitude (GDA94)	Latitude (GDA94)	Contaminant source and location	Monitoring point	Receiving waters
ED RP 1	147 59 49	-21 53 41	Dam 4 spillway via pipeline	ED MP 1	Isaac River

Table 2 - Contaminant release monitoring points

Monitoring point (ED MP)	Longitude (GDA94)	Latitude (GDA94)	Contaminant source and location	Monitoring point location	Receiving waters
ED MP 1	147 59 49	-21 53 41	Dam 4 spillway via pipeline	End of Pipe	Isaac River

Table 3 - Contaminant release limits

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical conductivity (uS/cm)	10,000	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	ED MP 1
			Samples require laboratory analysis[2]	ED MP 1
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	ED MP 1
			Samples require laboratory analysis[2]	ED MP 1
Sulphate (SO_4^{2-}) (mg/L)	250	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]	ED MP 1

[1] In situ samples can be taken using electronic sampling equipment.
[2] Samples are required to be analysed at a NATA accredited facility in accordance with this Emergency Direction.

Table 4 - Contaminant release during flow events

Receiving waters	Release point (ED RP)	Gauging station description	Longitude (GDA94)	Latitude (GDA94)	Minimum flow in receiving water required for a release event	Flow recording frequency
Isaac River	ED RP1	Isaac River @ Goonyella Site ID:130414A	147 58 21	-21 51 20	= > $39m^3$/sec	Continuous (minimum daily)

TRANSITIONAL ENVIRONMENTAL PROGRAM

AMENDMENT (MAN10140)

MORANBAH NORTH COAL PTY LTD

MIN100557107

WORKED WATER MANAGEMENT

SUBMISSION 16 DECEMBER 2010

COMPLETION 24 FEBRUARY 2012

Index

EXECUTIVE SUMMARY

Moranbah North Mine is located approximately 18km north of Moranbah in Central Queensland. Mining is via conventional longwall operation with drift underground access. Surface infrastructure consists of a coal preparation plant and associated coal handling facilities including rail load out, co-disposal area, raw and product stockpiles and water management structures.

Longwall operations commenced in 1999 and the mine has a current production of around 4.1Mtpa. Current operations are associated with longwall panels LW108 and LW202. Co-disposal of coarse and fine rejects is undertaken with deposition into a prepared area located to the immediate west of the Industrial Area.

Central to the ongoing viability of the Moranbah North Mine is:

- Access to Raw Water;
- Effective management of Worked Water (mine affected Raw Water);
- Continued safe operation;
- Reliability of production assets.

Changes to the MNM Environmental Authority (EA) in 2009, restrict the mines ability to discharge Worked Water to the Isaac River during natural flow events. These changes, and other influences discussed in Section 2.4, have seen the total Worked Water stored onsite increase to levels approaching Mandatory Reporting Level (MRL). This information has been communicated to DERM as required under Section A8 of the EA and a Program Notice was subsequently submitted. In response DERM requested submission of a TEP detailing the considerations and recommended actions required to bring the water balance at Moranbah North into compliance with the current EA requirements.

Where actions potentially require dispensation from current EA conditions these are clearly identified in Section 5 - Proposed actions.

Should the proposed actions fail to reduce the need to store Worked Water then MNM may need to:

- Continue to store Worked Water above MRL whilst alternative solutions are developed that will reverse the trend;
- Discharge.

It should be noted that any discharge would occur in accordance with standard practice prior to December 2008, with environmental monitoring failing to identify significant environmental harm in receiving waters during previous release events.

1 INTRODUCTION

1.1 Background

Anglo Coal (Moranbah North Management) Pty Ltd (MNM) engaged Water Solutions Pty Ltd (WSPL) to assist with the development of the Transitional Environmental Program (TEP) covering Worked Water Management at MNM.

The Transitional Environmental Program (TEP) outlined actions that Moranbah North Mine (MNM) proposed to (and have already completed) undertake over a period of 14 months to deliver compliance with the site Environmental Authority (EA) MIN 10055717.

The TEP was prepared in response to a request from DERM dated 23rd March 2010 (Ref MIN100557107) following their review of the MNM Program Notice submitted 9th of March 2010. Lodgement of the TEP was required by the 18 May 2010. Approval of the Worked Water TEP was received on the 8th of August 2010.

Implementation of the current TEP for Worked Water has identified that opportunities to discharge worked water can be improved. Issues exist where the current discharge location identified within the TEP (from the Environmental Dam spillway) and the existing flow requirement for the Isaac River exposes the mine to non-compliance. This is as a result of the river flow rate dropping to below the required flow rate for discharge, while the discharge continues as a result of the flow associated with the co-disposal catchment area taking longer to cease.

This document incorporates the existing Worked Water Management TEP and outlines proposed amendment to reducing the flow required in the Isaac River for discharge to occur from the Environmental Dam discharge point. Mitigation of any potential environmental harm is addressed by dilution of the discharge with non-contaminated water from the stilling basin which can be released at the Environmental Dam spillway discharge point.

1.2 Objective

The objective of this TEP is to identify actions required to deliver compliance with the site EA within the nominated TEP period while mitigating and eliminating potential environmental harm through best practice activities in discharge management.

1.3 Compliance Requirements

Previous Worked Water discharges from site to the Isaac River during 2010 were not compliant with the site EA conditions (refer W3 and W2), as evidenced by fines imposed by DERM in March 2010 (DERM reference: EMD 137) and a warning notice in December 2010.

In response to these non-compliances, an Incident Management Team (IMT) was established at MNM to investigate and recommend actions to achieve compliance with the site EA.

The actions in this TEP have been identified following consideration of the following:

- Legislative compliance:

  Compliance to the Environmental Protection Act 1994, Environmental Protection Regulation 2008 and the Environmental Authority (Permit Number: MIN100557107 – Moranbah North Coal Mine). Consideration has been focused on how the Environmental Management System (EMS) can be better designed and implemented to ensure compliance. Stakeholders include MNM Site Leadership Team, AAMC and DERM.

- Community expectations and social engagement:

  MNM's Social Licence to Operate. This area of consideration revolves around the socially responsible use of raw water, the ability to recycle Worked Water and optimising site evaporation capabilities. Stakeholders include the properties associated in the near and downstream areas adjacent to the mine, Fitzroy Water Quality Advisory Group and the Isaac Regional Council.

- Sustainable operation:

  The area for consideration has been around the financial impacts of delivering/ using Worked Water (high in salt 8,000 – 10,000 uS/cm) into the production process underground. The key areas of focus have been:

  Increased health and safety risks:

  Underground Longwall Mining utilises high pressure hydraulic systems in face operations. The health and safety risks associated with operating these systems in close proximity to Mine Workers requires a thorough and effective maintenance system. These maintenance systems require MNM to identify the safety critical equipment (e.g. hydraulic hoses and valves) and to understand the mean time to failure for this equipment. Replacement of these items is then scheduled and effected before the mean time to failure.

  Introduction of Worked Water into these hydraulic systems is expected to dramatically reduce the mean time to failure. At the time of writing this TEP it is unclear exactly what the reduction in mean time to failure will be for specific equipment.

  Whilst MNM will endeavour to manage these risks, to as low as reasonably achievable, there needs to be recognition that the properties of the Worked Water are outside Original Equipment Manufacturer (OEM) specifications.

  Note: The risk of a serious injury or fatality to Mine Workers, as a result of an unexpected premature failure of safety critical equipment, is a significant area of concern for MNM and needs to be a key point of consideration when assessing this TEP.

  Ongoing viability of the operation:

  The current mining equipment runs on raw water (<400µS/cm) supplied from Eungella Dam. Introduction of Worked Water, above the OEM specification of 800µS/cm, is likely to reduce the production availability of the Longwall Mining Equipment (currently 33%) and profitability of the Moranbah North Mine.

  This reduced profitability could impact the ongoing viability of the mine thereby directly jeopardising 550 primary jobs at MNM and remove an annual spend of $371 million, including $61 million in royalties.

  Note: Environmental Monitoring during previous discharge events have failed to identify significant environmental harm to the receiving waters. This is a fact that is supported by conducted during discharges. This and the ongoing viability of the operation needs to be a key point for consideration when assessing this TEP.

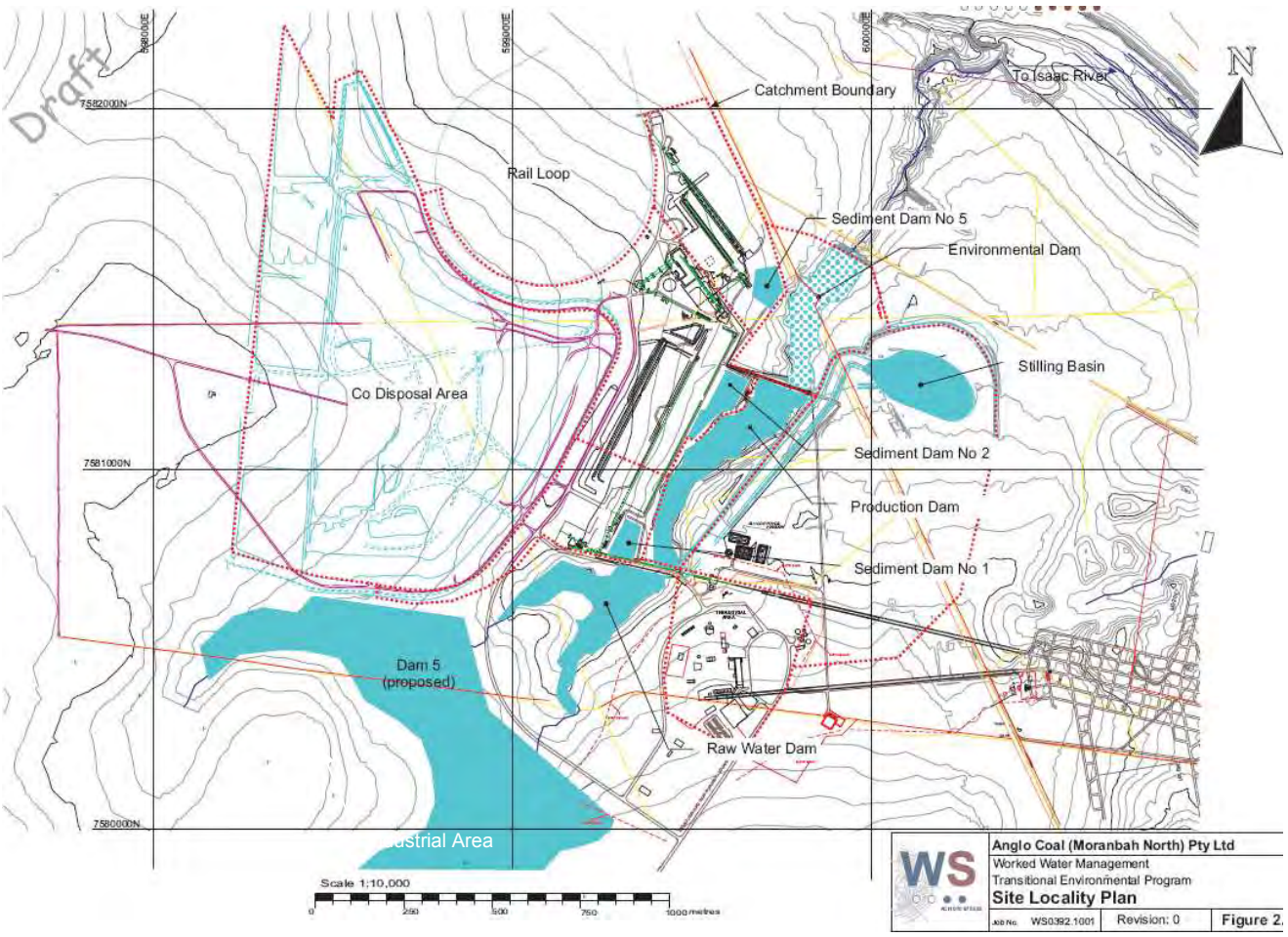


Figure 2.2 detailed layout plan of the Industrial Area showing the major water management infrastructure including proposed Dam 5

2 CURRENT STATUS

2.1 Worked Water Management System - Overview

MNM have identified a Worked Water management system to achieving compliance with both Anglo American Metallurgical Coal (AAMC) and regulatory requirements. A key component of this system is the MNM Operational Simulation (OPSIM) model which simulates the operation of the Worked Water management system on a daily time step basis whilst keeping account of all site water and representative water quality. Background details of the MNM OPSIM model are contained in the WSPL Report WS090544.

The Worked Water inventory status as at 13th December 2010 is summarised in Table 2.1.

Table 2.1. Worked Water Storages – Inventory Status

Storage Name	Inventory (13 Dec 2010) (ML)	Full Supply Volume (ML)	Mandatory Reporting Level (ML)
Production Dam	200	200	180[2]
Environmental Dam	60	66	20[1]
Dam 1	77	160	145[1]
Dam 2	173	267	255[1]
Dam 4	403	476	457[1]

Note: 1/ Reference from *Annual Inspection of Regulated Dams October 2009 (Henderson Geotech).*

2/ For the purposes of the TEP period, MNM have adopted 200ML as the effective MRL for the Production Dam, pending approval of the Hazardous Dam TEP (submitted 1 April 2010 to DERM) and construction of proposed Dam 5.

2.2 Circumstances Leading to Current Site Position

A review of site operations over the last 3 years has identified that the following issues have contributed to the current situation at MNM.

Increasing Underground Raw Water Consumption

The inability for site to reduce Worked Water inventory via active discharge has been compounded by increases in raw water consumption by underground mining operations.

In 2005, underground raw water consumption was 113L/tonne of coal mined and by early 2010 this had increased to 175 L/tonne– this equates to a 64% increase raw water consumption with no corresponding increase in site containment capacity.

The impacts of this change are the principal reason for the current site Worked Water imbalance.

Changes to EA Discharge Requirements

The MNM EA was amended in December 2008 with reductions in the “end of pipe” discharge limits from <10,000µs/cm to <1,500µs/cm during flow events in the Isaac River. Given the salinity of MNM Worked Water (typically 8,000-10,000us/cm) this change effectively removed the ability for MNM to discharge during Isaac River flow events.

Previous site practice was to discharge 200-300ML from Dams 1, 2 & 4 during natural flow events, thereby creating additional storage capacity within the MNM Worked Water system. Changes to the EA mean Worked Water which would previously have been released during large flow events has accumulated in the Worked Water circuit.

Change Management was not applied to identify and manage the risks associated with the site EA changes.

EMS – Water Balance

The current Water Balance Procedure (3.3 Water Balance), contained within the MNM Environmental Management System (EMS), does not incorporate Trigger Action Response Plans (TARP’s) to provide advanced warning and escalate actions to control the site Water Balance in

accordance with the current EA As a consequence, the water imbalance was not identified early enough to enable MNM to address the relevant issues prior to reaching site MRL.

3 FUTURE REQUIREMENTS

In understanding the future requirements for MNM, the following were considered:

- Legislative Compliance
  - At the completion of the TEP site must be compliant with EA conditions.
- Community Expectations
  - The actions recommended in the TEP must be consistent with community expectations as they relate too responsible use of raw water and impacts on receiving waterways.
- Social Engagement
  - The TEP must consider avenues for the engagement of and consideration of stakeholders concerns.
- Sustainable operation
  - Corporate Compliance
    At the completion of the TEP, site must be compliant with both AAPlc values and the *Anglo Environment Way.*
  - Effective EMS
    During the TEP process the site EMS must be reviewed and updated so that the system defines sustainable outcomes.
  - Rehabilitation
    The TEP must consider potential harm to the environment. Harm should be avoided where possible, with remedial strategies defined where necessary.
  - Ongoing Viability of the Business
    Proposed TEP actions must deliver solutions that do not compromise the ongoing viability of the mine. Specifically consideration must be given to the financial, health and safety impacts of introducing Worked Water into the underground production raw water circuit.

4 IDENTIFIED IMPROVEMENT OPTIONS

The following areas of opportunity were identified as potential actions for this TEP.

4.1 Behavioural

Education and awareness of responsible water management on site

Deliver training to improve workforce understanding of the Raw and Worked Water management systems function and the responsible use of these systems (ie. align business values).

Assignment of site role related KPI's

Include a KPI into relevant Performance Reviews which represents a 50% reduction in the use of Raw Water for 2010/11 Year.

No. of Lt's of Water/ Tonne of coal mined. (*Equivalent to 500Ml use for 2010/11 water year)*

4.2 Eliminate Raw Water Use Onsite

Surface

Quantify current surface use of Raw Water and develop strategies to reduce consumption.

Note: The TEP must consider potential environmental harm from alternative uses of saline water. Harm should be avoided where possible, with remedial strategies defined where necessary.

Underground

Quantify current underground use of Raw Water and develop strategies to reduce consumption. Investigations to-date have identified the ability to reduce raw water use by:

- maintaining con-flow valves on conveyor sprays ,
- Reinstalling heat exchangers on the LW and conveyors thereby preventing release of cooling water underground.
- Utilizing Automatic Raw Water shut off when the longwall's are not operating, and
- Repair leaking hoses/ pipes.

Nominal these reductions could be expected to achieve up to 500kL/day in raw water use savings.

4.3 Substitute Raw Water for Worked Water

Water replacement / Substitution

Identify opportunities from the above and replace Raw Water use with Worked Water where risks are deemed acceptable having consideration for the Future Requirements detailed in Section 3.

Desalination Plant

Commission the Desalination Plant and introduce permeate to the raw water system to reduce reliability on raw water import. At present commissioning of the desalination plant is not authorised under the current EA and this issue must be addressed through this TEP.

4.4 Engineering Controls

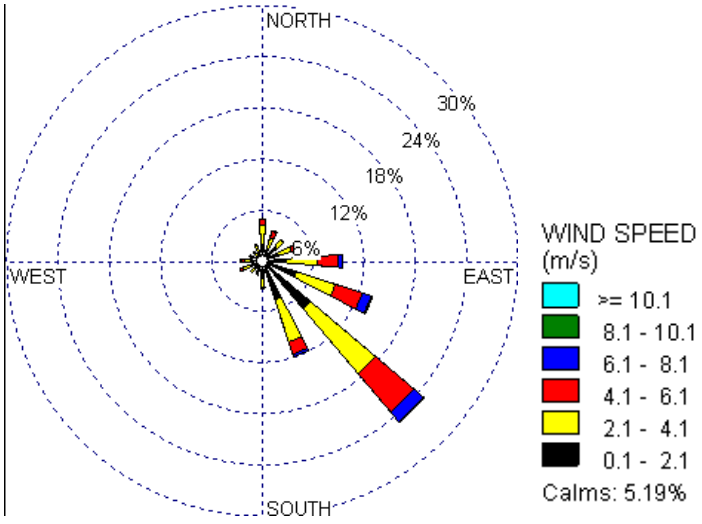
Additional evaporative surface area

Optimise the evaporative capacity of Dam 5 to ensure sustainable outcomes post-TEP operation.

Mechanical (atomisers)

Install atomised spray machines to improve evaporation rates. 15 units would be required to achieve required evaporation rates.

Machines would need to be targeted over the surface area of Dam 1 (see Appendix C) to contain salt concentration to the dam that will receive desalination brine. Additional consideration needs to be given to fall-out roses for salt drift and rehabilitation of areas affected external to Dam 1.



Wind Rose showing expected spray drift over Dam 1.

Storage

Surface

Considerations for s North nents include:

- Construction and commissioning of Dam 5 (nominal capacity 1,310ML). A TEP was lodged with DERM on the 1st of April containing this action.
- Storing Worked Water in Dams 1, 2 and 4 above Mandatory Reporting Level without discharging. This would give MNM an additional 35Ml storage. The additional 9-12 days additional storage would assist implementation of atomising sprays. Dispensation to do this would be required under this TEP.

Underground

Consider utilisation of the bored and pilar area for Worked Water storage as a short term strategy until Dam 5 is available. Investigation has found that underground storage in decommissioned bord and pillar areas is not a viable option as these areas are full from groundwater ingress.

Additional storage could potentially be achieved in the 100 series goafs by increasing the RL of the Pleuger Pump at LW105. Investigations have found that this is not a viable option as the current seals on the LW107 panel holding this water in place are not designed/ rated to retain significant amounts of Worked Water.

4.5 Discharge Management

Off-lease beneficial use

Neighbouring mines and farmers have been asked if they could utilise MNC Worked Water. Given the salinity of Worked Water, all have declined at this stage.

Diluted with imported Raw Water

MNC has a current ability to dilute Worked Water with Raw Water and discharge either to pasture or the Isaac River. Given the quantity of Worked Water required to be discharged (nominally around 300ML) and the associated flow dilution ratio (20%, which equates to 1,200ML Raw Water) this would result in 1,500ML of diluted water discharged annually to receiving waters. While the current MNM raw water pipeline does not have the capability to deliver this quantity of water this option is considered environmentally and socially unacceptable.

Diluted with flood harvested Raw Water

MNM does not have a license or the ability to harvest flood water from the Isaac River for the purposing of diluting Worked Water.

Diluted with site catchment harvested Raw Water

MNM does not have the infrastructure to catchment harvest raw water. The yield from this arrangement would be insufficient to make any significant impact on the current Worked Water site inventory. Return on investment (ROI) is not acceptable from a business perspective.

Diluted with permeate

MNM has the capability to produced 2ML/day of permeate (at around 800µs/cm). This could potentially be used to dilute Worked Water at a nominal 40/60 dilution ratio to enable discharge of 3.8ML/day at around 5,000µs/cm.

Note: The preference for the permeate stream is for substitution of imported raw water further reducing site containment requirements, not discharge.

Discharge to pasture (irrigation)

MNM has capability to discharge 2ML/day of permeate to pasture or to the Isaac River during a flow event. Again, preference for the permeate stream is for substitution of imported raw water further reducing site containment requirements.

Undiluted (direct to river)

This action is not authorised under the current MNM EA. Previous application via TEP seeking reinstatement of previous discharge criteria with DERM were unsuccessful. This is considered a viable option given current community expectations.

The key component modified within this TEP relates to the flow rate requirement for discharge from the Environmental Dam discharge point, decreasing required flow from $5m^3$/sec to $2m^3$/sec. This is designed to eliminate non-compliance for flow in the Isaac River. As identified in the notification reports supplied to DERM during recent releases, the volume discharged from this point is significantly less than the permitted 20%.

To mitigate the potential of causing environmental harm MNM proposes to accelerate the flow by installation of a diesel pump. The pump is stated as able to deliver 75-80l/sec and has been site inducted. When sufficient flow in the Isaac River is reached the pump will be turnedon.. If the lag between flow in river decrease to $5m^3$/sec and continuation of discharge the stilling basin water valve will be turned on to dilute discharge from the environment dam.

4.6 Administrative Controls

- Develop and implement Trigger Action Response Plans (TARPs) for Worked Water management into EMS.
- Develop and implement an Environmental Management Assurance Program – Corporate initiative currently being developed for AAMC. Need to consider requirements to expedite this program to better align site performance with A/A Plc expectations.
- Review the site Water Management Standard to include yearly refresher awareness for the workforce in responsible water use.

5 PROPOSED ACTIONS

The following actions drawn from above are proposed for this TEP. A detailed project plan containing responsible persons and due dates for action completion is attached in Appendix A.

Summary details are provided in Table 5.1.

Table 5.1 – MNC Worked Water TEP – Proposed Actions Summary Details

Proposed Actions		Completion Date
Behavioural		
❑ Education and awareness of responsible water management on site		Completed
❑ Assignment of site role related KPI's Community Expectations		01/07/10
Stakeholder Engagement		
MNM will extend and open invitation to DERM, the Fitzroy Water Quality Advisory Group and the Isaac Regional Council to attend site for the purposes of discussing this TEP or any other environmental topic.		
Eliminate Raw Water Use Onsite		
❑ Reduction of Raw Water Usage (Surface)	➢ Cease Raw Water use in the Clarified Water Tank – CHPP	Completed
❑ Reduction of Raw Water Usage (Underground)	➢ Maintain con-flow values	Completed
	➢ Reinstall heat exchangers on the LW and conveyors – cooling water not discharged to ground.	Completed
	➢ When longwalls are not operating, close the raw water valve.	Completed
Substitute Raw Water for Worked Water		
❑ Recycling of Worked Water	➢ Commission the Desalination Plant and introduce permeate to the raw water circuit. (Replaces 2Ml/dy of Raw Water use)	Completed
	➢ Reroute underground water network to establish 2 independent circuits. Permeate to face units and treated worked water to outbye uses (e.g. conveyor sprays)	Completed and trialling
	➢ Introduce treated Worked Water into the Worked Water circuit underground. (Replaces deficit between permeate and total underground daily use)	Completed and trialling
Engineering Controls to Improve Evaporation Effectiveness		
❑ Improvement of evaporation capability	➢ Install Worked Water atomising units to improve evaporation. (15 units @ 4L/s= 4.9Ml/dy)	Completed

❑ Increasing site Worked Water storage capacity	➢ Optimise natural evaporative design capability of Dam 5 to assist with sustainable outcomes post TEP.	Completed
	➢ Construction and commissioning of Dam 5 (nominal capacity - 1,310ML).	October 2011
❑ Discharge management	➢ **Environmental Dam Spillway** Electrical Conductivity readings have historically been about 5,000µS/cm during discharges. Discharge would only be authorised when the Isaac River is flowing at or greater than $5m^3$/sec as the river rises, but continue to $2m^3$/sec as the river flow decreases (if needed). Discharge monitoring would be conducted at the Environmental Dam Spillway and 500m downstream of the Service Creek flow into the Isaac River. Both passive and active discharge would occur during appropriate flow conditions through installation of a diesel pump. The release of contaminants from the Environment Dam will occur in accordance with this Transitional Environmental Program. The release of contaminants under this approval will cease on **10 January 2012.**	10 January 2012
Administrative Controls		
❑ Develop and implement Trigger Action Response Plans (TARPs) for Worked Water management into EMS.		Completed & reviewing
❑ Develop and implement an Environmental Management Assurance.		2011

Discharge Management

In carrying out this Transitional Environmental Program, Moranbah North Coal Pty Ltd will undertake all activities in accordance with the following conditions.

Undertaking the release of mine affected water

1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under this Transitional Environmental Approval – Certificate of Approval, unless otherwise authorised to under the *Environmental Protection Act 1994*.

2 The release of contaminants to waters must only occur from the release points specified in Table 2 and depicted in Appendix D attached to this Transitional Environmental Program.

3 The release of contaminants to waters must not exceed the release limits stated in Table 4 at the monitoring points specified in Table 2 and Table 3 of this Transitional Environmental Program.

4 The release of contaminants to waters from the release points must be monitored at the locations specified in Table 2 and Table 3 for each quality characteristic and at the frequency specified in Table 4 and Table 5 of this Transitional Environmental Program.

5 If quality characteristics of the release exceed any of the trigger levels specified in Table 5 during a release event, the Transitional Environmental Program holder must compare the downstream results in the receiving waters identified in Table 7 to the trigger values specified in Table 5 and:
   a) where the trigger values are not exceeded then no action is to be taken
   b) where the downstream results exceed the trigger values specified Table 5 for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and
      i) if the result is less than the background monitoring site data, then no action is to be taken or
      ii) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining
         1) details of the investigations carried out
         2) actions taken to prevent environmental harm.

6 If an exceedance in accordance with condition 5(a)(ii)(2) is identified, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the result. The notification must include written verification of the exceedance forwarded to the administering authority either via facsimile [redacted] or email to [redacted]

Receiving environment monitoring and contaminant trigger levels

7 The quality of the receiving waters must be monitored at the locations specified in Table 7 for each quality characteristic and at the monitoring frequencies stated in Table 8.

8 If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table 8 during a release event the holder of this Transitional Environmental Program must compare the downstream results to the upstream results in the receiving environment and:
   a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken;
   b) where the downstream results exceed the upstream results complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority within 28 days, outlining:
      i) details of the investigations carried out;
      ii) actions taken to prevent environmental harm.

9 If an exceedance in accordance with condition 5(a)(ii)(2) is identified, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the result. The notification must include written verification of the exceedance forwarded to the administering authority either via facsimile [redacted] or email to [redacted]

Contaminant Release Events

10 The Transitional Environmental Program holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each release point specified in Table 2 for any receiving waters into which a release occurs.

11 Notwithstanding any other condition of this Transitional Environmental Program, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in Table 6 for the contaminant release point(s) specified in Table 2.

12 Contaminant release flow rate must not exceed 20% of receiving water flow rate.

13 The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Table 2.

Erosions and Sediment Control

14 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

15 Erosion protection must be designed, installed and maintained at each release point authorised by this Transitional Environmental Program and must:
a) designed and constructed by a suitably qualified and experienced person, and
b) be inspected by a suitably qualified and experienced person
    1. prior to the commencement of dewatering operations; and
    2. following the cessation of release in accordance with the conditions of this Transitional Environmental Program – Certificate of Approval.

16 The holder of this Transitional Environmental Program must provide a report to the administering authority within 10 business days following the cessation of release of mine affected water authorised under authority of this Transitional Environmental Program. The report must detail the performance of erosion protection measures, including:
a) identification of erosion, slumping and scour impacts to vegetation,
b) rehabilitation, including earthworks, scour protection and flow velocity controls undertaken to minimise environmental harm, and
c) detailed engineering assessment of erosion protection works completed to date and any proposed works to be undertaken.

Notification of Release Events

14 The Transitional Environmental Program holder must notify the administering authority within eight hours of having commenced releasing mine affected water to the receiving environment. Notification must include the submission of written verification to the administering authority (either via facsimile [redacted] or email to [redacted] of the following information:
a) release commencement date/time
b) expected release cessation date/time
c) release point/s
d) release volume (estimated)
e) receiving water/s including the natural flow rate
f) any details (including available data) regarding likely impacts on the receiving water(s).

15 The Transitional Environmental Program holder must provide the administering authority daily during the release of mine affected water, in writing (either via facsimile [redacted] or email to [redacted]) of the following information:
a) all in situ monitoring data for that day
b) the receiving water flow rate
c) the release flow rate.

16 The Transitional Environmental Program holder must notify the administering authority as soon as practicable, (no later than within 24 hours after cessation of a release) of the cessation of a release notified under condition 14 and within 28 days provide the following information in writing:
a) release cessation date/time
b) natural flow volume in receiving water
c) volume of water released
d) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
e) all in-situ water quality monitoring results
f) any other matters pertinent to the water release event.

Notification of release event exceedence

17 If the release limits defined in Table 3 are exceeded, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the results.

18 The Transitional Environmental Program holder must, within 28 days of a release that exceeds the conditions of this Transitional Environmental Program, provide a report to the administering authority detailing:
a) the reason for the release
b) the location of the release
c) all water quality monitoring results
d) any general observations
e) all calculations
f) any other matters pertinent to the water release event.

Requirements to cease the release of mine affected water

19 The release of mine affected waters must cease immediately if any water quality limit as specified in Table 4 is exceeded.

20 The release of mine affected waters must cease immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

21 The release of mine affected waters must cease immediately if the holder of this Transitional Environmental Program is directed to do so by the administering authority.

22 The release of mine affected waters authorised under this Transitional Environmental Program must cease by **10 January 2012**.

23 The release of mine affected waters authorised under this Transitional Environmental Program must cease when the flow of water within the Isaac River, when measured at the stream flow gauging station identified as Isaac River @ Goonyella, Site ID: 130414A, is less than $2.5m^3$/second.

24 Subject to condition 23 the release of mine affected waters authorised under this Transitional Environmental Program must cease within 24 hours when the flow of water within the Isaac River, when measured at the stream flow gauging station identified as Isaac River @ Goonyella, Site ID: 130414A, declines to less than $5m^3$/second.

Monitoring Requirements

25 Where monitoring is a requirement of this Transitional Environmental Program, ensure that a competent person(s) conducts all monitoring.

26 All monitoring undertaken as a requirement of this Transitional Environmental Program must be undertaken in accordance with the administering authority's Water Sampling Manual.

Notification of emergencies, incidents and exceptions

27 As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this Transitional Environmental Program, the administering authority must be notified of the release by telephone, facsimile or email.

28 The notification of emergencies or incidents must include but not be limited to the following:
a) the holder of the Transitional Environmental Program
b) the location of the emergency or incident
c) the number of the Transitional Environmental Program
d) the name and telephone number of the designated contact person
e) the time of the release
f) the time the holder of the Transitional Environmental Program became aware of the release
g) the suspected cause of the release
h) the environmental harm caused, threatened, or suspected to be caused by the release, and
i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.

29 Not more than fourteen days following the initial notification of an emergency or incident, written advice must be provided of the information supplied to the administering authority in relation to:
a) proposed actions to prevent a recurrence of the emergency or incident, and
b) outcomes of actions taken at the time to prevent or minimise environmental harm.

5.1 Reporting

Moranbah North Coal Pty Ltd will notify the administering authority, in writing, within six hours of commencing a release of contaminants under this Transitional Environmental Program, detailing:
g) release commencement date/time
h) expected release cessation date/time
i) release point/s
j) release volume (estimated)
k) receiving water/s including the natural flow rate
l) any details (including available data) regarding likely impacts on the receiving water(s).

Moranbah North Coal Pty Ltd will submit a report to the administering authority daily during the release of contaminants under this Transitional Environmental Program, detailing:
a) all in situ monitoring data for that day
b) the receiving water flow rate
c) the release flow rate.

Moranbah North Coal Pty Ltd will notify the administering authority, in writing, within twenty-four hours of ceasing a release of contaminants uner this Transitional Environmental Program, detailing:
g) release cessation date/time
h) natural flow volume in receiving water
i) volume of water released
j) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
k) all in-situ water quality monitoring results
l) any other matters pertinent to the water release event.

Moranbah North Coal Pty Ltd will submit a report to the administering authority on the final business day of each month detailing:
a) all activities undertaken under the Transitional Environmental Program,
b) b) how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
   i. the best practice environmental management for the activity, and
   ii. the risks of environmental harm being caused by the activity, and
c) how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program.

Moranbah North Coal Pty Ltd will submit a report to the administering authority by **24 January 2012** including:
a) details of the completion of the Transitional Environmental Program,
b) details on all activities undertaken under the Transitional Environmental Program,
c) identification of how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
   i. the best practice environmental management for the activity, and
   ii. the risks of environmental harm being caused by the activity,
d) identification of how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program, and
e) confirmation that at closure of the Transitional Environmental Program, the holder will be able to comply with the conditions of the current Environmental Authority issued for the Moranbah North Coal Mine, located at Mining Lease 70108 and the *Environmental Protection Act 1994*.

6 CONCLUSIONS

Actions proposed in this TEP are designed to reduce the current worked water inventory in a manner that does not result in significant environmental harm. The actions recommended are considered to be executable and we have a high level of confidence in the margin for success.

7 REFERENCES

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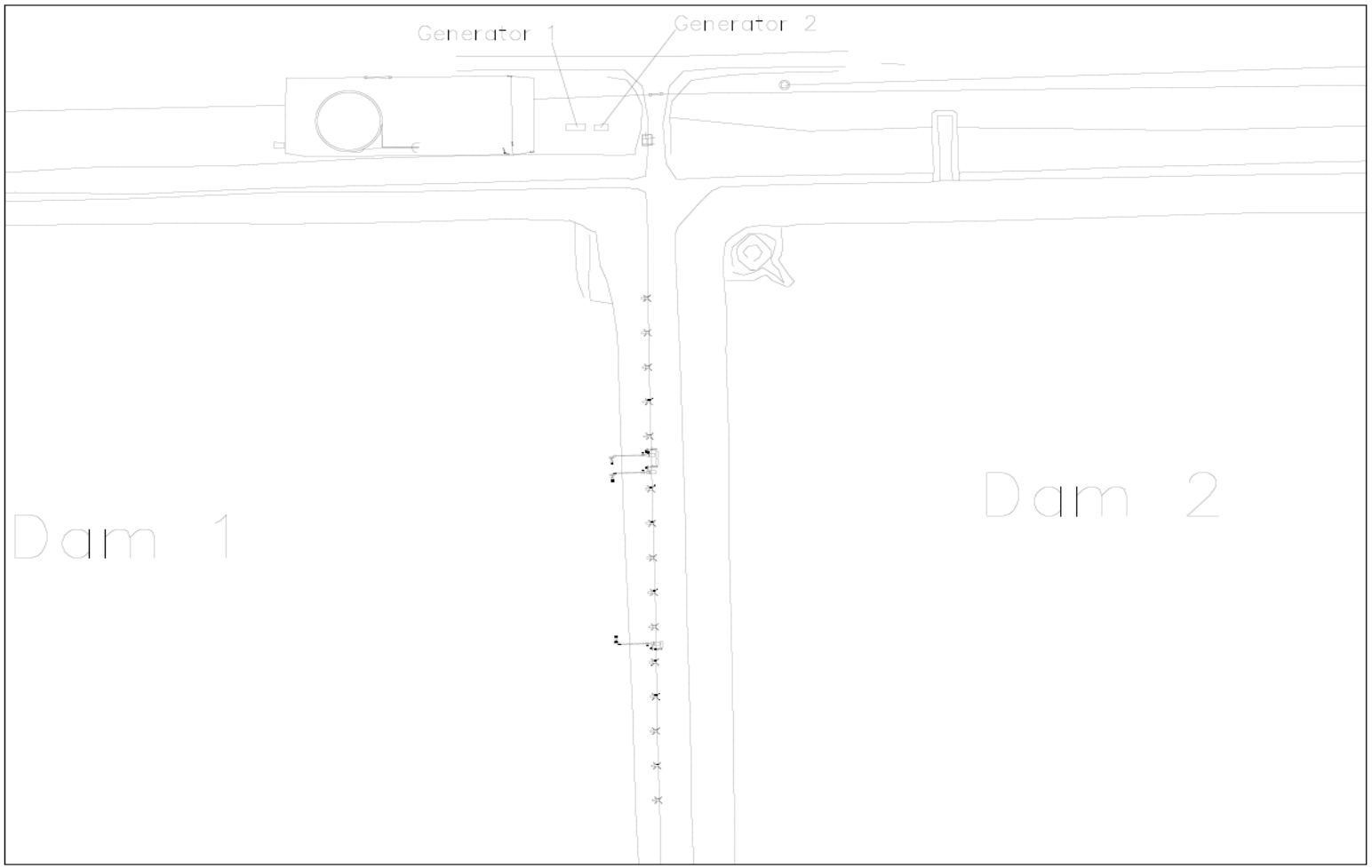
APPENDIX A

Project Plan

Submitted with original TEP

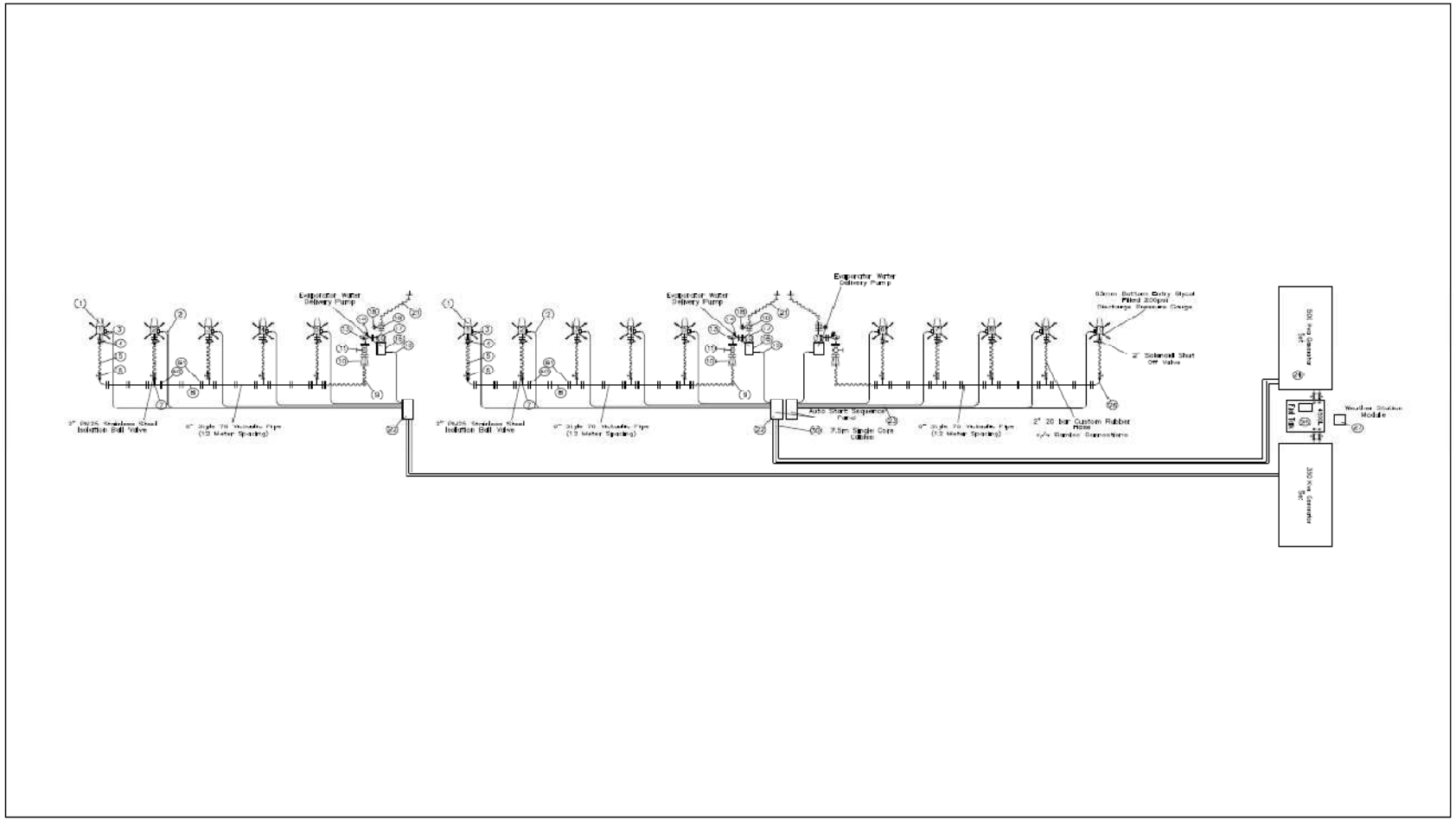
APPENDIX B

Dams 1 & 2 Atomised Spray Installation Overview



APPENDIX C

Dams 1 & 2 Atomised Spray Installation Design



APPENDIX D

Overview of Site Discharge Locations & Associated Monitoring Points

APPENDIX E

Table 2 - Contaminant release points, sources and receiving waters

Release point (TEP RP)	Easting GDA94	Northing GDA94	Contaminant source and location	Monitoring point	Receiving waters
TEP RP 1	599,980	7,580,615	Environmental Dam	TEP MP 1 TEP MP 9 TEP MP 8	Service Area Creek & Isaac River

Table 3 - Contaminant release monitoring points

Monitoring point	Easting GDA94	Northing GDA94	Contaminant source and location	Monitoring point location	Receiving waters
TEP MP 1	TBA	TBA	Environmental Dam	1900m downstream of junction of Service Area Creek & Isaac River	Service Area Creek & Isaac River
TEP MP 9	599,980	7,580,615	Environmental Dam	Spillway of Environmental Dam	Isaac River
TEP MP 8	605,310	7,575,260	Environment Dam	2200m downstream of of RP4	Isaac River

Table 4 - Contaminant release limits

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Compliance release levels for releases occurring at 5m^3/second or greater flow in the Isaac River				
Electrical Conductivity (uS/cm)	800 *or* upstream background electrical conductivity[3] + 10% *whichever is the higher level*	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 1
			Samples require laboratory analysis[2]	TEP MP 1
	500 *or* upstream background electrical conductivity[3] + 10% *whichever is the higher level*	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 8
			Samples require laboratory analysis[2]	TEP MP 8
	N/A	Daily during release (the first	*In situ*[1]	TEP MP 9

		sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 9
			Samples require laboratory analysis[2]	TEP MP 9
TSS	Limit = 80th percentile of upstream background sites[3]	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9
Sulphate (SO_4^{2-}) (mg/L)	250	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9
Compliance release levels for releases occurring between 2.5m^3/second and 5m^3/second flow in the Isaac River				
Electrical Conductivity (uS/cm)	800 *or* upstream background electrical	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	TEP MP 1
			Samples require laboratory analysis[2]	TEP MP 1

	conductivity[3] + 10% *whichever is the higher level*			
	500 *or* upstream background electrical conductivity[3] + 10% *whichever is the higher level*	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 8
			Samples require laboratory analysis[2]	TEP MP 8
	1500	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 9
			Samples require laboratory analysis[2]	TEP MP 9
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 9
			Samples require laboratory analysis[2]	TEP MP 9

TSS	Limit = 80th percentile of upstream background sites[3]	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9
Sulphate (SO_4^{2-}) (mg/L)	250	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9

[1] In situ samples can be taken using electronic sampling equipment.

[2] Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.

[3] Upstream background sites are defined in Table 7. For release point 'TEP RP 1' monitoring for Electrical Conductivity and TSS, the associated upstream background site is TEP Reference Monitoring Point 1.

Table 5 - Release contaminant trigger investigation levels

Quality characteristic	Trigger levels (µg/L)	Monitoring frequency	Monitoring Point
Aluminium	55	Commencement of release and thereafter weekly during release	TEP MP 9
Arsenic	13		
Cadmium	0.2		
Chromium	1.0		
Copper	2.0		
Iron	300		
Lead	10		
Mercury	0.2		
Nickel	11		
Zinc	8.0		
Boron	370		
Cobalt	90		
Manganese	1900		
Molybdenum	34		
Selenium	10		
Silver	1.0		
Uranium	1.0		
Vanadium	10		

Ammonia	900		
Nitrate	1100		
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000		

Table 6 - Contaminant release during flow events

Receiving waters	Release point (TEP RP)	Gauging station description	Longitude (GDA94)	Latitude (GDA94)	Receiving water flow rate	Flow recording frequency	Activity Authorised
Isaac River	TEP RP 1	Isaac River @ Goonyella Site ID:130414A	147 58 21	-21 51 20	= > 5m^3/sec	Continuous (minimum daily)	Commence releasing contaminants from TEP RP 1
Isaac River	TEP RP 1	Isaac River @ Goonyella Site ID:130414A	147 58 21	-21 51 20	= > 2.5m^3/sec	Continuous (minimum daily)	Continue releasing contaminants from TEP RP 1 for a maximum of 24 hours. Commencement of the release of contaminants from TEP RP 1 is not permitted.

Table 7 - Reference monitoring points

Monitoring points (TEP MP)	Receiving waters location description	Longitude (GDA94)	Latitude (GDA94)
Upstream background monitoring point			
TEP Reference Monitoring Point 1	Upstream Isaac River – Automated Water Station. TEP Reference Monitoring Point 1 is the reference site for TEP Impact Monitoring Point 1.	147 58 12	-21 52 40
Downstream background monitoring point			
TEP Impact Monitoring Point 1	TEP Impact Monitoring Point 1 is located south of the downstream Automatic Water Station on the Isaac River.	148 00 58	-21 55 18

Table 8 – Receiving waters contaminant trigger levels

Quality characteristic	Trigger level	Monitoring frequency	Sample type
Electrical Conductivity (uS/cm)	400 *or* upstream background electrical conductivity[3] + 10% *whichever is the higher level*	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]
			Samples require laboratory analysis[2]
pH	6.5-8.0	Daily during release (the first sample must be taken within	*In situ*[1]

		2 hours of commencement of release)	Samples require laboratory analysis[2]
Suspended Solids (mg/L)	Limit = 80th percentile of upstream background sites[3]	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]
Sulphate (SO_4^{2-}) (mg/L)	250	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]

[1] In situ samples can be taken using electronic sampling equipment.

[2] Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.

[3] Upstream background sites are defined in Table 7. For release point 'TEP Impact Monitoring Point 1' monitoring for Electrical Conductivity and Suspended Solids, the associated upstream background site is TEP Reference Monitoring Point 1.

DRAFT TRANSITIONAL ENVIRONMENTAL PROGRAM UNDER SECTION 333 OF THE *ENVIRONMENTAL PROTECTION ACT 1994*

Principal Holder: Moranbah North Coal Pty Ltd
1164 Goonyella Road
Moranbah QLD 4744

EA Number: MIN1005577107

Title: Worked Water TEP - Additional Discharge Locations

Date: 20th December 2010

Finish Date: 30th June 2011

BACKGROUND

Changes to the MNM Environmental Authority (EA) in 2009, restricted the mines ability to discharge Worked Water to the Isaac River during natural flow events. These changes, and other influences, have seen the total Worked Water stored onsite increase to levels approaching Mandatory Reporting Level (MRL). This information has been communicated to DERM as required under Section A 8 of the EA and a Program Notice was subsequently submitted. In response DERM requested submission of a TEP detailing the considerations and recommended actions required to bring the water balance at Moranbah North into Compliance with the current EA requirements.

Moranbah North has worked towards reducing the site worked water inventory through the actions identified within the approved TEP for Worked Water and the associated Certificate of Approval MAN10140. However, due to significant rainfall seen to date this wet season, the dam's onsite are again filling to MRL. Given the height of the Isaac River and the consistent rainfall currently being experienced, discharges from site water storages (in addition to the Environmental Dam Spillway already identified within the approved TEP MAN 10140) would experience significant dilution and therefore reduce the potential for environmental harm to occur.

The additional locations proposed are:

- Production Dam via pipeline (RP1 within current EA).
  Discharge rates from this location would be approximately 100l/s
  Water quality was 5300µS/cm at 15 December

- Dam 4 via pipeline (RP2 within current EA)
  Discharge rates from this location would be approximately 100l/s
  Water quality is approximately 7700µS/cm at 15 December

- Dam 2 via pipeline (RP3 within current EA)
  Discharge rates from this location would be approximately 100l/s
  Dam 2 is approximately 11,300µS/cm at 15 December

Please see the tables within the Monitoring section of the TEP which outline reporting, monitoring and compliance limits to be achieved. Assessment of the pumping capabilities, minimum flow requirements and distances from release have identified targeted quality levels of 500µS/cm can be achieved.

Given the significant dilution of the worked water within the Isaac River, stakeholders who would potentially be impacted by discharge activities have not raised any concerns. MNM will extend an open invitation to DERM, the Fitzroy Water Quality Advisory Group and the Isaac Regional Council to attend site for the purposes of discussing this TEP or any other environmental topic.

OBJECTIVES

The objective of this TEP is to identify actions required to deliver compliance with the site EA within the nominated TEP period while providing mitigation of potential environmental harm and damage to mine infrastructure.

HOW OBJECTIVES ARE TO BE ACHIEVED

The TEP will achieve its objectives by discharging water harvested by the mine with a view to best proactive environmental management by mitigating harm in controlled active discharge while maximum dilution is available.

Table 1 – achieving TEP objectives

OBJECTIVE	ACTION	RESPONSIBILITY	TIME FRAME	PERFORMANCE INDICATOR
Manage worked water captured on site	Actively discharge worked water from nominated points via existing pumping infrastructure	Environmental Superintendent	When river flows exceed $5m^3$/sec prior to 30 June 2011	No discharges not in compliance with the TEP occur

MONITORING

Table 2 - Contaminant release points, sources and receiving waters

Release point (TEP RP)	Easting GDA94	Northing GDA94	Contaminant source and location	Monitoring point	Receiving waters
TEP RP 2	601,520	7,579,900	Production Dam	TEP MP 2	Isaac River
TEP RP 3	602,940	7,577,890	Dam 4	TEP MP 3	Isaac River
TEP RP 4	604,040	7,576,850	Dam 2	TEP MP 4	Isaac River

Table 3 - Contaminant release monitoring points

Monitoring point	Easting GDA94	Northing GDA94	Contaminant source and location	Monitoring point location	Receiving waters
TEP MP 2	601,820	7,579,250	Production Dam	750m downstream of junction of Production Dam pipeline & Isaac River	Isaac River
TEP MP 3	603,480	7,577,460	Dam 4	650m downstream of junction of Dam 4 overflow flume and Isaac River	Isaac River
TEP MP 4	604,290	7,576,500	Dam 2	500m downstream of junction of Dams 1 & 2 pipeline & Isaac River	Isaac River

Table 4 - Contaminant release limits

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical Conductivity (uS/cm)	500	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 2,3,4[3]
			Samples require laboratory analysis[2]	TEP MP 2,3,4[3]
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 8 hours of commencemen	*In situ*[1]	TEP RP 2,3,4 TEP MP 2,3,4

		t of release)	Samples require laboratory analysis[2]	TEP RP 2,3,4 TEP MP 2,3,4
Turbidity (NTU)	Limit = 80th percentile of upstream background[3] sites	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP RP 2,3,4 TEP MP 2,3,4
Sulphate (SO_4^{2-}) (mg/L)	250	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP RP 2,3,4 TEP MP 2,3,4

[1] In situ samples can be taken using electronic sampling equipment.
[2] Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.
[3] These sites will have EC monitored at the associated release points and submitted, but the release limit is defined as the stated points.

Table 5 - Release contaminant trigger investigation levels

Quality characteristic	Trigger levels (μg/L)	Monitoring frequency	Monitoring Point
Aluminium	55	Commencement of release and thereafter weekly during release	TEP MP 1,2,3,4
Arsenic	13		
Cadmium	0.2		
Chromium	1.0		
Copper	2.0		
Iron	300		
Lead	10		
Mercury	0.2		
Nickel	11		
Zinc	8.0		
Boron	370		
Cobalt	90		
Manganese	1900		
Molybdenum	34		

Selenium	10		
Silver	1.0		
Uranium	1.0		
Vanadium	10		
Ammonia	900		
Nitrate	1100		
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000		

Table 6 - Contaminant release during flow events

Receiving waters	Release point (TEP RP)	Gauging station description	Easting (GDA94)	Northing (GDA94)	Minimum flow in receiving water required for a release event	Flow recording frequency
Isaac River	TEP RP 2	Upstream Automated Water Station	601,520	7,579,900	= > 5m^3/sec	Continuous (minimum daily)
Isaac River	TEP RP 3	Upstream Automated Water Station	602,940	7,577,890	= > 5m^3/sec	Continuous (minimum daily)
Isaac River	TEP RP 4	Upstream Automated Water Station	604,040	7,576,850	= > 5m^3/sec	Continuous (minimum daily)

Table 7 - Receiving water downstream monitoring points

Monitoring points (TEP MP)	Receiving waters location description	Easting (GDA94)	Northing (GDA94)
TEP Impact Monitoring Point 1	TEP Impact Monitoring Point 1 is located south of the downstream Automatic Water Station on the Isaac River.	605,310	7,575,260

REPORTING

Daily reporting of insitu water quality parameters will be provided to DERM.

Progress reports will be submitted to the department on the 5th business day of each month. This report will describe activities and issues from the previous month and outline the proposed activities for the next month.

A final report will be submitted upon completion of the TEP.

CONDITIONS

In carrying out this Transitional Environmental Program, Moranbah North Coal will undertake all activities in accordance with the following conditions.

Undertaking the release of mine affected water

1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under this Transitional Environmental Approval – Certificate of Approval, unless otherwise authorised to under the *Environmental Protection Act 1994*.

2 The release of contaminants to waters must only occur from the release points specified in Table 2 and depicted in Appendix D attached to this Transitional Environmental Program.

3 The release of contaminants to waters must not exceed the release limits stated in Table 4 at the monitoring points specified in Table 2 and Table 3 of this Transitional Environmental Program.

4 The release of contaminants to waters from the release points must be monitored at the locations specified in Table 2 and Table 3 for each quality characteristic and at the frequency specified in Table 4 and Table 5 of this Transitional Environmental Program.

5 If quality characteristics of the release exceed any of the trigger levels specified in Table 5 during a release event, the Transitional Environmental Program holder must compare the downstream results in the receiving waters identified in Table 7 to the trigger values specified in Table 5 and:

a) where the trigger values are not exceeded then no action is to be taken

b) where the downstream results exceed the trigger values specified Table 5 for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and

i) if the result is less than the background monitoring site data, then no action is to be taken or

ii) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining

1) details of the investigations carried out

2) actions taken to prevent environmental harm.

6 If an exceedance in accordance with condition 5(a)(ii)(2) is identified, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the result. The notification must include written verification of the exceedance forwarded to the administering authority either via facsimile [redacted] or email to [redacted]

Contaminant Release Events

7 The Transitional Environmental Program holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each release point specified in Table 2 for any receiving waters into which a release occurs.

8 Notwithstanding any other condition of this Transitional Environmental Program, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in Table 6 for the contaminant release point(s) specified in Table 2.

9 Contaminant release flow rate must not exceed 20% of receiving water flow rate.

10 The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Table 2.

Erosions and Sediment Control

11 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

12 Erosion protection must be designed, installed and maintained at each release point authorised by this Transitional Environmental Program and must:
   a) designed and constructed by a suitably qualified and experienced person, and
   b) be inspected by a suitably qualified and experienced person
      1. prior to the commencement of dewatering operations; and
      2. following the cessation of release in accordance with the conditions of this Transitional Environmental Program – Certificate of Approval.

13 The holder of this Transitional Environmental Program must provide a report to the administering authority within 10 business days following the cessation of release of mine affected water authorised under authority of this Transitional Environmental Program. The report must detail the performance of erosion protection measures, including:
   a) identification of erosion, slumping and scour impacts to vegetation,
   b) rehabilitation, including earthworks, scour protection and flow velocity controls undertaken to minimise environmental harm, and
   c) detailed engineering assessment of erosion protection works completed to date and any proposed works to be undertaken.

Notification of Release Events

14 The Transitional Environmental Program holder must notify the administering authority within 6 hours of having commenced releasing mine affected water to the receiving environment. Notification must include the submission of written verification to the administering authority (either via facsimile [redacted] or email to [redacted] of the following information:
   a) relea se commencement date/time
   b) expected release cessation date/time
   c) r elease point/s
   d) release volume (estimated)
   e) receiving water/s including the natural flow rate
   f) any details (including available data) regarding likely impacts on the receiving water(s).

15 The Transitional Environmental Program holder must provide the administering authority daily during the release of mine affected water, in writing (either via facsimile [redacted] or email to [redacted] of the following information:
   a) all in situ monitoring data for that day

b) the receiving water flow rate
c) the release flow rate.

16 The Transitional Environmental Program holder must notify the administering authority as soon as practicable, (no later than within 24 hours after cessation of a release) of the cessation of a release notified under condition 14 and within 28 days provide the following information in writing:
   a) relea se cessation date/time
   b) natural flow volume in receiving water
   c) volume of water released
   d) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
   e) all in-situ water quality monitoring results
   f) any other matters pertinent to the water release event.

Notification of release event exceedence

17 If the release limits defined in Table 3 are exceeded, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the results.

18 The Transitional Environmental Program holder must, within 28 days of a release that exceeds the conditions of this Transitional Environmental Program, provide a report to the administering authority detailing:
   a) the reason for the release
   b) the location of the release
   c) all water quality monitoring results
   d) any general observations
   e) all calculations
   f) any other matters pertinent to the water release event.

Monitoring Requirements

23 Where monitoring is a requirement of this Transitional Environmental Program, ensure that a competent person(s) conducts all monitoring.

24 All monitoring undertaken as a requirement of this Transitional Environmental Program must be undertaken in accordance with the administering authority's Water Sampling Manual.

Notification of emergencies, incidents and exceptions

25 As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this Transitional Environmental Program, the administering authority must be notified of the release by telephone, facsimile or email.

26 The notification of emergencies or incidents must include but not be limited to the following:
   a) the holder of the Transitional Environmental Program
   b) the location of the emergency or incident
   c) the number of the Transitional Environmental Program
   d) the name and telephone number of the designated contact person
   e) the time of the release
   f) the time the holder of the Transitional Environmental Program became aware of the release
   g) the suspected cause of the release
   h) the environmental harm caused, threatened, or suspected to be caused by the release, and
   i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.

27 Not more than fourteen days following the initial notification of an emergency or incident, written advice must be provided of the information supplied to the administering authority in relation to:
   a) proposed actions to prevent a recurrence of the emergency or incident, and
   b) outcomes of actions taken at the time to prevent or minimise environmental harm.

Calculations

Upstream EC for flow event has averaged 237µs/cm (12-19 December)

Discharge	EC 15/12/10	Distance	EC limit @ MP	Volume l/sec	Ratio	Max discharge volume @ $5m^3$/sec
Production	5,300	750	500	100	1:9	555l/sec
Dam 2	11,300	500	500	100	1:41	121l/sec
Dam 4	7,700	650	500	100	1:28	185l/sec

Please note this is the minimum flow to start of cease discharge by pump and it is anticipated normal flow for discharge will be in excess of $5m^3$/sec for 98% of time.

DRAFT TRANSITIONAL ENVIRONMENTAL PROGRAM UNDER SECTION 333 OF THE *ENVIRONMENTAL PROTECTION ACT 1994*

Principal Holder: Moranbah North Coal Pty Ltd
1164 Goonyella Road
Moranbah QLD 4744

EA Number: MIN1005577107

Title: Worked Water TEP - Additional Discharge Locations

Date: 20th December 2010

Finish Date: 30th June 2011

BACKGROUND

Changes to the MNM Environmental Authority (EA) in 2009, restricted the mines ability to discharge Worked Water to the Isaac River during natural flow events. These changes, and other influences, have seen the total Worked Water stored onsite increase to levels approaching Mandatory Reporting Level (MRL). This information has been communicated to DERM as required under Section A8 of the EA and a Program Notice was subsequently submitted. In response DERM requested submission of a TEP detailing the considerations and recommended actions required to bring the water balance at Moranbah North into Compliance with the current EA requirements.

Moranbah North has worked towards reducing the site worked water inventory through the actions identified within the approved TEP for Worked Water and the associated Certificate of Approval MAN10140. However, due to significant rainfall seen to date this wet season, the dam's onsite are again filling to MRL. Given the height of the Isaac River and the consistent rainfall currently being experienced, discharges from site water storages (in addition to the Environmental Dam Spillway already identified within the approved TEP MAN 10140) would experience significant dilution and therefore reduce the potential for environmental harm to occur.

The additional locations proposed are:

- Production Dam via pipeline (RP1 within current EA).
  Discharge rates from this location would be approximately 100l/s
  Water quality was 5300µS/cm at 15 December

- Dam 4 via pipeline (RP2 within current EA)
  Discharge rates from this location would be approximately 70l/s
  Water quality is approximately 7700µS/cm at 15 December

- Dam 2 via pipeline (RP3 within current EA)
  Discharge rates from this location would be approximately 100l/s
  Dam 2 is approximately 11,300µS/cm at 15 December

Please see the tables within the Monitoring section of the TEP which outline reporting, monitoring and compliance limits to be achieved. Assessment of the pumping capabilities, minimum flow requirements and distances from release have identified targeted quality levels of 500µS/cm can be achieved.

Given the significant dilution of the worked water within the Isaac River, stakeholders who would potentially be impacted by discharge activities have not raised any concerns. MNM will extend an open invitation to DERM, the Fitzroy Water Quality Advisory Group and the Isaac Regional Council to attend site for the purposes of discussing this TEP or any other environmental topic.

OBJECTIVES

The objective of this TEP is to identify actions required to deliver compliance with the site EA within the nominated TEP period while providing mitigation of potential environmental harm and damage to mine infrastructure.

HOW OBJECTIVES ARE TO BE ACHIEVED

The TEP will achieve its objectives by discharging water harvested by the mine with a view to best proactive environmental management by mitigating harm in controlled active discharge while maximum dilution is available.

Table 1 – achieving TEP objectives

OBJECTIVE	ACTION	RESPONSIBILITY	TIME FRAME	PERFORMANCE INDICATOR
Manage worked water captured on site	Actively discharge contaminants from nominated points via existing pumping infrastructure	Environmental Superintendent	The release of contaminants under this approval will cease on **13 May 2011**	No discharges not in compliance with the TEP occur

MONITORING

Table 2 - Contaminant release points, sources and receiving waters

Release point (TEP RP)	Easting GDA94	Northing GDA94	Contaminant source and location	Monitoring point	Receiving waters
TEP RP 2	601,520	7,579,900	Production Dam	TEP MP 2 TEP MP 5 TEP MP 8	Isaac River
TEP RP 3	602,940	7,577,890	Dam 4	TEP MP 3 TEP MP 6 TEP MP 8	Isaac River
TEP RP 4	604,040	7,576,850	Dam 2	TEP MP 4 TEP MP 7 TEP MP 8	Isaac River

Table 3 - Contaminant release monitoring points

Monitoring point	Easting GDA94	Northing GDA94	Contaminant source and location	Monitoring point location	Receiving waters
TEP MP 2	601,820	7,579,250	Production Dam	750m downstream of junction of Production Dam pipeline & Isaac River	Isaac River
TEP MP 3	603,480	7,577,460	Dam 4	650m downstream of junction of Dam 4 overflow flume and Isaac River	Isaac River
TEP MP 4	604,290	7,576,500	Dam 2	500m downstream of junction of Dams 1 & 2 pipeline & Isaac River	Isaac River
TEP MP 5	601,520	7,579,900	Production Dam	TEP RP 2, End of Pipe	Isaac River
TEP MP 6	602,940	7,577,890	Dam 4	TEP RP 3, End of Pipe	Isaac River
TEP MP 7	604,040	7,576,850	Dam 2	TEP RP 4, End of Pipe	Isaac River
TEP MP 8	605,310	7,575,260	Production Dam Dam 4 Dam 2	2200m downstream of RP 4	Isaac River

Table 4 - Contaminant release limits

Quality characteristic	Compliance Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical Conductivity (uS/cm)	5,500	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 5
			Samples require laboratory analysis[2]	TEP MP 5
	8,000	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 6
			Samples require laboratory analysis[2]	TEP MP 6
	11,500	Daily during release (the first sample	*In situ*[1]	TEP MP 7

		must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 7
	400	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 2 TEP MP 3 TEP MP 4 TEP MP 8
			Samples require laboratory analysis[2]	TEP MP 2 TEP MP 3 TEP MP 4 TEP MP 8
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 2 TEP MP 3 TEP MP 4 TEP MP 5 TEP MP 6 TEP MP 7 TEP MP 8
			Samples require laboratory analysis[2]	TEP MP 2 TEP MP 3 TEP MP 4 TEP MP 5 TEP MP 6 TEP MP 7 TEP MP 8
TSS	Limit = 80th percentile of upstream background[3] sites	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 5 TEP MP 6 TEP MP 7
Sulphate (SO_4^{2-}) (mg/L)	250	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 5 TEP MP 6 TEP MP 7

[1] In situ samples can be taken using electronic sampling equipment.
[2] Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.
[3] Upstream background sites are defined in Table 7. For release points 'TEP RP 2', 'TEP RP 3' and 'TEP RP 3' monitoring for Total Suspended Solids, the associated upstream background site is TEP Reference Monitoring Point

Table 5 - Release contaminant trigger investigation levels

Quality characteristic	Trigger levels (µg/L)	Monitoring frequency	Monitoring Point
Aluminium	55	Commencement of release and thereafter weekly during release	TEP MP 5 TEP MP 6 TEP MP 7
Arsenic	13		
Cadmium	0.2		
Chromium	1.0		
Copper	2.0		
Iron	300		
Lead	10		
Mercury	0.2		
Nickel	11		
Zinc	8.0		
Boron	370		
Cobalt	90		
Manganese	1900		
Molybdenum	34		
Selenium	10		
Silver	1.0		
Uranium	1.0		
Vanadium	10		
Ammonia	900		
Nitrate	1100		
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000		

Table 6 - Contaminant release during flow events

Receiving waters	Release point (TEP RP)	Gauging station description	Longitude (GDA94)	Latitude (GDA94)	Minimum flow in receiving water required for a release event	Flow recording frequency
Isaac River	TEP RP 2	Isaac River @ Goonyella Site ID:130414A	147 58 21	-21 51 20	= > 20m^3/sec	Continuous (minimum daily)
Isaac River	TEP RP 3	Isaac River @ Goonyella Site ID:130414A	147 58 21	-21 51 20	= > 20m^3/sec	Continuous (minimum daily)
Isaac River	TEP RP 4	Isaac River @ Goonyella Site ID:130414A	147 58 21	-21 51 20	= > 50m^3/sec	Continuous (minimum daily)

Table 7 - Receiving water downstream monitoring points

Monitoring points (TEP MP)	Receiving waters location description	Easting (GDA94)	Northing (GDA94)
TEP Impact Monitoring Point 1	TEP Impact Monitoring Point 1 is located south of the downstream Automatic Water Station on the Isaac River.	605,310	7,575,260

REPORTING

Moranbah North Coal Pty Ltd will notify the administering authority, in writing, within eight hours of commencing a release of contaminants under this Transitional Environmental Program, detailing:

a) release commencement date/time
b) expected release cessation date/time
c) release point/s
d) release volume (estimated)
e) receiving water/s including the natural flow rate
f) any details (including available data) regarding likely impacts on the receiving water(s).

Moranbah North Coal Pty Ltd will submit a report to the administering authority daily during the release of contaminants under this Transitional Environmental Program, detailing:

a) all in situ monitoring data for that day
b) the receiving water flow rate
c) the release flow rate.

Moranbah North Coal Pty Ltd will notify the administering authority, in writing, within twenty-four hours of ceasing a release of contaminants uner this Transitional Environmental Program, detailing:

a) release cessation date/time
b) natural flow volume in receiving water
c) volume of water released
d) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
e) all in-situ water quality monitoring results
f) any other matters pertinent to the water release event.

Moranbah North Coal Pty Ltd will submit a report to the administering authority on the fifth business day of each month detailing:

a) all activities undertaken under the Transitional Environmental Program,
b) b) how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
    i. the best practice environmental management for the activity, and
    ii. the risks of environmental harm being caused by the activity, and
c) how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program.

Moranbah North Coal Pty Ltd will submit a report to the administering authority by **27 May 2011** including:

a) details of the completion of the Transitional Environmental Program,
b) details on all activities undertaken under the Transitional Environmental Program,
c) identification of how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
    i. the best practice environmental management for the activity, and
    ii. the risks of environmental harm being caused by the activity,

d) identification of how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program, and
e) confirmation that at closure of the Transitional Environmental Program, the holder will be able to comply with the conditions of the current Environmental Authority issued for the Moranbah North Coal Mine, located at Mining Lease 70108 and the *Environmental Protection Act 1994*.

CONDITIONS

In carrying out this Transitional Environmental Program, Moranbah North Coal Pty Ltd will undertake all activities in accordance with the following conditions.

Undertaking the release of mine affected water

1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under this Transitional Environmental Approval – Certificate of Approval, unless otherwise authorised to under the *Environmental Protection Act 1994*.

2 The release of contaminants to waters must only occur from the release points specified in Table 2 of this Transitional Environmental Program.

3 The release of contaminants to waters must not exceed the release limits stated in Table 4 at the monitoring points specified in Table 2 and Table 3 of this Transitional Environmental Program.

4 The release of contaminants to waters from the release points must be monitored at the locations specified in Table 2 and Table 3 for each quality characteristic and at the frequency specified in Table 4 and Table 5 of this Transitional Environmental Program.

5 If quality characteristics of the release exceed any of the trigger levels specified in Table 5 during a release event, the Transitional Environmental Program holder must compare the downstream results in the receiving waters identified in Table 7 to the trigger values specified in Table 5 and:
   a) where the trigger values are not exceeded then no action is to be taken
   b) where the downstream results exceed the trigger values specified Table 5 for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and
      i) if the result is less than the background monitoring site data, then no action is to be taken or
      ii) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining
         1) details of the investigations carried out
         2) actions taken to prevent environmental harm.

6 If an exceedance in accordance with condition 5(a)(ii)(2) is identified, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the result. The notification must include written verification of the exceedance forwarded to the administering authority either via facsimile [redacted] or email to [redacted]

Contaminant Release Events

7 The Transitional Environmental Program holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations

upstream of each release point specified in Table 2 for any receiving waters into which a release occurs.

8 Notwithstanding any other condition of this Transitional Environmental Program, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in Table 6 for the contaminant release point(s) specified in Table 2.

9 Contaminant release flow rate from RP 2 must not exceed a release rate of 100l/s.

10 Contaminant release flow rate from RP 3 must not exceed a release rate of 100l/s.

11 Contaminant release flow rate from RP 4 must not exceed a release rate of 100l/s.

12 The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Table 2.

Erosions and Sediment Control

13 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

14 Erosion protection must be designed, installed and maintained at each release point authorised by this Transitional Environmental Program and must:
a) designed and constructed by a suitably qualified and experienced person, and
b) be inspected by a suitably qualified and experienced person
    1. prior to the commencement of dewatering operations; and
    2. following the cessation of release in accordance with the conditions of this Transitional Environmental Program.

15 The holder of this Transitional Environmental Program must provide a report to the administering authority within 10 business days following the cessation of release of mine affected water authorised under authority of this Transitional Environmental Program. The report must detail the performance of erosion protection measures, including:
a) identification of erosion, slumping and scour impacts to vegetation,
b) rehabilitation, including earthworks, scour protection and flow velocity controls undertaken to minimise environmental harm, and
c) detailed engineering assessment of erosion protection works completed to date and any proposed works to be undertaken.

Notification of Release Events

16 The Transitional Environmental Program holder must notify the administering authority within 6 hours of having commenced releasing mine affected water to the receiving environment. Notification must include the submission of written verification to the administering authority (either via facsimile [redacted] or email to [redacted] of the following information:
a) release commencement date/time
b) expected release cessation date/time
c) release point/s
d) release volume (estimated)
e) receiving water/s including the natural flow rate
f) any details (including available data) regarding likely impacts on the receiving water(s).

17 The Transitional Environmental Program holder must provide the administering authority daily during the release of mine affected water, in writing (either via facsimile [redacted] or email to [redacted] of the following information:
a) all in situ monitoring data for that day

b) the receiving water flow rate
c) the release flow rate.

18 The Transitional Environmental Program holder must notify the administering authority as soon as practicable, (no later than within 24 hours after cessation of a release) of the cessation of a release notified under condition 14 and within 28 days provide the following information in writing:
a) release cessation date/time
b) natural flow volume in receiving water
c) volume of water released
d) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
e) all in-situ water quality monitoring results
f) any other matters pertinent to the water release event.

Notification of release event exceedence

19 If the release limits defined in Table 3 are exceeded, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the results.

20 The Transitional Environmental Program holder must, within 28 days of a release that exceeds the conditions of this Transitional Environmental Program, provide a report to the administering authority detailing:
a) the reason for the release
b) the location of the release
c) all water quality monitoring results
d) any general observations
e) all calculations
f) any other matters pertinent to the water release event.

Requirements to cease the release of mine affected water

21 The release of mine affected waters must cease immediately if any water quality limit as specified in Table 4 is exceeded.

22 The release of mine affected waters must cease immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

23 The release of mine affected waters must cease immediately if the holder of this Transitional Environmental Program is directed to do so by the administering authority.

24 The release of mine affected waters authorised under this Transitional Environmental Program must cease by **13 May 2011**.

Monitoring Requirements

25 Where monitoring is a requirement of this Transitional Environmental Program, ensure that a competent person(s) conducts all monitoring.

26 All monitoring undertaken as a requirement of this Transitional Environmental Program must be undertaken in accordance with the administering authority's Water Sampling Manual.

Notification of emergencies, incidents and exceptions

27 As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this Transitional Environmental Program, the administering authority must be notified of the release by telephone, facsimile or email.

28 The notification of emergencies or incidents must include but not be limited to the following:
   a) the holder of the Transitional Environmental Program
   b) the location of the emergency or incident
   c) the number of the Transitional Environmental Program
   d) the name and telephone number of the designated contact person
   e) the time of the release
   f) the time the holder of the Transitional Environmental Program became aware of the release
   g) the suspected cause of the release
   h) the environmental harm caused, threatened, or suspected to be caused by the release, and
   i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.

29 Not more than fourteen days following the initial notification of an emergency or incident, written advice must be provided of the information supplied to the administering authority in relation to:
   a) proposed actions to prevent a recurrence of the emergency or incident, and
   b) outcomes of actions taken at the time to prevent or minimise environmental harm.

Department of Environment and Resource Management

Notice

Environmental Protection Act

Decision to grant a transitional environmental program

This statutory notice is issued by the administering authority pursuant to 340 of the Environmental Protection Act 1994, *to advise you of a decision or action.*

Your reference : Worked Water Management – additional discharge locations
Our reference : MAN11420

Moranbah North Coal Pty Ltd
1164 Goonyella Road
Moranbah Qld 4744

Attention: Mr Michael Rodgerson,

Re: Application for the a transitional environmental program for management of mine affected water at the Moranbah North Coal Mine, located at mining lease 70108.

Thank you for your application a Transitional Environmental Program. Your application, which was originally received by this office on 20 December 2010 and amended on 23 December 2010, has been approved.

A copy of the certificate of approval (MAN11420) with conditions is attached.

Fees apply for the assessment of a draft transitional environmental program and any subsequent annual returns. The fees are outlined in the attached operational policy *Transitional Environmental Program (TEP) fees.*

A fee of $3516.30 is payable.

You may apply to the Department of Environment and Resource Management for a review of this decision within 10 business days of receiving this notice. You may also appeal against this decision to the Planning and Environment Court.

Information outlining the review and appeal processes under the *Environmental Protection Act 1994* is included with this notice. This information is intended as a guide only. You may have other legal rights and obligations

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

Queensland Government

Notice

Should you have any queries in relation to this notice, Rebecca Blades, Principal Environmental Officer of the Department of Environment and Resource Management on telephone [redacted] would be happy to assist you.

[redacted]

SIGNATURE

24/12/2010

DATE

Christopher Loveday
Manager, Environmental Services - Mining
Delegate of the
Environmental Protection Act 1994

Enquiries:
[redacted]

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

Queensland Government

Environmental Protection Act

Transitional environmental program certificate of approval number MAN11420

This certificate of approval is issued by the administering authority pursuant to section 339 of the Environmental Protection Act 1994. *A transitional environmental program is a specific program that, when approved, achieves compliance with the* Environmental Protection Act 1994 *for the matters dealt with by the program by reducing environmental harm, or detailing the transition to an environmental standard.*

Under the provisions of the *Environmental Protection Act 1994*, this certificate of approval is hereby granted to:

Moranbah North Coal Pty Ltd
1164 Goonyella Road
Moranbah Qld 4744

approving the draft transitional environmental program; titled Worked Water TEP – Additional Discharge Locations for management of mine affected water at the Moranbah North Coal Mine, Mining Lease 70108.

The draft transitional environmental program, dated 20 December 2010, was received by this office on 20 December 2010 and amended on 23 December 2010.

The draft transitional environmental program is approved subject to the following conditions:

Reporting

1. Moranbah North Coal Pty Ltd must notify the administering authority, in writing, within six hours of commencing a release of contaminants under this Transitional Environmental Program, detailing:
   a) release commencement date/time
   b) expected release cessation date/time
   c) release point/s
   d) release volume (estimated)
   e) receiving water/s including the natural flow rate
   f) any details (including available data) regarding likely impacts on the receiving water(s).

2. Moranbah North Coal Pty Ltd must submit a report to the administering authority daily during the release of contaminants under this Transitional Environmental Program, detailing:
   a) all in situ monitoring data for that day
   b) the receiving water flow rate
   c) the release flow rate.

3. Moranbah North Coal Pty Ltd must notify the administering authority, in writing, within twenty-four hours of ceasing a release of contaminants under this Transitional Environmental Program, detailing:
   a) release cessation date/time
   b) natural flow volume in receiving water
   c) volume of water released
   d) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
   e) all in-situ water quality monitoring results
   f) any other matters pertinent to the water release event.

4. Moranbah North Coal Pty Ltd must submit a report to the administering authority on the fifth business day of each month detailing:
   a) all activities undertaken under the Transitional Environmental Program,

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485
Queensland Government

b) b) how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
   i. the best practice environmental management for the activity, and
   ii. the risks of environmental harm being caused by the activity, and
c) how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program.

5. Moranbah North Coal Pty Ltd must submit a report to the administering authority by 27 May 2011 including:
   a) details of the completion of the Transitional Environmental Program,
   b) details on all activities undertaken under the Transitional Environmental Program,
   c) identification of how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
      i. the best practice environmental management for the activity, and
      ii. the risks of environmental harm being caused by the activity,
   d) identification of how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program, and
   e) confirmation that at closure of the Transitional Environmental Program, the holder will be able to comply with the conditions of the current Environmental Authority issued for the Moranbah North Coal Mine, located at Mining Lease 70108 and the *Environmental Protection Act 1994*.

Requirements to cease the release of mine affected water

6. Moranbah North Coal Pty Ltd must cease the release of mine affected waters immediately if any water quality limit as specified in Table 4 of the Transitional Environmental Program is exceeded.

7. Moranbah North Coal Pty Ltd must cease the release of mine affected waters immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

8. Moranbah North Coal Pty Ltd must cease the release of mine affected waters immediately if the holder of this Transitional Environmental Program is directed to do so by the administering authority.

9. Moranbah North Coal Pty Ltd must cease the release of mine affected waters authorised under this Transitional Environmental Program by **13 May 2011**.

Departmental Review of TEP

10. The release of mine affected water under authority of this Transitional Environmental Program may be reviewed at any time in accordance with Table 1: Trigger Values at Downstream Locations. The department may require the Transitional Environmental Program holder to cease any release if values are met or exceeded at these locations.

Table 1: Trigger Values at Downstream Locations (Isaac River)

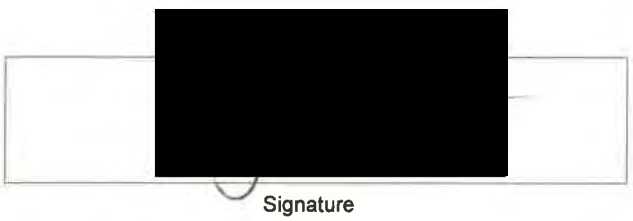
Quality characteristic	Trigger Value	Flow Trigger	Monitoring Point
Electrical conductivity (uS/cm)	525	<5m³/s	DERM Gauging Station 130410A (Deverill)
	400	>5m³/s	DERM Gauging Station 130410A (Deverill)
	400	All Flows	DERM Gauging Station 130401A (Yatton)

The transitional environmental program remains in force until 30 June 2011.

In any case where conditions are imposed upon a certificate of approval, you may apply to the administering authority for a review of the decision. You may also appeal against the decision to the Planning and Environment Court.

Information relating to a review of decisions or appeals under the *Environmental Protection Act 1994* is included with this notice. This information is intended as a guide only. You may have other legal rights and obligations.

Should you have any queries in relation to this Notice, Rebecca Blades, Principal Environmental Officer of the Department of Environment and Resource Management on telephone [redacted] would be happy to assist you.



Signature

24/12/2010

Date

Christopher Loveday
Manager, Environmental Services - Mining
Department of Environment and Resource Management

Enquiries:

[redacted]

Department of Environment and Resource Management

Notice

Environmental Protection Act

Decision to grant amendment of an approval of a transitional environmental program

This statutory notice is issued by the administering authority pursuant to sections 340 and 344 of the Environmental Protection Act 1994, *to advise you of a decision or action.*

Your reference : Worked Water Management
Our reference : MAN11401

Moranbah North Coal Pty Ltd
1164 Goonyella Road
Moranbah Qld 4744

Attention: Mr Michael Rodgerson,

Re: Application for the amendment of an approved transitional environmental program for management of mine affected water at the Moranbah North Coal Mine, located at mining lease 70108.

Thank you for your application for the amendment of an approved transitional environmental program and transitional environmental program – certificate of approval MAN10140. Your application, which was originally received by this office on 16 December 2010 and amended on 23 December 2010, has been approved.

A copy of the certificate of approval, number MAN11401, is attached.

Fees apply for the assessment of a draft transitional environmental program and any subsequent annual returns. The fees are outlined in the attached operational policy *Transitional Environmental Program (TEP) fees.*

A fee of $180.40 is payable.

You may apply to the Department of Environment and Resource Management for a review of this decision within 10 business days of receiving this notice. You may also appeal against this decision to the Planning and Environment Court.

Information outlining the review and appeal processes under the *Environmental Protection Act 1994* is included with this notice. This information is intended as a guide only. You may have other legal rights and obligations

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

Queensland Government

Department of Environment and Resource Management

Notice

Should you have any queries in relation to this notice, Rebecca Blades, Principal Environmental Officer of the Department of Environment and Resource Management on telephone (07) 4980 6200 would be happy to assist you.

[redacted]

SIGNATURE

24/12/2010.

DATE

Christopher Loveday
Manager, Environmental Services - Mining
Delegate of the
Environmental Protection Act 1994

Enquiries:

[redacted]

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

Queensland Government

Environmental Protection Act

Transitional environmental program certificate of approval number MAN11401

This certificate of approval is issued by the administering authority pursuant to sections 339 and 344 of the Environmental Protection Act 1994. *A transitional environmental program is a specific program that, when approved, achieves compliance with the* Environmental Protection Act 1994 *for the matters dealt with by the program by reducing environmental harm, or detailing the transition to an environmental standard.*

Under the provisions of the *Environmental Protection Act 1994*, this amended certificate of approval is hereby granted to:

Moranbah North Coal Pty Ltd
1164 Goonyella Road
Moranbah Qld 4744

approving the draft transitional environmental program; titled Transitional Environmental Program Amendment (MAN10140), Moranbah North Coal Pty Ltd, MIN100557107, Worked Water Management, Submission 16 December 2010, Completion 24 February 2012 for management of mine affected water at the Moranbah North Coal Mine, Mining Lease 70108.

The draft transitional environmental program, dated 16 December 2010, was received by this office on on 16 December 2010, and was amended on 23 December 2010.

The draft transitional environmental program is approved subject to the following conditions:

Reporting

1. Moranbah North Coal Pty Ltd must notify the administering authority, in writing, within six hours of commencing a release of contaminants under this Transitional Environmental Program, detailing:
   a) release commencement date/time
   b) expected release cessation date/time
   c) release point/s
   d) release volume (estimated)
   e) receiving water/s including the natural flow rate
   f) any details (including available data) regarding likely impacts on the receiving water(s).

2. Moranbah North Coal Pty Ltd must submit a report to the administering authority daily during the release of contaminants under this Transitional Environmental Program, detailing:
   a) all in situ monitoring data for that day
   b) the receiving water flow rate
   c) the release flow rate.

3. Moranbah North Coal Pty Ltd must notify the administering authority, in writing, within twenty-four hours of ceasing a release of contaminants under this Transitional Environmental Program, detailing:
   a) release cessation date/time
   b) natural flow volume in receiving water
   c) volume of water released
   d) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
   e) all in-situ water quality monitoring results
   f) any other matters pertinent to the water release event.

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

4. Moranbah North Coal Pty Ltd must submit a report to the administering authority on the final business day of each month detailing:

a) all activities undertaken under the Transitional Environmental Program,
b) b) how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
    i. the best practice environmental management for the activity, and
    ii. the risks of environmental harm being caused by the activity, and
c) how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program.

5. Moranbah North Coal Pty Ltd must submit a report to the administering authority by 24 January 2012 including:

a) details of the completion of the Transitional Environmental Program,
b) details on all activities undertaken under the Transitional Environmental Program,
c) identification of how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
    i. the best practice environmental management for the activity, and
    ii. the risks of environmental harm being caused by the activity,
d) identification of how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program, and
e) confirmation that at closure of the Transitional Environmental Program, the holder will be able to comply with the conditions of the current Environmental Authority issued for the Moranbah North Coal Mine, located at Mining Lease 70108 and the *Environmental Protection Act 1994*.

Requirements to cease the release of mine affected water

6. Moranbah North Coal Pty Ltd must cease the release of mine affected waters immediately if any water quality limit as specified in Table 4 of the Transitional Environmental Program is exceeded.

7. Moranbah North Coal Pty Ltd must cease the release of mine affected waters immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

8. Moranbah North Coal Pty Ltd must cease the release of mine affected waters immediately if the holder of this Transitional Environmental Program is directed to do so by the administering authority.

9. Moranbah North Coal Pty Ltd must cease the release of mine affected waters authorised under this Transitional Environmental Program by **10 January 2012**.

10. Moranbah North Coal Pty Ltd must cease the release of mine affected waters authorised under this Transitional Environmental Program when the flow of water within the Isaac River, when measured at the stream flow gauging station identified as Isaac River @ Goonyella, Site ID: 130414A, is less than 2.5m^3/second.

11. Moranbah North Coal Pty Ltd must cease the release of mine affected waters authorised under this Transitional Environmental Program must cease within 24 hours when the flow of water within the Isaac River, when measured at the stream flow gauging station identified as Isaac River @ Goonyella, Site ID: 130414A, declines to less than 5m^3/second.

Departmental Review of TEP

12. The release of mine affected water under authority of this Transitional Environmental Program may be reviewed at any time in accordance with Table 1: Trigger Values at Downstream Locations. The department may require the Transitional Environmental Program holder to cease any release if values are met or exceeded at these locations.

Table 1: Trigger Values at Downstream Locations (Isaac River)

Quality characteristic	Trigger Value	Flow Trigger	Monitoring Point
Electrical conductivity (uS/cm)	525	<5m³/s	DERM Gauging Station 130410A (Deverill)
	400	>5m³/s	DERM Gauging Station 130410A (Deverill)
	400	All Flows	DERM Gauging Station 130401A (Yatton)

The transitional environmental program remains in force until 24 February 2012.

In any case where conditions are imposed upon a certificate of approval, you may apply to the administering authority for a review of the decision. You may also appeal against the decision to the Planning and Environment Court.

Information relating to a review of decisions or appeals under the *Environmental Protection Act 1994* is included with this notice. This information is intended as a guide only. You may have other legal rights and obligations.

Should you have any queries in relation to this Notice, Rebecca Blades, Principal Environmental Officer of the Department of Environment and Resource Management on telephone (07) 4980 6200 would be happy to assist you.

[redacted]

Signature

24/12/2010

Date

Christopher Loveday
Manager, Environmental Services - Mining
Department of Environment and Resource Management

Enquiries:

[redacted]

Moranbah North Coal

ANGLO COAL

21 February 2011

Anglo Coal (Moranbah North Management) Pty Ltd.
Safety & Health Department.

Michael Rodgerson
Environmental Superintendent

[redacted]

Rebecca Blades
Principal Environmental Officer
Department of Environment & Resource Management
PO Box 19
EMERALD QLD 4720

Dear Rebecca,

Moranbah North Mine in its operations under the Transitional Environmental Program (TEP), Worked Water Management installed and operated 15 atomised spray machines since May 2010. It has been found these units are not as effective as initially reported and have had significant non-operational time.

With the implementation of strategies to make the existing water management system more effective Moranbah North Mine would like to remove the atomisers from the TEP and concentrate the resources in other areas. Please find attached an amended TEP for your consideration.

Please do not hesitate to contact myself if you have any queries on [redacted] or e-mail: [redacted]

Yours sincerely,

[redacted]

Michael Rodgerson
Anglo Coal (Moranbah North Management) Pty Ltd

TRANSITIONAL ENVIRONMENTAL PROGRAM

AMENDMENT (MAN10140)

MORANBAH NORTH COAL PTY LTD

MIN100557107

WORKED WATER MANAGEMENT

SUBMISSION 22 FEBRUARY 2011

COMPLETION 24 FEBRUARY 2012

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EXECUTIVE SUMMARY

Moranbah North Mine is located approximately 18km north of Moranbah in Central Queensland. Mining is via conventional longwall operation with drift underground access. Surface infrastructure consists of a coal preparation plant and associated coal handling facilities including rail load out, co-disposal area, raw and product stockpiles and water management structures.

Longwall operations commenced in 1999 and the mine has a current production of around 4.1Mtpa. Current operations are associated with longwall panels LW108 and LW202. Co-disposal of coarse and fine rejects is undertaken with deposition into a prepared area located to the immediate west of the Industrial Area.

Central to the ongoing viability of the Moranbah North Mine is:

- Access to Raw Water;
- Effective management of Worked Water (mine affected Raw Water);
- Continued safe operation;
- Reliability of production assets.

Changes to the MNM Environmental Authority (EA) in 2009, restrict the mines ability to discharge Worked Water to the Isaac River during natural flow events. These changes, and other influences discussed in Section 2.4, have seen the total Worked Water stored onsite increase to levels approaching Mandatory Reporting Level (MRL). This information has been communicated to DERM as required under Section A8 of the EA and a Program Notice was subsequently submitted. In response DERM requested submission of a TEP detailing the considerations and recommended actions required to bring the water balance at Moranbah North into compliance with the current EA requirements.

Where actions potentially require dispensation from current EA conditions these are clearly identified in Section 5 - Proposed actions.

Should the proposed actions fail to reduce the need to store Worked Water then MNM may need to:

- Continue to store Worked Water above MRL whilst alternative solutions are developed that will reverse the trend;
- Discharge.

It should be noted that any discharge would occur in accordance with standard practice prior to December 2008, with environmental monitoring failing to identify significant environmental harm in receiving waters during previous release events.

1 INTRODUCTION

1.1 Background

Anglo Coal (Moranbah North Management) Pty Ltd (MNM) engaged Water Solutions Pty Ltd (WSPL) to assist with the development of the Transitional Environmental Program (TEP) covering Worked Water Management at MNM.

The Transitional Environmental Program (TEP) outlined actions that Moranbah North Mine (MNM) proposed to (and have already completed) undertake over a period of 14 months to deliver compliance with the site Environmental Authority (EA) MIN 10055717.

The TEP was prepared in response to a request from DERM dated 23rd March 2010 (Ref MIN100557107) following their review of the MNM Program Notice submitted 9th of March 2010. Lodgement of the TEP was required by the 18 May 2010. Approval of the Worked Water TEP was received on the 8th of August 2010.

Implementation of the current TEP for Worked Water has identified that opportunities to discharge worked water can be improved. Issues exist where the current discharge location identified within the TEP (from the Environmental Dam spillway) and the existing flow requirement for the Isaac River exposes the mine to non-compliance. This is as a result of the river flow rate dropping to below the required flow rate for discharge, while the discharge continues as a result of the flow associated with the co-disposal catchment area taking longer to cease.

This document incorporates the existing Worked Water Management TEP and outlines proposed amendment to reducing the flow required in the Isaac River for discharge to occur from the Environmental Dam discharge point. Mitigation of any potential environmental harm is addressed by dilution of the discharge with non-contaminated water from the stilling basin which can be released at the Environmental Dam spillway discharge point.

1.2 Objective

The objective of this TEP is to identify actions required to deliver compliance with the site EA within the nominated TEP period while mitigating and eliminating potential environmental harm through best practice activities in discharge management.

1.3 Compliance Requirements

Previous Worked Water discharges from site to the Isaac River during 2010 were not compliant with the site EA conditions (refer W3 and W2), as evidenced by fines imposed by DERM in March 2010 (DERM reference: EMD 137) and a warning notice in December 2010.

In response to these non-compliances, an Incident Management Team (IMT) was established at MNM to investigate and recommend actions to achieve compliance with the site EA.

The actions in this TEP have been identified following consideration of the following:

- Legislative compliance:

  Compliance to the Environmental Protection Act 1994, Environmental Protection Regulation 2008 and the Environmental Authority (Permit Number: MIN100557107 – Moranbah North Coal Mine). Consideration has been focused on how the Environmental Management System (EMS) can be better designed and implemented to ensure compliance. Stakeholders include MNM Site Leadership Team, AAMC and DERM.

- Community expectations and social engagement:

  MNM's Social Licence to Operate. This area of consideration revolves around the socially responsible use of raw water, the ability to recycle Worked Water and optimising site evaporation capabilities. Stakeholders include the properties associated in the near and downstream areas adjacent to the mine, Fitzroy Water Quality Advisory Group and the Isaac Regional Council.

- Sustainable operation:

  The area for consideration has been around the financial impacts of delivering/ using Worked Water (high in salt 8,000 – 10,000 uS/cm) into the production process underground. The key areas of focus have been:

  Increased health and safety risks:

  Underground Longwall Mining utilises high pressure hydraulic systems in face operations. The health and safety risks associated with operating these systems in close proximity to Mine Workers requires a thorough and effective maintenance system. These maintenance systems require MNM to identify the safety critical equipment (e.g. hydraulic hoses and valves) and to understand the mean time to failure for this equipment. Replacement of these items is then scheduled and effected before the mean time to failure.

  Introduction of Worked Water into these hydraulic systems is expected to dramatically reduce the mean time to failure. At the time of writing this TEP it is unclear exactly what the reduction in mean time to failure will be for specific equipment.

  Whilst MNM will endeavour to manage these risks, to as low as reasonably achievable, there needs to be recognition that the properties of the Worked Water are outside Original Equipment Manufacturer (OEM) specifications.

  Note: The risk of a serious injury or fatality to Mine Workers, as a result of an unexpected premature failure of safety critical equipment, is a significant area of concern for MNM and needs to be a key point of consideration when assessing this TEP.

  Ongoing viability of the operation:

  The current mining equipment runs on raw water (<400µS/cm) supplied from Eungella Dam. Introduction of Worked Water, above the OEM specification of 800µS/cm, is likely to reduce the production availability of the Longwall Mining Equipment (currently 33%) and profitability of the Moranbah North Mine.

  This reduced profitability could impact the ongoing viability of the mine thereby directly jeopardising 550 primary jobs at MNM and remove an annual spend of $371 million, including $61 million in royalties.

  Note: Environmental Monitoring during previous discharge events have failed to identify significant environmental harm to the receiving waters. This is a fact that is supported by conducted during discharges. This and the ongoing viability of the operation needs to be a key point for consideration when assessing this TEP.

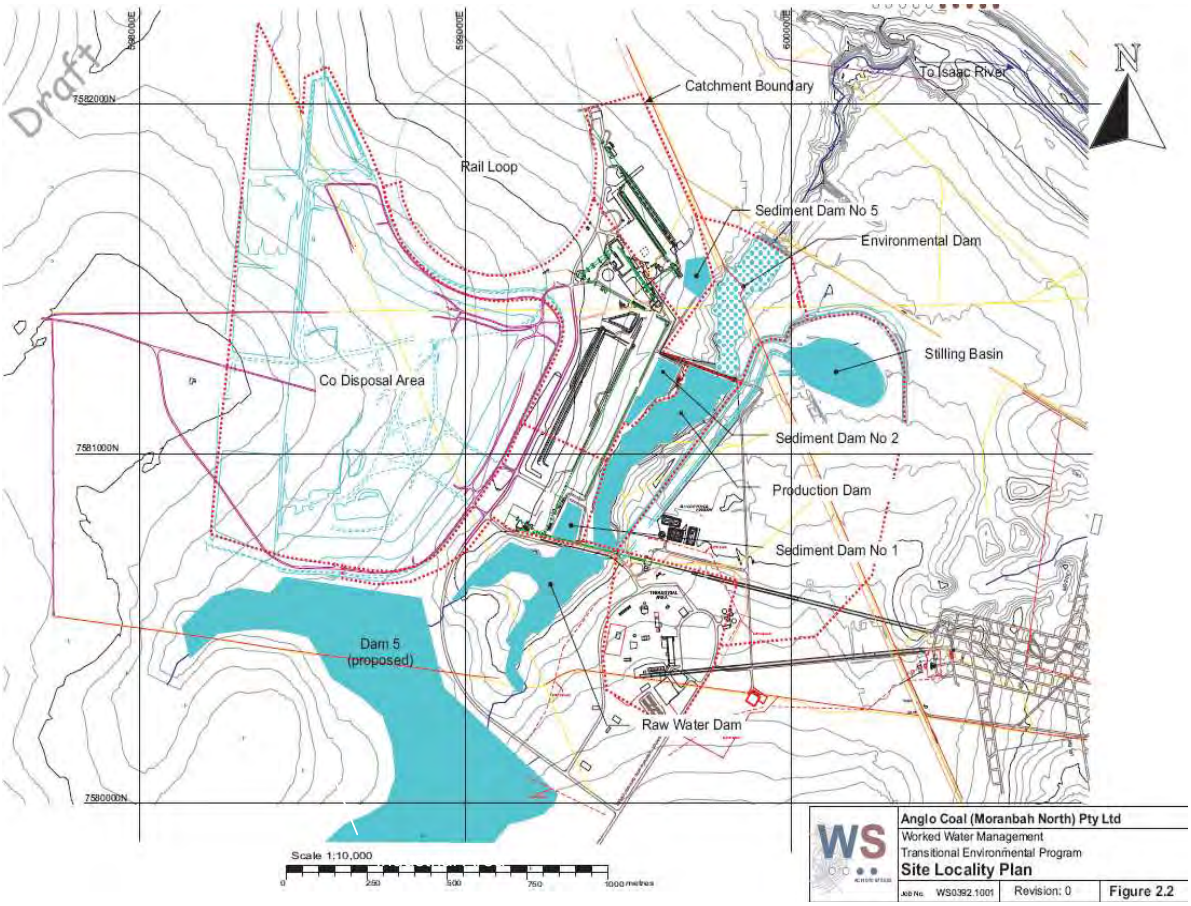

Figure 2.2 detailed layout plan of the Industrial Area showing the major water management infrastructure including proposed Dam 5

2 CURRENT STATUS

2.1 Worked Water Management System - Overview

MNM have identified a Worked Water management system to achieving compliance with both Anglo American Metallurgical Coal (AAMC) and regulatory requirements. A key component of this system is the MNM Operational Simulation (OPSIM) model which simulates the operation of the Worked Water management system on a daily time step basis whilst keeping account of all site water and representative water quality. Background details of the MNM OPSIM model are contained in the WSPL Report WS090544.

The Worked Water inventory status as at 13th December 2010 is summarised in Table 2.1.

Table 2.1. Worked Water Storages – Inventory Status

Storage Name	Inventory (13 Dec 2010) (ML)	Full Supply Volume (ML)	Mandatory Reporting Level (ML)
Production Dam	200	200	180[2]
Environmental Dam	60	66	20[1]
Dam 1	77	160	145[1]
Dam 2	173	267	255[1]
Dam 4	403	476	457[1]

Note: 1/ Reference from *Annual Inspection of Regulated Dams October 2009 (Henderson Geotech).*

2/ For the purposes of the TEP period, MNM have adopted 200ML as the effective MRL for the Production Dam, pending approval of the Hazardous Dam TEP (submitted 1 April 2010 to DERM) and construction of proposed Dam 5.

2.2 Circumstances Leading to Current Site Position

A review of site operations over the last 3 years has identified that the following issues have contributed to the current situation at MNM.

Increasing Underground Raw Water Consumption

The inability for site to reduce Worked Water inventory via active discharge has been compounded by increases in raw water consumption by underground mining operations.

In 2005, underground raw water consumption was 113L/tonne of coal mined and by early 2010 this had increased to 175 L/tonne– this equates to a 64% increase raw water consumption with no corresponding increase in site containment capacity.

The impacts of this change are the principal reason for the current site Worked Water imbalance.

Changes to EA Discharge Requirements

The MNM EA was amended in December 2008 with reductions in the “end of pipe” discharge limits from <10,000µs/cm to <1,500µs/cm during flow events in the Isaac River. Given the salinity of MNM Worked Water (typically 8,000-10,000us/cm) this change effectively removed the ability for MNM to discharge during Isaac River flow events.

Previous site practice was to discharge 200-300ML from Dams 1, 2 & 4 during natural flow events, thereby creating additional storage capacity within the MNM Worked Water system. Changes to the EA mean Worked Water which would previously have been released during large flow events has accumulated in the Worked Water circuit.

Change Management was not applied to identify and manage the risks associated with the site EA changes.

EMS – Water Balance

The current Water Balance Procedure (3.3 Water Balance), contained within the MNM Environmental Management System (EMS), does not incorporate Trigger Action Response Plans (TARP’s) to provide advanced warning and escalate actions to control the site Water Balance in

accordance with the current EA As a consequence, the water imbalance was not identified early enough to enable MNM to address the relevant issues prior to reaching site MRL.

3 FUTURE REQUIREMENTS

In understanding the future requirements for MNM, the following were considered:

- Legislative Compliance
  - At the completion of the TEP site must be compliant with EA conditions.
- Community Expectations
  - The actions recommended in the TEP must be consistent with community expectations as they relate too responsible use of raw water and impacts on receiving waterways.
- Social Engagement
  - The TEP must consider avenues for the engagement of and consideration of stakeholders concerns.
- Sustainable operation
  - Corporate Compliance
    At the completion of the TEP, site must be compliant with both AAPlc values and the *Anglo Environment Way.*
  - Effective EMS
    During the TEP process the site EMS must be reviewed and updated so that the system defines sustainable outcomes.
  - Rehabilitation
    The TEP must consider potential harm to the environment. Harm should be avoided where possible, with remedial strategies defined where necessary.
  - Ongoing Viability of the Business
    Proposed TEP actions must deliver solutions that do not compromise the ongoing viability of the mine. Specifically consideration must be given to the financial, health and safety impacts of introducing Worked Water into the underground production raw water circuit.

4 IDENTIFIED IMPROVEMENT OPTIONS

The following areas of opportunity were identified as potential actions for this TEP.

4.1 Behavioural

Education and awareness of responsible water management on site

Deliver training to improve workforce understanding of the Raw and Worked Water management systems function and the responsible use of these systems (ie. align business values).

Assignment of site role related KPI's

Include a KPI into relevant Performance Reviews which represents a 50% reduction in the use of Raw Water for 2010/11 Year.

No. of Lt's of Water/ Tonne of coal mined. (*Equivalent to 500Ml use for 2010/11 water year)*

4.2 Eliminate Raw Water Use Onsite

Surface

Quantify current surface use of Raw Water and develop strategies to reduce consumption.

Note: The TEP must consider potential environmental harm from alternative uses of saline water. Harm should be avoided where possible, with remedial strategies defined where necessary.

Underground

Quantify current underground use of Raw Water and develop strategies to reduce consumption. Investigations to-date have identified the ability to reduce raw water use by:

- maintaining con-flow valves on conveyor sprays ,
- Reinstalling heat exchangers on the LW and conveyors thereby preventing release of cooling water underground.
- Utilizing Automatic Raw Water shut off when the longwall's are not operating, and
- Repair leaking hoses/ pipes.

Nominal these reductions could be expected to achieve up to 500kL/day in raw water use savings.

4.3 Substitute Raw Water for Worked Water

Water replacement / Substitution

Identify opportunities from the above and replace Raw Water use with Worked Water where risks are deemed acceptable having consideration for the Future Requirements detailed in Section 3.

Desalination Plant

Commission the Desalination Plant and introduce permeate to the raw water system to reduce reliability on raw water import. At present commissioning of the desalination plant is not authorised under the current EA and this issue must be addressed through this TEP.

4.4 Engineering Controls

Additional evaporative surface area

Optimise the evaporative capacity of Dam 5 to ensure sustainable outcomes post-TEP operation.

- Construction and commissioning of Dam 5 (nominal capacity 1,310ML). A TEP was lodged with DERM on the 1st of April containing this action.

- Storing Worked Water in Dams 1, 2 and 4 above Mandatory Reporting Level without discharging. This would give MNM an additional 35Ml storage.

Underground

Consider utilisation of the bored and pilar area for Worked Water storage as a short term strategy until Dam 5 is available. Investigation has found that underground storage in decommissioned bord and pillar areas is not a viable option as these areas are full from groundwater ingress.

Additional storage could potentially be achieved in the 100 series goafs by increasing the RL of the Pleuger Pump at LW105. Investigations have found that this is not a viable option as the current seals on the LW107 panel holding this water in place are not designed/ rated to retain significant amounts of Worked Water.

4.5 Discharge Management

Off-lease beneficial use

Neighbouring mines and farmers have been asked if they could utilise MNC Worked Water. Given the salinity of Worked Water, all have declined at this stage.

Diluted with imported Raw Water

MNC has a current ability to dilute Worked Water with Raw Water and discharge either to pasture or the Isaac River. Given the quantity of Worked Water required to be discharged (nominally around 300ML) and the associated flow dilution ratio (20%, which equates to 1,200ML Raw Water) this would result in 1,500ML of diluted water discharged annually to receiving waters. While the current MNM raw water pipeline does not have the capability to deliver this quantity of water this option is considered environmentally and socially unacceptable.

Diluted with flood harvested Raw Water

MNM does not have a license or the ability to harvest flood water from the Isaac River for the purposing of diluting Worked Water.

Diluted with site catchment harvested Raw Water

MNM does not have the infrastructure to catchment harvest raw water. The yield from this arrangement would be insufficient to make any significant impact on the current Worked Water site inventory. Return on investment (ROI) is not acceptable from a business perspective.

Diluted with permeate

MNM has the capability to produced 2ML/day of permeate (at around 800µs/cm). This could potentially be used to dilute Worked Water at a nominal 40/60 dilution ratio to enable discharge of 3.8ML/day at around 5,000µs/cm.

Note: The preference for the permeate stream is for substitution of imported raw water further reducing site containment requirements, not discharge.

Discharge to pasture (irrigation)

MNM has capability to discharge 2ML/day of permeate to pasture or to the Isaac River during a flow event. Again, preference for the permeate stream is for substitution of imported raw water further reducing site containment requirements.

Undiluted (direct to river)

This action is not authorised under the current MNM EA. Previous application via TEP seeking

reinstatement of previous discharge criteria with DERM were unsuccessful. This is considered a viable option given current community expectations.

The key component modified within this TEP relates to the flow rate requirement for discharge from the Environmental Dam discharge point, decreasing required flow from 5m^3/sec to 2.5m^3/sec. This is designed to eliminate non-compliance for flow in the Isaac River. As identified in the notification reports supplied to DERM during recent releases, the volume discharged from this point is significantly less than the permitted 20%.

To mitigate the potential of causing environmental harm MNM proposes to accelerate the flow by installation of a diesel pump. The pump is stated as able to deliver 75-80l/sec and has been site inducted. When sufficient flow in the Isaac River is reached the pump will be turned on. If the flow in river decreases to <5m^3/sec and discharge continues the stilling basin water valve will be turned on to dilute discharge from the environment dam.

4.6 Administrative Controls

- Develop and implement Trigger Action Response Plans (TARPs) for Worked Water management into EMS.
- Develop and implement an Environmental Management Assurance Program – Corporate initiative currently being developed for AAMC. Need to consider requirements to expedite this program to better align site performance with A/A Plc expectations.
- Review the site Water Management Standard to include yearly refresher awareness for the workforce in responsible water use.

5 PROPOSED ACTIONS

The following actions drawn from above are proposed for this TEP. A detailed project plan containing responsible persons and due dates for action completion is attached in Appendix A.

Summary details are provided in Table 5.1.

Table 5.1 – MNC Worked Water TEP – Proposed Actions Summary Details

Proposed Actions		Completion Date
Behavioural		
❑ Education and awareness of responsible water management on site		Completed
❑ Assignment of site role related KPI's Community Expectations		01/07/10
Stakeholder Engagement		
MNM will extend and open invitation to DERM, the Fitzroy Water Quality Advisory Group and the Isaac Regional Council to attend site for the purposes of discussing this TEP or any other environmental topic.		
Eliminate Raw Water Use Onsite		
❑ Reduction of Raw Water Usage (Surface)	➢ Cease Raw Water use in the Clarified Water Tank – CHPP	Completed
❑ Reduction of Raw Water Usage (Underground)	➢ Maintain con-flow values	Completed
	➢ Reinstall heat exchangers on the LW and conveyors – cooling water not discharged to ground.	Completed
	➢ When longwalls are not operating, close the raw water valve.	Completed
Substitute Raw Water for Worked Water		
❑ Recycling of Worked Water	➢ Commission the Desalination Plant and introduce permeate to the raw water circuit. (Replaces 2Ml/dy of Raw Water use)	Completed
	➢ Reroute underground water network to establish 2 independent circuits. Permeate to face units and treated worked water to outbye uses (e.g. conveyor sprays)	Completed and trialling
	➢ Introduce treated Worked Water into the Worked Water circuit underground. (Replaces deficit between permeate and total underground daily use)	Completed and trialling
Engineering Controls to Improve Evaporation Effectiveness		
❑ Increasing site Worked Water storage capacity	➢ Optimise natural evaporative design capability of Dam 5 to assist with sustainable outcomes post TEP.	Completed

	➢ Construction and commissioning of Dam 5 (nominal capacity - 1,310ML).	October 2011
❑ Discharge management	➢ **Environmental Dam Spillway** Electrical Conductivity readings have historically been about 5,000µS/cm during discharges. Discharge would only be authorised when the Isaac River is flowing at or greater than 5m^3/sec as the river rises, but continue to 2.5m^3/sec as the river flow decreases (if needed). Discharge monitoring would be conducted at the Environmental Dam Spillway and 500m downstream of the Service Creek flow into the Isaac River. Both passive and active discharge would occur during appropriate flow conditions through installation of a diesel pump. The release of contaminants from the Environment Dam will occur in accordance with this Transitional Environmental Program. The release of contaminants under this approval will cease on **10 January 2012.**	10 January 2012
Administrative Controls		
❑ Develop and implement Trigger Action Response Plans (TARPs) for Worked Water management into EMS.		Completed & reviewing
❑ Develop and implement an Environmental Management Assurance.		2011

Discharge Management
In carrying out this Transitional Environmental Program, Moranbah North Coal Pty Ltd will undertake all activities in accordance with the following conditions.

Undertaking the release of mine affected water

1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under this Transitional Environmental Approval – Certificate of Approval, unless otherwise authorised to under the *Environmental Protection Act 1994*.

2 The release of contaminants to waters must only occur from the release points specified in Table 2 and depicted in Appendix D attached to this Transitional Environmental Program.

3 The release of contaminants to waters must not exceed the release limits stated in Table 4 at the monitoring points specified in Table 2 and Table 3 of this Transitional Environmental Program.

4 The release of contaminants to waters from the release points must be monitored at the locations specified in Table 2 and Table 3 for each quality characteristic and at the frequency specified in Table 4 and Table 5 of this Transitional Environmental Program.

5 If quality characteristics of the release exceed any of the trigger levels specified in Table 5 during a release event, the Transitional Environmental Program holder must compare the downstream results in the receiving waters identified in Table 7 to the trigger values specified in Table 5 and:
a) where the trigger values are not exceeded then no action is to be taken

b) where the downstream results exceed the trigger values specified Table 5 for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and
   i) if the result is less than the background monitoring site data, then no action is to be taken or
   ii) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining
      1) details of the investigations carried out
      2) actions taken to prevent environmental harm.

6 If an exceedance in accordance with condition 5(a)(ii)(2) is identified, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the result. The notification must include written verification of the exceedance forwarded to the administering authority either via facsimile [redacted] or email to [redacted]

Receiving environment monitoring and contaminant trigger levels

7 The quality of the receiving waters must be monitored at the locations specified in Table 7 for each quality characteristic and at the monitoring frequencies stated in Table 8.

8 If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table 8 during a release event the holder of this Transitional Environmental Program must compare the downstream results to the upstream results in the receiving environment and:
   a. where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken;
   b. where the downstream results exceed the upstream results complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority within 28 days, outlining:
      i. details of the investigations carried out;
      ii. actions taken to prevent environmental harm.

9 If an exceedance in accordance with condition 5(a)(ii)(2) is identified, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the result. The notification must include written verification of the exceedance forwarded to the administering authority either via facsimile [redacted] or email to [redacted]

Contaminant Release Events

10 The Transitional Environmental Program holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each release point specified in Table 2 for any receiving waters into which a release occurs.

11 Notwithstanding any other condition of this Transitional Environmental Program, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in Table 6 for the contaminant release point(s) specified in Table 2.

12 Contaminant release flow rate must not exceed 20% of receiving water flow rate.

13 The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Table 2.

Erosions and Sediment Control

14 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

15 Erosion protection must be designed, installed and maintained at each release point authorised by this Transitional Environmental Program and must:
   a) designed and constructed by a suitably qualified and experienced person, and
   b) be inspected by a suitably qualified and experienced person
      1. prior to the commencement of dewatering operations; and
      2. following the cessation of release in accordance with the conditions of this Transitional Environmental Program – Certificate of Approval.

16 The holder of this Transitional Environmental Program must provide a report to the administering authority within 10 business days following the cessation of release of mine affected water authorised under authority of this Transitional Environmental Program. The report must detail the performance of erosion protection measures, including:
   a) identification of erosion, slumping and scour impacts to vegetation,
   b) rehabilitation, including earthworks, scour protection and flow velocity controls undertaken to minimise environmental harm, and
   c) detailed engineering assessment of erosion protection works completed to date and any proposed works to be undertaken.

Notification of Release Events

14 The Transitional Environmental Program holder must notify the administering authority within eight hours of having commenced releasing mine affected water to the receiving environment. Notification must include the submission of written verification to the administering authority (either via facsimile [redacted] or email to [redacted] of the following information:
   a) release commencement date/time
   b) expected release cessation date/time
   c) release point/s
   d) release volume (estimated)
   e) receiving water/s including the natural flow rate
   f) any details (including available data) regarding likely impacts on the receiving water(s).

15 The Transitional Environmental Program holder must provide the administering authority daily during the release of mine affected water, in writing (either via facsimile [redacted] or email to [redacted]) of the following information:
   a) all in situ monitoring data for that day
   b) the receiving water flow rate
   c) the release flow rate.

16 The Transitional Environmental Program holder must notify the administering authority as soon as practicable, (no later than within 24 hours after cessation of a release) of the cessation of a release notified under condition 14 and within 28 days provide the following information in writing:
   a) release cessation date/time
   b) natural flow volume in receiving water
   c) volume of water released
   d) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
   e) all in-situ water quality monitoring results
   f) any other matters pertinent to the water release event.

Notification of release event exceedence

17 If the release limits defined in Table 3 are exceeded, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the results.

18 The Transitional Environmental Program holder must, within 28 days of a release that exceeds the conditions of this Transitional Environmental Program, provide a report to the administering authority detailing:
   a) the reason for the release
   b) the location of the release

c) all water quality monitoring results
d) any general observations
e) all calculations
f) any other matters pertinent to the water release event.

Requirements to cease the release of mine affected water

19 The release of mine affected waters must cease immediately if any water quality limit as specified in Table 4 is exceeded.

20 The release of mine affected waters must cease immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

21 The release of mine affected waters must cease immediately if the holder of this Transitional Environmental Program is directed to do so by the administering authority.

22 The release of mine affected waters authorised under this Transitional Environmental Program must cease by **10 January 2012**.

23 The release of mine affected waters authorised under this Transitional Environmental Program must cease when the flow of water within the Isaac River, when measured at the stream flow gauging station identified as Isaac River @ Goonyella, Site ID: 130414A, is less than 2.5m^3/second.

24 Subject to condition 23 the release of mine affected waters authorised under this Transitional Environmental Program must cease within 24 hours when the flow of water within the Isaac River, when measured at the stream flow gauging station identified as Isaac River @ Goonyella, Site ID: 130414A, declines to less than 5m^3/second.

Monitoring Requirements

25 Where monitoring is a requirement of this Transitional Environmental Program, ensure that a competent person(s) conducts all monitoring.

26 All monitoring undertaken as a requirement of this Transitional Environmental Program must be undertaken in accordance with the administering authority's Water Sampling Manual.

Notification of emergencies, incidents and exceptions

27 As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this Transitional Environmental Program, the administering authority must be notified of the release by telephone, facsimile or email.

28 The notification of emergencies or incidents must include but not be limited to the following:
a) the holder of the Transitional Environmental Program
b) the location of the emergency or incident
c) the number of the Transitional Environmental Program
d) the name and telephone number of the designated contact person
e) the time of the release
f) the time the holder of the Transitional Environmental Program became aware of the release
g) the suspected cause of the release
h) the environmental harm caused, threatened, or suspected to be caused by the release, and
i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.

29 Not more than fourteen days following the initial notification of an emergency or incident, written advice must be provided of the information supplied to the administering authority in relation to:
a) proposed actions to prevent a recurrence of the emergency or incident, and
b) outcomes of actions taken at the time to prevent or minimise environmental harm.

5.1 Reporting

Moranbah North Coal Pty Ltd will notify the administering authority, in writing, within six hours of commencing a release of contaminants under this Transitional Environmental Program, detailing:

g) release commencement date/time
h) expected release cessation date/time
i) release point/s
j) release volume (estimated)
k) receiving water/s including the natural flow rate
l) any details (including available data) regarding likely impacts on the receiving water(s).

Moranbah North Coal Pty Ltd will submit a report to the administering authority daily during the release of contaminants under this Transitional Environmental Program, detailing:

a) all in situ monitoring data for that day
b) the receiving water flow rate
c) the release flow rate.

Moranbah North Coal Pty Ltd will notify the administering authority, in writing, within twenty-four hours of ceasing a release of contaminants uner this Transitional Environmental Program, detailing:

g) release cessation date/time
h) natural flow volume in receiving water
i) volume of water released
j) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
k) all in-situ water quality monitoring results
l) any other matters pertinent to the water release event.

Moranbah North Coal Pty Ltd will submit a report to the administering authority on the final business day of each month detailing:

a) all activities undertaken under the Transitional Environmental Program,
b) b) how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
   i. the best practice environmental management for the activity, and
   ii. the risks of environmental harm being caused by the activity, and
c) how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program.

Moranbah North Coal Pty Ltd will submit a report to the administering authority by **24 January 2012** including:

a) details of the completion of the Transitional Environmental Program,
b) details on all activities undertaken under the Transitional Environmental Program,
c) identification of how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
   i. the best practice environmental management for the activity, and
   ii. the risks of environmental harm being caused by the activity,
d) identification of how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program, and
e) confirmation that at closure of the Transitional Environmental Program, the holder will be able to comply with the conditions of the current Environmental Authority issued for the Moranbah North Coal Mine, located at Mining Lease 70108 and the *Environmental Protection Act 1994*.

6 CONCLUSIONS

Actions proposed in this TEP are designed to reduce the current worked water inventory in a manner that does not result in significant environmental harm. The actions recommended are considered to be executable and we have a high level of confidence in the margin for success.

7 REFERENCES

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- *Department of Mineral and Energy, Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland, January 1995.*
- *Draft Transitional Environmental Program under Section 333 of the Environmental Protection Act 1994, Moranbah North Pty Ltd, 12 November 2009.*
- *Environmental Authority (Mining Activities) Non Code Compliant Level 1 – Mining Project – Permit Number MIN100557107 – Moranbah North Coal Mine, Environmental Protection Agency, 6 March 2009.*
- *Environmental Authority (Mining Activities) Non Code Compliant Level 1 Mining Project – Permit Number MIN100557107 – Moranbah North Coal Mine, Environmental Protection Agency, 11 December 2009.*
- *Henderson Geotech the MINSERVE Group Pty Ltd, 2009a. Annual Inspections of Regulated Dams, Anglo Coal (Moranbah North Management) Pty Ltd, October 2009.*
- *Henderson Geotech the MINSERVE Group Pty Ltd, 2009b. Dam Hazard Category Assessment, Anglo Coal (Moranbah North Management) Pty Ltd, December 2009.*
- *Water Solutions Pty Ltd, 2007. Mine Water Management Update – May 2007, Anglo Coal (Moranbah North) Pty Ltd, May 2007.*

APPENDIX A

Project Plan

Submitted with original TEP

APPENDIX B

Overview of Site Discharge Locations & Associated Monitoring Points

APPENDIX C

TEP Tables – from DERM TEP Template

Table 2 - Contaminant release points, sources and receiving waters

Release point (TEP RP)	Easting GDA94	Northing GDA94	Contaminant source and location	Monitoring point	Receiving waters
TEP RP 1	599,980	7,580,615	Environmental Dam	TEP MP 1 TEP MP 9 TEP MP 8	Service Area Creek & Isaac River

Table 3 - Contaminant release monitoring points

Monitoring point	Easting GDA94	Northing GDA94	Contaminant source and location	Monitoring point location	Receiving waters
TEP MP 1	601,532	7,579,884	Environmental Dam	1900m downstream of junction of Service Area Creek & Isaac River	Service Area Creek & Isaac River
TEP MP 9	599,980	7,580,615	Environmental Dam	Spillway of Environmental Dam	Isaac River
TEP MP 8	605,310	7,575,260	Environmental Dam	2200m downstream of RP 4	Isaac River

Table 4 - Contaminant release limits

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Compliance release levels for releases occurring at 5m^3/second or greater flow in the Isaac River				
Electrical Conductivity (uS/cm)	800 *or* upstream background electrical conductivity[3] + 10% *whichever is the higher level*	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 1
			Samples require laboratory analysis[2]	TEP MP 1
	500 *or* upstream background electrical conductivity[3] + 10% *whichever is the higher level*	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 8
			Samples require laboratory analysis[2]	TEP MP 8
	N/A	Daily during release (the first	*In situ*[1]	TEP MP 9

		sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 9
			Samples require laboratory analysis[2]	TEP MP 9
TSS	Limit = 80th percentile of upstream background sites[3]	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9
Sulphate (SO_4^{2-}) (mg/L)	250	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9
Compliance release levels for releases occurring between 2.5m³/second and 5m³/second flow in the Isaac River				
Electrical Conductivity (uS/cm)	800 *or* upstream background electrical	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	TEP MP 1
			Samples require laboratory analysis[2]	TEP MP 1

	conductivity[3] + 10% *whichever is the higher level*			
	500 *or* upstream background electrical conductivity[3] + 10% *whichever is the higher level*	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 8
			Samples require laboratory analysis[2]	TEP MP 8
	1500	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 9
			Samples require laboratory analysis[2]	TEP MP 9
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 8 hours of commencement of release)	*In situ*[1]	TEP MP 9
			Samples require laboratory analysis[2]	TEP MP 9

TSS	Limit = 80th percentile of upstream background sites[3]	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9
Sulphate (SO_4^{2-}) (mg/L)	250	Daily during release (the first sample must be taken within 8 hours of commencement of release)	Samples require laboratory analysis[2]	TEP MP 9

[1] In situ samples can be taken using electronic sampling equipment.

[2] Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.

[3] Upstream background sites are defined in Table 7. For release point 'TEP RP 1' monitoring for Electrical Conductivity and TSS, the associated upstream background site is TEP Reference Monitoring Point 1.

Table 5 - Release contaminant trigger investigation levels

Quality characteristic	Trigger levels (µg/L)	Monitoring frequency	Monitoring Point
Aluminium	55	Commencement of release and thereafter weekly during release	TEP MP 9
Arsenic	13		
Cadmium	0.2		
Chromium	1.0		
Copper	2.0		
Iron	300		
Lead	10		
Mercury	0.2		
Nickel	11		
Zinc	8.0		
Boron	370		
Cobalt	90		
Manganese	1900		
Molybdenum	34		
Selenium	10		
Silver	1.0		
Uranium	1.0		
Vanadium	10		

Ammonia	900		
Nitrate	1100		
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000		

Table 6 - Contaminant release during flow events

Receiving waters	Release point (TEP RP)	Gauging station description	Longitude (GDA94)	Latitude (GDA94)	Receiving water flow rate	Flow recording frequency	Activity Authorised
Isaac River	TEP RP 1	Isaac River @ Goonyella Site ID:130414A	147 58 21	-21 51 20	= > 5m^3/sec	Continuous (minimum daily)	Commence releasing contaminants from TEP RP 1
Isaac River	TEP RP 1	Isaac River @ Goonyella Site ID:130414A	147 58 21	-21 51 20	= > 2.5m^3/sec	Continuous (minimum daily)	Continue releasing contaminants from TEP RP 1 for a maximum of 24 hours. Commencement of the release of contaminants from TEP RP 1 is not permitted.

Table 7 - Reference monitoring points

Monitoring points (TEP MP)	Receiving waters location description	Longitude (GDA94)	Latitude (GDA94)
Upstream background monitoring point			
TEP Reference Monitoring Point 1	Upstream Isaac River – Automated Water Station. TEP Reference Monitoring Point 1 is the reference site for TEP Impact Monitoring Point 1.	147 58 12	-21 52 40
Downstream background monitoring point			
TEP Impact Monitoring Point 1	TEP Impact Monitoring Point 1 is located south of the downstream Automatic Water Station on the Isaac River.	148 00 58	-21 55 18

Table 8 – Receiving waters contaminant trigger levels

Quality characteristic	Trigger level	Monitoring frequency	Sample type
Electrical Conductivity (uS/cm)	400 *or* upstream background electrical conductivity[3] + 10% *whichever is the higher level*	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]
			Samples require laboratory analysis[2]
pH	6.5-8.0	Daily during release (the first sample must be taken within	*In situ*[1]

		2 hours of commencement of release)	Samples require laboratory analysis[2]
Suspended Solids (mg/L)	Limit = 80th percentile of upstream background sites[3]	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]
Sulphate (SO_4^{2-}) (mg/L)	250	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]

[1] In situ samples can be taken using electronic sampling equipment.

[2] Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.

[3] Upstream background sites are defined in Table 7. For release point 'TEP Impact Monitoring Point 1' monitoring for Electrical Conductivity and Suspended Solids, the associated upstream background site is TEP Reference Monitoring Point 1.

Department of Environment and Resource Management

Notice

Environmental Protection Act

Decision to grant amendment of an approval of a transitional environmental program

This statutory notice is issued by the administering authority pursuant to sections 340 and 344 of the Environmental Protection Act 1994*, to advise you of a decision or action.*

Your reference : Worked Water Management
Our reference : MAN11401

Moranbah North Coal Pty Ltd
1164 Goonyella Road
Moranbah Qld 4744

Attention: Mr Michael Rodgerson,

Re: Application for the amendment of an approved transitional environmental program for management of mine affected water at the Moranbah North Coal Mine, located at mining lease 70108.

Thank you for your application for the amendment of an approved transitional environmental program and transitional environmental program – certificate of approval MAN11401. Your application, which was originally received by this office on 22 February 2011, has been approved.

A copy of the certificate of approval, number MAN12579, is attached.

Fees apply for the assessment of a draft transitional environmental program and any subsequent annual returns. The fees are outlined in the attached operational policy *Transitional Environmental Program (TEP) fees.*

A fee of $180.40 is payable.

You may apply to the Department of Environment and Resource Management for a review of this decision within 10 business days of receiving this notice. You may also appeal against this decision to the Planning and Environment Court.

Information outlining the review and appeal processes under the *Environmental Protection Act 1994* is included with this notice. This information is intended as a guide only. You may have other legal rights and obligations

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

Queensland Government

Notice

Should you have any queries in relation to this notice, Rebecca Blades, Principal Environmental Officer of the Department of Environment and Resource Management on telephone [redacted] would be happy to assist you.

	22 March 2011
SIGNATURE	DATE

Christopher Loveday
Manager, Environmental Services - Mining
Delegate of the
Environmental Protection Act 1994

Enquiries:
[redacted]

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

Environmental Protection Act

Transitional environmental program certificate of approval number MAN12579

This certificate of approval is issued by the administering authority pursuant to sections 339 and 344 of the Environmental Protection Act 1994. *A transitional environmental program is a specific program that, when approved, achieves compliance with the* Environmental Protection Act 1994 *for the matters dealt with by the program by reducing environmental harm, or detailing the transition to an environmental standard.*

Under the provisions of the *Environmental Protection Act 1994*, this amended certificate of approval is hereby granted to:

Moranbah North Coal Pty Ltd
1164 Goonyella Road
Moranbah Qld 4744

approving the draft transitional environmental program; titled Transitional Environmental Program Amendment (MAN10140), Moranbah North Coal Pty Ltd, MIN100557107, Worked Water Management, Submission 22 February 2011, Completion 24 February 2012 for management of mine affected water at the Moranbah North Coal Mine, Mining Lease 70108.

The draft transitional environmental program, dated 22 February 2011, was received by this office on 22 February 2011.

The draft transitional environmental program is approved subject to the following conditions:

Reporting

1. Moranbah North Coal Pty Ltd must notify the administering authority, in writing, within six hours of commencing a release of contaminants under this Transitional Environmental Program, detailing:
    a) relea se commencement date/time
    b) expected release cessation date/time
    c) r elease point/s
    d) release volume (estimated)
    e) receiving water/s including the natural flow rate
    f) any details (including available data) regarding likely impacts on the receiving water(s).

2. Moranbah North Coal Pty Ltd must submit a report to the administering authority daily during the release of contaminants under this Transitional Environmental Program, detailing:
    a) all in situ monitoring data for that day
    b) the receiving water flow rate
    c) the release flow rate.

3. Moranbah North Coal Pty Ltd must notify the administering authority, in writing, within twenty-four hours of ceasing a release of contaminants under this Transitional Environmental Program, detailing:
    a) relea se cessation date/time
    b) natural flow volume in receiving water
    c) volume of water released
    d) details regarding the compliance of the release with the conditions of this Transitional Environmental Program (i.e. contamination limits, natural flow, discharge volume)
    e) all in-situ water quality monitoring results
    f) any other matters pertinent to the water release event.

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485
Queensland Government

4. Moranbah North Coal Pty Ltd must submit a report to the administering authority on the final business day of each month detailing:

a) all activities undertaken under the Transitional Environmental Program,
b) b) how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
    i. the best practice environmental management for the activity, and
    ii. the risks of environmental harm being caused by the activity, and
c) how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program.

5. Moranbah North Coal Pty Ltd must submit a report to the administering authority by 24 January 2012 including:

a) details of the completion of the Transitional Environmental Program,
b) details on all activities undertaken under the Transitional Environmental Program,
c) identification of how the Transitional Environmental Program holder has met the objectives of the Transitional Environmental Program, taking into account:
    i. the best practice environmental management for the activity, and
    ii. the risks of environmental harm being caused by the activity,
d) identification of how the Transitional Environmental Program holder has complied with all conditions contained within the Transitional Environmental Program, and
e) confirmation that at closure of the Transitional Environmental Program, the holder will be able to comply with the conditions of the current Environmental Authority issued for the Moranbah North Coal Mine, located at Mining Lease 70108 and the *Environmental Protection Act 1994*.

Requirements to cease the release of mine affected water

6. Moranbah North Coal Pty Ltd must cease the release of mine affected waters immediately if any water quality limit as specified in Table 4 of the Transitional Environmental Program is exceeded.

7. Moranbah North Coal Pty Ltd must cease the release of mine affected waters immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

8. Moranbah North Coal Pty Ltd must cease the release of mine affected waters immediately if the holder of this Transitional Environmental Program is directed to do so by the administering authority.

9. Moranbah North Coal Pty Ltd must cease the release of mine affected waters authorised under this Transitional Environmental Program by **10 January 2012**.

10. Moranbah North Coal Pty Ltd must cease the release of mine affected waters authorised under this Transitional Environmental Program when the flow of water within the Isaac River, when measured at the stream flow gauging station identified as Isaac River @ Goonyella, Site ID: 130414A, is less than 2.5m^3/second.

11. Moranbah North Coal Pty Ltd must cease the release of mine affected waters authorised under this Transitional Environmental Program must cease within 24 hours when the flow of water within the Isaac River, when measured at the stream flow gauging station identified as Isaac River @ Goonyella, Site ID: 130414A, declines to less than 5m^3/second.

Departmental Review of TEP

12. The release of mine affected water under authority of this Transitional Environmental Program may be reviewed at any time in accordance with Table 1: Trigger Values at Downstream Locations. The department may require the Transitional Environmental Program holder to cease any release if values are met or exceeded at these locations.

Table 1: Trigger Values at Downstream Locations (Isaac River)

Quality characteristic	Trigger Value	Flow Trigger	Monitoring Point
Electrical conductivity (uS/cm)	525	<5m³/s	DERM Gauging Station 130410A (Deverill)
	400	>5m³/s	DERM Gauging Station 130410A (Deverill)
	400	All Flows	DERM Gauging Station 130401A (Yatton)

The transitional environmental program remains in force until 24 February 2012.

In any case where conditions are imposed upon a certificate of approval, you may apply to the administering authority for a review of the decision. You may also appeal against the decision to the Planning and Environment Court.

Information relating to a review of decisions or appeals under the *Environmental Protection Act 1994* is included with this notice. This information is intended as a guide only. You may have other legal rights and obligations.

Should you have any queries in relation to this Notice, Rebecca Blades, Principal Environmental Officer of the Department of Environment and Resource Management on telephone [redacted] would be happy to assist you.

Signature

22 March 2011

Date

Christopher Loveday
Manager, Environmental Services - Mining
Department of Environment and Resource Management

[redacted]

INDEX – MORANBAH

QFCI

Date: 22/09/11 JM

Exhibit Number: 607

Tab	Document	Doc ID	Exhibit no.
1	Environmental Authority - Water Schedule MIN100557107	1723681	
2	Request for Emergency Direction	1723682	
3	Emergency Direction	1723683	
4	TEP amendment MAN10140 (16 December 2010)	1722868	
5	DRAFT TEP, additional discharge (submitted)	1722879	
6	DRAFT TEP, additional discharge location (final)	1723699	
7	Decision to grant a TEP MAN11420 additional discharge locations	1720510	
8	Decision to grant amendment of an approval to a TEP MAN11401	1720946	
9	Cover letter to R. Blades (DERM) from M. Rodgers (Anglo)	1722892	
10	TEP amendment MAN10140 (22 February 2011)	1722898	
11	Decision to grant amendment of an approval of a TEP re MAN12579 (unsigned)	1720512	
12	TEP certificate of approval MAN12579 (draft)	1720505	

Documents to be tendered – DAWSON

Tab	Document	Doc ID	Exhibit no.
1	Environmental Authority – Dawson North and Central water schedule	1723679	
2	Environmental Authority – south water schedule	1723678	
3	DRAFT TEP - release from Hillview Dam & 9-12 Dam	1722860	
4	DRAFT TEP – release from North Pit	1722857	
5	DRAFT TEP - release from North Pit: re-submission	1722852	
6	Letter to C. Loveday from Anglo: response to compliance inspection	1722842	
7	DRAFT TEP: Dawson North and Central	1722825	
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9	Decision to grant an approval for a draft EP MAN11600 (unsigned)	1720940	
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11	Requested amendment to TEP MAN1600 Dawson Central and North	1722833	
12	Decision to refuse an application to amend a TEP MAN11600 (unsigned)	1720507	

Final Model Water Conditions for Coal Mines in the Fitzroy Basin – Anglo Coal (Dawson Central and North) Pty Ltd

Contaminant Release

W1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.

W2 The release of contaminants to waters must only occur from the release points specified in Table 1 and depicted on Figure 1 attached to this environmental authority.

Table 1 (Contaminant Release Points, Sources and Receiving Waters)

Release Point (RP)	Northing (GDA94)	Easting (GDA94)	Contaminant Source and Location	Monitoring Point	Receiving waters description
RP-DN01T	-242915.62	150353.46	Dawson North – Industrial Dam 1	End-of-pipe	Defined active release point for waste water at Dawson North Mine. Release point for WA-DN01T. End-of-pipe in unnamed creek (or spillway at the waste water dam). Ephemeral tributary of Kianga Creek.
RP-DC01T	-243358.95	150039.09	Dawson Central – Hillview Dam	End-of-pipe	Defined active release point for waste water at Dawson Central Mine. Release point for WA-DC01T. End-of-pipe in Kianga Creek (or spillway at the waste water dam). Ephemeral tributary of Dawson River.
RP-DC02T	-243949.98	150336.97	Dawson Central – 14 Dam	End-of-pipe	Defined active release point for waste water at Dawson Central Mine. Release point for WA-DC02T. End-of-pipe in Kianga Creek (or spillway at the waste water dam). Ephemeral tributary of Dawson River.

W3 The release of contaminants to waters must not exceed the release limits stated in Table 2 when measured at the monitoring points specified in Table 1 for each quality characteristic.

Table 2 (Contaminant Release Limits)

Quality Characteristic	Interim Release Limits for all mines (limits to apply from the date of issue)	Future Release Limits from (negotiated date) Note: These future limits will apply from a yet to be negotiated date using alternative numbers that will be derived from the information gathered by any combination of the following: (1) the results of near field monitoring, (2) any studies or investigations carried out in accordance with recommendations 2 & 3 of the Cumulative Impact Study on water quality in the Fitzroy River Basin. (3) any review of the QLD Water Quality Guidelines. (4) other relevant information *Note: This information should be available by the end of 2011 if not before and when it becomes available limits will be determined for each mine site based on the environmental values to be protected and in accordance with criteria below*	Monitoring frequency	Comments
Electrical conductivity (uS/cm)	1500	Future limit to be determined to achieve aquatic ecosystem protection (no drinking water value): An end-of-pipe limit to achieve in the range 0 to 1000 EC in the receiving waters - for mines in the upper catchments must have natural flow i.e. the 20th percentile flow trigger.	Daily during release	
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	6.5 (minimum) 9.0 (maximum)	Daily during release	
Turbidity (NTU)	560	Limit to be determined based on receiving water reference data and achievable best practice sedimentation control and treatment	Daily during release*	Turbidity is required to assess ecosystems impacts and can provide instantaneous results
Suspended Solids (mg/L)	400	Limit to be determined based on receiving water reference data and achievable best practice sedimentation control and treatment	Daily during release*	Suspended solids are required to measure the performance of sediment and erosion control measures.
Sulphate (SO_4^{2-}) (mg/L)	400	Limit to be determined	Daily during release*	Drinking water environmental values from NHMRC 2006 guidelines OR ANZECC & ARMCANZ 2000 stock water quality guidelines.

*Note: NA – not available, * local trigger values need to be developed*

W4 The release of contaminants to waters from the release points must be monitored at the locations specified in Table 1 for each quality characteristic and at the frequency specified in Table 2 and Table 3.

Table 3 (Release Contaminant Trigger Investigation Levels)

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	100	*For aquatic ecosystem protection, based on LOR for ICPMS*	Commencement of release and thereafter weekly during the release.
Arsenic	13	*For aquatic ecosystem protection, based on SMD guideline*	
Cadmium	0.2	*For aquatic ecosystem protection, based on SMD guideline*	
Chromium	1	*For aquatic ecosystem protection, based on SMD guideline*	
Copper	2	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Iron	300	*For aquatic ecosystem protection, based on low reliability guideline*	
Lead	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Mercury (inorganic)	0.2	*For aquatic ecosystem protection, based on LOR for CV FIMS*	
Nickel	11	*For aquatic ecosystem protection, based on SMD guideline*	
Zinc	8	*For aquatic ecosystem protection, based on SMD guideline*	
Boron	370	*For aquatic ecosystem protection, based on SMD guideline*	
Cobalt	90	*For aquatic ecosystem protection, based on low reliability guideline*	
Manganese	1900	*For aquatic ecosystem protection, based on SMD guideline*	
Molybdenum	34	*For aquatic ecosystem protection, based on low reliability guideline*	
Selenium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Silver	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Uranium	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Vanadium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Ammonia	1000	*For aquatic ecosystem protection, based on SMD guideline*	
Nitrate	1100	*For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN*	

Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000	*Protection of livestock and short term irrigation guideline*	

Note:

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.

2. The list of quality characteristics required to be monitored as per Table 3 will be reviewed once the results of the monitoring data is gathered for the interim period until 31 December 2011 or an earlier date if the data is, or becomes, available and if its is determined that there is no need to monitor for certain individual quality characteristics these can be removed from Table 3.

3. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).

4. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

W5 If quality characteristics of the release exceed any of the trigger levels specified in Table 3 during a release event, the environmental authority holder must compare the down stream results in the receiving waters to the trigger values specified in Table 3 and:

1. where the trigger values are not exceeded then no action is to be taken; or
2. where the down stream results exceed the trigger values specified Table 3 for any quality characteristic, compare the results of the down stream site to the data from background monitoring sites and;
   (a) if the result is less than the background monitoring site data, then no action is to be taken; or
   (b) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:
      (i) details of the investigations carried out; and
      (ii) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with W5 (2)(b)(ii) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

W6 If an exceedance in accordance with condition **W5(2)(b)(ii)** is identified, the holder of the authority must notify the administering authority within **fourteen (14) days** of receiving the result.

Contaminant Release Events

W7 The holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each Release Point as specified in Table 4 for any receiving water into which a release occurs.

W8 Notwithstanding any other condition of this environmental authority, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in Table 4 for the contaminant release point(s) specified in Table 1.

Table 4 (Contaminant Release during Flow Events)

Receiving water description	Release Point	Gauging station description	Northing (GDA94)	Easting (GDA94)	Minimum Flow in Receiving Water Required for a Release Event	Flow recording Frequency
Kianga Creek	RP-DN01T	AQ-DC02T	-242915.62	150353.46	> or = 0.05 m^3/sec	Continuous (minimum daily)
Kianga Creek	RP-DC01T	AQ-DC02T	-243358.95	150039.09	> or = 2 m^3/sec	Continuous (minimum daily)
Kianga Creek	RP-DC02T	AQ-DC02T	-243949.98	150336.97	> or = 4 m^3/sec	Continuous (minimum daily)

W9 Contaminant release flow rate must not exceed **twenty percent (20%)** of receiving water flow rate.

W10 The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Table 1.

W11 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

Notification of Release Event

W12 The authority holder must notify the administering authority as soon as practicable (no later than **six (6) hours** of having commenced releasing mine affected water to the receiving environment). Notification must include the submission of written verification to the administering authority of the following information:

a) release commencement date/time;

b) expected release cessation date/time;

c) release point/s;

d) release volume (estimated);

e) receiving water/s including the natural flow rate; and

f) any details (including available data) regarding likely impacts on the receiving water(s).

Note: Notification to the administering authority must be addressed to the Manager and Project Manager of the local Administering Authority via email or facsimile.

W13 The authority holder must notify the administering authority as soon as practicable, (nominally within **twenty-four (24) hours** after cessation of a release) of the cessation of a release notified under condition **W12** and within **twenty-eight (28) days** provide the following information in writing:

a) release cessation date/time;

b) natural flow volume in receiving water;

c) volume of water released;

d) details regarding the compliance of the release with the conditions of Department Interest: Water of this environmental authority (i.e. contamination limits, natural flow, discharge volume);

e) all in-situ water quality monitoring results; and

f) any other matters pertinent to the water release event.

Notification of Release Event Exceedance

W14 If the release limits defined in Table 2 are exceeded, the holder of the environmental authority must notify the administering authority within **twenty-four (24) hours** of receiving the results.

W15 The authority holder must, within **twenty-eight (28) days** of a release that exceeds the conditions of this authority, provide a report to the administering authority detailing:

a) the reason for the release;

b) the location of the release;

c) all water quality monitoring results;

d) any general observations;

e) all calculations; and

f) any other matters pertinent to the water release event.

Monitoring of Water Storage Quality

W16 Water storages stated in Table 5 which are associated with the release points must be monitored for the water quality characteristics specified in Table 6 at the monitoring locations and at the monitoring frequency specified in Table 5.

Table 5 (Water Storage Monitoring)

Water Storage Description	Northing (GDA94)	Easting (GDA94)	Monitoring Location	Frequency of Monitoring
WA-DN01T	-242958.04	150354.34	Dawson North - Industrial Dam 1	Quarterly
WA-DC01T	-243342.66	150140.57	Dawson Central – Hillview Dam	Quarterly
WA-DC02T	-243959.46	150341.72	Dawson Central - 14 Dam	Quarterly

W17 In the event that waters storages defined in Table 5 exceed the contaminant limits defined in Table 6, the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by all livestock.

Table 6 (Onsite Water Storage Contaminant Limits)

Quality Characteristic	Test Value	Contaminant Limit
pH (pH unit)	Range	Greater than 4, less than 9[2]
EC (µS/cm)	Maximum	5970[1]
Sulphate (mg/L)	Maximum	1000[1]
Fluoride (mg/L)	Maximum	2[1]
Aluminium (mg/L)	Maximum	5[1]
Arsenic (mg/L)	Maximum	0.5[1]
Cadmium (mg/L)	Maximum	0.01[1]
Cobalt (mg/L)	Maximum	1[1]
Copper (mg/L)	Maximum	1[1]
Lead (mg/L)	Maximum	0.1[1]
Nickel (mg/L)	Maximum	1[1]
Zinc (mg/L)	Maximum	20[1]

Note:

[1] Contaminant limit based on ANZECC & ARMCANZ (2000) stock water quality guidelines.

[2] Page 4.2-15 of ANZECC & ARMCANZ (2000) "Soil and animal health will not generally be affected by water with pH in the range of 4–9".
Note: Total measurements (unfiltered) must be taken and analysed

Receiving Environment Monitoring and Contaminant Trigger Levels

W18 The quality of the receiving waters must be monitored at the locations specified in Table 8 for each quality characteristic and at the monitoring frequency stated in Table 7.

Table 7 (Receiving Waters Contaminant Trigger Levels)

Quality Characteristic	Trigger Level	Monitoring Frequency	Comments
pH	6.5 – 8.0	Daily during the release	**See Table 2 comments**
Electrical Conductivity (µS/cm)	1000		
Suspended solids (mg/L)	To Be Determined. Turbidity may be required to assess ecosystems impacts and can provide instantaneous results.		
Sulphate (SO_4^{2-}) (mg/L)	To Be Determined.		

Table 8 (Receiving Water Upstream Background Sites and Down Stream Monitoring Points)

Monitoring Points	Receiving Waters Location Description	Northing (GDA94)	Easting (GDA94)
Upstream Background Monitoring Points			
AQ-DC01R	Huon Creek upstream	-244630.33	150247.49
AQ-DC02R	Kianga Creek upstream	-243933.96	150349.79
AQ-DC03R	Bottletree Creek	-243822.00	150715.49
AQ-DN01R	Unnamed creek	-24301.10	15049.60
Downstream Monitoring Points			
AQ-DC01T	Huon Creek downstream	-244629.09	150133.48
AQ-DC03T	Kianga Creek downstream	-243340.29	150020.60
AQ-DN01T	DN lease boundary creek	-243145.83	150055.77
AQ-DN02T	Kianga Belvedere Coal road	-243112.10	149568.13
AQ-DN03T	Kianga Mungi Road	-242613.46	1495357.89
AQ-DN05T	Dawson River downstream	-241624.81	1494926.65

Notes:

a) The data from background monitoring points must not be used where they are affected by releases from other mines.

W19 If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table 7 during a release event, the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and:

1. where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; or
2. where the downstream results exceed the upstream results, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:
    (i) details of the investigations carried out; and
    (ii) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with W19(2)(ii) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

Receiving Environment Monitoring Program (REMP)

W20 A REMP must be developed and implemented by **15 April 2010** to monitor and record the effects of the release of contaminants on the receiving environment periodically and whilst contaminants are being discharged from the site, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority.

For the purposes of the REMP, the receiving environment is the waters of Dawson River and connected major tributaries within 50km downstream of the release.

W21 The REMP must address (but not necessarily be limited to) the following:

a) Description of potentially affected receiving waters including key communities and background water quality characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality); and

b) Description of applicable environmental values and water quality objectives to be achieved (i.e. as scheduled pursuant to the *Environmental Protection (Water) Policy 1997*); and

c) Any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed; and

d) Water quality targets within the receiving environment to be achieved, and clarification of contaminant concentrations or levels indicating adverse environmental impacts during the REMP.

e) Monitoring for any potential adverse environmental impacts caused by the release;

f) Monitoring of stream flow and hydrology;

g) Monitoring of toxicants should consider the indicators specified in Table 3 to assess the extent of the compliance of concentrations with water quality objectives and/or the ANZECC & ARMCANZ 2000 guidelines for slightly to moderately disturbed ecosystems;

h) Monitoring of physical chemical parameters as a minimum those specified in Table 2 (in addition to dissolved oxygen saturation and temperature);

i) Monitoring biological indicators (for macroinvertebrates in accordance with the AusRivas methodology) and metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.*1 Guidance on Sampling of Bottom Sediments*) for permanent, semi-permanent water holes and water storages;

j) The locations of monitoring points (including the locations specified in Table 8 which are background and downstream impacted sites for each release point);

k) The frequency or scheduling of sampling and analysis sufficient to determine water quality objectives and to derive site specific reference values within **two (2) years** (depending on wet season flows) in accordance with the *Queensland Water Quality Guidelines* 2006. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges;

l) Specify sampling and analysis methods and quality assurance and control;

m) Any historical datasets to be relied upon;

n) Description of the statistical basis on which conclusions are drawn, and

o) Any spatial and temporal controls to exclude potential confounding factors.

W22 A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with condition **W20** must be prepared and submitted in writing to the administering authority by **1 October 2011**. This should include an assessment of background water quality, any assimilative capacity for those contaminants monitored and the suitability of current discharge limits to protect downstream environment values.

Water Reuse

W25 Water contaminated by mining activity may be piped or trucked off the mining lease for the purpose of supplying water to a third party for purpose of construction and/or road maintenance in accordance with the conditions of this environmental authority.

W26 Water contaminated by mining activity may be piped or trucked for the purpose of supplying water to Dawson South operation in accordance with the conditions of this environmental authority. The volume, pH and electrical conductivity of water transferred to Dawson South must be monitored and recorded.

W27 If the responsibility of water contaminated by mining activities (the water) is given or transferred to another person in accordance with conditions **W25 or W26:**

a) the responsibility of the water must only be given or transferred in accordance with a written agreement (the third party agreement); and

b) include in the third party agreement a commitment from the person(s) utilising the water to use water in such a way as to prevent environmental harm or public health incidences and specifically make the person(s) aware of the General Environmental Duty (GED) under section 319 of the *Environmental Protection Act 1994,* environmental sustainability of the water disposal and protection of environmental values of waters.

Water General

W28 All determinations of water quality must be:

a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements;

b) made in accordance with methods prescribed in the latest edition of the administering authority's Water Quality Sampling Manual;

*Note: Condition **W28** requires the Water Quality Manual to be followed and where it is not followed because of exceptional circumstances this should be explained and reported with the results.*

c) collected from the monitoring locations identified within this environmental authority, within **twenty four (24) hours** of each other where possible;

d) carried out on representative samples; and

e) laboratory testing must be undertaken using a laboratory accredited (e.g. NATA) for the method of analysis being used.

W29 The release of contaminants directly or indirectly to waters:

a) must not produce any visible discolouration of receiving waters; nor

b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.

Annual Water Monitoring Reporting

W30 The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return:

a) the date on which the sample was taken;

b) the time at which the sample was taken;

c) the monitoring point at which the sample was taken;

d) the measured or estimated daily quantity of the contaminants released from all release points;

e) the release flow rate at the time of sampling for each release point;

f) the results of all monitoring and details of any exceedances with the conditions of this environmental authority; and

g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

Temporary Interference with waterways

W31 Temporarily destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with Department of Environment and Resource Management *Guideline - Activities in a Watercourse, Lake or Spring associated with Mining Activities.*

Water Management Plan

W32 A Water Management Plan must be developed and implemented by **15 April 2010** that provides for the proper and effective management of the actual and potential environmental impacts resulting from the mining activity and to ensure compliance with the conditions of this environmental authority.

W33 The Water Management Plan must be developed in accordance with DERM *Guideline for Preparing a Water Management Plan 2009* (to be developed by 1 October) or any updates that become available from time to time and must include at least the following components:

a) Contaminant Source Study;

b) Site Water Balance and Model;

c) Water Management System;

d) Saline Drainage Prevention and Management Measures;

e) Acid Rock Drainage Prevention and Management Measures (if applicable);

f) Emergency and Contingency Planning; and

g) Monitoring and Review.

W34 Each year the holder of the environmental authority must undertake a review of the Water Management Plan prior to the wet season (i.e. by **1 November**) and a further review following the wet season (i.e. by **1 May** the following year) to ensure that proper and effective measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.

W35 A copy of the Water Management Plan and/or a review of the Water Management Plan must be provided to the administering authority on request.

Saline Drainage

W36 The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage.

Acid Rock Drainage

W37 The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.

Stormwater and Water sediment controls

W38 An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.

W39 The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.

W40 Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.

All Dams

W41 The hazard category of each dam must be determined by a suitably qualified and experienced person at least once in each two year period.

W42 Dams having a hazard category determined to be significant or high, must be specifically authorised by an environmental authority.

Fitzroy River Basin Study

W43 The administering authority and the holder of this environmental authority both acknowledge that the conditions for release of contaminants to the Dawson River System in this environmental authority have been calculated without the benefit of the findings of projects proposed to be undertaken as per recommendations 2 and 3 of the *Study of cumulative impacts on water quality of mining activities in the Fitzroy River Basin* (April 2009). The administering authority may, based on the information provided in the study report when it becomes available, all relevant information available at the time and the regulatory framework applicable at that time, consult with the holder of this environmental authority about the conditions in the environmental authority concerning the treatment and disposal of waste water.

The aim of the consultation shall be the meaningful review of the contaminant release limits imposed in this authority having regard to:

a) the study results;

b) near field monitoring results;

c) QLD Water Quality Guidelines; and

d) best practice environmental management.

If this review leads to a change in the requirements on this environmental authority holder, this shall be advanced by way of an authority amendment or a Transitional Environmental Program and as is necessary or desirable.

Definitions:

"20th percentile flow" means the 20th percentile of all daily flow measurements (or estimations) of daily flow over a 10 year period for a particular site. The 20th percentile calculation should only include days where flow has been measured (or estimated), i.e. not dry weather days.

"acid rock drainage" means any contaminated discharge emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture as a result of mining activity.

"administering authority" means the Department of Environment and Resource Management or its successor.

"appropriately qualified person" means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods or literature.

"dam" means a land-based structure or a void that is designed to contain, divert or control flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works. However; a dam does *not* mean a fabricated or manufactured tank or container designed to a recognised standard, *nor* does a dam mean a land-based structure where that structure is designed to an Australian Standard. In case there is any doubt, a levee (dyke or bund) is a dam, but (for example) a bund designed for spill containment to AS1940 is *not* a dam.

"environmental authority" means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act 1994*.

"environmental authority holder" means the holder of this environmental authority.

"flowable substance" means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

"hazard" in relation to a dam as defined, means the potential for environmental harm resulting from the collapse or failure of the dam to perform its primary purpose of containing, diverting or controlling flowable substances.

"hazard category" means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (Version 2.0, 2009) published by the Environmental Protection Agency on its website.

"natural flow" means the flow of water through waters caused by nature.

"receiving environment" means all groundwater, surface water, land, and sediments that are not disturbed areas authorised by this environmental authority.

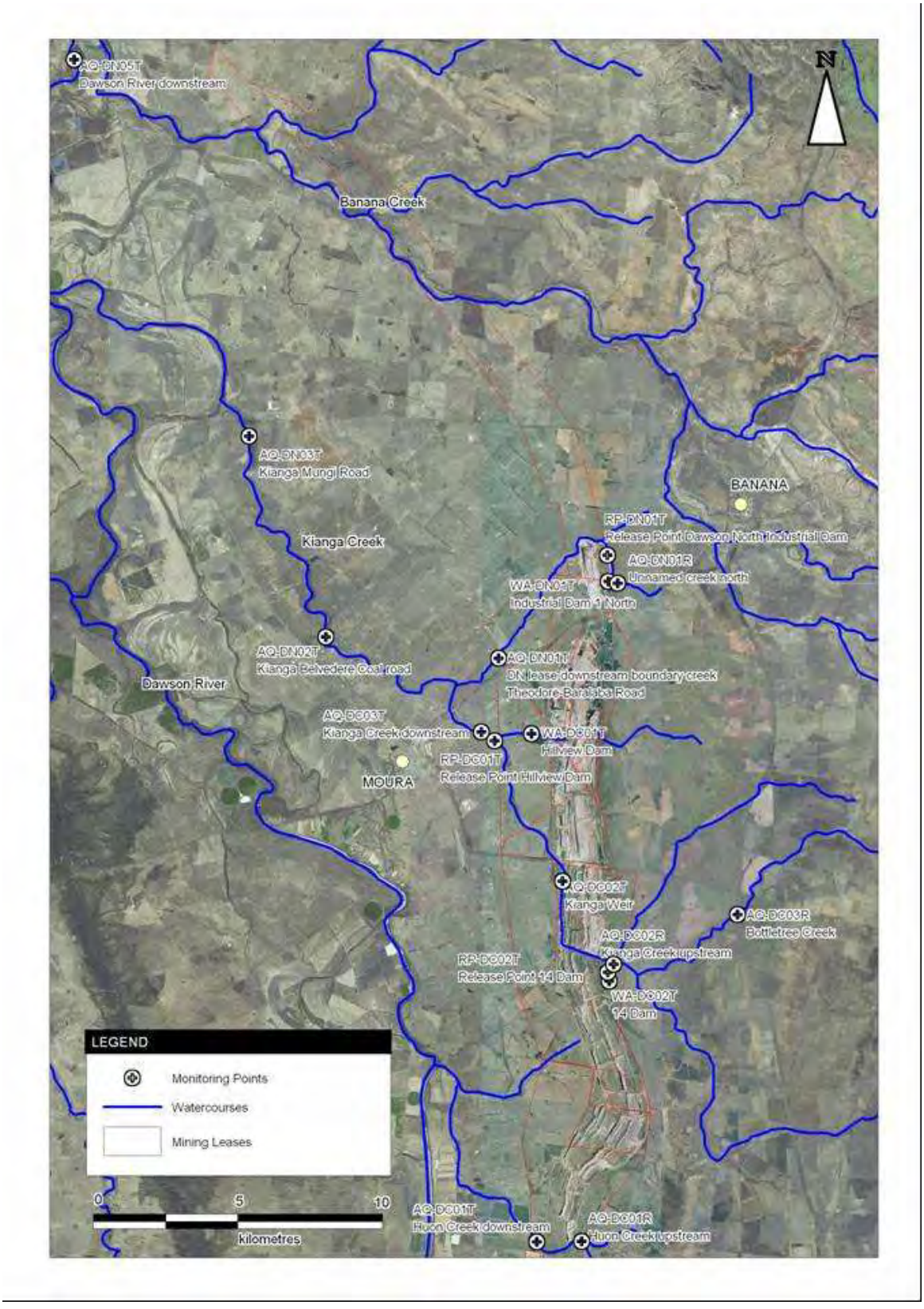
"receiving waters" means all groundwater and surface water that are not disturbed areas authorised by this environmental authority.

"representative" means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.

"saline drainage" The movement of waters, contaminated with salt(s), as a result of the mining activity.

"waters" includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, and groundwater and any part thereof.

Figure 1: Authorised Discharge Points – Anglo Coal (Dawson Central and North) Pty Ltd



Departmental Interest: Water

Contaminant Release

W1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.

W2 The release of contaminants to waters must only occur from the release points specified in *Table W1: Contaminant Release Points, Sources and Receiving Waters* and depicted on *Attachment 2: Authorised Discharge Points – Anglo Coal (Dawson South) Pty Ltd* attached to this environmental authority.

Table W1: Contaminant Release Points, Sources and Receiving Waters

Release Point (RP)	Latitude (GDA94)	Longitude (GDA94)	Contaminant Source and Location	Monitoring Point	Receiving waters description
RP DSO1T	-244947.2	1495950.2	Industrial Dam (WA-DS01T) located west of Dawson South mining operations.	End-of-pipe	Defined ephemeral stream channel draining to the Dawson River

W3 The release of contaminants to waters must not exceed the release limits stated in *Table W2: Contaminant Release Limits* when measured at the monitoring points specified in *Table W1: Contaminant Release Points, Sources and Receiving Waters* for each quality characteristic.

W4 The release of contaminants to waters from the release points must be monitored at the locations specified in *Table W1: Contaminant Release Points, Sources and Receiving Waters* for each quality characteristic and at the frequency specified in *Table W2: Contaminant Release Limits* and *Table W3: Release Contaminant Trigger Investigation Levels.*

Table W2: Contaminant Release Limits

Quality Characteristic	Interim Release Limits for all mines (limits to apply from the date of issue)	Future Release Limits from 31 December 2009 Note: These future limits will apply from a yet to be negotiated date using alternative numbers that will be derived from the information gathered by any combination of the following: (1) the results of near field monitoring, (2) any studies or investigations carried out in accordance with recommendations 2 & 3 of the Cumulative Impact Study on water quality in the Fitzroy River Basin, (3) any review of the QLD Water Quality Guidelines, (4) other relevant information. *Note: This information should be available by the end of 2011 if not before and when it becomes available limits will be determined for each mine site based on the environmental values to be protected and in accordance with criteria below*	Monitoring frequency	Comments
Electrical conductivity (uS/cm)	1500	Future limit to be determined to achieve aquatic ecosystem protection (no drinking water value): An end-of-pipe limit to achieve in the range 0 to 1000 EC in the receiving waters - for mines in the upper catchments must have natural flow i.e. the 20th percentile flow trigger.	Daily during release	
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	6.5 (minimum) 9.0 (maximum)	Daily during release	
Turbidity (NTU)	560	560	Daily during release*	Turbidity is required to assess ecosystems impacts and can provide instantaneous results
Suspended Solids (mg/L)	400	Limit to be determined based on receiving water reference data and achievable best practice sedimentation control and treatment	Daily during release*	Suspended solids are required to measure the performance of sediment and erosion control measures.
Sulphate (SO_4^{2-}) (mg/L)	400	Limit to be determined	Daily during release*	Drinking water environmental values from NHMRC 2006 guidelines OR ANZECC & ARMCANZ 2000 stock water quality guidelines.

** local trigger values need to be developed*

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Queensland Government

Table W3: Release Contaminant Trigger Investigation Levels

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	100	*For aquatic ecosystem protection, based on LOR for ICPMS*	Commencement of release and thereafter weekly during the release.
Arsenic	13	*For aquatic ecosystem protection, based on SMD guideline*	
Cadmium	0.2	*For aquatic ecosystem protection, based on SMD guideline*	
Chromium	1	*For aquatic ecosystem protection, based on SMD guideline*	
Copper	2	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Iron	300	*For aquatic ecosystem protection, based on low reliability guideline*	
Lead	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Mercury (inorganic)	0.2	*For aquatic ecosystem protection, based on LOR for CV FIMS*	
Nickel	11	*For aquatic ecosystem protection, based on SMD guideline*	
Zinc	8	*For aquatic ecosystem protection, based on SMD guideline*	
Boron	370	*For aquatic ecosystem protection, based on SMD guideline*	
Cobalt	90	*For aquatic ecosystem protection, based on low reliability guideline*	
Manganese	1900	*For aquatic ecosystem protection, based on SMD guideline*	
Molybdenum	34	*For aquatic ecosystem protection, based on low reliability guideline*	
Selenium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Silver	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Uranium	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Vanadium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Ammonia	1000	*For aquatic ecosystem protection, based on SMD guideline*	
Nitrate	1100	*For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN*	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000	*Protection of livestock and short term irrigation guideline*	

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.

2. The list of quality characteristics required to be monitored as per Table W3: Release Contaminant Trigger Investigation Levels will be reviewed once the results of the monitoring data is gathered for the interim period until 31 December 2011 or an earlier date if the data is, or becomes, available and if its is determined that there is no need to monitor for certain individual quality characteristics these can be removed from Table W3: Release Contaminant Trigger Investigation Levels.

3. SMD – slightly modsrately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).

4. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

W5 If quality characteristics of the release exceed any of the trigger levels specified in *Table W3: Release Contaminant Trigger Investigation Levels* during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in *Table W3: Release Contaminant Trigger Investigation Levels* and:

1. where the trigger values are not exceeded then no action is to be taken; or
2. where the downstream results exceed the trigger values specified *Table W3: Release Contaminant Trigger Investigation Levels* for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and;

   a) if the result is less than the background monitoring site data, then no action is to be taken; or

   b) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:

   i. details of the investigations carried out; and

   ii. actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with W5 (2)b)(ii) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

W6 If an exceedance in accordance with condition **W5(2)b)(ii)** is identified, the holder of the authority must notify the administering authority within **fourteen (14) days** of receiving the result.

Contaminant Release Events

W7 The holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each Release Point as specified in *Table W4: Contaminant Release during Flow Events* for any receiving water into which a release occurs.

W8 Notwithstanding any other condition of this environmental authority, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in *Table W4: Contaminant Release during Flow Events* for the contaminant release point(s) specified in *Table W1: Contaminant Release Points, Sources and Receiving Waters.*

Table 4: Contaminant Release during Flow Events

Receiving water description	Release Point	Gauging station description	Latitude (GDA94)	Longitude (GDA94)	Minimum Flow in Receiving Water Required for a Release Event	Flow recording Frequency
Dawson River	RP-DS01T	AQ-DS01T	-244947.2	1495950.2	> or = 2m^3/sec	Continuous (minimum daily)

W9 Contaminant release flow rate must not exceed twenty percent (20%) of receiving water flow rate.

W10 The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in *Table W1: Contaminant Release Points, Sources and Receiving Waters.*

W11 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

Notification of Release Event

W12 The authority holder must notify the administering authority as soon as practicable (no later than six (6) hours of having commenced releasing mine affected water to the receiving environment). Notification must include the submission of written verification to the administering authority of the following information:

a) release commencement date/time;
b) expected release cessation date/time;
c) release point/s;
d) release volume (estimated);
e) receiving water/s including the natural flow rate; and
f) any details (including available data) regarding likely impacts on the receiving water(s).

Note: Notification to the administering authority must be addressed to the Manager and Project Manager of the local administering authority via email or facsimile.

W13 The authority holder must notify the administering authority as soon as practicable, (nominally within twenty-four (24) hours after cessation of a release) of the cessation of a release notified under condition **W12** and within twenty-eight (28) days provide the following information in writing:

a) release cessation date/time;
b) natural flow volume in receiving water;
c) volume of water released;
d) details regarding the compliance of the release with the conditions of **Department Interest: Water** of this environmental authority (i.e. contamination limits, natural flow, discharge volume);
e) all in-situ water quality monitoring results; and
f) any other matters pertinent to the water release event.

Notification of Release Event Exceedance

W14 If the release limits defined in *Table W2: Contaminant Release Limits* are exceeded, the holder of the environmental authority must notify the administering authority within twenty-four (24) hours of receiving the results.

W15 The authority holder must, within twenty-eight (28) days of a release that exceeds the conditions of this authority, provide a report to the administering authority detailing:

a) the reason for the release;
b) the location of the release;
c) all water quality monitoring results;
d) any general observations;
e) all calculations; and
f) any other matters pertinent to the water release event.

Monitoring of Water Storage Quality

W16 Water storages stated in *Table W5: Water Storage Monitoring* which are associated with the release points must be monitored for the water quality characteristics specified in *Table W6: Onsite Water Storage Contaminant Limits* at the monitoring locations and at the monitoring frequency specified in *Table W5: Water Storage Monitoring*.

Table W5: Water Storage Monitoring

Water Storage Description	Latitude (GDA94)	Longitude (GDA94)	Monitoring Location	Frequency of Monitoring
WA-DS01T	-244918.92	1500142.3	Industrial Dam located west of Dawson South mining operations	Quarterly

W17 In the event that water storages defined in *Table W5: Water Storage Monitoring* exceed the contaminant limits defined in *Table W6: Onsite Water Storage Contaminant Limits*, the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by all livestock.

Table W6: Onsite Water Storage Contaminant Limits

Quality Characteristic	Test Value	Contaminant Limit
pH (pH unit)	Range	Greater than 4, less than 9[2]
EC (µS/cm)	Maximum	5970[1]
Sulphate (mg/L)	Maximum	1000[1]
Fluoride (mg/L)	Maximum	2[1]
Aluminium (mg/L)	Maximum	5[1]
Arsenic (mg/L)	Maximum	0.5[1]
Cadmium (mg/L)	Maximum	0.01[1]
Cobalt (mg/L)	Maximum	1[1]
Copper (mg/L)	Maximum	1[1]
Lead (mg/L)	Maximum	0.1[1]
Nickel (mg/L)	Maximum	1[1]
Zinc (mg/L)	Maximum	20[1]

[1] *Contaminant limit based on ANZECC & ARMCANZ (2000) stock water quality guidelines.*

[2] *Page 4.2-15 of ANZECC & ARMCANZ (2000) "Soil and animal health will not generally be affected by water with pH in the range of 4–9".*

Note: Total measurements (unfiltered) must be taken and analysed

Receiving Environment Monitoring and Contaminant Trigger Levels

W18 The quality of the receiving waters must be monitored at the locations specified in *Table W8: Receiving Water Upstream Background Sites and Downstream Monitoring Points* for each quality characteristic and at the monitoring frequency stated in *Table W7: Receiving Waters Contaminant Trigger Levels*.

Table W7: Receiving Waters Contaminant Trigger Levels

Quality Characteristic	Trigger Level	Monitoring Frequency	Comments
pH	6.5 – 8.0	Daily during the release	See Table 2 comments
Electrical Conductivity (µS/cm)	1000		
Suspended solids (mg/L)	400		
Sulphate (SO_4^{2-}) (mg/L)	400		

Table W8: Receiving Water Upstream Background Sites and Downstream Monitoring Points

Monitoring Points	Receiving Waters Location Description	Latitude (GDA94)	Longitude (GDA94)
Upstream Background Monitoring Points			
AQ-DS01R	Dawson River main channel 1.4 kilometres upstream of confluence with release water channel (i.e. channel initially receiving water from RPDS01T) – at Theodore Nth	-240539.21	1500020.9
Downstream Monitoring Points			
AQ-DS01T	Dawson River main channel 4.5 kilometres downstream of confluence with release water channel (i.e. channel initially receiving water from RPDS01T) – at Woodleigh guage	-244955.7	1495830.52

Note: The data from background monitoring points must not be used where they are affected by releases from other mines.

W19 If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in *Table W7: Receiving Waters Contaminant Trigger Levels* during a release event, the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and:

a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; or

b) where the downstream results exceed the upstream results, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:

a) details of the investigations carried out; and

b) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with W19(2)b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic

Receiving Environment Monitoring Program (REMP)

W20 A REMP must be developed and implemented by 3 March 2010 to monitor and record the effects of the release of contaminants on the receiving environment periodically and whilst contaminants are being discharged from the site, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority.

For the purposes of the REMP, the receiving environment is the waters of the Dawson River and connected major tributaries within 50km downstream of the release.

W21 The REMP must address (but not necessarily be limited to) the following:

a) Description of potentially affected receiving waters including key communities and background water quality characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality);

b) Description of applicable environmental values and water quality objectives to be achieved (i.e. as scheduled pursuant to the *Environmental Protection (Water) Policy 1997*);

c) Any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed;

d) Water quality targets within the receiving environment to be achieved, and clarification of contaminant concentrations or levels indicating adverse environmental impacts during the REMP.

e) Monitoring for any potential adverse environmental impacts caused by the release;

f) Monitoring of stream flow and hydrology;

g) Monitoring of toxicants should consider the indicators specified in *Table W3: Release Contaminant Trigger Investigation Levels* to assess the extent of the compliance of concentrations with water quality objectives and/or the ANZECC & ARMCANZ 2000 guidelines for slightly to moderately disturbed ecosystems;

h) Monitoring of physical chemical parameters as a minimum those specified in *Table W2: Contaminant Release Limits* (in addition to dissolved oxygen saturation and temperature);

i) Monitoring biological indicators (for macroinvertebrates in accordance with the AusRivas methodology) and metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.*1 Guidance on Sampling of Bottom Sediments*) for permanent, semi-permanent water holes and water storages;

j) The locations of monitoring points (including the locations specified in *Table W8: Receiving Water Upstream Background Sites and Downstream Monitoring Points* which are background and downstream impacted sites for each release point);

k) The frequency or scheduling of sampling and analysis sufficient to determine water quality objectives and to derive site specific reference values within two (2) years (depending on wet season flows) in accordance with the *Queensland Water Quality Guidelines* 2006. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges;

l) Specify sampling and analysis methods and quality assurance and control;

m) Any historical datasets to be relied upon;

n) Description of the statistical basis on which conclusions are drawn; and

o) Any spatial and temporal controls to exclude potential confounding factors.

W22 A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with condition **W20** must be prepared and submitted in writing to the administering authority by **1 October 2011**. This should include an assessment of background water quality, any assimilative capacity for those contaminants monitored and the suitability of current discharge limits to protect downstream environment values.

Water General

W23 All determinations of water quality must be:

a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements;

b) made in accordance with methods prescribed in the latest edition of the administering authority's Water Quality Sampling Manual;

c) collected from the monitoring locations identified within this environmental authority, within **twenty-four (24) hours** of each other where possible;

d) carried out on representative samples; and

e) laboratory testing must be undertaken using a laboratory accredited (e.g. NATA) for the method of analysis being used.

*Note: Condition **W23** requires the Water Quality Manual to be followed and where it is not followed because of exceptional circumstances this should be explained and reported with the results.*

W24 The release of contaminants directly or indirectly to waters:

a) must not produce any visible discolouration of receiving waters; nor

b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.

Annual Water Monitoring Reporting

W25 The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return:

a) the date on which the sample was taken;
b) the time at which the sample was taken;
c) the monitoring point at which the sample was taken;
d) the measured or estimated daily quantity of the contaminants released from all release points;
e) the release flow rate at the time of sampling for each release point;
f) the results of all monitoring and details of any exceedances with the conditions of this environmental authority; and
g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

Temporary Interference with waterways

W26 Temporarily destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with Department of Environment and Resource Management *Guideline - Activities in a Watercourse, Lake or Spring associated with Mining Activities.*

Water Management Plan

W27 A Water Management Plan must be developed and implemented by **3 March 2010** that provides for the proper and effective management of the actual and potential environmental impacts resulting from the mining activity and to ensure compliance with the conditions of this environmental authority.

W28 The Water Management Plan must be developed in accordance with DERM *Guideline for Preparing a Water Management Plan 2009* (to be developed by 1 October) or any updates that become available from time to time and must include at least the following components:

a) Contaminant Source Study;
b) Site Water Balance and Model;
c) Water Management System;
d) Saline Drainage Prevention and Management Measures;
e) Acid Rock Drainage Prevention and Management Measures (if applicable);
f) Emergency and Contingency Planning; and
g) Monitoring and Review.

W29 Each year the holder of the environmental authority must undertake a review of the Water Management Plan prior to the wet season (i.e. by **1 November**) and a further review following the wet season (i.e. by **1 May** the following year) to ensure that proper and effective measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.

W30 A copy of the Water Management Plan and/or a review of the Water Management Plan must be provided to the administering authority on request.

Saline Drainage

W31 The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage.

Acid Rock Drainage

W32 The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.

Stormwater and Water sediment controls

W33 An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.

W34 The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.

W35 Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.

All Dams

W36 The hazard category of each dam must be determined by a suitably qualified and experienced person at least once in each two year period.

W37 Dams having a hazard category determined to be significant or high, must be specifically authorised by an environmental authority.

W38 The holder of this environmental authority must ensure that dams are designed, constructed, operated and maintained in accordance with accepted engineering standards.

W39 The condition of dams must be monitored for early signs of loss of structural or hydraulic integrity based on the advice of a suitably qualified and experienced person.

W40 In the event of early signs of loss of structural or hydraulic integrity, the holder of this environmental authority must take action to prevent or minimize any actual or potential environmental harm, and report any findings and actions taken to the administering authority.

W41 The holder of this environmental authority must not abandon any dam, but must decommission each dam to a situation where ongoing environmental harm is prevented.

W42 As a minimum, dams must be decommissioned such that they:

a) no longer contain flowable substances;
b) become stable landforms; and
c) comply with the rehabilitation requirements of this environmental authority.

W43 The holder of this environmental authority must ensure that activities conducted in accordance with this environmental authority do not compromise the integrity of a dam, whether or not that dam is under the control of the holder.

W44 The spillway for industrial dams, environmental dams and sediment dams constructed or operated within the operational land must be sized for a spillway critical design storm with a 100 year ARI and the capacity of industrial dams must be sized for a 100 year ARI 24 hour rainfall event.

Erosion control

W45 All reasonable and practicable erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.

Groundwater

W46 Groundwater, affected by the mining activities must be monitored at the frequencies defined in *Table W9: Ground water monitoring locations, frequency and parameters* and at the locations generally in accordance with –*Attachment 3: Water monitoring locations.*

Table W9: Groundwater monitoring locations, frequency and parameters

Monitoring point	Monitoring frequency (once every)	Parameters
GW1	3 months	Depth to water; TDS (mg/L); EC (µS/cm); and Sulphate (mg/L).
GW2		
GW3		
GW4		

Note: The locations of the groundwater monitoring bores will be generally as indicated in Attachment 3: Water monitoring locations. The Plan of Operations will indicate groundwater monitoring bore locations more precisely.

W47 Subject to requirements of condition **W46**, groundwater levels must be monitored and groundwater draw down fluctuations in excess of 2 m per year, not resulting from the pumping of licensed bores, must be notified within 14 days to the administering authority following completion of monitoring.

W48 Complete an investigation into groundwater on the surface area of ML5667 and submit a report to the administering authority proposing revised monitoring program to identify the impact of mining and spoil management on the groundwater quality by **30 June 2012**. The investigation is to include an assessment of the hydraulic characteristics of the alluvium in the near the Dawson River and determine potential for seepage between the alluvium and the final void.

W49 The method of sampling of groundwater must comply with that set out in the latest edition of the administering authority's Water Quality Sampling Manual.

Fitzroy River Basin Study

W50 The administering authority and the holder of this environmental authority both acknowledge that the conditions for release of contaminants to the Dawson River in this environmental authority have been calculated without the benefit of the findings of projects proposed to be undertaken as per recommendations 2 and 3 of the *Study of cumulative impacts on water quality of mining activities in the Fitzroy River Basin* (April 2009). The administering authority may, based on the information provided in the study report when it becomes available, all relevant information available at the time and the regulatory framework applicable at that time, consult with the holder of this environmental authority about the conditions in the environmental authority concerning the treatment and disposal of waste water.

The aim of the consultation shall be the meaningful review of the contaminant release limits imposed in this authority having regard to:

a) the study results;
b) near field monitoring results;
c) QLD Water Quality Guidelines; and
d) best practice environmental management.

If this review leads to a change in the requirements on this environmental authority holder, this shall be advanced by way of an authority amendment or a Transitional Environmental Program and as is necessary or desirable.

DRAFT TRANSITIONAL ENVIRONMENTAL PROGRAM UNDER s333 OF THE *ENVIRONMENTAL PROTECTION ACT 1994*

Principal Holder:	Anglo Coal Australia Pty Ltd
EA Number:	No EA - Refer to Current Plan of Operations and Fitzroy Model Water Conditions
Title:	Dawson Mine Transitional Environmental Program: Release from Hillview Dam and 9-12 Dam
Date:	1st January 2011
Finish Date:	1st July 2011

1.0 BACKGROUND

1.1 Purpose of TEP

Dawson Mine, one of Queensland's leading export coal operations, is owned by the Moura Joint Venture, comprising Anglo Coal Australia Pty Ltd (51%) and Mitsui Coal Holdings Pty Ltd (49%). The mine is operated by Anglo Coal Australia and is located in the southern part of the Bowen Basin, approximately 180km west of Gladstone.

A recent weather system has caused excessive rainfall across most of Central Queensland resulting in the flooding of tributaries across a large portion of the region. The weather station located in the town of Moura recorded a total monthly rainfall in December of 290.4mm (refer to Figure 1). Due to this recent weather event the Dawson Mine water inventory has risen significantly and many onsite water storages are nearing or have reached full capacity. The mine has implemented its Water Management Plan to appropriately manage or contain water across the operation. This includes the diversion of clean water around the site, controlled releases of water where possible and the pumping of water to water storages across site. There are currently three (3) dams at Dawson Mine which are releasing or have recently released; Hillview Dam, 14 Dam and 35ML Dam. These releases have been both controlled (within licence conditions) and uncontrolled and have been reported to Department of Environment and Resource Management (DERM).

Due to the uncontrollable climatic conditions detailed, Dawson Mine requests the consideration of this Draft Transitional Environmental Program (TEP) in accordance with s333 of the *Environmental Protection Act 1994,* to allow for the management of increased water flows at the Dawson Mines. Specifically, this TEP proposes to allow for the controlled release of water from the 9-12 Clean Water Dam and Hillview Dam into Kianga Creek with the potential for water quality parameters and receiving water flow rates to be outside prescribed limits. Details of how environmental aspects shall be managed under this TEP are detailed in the following sections of this application.

Daily Rainfall (millimetres)

MOURA POST OFFICE

Station Number: 039071 · State: QLD · Opened: 1941 · Status: Open · Latitude: 24.57°S · Longitude: 149.97°E · Elevation: 148 m

2010	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1st	0	38.4	5.2	1.0	0	0	0	0	0	0	0	4.4
2nd	0	7.6	14.8	0	0	0	0	0	0	0	0.6	
3rd	0	0.6	10.4	0	0	0	1.0	0	0	0	0	27.6
4th	6.2	4.8	0	0	0	0	0	0	0	0	1.8	9.0
5th	22.4	0	13.2	0	0	0	0	0	10.2	0	2.6	1.0
6th	2.4	0	2.0	0	1.8	0	0	0	141.0	0	0	
7th	8.0	4.8	33.2	0	0	0	0	0	0	0	0	7.6
8th	0	0	0	0	0	0	3.6	0	0	0.8	0	
9th	0	38.2	0	0	0	0	1.2	0	0	0	3.6	
10th	0	0	0	12.6	0	0	0	0	0	0	0	
11th	0	0	0	0	0	0	0	69.8	1.0	0	0	
12th	0	4.8	0	34.6	0	0	0	0	0	9.2	0	2.2
13th	0	0	0	4.0	0	0	0	0	0	0	0	3.8
14th	0	0	0	0	0	0	0	0	0	0	0	
15th	0	0	0	0	0	8.0	0	0	0	0	0	
16th	0	50.8	0	0	0	0	0	0	0	34.0	2.0	
17th	0	12.2	0	0	0	0	0	0	0	0	3.2	
18th	0	6.4	0	0	0	0	0	0	1.0	0	10.8	3.6
19th	0	44.6	0	0.6	0	2.0	0	0	3.0	0	27.6	32.6
20th	0	0	0	0.4	0	2.8	5.0	0	22.6	0	4.6	21.4
21st	0	0	0	0	0	0	0	4.6	0.6	0	4.6	
22nd	0	0	25.6	0	1.6	0	0	0	7.0	0	7.0	
23rd	0	0	2.4	0	0	0	0	0	16.6	0	0	53.0
24th	0	0	0	0	0	0	0	6.0	0	0	9.8	0.8
25th	0	3.0	0	0	4.8	1.2	0	0	6.4	3.4	0	2.0
26th	0	6.4	0	0	3.0	0	2.4	10.6	1.0	0	0	29.8
27th	0	0	0	0	0	0	0	0	1.8	0	0	28.8
28th	0	0	0	0	0	0	0	0	0.8	0	0	58.0
29th	0		5.8	0	2.6	0	0	0	15.6	0	0	4.8
30th	0		0	0	0	0	0	0	0.8	0	2.6	
31st	2.0		0		0		0	0		0		
Highest daily	22.4	50.8	33.2	34.6	4.8	8.0	5.0	69.8	141.0	34.0	27.6	58.0
Monthly Total	41.0	222.6	112.6	53.2	13.8	14.0	13.2	91.0	229.4	47.4	80.8	290.4

Annual total for 2010 = 1209.4mm

↓ This day is part of an accumulated total
Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown

Product code: IDCJAC0009 reference: 03624368

Australian Government
Bureau of Meteorology

Figure 1: Table of Rainfall Data for Moura Weather Station 039071.
Source: Australian Government Bureau of Meteorology, 31st December 2010.

1.2 Current Status and Water Management Options for Dams

1.2.1 Hillview Dam

Hillview Dam is located on the western side of the Dawson Central mining operations and is a nominated release point for Dawson Central (Refer to Figure 2). Water is pumped to Hillview Dam from various locations across site including clean water dams, sediment dams and pits. There is an automatic monitoring station at Hillview which monitors volume, level, EC, pH and temperature. Manual sampling is also conducted at Hillview Dam for further parameters.

Over the last ten (10) days Hillview Dam has, at intervals of two (2) and three (3) days, been subject to both controlled and uncontrolled releases. DERM officers have been notified of these releases and have been provided with all requested information. The water released from Hillview Dam to date has remained under water quality trigger levels. Three (3) days of controlled and uncontrolled discharging occurred while the flow rate in Kianga Creek was under the nominated 2m^3/s. This controlled discharge was undertaken after verbal permission was received from DERM Officers (Terry Farley).

There is potential that further controlled discharges from Hillview Dam will need to be undertaken with a flow rate in Kianga Creek of less than 2m3/s, to ensure water levels are appropriately managed on site. Where this potential arises, it is proposed under this TEP that Hillview Dam be permitted to discharge in a controlled manner, as necessary for flood mitigation and water management during and after extreme high rainfall conditions. If this situation is to arise, DERM officers will be contacted to discuss the action plan for discharges from Hillview Dam moving forward.

1.2.2 9-12 Clean Water Dam

The 9-12 Clean Water Dam (9-12 Dam) is located east of the Dawson Central mining operations. This dam contains runoff from catchments on the eastern side of the mining lease which mostly consist of grazing land. The dam does not contain any water from pits or sediment dams across the mining lease. Please refer to Figure 3 which outlines the location of the 9-12 Dam. This Dam has reached capacity following the recent rainfall events.

Infrastructure is currently available to pump water from the 9-12 Dam into Kianga Creek upstream from the Hillview Dam release point to increase the storage capacity of this Dam should further rainfall be received. In addition to improving water storage on site, the controlled release of water from this dam has the potential to increase the flow in Kianga Creek prior to further discharges from Hillview Dam.

Water quality samples are to be collected from the 9-12 Dam by Bureau Veritas International Trade (BVIT) on 4th January 2011. A pH/EC meter was used by BVIT to monitor levels in 9-12 Dam on 3rd January 2011. The pH results indicated a pH of 7.8 and an EC of 160µS/cm.

1.2.3 Bottom Dam East

Bottom Dam East is a clean water dam located on the eastern side of the mining operations in the vicinity of the Coal Handling Preparation Plant (CHPP) (Refer to Figure 4). This Dam contains runoff from catchments on the eastern side of the mining lease. This dam has received a high influx of rainwater during the recent weather events and is close to capacity. Infrastructure is available to pump water from Bottom Dam East to Borehole Creek which flows directly to Hillview Dam. This water has the potential to increase the dilution factor at Hillview Dam prior to discharge from Hillview Dam.

Water Quality samples are to be collected at Bottom Dam East by Dawson Mine Contractor BVIT on 4th January 2011. A pH/EC meter was used by BVIT to monitor levels in Bottom Dam East on 3rd January 2011. The results indicated a pH of 7.5 and an EC of 390µS/cm.

1.2.4 Days Dam

Days Dam is a clean water Dam which is located on the eastern side of the Dawson Central mining operations (Refer to Figure 5). This dam contains runoff from catchments on the eastern side of the mining lease which mostly consist of grazing land. This dam has similarly

received a high volume of rainfall in recent weeks. Infrastructure is currently available to pump water from Days Dam into Hillview Dam thereby potentially increasing the dilution factor in Hillview Dam. Water Quality samples are to be collected at Days Dam by Dawson Mine Contractor BVIT on 4th January 2011.

Figure 2: Map of Hillview Dam and Drainage System
Source: Dawson Mine GIS Software

Figure 3: Map of 9-12 Dam and Drainage System
Source: Dawson Mine GIS Software

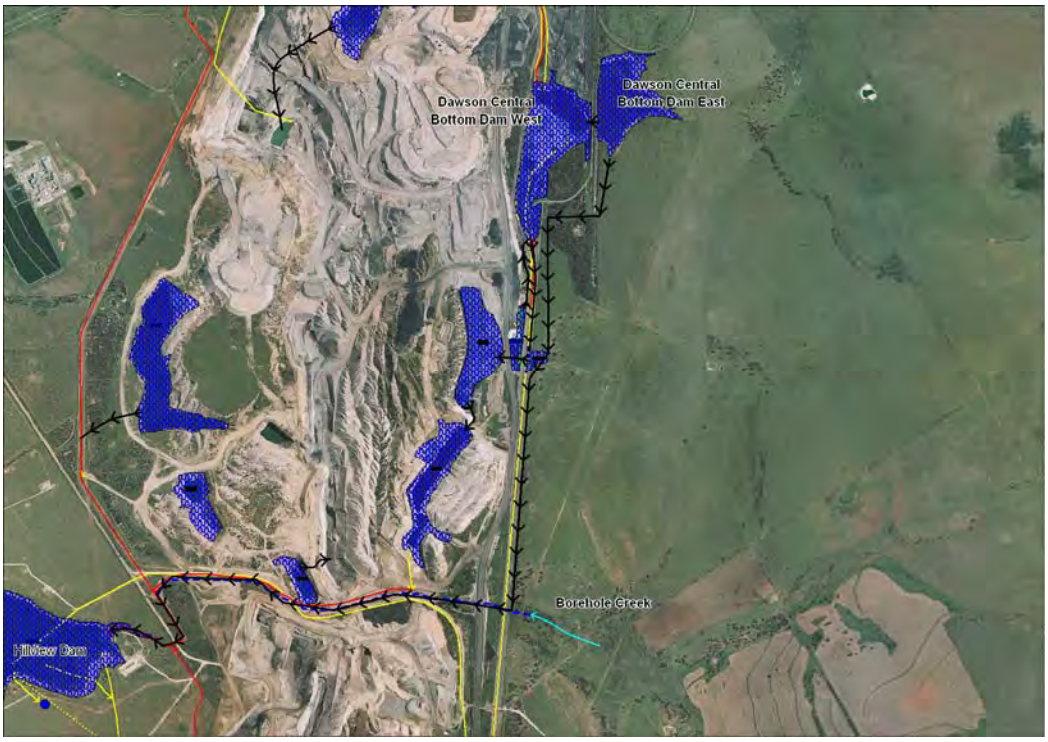

Figure 4: Map of Bottom Dam East and Drainage System
Source: Dawson Mine GIS Software

Figure 5: Map of Days Dam and Drainage System
Source: Dawson Mine GIS Software

2.0 SUPPORTING INFORMATION

The Dawson Central operation currently operates under a Plan of Operations (PoOps). Under this PoOps Hillview Dam is a nominated release point provided discharges comply with both the PoOps and The Final Model Water Conditions for Coal Mines in the Fitzroy Basin (Fiztroy Model Water Conditions). The water quality in Hillview Dam is manually monitored on a monthly basis during normal operations. Historical monthly water quality monitoring results from January – November 2010 are provided in Appendix 1. Where a controlled release from the dam is undertaken, monitoring is completed as per the PoOps and Fitzroy Model Water Conditions.

Discharges from Hillview Dam are directed into Kianga Creek which then flows into the Dawson River. The proposed discharge from 9-12 Dam will also be directed to Kianga Creek with flow through to the Dawson River. The Dawson River is currently in flood with a flow rate of 3796 m^3/s recorded at Woodleigh monitoring station (AQDS01T) on 3rd January 2011. Communities both upstream and down stream of the discharge point along the river are also experiencing flood conditions. As Such, the environmental impact of water discharged from Hillview Dam and 9-12 Dam is expected to be minimised through the dilution of dam water from high quantities of rainfall and the current flood status of the receiving waters.

3.0 OBJECTIVES

The purpose of this Transitional Environmental Program (TEP) is to adequately manage water at the Dawson Central operation. To achieve this, it is proposed that Dawson Mine conduct controlled release events from Hillview Dam and 9-12 Dam into Kianga Creek while

co-currently pumping Days Dam and Bottom Dam east into Hillview Dam, with the potential for water quality parameters and flow rates of receiving water to be outside prescribed limits. By allowing these controlled and monitored discharges, this will reduce the likelihood of an uncontrolled release of water from the Dawson Central operation therefore reducing the risk of environmental harm.

The objectives of this TEP are as follows:

- Reduce the volume of water stored onsite at Dawson Central and maintain freeboard so as to prevent an uncontrolled release event;
- Outline how the release is to be conducted;
- Indicate performance indicators for the release;
- Outline monitoring requirements prior, during and after the release;
- Outline the appropriate resources to be allocated to the TEP; and
- Provide a timeframe for the commencement, duration and completion of the TEP.

Allowance for discharging water under this TEP will provide for greater management of water at Dawson Mine should further extreme rainfall events occur. The Dawson Mine is continuing flood immunity works that will progressively improve the capability for water storage across the operation.

4.0 HOW OBJECTIVES ARE TO BE ACHIEVED

Details of how the objectives of this TEP will be achieved are summarised in Table 1 with further detail provided below where necessary.

Table 1: Action Plan for Achieving TEP Objectives

Objective Actio	n	Responsibility	Time Frame	Performance Indicator	Completion Details
Undertake a controlled release from 9-12 Dam to reduce water volume with the potential to increase the flow rate in Kianga Creek upstream of Hillview Dam.	Install two (2) diesel pumps and piping infrastructure to pump water from 9-12 Dam into Kianga Creek upstream of the Hillview Dam release point	Dawson Mine pump crew will install and maintain the pumping infrastructure in consultation with Dawson environmental personnel	4th January 2011	Successful installation of pumping infrastructure.	
	Water to be pumped at a maximum rate of 300L/s into Kianga Creek where it will flow 13.8km before reaching the Hillview Dam release point.	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over the 6 month period commencing 4th January 2011	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Undertake water quality monitoring	Dawson Environmental personnel and BVIT personnel	As per TEP requirements over the 6 month term of the TEP	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Submit monitoring results and TEP reports to DERM as detailed by TEP	Dawson Environmental personnel	As per TEP requirements over the 6 month term of the TEP	Timely submission of monitoring data and reports to DERM	

Undertake a controlled release from Hillview Dam to maintain freeboard and manage excess water in the Dawson Central Operation.	Switch on two (2) siphons to release water from Hillview Dam into Kianga creek	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	4th January 2011	Successful operation of pumping infrastructure.	
	Water to be pumped at a maximum rate of 1000L/s through the siphons into Kianga Creek. The water will travel approx 30km in Kianga Creek to reach the Dawson River	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over the 6 month period commencing 4th January 2011	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Undertake water quality monitoring	Dawson Environmental personnel and BVIT personnel	As per PoOps and TEP requirements over the 6 month term of the TEP	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Submit monitoring results and TEP reports to DERM as detailed by TEP	Dawson Environmental personnel	As per PoOps and TEP requirements over the 6 month term of the TEP	Timely submission of monitoring data and reports to DERM	
Pump water from Bottom Dam East into Hillview Dam to manage water across the Dawson central operation.	Install diesel pump at Bottom Dam East to pump water into Hillview Dam.	Dawson Mine pump crew will install and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	Successful installation of pumping infrastructure.	
	Pump water from	Dawson Mine pump crew	As required	• Volume of Hillview	

	Bottom Dam East to Hillview Dam at a maximum flow rate of 300L/s	will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	over 6 month period	Dam • Volume discharged	
Pump from Days Dam into Hillview Dam to manage water across the Dawson central operation.	Install an electric pump at Days Dam to pump water into Hillview Dam	Dawson Mine pump crew will install and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	Successful installation of pumping infrastructure	
	Pump water from Days Dam into Hillview Dam at a maximum flow rate of 250L/s	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	• Volume of Hillview Dam • Volume discharged	

4.1 Responsibility and Resources

Dawson environmental personnel will be primarily responsible for coordinating the release of water from the specified dams, including ensuring monitoring and reporting requirements as per PoOps and TEP conditions are met.

The following resources will be available during the release event:

- Dawson Mine Environmental personnel;
- Dawson Mine Pump and infrastructure crew;
- BVIT personnel
- Monitoring equipment (incl sample bottles, gloves, etc);
- Dedicated pumps and piping for transportation of water across site;
- Citect program for analysis of automatic water monitoring results; and
- DERM personnel.

4.2 Time Frame

Dawson Mine request that this TEP be implemented for a period of up to six (6) months. This does not suggest, however, that the release event will continue for the full six (6) month period. The focus for the immediate future is to discharge a sufficient water volume that will allow for the management of water levels on site following recent rainfall events. The release event will cease when the dams reach a capacity whereby sufficient freeboard is maintained to adequately manage the risk of subsequent rain events.

Should another weather system similar to or more severe than the recent event lead to similar water volumes being received within the Dawson region, the timeframe of this TEP will allow for further discharge of water for flood mitigation if necessary. The Dawson Mine will notify DERM of the necessity for further releases as per the requirements of this TEP.

4.3 Performance Indicators

4.3.1 Flow Rate

According to the current Dawson Central and North Plan of Operations the flow rate in the Kianga Creek must be greater than or equal to 2 m^3/s in order to release from Hillview Dam (RP-DC01T) (See Figure 6).

Receiving water description	Release Point	Gauging station description	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Minimum Flow in Receiving Water Required for a Release Event	Flow recording Frequency
Kianga Creek	RP-DN01T	AQ-DC02T	-242915.62	150353.46	> or = 0.5 m^3/s	Continuous (minimum daily)
Kianga Creek	RP-DC01T	AQ-DC02T	-243358.95	150039.09	> or = 2 m^3/s	Continuous (minimum daily)
Kianga Creek	RP-DC02T	AQ-DC02T	-243949.98	150336.97	> or = 4 m^3/s	Continuous (minimum daily)

Figure 6: Table of Flow Conditions required to conduct controlled release at RP-DC01T

Source: Current Dawson Central and North Plan of Operations

The flow rate obtained from the Dawson Mine automatic monitoring station at Kianga Weir (AQ-DC02T) is used to monitor flow in Kianga Creek to ensure it remains at greater than 2m^3/s during releases from Hillview Dam. Where the potential arises for the Kianga Creek flow rate to fall below 2m^3/s, it is proposed under this TEP that Hillview Dam be permitted to

discharge in a controlled manner, as necessary for flood mitigation and water management during and after extreme high rainfall conditions. If this situation is to arise, DERM officers will be contacted to discuss the action plan for discharges from Hillview Dam moving forward.

4.3.2 Water Quality

Water contaminant limits for releases from Hillview Dam are detailed in the Final Model Water Conditions for Coal Mines in the Fitzroy Basin as contained in the current Dawson Central and North Plan of Operations. For the purpose of this TEP, these conditions will also form the basis for assessing the quality of water released from 9-12 Dam.

There is the potential that water of a quality outside these limits may be released under this TEP. For Hillview Dam, current physical water quality parameters are within prescribed limits for release. In addition, it is expected that the significant inflow of freshwater from clean water dams and from the catchment area, will allow for sufficient dilution of any contaminants therefore reducing the risk of environmental harm. The release of water from 9-12 Dam is not expected to exceed these limits due to it being a clean water dam.

If the level of any parameter as per the Fitzroy Model Water Conditions is recorded to be outside of the given limits at the downstream monitoring point for both Hillview Dam and 9-12 Dam, this will be communicated to DERM through daily reporting of in situ parameters and weekly recordings of metals, ammonia and nitrate.

Appendix A contains water quality results for Hillview Dam over a period starting 1st January 2010 to 30th November 2010.

5.0 MONITORING

Water samples will be collected at the release point from Hillview Dam (RP-DC01T) as well as the upstream (AQ-DC02R) and downstream (AQ-DC03T) monitoring point. Water samples will be collected from 9-12 Dam release point as well as the upstream (AQ-DC03R) and downstream (AQ-DC02R).

Physical parameters will be monitored on a daily basis during the release event and metals, ammonia and nitrate will be monitored on a weekly basis.

Water samples will be collected either by Dawson Mine personnel or Dawson Mine contractors BVIT. All samples will be analysed in the BVIT laboratory by trained and competent lab technicians.

6.0 REPORTING

Results of insitu water quality parameters will be reported to DERM on a daily basis. Monthly progress reports outlining the activities and issues associated with the TEP will be issued to DERM along with proposed activities for the upcoming month. A final report defining how the objectives of the TEP have been achieved will be submitted upon completion of all actions.

7.0 APPENDIX A: Hillview DamWater Quality Results 1st Jan – 30th Nov 2010

January:

Environmental, Health & Safety Services
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ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Jan-10**

REPORTED TO: **Tom Hayes**

DATE REPORTED: **16/02/10**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	Narweena Dam	Dawson River	100 Meg Dam
Date Sampled		14/01/10	13/01/10	13/01/10	14/01/10	-	14/01/10	13/01/10	13/01/10
Sample No.		M7766	M7750	M7749	M7763	-	M7764	M7740	M7747
pH		9.0	8.8	8.9	9.2	-	9.7	7.1	8.5
Conductivity	µS/cm	8360		9600	6570	-		160	5940
Temperature	°C	30.7	33.3	32.3	33.0	-	33.0	33.7	29.1
Dissolved Oxygen	mg/L	9.3	6.9	9.8	9.3	-	7.4	7.7	9.1
Turbidity	NTU	-	-	-	-	-	-	-	-
RL	m	-	-	-	-	-	-	-	-
Total olids S	mg/L	-	-	-	-	-	-	-	-
Total issolved olids D	mg/L	-	-	-	-	-	-	-	-
Total uspended olids S	mg/L	-	-	-	-	-	-	-	-
Sulphate	mg/L	-	-	-	-	-	-	-	-
DISSOLVED METALS									
Aluminium	ug/L	13	NR	<5	NR	-	NR	NR	NR
Arsenic	ug/L	11	NR	13	NR	-	NR	NR	NR
Boron	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Cadmium	ug/L	<5	NR	<5	NR	-	NR	NR	NR
Chromium ug/	L	NR	NR	NR	NR	-	NR	NR	NR
Cobalt	ug/L	<5	NR	<5	NR	-	NR	NR	NR
Copper	ug/L	<5	NR	<5	NR	-	NR	NR	NR
Iron	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Lead	ug/L	<5	NR	<5	NR	-	NR	NR	NR
Manganese	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Mercury	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Nickel	ug/L	<5	NR	<5	NR	-	NR	NR	NR
Selenium	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Silver	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Uranium	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Vanadium	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Zinc	ug/L	32	NR	15	NR	-	NR	NR	NR
TOTAL METALS									
Aluminium	ug/L	210	130	510	1300	-	520	10000	270
Arsenic	ug/L	12	<5	14	14	-	<5	<5	7
Boron	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Cadmium	ug/L	<5	NR	<5	NR	-	NR	NR	NR
Chromium ug/	L	NR	<5	NR	<5	-	<5	<5	<5
Cobalt	ug/L	<5	NR	<5	NR	-	NR	NR	NR
Copper	ug/L	<5	29	<5	12	-	23	9	<5
Iron	ug/L	NR	<100	NR	1100	-	470	6500	140
Lead	ug/L	<5	NR	<5	NR	-	NR	NR	NR
Manganese	ug/L	NR	140	NR	42	-	32	220	29
Mercury	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Nickel	ug/L	<5	16	<5	<5	-	9	6	<5
Selenium	ug/L	NR	170		17	-	140	<5	14
Silver	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Uranium	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Vanadium	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Zinc	ug/L	34	31	16	28	-	27	41	14
TPH FRACTIONS									
C6 - C9	ug/L	NR	NR	NR	NR	-	NR	NR	NR
C10 - C14	ug/L	NR	NR	NR	NR	-	NR	NR	NR
C15 - C28	ug/L	NR	NR	NR	NR	-	NR	NR	NR
C29 -C36	ug/L	NR	NR	NR	NR	-	NR	NR	NR
Fluoride	mg/L	0.5	<0.5	0.9	0.900	-	<0.5	<0.5	0.600
Ammonia as N	mg/L	NR	NR	NR	NR	-	NR	NR	NR
Total Fluoride	mg/L	0.500	NR	0.900	NR	-	NR	NR	NR
Nitrate as N	mg/L	1.900	<0.5	2.000	<0.5	-	<0.5	1.500	5.000
Chloride	mg/L	1800	18000	2400	1200	-	15000	7	1300
Orthophosphate as P	mg/L	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
TRH	mg/L	NR	NR	NR	NR	-	NR	NR	NR

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 1

February:

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ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Feb-10**

REPORTED TO: **Tom Hayes** **PAGE:** **7 of 55**

DATE REPORTED: **10/03/10**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	Narweena Dam	Dawson River	100 Meg Dam
Date Sampled		05/02/10	05/02/10	05/02/10	04/02/10	DRY	04/02/10	10/02/10	05/02/10
Sample No.		M7838	M7843	M7844	M7834	-	M7835	M7852	M7846
pH		8.7	9.1	9.1	9.3	-	9.2	7.2	8.4
Conductivity	µS/cm	7.07	92.10	9.54	7.29	-	77.3	0.14	5.99
Temperature	°C	28.7	30.4	30.7	35.5	-	29.5	26.9	28.9
Dissolved Oxygen	mg/L	7.6	10.1	10.9	13.8	-	19.2	4.6	9.7
Turbidity	NTU				-	-			
RL	m				-	-			
Total Solids	mg/L				-	-			
Total Dissolved Solids	mg/L				-	-			
Total Suspended Solids	mg/L				-	-			
Sulphate	mg/L				-	-	-	-	-
DISSOLVED METALS									
Aluminium	ug/L		-		-	-	-	-	-
Arsenic	ug/L		-		-	-	-	-	-
Boron	ug/L	NR	-	NR	-	-	-	-	-
Cadmium	ug/L		-		-	-	-	-	-
Chromium ug/	L	NR	-	NR	-	-	-	-	-
Cobalt	ug/L		-		-	-	-	-	-
Copper	ug/L		-		-	-	-	-	-
Iron	ug/L	NR	-	NR	-	-	-	-	-
Lead	ug/L		-		-	-	-	-	-
Manganese	ug/L	NR	-	NR	-	-	-	-	-
Mercury	ug/L	NR	-	NR	-	-	-	-	-
Nickel	ug/L		-		-	-	-	-	-
Selenium	ug/L	NR	-	NR	-	-	-	-	-
Silver	ug/L	NR	-	NR	-	-	-	-	-
Uranium	ug/L	NR	-	NR	-	-	-	-	-
Vanadium	ug/L	NR	-	NR	-	-	-	-	-
Zinc	ug/L		-		-	-	-	-	-
TOTAL METALS									
Aluminium	ug/L		-		-	-	-	-	-
Arsenic	ug/L		-		-	-	-	-	-
Boron	ug/L	NR	-	NR	-	-	-	-	-
Cadmium	ug/L		-		-	-	-	-	-
Chromium ug/	L	NR	-	NR	-	-	-	-	-
Cobalt	ug/L		-		-	-	-	-	-
Copper	ug/L		-		-	-	-	-	-
Iron	ug/L	NR	-	NR	-	-	-	-	-
Lead	ug/L		-		-	-	-	-	-
Manganese	ug/L	NR	-	NR	-	-	-	-	-
Mercury	ug/L	NR	-	NR	-	-	-	-	-
Nickel	ug/L		-		-	-	-	-	-
Selenium	ug/L	NR	-	NR	-	-	-	-	-
Silver	ug/L	NR	-	NR	-	-	-	-	-
Uranium	ug/L	NR	-	NR	-	-	-	-	-
Vanadium	ug/L	NR	-	NR	-	-	-	-	-
Zinc	ug/L		-		-	-	-	-	-
TPH FRACTIONS									
C6 - C9	ug/L	NR	-	NR	-	-	-	-	-
C10 - C14	ug/L	NR	-	NR	-	-	-	-	-
C15 - C28	ug/L	NR	-	NR	-	-	-	-	-
C29 -C36	ug/L	NR	-	NR	-	-	-	-	-
Fluoride	mg/L		-		-	-	-	-	-
Ammonia as N	mg/L		-		-	-	-	-	-
Total Fluoride	mg/L		-		-	-	-	-	-
Nitrate as N	mg/L		-		-	-	-	-	-
Chloride	mg/L		-		-	-	-	-	-
Orthophosphate as P	mg/L		-		-	-	-	-	-
TRH	mg/L	-	-	-	-	-	-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 1

March:

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ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Feb-10**

REPORTED TO: **Tom Hayes**

DATE REPORTED: **30/03/10**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	Narweena Dam	Dawson River	100 Meg Dam
Date Sampled		23/03/10	24/03/10	24/03/10	23/03/10	DRY	23/03/10	25/03/10	24/03/10
Sample No.		M8030	M8042	M8041	M8028	-	M8029	M8052	M8044
pH		8.8	8.6	8.9	8.5	-	7.4	7.4	7.8
Conductivity	µS/cm	2330.00	8.72	1110.00	1630.00	-	1420.0	180.00	3870.00
Temperature	°C	26.6	28.9	28.3	28.5	-	30.0	26.5	28.1
Dissolved Oxygen	mg/L	13.5	10.2	6.6	10.6	-	5.6	2.8	9.8
Turbidity	NTU				-	-			
RL	m				-	-			
Total Solids	mg/L				-	-			
Total Dissolved Solids	mg/L				-	-			
Total Suspended Solids	mg/L				-	-			
Sulphate	mg/L				-	-	-	-	-
DISSOLVED METALS									
Aluminium	ug/L	8	-	9	-	-	-	-	-
Arsenic	ug/L	7	-	6	-	-	-	-	-
Boron	ug/L	NR	-	NR	-	-	-	-	-
Cadmium	ug/L	<5	-	<5	-	-	-	-	-
Chromium ug/	L	NR	-	NR	-	-	-	-	-
Cobalt	ug/L	<5	-	<5	-	-	-	-	-
Copper	ug/L	<5	-	<5	-	-	-	-	-
Iron	ug/L	NR	-	NR	-	-	-	-	-
Lead	ug/L	<5	-	<5	-	-	-	-	-
Manganese	ug/L	NR	-	NR	-	-	-	-	-
Mercury	ug/L	NR	-	NR	-	-	-	-	-
Nickel	ug/L	<5	-	<5	-	-	-	-	-
Selenium	ug/L	NR	-	NR	-	-	-	-	-
Silver	ug/L	NR	-	NR	-	-	-	-	-
Uranium	ug/L	NR	-	NR	-	-	-	-	-
Vanadium	ug/L	NR	-	NR	-	-	-	-	-
Zinc	ug/L	26	-	23	-	-	-	-	-
TOTAL METALS									
Aluminium	ug/L	110	-	380	-	-	-	-	-
Arsenic	ug/L	7	-	6	-	-	-	-	-
Boron	ug/L	NR	-	NR	-	-	-	-	-
Cadmium	ug/L	<5	-	<5	-	-	-	-	-
Chromium ug/	L	NR	-	NR	-	-	-	-	-
Cobalt	ug/L	<5	-	<5	-	-	-	-	-
Copper	ug/L	<5	-	<5	-	-	-	-	-
Iron	ug/L	NR	-	NR	-	-	-	-	-
Lead	ug/L	<5	-	<5	-	-	-	-	-
Manganese	ug/L	NR	-	NR	-	-	-	-	-
Mercury	ug/L	NR	-	NR	-	-	-	-	-
Nickel	ug/L	<5	-	<5	-	-	-	-	-
Selenium	ug/L	NR	-	NR	-	-	-	-	-
Silver	ug/L	NR	-	NR	-	-	-	-	-
Uranium	ug/L	NR	-	NR	-	-	-	-	-
Vanadium	ug/L	NR	-	NR	-	-	-	-	-
Zinc	ug/L	26	-	23	-	-	-	-	-
TPH FRACTIONS									
C6 - C9	ug/L	NR	-	NR	-	-	-	-	-
C10 - C14	ug/L	NR	-	NR	-	-	-	-	-
C15 - C28	ug/L	NR	-	NR	-	-	-	-	-
C29 -C36	ug/L	NR	-	NR	-	-	-	-	-
Fluoride	mg/L		-		-	-	-	-	-
Ammonia as N	mg/L		-		-	-	-	-	-
Total Fluoride	mg/L		-		-	-	-	-	-
Nitrate as N	mg/L		-		-	-	-	-	-
Chloride	mg/L		-		-	-	-	-	-
Orthophosphate as P	mg/L		-		-	-	-	-	-
TRH	mg/L	-	-	-	-	-	-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 2

April:

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ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Apr-10**

REPORTED TO: **Tom Hayes**

DATE REPORTED: **0/01/00**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	Narweena Dam	Dawson River	100 Meg Dam
Date Sampled		20/04/10	20/04/10	20/04/10	20/04/10	DRY	20/04/10	20/04/10	20/04/10
Sample No.		M8103	M8108	M8109	M8100	-	M8101	M8113	M8111
pH		8.3	8.9	9.2	8.7	-	8.9	7.6	8.6
Conductivity	µS/cm	2870.00	11940.00	2200.00	2210.00	-	4.6	250.00	2310.00
Temperature	°C	24.7	24.4	24.6	24.3	-	26.5	24.9	24.8
Dissolved Oxygen	mg/L	7.2	8.9	10.8	6.4	-	10.8	4.7	8.5
Turbidity	NTU					-			
RL	m					-			
Total Solids	mg/L					-			
Total Dissolved Solids	mg/L					-			
Total Suspended Solids	mg/L					-			
Sulphate	mg/L					-	-	-	-
DISSOLVED METALS									
Aluminium	ug/L					-	-	-	-
Arsenic	ug/L					-	-	-	-
Boron	ug/L					-	-	-	-
Cadmium	ug/L					-	-	-	-
Chromium ug/	L					-	-	-	-
Cobalt	ug/L					-	-	-	-
Copper	ug/L					-	-	-	-
Iron	ug/L					-	-	-	-
Lead	ug/L					-	-	-	-
Manganese	ug/L					-	-	-	-
Mercury	ug/L					-	-	-	-
Nickel	ug/L					-	-	-	-
Selenium	ug/L					-	-	-	-
Silver	ug/L					-	-	-	-
Uranium	ug/L					-	-	-	-
Vanadium	ug/L					-	-	-	-
Zinc	ug/L					-	-	-	-
TOTAL METALS									
Aluminium	ug/L					-	-	-	-
Arsenic	ug/L					-	-	-	-
Boron	ug/L					-	-	-	-
Cadmium	ug/L					-	-	-	-
Chromium ug/	L					-	-	-	-
Cobalt	ug/L					-	-	-	-
Copper	ug/L					-	-	-	-
Iron	ug/L					-	-	-	-
Lead	ug/L					-	-	-	-
Manganese	ug/L					-	-	-	-
Mercury	ug/L					-	-	-	-
Nickel	ug/L					-	-	-	-
Selenium	ug/L					-	-	-	-
Silver	ug/L					-	-	-	-
Uranium	ug/L					-	-	-	-
Vanadium	ug/L					-	-	-	-
Zinc	ug/L					-	-	-	-
TPH FRACTIONS									
C6 - C9	ug/L					-	-	-	-
C10 - C14	ug/L					-	-	-	-
C15 - C28	ug/L					-	-	-	-
C29 -C36	ug/L					-	-	-	-
Fluoride	mg/L					-	-	-	-
Ammonia as N	mg/L					-	-	-	-
Total Fluoride	mg/L					-	-	-	-
Nitrate as N	mg/L					-	-	-	-
Chloride	mg/L					-	-	-	-
Orthophosphate as P	mg/L					-	-	-	-
TRH	mg/L					-	-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 1

May:

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ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **May-10**

REPORTED TO: **Tom Hayes**

DATE REPORTED: **22/06/10**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	Narweena Dam	Dawson River	100 Meg Dam
Date Sampled						DRY			
Sample No.						-			
pH						-			
Conductivity	µS/cm					-			
Temperature	°C					-			
Dissolved Oxygen	mg/L					-			
Turbidity	NTU					-			
RL	m					-			
Total Solids	mg/L					-			
Total Dissolved Solids	mg/L					-			
Total Suspended Solids	mg/L					-			
Sulphate	mg/L					-	-	-	-
DISSOLVED METALS									
Aluminium	ug/L					-	-	-	-
Arsenic	ug/L					-	-	-	-
Boron	ug/L					-	-	-	-
Cadmium	ug/L					-	-	-	-
Chromium ug/	L					-	-	-	-
Cobalt	ug/L					-	-	-	-
Copper	ug/L					-	-	-	-
Iron	ug/L					-	-	-	-
Lead	ug/L					-	-	-	-
Manganese	ug/L					-	-	-	-
Mercury	ug/L					-	-	-	-
Nickel	ug/L					-	-	-	-
Selenium	ug/L					-	-	-	-
Silver	ug/L					-	-	-	-
Uranium	ug/L					-	-	-	-
Vanadium	ug/L					-	-	-	-
Zinc	ug/L					-	-	-	-
TOTAL METALS									
Aluminium	ug/L					-	-	-	-
Arsenic	ug/L					-	-	-	-
Boron	ug/L					-	-	-	-
Cadmium	ug/L					-	-	-	-
Chromium ug/	L					-	-	-	-
Cobalt	ug/L					-	-	-	-
Copper	ug/L					-	-	-	-
Iron	ug/L					-	-	-	-
Lead	ug/L					-	-	-	-
Manganese	ug/L					-	-	-	-
Mercury	ug/L					-	-	-	-
Nickel	ug/L					-	-	-	-
Selenium	ug/L					-	-	-	-
Silver	ug/L					-	-	-	-
Uranium	ug/L					-	-	-	-
Vanadium	ug/L					-	-	-	-
Zinc	ug/L					-	-	-	-
TPH FRACTIONS									
C6 - C9	ug/L					-	-	-	-
C10 - C14	ug/L					-	-	-	-
C15 - C28	ug/L					-	-	-	-
C29 -C36	ug/L					-	-	-	-
Fluoride	mg/L					-	-	-	-
Ammonia as N	mg/L					-	-	-	-
Total Fluoride	mg/L					-	-	-	-
Nitrate as N	mg/L					-	-	-	-
Chloride	mg/L					-	-	-	-
Orthophosphate as P	mg/L					-	-	-	-
TRH	mg/L					-	-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 1

June:

Bureau Veritas - International Trade Australia
ABN: 64 001 285 927
46 RAEDON ST
BILOELA QLD 4715
PH: 07 49925600 FAX: 07 49925115
biloela.reporting@au.bureauveritas.com

ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Jun-10**

REPORTED TO: **Tom Hayes**

DATE REPORTED: **0/01/00**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	Narweena Dam	Dawson River	100 Meg Dam
Date Sampled		21/06/10	21/06/10	21/06/10	21/06/10	DRY	21/06/10	23/06/10	25/06/10
Sample No.		M8255	M8261	M8260	M8252	-	M8253	M8268	M8303
pH		8.1	9.0	9.2	10.2	-	8.9	7.9	8.3
Conductivity	µS/cm	3550.00	18620.00	4230.00	2900.00	-	7220.0	290	3080.00
Temperature	°C	17.3	18.6	18.0	15.1	-	19.4	18.2	18.3
Dissolved Oxygen	mg/L	9.0	10.7	13.9	12.3	-	11.2	7.1	9.5
Turbidity	NTU	5.00	-	10.00	-	-	-	-	-
RL	m	-	-	-	-	-	-	-	-
Total olids S	mg/L	-	-	-	-	-	-	-	-
Total Dissolved Solids	mg/L	2000	13858	2500	1728	-	4362.0	-	-
Total Suspended Solids	mg/L	<20	18	22	24	-	62.0	-	-
Sulphate	mg/L	480	-	380	-	-	-	-	-
DISSOLVED METALS									
Aluminium	ug/L	<5	-	<5	-	-	-	-	-
Arsenic	ug/L	6	-	34	-	-	-	-	-
Boron	ug/L		-		-	-	-	-	-
Cadmium	ug/L	<0.2	-	<0.2	-	-	-	-	-
Chromium ug/	L	-	-	-	-	-	-	-	-
Cobalt	ug/L	<5	-	<5	-	-	-	-	-
Copper	ug/L	<5	-	<5	-	-	-	-	-
Iron	ug/L	<100	-	<100	-	-	-	-	-
Lead	ug/L	<5	-	<5	-	-	-	-	-
Manganese	ug/L	-	-	-	-	-	-	-	-
Mercury	ug/L	-	-	-	-	-	-	-	-
Nickel	ug/L	<5	-	<5	-	-	-	-	-
Selenium	ug/L	-	-	-	-	-	-	-	-
Silver	ug/L	-	-	-	-	-	-	-	-
Uranium	ug/L	-	-	-	-	-	-	-	-
Vanadium	ug/L	-	-	-	-	-	-	-	-
Zinc	ug/L	43	-	26	-	-	-	-	-
TOTAL METALS									
Aluminium	ug/L	100	-	280	-	-	-	-	-
Arsenic	ug/L	5	-	33	-	-	-	-	-
Boron	ug/L	-	-	-	-	-	-	-	-
Cadmium	ug/L	<0.2	-	<0.2	-	-	-	-	-
Chromium ug/	L	-	-	-	-	-	-	-	-
Cobalt	ug/L	<5	-	<5	-	-	-	-	-
Copper	ug/L	<5	-	<5	-	-	-	-	-
Iron	ug/L	<100	-	100	-	-	-	-	-
Lead	ug/L	<5	-	<5	-	-	-	-	-
Manganese	ug/L	-	-	-	-	-	-	-	-
Mercury	ug/L	-	-	-	-	-	-	-	-
Nickel	ug/L	<5	-	<5	-	-	-	-	-
Selenium	ug/L	-	-	-	-	-	-	-	-
Silver	ug/L	-	-	-	-	-	-	-	-
Uranium	ug/L	-	-	-	-	-	-	-	-
Vanadium	ug/L	-	-	-	-	-	-	-	-
Zinc	ug/L	11	-	13	-	-	-	-	-
TPH FRACTIONS									
C6 - C9	ug/L	-	-	-	-	-	-	-	-
C10 - C14	ug/L	-	-	-	-	-	-	-	-
C15 - C28	ug/L	-	-	-	-	-	-	-	-
C29 -C36	ug/L	-	-	-	-	-	-	-	-
Fluoride	mg/L	-	-	-	-	-	-	-	-
Ammonia as N	mg/L	-	-	-	-	-	-	-	-
Total Fluoride	mg/L	-	-	-	-	-	-	-	-
Nitrate as N	mg/L	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-
Orthophosphate as P	mg/L	-	-	-	-	-	-	-	-
TRH	mg/L	-	-	-	-	-	-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 1

July:

Bureau Veritas - International Trade Australia
ABN: 64 001 285 927
46 RAEDON ST
BILOELA QLD 4715
PH: 07 49925600 FAX: 07 49925115
biloela.reporting@au.bureauveritas.com

ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Jul-10**

REPORTED TO: **Brian Barry**

DATE REPORTED: **1/09/10**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	100 Meg Dam	Dawson River	Narweena Dam
Date Sampled		16/07/10	16/07/10	16/07/10	16/07/10	DRY	20/07/10	09/07/10	16/07/10
Sample No.		M8374	M8378	M8377	M8371	-	M8386	M8367	M8372
pH		8.9	9.1	9.1	10.4	-	8.4	7.8	8.9
Conductivity	µS/cm	3840.00	22170.00	5120.00	3240.00	-	3890.0	250	8270.00
Temperature	°C	19.1	18.9	18.5	20.4	-	17.7	17.6	21.1
Dissolved Oxygen	mg/L	12.2	10.6	12.3	13.9	-	8.3	6.8	9.9
Turbidity	NTU	8.00	10	13.00	29.00	-	4.0	13	12
RL	m		-	-		-	-	-	-
Total Solids	mg/L	2400.0	17000.0	3500.0	2100.0	-	-	200	5600
Total Dissolved Solids	mg/L	2400	17000	3000	2100	-	3700.0	200	5100
Total Suspended Solids	mg/L	<20	44	22	44	-	<20	<20	27/01/00
Sulphate	mg/L	460	4400	360	380	-	660	3	880
DISSOLVED METALS									
Aluminium	ug/L	<5	360	140	1400	-	-	770	350
Arsenic	ug/L	<5	8	35	38	-	-	<5	8
Boron	ug/L	-	-	-	-	-	-	-	-
Cadmium	ug/L	<0.2	-	<0.2	-	-	-	-	
Calcium	ug/L	-	130	-	10			21	48
Chromium ug	/L	-	<5	-	<5	-	-	<5	<5
Cobalt	ug/L	<5	-	<5	-	-	-	-	-
Copper	ug/L	<5	7	<5	6	-	-	<5	<5
Iron	ug/L	<100	200	<100	500	-	-	500	300
Lead	ug/L	<5	-	<5	-	-	-	-	-
Magnesium	ug/L	-	570	-	11			7	47
Manganese	ug/L	-	14	-	28	-	-	10	55
Mercury	ug/L	-	-	-	-	-	-	-	-
Nickel	ug/L	<5	<5	<5	<5	-	-	<5	<5
Postassium	ug/L	-	33	-	2			8	19
Selenium	ug/L	-	58	-	<5	-	-	<5	20
Silver	ug/L	-	-	-	-	-	-	-	-
Sodium	ug/L	-	5000	-	660			26	1700
Uranium	ug/L	-	-	-	-	-	-	-	-
Vanadium	ug/L	-	-	-	-	-	-	-	-
Zinc	ug/L	<5	17	<5	14	-	-	14	13
TOTAL METALS									
Aluminium	ug/L	120	-	400	-	-	170	-	-
Arsenic	ug/L	<5	-	30	-	-	6	-	-
Boron	ug/L	-	-	-	-	-	-	-	-
Cadmium	ug/L	<0.2	-	<0.2	-	-	-	-	-
Calcium	ug/L	-		-			73		
Chromium ug	/L	-		-	-	-	<5	-	-
Cobalt	ug/L	<5	-	<5	-	-	-	-	-
Copper	ug/L	<5	-	<5	-	-	<5	-	-
Iron	ug/L	100	-	200	-	-	100	-	-
Lead	ug/L	<5	-	<5	-	-	-	-	-
Magnesium	ug/L	-		-			62		
Manganese	ug/L	-	-	-	-	-	18	-	-
Mercury	ug/L	-	-	-	-	-	-	-	-
Nickel	ug/L	<5	-	<5	-	-	8	-	-
Postassium	ug/L	-		-			14		
Selenium	ug/L	-	-	-	-	-	13	-	-
Silver	ug/L	-	-	-	-	-	-	-	-
Sodium	ug/L	-		-			790		
Uranium	ug/L	-	-	-	-	-	-	-	-
Vanadium	ug/L	-	-	-	-	-	-	-	-
Zinc	ug/L	15	-	14	-	-	18	-	-
TPH FRACTIONS									
C6 - C9	ug/L	-	-	-	-	-	-	-	-
C10 - C14	ug/L	-	-	-	-	-	-	-	-
C15 - C28	ug/L	-	-	-	-	-	-	-	-
C29 -C36	ug/L	-	-	-	-	-	-	-	-
Fluoride	mg/L	<0.5	-	0.800	0.600	-	0.700	<0.5	<0.5
Ammonia as N	mg/L	-	-	-	-	-	-	-	-
Total Fluoride	mg/L	-	-	-	-	-	-	-	-
Nitrate as N	mg/L	0.900	-	<0.1	<0.1	-	9.100	0.400	<0.1
Chloride	mg/L	710	-	1000	480	-	720	30.000	1600
Orthophosphate as P	mg/L	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5
TRH	mg/L	-	-	-	-	-	-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 2

August:

Bureau Veritas - International Trade Australia
ABN: 64 001 285 927
46 RAEDON ST
BILOELA QLD 4715
PH: 07 49925600 FAX: 07 49925115
biloela.reporting@au.bureauveritas.com

ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Aug-10**

REPORTED TO: **Brian Barry**

DATE REPORTED: **22/09/10**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	100 Meg Dam	Dawson River	Narweena Dam
Date Sampled		12/08/10	10/08/10	12/08/10	12/08/10	-	10/08/10	10/08/10	13/08/10
Sample No.		M8505	M8489	M8507	M8503	-	M8491	M8494	M8510
pH		9.0	9.6	8.9	10.3	-	7.7	8.4	8.8
Conductivity	µS/cm	3530.00	22090.00	5460.00	2950.00	-	5090.0	410	8300.00
Temperature	°C	18.5	18.7	19.0	19.0	-	20.2	19	21.5
Dissolved Oxygen	mg/L	11.2	9.6	10.3	11.8	-	7.3	8.6	11.7
Turbidity	NTU	12.00	9	29.00	32.00	-	17.0	13	54
RL	m	-	-	-	-	-	-	-	-
Total olids S	mg/L	-	-	-	-	-	-	-	-
Total Dissolved Solids	mg/L	2300	22000	3400	1800	-	3600.0	200	16000
Total Suspended Solids	mg/L	33	68	45	34	-	35.0	<20	87
Sulphate	mg/L	-	-	-	-	-	-	-	-
DISSOLVED METALS									
Aluminium	ug/L	<5	-	8	-	-	-	-	-
Arsenic	ug/L	<5	-	29	-	-	-	-	-
Boron	ug/L	-	-	-	-	-	-	-	-
Cadmium	ug/L	<0.2	-	<0.2	-	-	-	-	-
Calcium	ug/L	-	-	-	-	-	-	-	-
Chromium ug	/L	-	-	-	-	-	-	-	-
Cobalt	ug/L	<5	-	<5	-	-	-	-	-
Copper	ug/L	<5	-	<5	-	-	-	-	-
Iron	ug/L	<100	-	<100	-	-	-	-	-
Lead	ug/L	<5	-	<5	-	-	-	-	-
Magnesium	ug/L	-	-	-	-	-	-	-	-
Manganese	ug/L	-	-	-	-	-	-	-	-
Mercury	ug/L	-	-	-	-	-	-	-	-
Nickel	ug/L	<5	-	<5	-	-	-	-	-
Postassium	ug/L	-	-	-	-	-	-	-	-
Selenium	ug/L	-	-	-	-	-	-	-	-
Silver	ug/L	-	-	-	-	-	-	-	-
Sodium	ug/L	-	-	-	-	-	-	-	-
Uranium	ug/L	-	-	-	-	-	-	-	-
Vanadium	ug/L	-	-	-	-	-	-	-	-
Zinc	ug/L	<5	-	<5	-	-	-	-	-
TOTAL METALS									
Aluminium	ug/L	210	-	580	-	-	-	-	-
Arsenic	ug/L	<5	-	27	-	-	-	-	-
Boron	ug/L	-	-	-	-	-	-	-	-
Cadmium	ug/L	<0.2	-	<0.2	-	-	-	-	-
Calcium	ug/L	-	-	-	-	-	-	-	-
Chromium ug	/L	-	-	-	-	-	-	-	-
Cobalt	ug/L	<5	-	<5	-	-	-	-	-
Copper	ug/L	<5	-	<5	-	-	-	-	-
Iron	ug/L	300	-	600	-	-	-	-	-
Lead	ug/L	<5	-	<5	-	-	-	-	-
Magnesium	ug/L	-	-	-	-	-	-	-	-
Manganese	ug/L	-	-	-	-	-	-	-	-
Mercury	ug/L	-	-	-	-	-	-	-	-
Nickel	ug/L	<5	-	<5	-	-	-	-	-
Postassium	ug/L	-	-	-	-	-	-	-	-
Selenium	ug/L	-	-	-	-	-	-	-	-
Silver	ug/L	-	-	-	-	-	-	-	-
Sodium	ug/L	-	-	-	-	-	-	-	-
Uranium	ug/L	-	-	-	-	-	-	-	-
Vanadium	ug/L	-	-	-	-	-	-	-	-
Zinc	ug/L	8	-	7	-	-	-	-	-
TPH FRACTIONS									
C6 - C9	ug/L	-	-	-	-	-	-	-	-
C10 - C14	ug/L	-	-	-	-	-	-	-	-
C15 - C28	ug/L	-	-	-	-	-	-	-	-
C29 -C36	ug/L	-	-	-	-	-	-	-	-
Fluoride	mg/L	-	-	-	-	-	-	-	-
Ammonia as N	mg/L	-	-	-	-	-	-	-	-
Total Fluoride	mg/L	-	-	-	-	-	-	-	-
Nitrate as N	mg/L	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-
Orthophosphate s P	mg/L	-	-	-	-	-	-	-	-
TRH	mg/L	-	-	-	-	-	-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 1

September:

Bureau Veritas - International Trade Australia
ABN: 64 001 285 927
46 RAEDON ST
BILOELA QLD 4715
PH: 07 49925600 FAX: 07 49925115
biloela.reporting@au.bureauveritas.com

ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Sep-10**

REPORTED TO: **Brian Barry**

DATE REPORTED: **0/01/00**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	100 Meg Dam	Dawson River	Narweena Dam
Date Sampled		18/09/10	INACCESSIBLE	14/09/10	18/09/10		18/09/10	14/09/10	18/09/10
Sample No.		M8617		M8610	M8614		M8622	M8609	M8615
pH		7.9		8.7	7.9		8.1	7.4	7.5
Conductivity	µS/cm	1420.00		1100.00	1270.00		1790.0	170	1660.00
Temperature	°C	26.0		26.9	25.4		24.1	22.5	25.7
Dissolved Oxygen	mg/L	7.5		9.4	5.1		7.0	7	6.8
Turbidity	NTU	26.00		100.00	46.00		99.0	370	31
RL	m	-		-	-		-	-	-
Total Solids	mg/L	-		-	-		-	-	-
Total Dissolved Solids	mg/L	430		470	820		1100.0	1800	1100
Total Suspended Solids	mg/L	<20		77	<20		65.0	240	24
Sulphate	mg/L	-		-	120		220	2	180
DISSOLVED METALS									
Aluminium	ug/L	220		230	-		-	-	-
Arsenic	ug/L	<5		9	-		-	-	-
Boron	ug/L	-		-	-		-	-	-
Cadmium	ug/L	<0.2		<0.2	-		-	-	-
Chromium ug/	L	-		-	-		-	-	-
Cobalt	ug/L	<5		<5	-		-	-	-
Copper	ug/L	<5		<5	-		-	-	-
Iron	ug/L	100		200	-		-	-	-
Lead	ug/L	<5		<5	-		-	-	-
Manganese	ug/L	-		-	-		-	-	-
Mercury	ug/L	-		-	-		-	-	-
Nickel	ug/L	<5		<5	-		-	-	-
Selenium	ug/L	-		-	-		-	-	-
Silver	ug/L	-		-	-		-	-	-
Uranium	ug/L	-		-	-		-	-	-
Vanadium	ug/L	-		-	-		-	-	-
Zinc	ug/L	8		8	-		-	-	-
TOTAL METALS									
Aluminium	ug/L	470		880	-		-	-	-
Arsenic	ug/L	<5		9	-		-	-	-
Boron	ug/L	-		-	-		-	-	-
Cadmium	ug/L	<0.2		<0.2	-		-	-	-
Chromium ug/	L	-		-	-		-	-	-
Cobalt	ug/L	<5		<5	-		-	-	-
Copper	ug/L	<5		<5	-		-	-	-
Iron	ug/L	400		800	-		-	-	-
Lead	ug/L	<5		<5	-		-	-	-
Manganese	ug/L	-		-	-		-	-	-
Mercury	ug/L	-		-	-		-	-	-
Nickel	ug/L	<5		<5	-		-	-	-
Selenium	ug/L	-		-	-		-	-	-
Silver	ug/L	-		-	-		-	-	-
Uranium	ug/L	-		-	-		-	-	-
Vanadium	ug/L	-		-	-		-	-	-
Zinc	ug/L	27		33	-		-	-	-
TPH FRACTIONS									
C6 - C9	ug/L	-		-	-		-	-	-
C10 - C14	ug/L	-		-	-		-	-	-
C15 - C28	ug/L	-		-	-		-	-	-
C29 -C36	ug/L	-		-	-		-	-	-
Fluoride	mg/L	-		-	-		-	-	-
Ammonia as N	mg/L	-		-	-		-	-	-
Total Fluoride	mg/L	-		-	-		-	-	-
Nitrate as N	mg/L	-		-	-		-	-	-
Chloride	mg/L	-		-	-		-	-	-
Orthophosphate as P	mg/L	-		-	-		-	-	-
TRH	mg/L	-		-	-		-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 1

October:

Bureau Veritas - International Trade Australia
ABN: 64 001 285 927
46 RAEDON ST
BILOELA QLD 4715
PH: 07 49925600 FAX: 07 49925115
biloela.reporting@au.bureauveritas.com

ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Oct-10**

REPORTED TO: **Brian Barry**

DATE REPORTED: **0/01/00**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	100 Meg Dam	Dawson River	Narweena Dam
Date Sampled		12/10/10	INACCESSIBLE	12/10/10	12/10/10		12/10/10	12/10/10	12/10/10
Sample No.		M8718		M8722	M8715		M8725	M8727	M8716
pH		8.3		9.4	7.5		8.3	7.7	8.4
Conductivity	µS/cm	1710.00		1320.00	1050.00		2020.0	190	2700.00
Temperature	°C	23.9		24.0	23.6		24.2	23.8	25.0
Dissolved Oxygen	mg/L	8.3		10.3	5.4		6.8	6	11.9
Turbidity	NTU	6.00		31.00	13.00		5.0	280	24
RL	m	-		-	-		-	-	-
Total Solids	mg/L	-		-	-		-	-	-
Total Dissolved Solids	mg/L	1000		740	650		1300.0	290	1500
Total Suspended Solids	mg/L	<20		28	<20		20.0	48	<20
Sulphate	mg/L	210		81	100		280	3	140
DISSOLVED METALS									
Aluminium	ug/L	130		67	-		-	-	-
Arsenic	ug/L	<5		12	-		-	-	-
Boron	ug/L	-		-	-		-	-	-
Cadmium	ug/L	<0.2		<0.2	-		-	-	-
Chromium ug/	L	-		-	-		-	-	-
Cobalt	ug/L	<5		<5	-		-	-	-
Copper	ug/L	<5		<5	-		-	-	-
Iron	ug/L	<100		<100	-		-	-	-
Lead	ug/L	<5		<5	-		-	-	-
Manganese	ug/L	-		-	-		-	-	-
Mercury	ug/L	-		-	-		-	-	-
Nickel	ug/L	<5		<5	-		-	-	-
Selenium	ug/L	-		-	-		-	-	-
Silver	ug/L	-		-	-		-	-	-
Uranium	ug/L	-		-	-		-	-	-
Vanadium	ug/L	-		-	-		-	-	-
Zinc	ug/L	9		14	-		-	-	-
TOTAL METALS									
Aluminium	ug/L	460		560	-		-	-	-
Arsenic	ug/L	<5		12	-		-	-	-
Boron	ug/L	-		-	-		-	-	-
Cadmium	ug/L	<0.2		<0.2	-		-	-	-
Chromium ug/	L	-		-	-		-	-	-
Cobalt	ug/L	<5		<5	-		-	-	-
Copper	ug/L	<5		<5	-		-	-	-
Iron	ug/L	300		500	-		-	-	-
Lead	ug/L	<5		<5	-		-	-	-
Manganese	ug/L	-		-	-		-	-	-
Mercury	ug/L	-		-	-		-	-	-
Nickel	ug/L	<5		<5	-		-	-	-
Selenium	ug/L	-		-	-		-	-	-
Silver	ug/L	-		-	-		-	-	-
Uranium	ug/L	-		-	-		-	-	-
Vanadium	ug/L	-		-	-		-	-	-
Zinc	ug/L	13		18	-		-	-	-
TPH FRACTIONS									
C6 - C9	ug/L	-		-	-		-	-	-
C10 - C14	ug/L	-		-	-		-	-	-
C15 - C28	ug/L	-		-	-		-	-	-
C29 -C36	ug/L	-		-	-		-	-	-
Fluoride	mg/L	-		-	-		-	-	-
Ammonia as N	mg/L	-		-	-		-	-	-
Total Fluoride	mg/L	-		-	-		-	-	-
Nitrate as N	mg/L	-		-	-		-	-	-
Chloride	mg/L	-		-	-		-	-	-
Orthophosphate as P	mg/L	-		-	-		-	-	-
TRH	mg/L	-		-	-		-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 1

November:

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46 RAEDON ST
BILOELA QLD 4715
PH: 07 49925600 FAX: 07 49925115
biloela.reporting@au.bureauveritas.com

ORIGIN: **Dawson Mine** **JOB NO:** **Bi1498502**

DESCRIPTION: **Water Quality - Monthly Sampling** **REC'D:** **Nov-10**

REPORTED TO: **Brian Barry**

DATE REPORTED: **2/12/10**

Sample ID		Area 14 Dam	Evaporation Ponds	Hillview Dam	Area 19 Dam	Pit 13BL	100 Meg Dam	Dawson River	Narweena Dam
Date Sampled		09/11/10	09/11/10	09/11/10	09/11/10		09/11/10	09/11/10	09/11/10
Sample No.		M8797	M8802	M8803	M8794		M8805	M8807	M8795
pH		8.5	9.0	9.1	9.2		8.5	7.7	8.3
Conductivity	µS/cm	1960.00	16860.00	1600.00	1200.00		1530.0	200	4010.00
Temperature	°C	26.2	25.2	25.5	24.4		25.0	24.9	25.3
Dissolved Oxygen	mg/L	8.2	9.8	10.8	10.4		7.8	6.1	8.7
Turbidity	NTU	9.10	5	55.00	19.00		41.0	180	18
RL	m	-		-	-		-	-	-
Total Solids	mg/L	-		-	-		-	-	-
Total Dissolved Solids	mg/L	1100	12000	760	680		920.0	250	2300
Total Suspended Solids	mg/L	2	20	16	16		10.0	24	66
Sulphate	mg/L		3700		120		220	<15	470
DISSOLVED METALS									
Aluminium	ug/L	<50		<50	-		-	-	-
Arsenic	ug/L	4		10	-		-	-	-
Boron	ug/L	-		-	-		-	-	-
Cadmium	ug/L	<0.2		<0.2	-		-	-	-
Chromium ug/	L	-		-	-		-	-	-
Cobalt	ug/L	<1		<1	-		-	-	-
Copper	ug/L	<1		2	-		-	-	-
Iron	ug/L	<50		<50	-		-	-	-
Lead	ug/L	<1		<1	-		-	-	-
Manganese	ug/L	-		-	-		-	-	-
Mercury	ug/L	-		-	-		-	-	-
Nickel	ug/L	<1		<1	-		-	-	-
Selenium	ug/L	-		-	-		-	-	-
Silver	ug/L	-		-	-		-	-	-
Uranium	ug/L	-		-	-		-	-	-
Vanadium	ug/L	-		-	-		-	-	-
Zinc	ug/L	21		3	-		-	-	-
TOTAL METALS									
Aluminium	ug/L	210		1900	-		-	-	-
Arsenic	ug/L	4		11	-		-	-	-
Boron	ug/L	-		-	-		-	-	-
Cadmium	ug/L	<0.2		<0.2	-		-	-	-
Chromium ug/	L	-		-	-		-	-	-
Cobalt	ug/L	<1		1	-		-	-	-
Copper	ug/L	<1		4	-		-	-	-
Iron	ug/L	230		1200	-		-	-	-
Lead	ug/L	<1		<1	-		-	-	-
Manganese	ug/L	-		-	-		-	-	-
Mercury	ug/L	-		-	-		-	-	-
Nickel	ug/L	<1		2	-		-	-	-
Selenium	ug/L	-		-	-		-	-	-
Silver	ug/L	-		-	-		-	-	-
Uranium	ug/L	-		-	-		-	-	-
Vanadium	ug/L	-		-	-		-	-	-
Zinc	ug/L	5		<1	-		-	-	-
TPH FRACTIONS									
C6 - C9	ug/L	-		-	-		-	-	-
C10 - C14	ug/L	-		-	-		-	-	-
C15 - C28	ug/L	-		-	-		-	-	-
C29 -C36	ug/L	-		-	-		-	-	-
Fluoride	mg/L	-		-	-		-	-	-
Ammonia as N	mg/L	-		-	-		-	-	-
Total Fluoride	mg/L	-		-	-		-	-	-
Nitrate as N	mg/L	-		-	-		-	-	-
Chloride	mg/L	-		-	-		-	-	-
Orthophosphate as P	mg/L	-		-	-		-	-	-
TRH	mg/L	-		-	-		-	-	-

ND - Nil Detected
NR - Not Required
^ Sample lost in transit.

* - Guidelines apply only to Kianga Weir. Remaining samples are dirty water and guidelines do not apply.

This is preliminary report number 1

DRAFT TRANSITIONAL ENVIRONMENTAL PROGRAM UNDER s333 OF THE *ENVIRONMENTAL PROTECTION ACT 1994*

Principal Holder:	Anglo Coal Australia Pty Ltd
EA Number:	No EA - Refer to Current Plan of Operations and Fitzroy Model Water Conditions
Title:	Dawson Mine Transitional Environmental Program: Release from Dawson North Pit
Date:	14th January 2011
Finish Date:	14th July 2011

1.0 BACKGROUND

1.1 Purpose of TEP

Dawson Mine, one of Queensland's leading export coal operations, is owned by the Moura Joint Venture, comprising Anglo American Metallurgical Coal (AAMC) (51%) and Mitsui Coal Holdings Pty Ltd (49%). The mine is operated by AAMC and is located in the southern part of the Bowen Basin, approximately 180km west of Gladstone.

A recent weather system has caused excessive rainfall across most of Central Queensland resulting in the flooding of tributaries across a large portion of the region. The weather station located in the town of Moura recorded a total monthly rainfall in December of 290.4mm (refer to Figure 2). Due to this recent weather event several mining pits are now containing significant volumes of water due to surface water run off and direct contributions from the rainfall. The mine has implemented its Water Management Plan to appropriately manage or contain water across the operation. This includes the diversion of clean water around the site, controlled releases of water where possible and the pumping of water to water storages across site.

The Dawson North Pit's construction included the diversion of an unnamed creek, which became know as Dawson North Lease Boundary Creek (a tributary of Kianga Creek). The diversion channel was designed to contain the peak 1:100 year flow and still maintain a 500mm freeboard. However during the recent heavy rainfall event, the bank of the diversion channel was compromised causing an inflow of fresh water into the pit. The calculated volume of water stored in the pit is 3,750 ML. Water quality information is shown in Figure 1.

Dawson Mine requests the consideration of this Draft Transitional Environmental Program (TEP) in accordance with s333 of the *Environmental Protection Act 1994,* to allow for the active discharge of 3,750ML of water from the Dawson North Pit into Dawson North Lease Boundary Creek at a maximum flow rate of $1m^3$/sec for a period of 6 months. It is not expected that this maximum flow rate would be maintained for the entire duration of the TEP, however it represents the maximum peak flow. Details of how environmental aspects shall be managed under this TEP are detailed in the following sections of this application.

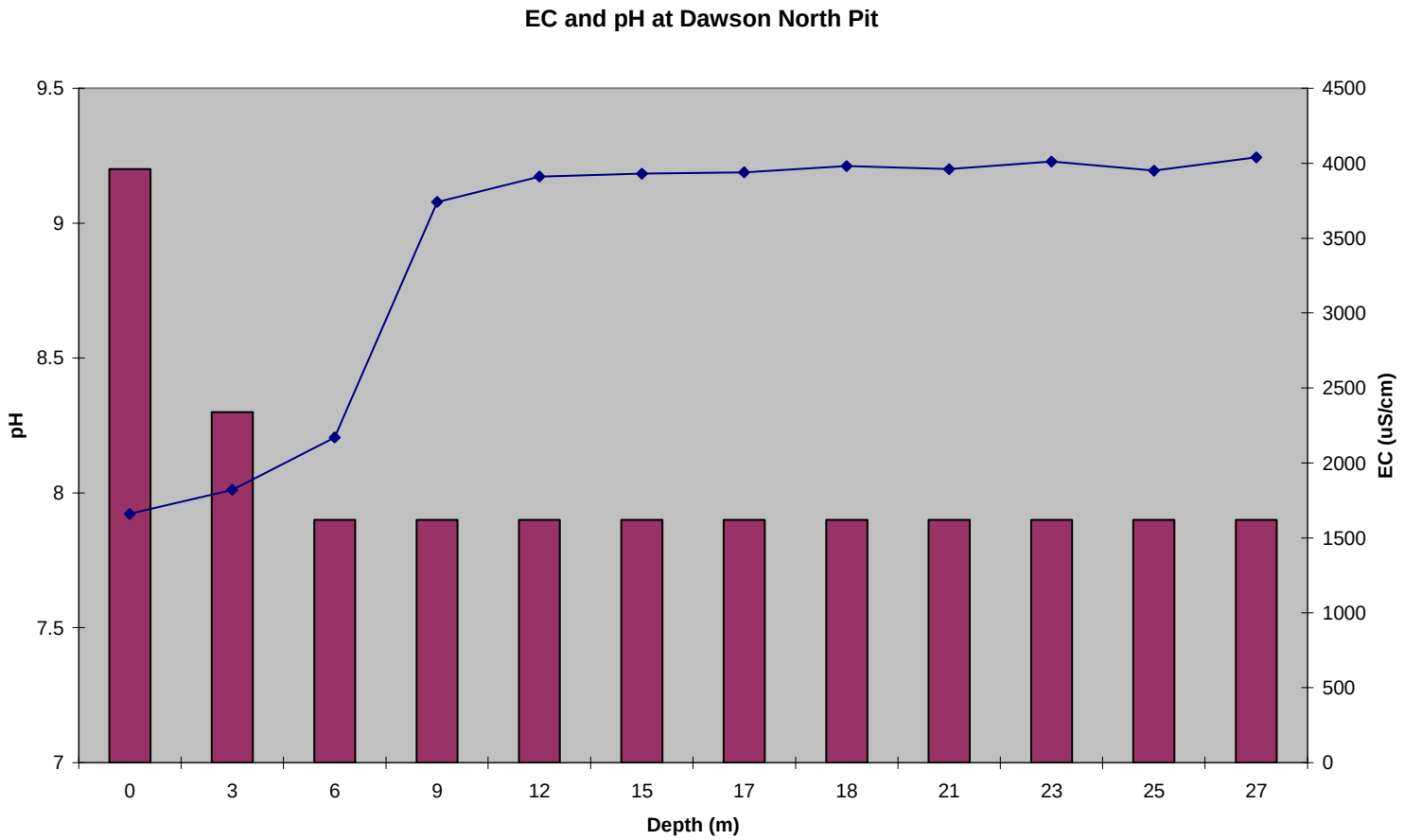


Figure 1. Results of a Water Quality Survey at Various Depths in the Dawson North Pit.

Daily Rainfall (millimetres)

MOURA POST OFFICE

Station Number: 039071 · State: QLD · Opened: 1941 · Status: Open · Latitude: 24.57°S · Longitude: 149.97°E · Elevation: 148 m

2010	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1st	0	38.4	5.2	1.0	0	0	0	0	0	0	0	4.4
2nd	0	7.6	14.8	0	0	0	0	0	0	0	0.6	
3rd	0	0.6	10.4	0	0	0	1.0	0	0	0	0	27.6
4th	6.2	4.8	0	0	0	0	0	0	0	0	1.8	9.0
5th	22.4	0	13.2	0	0	0	0	0	10.2	0	2.6	1.0
6th	2.4	0	2.0	0	1.8	0	0	0	141.0	0	0	
7th	8.0	4.8	33.2	0	0	0	0	0	0	0	0	7.6
8th	0	0	0	0	0	0	3.6	0	0	0.8	0	
9th	0	38.2	0	0	0	0	1.2	0	0	0	3.6	
10th	0	0	0	12.6	0	0	0	0	0	0	0	
11th	0	0	0	0	0	0	0	69.8	1.0	0	0	
12th	0	4.8	0	34.6	0	0	0	0	0	9.2	0	2.2
13th	0	0	0	4.0	0	0	0	0	0	0	0	3.8
14th	0	0	0	0	0	0	0	0	0	0	0	
15th	0	0	0	0	0	8.0	0	0	0	0	0	
16th	0	50.8	0	0	0	0	0	0	0	34.0	2.0	
17th	0	12.2	0	0	0	0	0	0	0	0	3.2	
18th	0	6.4	0	0	0	0	0	0	1.0	0	10.8	3.6
19th	0	44.6	0	0.6	0	2.0	0	0	3.0	0	27.6	32.6
20th	0	0	0	0.4	0	2.8	5.0	0	22.6	0	4.6	21.4
21st	0	0	0	0	0	0	0	4.6	0.6	0	4.6	
22nd	0	0	25.6	0	1.6	0	0	0	7.0	0	7.0	
23rd	0	0	2.4	0	0	0	0	0	16.6	0	0	53.0
24th	0	0	0	0	0	0	0	6.0	0	0	9.8	0.8
25th	0	3.0	0	0	4.8	1.2	0	0	6.4	3.4	0	2.0
26th	0	6.4	0	0	3.0	0	2.4	10.6	1.0	0	0	29.8
27th	0	0	0	0	0	0	0	0	1.8	0	0	28.8
28th	0	0	0	0	0	0	0	0	0.8	0	0	58.0
29th	0		5.8	0	2.6	0	0	0	15.6	0	0	4.8
30th	0		0	0	0	0	0	0	0.8	0	2.6	
31st	2.0		0		0		0	0		0		
Highest daily	22.4	50.8	33.2	34.6	4.8	8.0	5.0	69.8	141.0	34.0	27.6	58.0
Monthly Total	41.0	222.6	112.6	53.2	13.8	14.0	13.2	91.0	229.4	47.4	80.8	290.4

Annual total for 2010 = 1209.4mm

↓ This day is part of an accumulated total
Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown

Product code: IDCJAC0009 reference: 03624368

Australian Government
Bureau of Meteorology

Figure 2: Table of Rainfall Data for Moura Weather Station 039071.
Source: Australian Government Bureau of Meteorology, 31st December 2010.

Figure 3. Dawson North Pit Details and Monitoring Locations.

3.0 OBJECTIVES

The purpose of this Transitional Environmental Program (TEP) is to adequately manage the environmental risks associated with pumping out the Dawson North Pit to enable it to return to operation. To achieve this, it is proposed that Dawson Mine conduct a sustained controlled release events by pumping the water stored in the Dawson North Pit into the Dawson North Industrial Dam and allowing it to discharge through the spillway to Dawson North Lease Boundary Creek until the pit has been dewatered sufficiently to enable operations to re-commence.

In order to prevent a reoccurrence of the significant inflow of fresh water into the Dawson North Pit, the root causes are currently being addressed including a re-evaluation of the original hydraulic design with respect to any recent infrastructure changes, and the re-instating of the diversion channel bank.

The pumping of water out of the pit into Dawson North Lease Boundary Creek would be via the Dawson North Industrial Dam, which is the licensed release point for Dawson North. This will enable further dilution of the water from the pit before it passively discharges through the Dawson North Industrial Dam spillway, which has been constructed to minimise the risk of flow path erosion.

The current release conditions for Dawson North Industrial Dam require a 0.5m3/sec flow in Kianga Creek and various water quality limits as described in Table 2 of the Final Model Water Conditions for Coal Mines in the Fitzroy Basin, (See Appendix A). It is proposed that under this TEP, that the Kianga Creek flow requirements and discharge water quality requirements be amended to enable a continuous controlled release. From the data available at the time of writing it is proposed that the water quality and flow conditions listed in Table 1 would facilitate a continuous controlled release.

Parameter	Value	Monitoring Frequency
Flow in Kianga Creek (cumec) as monitored at the Kianga Weir	0	Not Applicable
EC (uS/cm)	4500	Daily during release
pH	6.5 - 9.5	Daily during release
Turbidity (NTU)	560	Daily during release
Suspended Solids (mg/L)	500	Daily during release
Sulphate (mg/L)	400	Daily during release

Table 1. Proposed Conditions for this TEP.

In summary the objectives of this TEP are as follows:

- Dewater the Dawson North Pit to enable mining operations to re-commence, whilst appropriately managing the environmental risks;
- Outline how reoccurrence of fresh water inflow into the Dawson North Pit is to be avoided;
- Outline how the release is to be conducted;
- Indicate performance indicators for the release;
- Outline monitoring requirements during the release;
- Outline the appropriate resources to be allocated to the TEP; and
- Provide a timeframe for the commencement and duration of the TEP.

4.0 HOW OBJECTIVES ARE TO BE ACHIEVED

Details of how the objectives of this TEP will be achieved are summarised in Table 1. Addition detail is also included in the subsections below.

4.1 Responsibility and Resources

Dawson environmental personnel will be primarily responsible for coordinating the release of water from the Dawson North Industrial Dam, including ensuring monitoring and reporting requirements as per licence and TEP conditions are met.

The following resources will be available during the release event:

- Dawson Mine Environmental personnel;
- Dawson Mine Pump and infrastructure crew;
- Bureau Veritas International Trade (BVIT) personnel
- Monitoring equipment (incl sample bottles, gloves, etc);
- Dedicated pumps and piping for transportation of water across site to ensure water quality conditions are maintained for the release water; and
- DERM personnel.

4.2 Time Frame

Dawson Mine request that this TEP be implemented for a period of up to six (6) months. This does not suggest, however, that the release event will continue for the full six (6) month period. The focus for the immediate future is to discharge a sufficient water volume that will allow for the management of water levels on site following recent rainfall and pit inrush events. The release event will cease when the Dawson North Pit is dewatered sufficiently to enable mining operations to continue.

4.3 Performance Indicators

4.3.1 Water Quality

The current water contaminant release limits are contained in the Final Model Water Conditions for Coal Mines in the Fitzroy Basin as detailed in Appendix A. There is the potential to release water outside these limits under this TEP (Table 1), which is required in order to get the Dawson North Pit operational within an acceptable time frame to avoid significant economical impact to the mining operation.

4.3.2 Discharge Flow Rates

Discharge flow rates will be able to be approximated by quantifying the pumping inflows into the Dawson North Industrial Dam, this information will be monitored daily and altered as required based on in-situ water quality results.

Table 1: Action Plan for Achieving TEP Objectives

Objective	Action	Responsibility	Time Frame	Performance Indicator	Completion Details
Conduct sustained controlled release from Dawson North Industrial Dam in accordance with TEP	Install required pumps and pipelines to move water from Dawson North Pit to the Dawson North Industrial Dam	Dawson Pump Crew and Dawson Project Group	Within 7 days	Successful installation of infrastructure	
	Conduct monitoring of water contained within the pit, at the release point (RP-DN01T), and upstream and downstream reference points (AQ-DC01R and AQ-DC01T, respectively).	Dawson Environmental Department	Duration of TEP and on-going in accordance with current RWMP	Collection of all required samples and analysis of appropriate analytes	
	Repair drainage channel bank, and ensure the capacity of the drainage channel is maintained	Dawson North Mine Operator	Ongoing	Inspection, survey information to confirm	
	Submit monitoring results and TEP reports to DERM as detailed by TEP	Dawson Environmental Department	Duration of TEP	Submitting required reports in accordance with deadlines.	
	Inform neighbouring framers of TEP	Dawson Environmental Department and Dawson Community Co-ordinator	Prior to Commencement		

5.0 MONITORING

Water samples will be collected in accordance with the current requirements, which require physical parameters and Sulphate to be monitored on a daily basis during the release event and metals, ammonia, nitrate and hydrocarbons monitored on a weekly basis.

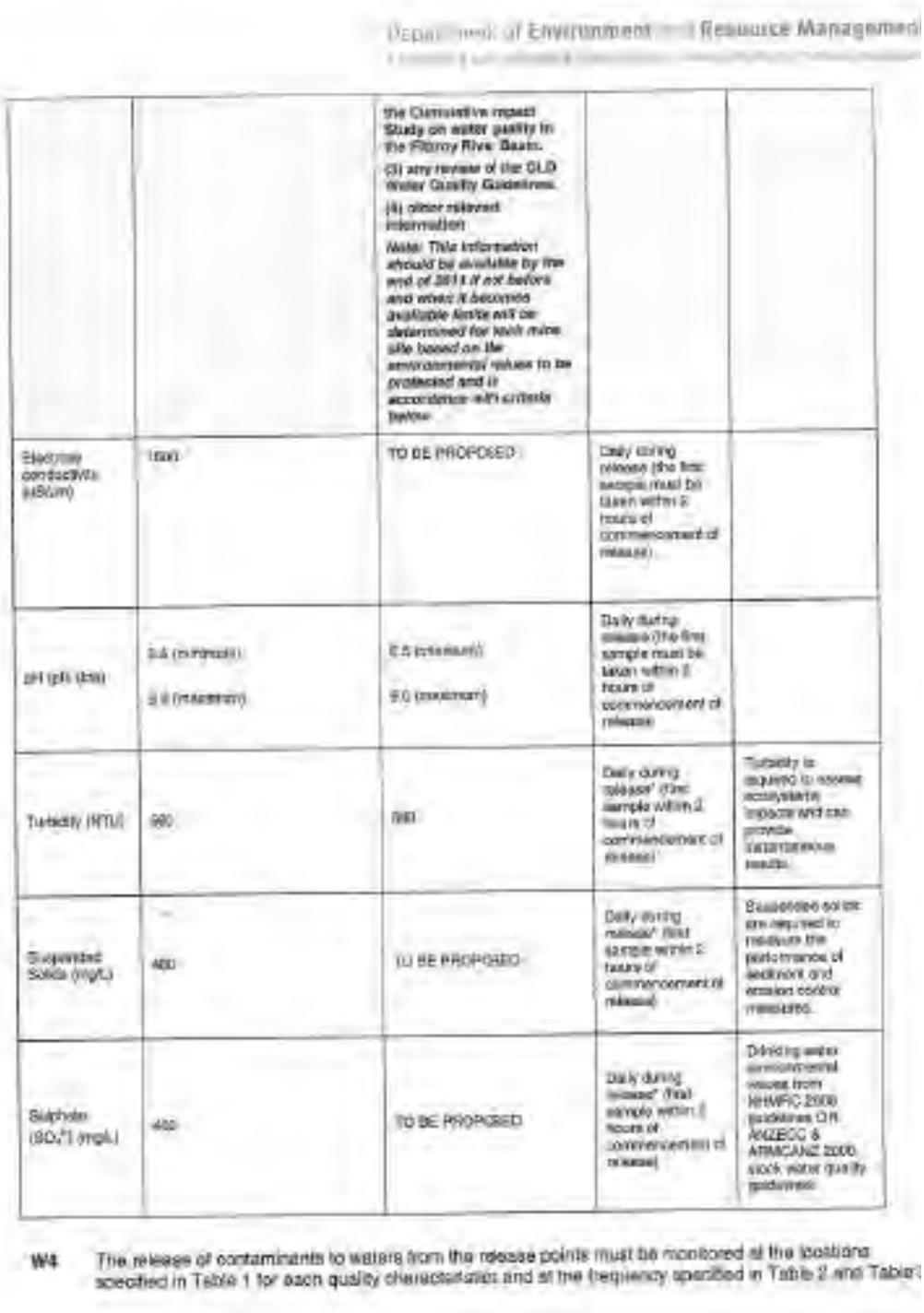
Monitoring locations are shown in Figure 3.

Water samples will be collected either by Dawson Mine personnel or Dawson Mine contractors Bureau Veritas International Trade (BVIT). All samples will be analysed in the BVIT laboratory by trained and competent lab technicians.

6.0 REPORTING

Results of insitu water quality parameters will be available for reporting to DERM on a daily basis. Monthly progress reports outlining the activities and issues associated with the TEP will be issued to DERM along with proposed activities for the upcoming month. A final report defining how the objectives of the TEP have been achieved will be submitted upon completion of all actions.

7.0 APPENDIX A: Current Water Release Conditions for Dawson North Industrial Dam



(Department of Environment and Resource Management)

		the Cumulative Impact Study on water quality in the Fitzroy River Basin. (ii) any review of the QLD Water Quality Guidelines. (iii) other relevant information *Note: This information should be available by the end of 2013 if not before and when it becomes available limits will be determined for each mine site based on the environmental values to be protected and in accordance with criteria below*		
Electrical conductivity (uS/cm)	1500	TO BE PROPOSED	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
pH (pH Units)	6.5 (minimum) 8.5 (maximum)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release	
Turbidity (NTU)	500	500	Daily during release* (first sample within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impacts and can provide representative results.
Suspended Solids (mg/L)	400	TO BE PROPOSED	Daily during release* (first sample within 2 hours of commencement of release)	Suspended solids are required to measure the performance of sediment and erosion control measures.
Sulphate (SO_4^{2-}) (mg/L)	400	TO BE PROPOSED	Daily during release* (first sample within 2 hours of commencement of release)	Drinking water environmental values from NHMRC 2008 guidelines OR ANZECC & ARMCANZ 2000 stock water quality guidelines

W4 The release of contaminants to waters from the release points must be monitored at the locations specified in Table 1 for each quality characteristics and at the frequency specified in Table 2 and Table

Receiving water description	Release Point	Gauging station description	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Minimum Flow in Receiving Water Required for a Release Event	Flow recording Frequency
Kianga Creek	RP-DN01T	AQ-DC02T	-242915.62	150353.46	> or = 0.5 m^3/s	Continuous (minimum daily)
Kianga Creek	RP-DC01T	AQ-DC02T	-243358.95	150039.09	> or = 2 m^3/s	Continuous (minimum daily)
Kianga Creek	RP-DC02T	AQ-DC02T	-243949.98	150336.97	> or = 4 m^3/s	Continuous (minimum daily)

DRAFT TRANSITIONAL ENVIRONMENTAL PROGRAM UNDER s333 OF THE *ENVIRONMENTAL PROTECTION ACT 1994*

Principal Holder:	Anglo Coal Australia Pty Ltd
EA Number:	No EA - Refer to Current Plan of Operations and Fitzroy Model Water Conditions
Title:	Dawson Mine Transitional Environmental Program: Release from Dawson North Pit – Re-submission
Date:	27th January 2011
Finish Date:	27th September 2011

1.0 BACKGROUND

1.1 Purpose of TEP

Dawson Mine, one of Queensland's leading export coal operations, is owned by the Moura Joint Venture, comprising Anglo American Metallurgical Coal (AAMC) (51%) and Mitsui Coal Holdings Pty Ltd (49%). The mine is operated by AAMC and is located in the southern part of the Bowen Basin, approximately 180km west of Gladstone.

A recent weather system has caused excessive rainfall across most of Central Queensland resulting in the flooding of tributaries across a large portion of the region. The weather station located in the town of Moura recorded a total monthly rainfall in December of 290.4mm (refer to Figure 2). Due to this recent weather event several mining pits are now containing significant volumes of water due to surface water run off and direct contributions from the rainfall. The mine has implemented its Water Management Plan to appropriately manage or contain water across the operation. This includes the diversion of clean water around the site, controlled releases of water where possible and the pumping of water to water storages across site.

The Dawson North Pit's construction included the diversion of an unnamed creek, which became know as Dawson North Lease Boundary Creek (a tributary of Kianga Creek). The diversion channel was designed to contain the peak 1:100 year flow and still maintain a 500mm freeboard. However during the recent heavy rainfall event, the bank of the diversion channel was compromised causing an inflow of fresh water into the pit. The calculated volume of water stored in the pit is 3,750 ML. Water quality information is shown in Figure 1.

Dawson Mine requests the consideration of this Draft Transitional Environmental Program (TEP) in accordance with s333 of the *Environmental Protection Act 1994,* to allow for the active discharge of 3,750ML of water from the Dawson North Pit into Dawson North Lease Boundary Creek at a maximum flow rate of 250L/sec for a period of 6 months, with an EC limit of 3250uS/cm. Details of how environmental aspects shall be managed under this TEP are detailed in the following sections of this application.

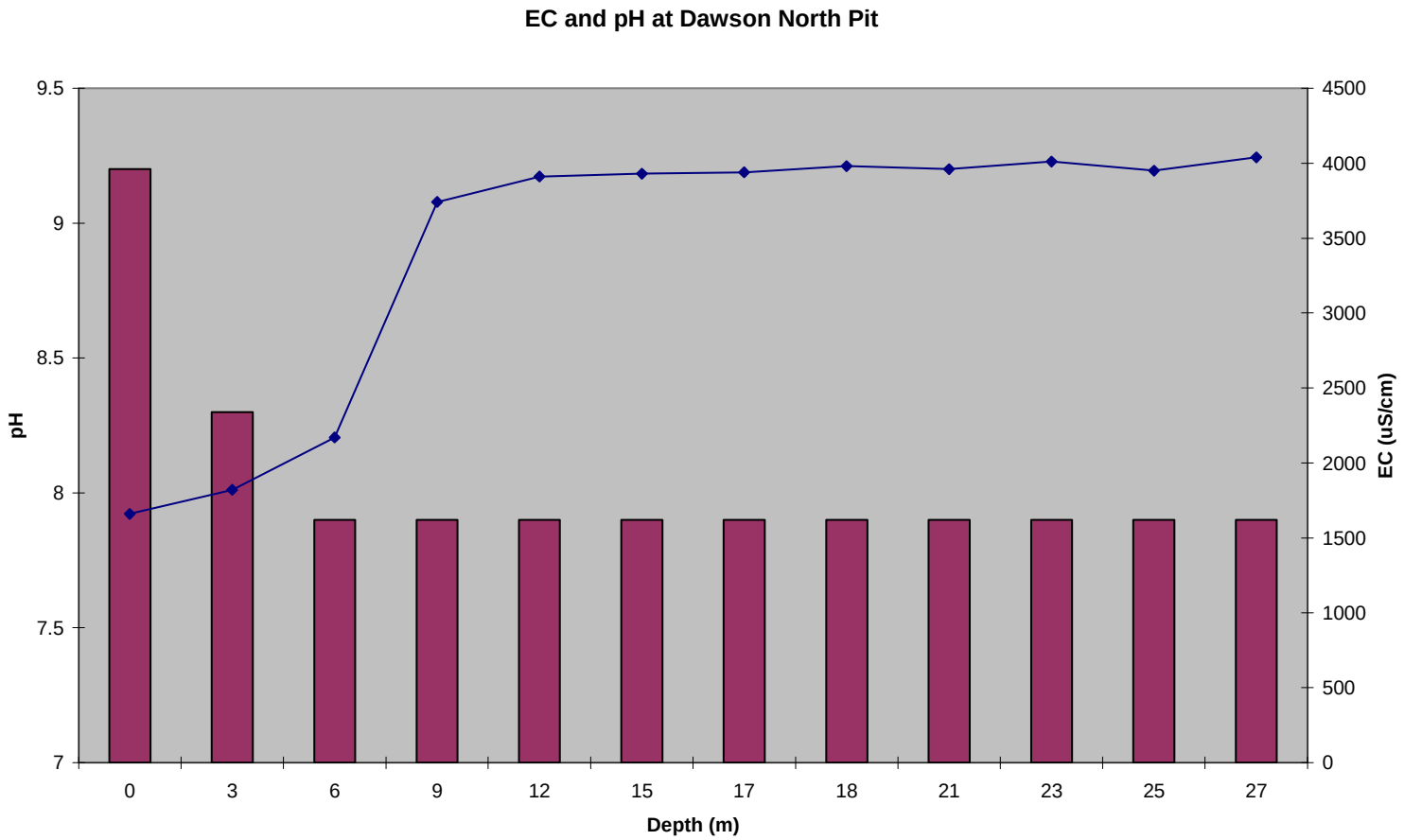


Figure 1. Results of a Water Quality Survey at Various Depths in the Dawson North Pit.

Daily Rainfall (millimetres)

MOURA POST OFFICE

Station Number: 039071 · State: QLD · Opened: 1941 · Status: Open · Latitude: 24.57°S · Longitude: 149.97°E · Elevation: 148 m

2010	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1st	0	38.4	5.2	1.0	0	0	0	0	0	0	0	4.4
2nd	0	7.6	14.8	0	0	0	0	0	0	0	0.6	
3rd	0	0.6	10.4	0	0	0	1.0	0	0	0	0	27.6
4th	6.2	4.8	0	0	0	0	0	0	0	0	1.8	9.0
5th	22.4	0	13.2	0	0	0	0	0	10.2	0	2.6	1.0
6th	2.4	0	2.0	0	1.8	0	0	0	141.0	0	0	
7th	8.0	4.8	33.2	0	0	0	0	0	0	0	0	7.6
8th	0	0	0	0	0	0	3.6	0	0	0.8	0	
9th	0	38.2	0	0	0	0	1.2	0	0	0	3.6	
10th	0	0	0	12.6	0	0	0	0	0	0	0	
11th	0	0	0	0	0	0	0	69.8	1.0	0	0	
12th	0	4.8	0	34.6	0	0	0	0	0	9.2	0	2.2
13th	0	0	0	4.0	0	0	0	0	0	0	0	3.8
14th	0	0	0	0	0	0	0	0	0	0	0	
15th	0	0	0	0	0	8.0	0	0	0	0	0	
16th	0	50.8	0	0	0	0	0	0	0	34.0	2.0	
17th	0	12.2	0	0	0	0	0	0	0	0	3.2	
18th	0	6.4	0	0	0	0	0	0	1.0	0	10.8	3.6
19th	0	44.6	0	0.6	0	2.0	0	0	3.0	0	27.6	32.6
20th	0	0	0	0.4	0	2.8	5.0	0	22.6	0	4.6	21.4
21st	0	0	0	0	0	0	0	4.6	0.6	0	4.6	
22nd	0	0	25.6	0	1.6	0	0	0	7.0	0	7.0	
23rd	0	0	2.4	0	0	0	0	0	16.6	0	0	53.0
24th	0	0	0	0	0	0	0	6.0	0	0	9.8	0.8
25th	0	3.0	0	0	4.8	1.2	0	0	6.4	3.4	0	2.0
26th	0	6.4	0	0	3.0	0	2.4	10.6	1.0	0	0	29.8
27th	0	0	0	0	0	0	0	0	1.8	0	0	28.8
28th	0	0	0	0	0	0	0	0	0.8	0	0	58.0
29th	0		5.8	0	2.6	0	0	0	15.6	0	0	4.8
30th	0		0	0	0	0	0	0	0.8	0	2.6	
31st	2.0		0		0		0	0		0		
Highest daily	22.4	50.8	33.2	34.6	4.8	8.0	5.0	69.8	141.0	34.0	27.6	58.0
Monthly Total	41.0	222.6	112.6	53.2	13.8	14.0	13.2	91.0	229.4	47.4	80.8	290.4

Annual total for 2010 = 1209.4mm

↓ This day is part of an accumulated total
Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown

Product code: IDCJAC0009 reference: 03624368

Australian Government
Bureau of Meteorology

Figure 2: Table of Rainfall Data for Moura Weather Station 039071.
Source: Australian Government Bureau of Meteorology, 31st December 2010.

Figure 3. Dawson North Pit Details and Monitoring Locations.

3.0 OBJECTIVES

The purpose of this Transitional Environmental Program (TEP) is to adequately manage the environmental risks associated with pumping out the Dawson North Pit to enable it to return to operation. To achieve this, it is proposed that Dawson Mine conduct sustained controlled release events by pumping the water stored in the Dawson North Pit into the Dawson North Industrial Dam and allowing it to discharge through the spillway to Dawson North Lease Boundary Creek until the pit has been dewatered sufficiently to enable operations to re-commence.

In order to prevent a reoccurrence of the significant inflow of fresh water into the Dawson North Pit, the root causes are currently being addressed including a re-evaluation of the original hydraulic design with respect to any recent infrastructure changes, and the re-instating of the diversion channel bank.

The pumping of water out of the pit into Dawson North Lease Boundary Creek would be via the Dawson North Industrial Dam, which is the licensed release point for Dawson North. This will enable further dilution of the water from the pit before it passively discharges through the Dawson North Industrial Dam spillway (which has been constructed to minimise the risk of flow path erosion) by the addition of clean water from the eastern dams.

The current release conditions for Dawson North Industrial Dam requires a 0.5m3/sec flow in Kianga Creek and various water quality limits as described in Table 2 of the Final Model Water Conditions for Coal Mines in the Fitzroy Basin, (See Appendix A). It is proposed that under this TEP, that the Kianga Creek flow requirements and discharge water quality requirements be amended to enable a continuous controlled release. From the data available at the time of writing it is proposed that the water quality and flow conditions listed in Table 1 would facilitate a continuous controlled release.

Parameter	Value	Monitoring Frequency
Flow in Kianga Creek (cumec) as monitored at the Kianga Weir	0	Not Applicable
Flow rate (L/s)	250	Not applicable
EC (uS/cm)	3250	Daily during release
pH	6.5 - 9.5	Daily during release

Table 1. Proposed Conditions for this TEP.

In summary the objectives of this TEP are as follows:

- Dewater the Dawson North Pit to enable mining operations to re-commence, whilst appropriately managing the environmental risks;
- Outline how reoccurrence of fresh water inflow into the Dawson North Pit is to be avoided;
- Outline how the release is to be conducted;
- Indicate performance indicators for the release;
- Outline monitoring requirements during the release;
- Outline the appropriate resources to be allocated to the TEP; and
- Provide a timeframe for the commencement and duration of the TEP.

4.0 HOW OBJECTIVES ARE TO BE ACHIEVED

Details of how the objectives of this TEP will be achieved are summarised in Table 1. Addition detail is also included in the subsections below.

4.1 Responsibility and Resources

Dawson environmental personnel will be primarily responsible for coordinating the release of water from the Dawson North Industrial Dam, including ensuring monitoring and reporting requirements as per licence and TEP conditions are met.

The following resources will be available during the release event:

- Dawson Mine Environmental personnel;
- Dawson Mine Pump and infrastructure crew;
- Bureau Veritas International Trade (BVIT) personnel
- Monitoring equipment (incl sample bottles, gloves, etc);
- Dedicated pumps and piping for transportation of water across site to ensure water quality conditions are maintained for the release water; and
- DERM personnel.

4.2 Time Frame

Dawson Mine request that this TEP be implemented for a period of up to eight (8) months (to allow for DERM reporting requirements of 6 weeks at cessation of discharge events). The focus for the immediate future is to discharge a sufficient water volume that will allow for the management of water levels on site following recent rainfall and pit inrush events. The release event will cease when the Dawson North Pit is dewatered sufficiently to enable mining operations to continue.

4.3 Performance Indicators

4.3.1 Water Quality

The current water contaminant release limits are contained in the Final Model Water Conditions for Coal Mines in the Fitzroy Basin as detailed in Appendix A. There is the potential to release water outside these limits under this TEP (Table 1), which is required in order to get the Dawson North Pit operational within an acceptable time frame to avoid significant economical impact to the mining operation.

4.3.2 Discharge Flow Rates

Discharge flow rates will be able to be approximated by quantifying the pumping inflows into the Dawson North Industrial Dam, this information will be monitored daily and altered as required based on in-situ water quality results.

Table 1: Action Plan for Achieving TEP Objectives

Objective	Action	Responsibility	Time Frame	Performance Indicator	Completion Details
Conduct sustained controlled release from Dawson North Pit into Dawson North Industrial Dam in accordance with TEP	Install required pumps and pipelines to move water from Dawson North Pit to the Dawson North Industrial Dam	Dawson Pump Crew and Dawson Project Group	Within 7 days	Successful installation of infrastructure	
	Conduct monitoring of water contained within the pit, at the release point (RP-DN01T), and upstream and downstream reference points (AQ-DC01R and AQ-DC01T, respectively).	Dawson Environmental Department	Duration of TEP and on-going in accordance with current RWMP	Collection of all required samples and analysis of appropriate analytes	
	Repair drainage channel bank, and ensure the capacity of the drainage channel is maintained	Dawson North Mine Operator	Ongoing	Inspection, survey information to confirm	
	Submit monitoring results and TEP reports to DERM as detailed by TEP	Dawson Environmental Department	Duration of TEP	Submitting required reports in accordance with deadlines.	
	Inform neighbouring framers of TEP	Dawson Environmental Department and Dawson Community Co-ordinator	Prior to Commencement		

5.0 MONITORING

Water samples will be collected in accordance with the current requirements, which require physical parameters and Sulphate to be monitored on a daily basis during the release event and metals, ammonia, nitrate and hydrocarbons monitored on a weekly basis.

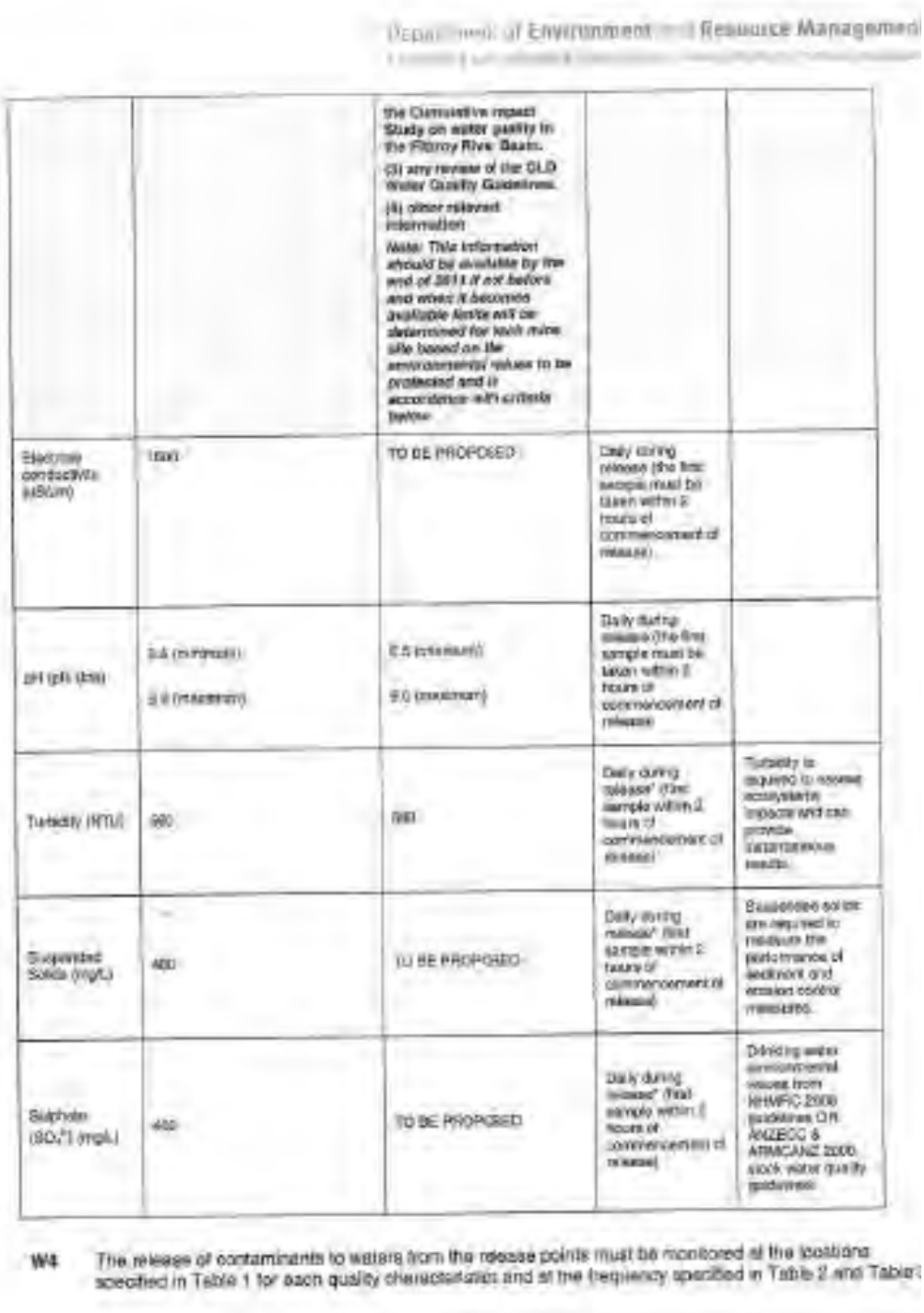
Monitoring locations are shown in Figure 3.

Water samples will be collected either by Dawson Mine personnel or Dawson Mine contractors Bureau Veritas International Trade (BVIT). All samples will be analysed in the BVIT laboratory by trained and competent lab technicians.

6.0 REPORTING

Results of insitu water quality parameters will be available for reporting to DERM on a daily basis. Monthly progress reports outlining the activities and issues associated with the TEP will be issued to DERM along with proposed activities for the upcoming month. A final report defining how the objectives of the TEP have been achieved will be submitted upon completion of all actions.

7.0 APPENDIX A: Current Water Release Conditions for Dawson North Industrial Dam



Department of Environment and Resource Management

		the Cumulative Impact Study on water quality in the Fitzroy River Basin. (ii) any review of the QLD Water Quality Guidelines. (iii) other relevant information *Note: This information should be available by the end of 2013 if not before and when it becomes available limits will be determined for each mine site based on the environmental values to be protected and in accordance with criteria below*		
Electrical conductivity (uS/cm)	1500	TO BE PROPOSED	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
pH (pH Units)	6.5 (minimum) 8.5 (maximum)	6.5 (minimum) 8.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release	
Turbidity (NTU)	500	500	Daily during release* (first sample within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impacts and can provide representative results.
Suspended Solids (mg/L)	400	TO BE PROPOSED	Daily during release* (first sample within 2 hours of commencement of release)	Suspended solids are required to measure the performance of sediment and erosion control measures.
Sulphate (SO_4^{2-}) (mg/L)	400	TO BE PROPOSED	Daily during release* (first sample within 2 hours of commencement of release)	Drinking water environmental values from NHMRC 2008 guidelines OR ANZECC & ARMCANZ 2000 stock water quality guidelines

W4 The release of contaminants to waters from the release points must be monitored at the locations specified in Table 1 for each quality characteristics and at the frequency specified in Table 2 and Table

Receiving water description	Release Point	Gauging station description	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Minimum Flow in Receiving Water Required for a Release Event	Flow recording Frequency
Kianga Creek	RP-DN01T	AQ-DC02T	-242915.62	150353.46	> or = 0.5 m^3/s	Continuous (minimum daily)
Kianga Creek	RP-DC01T	AQ-DC02T	-243358.95	150039.09	> or = 2 m^3/s	Continuous (minimum daily)
Kianga Creek	RP-DC02T	AQ-DC02T	-243949.98	150336.97	> or = 4 m^3/s	Continuous (minimum daily)

AngloAmerican

METALLURGICAL COAL

Anglo American Metallurgical Coal Pty Ltd

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GPO Box 1410
Brisbane 4001 Australia

Christopher Loveday
Manager (Environmental Services – Mining)
Central West Region
Department of Environment and Resource Management
Ground Floor 136 Goondoon Street
PO Box 5065
Gladstone Qld 4680

28th January 2011

Dear Mr Loveday

Please accept the following as a response to your letter regarding the compliance inspection conducted for water management systems at Dawson North and Central Mine, your reference GLT952. In this letter it was requested that Dawson Mine respond with the details of actions that Dawson Mine is taking to address the risks identified. Each identified risk is listed below with details of the associated actions being undertaken to mitigate them.

'14 Dam appeared to be at full capacity with EC of 3536uS/cm'

- During the inspection it was noted that the Industrial Dam South did appear to be quite full due to water level at the spillway.
- The water level in this dam (and the other three licenced release dams) is monitored on a fortnightly basis at the site water meeting to ensure that enough freeboard is maintained. The DERM inspector conducting the compliance inspection was shown the "Water Board" at the time of the inspection which contained graphs and associated documentation resulting from the fortnightly meetings.
- Dawson Environmental Personnel at the conclusion of the inspection as per request from DERM inspector reviewed RL levels for the four release dams to ensure that the data was accurate. This review indicated that the data for the RL of 14 Dam spillway was in fact incorrect. This amended RL was then used to recalculate the freeboard level within 14 Dam.
- As a result an action to install an open diversion drain into a non operational pit was put in place to effectively eliminate the potential risk of a non-compliant release due to passive discharge from this dam. This diversion drain has now been completed.

'Industrial Dam North contained EC levels of 1900uS/cm'

- The water level in this dam (and the other three licenced release dams) is monitored on a fortnightly basis at the site water meeting to ensure that enough

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freeboard is maintained. The DERM inspector conducting the compliance inspection was shown the "Water Board" at the time of the inspection which contained graphs and associated documentation resulting from the fortnightly meetings.

- By maintaining sufficient freeboard in Industrial Dam North enables adequate dilution during a large rainfall event thus the risk of a non-compliant release is effectively reduced to within licence discharge limits.

'Roads to some monitoring points for Industrial Dam North were inaccessible during significant rainfall events'

- Dawson Mines acknowledges that during significant rainfall events access to not only monitoring sites may become inaccessible but to the site itself. This is as a result of roads being closed by council and the condition of the tracks accessing the monitoring points.
- Dawson Mines has installed automatic water quality monitoring stations at a number of locations across the operations. Those stations providing data relating to Dawson North are:
    - AQ-DN01T;
- These stations communicate in-situ water quality results back to the Dawson Mines main office via radio telemetry.
- Following the significant rain that was received in December 2010 Dawson Mines has applied for a TEP to discharge water from the Dawson North Pit via the Industrial Dam North into Kianga Creek. As part of this application an alternative monitoring site was allocated and has been documented as AQ-DN01A. This alternate monitoring site will now be sampled when access to monitoring station points become impassable during a rain event.

'It was discussed during the inspection that telemetry systems are in place to monitor residual water storage capacity'

- There are several storages that have telemetry systems that report water level and quality. These sites were installed selectively on the licensed discharge dams that have the greatest risk of discharge. The telemetry systems at these sites enables more frequent monitoring of the higher risk sites, effectively reducing the level of risk of a non-compliant discharge.

Please do not hesitate to contact either myself or Brian Barry, Environmental Officer on (07) 4990 9712, (brian.barry@angloamerican.com.au) if there are any questions or concerns regarding this response.

Thank you to yourself and your staff for conducting this inspection and assisting Dawson Mine with it's commitment to continual improvement of the water management system.

AngloAmerican

Yours sincerely

[redacted]

Nicole Mittan
Environmental Superintendent
Anglo American Metallurgical Coal
Dawson Mine
[redacted]
www.angloamerican.com.au

DRAFT TRANSITIONAL ENVIRONMENTAL PROGRAM UNDER s333 OF THE *ENVIRONMENTAL PROTECTION ACT 1994*

Principal Holder: Anglo Coal Australia Pty Ltd

EA Number: No EA - Refer to Current Plan of Operations and Fitzroy Model Water Conditions

Title: Dawson North and Central Transitional Environmental Program:

Date: 7th February 2011

Finish Date: 1st July 2011 (inclusion of time required for reporting after discharge)

1.0 BACKGROUND

1.1 Purpose of TEP

Dawson Mine, one of Queensland's leading export coal operations, is owned by the Moura Joint Venture, comprising Anglo Coal Australia Pty Ltd (51%) and Mitsui Coal Holdings Pty Ltd (49%). The mine is operated by Anglo Coal Australia and is located in the southern part of the Bowen Basin, approximately 180km west of Gladstone.

A recent weather system has caused excessive rainfall across most of Central Queensland resulting in the flooding of tributaries across a large portion of the region. The weather station located in the town of Moura recorded a total monthly rainfall in December of 290.4mm (refer to Figure 1). Due to this recent weather event the Dawson Mine water inventory has risen significantly and many onsite water storages are nearing or have reached full capacity. The mine has implemented its Water Management Plan to appropriately manage or contain water across the operation. This includes the diversion of clean water around the site, controlled releases of water where possible and the pumping of water to water storages across site. There are currently three (3) dams at Dawson Mine which are releasing or have recently released; Hillview Dam, 14 Dam and 35ML Dam. These releases have been both controlled (within licence conditions) and uncontrolled and have been reported to Department of Environment and Resource Management (DERM).

The Dawson North Pit's construction included the diversion of an unnamed creek, which became know as Dawson North Lease Boundary Creek (a tributary of Kianga Creek). The diversion channel was designed to contain the peak 1:100 year flow and still maintain a 500mm freeboard. However during the recent heavy rainfall event, the bank of the diversion channel was compromised causing an inflow of fresh water into the pit. The calculated volume of water stored in the pit is 3,750 ML.

Due to the uncontrollable climatic conditions detailed, Dawson Mine requests the consideration of this Draft Transitional Environmental Program (TEP) in accordance with s333 of the *Environmental Protection Act 1994,* to allow for the management of increased water flows at the Dawson Mines.

Specifically, this TEP proposes:

- Release rate and period of release,
- EC level,
- Minimum flow in the Dawson River required for release,
- Flushing of Kianga Creek with Dawson Central clean water,
- Discharging from Hillview Dam in association with Dawson North Pit, and
- Proposed monitoring.

1.2 Current Status and Water Management Options for Dams

1.2.1 Hillview Dam

Hillview Dam is located on the western side of the Dawson Central mining operations and is a nominated release point for Dawson Central (Refer to Figure 2**Error! Reference source not found.**). Water is pumped to Hillview Dam from various locations across site including clean water dams, sediment dams and pits. There

is an automatic monitoring station at Hillview which monitors volume, level, EC, pH and temperature. Manual sampling is also conducted at Hillview Dam for further parameters.
Over the last ten (10) days Hillview Dam has, at intervals of two (2) and three (3) days, been subject to both controlled and uncontrolled releases. DERM officers have been notified of these releases and have been provided with all requested information. The water released from Hillview Dam to date has remained under water quality trigger levels. Three (3) days of controlled and uncontrolled discharging occurred while the flow rate in Kianga Creek was under the nominated $2m^3/s$. This controlled discharge was undertaken after verbal permission was received from DERM Officers (Terry Farley).

There is potential that further controlled discharges from Hillview Dam will need to be undertaken with a flow rate in Kianga Creek of less than 2m3/s, to ensure water levels are appropriately managed on site. Where this potential arises, it is proposed under this TEP that Hillview Dam be permitted to discharge in a controlled manner, as necessary for flood mitigation and water management during and after extreme high rainfall conditions. If this situation is to arise, DERM officers will be contacted to discuss the action plan for discharges from Hillview Dam moving forward.

1.2.2 9-12 Clean Water Dam

The 9-12 Clean Water Dam (9-12 Dam) is located east of the Dawson Central mining operations. This dam contains runoff from catchments on the eastern side of the mining lease which mostly consist of grazing land. The dam does not contain any water from pits or sediment dams across the mining lease. Please refer to **Error! Reference source not found.**Figure 3 which outlines the location of the 9-12 Dam. This Dam has reached capacity following the recent rainfall events.

Infrastructure is currently available to pump water from the 9-12 Dam into Kianga Creek upstream from the Hillview Dam release point to increase the storage capacity of this Dam should further rainfall be received. In addition to improving water storage on site, the controlled release of water from this dam has the potential to increase the flow in Kianga Creek prior to further discharges from Hillview Dam.

Water quality samples are to be collected from the 9-12 Dam by Bureau Veritas International Trade (BVIT) on 4th January 2011. A pH/EC meter was used by BVIT to monitor levels in 9-12 Dam on 3rd January 2011. The pH results indicated a pH of 7.8 and an EC of 160µS/cm.

1.2.3 Bottom Dam East

Bottom Dam East is a clean water dam located on the eastern side of the mining operations in the vicinity of the Coal Handling Preparation Plant (CHPP) (Refer to Figure 3). This Dam contains runoff from catchments on the eastern side of the mining lease. This dam has received a high influx of rainwater during the recent weather events and is close to capacity. Infrastructure is available to pump water from Bottom Dam East to Dawson North Discharge Channel. This water has the potential to increase the dilution factor at the Dawson North Industrial Dam spillway prior to discharge from the drainage channel.

Water Quality samples are to be collected at Bottom Dam East by Dawson Mine Contractor BVIT on 4th January 2011. A pH/EC meter was used by BVIT to monitor levels in Bottom Dam East on 3rd January 2011. The results indicated a pH of 7.5 and an EC of 390µS/cm.

1.2.4 Days Dam

Days Dam is a clean water Dam which is located on the eastern side of the Dawson Central mining operations (Refer to Figure 4). This dam contains runoff from catchments on the eastern side of the mining lease which mostly consist of grazing land. This dam has similarly received a high volume of rainfall in recent weeks. Infrastructure is currently available to pump water from Days Dam into Hillview Dam thereby potentially increasing the dilution factor in Hillview Dam. Water Quality samples are to be collected at Days Dam by Dawson Mine Contractor BVIT on 4th January 2011.

Figure 1: Map of Hillview Dam and Drainage System
Source: Dawson Mine GIS Software

Figure 2: Map of 9-12 Dam and Drainage System
Source: Dawson Mine GIS Software

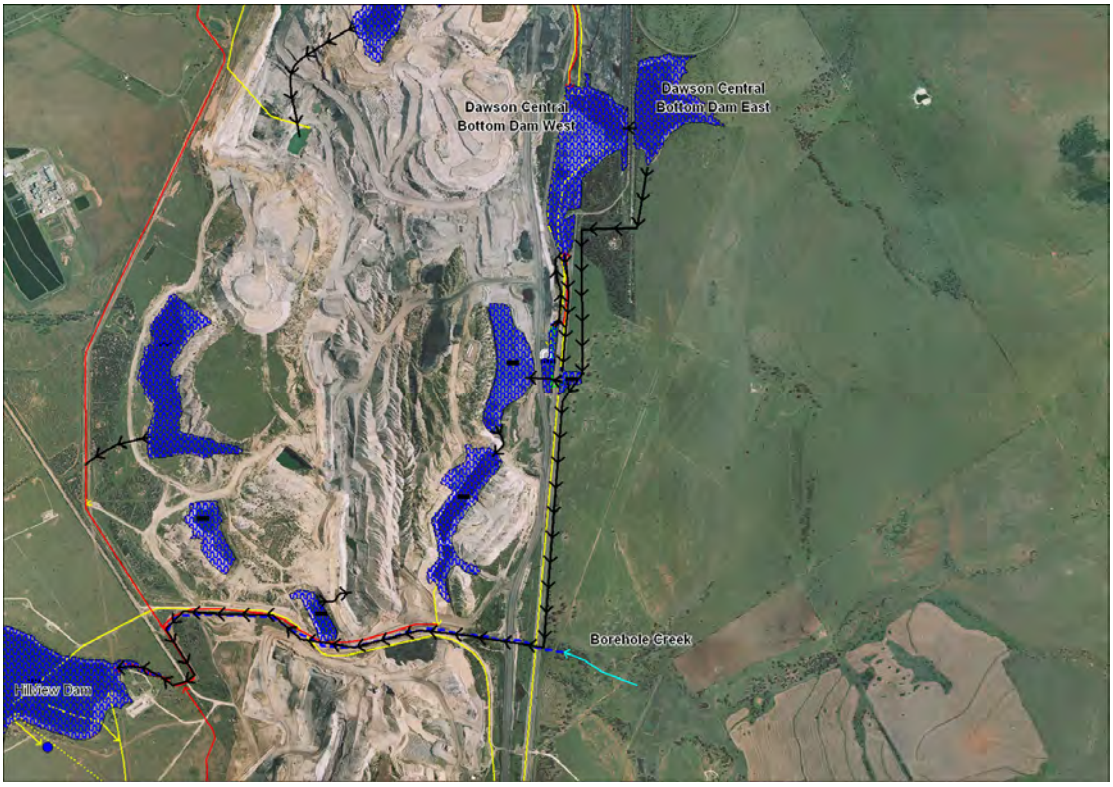

Figure 3: Map of Bottom Dam East and Drainage System
Source: Dawson Mine GIS Software

Figure 4: Map of Days Dam and Drainage System
Source: Dawson Mine GIS Software

Dawson North Pit Details and Monitoring Locations

3.0 OBJECTIVES

The purpose of this Transitional Environmental Program (TEP) is to adequately manage the environmental risks associated with pumping out the Dawson North Pit to enable it to return to operation. To achieve this, it is proposed that Dawson Mine conduct sustained controlled release events by pumping the water stored in the Dawson North Pit into the Dawson North Industrial Dam and allowing it to discharge through the spillway to Dawson North Lease Boundary Creek until the pit has been dewatered sufficiently to enable operations to re-commence.

In order to prevent a reoccurrence of the significant inflow of fresh water into the Dawson North Pit, the root causes are currently being addressed including a re-evaluation of the original hydraulic design with respect to any recent infrastructure changes, and the re-instating of the diversion channel bank.

The pumping of water out of the pit into Dawson North Lease Boundary Creek would be via the Dawson North Industrial Dam, which is the licensed release point for Dawson North. This will enable further dilution of the water from the pit before it passively discharges through the Dawson North Industrial Dam spillway (which has been constructed to minimise the risk of flow path erosion) by the addition of clean water from the eastern dams.

The current release conditions for Dawson North Industrial Dam requires a 0.5m3/sec flow in Kianga Creek and various water quality limits as described in Table 2 of the Final Model Water Conditions for Coal Mines in the Fitzroy Basin, (See Appendix A). It is proposed that under this TEP, that the Kianga Creek flow requirements and discharge water quality requirements be amended to enable a continuous controlled release.

3.1 Increasing the Release Flow Rate and Decreasing the Period of Release

The release flow rate has been increased to 700 L/second to allow the Dawson North pit water to be released during the wet season. It is estimated that around 3.5 months would be required to release all of the water currently within the Dawson North Pit and associated clean water to be used for shandying.

3.2 Decreasing the proposed EC Release Level from 3250 to 3000 uS/cm

At the request of DERM, Dawson North has done some more detailed analysis of what the minimum EC level that could be achieved with shandying of fresh water on site. It is proposed that a mix of 200 L/sec from bottom dam east with 500 L/sec. Of pit water will achieve a release EC of 3000 us/cm (see the table below for calculations).

Offsite Discharge Flow Rate and EC Calculation

Variable	Symbol	Value
Fresh Supply For Shandie EC (uS/cm) Bottom Dam East	Xf	410
Fresh Supply to Flow Rate (L/sec)	Qf	200
Dawson North Pit EC (uS/cm)	Xp	4000
Pit Flow Rate (L/sec)	Qp	500
Flow Rate of Off Site Discharge (L/sec)	Qr	700
Result EC Discharging Off Site	**Xr**	**3000**

Where: (QfxXf) + (QpxXp) = (QrxXr)

Through in-field surveying, it has been calculated that just over 1 GL of water can be pumped from the Dawson North pit before shandying will be required. This is due to the EC stratification that has been monitored within the pit. This will leave around 2.5 GL of pit water that can be shandied with the estimated 1 GL of fresh water in Bottom Dam East. This indicates that the proposed flow rates of 500 L/sec from the pit and 200 L/sec and from bottom dam east are realistic to achieve a release EC of 3000 uS/cm.

Minimum flow rate of Dawson River being $10m^3/s$ (measured at Bindaree or closest monitoring station to where Kianga Creek meets Dawson River);

3.3 Proposed Minimum Flow of 10m3/second within the Dawson River

During discussions with DERM on the 1st February, Dawson Mines requested that the revised TEP contain a minimum flow rate within the Dawson River rather than requiring flow within Kianga Creek or specifying a dilution rate or EC level within the Dawson River. DERM indicated that they would consider this providing that Dawson Mines could provide some estimates of the release water salt contribution under a couple of upstream EC level scenarios. This information is provided below.

A wide range of scenarios were modelled considering no or some decrease in EC from the release point and different upstream EC levels within the Dawson River (the excel spreadsheet with the calculator has been provided to DERM). Dawson Mines believes the most realistic scenario is the one outlined in the table below where some dilution is achieved through the 43 km from the release point to the confluence of Kianga Creek with the Dawson River, and the upstream EC of the Dawson River is 480 uS/cm.

Dawson River Flow Upstream of Release (m3/sec)	Dawson River Salinity Upstream of Release (uS/cm)	Kianga Creek Flow at Confluence with the Dawson River (m3/sec)	Salinity at Confluence with the Dawson River (uS/cm)	Percentage Increase in Salt Load in Dawson River
5	480	0.7	2000	58
10	480	0.7	2000	29
15	480	0.7	2000	19
20	480	0.7	2000	15
25	480	0.7	2000	12
30	480	0.7	2000	9.7
35	480	0.7	2000	8.3
40	480	0.7	2000	7.3
100	480	0.7	2000	2.9

3.4 Proposal to Flush Kianga Creek with Fresh Water from 9-12 Dam

During discussions with DERM on the 1st February, it was suggested that a potential strategy that DERM would consider rather than a required minimum flow within Kianga Creek would be using fresh water from 9-12 Dam to periodically flush the salty water out rather than allowing the pools to dry out following the release therefore increasing the likelihood of environmental harm. It has been estimated that 220 ML of water would be required to flush the 44 km of stream with an average area of 5 m^2. It is proposed that this flushing would occur during and at the end of the discharge. Furthermore, given that there is an estimated 1 GL of water in 9-12 Dam, this water may also be useful in shandying during the release if required. Current EC concentrations in 9-12 dam have been recorded as ranging from 120-170uS/cm.

3.5 Discharging from Hillview Dam in association with Dawson North Pit

If a discharge event from Hillview Dam is required while discharging of Dawson North Pit is occurring, management plans will be implemented to ensure that the combined or individual dam release EC concentration doesn't exceed the 3000 uS/cm. This could be achieved through a number of mechanisms such as reducing flow from Dawson North Pit discharge or adding more clean water to the system to maintain dilution factors. Should the EC concentration in Hillview Dam be within existing approval conditions during the addition of clean water from Days Dam, this could be used to further reduce the EC concentration of the discharge down Kianga Creek.

3.6 Proposed Monitoring

Water Monitoring will be undertaken by Dawson Mines in accordance with REMP, the Dawson Central and North Water Management Plans and associated conditions resulting from TEP approval.

Dawson Mines will also undertake an additional macro-invertebrate and water quality monitoring study post discharging based on the study that was undertaken by ALS Water Resources Group in October 2010.

The purpose of this Transitional Environmental Program (TEP) is to adequately manage water at the Dawson Central operation. To achieve this, it is proposed that Dawson Mine conduct controlled release events from Hillview Dam and 9-12 Dam into Kianga Creek while co-currently pumping Days Dam and Bottom Dam east into Hillview Dam, with the potential for water quality parameters and flow rates of receiving water to be outside prescribed limits. By allowing these controlled and monitored discharges, this will reduce the likelihood of an uncontrolled release of water from the Dawson Central operation therefore reducing the risk of environmental harm.

Allowance for discharging water under this TEP will provide for greater management of water at Dawson Mine should further extreme rainfall events occur. The Dawson Mine is continuing flood immunity works that will progressively improve the capability for water storage across the operation.

3.7 Reporting

Results of insitu water quality parameters will be reported to DERM on a daily basis. Monthly progress reports outlining the activities and issues associated with the TEP will be issued to DERM along with proposed activities for the upcoming month. A final report defining how the objectives of the TEP have been achieved will be submitted upon completion of all actions.

4.0 HOW OBJECTIVES ARE TO BE ACHIEVED

Details of how the objectives of this TEP will be achieved are summarised in Table 1 with further detail provided below where necessary.

Table 1: Action Plan for Achieving TEP Objectives

Objective	Action	Responsibility	Time Frame	Performance Indicator	Completion Details
Undertake a controlled release from 9-12 Dam to reduce water volume with the potential to increase the flow rate in Kianga Creek upstream of Hillview Dam.	Install two (2) diesel pumps and piping infrastructure to pump water from 9-12 Dam into Kianga Creek upstream of the Hillview Dam release point	Dawson Mine pump crew will install and maintain the pumping infrastructure in consultation with Dawson environmental personnel	4th January 2011	Successful installation of pumping infrastructure.	completed
	Water to be pumped at a maximum rate of 300L/s into Kianga Creek where it will flow 13.8km before reaching the Hillview Dam release point.	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over the 6 month period commencing 4th January 2011	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Undertake water quality monitoring	Dawson Environmental personnel and BVIT personnel	As per TEP requirements over the 6 month term of the TEP	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Submit monitoring results and TEP reports to DERM as detailed by TEP	Dawson Environmental personnel	As per TEP requirements over the 6 month term of the TEP	Timely submission of monitoring data and reports to DERM	
	Install required pumps and pipelines to move water from Dawson North Pit to the Dawson North Industrial Dam	Dawson Pump Crew and Dawson Project Group	Within 7 days	Successful installation of infrastructure	
	Conduct monitoring of water contained within the pit, at the release point (RP-DN01T), and upstream and downstream reference points (AQ-DC01R and AQ-DC01T, respectively).	Dawson Environmental Department	Duration of TEP and on-going in accordance with current RWMP	Collection of all required samples and analysis of appropriate analytes	

Conduct sustained controlled release from Dawson North Pit into Dawson North Industrial Dam in accordance with TEP	Repair drainage channel bank, and ensure the capacity of the drainage channel is maintained	Dawson North Mine Operator	Ongoing	Inspection, survey information to confirm	
	Submit monitoring results and TEP reports to DERM as detailed by TEP	Dawson Environmental Department	Duration of TEP	Submitting required reports in accordance with deadlines.	
	Inform neighbouring framers and Banana Shire of release of water offsite	Dawson Environmental Department and Dawson Community Co-ordinator	Prior to Commencement		

Undertake a controlled release from Hillview Dam to maintain freeboard and manage excess water in the Dawson Central Operation.	Switch on two (2) siphons to release water from Hillview Dam into Kianga creek	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	4th January 2011	Successful operation of pumping infrastructure.	
	Water to be pumped at a maximum rate of 1000L/s through the siphons into Kianga Creek. The water will travel approx 30km in Kianga Creek to reach the Dawson River	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over the 6 month period commencing 4th January 2011	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Undertake water quality monitoring	Dawson Environmental personnel and BVIT personnel	As per PoOps and TEP requirements over the 6 month term of the TEP	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Submit monitoring results and TEP reports to DERM as	Dawson Environmental personnel	As per PoOps and TEP requirements	Timely submission of monitoring data and reports to DERM	

	detailed by TEP		over the 6 month term of the TEP		
Pump water from Bottom Dam East into Hillview Dam to manage water across the Dawson central operation.	Install diesel pump at Bottom Dam East to pump water into Industrial Dam North.	Dawson Mine pump crew will install and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	Successful installation of pumping infrastructure.	
	Pump water from Bottom Dam East to Industrial Dam North at a maximum flow rate of 200L/s	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	• Volume of Hillview Dam • Volume discharged	
Pump from Days Dam into Hillview Dam to manage water across the Dawson central operation.	Install an electric pump at Days Dam to pump water into Hillview Dam	Dawson Mine pump crew will install and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	Successful installation of pumping infrastructure	
	Pump water from Days Dam into Hillview Dam at a maximum flow rate of 250L/s	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	• Volume of Hillview Dam • Volume discharged	

5.0 Transitional Environmental Program Conditions

The voluntary Transitional Environmental Program (TEP) is subject to the following conditions:

Undertaking the release of mine affected water

1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under this Transitional Environmental Approval, unless otherwise authorised under the *Environmental Protection Act 1994*.

2 The release of contaminants to waters must only occur from the release points specified in *Table 1: Dawson Central and North Discharge Locations* and depicted on the attached figures.

3 The release of contaminants to waters must not exceed the release limits stated in Table 2 at the monitoring points specified in Table 1 of this voluntary Transitional Environmental Program (TEP).

4 The release of contaminants to waters from the release point must be monitored at the locations specified in Tables 1 and 3 of this TEP.

5 If quality characteristics of the release exceed any trigger levels specified in *Table 5: Receiving water trigger investigation levels* during a release event, the Certificate of Approval holder must compare the downstream results in the receiving waters identified in *Table 6: Flow Measurement Location during discharge events* to the trigger values specified in *Table 5: Receiving water trigger investigation levels* and:

a) where the trigger values are not exceeded then no action is to be taken
b) where the downstream results exceed the trigger values specified *Table 5: Receiving water trigger investigation levels* for any quality characteristic, compare the results of the downstream sites to the data from background monitoring sites and
   i) if the result is less than the background monitoring site data, then no action is to be taken or
   ii) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining
      1) details of the investigations carried out
      2) actions taken to prevent environmental harm.

6 If an exceedance in accordance with condition 5(a)(ii)(2) is identified, the certificate holder of the TEP must notify the administering authority within 24 hours of receiving the result. The notification must include written verification of the exceedance forwarded to the administering authority either via facsimile [redacted] or email to [redacted]

Table 1: Dawson Central and North Discharge Locations.

Release Point (RP)	Northing GDA94	Easting GDA94	Contaminant Source	Monitor Point	Receiving Waters
RP - DCO1T	-243358.95	150039.09	Hillview Dam	End of pipe	Kianga Creek

RP – DCO2T	-243949.98	150336.97	14 Dam	End of pipe	Kianga Creek
	-243933.8	1500350.2	9-12 Dam	End of pipe	Kianga Creek
TBA	TBA	TBA	Bottom East Dam	End of pipe	Kianga Creek
RP-DN01T	-202441	7288330	Dawson North Industrial Dam	End of pipe	Kianga Creek

[1] *Discharge from this location is not to be included in the calculation of "natural flow" at the locations identified in Table 6 below. Reported flow rate must be revised during discharge from 9-12 Dam*

Table 2: Contaminant Release Limits.

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical conductivity (uS/cm)	3000 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	During release from the discharge locations listed in Table 1; *when flow in the Dawson River is >=18.0m^3/sec.*
	2500 (maximum)		Samples require laboratory analysis[2]	During release from the discharge locations listed in Table 1; *when flow in the Dawson River is >=14.5m^3/sec.*
	2000 (maximum)			During release from the discharge locations listed in Table 1; *when flow in the Dawson River is >=11.0m^3/sec.*
	1500 (maximum)			During release from the discharge locations listed in Table 1; *when flow in the Dawson River is >=3.5 m^3/sec.*
	450 (AQ-DN06T)	Daily during release (the first	*In situ*[1]	During release from the discharge

		sample must be taken within 12 hours of commencement of release)	Samples require laboratory analysis[2]	location listed in Table 3
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1] Samples require laboratory analysis[2]	During release from discharge locations listed in Table 1.
Turbidity (NTU)	600	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	During release from discharge locations listed in Table 1.
[3]*Total Suspended Solids (mg/l)*	400	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]	During release from discharge locations listed in Table 1.
Sulphate (SO_4^{2-}) (mg/l)	400	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]	During release from discharge locations listed in Table 1.

[1] *In situ samples can be taken using electronic sampling equipment.*
[2] *Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.*
[3] *Only required in the event Turbidity measurements are not available.*

Table 3: Receiving Water Upstream Background Sites and Downstream Monitoring Points.

Monitoring Points	Receiving Waters Location Description	Northing (GDA94)	Easting (GDA94)	Monitoring frequency
Upstream Background Monitoring Points				
AQ-DC02R	Kianga Creek upstream of the mine	-243933.96	150349.79	Daily during discharge
Downstream Monitoring Points				
AQ-DC03T	Kianga Creek downstream	-243340.29	150020.60	Daily during discharge
AQ-DN06T	Dawson River approximately 2 km downstream of confluence with Kianga Creek (Bindaree Weir)			Daily during discharge

Table 4: Receiving Water Contaminant Limit.

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical conductivity (*u*S/cm)	3000 (maximum)	Commencement of release (within 12 hours of release event) and thereafter daily during release	*In situ*[1]	AQ-DC03T
			Samples require laboratory analysis[2]	
	450 (maximum)	Commencement of release (with 12 hours of release event) and thereafter daily during release	*In situ*[1]	AQ-DN06T.
			Samples require laboratory analysis[2]	
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Commencement of release (within 12 hours of release event) and thereafter at the monitoring frequency listed in Table 3	*In situ*[1]	From Receiving Waters sites listed in Table 3.
			Samples require laboratory analysis[2]	
Suspended solids (mg/L)	400	Commencement of release (within 12 hours of release event) and thereafter at the monitoring frequency listed in Table 3	Samples require laboratory analysis[2]	From Receiving Waters sites listed in Table 3.
Sulphate (SO_4^{2-}) (mg/L)	400	Commencement of release (within 12 hours of release event) and thereafter at the monitoring frequency listed in Table 3	Samples require laboratory analysis[2]	From Receiving Waters sites listed in Table 3.

[1] *In situ samples can be taken using electronic sampling equipment.*
[2] *Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.*

Table 5: Receiving water trigger investigation levels.

Quality characteristic[1]	Trigger levels (µg/L)	Monitoring frequency	Monitoring Point
Aluminium	100	Commencement of release (within 12 hours of release event) and thereafter weekly during	During release from discharge locations listed in Table 1.
Arsenic	13		
Cadmium	0.2		
Chromium	1.0		
Copper	2.0		
Iron	300		

Lead	10	release	
Mercury	0.2		
Nickel	11		
Zinc	8.0		
Boron	370		
Cobalt	90		
Manganese	1900		
Molybdenum	34		
Selenium	10		
Silver	1.0		
Uranium	1.0		
Vanadium	10		
Ammonia	1000		
Nitrate	1100		
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000		

[1] *All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.*

Table 6: Flow Measurement Location during discharge events.

Receiving waters	Release point (TEP RP)	Gauging station description	Northing (GDA94)	Easting (GDA94)	Minimum flow in receiving water required for a release event	Flow recording frequency
Dawson River		Bindaree (flow measurement)			= > 18m^3/sec with EC up to 3000 uS/cm	Continuous (minimum daily)
					= > 14.5m^3/sec with EC up to 2500 uS/cm	
					= > 11m^3/sec with EC up to 2000 uS/cm	
					= > 3.5m^3/sec with EC up to 1500 uS/cm	

Contaminant Release Events

7 Notwithstanding any other condition of this TEP, the release of contaminants to waters must only take place under the conditions identified in *Table 6: Flow Measurement Location during discharge events* for the contaminant release point(s) specified in *Table 1: Dawson Central and North Discharge Locations.*

8 The TEP certificate holder must determine and record stream flows at the location specified in *Table 6: Flow Measurement Location during discharge events* for receiving waters into which a release occurs.

9 Notwithstanding any other condition of this TEP, the release of contaminants to waters must only take place from the discharge locations identified in Table 1 at a maximum volume of 75ML per day.

The maximum daily volume consists of 60ML /day from Dawson North Industrial Dam (700l/s) and 15ML/day from Dawson Central 9-12 Dam (150l/s). Dawson may manage the onsite water within the maximum daily volume to meet the water quality objectives identified in Table 2.

10 The daily quantity of contaminants released from each release point must be measured and recorded at the release points identified in *Table 1: Dawson Central and North Discharge Locations*.

Notification of Release Events

11 The TEP certificate holder must notify the administering authority as soon as practicable (within no later than 6 hours of having commenced deliberately releasing mine affected water to the receiving environment from an authorised discharge point, and no later than 12 hours after any uncontrolled release from an authorised discharge point). Notification must include the submission of written advice to the administering authority (either via facsimile [redacted] or email to [redacted]) of the following information:

a) release commencement date/time
b) expected release cessation date/time
c) release point/s
d) the release volume (estimated)
e) receiving water/s including the natural flow rate
f) any details (including available data) regarding likely impacts on the receiving water(s).

12 The TEP certificate holder must notify the administering authority as soon as practicable, (no later than 24 hours) of the cessation of a release notified under condition 11 and within 28 days provide the following information in writing:

a) release cessation date/time
b) natural flow volume in receiving water
c) volume of water released
d) details regarding the compliance of the release with the conditions of this TEP (i.e. contamination limits, natural flow, discharge volume)
e) all in-situ water quality monitoring results
f) any other matters pertinent to the water release event.

Notification of release event exceedence

13 If the release limits defined in Table 2 are exceeded, the certificate holder of the TEP must notify the administering authority within 24 hours of receiving the results.

14 The TEP certificate holder must, within 28 days of a release that exceeds the conditions of this TEP, provide a report to the administering authority detailing:

a) the reason for the release

b) the location of the release
c) all water quality monitoring results
d) any general observations
e) all calculations
f) any other matters pertinent to the water release event.

Erosion and Sediment Control

15 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

16 Erosion protection must be designed, installed and maintained as required at each release point authorised by this TEP and must:
a) designed and constructed by a suitably qualified and experienced person, and
b) be inspected by a suitably qualified and experienced person
    1. prior to the commencement of dewatering operations; and
    2. following the cessation of release in accordance with the conditions of this TEP. .

17 The certificate holder of this TEP must include within the cessation report required under condition 12 detail of the performance of erosion protection measures, including:
a) identification of erosion, slumping and scour impacts to vegetation,
b) rehabilitation, including earthworks, scour protection and flow velocity controls undertaken to minimise environmental harm, and
c) detailed engineering assessment of erosion protection works completed to date and any proposed works to be undertaken.

Requirements to cease the release of mine affected water

18 The release of mine affected waters must cease immediately if any water quality limit as specified in *Table 4: Receiving Water Contaminant Limit or Table 5 Receiving water trigger investigation levels* is exceeded.

19 The release of mine affected waters must cease immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

20 The release of mine affected waters must cease immediately if the certificate holder of this TEP is directed to do so by the administering authority.

21 The release of mine affected waters authorised under this TEP must cease by **13 May 2011**. If above average wet conditions continue beyond that date, the TEP may be extended for an additional length of time agreed to by Anglo Coal Dawson Central and North Coal Mine and the department.

Monitoring Requirements

22 Where monitoring is a requirement of this TEP, ensure that a competent person(s) conducts all monitoring.

23 All monitoring undertaken as a requirement of this TEP must be undertaken in accordance with the administering authority's Water Sampling Manual.

Notification of emergencies, incidents and exceptions

24 As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this TEP, the administering authority must be notified of the release by telephone, facsimile or email [redacted] and [redacted]

25 The notification of emergencies or incidents must include but not be limited to the following:

a) the holder of the TEP
b) the location of the emergency or incident
c) the number of the TEP
d) the name and telephone number of the designated contact person
e) the time of the release
f) the time the holder of the TEP became aware of the release
g) the suspected cause of the release
h) the environmental harm caused, threatened, or suspected to be caused by the release, and
i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.

26 Not more than fourteen days following the initial notification of an emergency or incident, written advice must be provided of the information supplied to the administering authority in relation to:

a) proposed actions to prevent a recurrence of the emergency or incident, and
b) outcomes of actions taken at the time to prevent or minimise environmental harm.

27 Conditions within this TEP may be amended or revised as agreed by Anglo Coal Dawson Central and North Coal Mine and the department.

Reporting

28 The TEP certificate holder must provide the administering authority, daily during the release of mine affected water, information on the release of contaminants to waters. The information must be provided in writing (either via facsimile [redacted] or email to [redacted]) and include the following:

a) all in situ monitoring data for that day
b) the receiving water flow rate
c) the release flow rate
d) the volume of water released from the release point.

29 The TEP certificate holder must provide the administering authority, weekly during the release of mine affected water, information on the release of contaminants to waters. The information must be provided in writing (either via facsimile [redacted] or email to [redacted] and include the following:

a) all in situ monitoring data for that week
b) the range of receiving water flow rate
c) the range of release flow rate
d) the total volume of water released from the release point.

30 The certificate holder of this TEP must submit a report to the administering authority on the fifth business day of each month detailing:
   a) all activities undertaken under the TEP,
   b) how the TEP certificate holder has met the objectives of the TEP, taking into account:
      i. the best practice environmental management for the activity, and
      ii. the risks of environmental harm being caused by the activity, and
   c) how the TEP certificate holder has complied with all conditions contained within the TEP

31 The certificate holder of this TEP must submit records of consultations with the Kianga Creek downstream landholders to the administering authority prior to the initiation of discharge under this TEP.

32 The certificate holder of this TEP must submit a report to the administering authority by **14 June 2011** including:
   a) details of the completion of the TEP,
   b) details on all activities undertaken under the TEP,
   c) identification of how the TEP certificate holder has met the objectives of the TEP, taking into account:
      i. the best practice environmental management for the activity, and
      ii. the risks of environmental harm being caused by the activity,
   d) identification of how the TEP certificate holder has complied with all conditions contained within the TEP – Certificate of Approval, and
   e) confirmation that at closure of the TEP, the certificate holder will be able to comply with the Final Model Water Conditions for Fitzroy River Basin Coal Mines administered through the current Plan of Operations for the Dawson Central and North Coal Mine, located at ML5591, ML5592, ML5593, ML5596, ML5597, ML5598, ML5599, ML5600, ML5601, ML5603, ML5604, ML5606, ML5607, ML5611, ML5630, ML5643, ML5644, ML5646, ML5650, ML5656, ML80032, ML80034, and ML80070 and the *Environmental Protection Act 1994*.

DRAFT TRANSITIONAL ENVIRONMENTAL PROGRAM UNDER s333 OF THE *ENVIRONMENTAL PROTECTION ACT 1994*

Principal Holder: Anglo Coal Australia Pty Ltd

EA Number: No EA - Refer to Current Plan of Operations and Fitzroy Model Water Conditions

Title: Dawson North and Central Transitional Environmental Program:

Date: 7th February 2011

Finish Date: 1st July 2011 (inclusion of time required for reporting after discharge)

1.0 BACKGROUND

1.1 Purpose of TEP

Dawson Mine, one of Queensland's leading export coal operations, is owned by the Moura Joint Venture, comprising Anglo Coal Australia Pty Ltd (51%) and Mitsui Coal Holdings Pty Ltd (49%). The mine is operated by Anglo Coal Australia and is located in the southern part of the Bowen Basin, approximately 180km west of Gladstone.

A recent weather system has caused excessive rainfall across most of Central Queensland resulting in the flooding of tributaries across a large portion of the region. The weather station located in the town of Moura recorded a total monthly rainfall in December of 290.4mm (refer to Figure 1). Due to this recent weather event the Dawson Mine water inventory has risen significantly and many onsite water storages are nearing or have reached full capacity. The mine has implemented its Water Management Plan to appropriately manage or contain water across the operation. This includes the diversion of clean water around the site, controlled releases of water where possible and the pumping of water to water storages across site. There are currently three (3) dams at Dawson Mine which are releasing or have recently released; Hillview Dam, 14 Dam and 35ML Dam. These releases have been both controlled (within licence conditions) and uncontrolled and have been reported to Department of Environment and Resource Management (DERM).

The Dawson North Pit's construction included the diversion of an unnamed creek, which became know as Dawson North Lease Boundary Creek (a tributary of Kianga Creek). The diversion channel was designed to contain the peak 1:100 year flow and still maintain a 500mm freeboard. However during the recent heavy rainfall event, the bank of the diversion channel was compromised causing an inflow of fresh water into the pit. The calculated volume of water stored in the pit is 3,750 ML.

Due to the uncontrollable climatic conditions detailed, Dawson Mine requests the consideration of this Draft Transitional Environmental Program (TEP) in accordance with s333 of the *Environmental Protection Act 1994,* to allow for the management of increased water flows at the Dawson Mines.

Specifically, this TEP proposes:

- Release rate and period of release,
- EC level,
- Minimum flow in the Dawson River required for release,
- Flushing of Kianga Creek with Dawson Central clean water,
- Discharging from Hillview Dam in association with Dawson North Pit, and
- Proposed monitoring.

1.2 Current Status and Water Management Options for Dams

1.2.1 Hillview Dam

Hillview Dam is located on the western side of the Dawson Central mining operations and is a nominated release point for Dawson Central (Refer to Figure 2**Error! Reference source not found.**). Water is pumped to Hillview Dam from various locations across site including clean water dams, sediment dams and pits. There

is an automatic monitoring station at Hillview which monitors volume, level, EC, pH and temperature. Manual sampling is also conducted at Hillview Dam for further parameters.
Over the last ten (10) days Hillview Dam has, at intervals of two (2) and three (3) days, been subject to both controlled and uncontrolled releases. DERM officers have been notified of these releases and have been provided with all requested information. The water released from Hillview Dam to date has remained under water quality trigger levels. Three (3) days of controlled and uncontrolled discharging occurred while the flow rate in Kianga Creek was under the nominated $2m^3/s$. This controlled discharge was undertaken after verbal permission was received from DERM Officers (Terry Farley).

There is potential that further controlled discharges from Hillview Dam will need to be undertaken with a flow rate in Kianga Creek of less than 2m3/s, to ensure water levels are appropriately managed on site. Where this potential arises, it is proposed under this TEP that Hillview Dam be permitted to discharge in a controlled manner, as necessary for flood mitigation and water management during and after extreme high rainfall conditions. If this situation is to arise, DERM officers will be contacted to discuss the action plan for discharges from Hillview Dam moving forward.

1.2.2 9-12 Clean Water Dam

The 9-12 Clean Water Dam (9-12 Dam) is located east of the Dawson Central mining operations. This dam contains runoff from catchments on the eastern side of the mining lease which mostly consist of grazing land. The dam does not contain any water from pits or sediment dams across the mining lease. Please refer to **Error! Reference source not found.**Figure 3 which outlines the location of the 9-12 Dam. This Dam has reached capacity following the recent rainfall events.

Infrastructure is currently available to pump water from the 9-12 Dam into Kianga Creek upstream from the Hillview Dam release point to increase the storage capacity of this Dam should further rainfall be received. In addition to improving water storage on site, the controlled release of water from this dam has the potential to increase the flow in Kianga Creek prior to further discharges from Hillview Dam.

Water quality samples are to be collected from the 9-12 Dam by Bureau Veritas International Trade (BVIT) on 4th January 2011. A pH/EC meter was used by BVIT to monitor levels in 9-12 Dam on 3rd January 2011. The pH results indicated a pH of 7.8 and an EC of 160µS/cm.

1.2.3 Bottom Dam East

Bottom Dam East is a clean water dam located on the eastern side of the mining operations in the vicinity of the Coal Handling Preparation Plant (CHPP) (Refer to Figure 3). This Dam contains runoff from catchments on the eastern side of the mining lease. This dam has received a high influx of rainwater during the recent weather events and is close to capacity. Infrastructure is available to pump water from Bottom Dam East to Dawson North Discharge Channel. This water has the potential to increase the dilution factor at the Dawson North Industrial Dam spillway prior to discharge from the drainage channel.

Water Quality samples are to be collected at Bottom Dam East by Dawson Mine Contractor BVIT on 4th January 2011. A pH/EC meter was used by BVIT to monitor levels in Bottom Dam East on 3rd January 2011. The results indicated a pH of 7.5 and an EC of 390µS/cm.

1.2.4 Days Dam

Days Dam is a clean water Dam which is located on the eastern side of the Dawson Central mining operations (Refer to Figure 4). This dam contains runoff from catchments on the eastern side of the mining lease which mostly consist of grazing land. This dam has similarly received a high volume of rainfall in recent weeks. Infrastructure is currently available to pump water from Days Dam into Hillview Dam thereby potentially increasing the dilution factor in Hillview Dam. Water Quality samples are to be collected at Days Dam by Dawson Mine Contractor BVIT on 4th January 2011.

Figure 1: Map of Hillview Dam and Drainage System
Source: Dawson Mine GIS Software

Figure 2: Map of 9-12 Dam and Drainage System
Source: Dawson Mine GIS Software

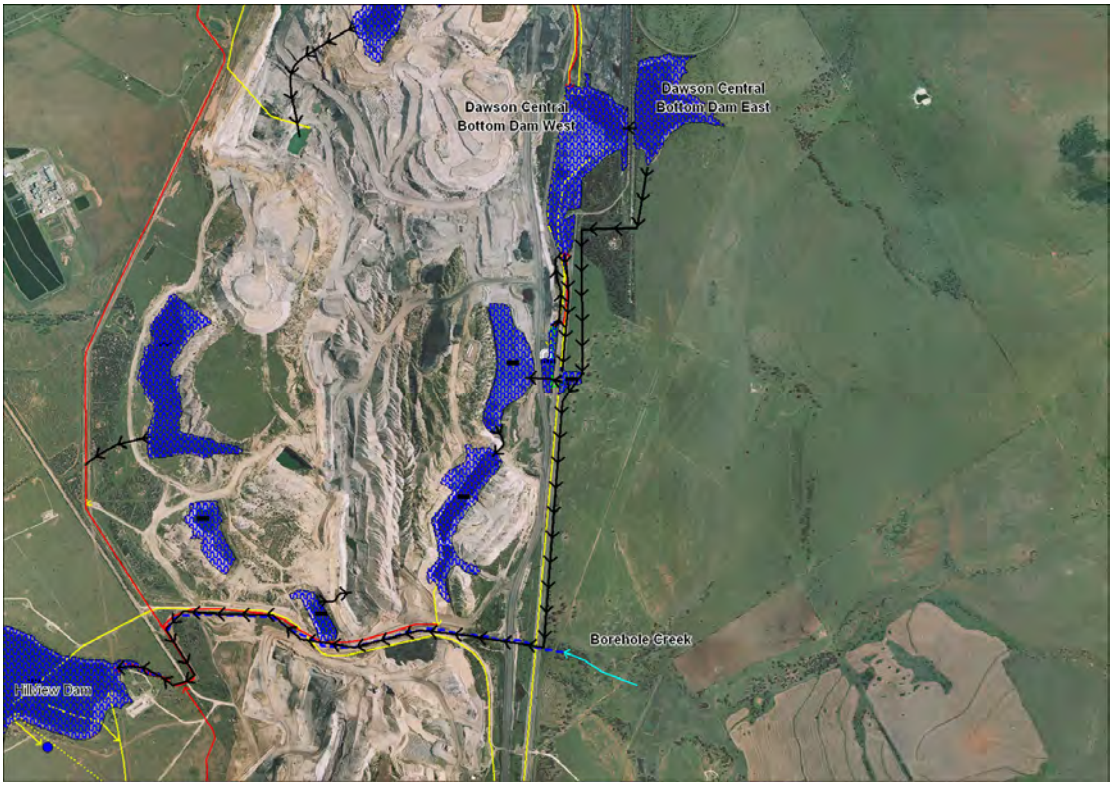

Figure 3: Map of Bottom Dam East and Drainage System
Source: Dawson Mine GIS Software

Figure 4: Map of Days Dam and Drainage System
Source: Dawson Mine GIS Software

Dawson North Pit Details and Monitoring Locations

3.0 OBJECTIVES

The purpose of this Transitional Environmental Program (TEP) is to adequately manage the environmental risks associated with pumping out the Dawson North Pit to enable it to return to operation. To achieve this, it is proposed that Dawson Mine conduct sustained controlled release events by pumping the water stored in the Dawson North Pit into the Dawson North Industrial Dam and allowing it to discharge through the spillway to Dawson North Lease Boundary Creek until the pit has been dewatered sufficiently to enable operations to re-commence.

In order to prevent a reoccurrence of the significant inflow of fresh water into the Dawson North Pit, the root causes are currently being addressed including a re-evaluation of the original hydraulic design with respect to any recent infrastructure changes, and the re-instating of the diversion channel bank.

The pumping of water out of the pit into Dawson North Lease Boundary Creek would be via the Dawson North Industrial Dam, which is the licensed release point for Dawson North. This will enable further dilution of the water from the pit before it passively discharges through the Dawson North Industrial Dam spillway (which has been constructed to minimise the risk of flow path erosion) by the addition of clean water from the eastern dams.

The current release conditions for Dawson North Industrial Dam requires a 0.5m3/sec flow in Kianga Creek and various water quality limits as described in Table 2 of the Final Model Water Conditions for Coal Mines in the Fitzroy Basin, (See Appendix A). It is proposed that under this TEP, that the Kianga Creek flow requirements and discharge water quality requirements be amended to enable a continuous controlled release.

3.1 Increasing the Release Flow Rate and Decreasing the Period of Release

The release flow rate has been increased to 700 L/second to allow the Dawson North pit water to be released during the wet season. It is estimated that around 3.5 months would be required to release all of the water currently within the Dawson North Pit and associated clean water to be used for shandying.

3.2 Decreasing the proposed EC Release Level from 3250 to 3000 uS/cm

At the request of DERM, Dawson North has done some more detailed analysis of what the minimum EC level that could be achieved with shandying of fresh water on site. It is proposed that a mix of 200 L/sec from bottom dam east with 500 L/sec. Of pit water will achieve a release EC of 3000 us/cm (see the table below for calculations).

Offsite Discharge Flow Rate and EC Calculation

Variable	Symbol	Value
Fresh Supply For Shandie EC (uS/cm) Bottom Dam East	Xf	410
Fresh Supply to Flow Rate (L/sec)	Qf	200
Dawson North Pit EC (uS/cm)	Xp	4000
Pit Flow Rate (L/sec)	Qp	500
Flow Rate of Off Site Discharge (L/sec)	Qr	700
Result EC Discharging Off Site	**Xr**	**3000**

Where: (QfxXf) + (QpxXp) = (QrxXr)

Through in-field surveying, it has been calculated that just over 1 GL of water can be pumped from the Dawson North pit before shandying will be required. This is due to the EC stratification that has been monitored within the pit. This will leave around 2.5 GL of pit water that can be shandied with the estimated 1 GL of fresh water in Bottom Dam East. This indicates that the proposed flow rates of 500 L/sec from the pit and 200 L/sec and from bottom dam east are realistic to achieve a release EC of 3000 uS/cm.

Minimum flow rate of Dawson River being $10m^3/s$ (measured at Bindaree or closest monitoring station to where Kianga Creek meets Dawson River);

3.3 Proposed Minimum Flow of 10m3/second within the Dawson River

During discussions with DERM on the 1st February, Dawson Mines requested that the revised TEP contain a minimum flow rate within the Dawson River rather than requiring flow within Kianga Creek or specifying a dilution rate or EC level within the Dawson River. DERM indicated that they would consider this providing that Dawson Mines could provide some estimates of the release water salt contribution under a couple of upstream EC level scenarios. This information is provided below.

A wide range of scenarios were modelled considering no or some decrease in EC from the release point and different upstream EC levels within the Dawson River (the excel spreadsheet with the calculator has been provided to DERM). Dawson Mines believes the most realistic scenario is the one outlined in the table below where some dilution is achieved through the 43 km from the release point to the confluence of Kianga Creek with the Dawson River, and the upstream EC of the Dawson River is 480 uS/cm.

Dawson River Flow Upstream of Release (m3/sec)	Dawson River Salinity Upstream of Release (uS/cm)	Kianga Creek Flow at Confluence with the Dawson River (m3/sec)	Salinity at Confluence with the Dawson River (uS/cm)	Percentage Increase in Salt Load in Dawson River
5	480	0.7	2000	58
10	480	0.7	2000	29
15	480	0.7	2000	19
20	480	0.7	2000	15
25	480	0.7	2000	12
30	480	0.7	2000	9.7
35	480	0.7	2000	8.3
40	480	0.7	2000	7.3
100	480	0.7	2000	2.9

3.4 Proposal to Flush Kianga Creek with Fresh Water from 9-12 Dam

During discussions with DERM on the 1st February, it was suggested that a potential strategy that DERM would consider rather than a required minimum flow within Kianga Creek would be using fresh water from 9-12 Dam to periodically flush the salty water out rather than allowing the pools to dry out following the release therefore increasing the likelihood of environmental harm. It has been estimated that 220 ML of water would be required to flush the 44 km of stream with an average area of 5 m^2. It is proposed that this flushing would occur during and at the end of the discharge. Furthermore, given that there is an estimated 1 GL of water in 9-12 Dam, this water may also be useful in shandying during the release if required. Current EC concentrations in 9-12 dam have been recorded as ranging from 120-170uS/cm.

3.5 Discharging from Hillview Dam in association with Dawson North Pit

If a discharge event from Hillview Dam is required while discharging of Dawson North Pit is occurring, management plans will be implemented to ensure that the combined or individual dam release EC concentration doesn't exceed the 3000 uS/cm. This could be achieved through a number of mechanisms such as reducing flow from Dawson North Pit discharge or adding more clean water to the system to maintain dilution factors. Should the EC concentration in Hillview Dam be within existing approval conditions during the addition of clean water from Days Dam, this could be used to further reduce the EC concentration of the discharge down Kianga Creek.

3.6 Proposed Monitoring

Water Monitoring will be undertaken by Dawson Mines in accordance with REMP, the Dawson Central and North Water Management Plans and associated conditions resulting from TEP approval.

Dawson Mines will also undertake an additional macro-invertebrate and water quality monitoring study post discharging based on the study that was undertaken by ALS Water Resources Group in October 2010.

The purpose of this Transitional Environmental Program (TEP) is to adequately manage water at the Dawson Central operation. To achieve this, it is proposed that Dawson Mine conduct controlled release events from Hillview Dam and 9-12 Dam into Kianga Creek while co-currently pumping Days Dam and Bottom Dam east into Hillview Dam, with the potential for water quality parameters and flow rates of receiving water to be outside prescribed limits. By allowing these controlled and monitored discharges, this will reduce the likelihood of an uncontrolled release of water from the Dawson Central operation therefore reducing the risk of environmental harm.

Allowance for discharging water under this TEP will provide for greater management of water at Dawson Mine should further extreme rainfall events occur. The Dawson Mine is continuing flood immunity works that will progressively improve the capability for water storage across the operation.

3.7 Reporting

Results of insitu water quality parameters will be reported to DERM on a daily basis. Monthly progress reports outlining the activities and issues associated with the TEP will be issued to DERM along with proposed activities for the upcoming month. A final report defining how the objectives of the TEP have been achieved will be submitted upon completion of all actions.

4.0 HOW OBJECTIVES ARE TO BE ACHIEVED

Details of how the objectives of this TEP will be achieved are summarised in Table 1 with further detail provided below where necessary.

Table 1: Action Plan for Achieving TEP Objectives

Objective	Action	Responsibility	Time Frame	Performance Indicator	Completion Details
Undertake a controlled release from 9-12 Dam to reduce water volume with the potential to increase the flow rate in Kianga Creek upstream of Hillview Dam.	Install two (2) diesel pumps and piping infrastructure to pump water from 9-12 Dam into Kianga Creek upstream of the Hillview Dam release point	Dawson Mine pump crew will install and maintain the pumping infrastructure in consultation with Dawson environmental personnel	4th January 2011	Successful installation of pumping infrastructure.	completed
	Water to be pumped at a maximum rate of 300L/s into Kianga Creek where it will flow 13.8km before reaching the Hillview Dam release point.	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over the 6 month period commencing 4th January 2011	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Undertake water quality monitoring	Dawson Environmental personnel and BVIT personnel	As per TEP requirements over the 6 month term of the TEP	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Submit monitoring results and TEP reports to DERM as detailed by TEP	Dawson Environmental personnel	As per TEP requirements over the 6 month term of the TEP	Timely submission of monitoring data and reports to DERM	
	Install required pumps and pipelines to move water from Dawson North Pit to the Dawson North Industrial Dam	Dawson Pump Crew and Dawson Project Group	Within 7 days	Successful installation of infrastructure	
	Conduct monitoring of water contained within the pit, at the release point (RP-DN01T), and upstream and downstream reference points (AQ-DC01R and AQ-DC01T, respectively).	Dawson Environmental Department	Duration of TEP and on-going in accordance with current RWMP	Collection of all required samples and analysis of appropriate analytes	

Conduct sustained controlled release from Dawson North Pit into Dawson North Industrial Dam in accordance with TEP	Repair drainage channel bank, and ensure the capacity of the drainage channel is maintained	Dawson North Mine Operator	Ongoing	Inspection, survey information to confirm	
	Submit monitoring results and TEP reports to DERM as detailed by TEP	Dawson Environmental Department	Duration of TEP	Submitting required reports in accordance with deadlines.	
	Inform neighbouring framers and Banana Shire of release of water offsite	Dawson Environmental Department and Dawson Community Co-ordinator	Prior to Commencement		

Undertake a controlled release from Hillview Dam to maintain freeboard and manage excess water in the Dawson Central Operation.	Switch on two (2) siphons to release water from Hillview Dam into Kianga creek	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	4th January 2011	Successful operation of pumping infrastructure.	
	Water to be pumped at a maximum rate of 1000L/s through the siphons into Kianga Creek. The water will travel approx 30km in Kianga Creek to reach the Dawson River	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over the 6 month period commencing 4th January 2011	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Undertake water quality monitoring	Dawson Environmental personnel and BVIT personnel	As per PoOps and TEP requirements over the 6 month term of the TEP	• Flow rate of Kianga Creek and Dawson River • Volume Discharged • Water Quality	
	Submit monitoring results and TEP reports to DERM as	Dawson Environmental personnel	As per PoOps and TEP requirements	Timely submission of monitoring data and reports to DERM	

	detailed by TEP		over the 6 month term of the TEP		
Pump water from Bottom Dam East into Hillview Dam to manage water across the Dawson central operation.	Install diesel pump at Bottom Dam East to pump water into Industrial Dam North.	Dawson Mine pump crew will install and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	Successful installation of pumping infrastructure.	
	Pump water from Bottom Dam East to Industrial Dam North at a maximum flow rate of 200L/s	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	• Volume of Hillview Dam • Volume discharged	
Pump from Days Dam into Hillview Dam to manage water across the Dawson central operation.	Install an electric pump at Days Dam to pump water into Hillview Dam	Dawson Mine pump crew will install and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	Successful installation of pumping infrastructure	
	Pump water from Days Dam into Hillview Dam at a maximum flow rate of 250L/s	Dawson Mine pump crew will operate and maintain the pumping infrastructure in consultation with Dawson environmental personnel	As required over 6 month period	• Volume of Hillview Dam • Volume discharged	

5.0 Transitional Environmental Program Conditions

The voluntary Transitional Environmental Program (TEP) is subject to the following conditions:

Undertaking the release of mine affected water

1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under this Transitional Environmental Approval, unless otherwise authorised under the *Environmental Protection Act 1994*.

2 The release of contaminants to waters must only occur from the release points specified in *Table 1: Dawson Central and North Discharge Locations* and depicted on the attached figures.

3 The release of contaminants to waters must not exceed the release limits stated in Table 2 at the monitoring points specified in Table 1 of this voluntary Transitional Environmental Program (TEP).

4 The release of contaminants to waters from the release point must be monitored at the locations specified in Tables 1 and 3 of this TEP.

5 If quality characteristics of the release exceed any trigger levels specified in *Table 5: Receiving water trigger investigation levels* during a release event, the Certificate of Approval holder must compare the downstream results in the receiving waters identified in *Table 6: Flow Measurement Location during discharge events* to the trigger values specified in *Table 5: Receiving water trigger investigation levels* and:

a) where the trigger values are not exceeded then no action is to be taken
b) where the downstream results exceed the trigger values specified *Table 5: Receiving water trigger investigation levels* for any quality characteristic, compare the results of the downstream sites to the data from background monitoring sites and
   i) if the result is less than the background monitoring site data, then no action is to be taken or
   ii) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining
      1) details of the investigations carried out
      2) actions taken to prevent environmental harm.

6 If an exceedance in accordance with condition 5(a)(ii)(2) is identified, the certificate holder of the TEP must notify the administering authority within 24 hours of receiving the result. The notification must include written verification of the exceedance forwarded to the administering authority either via facsimile [redacted] or email to [redacted]

Table 1: Dawson Central and North Discharge Locations.

Release Point (RP)	Northing GDA94	Easting GDA94	Contaminant Source	Monitor Point	Receiving Waters
RP - DCO1T	-243358.95	150039.09	Hillview Dam	End of pipe	Kianga Creek

RP – DCO2T	-243949.98	150336.97	14 Dam	End of pipe	Kianga Creek
	-243933.8	1500350.2	9-12 Dam	End of pipe	Kianga Creek
TBA	TBA	TBA	Bottom East Dam	End of pipe	Kianga Creek
RP-DN01T	-202441	7288330	Dawson North Industrial Dam	End of pipe	Kianga Creek

[1] *Discharge from this location is not to be included in the calculation of "natural flow" at the locations identified in Table 6 below. Reported flow rate must be revised during discharge from 9-12 Dam*

Table 2: Contaminant Release Limits.

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical conductivity (uS/cm)	3000 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	During release from the discharge locations listed in Table 1; *when flow in the Dawson River is >=18.0m^3/sec.*
	2500 (maximum)		Samples require laboratory analysis[2]	During release from the discharge locations listed in Table 1; *when flow in the Dawson River is >=14.5m^3/sec.*
	2000 (maximum)			During release from the discharge locations listed in Table 1; *when flow in the Dawson River is >=11.0m^3/sec.*
	1500 (maximum)			During release from the discharge locations listed in Table 1; *when flow in the Dawson River is >=3.5 m^3/sec.*
	450 (AQ-DN06T)	Daily during release (the first	*In situ*[1]	During release from the discharge

		sample must be taken within 12 hours of commencement of release)	Samples require laboratory analysis[2]	location listed in Table 3
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1] Samples require laboratory analysis[2]	During release from discharge locations listed in Table 1.
Turbidity (NTU)	600	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	During release from discharge locations listed in Table 1.
[3]*Total Suspended Solids (mg/l)*	400	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]	During release from discharge locations listed in Table 1.
Sulphate (SO_4^{2-}) (mg/l)	400	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]	During release from discharge locations listed in Table 1.

[1] *In situ samples can be taken using electronic sampling equipment.*
[2] *Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.*
[3] *Only required in the event Turbidity measurements are not available.*

Table 3: Receiving Water Upstream Background Sites and Downstream Monitoring Points.

Monitoring Points	Receiving Waters Location Description	Northing (GDA94)	Easting (GDA94)	Monitoring frequency
Upstream Background Monitoring Points				
AQ-DC02R	Kianga Creek upstream of the mine	-243933.96	150349.79	Daily during discharge
Downstream Monitoring Points				
AQ-DC03T	Kianga Creek downstream	-243340.29	150020.60	Daily during discharge
AQ-DN06T	Dawson River approximately 2 km downstream of confluence with Kianga Creek (Bindaree Weir)			Daily during discharge

Table 4: Receiving Water Contaminant Limit.

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical conductivity (*u*S/cm)	3000 (maximum)	Commencement of release (within 12 hours of release event) and thereafter daily during release	*In situ*[1]	AQ-DC03T
			Samples require laboratory analysis[2]	
	450 (maximum)	Commencement of release (with 12 hours of release event) and thereafter daily during release	*In situ*[1]	AQ-DN06T.
			Samples require laboratory analysis[2]	
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Commencement of release (within 12 hours of release event) and thereafter at the monitoring frequency listed in Table 3	*In situ*[1]	From Receiving Waters sites listed in Table 3.
			Samples require laboratory analysis[2]	
Suspended solids (mg/L)	400	Commencement of release (within 12 hours of release event) and thereafter at the monitoring frequency listed in Table 3	Samples require laboratory analysis[2]	From Receiving Waters sites listed in Table 3.
Sulphate (SO_4^{2-}) (mg/L)	400	Commencement of release (within 12 hours of release event) and thereafter at the monitoring frequency listed in Table 3	Samples require laboratory analysis[2]	From Receiving Waters sites listed in Table 3.

[1] *In situ samples can be taken using electronic sampling equipment.*
[2] *Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.*

Table 5: Receiving water trigger investigation levels.

Quality characteristic[1]	Trigger levels (µg/L)	Monitoring frequency	Monitoring Point
Aluminium	100	Commencement of release (within 12 hours of release event) and thereafter weekly during	During release from discharge locations listed in Table 1.
Arsenic	13		
Cadmium	0.2		
Chromium	1.0		
Copper	2.0		
Iron	300		

Lead	10	release	
Mercury	0.2		
Nickel	11		
Zinc	8.0		
Boron	370		
Cobalt	90		
Manganese	1900		
Molybdenum	34		
Selenium	10		
Silver	1.0		
Uranium	1.0		
Vanadium	10		
Ammonia	1000		
Nitrate	1100		
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000		

[1] *All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.*

Table 6: Flow Measurement Location during discharge events.

Receiving waters	Release point (TEP RP)	Gauging station description	Northing (GDA94)	Easting (GDA94)	Minimum flow in receiving water required for a release event	Flow recording frequency
Dawson River	AQ-DN06T	Bindaree (flow measurement)			= > 18m^3/sec with EC up to 3000 uS/cm	Continuous (minimum daily)
					= > 14.5m^3/sec with EC up to 2500 uS/cm	
					= > 11m^3/sec with EC up to 2000 uS/cm	
					= > 3.5m^3/sec with EC up to 1500 uS/cm	

Contaminant Release Events

7 Notwithstanding any other condition of this TEP, the release of contaminants to waters must only take place under the conditions identified in *Table 6: Flow Measurement Location during discharge events* for the contaminant release point(s) specified in *Table 1: Dawson Central and North Discharge Locations.*

8 The TEP certificate holder must determine and record stream flows at the location specified in *Table 6: Flow Measurement Location during discharge events* for receiving waters into which a release occurs.

9 Notwithstanding any other condition of this TEP, the release of contaminants to waters must only take place from the discharge locations identified in Table 1 at a maximum volume of 75ML per day.

Dawson may manage the onsite water within the maximum daily volume to meet the water quality objectives identified in Table 2.

10 The daily quantity of contaminants released from each release point must be measured and recorded at the release points identified in *Table 1: Dawson Central and North Discharge Locations*.

Notification of Release Events

11 The TEP certificate holder must notify the administering authority as soon as practicable (within no later than 6 hours of having commenced deliberately releasing mine affected water to the receiving environment from an authorised discharge point, and no later than 12 hours after any uncontrolled release from an authorised discharge point). Notification must include the submission of written advice to the administering authority (either via facsimile [redacted] or email to [redacted]) of the following information:

a) release commencement date/time
b) expected release cessation date/time
c) release point/s
d) the release volume (estimated)
e) receiving water/s including the natural flow rate
f) any details (including available data) regarding likely impacts on the receiving water(s).

12 The TEP certificate holder must notify the administering authority as soon as practicable, (no later than 24 hours) of the cessation of a release notified under condition 11 and within 28 days provide the following information in writing:

a) release cessation date/time
b) natural flow volume in receiving water
c) volume of water released
d) details regarding the compliance of the release with the conditions of this TEP (i.e. contamination limits, natural flow, discharge volume)
e) all in-situ water quality monitoring results
f) any other matters pertinent to the water release event.

Notification of release event exceedence

13 If the release limits defined in Table 2 are exceeded, the certificate holder of the TEP must notify the administering authority within 24 hours of receiving the results.

14 The TEP certificate holder must, within 28 days of a release that exceeds the conditions of this TEP, provide a report to the administering authority detailing:

a) the reason for the release
b) the location of the release
c) all water quality monitoring results

d) any general observations
e) all calculations
f) any other matters pertinent to the water release event.

Erosion and Sediment Control

15 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

16 Erosion protection must be designed, installed and maintained as required at each release point authorised by this TEP and must:
a) designed and constructed by a suitably qualified and experienced person, and
b) be inspected by a suitably qualified and experienced person
    1. prior to the commencement of dewatering operations; and
    2. following the cessation of release in accordance with the conditions of this TEP. .

17 The certificate holder of this TEP must include within the cessation report required under condition 12 detail of the performance of erosion protection measures, including:
a) identification of erosion, slumping and scour impacts to vegetation,
b) rehabilitation, including earthworks, scour protection and flow velocity controls undertaken to minimise environmental harm, and
c) detailed engineering assessment of erosion protection works completed to date and any proposed works to be undertaken.

Requirements to cease the release of mine affected water

18 The release of mine affected waters must cease immediately if any water quality limit as specified in *Table 4: Receiving Water Contaminant Limit or Table 5 Receiving water trigger investigation levels* is exceeded.

19 The release of mine affected waters must cease immediately if identified that the release of mine affected waters is causing erosion of the bed and banks of the receiving waters, or is causing a material build up of sediment in such waters.

20 The release of mine affected waters must cease immediately if the certificate holder of this TEP is directed to do so by the administering authority.

21 The release of mine affected waters authorised under this TEP must cease by **1 July 2011**. If above average wet conditions continue beyond that date, the TEP may be extended for an additional length of time agreed to by Anglo Coal Dawson Central and North Coal Mine and the department.

Monitoring Requirements

22 Where monitoring is a requirement of this TEP, ensure that a competent person(s) conducts all monitoring.

23 All monitoring undertaken as a requirement of this TEP must be undertaken in accordance with the administering authority's Water Sampling Manual.

Notification of emergencies, incidents and exceptions

24 As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this TEP, the administering authority must be notified of the release by telephone, facsimile or emai[redacted] and [redacted] .

25 The notification of emergencies or incidents must include but not be limited to the following:

a) the holder of the TEP
b) the location of the emergency or incident
c) the number of the TEP
d) the name and telephone number of the designated contact person
e) the time of the release
f) the time the holder of the TEP became aware of the release
g) the suspected cause of the release
h) the environmental harm caused, threatened, or suspected to be caused by the release, and
i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.

26 Not more than fourteen days following the initial notification of an emergency or incident, written advice must be provided of the information supplied to the administering authority in relation to:

a) proposed actions to prevent a recurrence of the emergency or incident, and
b) outcomes of actions taken at the time to prevent or minimise environmental harm.

27 Conditions within this TEP may be amended or revised as agreed by Anglo Coal Dawson Central and North Coal Mine and the department.

Reporting

28 The TEP certificate holder must provide the administering authority, daily during the release of mine affected water, information on the release of contaminants to waters. The information must be provided in writing (either via facsimile [redacted] or email to [redacted]) and include the following:

a) all in situ monitoring data for that day
b) the receiving water flow rate
c) the release flow rate
d) the volume of water released from the release point.

29 The TEP certificate holder must provide the administering authority, weekly during the release of mine affected water, information on the release of contaminants to waters. The information must be provided in writing (either via facsimile [redacted] or email to [redacted]) and include the following:

a) all in situ monitoring data for that week
b) the range of receiving water flow rate
c) the range of release flow rate
d) the total volume of water released from the release point.

30 The certificate holder of this TEP must submit a report to the administering authority on the fifth business day of each month detailing:
   a) all activities undertaken under the TEP,
   b) how the TEP certificate holder has met the objectives of the TEP, taking into account:
      i. the best practice environmental management for the activity, and
      ii. the risks of environmental harm being caused by the activity, and
   c) how the TEP certificate holder has complied with all conditions contained within the TEP

31 The certificate holder of this TEP must submit records of consultations with the Kianga Creek downstream landholders to the administering authority prior to the initiation of discharge under this TEP.

32 The certificate holder of this TEP must submit a report to the administering authority by **22 July 2011** including:
   a) details of the completion of the TEP,
   b) details on all activities undertaken under the TEP,
   c) identification of how the TEP certificate holder has met the objectives of the TEP, taking into account:
      i. the best practice environmental management for the activity, and
      ii. the risks of environmental harm being caused by the activity,
   d) identification of how the TEP certificate holder has complied with all conditions contained within the TEP – Certificate of Approval, and
   e) confirmation that at closure of the TEP, the certificate holder will be able to comply with the Final Model Water Conditions for Fitzroy River Basin Coal Mines administered through the current Plan of Operations for the Dawson Central and North Coal Mine, located at ML5591, ML5592, ML5593, ML5596, ML5597, ML5598, ML5599, ML5600, ML5601, ML5603, ML5604, ML5606, ML5607, ML5611, ML5630, ML5643, ML5644, ML5646, ML5650, ML5656, ML80032, ML80034, and ML80070 and the *Environmental Protection Act 1994*.

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Notice

Environmental Services - Mining

Decision to grant an approval for a draft transitional environmental program

This statutory notice is issued by the administering authority pursuant to section 340 of the Environmental Protection Act 1994*, to advise you of a decision or action.*

Anglo Metallurgical Coal (Dawson Central and North)Pty Ltd
Dawson Mine
Dawson Highway
PO Box 225
Moura Qld 4718

CC: Nicolle Mittan
Environmental Superintendent
Dawson Mine
Dawson Highway
PO Box 225
Moura Qld 4718

Your reference: Transitional Environmental Program (TEP) Anglo Metallurgical Coal (Dawson Central and North) Pty Ltd Water Discharge MAN11600

Our reference: MAN11600 File:

Attention: Nicolle,

Re: Application for an approval for a transitional environmental program for Anglo Metallurgical Coal (Dawson Central and North) Pty Ltd – Transitional Environmental Program (TEP) – Dawson Central and North Dewatering Program

Thank you for your application for an approval for a voluntary transitional environmental program. This application has been issued with the Certificate Approval number: MAN11600 (attached to this notice)

Your application, which was received by this office on 4 February 2011, has been approved with additional conditions as described in the *Draft Transitional Environmental Program Under s333 of the Environmental Protection Act 1994*.

Discharge from the site at the locations identified in the TEP may continue until 13 May 2011 unless conditions are revised.

Fees apply for the assessment of a draft transitional environmental program (TEP). The fees are outlined in the attached operational policy *Transitional Environmental Program (TEP) fees.*

A fee of **$10317.40** is payable.

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

Notice

Decision notice regarding a transitional environmental program

You may apply to the Department of Environment and Resource Management for a review of this decision within 10 business days of receiving this Notice. You may also appeal against this decision to the Planning and Environment Court.
Information outlining the review and appeal processes under the *Environmental Protection Act 1994* is included with this Notice. This information is intended as a guide only. You may have other legal rights and obligations

Should you have any queries in relation to this notice, Terry Farley of the department on telephone [redacted] would be happy to assist you.

	18 February 2011
SIGNATURE	DATE

Christopher Loveday
Manager (Environmental Services - Mining)
Central West Region
Delegate of the Administering Authority
Environmental Protection Act 1994

Enquiries:
Department of Environment and Resource Management
PO Box 19
EMERALD QLD 4720
[redacted]

ecoaccess
environmental licences and permits

Notice

Environmental Services - Mining

Decision to grant an approval for a draft transitional environmental program

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Anglo Metallurgical Coal (Dawson Central and North)Pty Ltd
Dawson Mine
Dawson Highway
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CC: Nicolle Mittan
Environmental Superintendent
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Department of Environment and Resource Management
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Decision notice regarding a transitional environmental program

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	18 February 2011
SIGNATURE	DATE

Christopher Loveday
Manager (Environmental Services - Mining)
Central West Region
Delegate of the Administering Authority
Environmental Protection Act 1994

Enquiries:
Department of Environment and Resource Management
PO Box 19
EMERALD QLD 4720
[redacted]

Department of Environment and Resource Management

Environmental Protection Act

Transitional environmental program certificate of approval number MAN11600

This certificate of approval is issued by the administering authority pursuant to section 339 of the Environmental Protection Act 1994. *A transitional environmental program is a specific program that, when approved, achieves compliance with the* Environmental Protection Act 1994 *for the matters dealt with by the program by reducing environmental harm, or detailing the transition to an environmental standard.*

Under the provisions of the *Environmental Protection Act 1994*, this certificate of approval is hereby granted to:

Mr Brett Thompson
General Manager
Dawson Mine
Dawson Highway
PO Box 225
Moura Qld 4718

C/C Nicolle Mittan Dawson Mine

Da wson Highway

approving the draft transitional environmental program; titled Draft Transitional Environmental Program Under s333 of the Environmental Protection Act 1994 for management of water releases at Dawson Central and North Coal Mine.

The draft transitional environmental program, dated 7 February 2011 , was received by this office on 4 February 2011.

The draft transitional environmental program is approved subject to the conditions identified in Section 5.0 of the *Draft Transitional Environmental Program Under s333 of the Environmental Protection Act 1994*:

The transitional environmental program remains in force until 30 June 2011.

In any case where conditions are imposed upon a certificate of approval, you may apply to the administering authority for a review of the decision. You may also appeal against the decision to the Planning and Environment Court.

Information relating to a review of decisions or appeals under the *Environmental Protection Act 1994* is included with this notice. This information is intended as a guide only. You may have other legal rights and obligations.

Should you have any queries in relation to this Notice, Mr Terry Farley of the Department of Environment and Resource Management on telephone 07 4971 6551 would be happy to assist you.

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

Queensland Government

Signature

18 February 2011

Date

Christopher Loveday
Manager – Environmental Services - Mining
Department of Environment and Resource Management

Enquiries:
Department of Environment and Resource Management
Ph. **07 4971 6551**
Fax. 07 4972 1993

REQUESTED AMENDMENT TO TRANSITIONAL ENVIRONMENTAL PROGRAM MAN11600 – DAWSON CENTRAL AND NORTH

Principal Holder: Anglo Coal Australia Pty Ltd

Title: MAN11600 DAWSON CENTRAL AND NORTH TEP REQUESTED AMENDMENT

Date: 20th June 2011

Purpose of this requested amendment to the TEP

Following on from the meeting between DERM and Anglo American Metallurgical Coal (AAMC) at DERM's Bolosover St offices on the 17th of June 2011, below is the details of the Phase 1 requested amendments required by AAMC in order to be able to conduct the required releases of water from site.

One of the points that was discussed at the meeting was in regard to the status of releases from Cockatoo Coal and Molopo into the Dawson River. It was communicated by DERM that Currently Cockatoo Coal were still releasing, however once they had stopped there may be some capacity to rework the conditions from Dawson Mine. It was agreed that AAMC would submit their proposed conditions based on current conditions (i.e. Cockatoo Coal still releasing), which has been called 'Phase 1'. AAMC would also submit proposed conditions for consideration under the assumption that Cockatoo Coal had completed its release, 'Phase 2'.

Requested Amendment 1 – Reduced flow rate and higher salinity of released water.

Dawson Mine has the ability to regulate discharge from Dawson North and Central by shutting down pumps and choking siphons as required. This enables the release of water to be reduced as the flow in the Dawson River recedes or the salinity of the release water increases. Therefore, allowing the regulation of discharge so as to reduce the likelihood that the Dawson River's target salinity value will be exceeded.

The table structure that would be used as a guideline for Dawson Mine Staff to use to regulate the discharge based on flow in the river is provided in Appendix A.

Requested Amendment 2 – Changes to the monitoring requirements.

It is requested that daily monitoring of the release be restricted to the Bindaree Gauging Station on the Dawson River to ensure that the current water quality target values of are not exceed.

Requested Amendment 3 – Extension of completion date of TEP

It is requested that the TEP be extended to the end of 2011, with releasing under the TEP to finish 31st of November 2011.

Requested Amendment 3 – Unrestricted release of fresh water from catchments not disturbed by mining activities.

At various locations at Dawson Central and North, fresh water builds up in blind lakes or flood mitigation dams. If left to build up, this water will eventually spill onto the mining area, where its quality will be reduced. This occurred during the January floods. In the case of Dawson North, 'Elliot's Dam' (see figure 1), is causing continued flooding of the neighbours grazing paddock.

It is requested that the TEP be amended to allow water that is below 450uS/cm to be released regardless of flow or water quality in the Dawson River. This will enable fresh water to be diverted around the mining operation via pipelines, thus reducing the risk of increasing the amount of mine affected water that needs to be stored on-site. Table 1 below is an example of how this amendment could be displayed.

It is acknowledge by AAMC that using pipelines and pumps to divert water is a temporary solution to prevent fresh water coming onsite that would be used until permanent solutions can be fully commissioned.

Examples of some of the permanent solutions include;

- An open drain to get water built up in the Eastern Flood Mitigation Dams to spill to Kianga Creek instead of the mine site. Preliminary designs and alignments have been completed and were shown to Terry Farley during discussions regarding the flooding at Elliots Dam, commissioning this system is a significant project involving, land not owned by AAMC and significant earthworks.
- A culvert system to rapidly dewater the Elliots Dam flood zone to reduce the inundation time of the Endangered Regional Ecosystem (ERE).

Contaminant Release Limits for Released Water up to 450uS/cm						
Quality Characteristic	**Release Limit**	**Monitoring Frequency**	**Sample Type**	**Monitoring Point**	**Release Flow Rate (L/sec)**	**Receiving Water Flow Rate in the Dawson River (m3/sec)**
EC (uS/cm)	450	Daily for the first 3 days, then weekly thereafter	In Situ	During release from the release points only.	868 (Maximum)	0
pH	6.5 (Minimum) 9.0 (Maximum)		In Situ			
Turbidity (NTU)	600		In Situ			
Total Suspended Solids (mg/L)	400		Lab			
Sulphate (mg/L)	400		Lab			

Table 1. Proposed inclusion to the TEP to enab le fresh water to be releas ed with reduced restrictions and monitoring requirements.

Resources available to assist in considerations

- Previously submitted insitu data from releases at Dawson North
- Site contact is Brian Barry ph: 4990 9712 or 0437 331 368

Appendix A – Release Guideline Tables to be Used By Site To Maintain Target Water Quality Conditions in the Dawson River.

Contaminant Release Limits for Released Water up to 4500uS/cm							
Quality Characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point	Release Flow Rate (L/sec)	Receiving Water Flow Rate in the Dawson River (m3/sec)	Dawson's Estimate of the Resultant Salinity in Dawson River (uS/cm)
EC (uS/cm)	4500	Daily during release	In Situ	During release from the discharge locations listed in Table 1.	3500	100	442.029
					1800	50	445.9459
					868	24	446.598
					820	23	444.5844
					720	20	445.9459
					600	17	443.1818
					420	12	442.029
					300	9	435.4839
					220	6	448.5531
					120	3.5	439.2265

Contaminant Release Limits for Released Water up to 3000uS/cm							
Quality Characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point	Release Flow Rate (L/sec)	Receiving Water Flow Rate in the Dawson River (m3/sec)	Dawson's Estimate of the Resultant Salinity in Dawson River (uS/cm)
EC (uS/cm)	2500	Daily during release	In Situ	During release from the discharge locations listed in Table 1.	4500	100	394.7368
					3500	50	443.9252
					868	12	448.3991
					820	12	440.7176
					720	10	447.7612
					600	9	437.5
					420	6	443.9252
					300	4.5	437.5
					220	3	450.3106
					120	2	424.5283

Appendix 1: Transitional Environmental Program Conditions
The voluntary Transitional Environmental Program (TEP) is subject to the following conditions:

Undertaking the release of mine affected water

1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under this Transitional Environmental Approval, unless otherwise authorised under the *Environmental Protection Act 1994*.

2 The release of contaminants to waters must only occur from the release points specified in *Table 1: Dawson Central and North Discharge Locations* at the locations specified.

3 The release of contaminants to waters must not exceed the release limits stated in Table 2 at the monitoring points specified in Table 1 of this voluntary Transitional Environmental Program (TEP).

4 The release of contaminants to waters from the release point must be monitored at the locations specified in Tables 1 and 3 of this TEP.

5 If quality characteristics of the release exceed any trigger levels specified in *Table 5: Receiving water trigger investigation levels* during a release event, the Certificate of Approval holder must compare the downstream results in the receiving waters identified in *Table 6: Flow Measurement Location during discharge events* to the trigger values specified in *Table 5: Receiving water trigger investigation levels* and:
   a) where the trigger values are not exceeded then no action is to be taken
   b) where the downstream results exceed the trigger values specified *Table 5: Receiving water trigger investigation levels* for any quality characteristic, compare the results of the downstream sites to the data from background monitoring sites and
      i) if the result is less than the background monitoring site data, then no action is to be taken or
      ii) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining
         1) details of the investigations carried out
         2) actions taken to prevent environmental harm.

6 If an exceedance in accordance with condition 5(a)(ii)(2) is identified, the certificate holder of the TEP must notify the administering authority within 24 hours of receiving the result. The notification must include written verification of the exceedance forwarded to the administering authority either via facsimile (07) 4972 2993 or email to the project manager and Manager.MiningCWR@derm.qld.gov.au.

Table 1: Dawson Central and North Discharge Locations.

Release Point (RP)	Northing GDA94	Easting GDA94	Contaminant Source	Monitor Point	Receiving Waters
RP - DCO1T	-243358.95	150039.09	Hillview Dam	End of pipe	Kianga Creek

RP – DCO2T	-243949.98	150336.97	14 Dam	End of pipe	Kianga Creek
	-243933.8	1500350.2	9-12 Dam	End of pipe	Kianga Creek
TBA	TBA	TBA	Bottom East Dam	End of pipe	Kianga Creek
RP-DN01T	-202441	7288330	Dawson North Industrial Dam	End of pipe	Kianga Creek

[1] *Discharge from this location is not to be included in the calculation of "natural flow" at the locations identified in Table 6 below. Reported flow rate must be revised during discharge from 9-12 Dam*

Table 2: Contaminant Release Limits.

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical conductivity (uS/cm)	4500 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1] Samples require laboratory analysis[2]	= > 17 m^3/sec at a maximum release flow rate of 600 l/s
				= > 12 m^3/sec at a maximum release flow rate of 420 l/s
				= > 9 m^3/sec at a maximum release flow rate of 300 l/s
				= > 6 m^3/sec at a maximum release flow rate of 220 l/s
				= > 3.5 m^3/sec at a maximum release flow rate of 120 l/s
	2500 (maximum)		*In situ*[1] Samples require laboratory analysis[2]	= > 9 m^3/sec at a maximum release flow rate of 600 l/s
				= > 6 m^3/sec at a maximum release flow rate of 420 l/s
				= > 4.5 m^3/sec at a maximum release flow rate of 300 l/s

				= > 3 m^3/sec at a maximum release flow rate of 220 l/s
				= > 2 m^3/sec at a maximum release flow rate of 120 l/s
	450 (AQ-DN06T)	Daily during release (the first sample must be taken within 12 hours of commencement of release)	*In situ*[1]	= > 0 m^3/sec at a maximum release flow rate of 600 l/s
			Samples require laboratory analysis[2]	
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	During release from discharge locations listed in Table 1.
			Samples require laboratory analysis[2]	
Turbidity (NTU)	600	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	During release from discharge locations listed in Table 1.
[3]Total Suspended Solids (mg/l)	400	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]	During release from discharge locations listed in Table 1.
Sulphate (SO_4^{2-}) (mg/l)	400	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis[2]	During release from discharge locations listed in Table 1.

[1] In situ samples can be taken using electronic sampling equipment.
[2] Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.
[3]Only required in the event Turbidity measurements are not available.

Table 3: Receiving Water Upstream Background Sites and Downstream Monitoring Points.

Monitoring Points	Receiving Waters Location Description	Northing (GDA94)	Easting (GDA94)	Monitoring frequency
Upstream Background Monitoring Points				
AQ-DC02R	Kianga Creek	-	150349.79	Daily during

	upstream of the mine	243933.96		discharge
Downstream Monitoring Points				
AQ-DC03T	Kianga Creek downstream	-243340.29	150020.60	Daily during discharge
AQ-DN06T	Dawson River approximately 2 km downstream of confluence with Kianga Creek (Bindaree Weir)			Daily during discharge

Table 4: Receiving Water Contaminant Limit.

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical conductivity (*u*S/cm)	3500 (maximum)	Commencement of release (within 2 hours of release event) and thereafter daily during release	*In situ*[1]	AQ-DC03T
			Samples require laboratory analysis[2]	
	450 (maximum)	Commencement of release (with 2 hours of release event) and thereafter daily during release	*In situ*[1]	AQ-DN06T.
			Samples require laboratory analysis[2]	
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Commencement of release (within 2 hours of release event) and thereafter at the monitoring frequency listed in Table 3	*In situ*[1]	From Receiving Waters sites listed in Table 3.
			Samples require laboratory analysis[2]	
Suspended solids (mg/L)	400	Commencement of release (within 2 hours of release event) and thereafter at the monitoring frequency listed in Table 3	Samples require laboratory analysis[2]	From Receiving Waters sites listed in Table 3.
Sulphate (SO_4^{2-}) (mg/L)	400	Commencement of release (within 2 hours of release event) and thereafter at the monitoring frequency listed in Table 3	Samples require laboratory analysis[2]	From Receiving Waters sites listed in Table 3.

[1] *In situ samples can be taken using electronic sampling equipment.*
[2] *Samples are required to be analysed at a NATA accredited facility in accordance with this Transitional Environmental Program.*

Table 5: Receiving water trigger investigation levels.

Quality characteristic[1]	Trigger levels (μg/L)	Monitoring frequency	Monitoring Point
Aluminium	100	Commencement of release (within 2 hours of release event) and thereafter weekly during release	During release from discharge locations listed in Table 1.
Arsenic	13		
Cadmium	0.2		
Chromium	1.0		
Copper	2.0		
Iron	300		
Lead	10		
Mercury	0.2		
Nickel	11		
Zinc	8.0		
Boron	370		
Cobalt	90		
Manganese	1900		
Molybdenum	34		
Selenium	10		
Silver	1.0		
Uranium	1.0		
Vanadium	10		
Ammonia	1000		
Nitrate	1100		
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000		

[1] *All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.*

Table 6: Flow Measurement Location during discharge events.

Receiving waters	Release point (TEPRP)	Gauging station description	Northing (GDA94)	Easting (GDA94)	Minimum flow in receiving water required for a release event	Flow recording frequency
Dawson River		Bindaree (flow measurement)			= > 17 m^3/sec with EC up to 4500 uS/cm at a maximum release flow rate of 600 l/s	Continuous (minimum daily)
					= > 12 m^3/sec with EC up to 4500 uS/cm at a maximum release flow rate of 420 l/s	

					= > 9 m^3/sec with EC up to 4500 uS/cm at a maximum release flow rate of 300 l/s	
					= > 6 m^3/sec with EC up to 4500 uS/cm at a maximum release flow rate of 220 l/s	
					= > 3.5 m^3/sec with EC up to 4500 uS/cm at a maximum release flow rate of 120 l/s	
					= > 9 m^3/sec with EC up to 2500 uS/cm at a maximum release flow rate of 600 l/s	
					= > 6 m^3/sec with EC up to 2500 uS/cm at a maximum release flow rate of 420 l/s	
					= > 4.5 m^3/sec with EC up to 2500 uS/cm at a maximum release flow rate of 300 l/s	
					= > 3 m^3/sec with EC up to 2500 uS/cm	

					at a maximum release flow rate of 220 l/s	
					= > 2 m^3/sec with EC up to 2500 uS/cm at a maximum release flow rate of 120 l/s	
					= > 0 m^3/sec with EC up to 450 uS/cm at a maximum release flow rate of 600 l/s	

Contaminant Release Events

7 Notwithstanding any other condition of this TEP, the release of contaminants to waters must only take place under the conditions identified in *Table 6: Flow Measurement Location during discharge events* for the contaminant release point(s) specified in *Table 1: Dawson Central and North Discharge Locations.*

8 The TEP certificate holder must determine and record stream flows at the location specified in *Table 6: Flow Measurement Location during discharge events* for receiving waters into which a release occurs.

9 Notwithstanding any other condition of this TEP, the release of contaminants to waters must only take place from the discharge locations identified in Table 1 at a maximum volume of 52ML per day.

Dawson may manage the onsite water within the maximum daily volume to meet the water quality objectives identified in Table 2.

10 The daily quantity of contaminants released from each release point must be measured and recorded at the release points identified in *Table 1: Dawson Central and North Discharge Locations*.

Notification of Release Events

11 The TEP certificate holder must notify the administering authority as soon as practicable (within no later than 6 hours of having commenced deliberately releasing mine affected water to the receiving environment from an authorised discharge point, and no later than 12 hours after any uncontrolled release from an authorised discharge point). Notification must include the submission of written advice to the administering authority (either via facsimile (07) 4972 1993 or email to the project manager and Manager.MiningCWR@derm.qld.gov.au) of the following information:

a) release commencement date/time
b) expected release cessation date/time
c) release point/s
d) the release volume (estimated)

e) receiving water/s including the natural flow rate
f) any details (including available data) regarding likely impacts on the receiving water(s).

12 The TEP certificate holder must notify the administering authority as soon as practicable, (no later than 24 hours) of the cessation of a release notified under condition 11 and within 28 days provide the following information in writing:
a) release cessation date/time
b) natural flow volume in receiving water
c) volume of water released
d) details regarding the compliance of the release with the conditions of this TEP (i.e. contamination limits, natural flow, discharge volume)
e) all in-situ water quality monitoring results
f) any other matters pertinent to the water release event.

Notification of release event exceedence

13 If the release limits defined in Table 2 are exceeded, the certificate holder of the TEP must notify the administering authority within 24 hours of receiving the results.

14 The TEP certificate holder must, within 28 days of a release that exceeds the conditions of this TEP, provide a report to the administering authority detailing:
a) the reason for the release
b) the location of the release
c) all water quality monitoring results
d) any general observations
e) all calculations
f) any other matters pertinent to the water release event.

Erosion and Sediment Control

15 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build up of sediment in such waters.

16 Erosion protection must be designed, installed and maintained as required at each release point authorised by this TEP and must:
a) designed and constructed by a suitably qualified and experienced person, and
b) be inspected by a suitably qualified and experienced person
    1) prior to the commencement of dewatering operations; and
    2) following the cessation of release in accordance with the conditions of this TEP.

17 The certificate holder of this TEP must include within the cessation report required under condition 12 detail of the performance of erosion protection measures, including:
a) identification of erosion, slumping and scour impacts to vegetation,
b) rehabilitation, including earthworks, scour protection and flow velocity controls undertaken to minimise environmental harm, and
c) detailed engineering assessment of erosion protection works completed to date and any proposed works to be undertaken.

Requirements to cease the release of mine affected water

18 The release of mine affected waters must cease immediately if any water quality limit as specified in Table 2 is exceeded.

19 The release of mine affected waters must cease immediately if the release of mine affected waters is causing erosion of the bed and banks of the local or regional receiving waters, or is causing a material build up of sediment in such waters.

20 The release of mine affected waters must cease immediately if the certificate holder of this TEP is directed to do so by the administering authority.

21 The release of mine affected waters authorised under this TEP must cease by **31 November 2011**. If above average wet conditions continue beyond that date, the TEP may be extended for an additional length of time agreed to by Anglo Coal Dawson Central and North Coal Mine and the department.

Monitoring Requirements

22 Where monitoring is a requirement of this TEP, ensure that a competent person(s) conducts all monitoring.

23 All monitoring undertaken as a requirement of this TEP must be undertaken in accordance with the administering authority's Water Sampling Manual.

Notification of emergencies, incidents and exceptions

24 As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this TEP, the administering authority must be notified of the release by telephone, facsimile (07 4972 1993) or email (manager.miningcwr@derm.qld.gov.au and terry.farley@derm.qld.gov.au).

25 The notification of emergencies or incidents must include but not be limited to the following:

a) the holder of the TEP
b) the location of the emergency or incident
c) the number of the TEP
d) the name and telephone number of the designated contact person
e) the time of the release
f) the time the holder of the TEP became aware of the release
g) the suspected cause of the release
h) the environmental harm caused, threatened, or suspected to be caused by the release, and
i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.

26 Not more than fourteen days following the initial notification of an emergency or incident, written advice must be provided of the information supplied to the administering authority in relation to:

a) proposed actions to prevent a recurrence of the emergency or incident, and

b) outcomes of actions taken at the time to prevent or minimise environmental harm.

27 Conditions within this TEP may be amended or revised as agreed by Anglo Coal Dawson Central and North Coal Mine and the department.

Reporting

28 The TEP certificate holder must provide the administering authority, daily during the release of mine affected water, information on the release of contaminants to waters. The information must be provided in writing (either via facsimile [redacted] or email to the project manager and [redacted] and include the following:
a) all in situ monitoring data for that day
b) the receiving water flow rate
c) the release flow rate
d) the volume of water released from the release point.

29 The TEP certificate holder must provide the administering authority, weekly during the release of mine affected water, information on the release of contaminants to waters. The information must be provided in writing (either via facsimile [redacted] or email to the project manager and [redacted] and include the following:
a) all in situ monitoring data for that week
b) the range of receiving water flow rate
c) the range of release flow rate
d) the total volume of water released from the release point.

30 The certificate holder of this TEP must submit a report to the administering authority on the fifth business day of each month detailing:
a) all activities undertaken under the TEP,
b) how the TEP certificate holder has met the objectives of the TEP, taking into account:
   1) the best practice environmental management for the activity, and
   2) the risks of environmental harm being caused by the activity, and
c) how the TEP certificate holder has complied with all conditions contained within the TEP

31 The certificate holder of this TEP must submit records of consultations with the Kianga Creek downstream landholders to the administering authority prior to the initiation of discharge under this TEP.

32 The certificate holder of this TEP must submit a report to the administering authority by **16 December 2011** including:
a) details of the completion of the TEP,
b) details on all activities undertaken under the TEP,
c) identification of how the TEP certificate holder has met the objectives of the TEP, taking into account:
   1) the best practice environmental management for the activity, and
   2) the risks of environmental harm being caused by the activity,
d) identification of how the TEP certificate holder has complied with all conditions contained within the TEP – Certificate of Approval, and
e) confirmation that at closure of the TEP, the certificate holder will be able to comply with the Final Model Water Conditions for Fitzroy River Basin Coal Mines administered through the current Plan of Operations for the Dawson Central and North Coal Mine, located at ML5591, ML5592, ML5593, ML5596, ML5597, ML5598, ML5599, ML5600, ML5601, ML5603,

ML5604, ML5606, ML5607, ML5611, ML5630, ML5643, ML5644, ML5646, ML5650, ML5656, ML80032, ML80034, and ML80070 and the *Environmental Protection Act 1994*.

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Notice

Environmental Services - Mining

Decision to refuse an application to amend a transitional environmental program

This statutory notice is issued by the administering authority pursuant to section 340 of the Environmental Protection Act 1994*, to advise you of a decision or action.*

Anglo Metallurgical Coal (Dawson Central and North)Pty Ltd
Dawson Mine
Dawson Highway
PO Box 225
Moura Qld 4718

CC: Larry Hantler
Environmental Superintendent
Dawson Mine
Dawson Highway
PO Box 225
Moura Qld 4718

Your reference: Transitional Environmental Program (TEP) Anglo Metallurgical Coal (Dawson Central and North) Pty Ltd Water Discharge MAN11600

Our reference: MAN11600 File:

Attention: Larry,

Re: Application for an amendment of a transitional environmental program for Anglo Metallurgical Coal (Dawson Central and North) Pty Ltd – Transitional Environmental Program (TEP) – Dawson Central and North Dewatering Program

Thank you for your application to amend the transitional environmental program. MAN11600

Your application, which was received by this office on 20 June 2011, has been refused *under s340 of the Environmental Protection Act 1994*.

The reason for this decision includes:

The application for the amendment of TEP MAN11600 does not include a timeframe for the proposed actions to be implemented within the TEP to minimise the conditions that have contributed to the current need for discharge from the facility outside of the current final model water conditions administered under the Plan of Operations for the site. The proposed actions are very limited in scope and unlikely to minimise future needs to discharge from the facility.

The application for an amended TEP does not consider the potential environmental harm to the receiving environment (Kianga Creek) due to elevated electrical conductivity (EC) concentrations and the timeframe (90 plus days) of the discharge.

Approval of the amended TEP MAN11600 would be considered an affront to public opinion as the TEP fails to identify and assess potential environmental harm to landholders and downstream users.

Department of Environment and Resource Management
www.derm.qld.gov.au ABN 46 640 294 485

Notice

Decision notice regarding a transitional environmental program

Discharge from the site at the locations identified in TEP MAN11600 must cease on 1 July 2011. Notification and reporting requirements must me completed as required by the TEP.

Fees apply for the assessment of an amendment to the transitional environmental program (TEP). The fees are outlined in the attached operational policy *Transitional Environmental Program (TEP) fees.*

A fee of **$185.40** is payable.

You may apply to the Department of Environment and Resource Management for a review of this decision within 10 business days of receiving this Notice. You may also appeal against this decision to the Planning and Environment Court.
Information outlining the review and appeal processes under the *Environmental Protection Act 1994* is included with this Notice. This information is intended as a guide only. You may have other legal rights and obligations

Should you have any queries in relation to this notice, Terry Farley of the department on telephone [redacted] would be happy to assist you.

	29 June 2011
SIGNATURE	DATE

Chris Loveday
Manager (Environmental Services - Mining)
Central West Region
Delegate of the Administering Authority
Environmental Protection Act 1994

Enquiries:
Department of Environment and Resource Management
PO Box 5065
Gladstone Qld 4680
[redacted]