Queensland Floods Commission of Inquiry

CROWN LAW–(DERM – Michael Birchley)
Supplementary Statement
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MFB-1[illegible]1768381 File 539985/1
Volume 1 ORIGINAL

Supplementary Statement

to

Statement

of

Michael Francis Birchley

September 2011

DERM

QFCI

Date: 9/11/11 JM

Exhibit Number: 944

QUEENSLAND FLOODS
COMMISSION OF INQUIRY

SUPPLEMENTARY STATEMENT OF MICHAEL (MIKE) FRANCIS BIRCHLEY

I, **MICHAEL (MIKE) FRANCIS BIRCHLEY**, of c/- 400 George Street, Brisbane in the State of Queensland, Assistant Director-General, Regional Service Delivery Division, Department of Environment and Resource Management ("DERM") state on oath:

1. I was previously provided with a letter dated 29 August 2011 from the Commissioner, Queensland Floods Commission of Inquiry ("the Commission") requiring a written statement under oath or affirmation addressing 14 Items ("Requirement") (Attachment **MFB-01**).

2. I provided a sworn statement dated 5 September 2011 in response to the Commission's Requirement.

3. Subsequent to 5 September 2011 I became aware of the existence of documents that had not been provided with my statement, but which are potentially required pursuant to the Requirement, in particular Item 7. I had not seen these documents previously as I was not personally involved in these email correspondence trails or the relevant internal departmental communications.

4. DERM Flood Commission of Inquiry Liaison Officers subsequently discovered these documents when preparing a statement for another departmental officer and identified that the documents were relevant to my statement sworn on 5 September 2011.

5. Accordingly, with respect to Item 7 of the Requirement and paragraph 101 of my previous statement, I attach correspondence between DERM and the Queensland Resources Council (QRC), as well as internal DERM documentation. The correspondence relates to the circulation of a template of a streamlined Transitional Environmental Program (TEP) application for use by mine operators for progressing TEP applications during the 2010/2011 wet season (Attached **MFB-17**).

I make this statement on oath conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867*.

[redacted]

Signed
Michael (Mike) Francis Birchley

Taken and declared before me, at Brisbane this 29th day of September 2011

[redacted]

Soli[redacted]ee of the Peac[redacted]r Declarations

[redacted]

From: Michael Roche [redacted]
Sent: Thursday, 6 January 2011 9:12 PM
To: [redacted] Best Debbie; Brown Damien; [redacted]
Cc: Frances Hayter; Greg Lane; Bradley John; Michael Roche
Subject: RE: Letter from Acting Director-General DERM
Importance: High

Dear Debbie
Many thanks for your letter and the draft TEP template. Let me reiterate what I have happily volunteered to Ministers, to John Bradley, to Ken Smith and to the media: the work of DERM through this difficult time has been excellent and much appreciated.

My approach to John yesterday was in no way a reflection on the good work of DERM to date, but rather a reflection of our concern that there is so much more wet weather to come during this wet season. Our focus is to help our members build in some resilience against further severe wet weather events by taking full advantage of strongly flowing water courses to get rid of the build up of water on site.

QRC has tonight will circulated this material to a selection of key member personnel and QRC advisers. We will try to get their feedback tomorrow with a view to meeting with DERM on Monday to work it through, perhaps early afternoon?

In the meantime, I have a few questions for you:

- why the focus on just Fitzroy mines? While my email to John Bradley of last night referenced the department's response of 24 Novemnber onn Fitzroy conditions, the email made clear our focus was all mines (and gas sites - see below)
- our CSG members also have a strong interest in a streamlined TEP process. Can I ask you to consider how this can be achieved as per my email to John B
- strong feedback from our members is a concern that the shutters will come down on water discharge approvals as local creeks/watercourses stop flowing (for the time being). Either as part of the TEP template or as an associated exercise, we are keen to discuss how we can "anticipate" resumption of water flows (given weather forecasts for the wet season) and so allow continuity of discharge.

Can you confirm DERM availability to meet with QRC during the afternoon of Monday 10 January on the TEP template and the other matters raised in this email?

Regards

Michael

Michael Roche
Chief Executive
Queensland Resources Council

From: [redacted]@derm.qld.gov.au]
Sent: Thursday, 6 January 2011 5:11 PM
To: Michael Roche
Subject: Letter from Acting Director-General DERM

Dear Mr Roche

Please find attached a letter and attachments from the Acting Director-General Debbie Best.

Thanks

6 JAN 2011

Queensland Government

Ref CTS 00139/10

Department of
Environment and Resource
Management

Mr Michael Roche
Email: [redacted]@qrc.org.au

Dear Mr Roche Michael

I refer to your discussions today with Mr John Bradley, Director-General of the Department of Environment and Resource Management requesting an expedited approval process to allow mines to discharge water during the current high flows in receiving watercourses.

As you will be aware, in early December 2010 the department contacted all of the coal mines in the Bowen Basin and offered priority assistance to them in dealing with existing water management issues and to support the mines' preparedness for more rainfall during of the wet season. This included the development of a transitional environment program (TEP) template to streamline the application and assessment process and the adoption of a case management approach with each mine. A copy of the template that is being used is attached.

Several mines availed themselves of this assistance resulting in the department approving 11 TEPs before Christmas. Notably, using this approach the average turnaround time for these TEPs was less than four days, with only three of the 11 applications taking more than four days to approve.

Departmental staff worked over the Christmas period assisting operations including: authorising a relaxation in the application of environmental authority (EA) conditions in response to emergent issues at Moranbah North, Dawson and Burton mines; working with Sonoma and Peak Downs on their TEP applications; and approving a TEP for Origin Energy's Coal Seam Gas operation at Spring Gully.

In the new year, the department made further contact with mines to determine what urgent assistance could be provided and is currently discussing TEP applications with several mines. The degree of urgency expressed by operations varies between mines. As you will be aware, the TEP for Ensham was approved on 5 January 2010, the same day that it was lodged. In regard to Baralaba mine, the department made contact with officers from the company, provided TEP application information and is standing-by to assist as soon as Baralaba is in a position to consider its recovery program.

I refer to the recent advice in your email to Mr Bradley dated 5 January 2010, that some QRC members are of the view that in order to take best advantage of the current flood situation the department could consider issuing an "open invitation which invites all companies to discharge as much water as possible within a short a period of time as possible".

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Queensland 4001 Australia
Telephone + 61 7 3330[redacted]
Facsimile + 61 7 3330[redacted]
Website www.derm.qld.gov.au
ABN 46 640 294 485

I affirm Mr Bradley's advice to you that whilst the department does not support the concept of an "open invitation", it is happy to work with QRC on an even more simplified TEP application to be applied on a case-by-case basis where the company is seeking dispensation over only limited parameters of an EA with all other conditions remaining in force.

The department, as the environmental regulator, has, as its first priority, the need to safeguard the environment and any abridged process that is agreed to should not compromise this. Companies would still need to meet their obligations to understand and manage environmental risk. The simplified process would still need to contain conditions on water quality, flow conditions, monitoring, and reporting to ensure that the environment is protected. In addition, in order for companies to qualify to apply under the simplified process, the department has an expectation that they have a good compliance record and that their financial assurance is paid up to date.

I have attached a draft simplified TEP template for QRC to consider and provide advice back to the department. Note that this would be specifically applicable to mines in the Fitzroy Basin which have the current model conditions included in their EAs, and site specific considerations may also need to be made. In the interim period, prior to receiving your advice on the simplified template, the department will continue to work with mines using its existing TEP template and process which has proven to be effective to date.

Senior departmental officers are available to meet with you to discuss this process as soon as you like.

Should you have any further enquiries, please do not hesitate to contact me on telephone 3330 [redacted].

Yours sincerely

[redacted]

Debbie Best
Acting Director-General

Atts

SIMPLIFIED VERSION

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

Principal Holder: XXXXXXXX
XXXXXXXX
XXXXXXXX

EA Number: XXXXXXXX

Title: XXXXXXXXXXXXXX

Date: XXXXXXXX

Finish Date: 30 June 2011

BACKGROUND

Explains why a TEP is required, as a result of an incident, breach, emergency. I.e. what went wrong – keep the submission and the discharge plan to a scale, based on the company's immediate and urgent priorities, that will allow timely consideration.
NOTE: Include relevant reporting requirements, monitoring locations and discharge limits from EA conditions, rainfall data, pits and water management structures affected, quantity of water proposed to be discharged, pumping/discharge rates and locations, creeks/rivers to be discharged to, whether creeks/rivers are still flowing naturally, water quality monitoring locations and downstream limits in creeks/rivers during discharge, results of previous sampling, ongoing reporting requirements to the administering authority, downstream water uses and affected properties. Also include contingency plans for possibility of having to cease discharge due to poor water quality or significant flow path erosion etc. Include whether there are other permits involved and status of the applications.

SUPPORTING INFORMATION

The *Environmental Protection Regulation 2008* (the regulation) commenced on 1 January 2009. The regulation consolidated considerations that must be made when making a range of decisions including TEPs into Chapter 4 of the regulation. This has resulted in making the range of matters to be considered clearer to decision makers. These include, but are not limited to relevant parts of sections 51, 52, 53 and 56 of the regulation. Particularly information of the impacts of the release of contaminants on the receiving environment in the context of the nature of the contaminants (including toxicity) and the nature of the receiving environment and its ability to assimilate contaminants.

Note: Section 330 of the EP Act defines a TEP as:
A transitional environmental program is a specific program that, when approved, achieves compliance with this Act for the matters dealt with by the program by:
(a) reducing environmental harm; or
(b) detailing the transition to an environmental standard.

OBJECTIVES

NOTE: As required under section 331 the transitional environmental program must state the objectives to be achieved and maintained under the program.

The objectives of the TEP must relate to the time frames for mines returning to operation in accordance with / compliance with the EA conditions, and must also include the prevention or re-occurrence in the short, medium and long term of the situation that gave rise to the approval of an TEP

HOW OBJECTIVES ARE TO BE ACHIEVED

NOTE: As required under section 331 the TEP must state how the objectives are to be achieved, and provide a timetable to achieve the objectives, taking into account the application of best practice environmental management and the risks of environmental harm

being caused by the activity. The timetable must state appropriate performance indicators that can be measured at various intervals.

As an approved TEP can protect the holder from enforcement action for non-compliances with the Act, the commitments or terms of the TEP made by the client need to be clearly drafted, unambiguous and easily auditable. Please note that a failure to comply with the terms of a TEP is an offence so the terms outlined within the document act in a similar way to conditions contained within an EA.

Table 1 – achieving TEP objectives

OBJECTIVE	ACTION	RESPONSIBILITY	TIME FRAME	PERFORMANCE INDICATOR
XXXXX		Nominate officer/person responsible for fulfilling objective.	The release of contaminants under this approval will cease on 13 May 2011	
XXXXX				
XXXXX				
XXXXX				

If the table above is not sufficient in size please use in the landscape format.
If the table is insufficient due to the quantity of detail required utilise subheadings e.g. objective, action, responsibility, timeframe and performance indicator with detailed information included below each heading. This information can then be modified in the reporting for successes, issues, incidents and failures.

MONITORING
As required under s331 of the EP Act

Table 2 – Discharge and Downstream Contaminant limits and Monitoring

Quality characteristic	Release or Downstream Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical conductivity (uS/cm)	8000	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	At each discharge location
			Samples require laboratory analysis[2]	At each discharge location
	400 *different EC limits may be required for different monitoring points	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	At each downstream monitoring location for each waterway released to. At a minimum the first downstream monitoring point must be within 1000m of the release point.

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]	At each discharge location
			Samples require laboratory analysis[2]	At each discharge location
			In situ[1]	At each downstream monitoring location for each waterway released to. At a minimum the first downstream monitoring point must be within 1000m of the release point.
Turbidity (NTU) and Suspended Solids	N/A	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	At each discharge location
			Samples require laboratory analysis[2]	At each discharge location
Sulphate (SO_4^{2-}) (mg/L)	1000	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	At each discharge location

			Samples require laboratory analysis[2]	At each discharge location

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

Table 3 – Flow monitoring and Minimum flows in receiving waters

Receiving waters	Gauging station description	Easting (GDA94)	Northing (GDA94)	Minimum flow in receiving water required for a release event	Flow recording frequency
XXXX Creek	WX	XXXXX	XXXXX	100m^3/sec	Continuous (minimum daily)
XXXX Creek	WX	XXXXX	XXXXX	100 XXm^3/sec	Continuous (minimum daily)

REPORTING
NOTE: The department will require daily reporting of insitu water quality parameters.

Progress reports will be required to be submitted to the department (i.e. monthly, can be stated as the 5th business day of each month) describing activities and issues from previous month and proposed activities for next month and a final report defining how the objectives of the TEP have been achieved.

A final report is required to be submitted to the report upon completion of all actions, and at least 2 months prior to the end date of the TEP.

'Principal EA Holder Name' will 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).

'Principal EA Holder Name' 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.

'Principal EA Holder Name' will 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.

'Principal EA Holder Name' 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.

'Principal EA Holder Name' 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 XXXX Coal Mine, located at Mining Lease XXXX and the *Environmental Protection Act 1994*.

CONDITIONS

NOTE: the TEP applicant should outline the rules they will follow in undertaking the proposed actions. Where the action results in a variation of the EA conditions, the rules should be set with the proposed variation. Example below:

In carrying out this Transitional Environmental Program, 'Client Name (i.e. principal EA holder)' 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 explicitly permitted under this Transitional Environmental Approval – Certificate of Approval, unless otherwise authorised to under the *Environmental Protection Act 1994*.
2. The combined discharge of mine affected water, to each receiving waters, from the mining leases to which this TEP relates shall not exceed 2% of the background flow as measured at a point upstream of the discharge of mine affected water.
3. For those parameters specified in this TEP, the release of contaminants to waters from each discharge point must not exceed that specified in this TEP.
4. The release of contaminants to waters from the release points must be monitored at each discharge location, and receiving water locations, for each quality characteristic and at the frequency specified in this TEP.

5. Irrespective of the Release Points used as part of this TEP, the requirements related to "Trigger Levels" (including monitoring) for contaminants listed in the Environmental Authority will be complied with as part of this TEP with and any exceedance of trigger levels in discharge water will be immediately (within 24 hours) notified to the administering authority. This notification shall include via e-mail to [redacted]@derm.qld.gov.au.

Contaminant Release Events

1. The Transitional Environmental Program holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at locations upstream of the first release point on each waterway released to.
2. 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 as specified in this TEP.
3. 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

1. 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.
2. 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.
   3. 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 event exceedence

1. If the release limits or receiving water quality limits included in this TEP are exceeded, the holder of the Transitional Environmental Program must notify the administering authority within 24 hours of receiving the results.
2. 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

1. The release of mine affected waters must cease immediately if any water quality limit for discharge or receiving water as specified in this TEP are exceeded.
2. 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.
3. 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.

4. The release of mine affected waters authorised under this Transitional Environmental Program must cease by **DATE** *(i.e. the last action date for discharges in Table 1).*

Monitoring Requirements

1. Where monitoring is a requirement of this Transitional Environmental Program, ensure that a competent person(s) conducts all monitoring.
2. All monitoring undertaken as a requirement of this Transitional Environmental Program must be underteken in accordance with the administering authority's Water Sampling Manual.

Notification of emergencies, incidents and exceptions

1. As soon as practicable, and within 24 hours, 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.
2. 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.
3. 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.

Any other conditions that require a response, contingency for matters under this TEP, i.e. if constructing a new regulated structure, design plans will be required to be submitted to the administering authority for approval prior to construction.

NOTES FOR THE CLIENT

These regulatory requirements of Chapter 4 of the *Environmental Protection Regulation 2008*, the Standard Criteria and the requirements of EP Act.

In deciding to accept or refuse a TEP the administering authority is required to consider section 338 of the EP Act, which states:

338 Criteria for deciding draft program

(1) In deciding whether to approve or refuse to approve the draft program or the conditions (if any) of the approval, the administering authority—
(a) must comply with any relevant regulatory requirement; and
(b) subject to paragraph (a), must also consider the following—
(i) the standard criteria;

- *The principles of ecological sustainable development as set out in the 'National Strategy for Ecologically Sustainable Development'.*
- *Any applicable environmental protection policy.*
- *Any applicable Commonwealth, State or local government plans, standards, agreements or requirements.*

- *Any applicable environmental impact study, assessment or report.*
- *The character, resilience and values of the receiving environment.*
- *All submissions made by the applicant and submitters.*
- *The best practice environmental management for activities under any relevant instrument, or proposed instrument, as follows – a transitional environmental program.*
- *The financial implications of the requirements under an instrument, or proposed instrument, mentioned in paragraph (g) (above) as they would relate to the type of activity or industry carried out, or proposed to be carried out, under the instrument.*
- *The public interest.*
- *Any applicable site management plan.*
- *Any relevant integrated environmental management system or proposed integrated environmental management system.*
- *Any other matter prescribed under a regulation.*

(ii) additional information given in relation to the draft program;
(iii) the views expressed at a conference held in relation to the draft program.

As has been demonstrated a significant consideration for the draft TEP is for the standard criteria. Recommendations in relation to a submission of a draft TEP in line with section 338 and the standard criteria are:

- Provide all relevant stakeholders, which may included Local Government and potentially affected landholders, with a copy of the draft TEP, and allow sufficient time for relevant stakeholders to provide comment for consideration.
- The applicant is required to consider Environmental Protection Policies, the character, resilience and values of the receiving environment, any applicable plans and standards, such as ANECC (aquatic ecosystem guidelines), the Queensland Water Quality Guidelines and 'A study of the cumulative impacts on water quality of mining activities in the Fitzroy River Basin'.

In accordance with the legislation, the submitted TEP must adequately address methods to reduce environmental harm (Section 330) and must meet the content requirements detailed in section 331.

FULL VERSION

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

Principal Holder: XXXXXXXX
XXXXXXXX
XXXXXXXX

EA Number: XXXXXXXX

Title: XXXXXXXXXXXXXXX

Date: XXXXXXXX

Finish Date: *NOTE: The 'End Date' should be approximately 2 months after the lodgement date of the completion report.*

BACKGROUND

Explains why a TEP is required, as a result of an incident, breach, emergency. I.e. what went wrong – keep the submission and the discharge plan to a scale, based on the company's immediate and urgent priorities, that will allow timely consideration.
NOTE: Include relevant reporting requirements, monitoring locations and discharge limits from EA conditions, rainfall data, pits and water management structures affected, quantity of water proposed to be discharged, pumping/discharge rates and locations, creeks/rivers to be discharged to, whether creeks/rivers are still flowing naturally, water quality monitoring locations and downstream limits in creeks/rivers during discharge, results of previous sampling, ongoing reporting requirements to the administering authority, downstream water uses and affected properties. Also include contingency plans for possibility of having to cease discharge due to poor water quality or significant flow path erosion etc. Include whether there are other permits involved and status of the applications.

SUPPORTING INFORMATION

The *Environmental Protection Regulation 2008* commenced on 1 January 2009. The regulation consolidated considerations that must be made when making a range of decisions including TEPs into Chapter 4 of the regulation. This has resulted in making the range of matters to be considered clearer to decision makers. These include, but are not limited to:

- s51(1) (a) requires the consideration of the management hierarchy, environmental values, quality objectives and management intent specified in an EPP. The *Environmental Protection (Water) Policy 2009* lists a range of values that includes the biological integrity, the agricultural value, the drinking water value, the recreation value and the value for industrial purposes. If these values are correctly identified, the 'beneficial uses' of the waterway will be identified.
- s51(1) (d) requires consideration of the impact of the release of contaminants on the environment including the cumulative impact
- s51(1) (f) the order of occupancy between the person carrying out the activity and the affected person
- s51(1) (g) the remaining capacity of the receiving environment to accept contaminants while protecting the environmental values.
- s52(1) (a) requires consideration of imposing a condition requiring the implementation of a system for managing risks to the environment
- S52(1) (g) requires consideration of imposing a condition on the way in which contaminants are released for example a condition restricting the release of a contaminant at a particular temperature, velocity or rate or during particular meteorological conditions or water flows.
- s53(1) requires consideration of whether to impose monitoring conditions about the release
- s56 (2) requires consideration of any available toxicity data relevant to the release and the receiving environment.

Note: Section 330 of the EP Act defines a TEP as:

A transitional environmental program is a specific program that, when approved, achieves compliance with this Act for the matters dealt with by the program by:
(a) reducing environmental harm; or
(b) detailing the transition to an environmental standard.

OBJECTIVES
NOTE: As required under section 331 the transitional environmental program must state the objectives to be achieved and maintained under the program.

The objectives of the TEP must relate to the time frames for mines returning to operation in accordance with / compliance with the EA conditions, and must also include the prevention or re-occurrence in the short, medium and long term of the situation that gave rise to the approval of an TEP

HOW OBJECTIVES ARE TO BE ACHIEVED
NOTE: As required under section 331 the TEP must state how the objectives are to be achieved, and provide a timetable to achieve the objectives, taking into account the application of best practice environmental management and the risks of environmental harm being caused by the activity. The timetable must state appropriate performance indicators that can be measured at various intervals.

As an approved TEP can protect the holder from enforcement action for non-compliances with the Act, the commitments or terms of the TEP made by the client need to be clearly drafted, unambiguous and easily auditable. Please note that a failure to comply with the terms of a TEP is an offence so the terms outlined within the document act in a similar way to conditions contained within an EA.

Table 1 – achieving TEP objectives

OBJECTIVE	ACTION	RESPONSIBILITY	TIME FRAME	PERFORMANCE INDICATOR
XXXXX		Nominate officer/person responsible for fulfilling objective.	The release of contaminants under this approval will cease on 13 May 2011	
XXXXX				
XXXXX				
XXXXX				

If the table above is not sufficient in size please use in the landscape format.
If the table is insufficient due to the quantity of detail required utilise subheadings e.g. objective, action, responsibility, timeframe and performance indicator with detailed information included below each heading. This information can then be modified in the reporting for successes, issues, incidents and failures.

MONITORING
NOTE: As required under section 331 –
Also include specific upstream and downstream monitoring locations and detailed supporting aerial photographs and maps defining discharge points and monitoring locations.

The following tables are provided as an example on providing the required data and how to apply varying limits to different monitoring points. If you are proposing to meet a specific water quality downstream (i.e. as a compliance point, approximately 500m is acceptable – receiving water monitoring locations should not be utilised), compliance will need to be monitored at both the 'end of pipe' location and the 'compliance point'. Justification of the discharge actions proposed need to be provided in the documentation, considering Chapter 4 of the Environmental Protection Regulation 2008.

FULL VERSION

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	xxxx	xxxx	xxxx	TEP MP 1	xxxx
TEP RP 2	xxxx	xxxx	xxxx	TEP MP 2	xxxx
				TEP MP 3	

Table 3 - Contaminant release monitoring points

Monitoring point (TEP MP)	Easting (GDA94)	Northing (GDA94)	Contaminant source and location	Monitoring point location	Receiving waters
TEP MP 1	xxxx	xxxx	xxxx	xxx dam spillway	xxxx
TEP MP 2	xxxx	xxxx	xxxx	xxx dam spillway	xxxx
TEP MP 3	xxxx	xxxx	xxxx	500m downstream of junction of xxx dam spillway on the xxx receiving waters	xxxx

Table 4 - Contaminant release limits

Quality characteristic	Release Limit	Monitoring Frequency	Sample Type	Monitoring Point
Electrical conductivity (uS/cm)	xxxx (e.g. 1500)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	TEP MP 1
				TEP MP 3
			Samples require laboratory analysis[2]	TEP MP 1
				TEP MP 3
	xxxx (e.g. 3000)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	TEP MP 2
			Samples require laboratory analysis[2]	TEP MP 2
pH (pH Unit)	6.5 (minimum)	Daily during	*In situ*[1]	TEP MP 1

	9.0 (maximum)	release (the first sample must be taken within 2 hours of commencement of release)		TEP MP 2
				TEP MP 3
			Samples require laboratory analysis[2]	TEP MP 1
				TEP MP 2
				TEP MP 3
Turbidity (NTU)	xxxxx	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	TEP MP 1
				TEP MP 2
				TEP MP 3
			Samples require laboratory analysis[2]	TEP MP 1
				TEP MP 2
				TEP MP 3
Sulphate (SO_4^{2-}) (mg/L)	xxxxx	Daily during release (the first sample must be taken within 2 hours of commencement of release)	*In situ*[1]	TEP MP 1
				TEP MP 2
				TEP MP 3
			Samples require laboratory analysis[2]	TEP MP 1
				TEP MP 2
				TEP MP 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 - 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 TEP MP 2
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
XXXX Creek	TEP RP1	WX	XXXXX	XXXXX	= > XXm^3/sec	Continuous (minimum daily)
XXXX Creek	TEP RP2	WX	XXXXX	XXXXX	= > XXm^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 MP X	CX – XXXX Creek XXX metres downstream of RP X	XXXX	XXXX
TEP MP X	CX - XXXX Gully XXXX metres downstream of RP X	XXXX	XXXX

REPORTING

NOTE: The department will require daily reporting of insitu water quality parameters.

Progress reports will be required to be submitted to the department (i.e. monthly, can be stated as the 5th business day of each month) describing activities and issues from previous month and proposed activities for next month and a final report defining how the objectives of the TEP have been achieved.

A final report is required to be submitted to the report upon completion of all actions, and at least 2 months prior to the end date of the TEP.

'Principal EA Holder Name' will 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).

'Principal EA Holder Name' 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.

'Principal EA Holder Name' 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.

'Principal EA Holder Name' 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.

'Principal EA Holder Name' 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 XXXX Coal Mine, located at Mining Lease XXXX and the *Environmental Protection Act 1994*.

CONDITIONS

NOTE: the TEP applicant should outline the rules they will follow in undertaking the proposed actions. Where the action results in a variation of the EA conditions, the rules should be set with the proposed variation. Example below:

In carrying out this Transitional Environmental Program, 'Client Name (i.e. principal EA holder)' 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 Figure 1 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 (INSERT LOCAL OFFICE NUMBER) 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 XXX% 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 eleases 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 XXX 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 (INSERT LOCAL OFFICE NUMBER) or email to [redacted] of the following information:
- 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).

15 The Transitional Environmental Program holder must provide the administering authority daily during the release of mine affected water, in writing (either via facsimile (INSERT LOCAL OFFICE NUMBER) 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:
- 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.

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 2 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 **DATE** *(i.e. the last action date for discharges in Table 1)*.

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.

Any other conditions that require a response, contingency for matters under this TEP, i.e. if constructing a new regulated structure, design plans will be required to be submitted to the administering authority for approval prior to construction.

NOTES FOR THE CLIENT
These regulatory requirements of Chapter 4 of the *Environmental Protection Regulation 2008*, the Standard Criteria and the requirements of EP Act.

In deciding to accept or refuse a TEP the administering authority is required to consider section 338 of the EP Act, which states:

338 Criteria for deciding draft program
(1) In deciding whether to approve or refuse to approve the draft program or the conditions (if any) of the approval, the administering authority—
(a) must comply with any relevant regulatory requirement; and
(b) subject to paragraph (a), must also consider the following—
(i) the standard criteria;
- *The principles of ecological sustainable development as set out in the 'National Strategy for Ecologically Sustainable Development'.*
- *Any applicable environmental protection policy.*
- *Any applicable Commonwealth, State or local government plans, standards, agreements or requirements.*
- *Any applicable environmental impact study, assessment or report.*
- *The character, resilience and values of the receiving environment.*
- *All submissions made by the applicant and submitters.*
- *The best practice environmental management for activities under any relevant instrument, or proposed instrument, as follows -- a transitional environmental program.*
- *The financial implications of the requirements under an instrument, or proposed instrument, mentioned in paragraph (g) (above) as they would relate to the type of activity or industry carried out, or proposed to be carried out, under the instrument.*
- *The public interest.*
- *Any applicable site management plan.*
- *Any relevant integrated environmental management system or proposed integrated environmental management system.*
- *Any other matter prescribed under a regulation.*

(ii) additional information given in relation to the draft program;
(iii) the views expressed at a conference held in relation to the draft program.

As has been demonstrated a significant consideration for the draft TEP is for the standard criteria. Recommendations in relation to a submission of a draft TEP in line with section 338 and the standard criteria are:
- Provide all relevant stakeholders, which may included Local Government and potentially affected landholders, with a copy of the draft TEP, and allow sufficient time for relevant stakeholders to provide comment for consideration.

- The applicant is required to consider Environmental Protection Policies, the character, resilience and values of the receiving environment, any applicable plans and standards, such as ANECC (aquatic ecosystem guidelines), the Queensland Water Quality Guidelines and 'A study of the cumulative impacts on water quality of mining activities in the Fitzroy River Basin'.

In accordance with the legislation, the submitted TEP must adequately address methods to reduce environmental harm (Section 330) and must meet the content requirements detailed in section 331.

[redacted]

From: Michael Roche [redacted]
Sent: Thursday, 6 January 2011 9:12 PM
To: [redacted] Best Debbie; Brown Damien; [redacted]
Cc: Frances Hayter; Greg Lane; Bradley John; Michael Roche
Subject: RE: Letter from Acting Director-General DERM
Importance: High

Dear Debbie
Many thanks for your letter and the draft TEP template. Let me reiterate what I have happily volunteered to Ministers, to John Bradley, to Ken Smith and to the media: the work of DERM through this difficult time has been excellent and much appreciated.

My approach to John yesterday was in no way a reflection on the good work of DERM to date, but rather a reflection of our concern that there is so much more wet weather to come during this wet season. Our focus is to help our members build in some resilience against further severe wet weather events by taking full advantage of strongly flowing water courses to get rid of the build up of water on site.

QRC has tonight will circulated this material to a selection of key member personnel and QRC advisers. We will try to get their feedback tomorrow with a view to meeting with DERM on Monday to work it through, perhaps early afternoon?

In the meantime, I have a few questions for you:

- why the focus on just Fitzroy mines? While my email to John Bradley of last night referenced the department's response of 24 Novemnber onn Fitzroy conditions, the email made clear our focus was all mines (and gas sites - see below)
- our CSG members also have a strong interest in a streamlined TEP process. Can I ask you to consider how this can be achieved as per my email to John B
- strong feedback from our members is a concern that the shutters will come down on water discharge approvals as local creeks/watercourses stop flowing (for the time being). Either as part of the TEP template or as an associated exercise, we are keen to discuss how we can "anticipate" resumption of water flows (given weather forecasts for the wet season) and so allow continuity of discharge.

Can you confirm DERM availability to meet with QRC during the afternoon of Monday 10 January on the TEP template and the other matters raised in this email?

Regards

Michael

Michael Roche
Chief Executive
Queensland Resources Council

From: [redacted]
Sent: Thursday, 6 January 2011 5:11 PM
To: Michael Roche
Subject: Letter from Acting Director-General DERM

Dear Mr Roche

Please find attached a letter and attachments from the Acting Director-General Debbie Best.

Thanks

[redacted]

From: John Bradley [redacted]
Sent: Thursday, 6 January 2011 11:20 AM
To: Best Debbie
Subject: Re: QRC feedback

That sounds good thanks John B
ps. Phone now dead for a few hours at least - so best contact is email or landline number I gave you earlier [redacted]

Will have charger and mobile back on line by tomorrow tho

On 06/01/2011, at 9:58 AM, [redacted] wrote:

> We are organising an immediate response for them so they can consider
> information and we will organise face to face meeting either this
> afternoon or tomorrow morning. Mike Birchley will be the key contact
> person. I will also forward email to ken Smith and Ministers' Offices
> so they are in loop.
>
> Also,
> I propose the following.
> Damien finishes on Friday 21 January. He stays off line doing the
> Disaster Co-ordinator role until then. Normally Associate DG has this
> role. Damien is currently acting Terry for next week so effectively it
> is only one week. Mike stays in Acting RSD role until we do an EOI for
> the ADG RSD role until role permanently filled. This gives you the
> option of considering the profile.
> Are you okay with this?
> Debbie
>
>
> -----Original Message-----
> From: John Bradley [mailto[redacted]
> Sent: Thursday, 6 January 2011 9:11 AM
> To: Best Debbie
> Cc: Brown Damien; [redacted] Evans Mark; john.bradley[redacted]
> Subject: QRC feedback
>
> Debbie and co
>
> I spoke to Michael Roche. (I should also say firstly that he was very
> complimentary about the accessibility and support from DERM in recent
> weeks.)
>
> I said to him that:
>
> 1) we were happy to work to progress a simplified TEP application - as
> simple as a one pager where the company was seeking dispensation over
> only limited parameters (eg. Salt and pH) and the rest of EA remained
> in force.
>
> 2) I said we were also conscious of a) the need for safeguarding
> environmental protection, b) other stakeholders will scrutinize
> closely and c) just because the process may be simplified wouldn't
> absolve companies of the need to confront their obligation to
> understand their env risk (eg.stored water) and manage it.
>
> 3) I said we had a preference for a TEP application - although
> simplified to a target of one page - so that companies are still
> warranting that they will meet their obligations, rather than an
> administrative letter of comfort. He seemed unaware of past work on a
> template TEP and asked me if it had been sent to QRC or companies and
> I said I thought it had but wasn't sure.
>
> 4) I said the straw man we had been discussing included:
>

> A) simple format with target of one page reflecting minimal parameters
> seeking dispensation
>
> B) authority to discharge up to max microsiemens while discharge would
> represent maximum of [say 2% - to be confirmed] of receiving water
> flow
>
> C) tolerance band around pH in discharge water may need to be
> specified on same dilution principle
>
> D) EA will be complied with in relation to acute toxicity thresholds (
> eg. Heavy metals etc)
>
> E) downstream water monitoring/auditing to be undertaken and to
> confirm compliance with above including that salt levels remain below
> [say 400 microsiemens - to be confirmed]
>
> F) discharge to cease if department advises it has reasonable concern
> of risk of environmental harm (or whatever you've been using in others
> Mark...)
>
> G) Applicant to be in good order in compliance with EA, including
> financial surety being paid up.
>
> He was positive. Michael said this went a long way to meeting his
> objectives. We agreed the best way to progress would be for us to
> "write it up" and get it over to he and Frances ASAP today. Officers
> can then either discuss by phone or in person (suggest you give him a
> key contact at one of your level).
>
> We accepted this would happen on a confidential and without prejudice
> basis and he would want to test it with some senior company operators
> with good environmental managers for feedback.
>
> Provided you are still comfortable with this approach - could you pls
> work something up along these lines using outline above as a
> guide/shell. Provided what we send is in this vein, you can just
> copy me in when it goes. If you need to ring give me a call,
> otherwise happy to proceed.
>
> Debbie can you pls forward this to Ken Smith and ministers Robertson
> and Jones and keep their offices in the loop as this issue progresses?
> This is obviously a potentially public issue as the QRC was reported
> in media last night (612 4qr) as saying the process to allow mines to
> discharge needed to be simplified....
>
> Thanks a lot
>
> John B
>
>
>
> +--+
> Think B4U Print
> 1 ream of paper = 6% of a tree and 5.4kg CO2 in the atmosphere
> 3 sheets of A4 paper = 1 litre of water
> +--+
>
>

Requirements to meet → Broad rules - conservative
→ no letter of comfort
→ template - they warrant only discharge when less than X % of flow
→ cap on EC flow
→ assurance on toxicity - stay within EA conditions
included some conditions -
· stop of dept tells
· downstream flows 400 ml.

[redacted]

From: Bradley John
Sent: Thursday, 6 January 2011 7:16 AM
To: Best Debbie
Subject: Fw: Our discussion in the morning
Importance: High
Attachments: CTS21349-10.pdf

Debbie

[redacted]

See message from MR below - This is what he wants to talk about - Can I pls discuss this with your or someone senior conversant with the technical consequences of michael's request just before 8 am - say 745 am?

To make things harder - my phone battery is dead and I won't be online til later today - can you pls advise by email to this work AND personal email address ([redacted] as to best number to ring? (I will call you on another line but if you need me by phone - [redacted])

I suspect this will lead to a need for urgent DERM /QRC meeting probably today - but Michael will be calling me to see what direction our officers will be given to what is a fairly exceptional change in approach (which they will see as justified by a substantial change in circumstances.)

The obvious question I will ask him is *why* companies shouldn't be expected to lodge a TEP (importance of them warranting their own assessment and management of risks, etc)...but we won't be able to rely on that approach (ie.Questioning need)alone.

Th essence of his question is aren't there some "no brainer" conditions we can set on large volume releases into large volume receiving waters - just as we have model conditions at present which are standardized.??

Thanks
John b

From: Michael Roche [redacted]
Sent: Wednesday, January 05, 2011 08:59 PM
To: Bradley John
Subject: Our discussion in the morning

[redacted]

Dear John

Thanks for agreeing to chat in the morning.

I will reference the attached letter on the Fitzroy model conditions received on the 24th of November from DERM.
The key paragraph is the last on the third page before the signature.

Key points fromn QRC members' viewpoint re a possible approach to water discharge are as follows:

- DERM response to TEP applications has been good, with very good feedback from Ensham just this afternoon (see below).
- However, not all companies are created equal in their capacity and knowledge of this TEP process, which does not mean that they are any less deserving of obtaining a TEP - they may just not have ever experienced the need for one (instance Cockatoo Coal's slow response re Baralaba). This

obviously impacts on the time taken to issue a TEP and a related resource burden on DERM.

- To take best 'advantage' of the current flood situation, DERM could consider issuing an open invitation (see 'letter of comfort' concept in atached letter of 24 November) which invites all companies (coal and gas) to discharge as much water as possible within as short a period of time as possible.
- Clearly there would need to be some high level water quality requirements (but at a level which reflects the sheer volume of water coming down the various rivers and the dilution factor such as evidenced in Ensham's revised EC levels.
- There would also have to be some sort of nominated time period for releases to occur - most likely based on the volume of water coming down the rivers.
- There would also need to be acceptance of a monitoring regime by sites.
- In other words - I think we are looking for a letter from DERM to all sites which in effect contains a generic TEP.

Look forward to discussing in the morning.

Regards

Michael

From: [redacted]
Sent: Wednesday, 24 November 2010 11:21 AM
To: Frances Hayter
Cc: [redacted]
Subject: Fitzroy River Basin Model Conditions

<<CTS21349-10.pdf>>
Good morning Frances
Please see attached Letter re: Fitzroy River Basin Model Conditions. Approved by Anne Lenz on behalf of [redacted]
I will send the hardcopy to you today.
Kind Regards
[redacted]

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+------------------------------------------------------------+
Think B4U Print
1 ream of paper = 6% of a tree and 5.4kg CO2 in the atmosphere
3 sheets of A4 paper = 1 litre of water
+------------------------------------------------------------+
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Queensland Government

File/Ref CTS 21349/10

Department of
Environment and Resource
Management

24 November 2010

Ms Frances Hayter
Director
Environment and Social Policy
Queensland Resources Council
Level 13
33 Mary Street
BRISBANE QLD 4000

Dear Frances

I refer to the work that the Department of Environment and Resource Management and the Queensland Resources Council have jointly undertaken with respect to the Fitzroy River Basin Model Conditions for Mine Water Management.

Enclosed are two documents - the agreed record of the workshop with the QRC, and the model conditions with amendments that DERM intends to make included in "track changes".

The following is a summary of the changes that have been made to the model conditions in reference to the particular issues identified in the Final Meeting Notes:

(a) Notification timeframes

Condition W12 has been amended as follows:

The authority 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 of the following information:

(b) Dilutions and flow rates

Condition W9 and Table 4 have been amended as a result of consultation with Dr Ian Ramsay of Environment and Natural Resource Science who attended the workshop.

Level 7
400 George Street
Brisbane Queensland
GPO Box 2454
Brisbane Qld 4001
Telephone + 61 7 3330 [redacted]
Facsimile + 61 7 3330 [redacted]
Website www.derm.qld.gov.au
ABN 46 640 294 485

The modified explanations to Table 4 and the amendments to Table 4 and condition W9 are believed by DERM to satisfactorily address the issues raised by QRC for the purposes of the model conditions. Condition W9 has been amended as follows:

The volume released through the release point(s) must not exceed the maximum allowable flow at any time determined by multiplying the recorded receiving water flow at the corresponding gauging station in Table 4 with the corresponding percentages for maximum release in Table 4.

As a matter of principle there can not be releases where there is no flow in a river. However the revised provisions give greater flexibility with respect to the calculation of the proportion of that flow that can be taken up by a mine discharge.

(c) Suspended solid limits

Table 2 has been amended to allow for the monitoring of turbidity as a measure of compliance where there is evidence of a correlation between turbidity and suspended solids.

The modified requirements of Table 2 are believed by DERM to satisfactorily address the issues raised by QRC for the purposes of the model conditions.

(d) End of pipe water quality limits

In essence the QRC position on this came down to a request that the model conditions provide for mixing zones in the rivers as a means of achieving water quality outcomes.

No changes have been made to the model conditions in relation to this matter. On review DERM considers that it is open to individual sites to make a case based on toxicity assessment at the end of pipe to deal with this issue.

(e) Distinctions between different types of water releases

QRC provided a detailed paper about ways in which it may be possible to define different types of water on mine sites – worked water and non-worked water. The paper sought to differentiate water that has been affected by mining activities from water that was unaffected.

This is a complex issue that DERM does not believe can be resolved by simple variations to the model conditions. DERM has gone some way towards dealing with part of this matter by including in the explanation to Table 1 some guidance about the exclusion as release points of sediment traps and dams that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan.

Revision of the way in which water on a mine site is classified and regulated should await the further review of the model conditions in the second half of 2011.

It is the responsibility of individual mines to be planning for the management of water in a timely fashion and with sufficient foresight to anticipate what impacts the accumulation and discharge of water may have. There are a range of measures that mines can take through amendments to environmental authorities and Transitional Environmental Programs that can be used to ensure that their operations are compliant with the *Environmental Protection Act 1994*.

DERM has recently approved a Transitional Environmental Program for Xstrata Coal's Rolleston Mine that goes further than the model conditions and under particular circumstances allows that mine to discharge water held on site thereby providing greater

capacity for the forthcoming wet season. DERM has had discussions with both Macarthur Coal and BMA about a similar approach for their mines. DERM will continue to respond to these issues in a timely and practical way.

I am aware that there is often a reluctance to go down the path of using a Transitional Environmental Program. It is nevertheless an effective lawful mechanism that is available to companies that may have difficult circumstances to manage, and wish to seek some dispensation in the way in which the normal environmental authority conditions apply.

With respect to these revised conditions taking effect, DERM intends to issue a 'letter of comfort' for the notification timeframes in order to minimise amendment application processes for this minor change. This will remain in effect until such time as a company makes an amendment application for other matters. The remaining changes to the model conditions will require evidence based applications and therefore will require an amendment application to be made in the normal way, that is it will be for each company to decide when/if they wish to have any changes made via an application for an amendment to their environmental authority.

Yours sincerely

[redacted]

Acting Assistant Director-General
Environment and Natural Resource Regulation

Encl.

Government continues to work with mines affected by extreme flooding

The Bligh Government is continuing to work closely with mines across Queensland impacted by flooding.

Treasurer and Acting Climate Change and Sustainability Minister Andrew Fraser said around 40 mines are expected to be affected by the flooding and each mine is being individually case managed.

"Protecting the quality of the water for the communities surrounding flooding catchments is the priority," Mr Fraser said.

"That is why we are working closely with the mines to ensure authorised dewatering activities go ahead while there are high volumes of water to dilute the discharge and minimise the risk of environmental impact.

"When we foresaw that this was going to be one of the worst wet seasons on record, we worked closely with each individual mine to make sure they were well prepared to meet their environmental obligations.

"Any discharges that have occurred outside of licence conditions are being investigated by the Department of Environment and Resource Management (DERM) and appropriate action will be taken where necessary."

Mr Fraser said since 1 December, DERM has issued 11 Transitional Environmental Programs (TEPs) to coal mines to allow them to safely discharge water.

"DERM has ensured that the TEPs are strictly conditioned to protect the environment and has worked fast to assist mines, taking on average, less than 4 days to process the TEPs which provide the environmental oversight for dealing with the extra water," he said.

Mines Minister Stephen Robertson said the State's growing coal seam gas industry has so far weathered the state's widespread rain and flooding.

Only one CSG company -- Australia Pacific Liquid Natural Gas (APLNG) – has been issued with a TEP for its operation at Spring Gully, north-east of Roma. However, the company advise they have not yet needed to activate any release.

"The minimal impact of the floods on CSG operations and the demonstrated ability of companies to handle these extreme weather conditions are a positive reflection of the rigorous environmental and safety conditions that we have put in place for CSG operations in Queensland," Mr Robertson said.

"The Department is aware of six potential breaches of environmental approvals as a result of the flood waters and heavy rain. All incidents will be investigated, but as with the cases at coal mines, the high volume of water in the systems has greatly reduced any risk of environmental impact.

"DERM is monitoring the situation and will undertake confirmatory testing on the sites as soon as access is possible. When the weather permits, aerial surveys and monitoring through satellite imagery will also occur.

"It's pleasing to see that there have been no spills from brine dams associated with CSG operations.

"We will continue to closely monitor the effects further heavy rain might have on CSG operations across the state and companies will continue to be required to report any breaches to government."

Coal mines issued with Transitional Environmental Programs since 1 December are:
Fitzroy Catchment: Ensham (Ensham Resources), Poitrel (BHP Mitsui), South Walker (BHP Mitsui), Isaac Plains (Vale), Cook (Cook Resource Mining), Callide (Anglo Coal), Moranbah North (Anglo Coal), Minerva (Yancoal Australia), Kestral (Rio Tinto), Carborough Downs (Vale)
Burdekin Catchment: Newlands (Xstrata)

Media Contact: [redacted]

Meeting Notes - Final

DERM / QRC Meeting

Model Water Conditions (3 November 2010)

Discussion of Specific Issues

a) Notification timeframes

This item related to model condition W12 which outlined the requirements for the initial notification timeframe and content requirements. Industry representatives indicated that the specified limit of 'no later than 6 hours of having commenced releasing mine affected water' was impractical due to the following reasons:

- Discharges often from overflowing rather than from turning on a valve (eg, from dam spillway or stormwater) – therefore the timing of the discharge not necessarily during business hours or immediately known.. There are also many types of minor 'passive' releases which are not necessarily located at authorised discharge points [as discussed in relation to item (e)].
- Size of some mine sites – some mines are extensive in area and can take best part of an hour or more to drive from one end to the other. In rainfall events, some roads may be inaccessible and therefore total time from commencement of discharge to notification time is likely to be more than 6 hours. In addition, there may be health and safety reasons during or just after severe storm events when personnel either cannot or should not access particular locations (eg, if there has been a landslip).
- When rainfall events commence overnight, this compromises ability to notify within 6 hours given the shortage of appropriately qualified or authorised staff to make a decision whether the condition is triggered or to prepare and issue correspondence.
- It is often impracticable to ascertain all of the content requirements for the notice immediately, for example, it may be difficult to ascertain estimated volume in poor lighting at night, it may be difficult to predict a release cessation timeframe for an overflow when it is uncertain whether a rainfall event will stop, ease or increase and impacts are often not immediately known. It has often not been the experience that DERM officers have been satisfied with initial 'rough estimates' and companies are concerned about appearing to give false and misleading information if they turn out to be incorrect in their forecasts of cessation time (due to uncertainty of forecast), volume or impacts. In addition, the term 'verification' in the condition appears to have led some DERM officers to take a stringent view of the content requirements.

Industry commented that the 6 hour requirement was perceived to be driven by a requirement that the Department receive notification about the discharge in order to 'meet the news cycle and brief the Minister'.

It was clarified that industry did not mean by this that they expected someone else to notify DERM first, but rather, that a 6 hour requirement is not practicable in terms of the content requirements.

Industry also emphasised that this is not a condition about notification of breaches or serious/material environmental harm, but rather, would normally apply to authorised releases. It is seen as unjustifiable to impose a more stringent period of notification for authorised releases, than in relation to the normal standard for notification of breaches or serious/material environmental harm.

Solutions Proposed:

- Industry representatives requested a 24 hour notification timeframe
- Another suggestion was to encourage a staged approach, including:
    - 1st stage :Notification within 6 hours, but without any supporting information [i.e. items for which information is known within 6 hours
    - 2nd stage: Completed notification within 24 hours complete with supporting information [i.e. items W12 a) through to f)]
- Another suggestion was for a 12 hours initial notification period.
- Leaving aside the question of timeframe, it was suggested that the potential for unnecessary over-notification could be minimised by more clearly defining the scope of which releases need to be notified and removing the term 'verification'. Although not included in the model conditions, the actual conditions received by many mines include an ambiguous definition of 'mine water' described as 'process water and contaminated water'. Potentially, this could include a greater range of types of water releases than intended [discussed in more detail at item (e) of the agenda].

Action agreed - there was agreement that DERM would give consideration to a 12 hour timeframe for reporting. The question about definitions was 'parked' until item (e) of the agenda was reached.

- It is noted that use of the word 'verification' in condition W12 has led some DERM officers and industry representatives to be particularly concerned about the extent of information required, particularly in relation to item (f). *'any details (including available data) regarding likely impacts on the receiving water (s).'*

b) Dilutions and flow rates

This issue is primarily about condition W9 of the model conditions: 'Contaminant release flow must not exceed 20% of receiving water flow rate.'

Ian Ramsay explained that, at the time the original model conditions were prepared, there was insufficient scientific data about what rate would be reasonable as a baseline (or in individual circumstances). DERM's intention had been for individual mines to negotiate appropriate flow rates, based on their particular circumstances. The intention to allow for variation in the 20% rate was supposed to be covered by the explanatory notes before Table 4.

Industry commented that this did not appear to have been the way that condition W9 was addressed in practice.

Industry representatives outlined their concern that they were retaining excessive volumes of good quality water given the restrictions on discharge dilutions with the receiving water flows, because the conditions prevent mines from releasing that water in a timely way during the current 'window of opportunity' before the wet season is fully underway, as natural flow rates are not sufficiently high yet. If the

industry cannot take the current 'window of opportunity', then day by day, the quality of the accumulating water is gradually deteriorating. By the time that natural flow rates are sufficiently high for releases to be permitted under the conditions, there will be a very large volume of water that will be released and the quality will be significantly worse.

It was confirmed that this is seen as an industry-wide issue and there were comments that nearly every mine is concerned about this issue.

Jon Womersley suggested that each mine should negotiate different flow rates on a case by case basis. One industry representative commented that they had been told that the 20% figure was a Cabinet decision and could not be varied, notwithstanding that the DERM officers involved said that they accepted that the scientific data provided would otherwise have been relevant.

Other industry representatives explained that negotiation of upstream natural flow rates is particularly difficult if a mine happens to be located at the top of a catchment..

Action agreed – there was agreement to reposition the explanatory notes in the condition (extended W9) to outline the case specific requirements when a 1:4 dilution cannot be achieved. It was proposed to relocate the paragraph within the existing explanatory note #4 *'under certain circumstances.....'*. There was discussion on how this would be reviewed on a case by case negotiation basis, although each and every submission would need to be supported by a characterisation of the quality of the water to be discharged, in particular the electrical conductivity values.

c) Suspended solid limits

Industry representatives outlined concern over the requirements in Table 2 (Contaminant Release Limits) for suspended solids. It is understood that analytical tests for Suspended Solids have a longer laboratory turnaround time given the nature of the test and currently there is no reliable field based test to measure suspended solids.

Industry representatives concerned over inability to ensure compliance prior to discharge. This is because the contaminant release point is at 'end of pipe' and given the restrictions associated with turnaround time and field methods, there is no way to ensure prior to discharge that the suspended solids limit is met.

It was confirmed that this is seen as an industry-wide issue and there were comments that nearly every mine is concerned about this issue.

Solutions proposed included:

- DERM suggested looking at relationship between suspended solids results and turbidity and internally correlating results so that an empirical relationship is developed between two parameters for particular storages; and
- Introduce turbidity limit in place of suspended solids limit; and
- Measure suspended solids concentration, but not have this as part of the Contaminant Release Limits.

Action agreed – that DERM would give consideration to swapping turbidity for suspended solids, so that in table 2 'suspended solids' is 'n/a'. (Industry had no objection to continuing to monitor for suspended solids, provided that this is not a table 2 parameter preventing release.)

d) End of pipe water quality limits

Concern expressed over absence of recognised 'mixing zones' for discharges.

High EC water is being accumulated given restriction on mixing zones.

Preferred DERM position is:

- 'no mixing zone' for acute toxic contaminants;
- No amendment to the model conditions regarding a mixing zone, but that individual mines may still propose a case by case mixing zone, other than for acute toxic contaminants.

Solutions proposed included:

- Review case by case for sites that require mixing zone;
- DERM to provide guidance on toxicity assessment for end of pipe; and
- Consider use of diffusers.
- There was some suggestion by DERM that sites may create their own internal mixing zones, prior to 'end of pipe' discharge. Industry representatives responded that the low water quality parameter for EC means that some mines have had to mix salty water with fresh water on site to create adequate internal dilution, that is, an on-site mixing zone. A number of representatives commented that this leads to: (a) very large storages involving significant additional disturbance and the need for additional mining leases (infrastructure); and (b) high use of fresh water (such as overland flow), which could perhaps be more efficiently used for other purposes. DERM (Ed Donahue) noted the difficulties this is likely to create for water resource management, and that this is the reason for the current exemption for mining EAs under WRPs. There was some suggestion that this could compromise the new Water Resource Plan (due out soon) and also that ultimately applications to harvest fresh water could lead to forced relinquishment of water allocations (from pipelines). QRC suggested that this is an issue for DERM to resolve in a policy sense, between its environment arm and its water resources arm.

Action agreed – that DERM would give consideration to the issues raised and any possible solution.

e) Distinctions between different types of water releases

Industry provided some pre-prepared discussion notes on this matter (refer to these)

Industry concern over:

- confusion in industry and government over existing definitions, and that it would be preferred to have a demarcation with definitions of worked water and other waters;
- need to separate management of authorised releases versus waterflows managed under an erosion and sediment control plan
- too many structures being recognised as a contaminant release point within a mine's catchment. The majority of these releases could be managed via the Erosion and Sediment Control Plan if the water meets standards/outcomes

defined in the Erosion and Sediment Control Plan. The remaining discharge points need separate management that would be specified in Table 1.

- If each minor release (eg, sumps, levees, seepages, 'true' sediment dams) are required to be monitored under Table 2, the unintended consequence would be for mines to consolidate these items into larger storages, but it is better management to have smaller storages and releases.

Action agreed – that DERM would give consideration to the issues raised and propose a solution having:

- worked through QRC discussion notes and come back to QRC with response
- developed a ready reckoner of definitions to avoid confusion around terminology e.g. Passive versus Active, Mine Affected Water, Worked Water
- provided undertaking to provide communication to staff on the issue of 'over-regulating/ over-prescribing' too many discharge points on each and every structure. Instead that the intent of the authorised release points was only to cover controlled discharges, and it was accepted in discussion that this included spillways associated with controlled releases. In particular, the original practical intention was that 'true' sediment dams were intended to function under ESCPs, rather than under authorised discharge points and associated tables.
- Consideration should be given to the requirements for ESCPs, in particular, that sediment dams are properly located, cleaned out and properly maintained.

6. Arrangements for Implementing changes to the Model Conditions

DERM committed to providing response to QRC by Friday 11 November 2010. DERM indicated that it would advise QRC if an extra week was needed to prepare the response.

QRC invited DERM to continue to discuss any questions with QRC in the meantime, for example, if further information would be of assistance, or to discuss terminology and definitions.

7. Arrangements for review of Model Conditions post 2011 wet season

DERM indicated that a review of the model conditions would be undertaken following the 2011 wet season once more monitoring data was available and a review of performance against conditions was completed. DERM indicated that it would develop and agree with QRC on a project plan (including terms of reference) for the conduct of that review, and that this would be done mid 2011.

DERM invited the industry to provide interim results in about March/April 2011.

Final Model Water Conditions for Coal Mines in the Fitzroy Basin

Note:
Explanatory notes are in green. DELETE prior to issue of EA.
Insertions required by applicants and or the administering authority are in blue. DELETE prior to issue.

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 in Figure 1 <this would be a plan or plans locating all monitoring (water quality and flow) and release points> attached to this environmental authority.

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

EXPLANATORY NOTES -- Determining Contaminant Release Points:

Contaminant release points should be specified in Table 1 where they represent a potential source of water contaminated by the mining activity. Release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage run-off containing sediment only that is not likely to contain contaminants or have properties that would cause environmental harm, do not need to be separately identified in Table 1.

Release Point (RP)	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Contaminant Source and Location	Monitoring Point	Receiving waters description
RP 1	XXXX	XXXX	e.g. Stormwater Dam Spillway Overflow	Dam Spillway	Wet Creek
RP 2	XXXX	XXXX	e.g. Dam overflow pipe	Sampling Tap on pipe where the pipe enters Sandy Creek	Sandy Creek

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)

EXPLANATORY NOTES -- Setting interim release limits for EC:

Option (c) -- To negotiate a higher value for end-of-pipe EC limits, it will be necessary to have sufficient background water quality data from historical flow events, ideally above each discharge point. This data should be used to demonstrate that there is sufficient "assimilative capacity" in receiving waters to receive mine discharges of the proposed higher EC levels and maximum flows specified in condition W9. In other words, the limits should be such that the predicted in-stream water quality downstream will always remain below 1000 µS/cm EC (for example, using all historical data and assumptions of complete dilution). Consideration should also be given to the potential impact on any drinking water reservoirs immediately downstream of the discharge and the need to keep in-stream water quality below 750 µS/cm.

Option (d) -- To negotiate a stepped approach to achieve Option (b) or (c) it will be necessary to predict the likely downstream receiving water EC as a result of the proposed limits for each step proposed. It will be necessary to

have sufficient background water quality data from historical flow events, ideally for each discharge point. The data should be used to demonstrate that there is sufficient assimilative capacity to receive mine discharges of the proposed higher EC levels and maximum flows specified in condition W9. The limits should be such that predicted the in-stream water quality downstream is not likely to result in environmental harm from high salinity impacts. Ideally, in-stream EC s should remain below 1000 µS/cm EC (for example, using all historical data and assumptions of complete dilution). Where in-stream EC is likely to be above 1000 µS/cm then a case should be put forward as to why this is required and comments about the likelihood and potential extent of impacts. Consideration should also be given to the potential impact on any drinking water reservoirs immediately downstream of the discharge and the need to keep in-stream water quality below 750 µS/cm.

Quality Characteristic	Interim Release Limits for all mines (limits to apply from the date of issue)	Future Release Limits from XX/XX/XXXX (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	Comment
Electrical conductivity (uS/cm)	Hierarchy for determining limits in priority order starting with (a): (a) for mines that do not release contaminants to waters - no conditions are required for release authorisation, then conditions W2, to W15 inclusive, W18, W19 and W43 can be deleted. (b) Current limit for those mine sites not under a TEP or 1500 EC (Maximum)* which ever is lower or (c) a negotiated higher limit value that does not result in the contaminant release exceeding a maximum 1000 EC in the receiving waters and where the mine site demonstrates to DERM that it is unreasonable and impractical to immediately comply with the 1500 EC limit in (b) above	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. (Must have natural flow i.e. the 20th percentile flow trigger and achieve a 1:4 dilution OR for mines in the upper catchments must have natural flow i.e. the 20th percentile flow trigger. OR Drinking water protection: An end-of-pipe limit to achieve 0 to 750 EC in the	Daily during release (the first sample must be taken within 2 hours of commencement of release)	

	and supported by a business case and commitment to ongoing environmental improvement on the mine site and with nominated timeframes. *Note: If the current limit is lower than a limit determined as above then the current limit would initially apply.* (d) for those other mines which cannot immediately achieve (b) or (c) above a stepped approach within the interim period ending 2011 to achieve (b) or (c) will be required. *Note: some of these mines may already be under an approved TEP and EC limits and compliance timeframes in the TEP need to be taken into account with the stepped approach.* To support a stepped approach DERM will require a business case and commitment to ongoing environmental improvement on the mine site to ensure that all reasonable and practicable measures are being/will be taken to prevent and/or minimise environmental harm.	receiving waters. (Must have natural flow, either 1:4 dilution and only release where a 20th percentile flow trigger occurs; OR for mines in the upper catchment must have a natural flow i.e. 20th percentile trigger.		
pH (pH Unit)	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)	Current limit or limit derived from suspended solids limit and demonstrated correlation between turbidity to suspended solids historical monitoring data for dam water*	Limit derived from suspended solids limit and demonstrated correlation of turbidity to suspended solids historical monitoring data for dam water*	Daily during release* (first sample within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impacts and can provide instantaneous results.
Suspended Solids (mg/L)	Current Limit *	Limit to be determined based on receiving water reference data and achievable best practice sedimentation control and treatment*	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)	Current limit or 1000 (maximum) which ever is the lower	250 (Maximum) (Protection of drinking water Environmental Value) OR 1000 (Maximum) (Protection of irrigation environmental value)	Daily during release* (first sample within 2 hours of commencement of release)	Drinking water environmental values from NHMRC 2006 guidelines OR ANZECC & ARMCANZ 2000 stock water quality guidelines.

*Note: *Limit for suspended solids can be omitted if turbidity limit is included. Limit for turbidity not required if suspended solids limit included. Both indicators should be measured in all cases..*

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 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 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*	
Include additional contaminants as required	Include additional contaminants as required		

Table 3 (Release Contaminant Trigger Investigation Levels) Potential Contaminants

EXPLANATORY NOTES – Table 3 Potential Contaminants:

The quality characteristics listed below should be assessed on a site by site basis by each mine prior to finalisation of amendment applications. Based on this assessment, the quality characteristic should be either disregarded if below trigger levels; or included as priority contaminants in Table 3 if above trigger levels. Assessment should involve comparison of representative data from dams that have historically been discharged or likely to be discharged from contaminant release points in Table 1. Data may include historical results or sampling undertaken for this specific purpose. The intent here is that not all dams on site would need to be sampled but those that would make up the majority of water in dams with release points. It could also be demonstrated based on existing water quality information that the water source and relative water quality of some dam are the same, in which case such dams may not need to be sampled individually. For metals and metalloids, trigger levels apply if dissolved results exceed trigger levels. However, total (unfiltered) results for metals and metalloids can be used to disregard a characteristic for inclusion in Table 3. Terms include SMD – slightly moderately disturbed level of protection, guideline - refers ANZECC & ARMCANZ (2000), LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical methods required to achieve LOR.

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level
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*

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.

. 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 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)

EXPLANATORY NOTES -- Table 4

Gauging station description:

The intent here is that every release point in Table 1 is associated with a gauging station that measures flow upstream of the discharge point. More than one discharge point may be associated with the same gauging station. The gauging station should be at a minimum distance from the discharge point such that water flow under trigger flow events will not significantly diminish by the time it reaches the discharge point. The location of the gauging station should ideally be such that it is not significantly affected by other upstream point source releases or times of discharge are limited to periods of "natural" flow.

Under certain circumstances it may be appropriate to have a downstream gauging station in addition to or in replace of an upstream gauging station. The location should ideally not be affected by the discharge (e.g. be measured off the main waterway). The need for this must be demonstrated on a case by case basis to show why an upstream gauging station is insufficient. This may be the case when mines are located in the upper parts of catchments or near the downstream confluence or a major waterway. Similarly, the gauging station should be at a distance from the discharge point such that water flow during triggered flow events will not significantly diminish between the discharge point and the measuring point (or the confluence with the creek being measured). For downstream flow triggers, some changes to calculation for flow triggers and maximum release flows would typically be required based on the relative sizes of the waterways involved.

Minimum Flow Trigger:

The intent for the minimum flow trigger is that the times of discharge are limited to times of natural flow events only (for ephemeral receiving waters). Ideally, the flow trigger should be chosen such that it represents, for example, an 80th percentile average daily flow (in m^3/s) of a minimum ten year period. This or a similar approach should aim to eliminate discharges during "low flow" periods. The maximum discharge volume can then be calculated by dividing the upstream flow trigger by 4. The intent here is that a minimum dilution 1:4 is always maintained (20% of downstream flow). In some situations, this will not allow the mine to release sufficient quantities of water. Therefore, it is possible to propose more than one flow trigger. For example, a 40th percentile average daily flow trigger may also be used in addition to the initial 20th percentile flow trigger such that above the 40th percentile average daily flow trigger a higher release volume will be allowed during periods of higher in-stream flow (while still maintaining a 1:4 dilution ratio).

Comment [r1]: This number has caused a lot of confusion. The reality is that the number for most mines is close to high flow events which 80th percentile is more representative of. It is just an example anyway.

The expectation is that where flow gauging data is available, it is used to calculate flow triggers. Where gauging data is not available or is insufficient, flow triggers should be based on runoff/stream flow estimates using appropriate hydrological calculations or models and known catchment area, rainfall estimations etc.

Under certain circumstances, such as where a mine is in the upper part of the catchment, achieving a 1:4 dilution with receiving waters as described above may not allow the mine to discharge sufficient volumes. In such a case, a lower flow trigger must still be proposed but the discharge volume will also need to be linked to some downstream flow measure with sufficient dilution (ideally much greater than 1:4 or 20%). The minimum flow trigger would typically be based on a proportional catchment area between the local receiving catchment and the larger downstream catchment. In this case, an additional line is added in Table 4. Note that some flow must be measured in the local stream to permit release. The need for this must be demonstrated on a case by case basis and be supported by various flow calculations to demonstrate feasibility and show minimal environmental impacts.

Other special cases include discharges to creeks below water reservoirs or dams and these should be dealt with on a case by case basis to address the intent described above.

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	Percentage for maximum release	Flow recording Frequency
Wet Creek		Gauging station 1	XXXX	XXXX	The minimum flow trigger should limit discharge to periods outside of no or low natural flow. The volume of flow can be determined by height of water or flow. The actual flow must be a quantifiable measure. Example: > or = 5 m^3/sec	20% of flow in receiving water	Continuous (minimum daily)

Downstream Larger Creek (Delete if not in upper catchment)*	Gauging station 2	XXXX	XXXX	To be included for upper catchment mines only. The minimum flow trigger should limit discharge to periods outside of no or low natural flow. The volume of flow can be determined by height of water or flow. The actual flow must be a quantifiable measure. Example: > or = 5 m^3/sec	XX% of flow in receiving water (value will be typically much less than 20%)

Note: Flow must also be measured at the Wet Creek gauging station for release to be permitted based on this flow trigger.

W9 The volume released through the release point(s) must not exceed the maximum allowable flow at any time determined by multiplying the recorded receiving water flow at the corresponding gauging station in Table 4 with the corresponding percentages for maximum release in Table 4.

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 (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 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 of cessation of a release) of the cessation of a release notified under Condition W12 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 Agency 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	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Monitoring Location	Frequency of Monitoring
XXXX	XXXX	XXXX	To be negotiated- will depend on the individual storage structure volume. This will deal with stratification – depth profiles and be appropriate to in situ quality characteristics.	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)	250 (Protection of drinking water Environmental Value) OR 1000 (Protection of irrigation environmental value)		

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

EXPLANATORY NOTES – Selection of monitoring sites:

The intent here is that that each discharge point has both an upstream and downstream monitoring point associated with it. These monitoring points should be located as close as practicable to the release point and the distances should be defined in the footnotes in Table 8. The location of flow monitoring points should also be considered in selecting upstream monitoring points. Other considerations include accessibility, particularly during wet weather conditions.

Monitoring Points	Receiving Waters Location Description	Latitude or northing (GDA94)	Longitude or easting (GDA94)
Upstream Background Monitoring Points			
Monitoring Point XX	XXXX Creek XX metres upstream of RP XX	XXXX	XXXX
Monitoring Point XX	XXXX Creek XX metres upstream of RP XX	XXXX	XXXX
Downstream Monitoring Points			

Monitoring Point XX	XXXX Creek XX metres downstream of RP XX	XXXX	XXXX
Monitoring Point XX	XXXX Creek XX metres downstream of RP XX	XXXX	XXXX

Notes:

a) The upstream monitoring point should be within Xkm the release point.

b) the downstream point should not be greater than Xm from the release point.

c) The data from background monitoring points must not be used where they are effected 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 down stream 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 down stream 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)

EXPLANATORY NOTES -- Designing a REMP:

The intent here is that the REMP will be designed for specific requirements of the mine's releases and the receiving environment. The monitoring within the REMP should not be the primary basis for compliance but will be essential for providing supporting information when incidents may occur or for deriving future license limits. The focus should also be on reporting against water quality objectives for relevant waterways affected by the discharge and be on a longer term basis compared to compliance reporting. The intent is that the REMP is to provide condition assessment of near-field areas, ie. local areas likely to be significantly affected by the mine's releases. To do this, it is necessary that monitoring data is collected during times of natural flow outside of times of release in addition to time of release. The REMP is likely to include monitoring sites and indicators in addition to what is presented in the tables of these conditions. The intent is that far-field areas and cumulative impacts will be monitored as part of regional monitoring described in Condition W43 and assist in providing regional condition assessment and regionally specific reference information.

W20 A REMP must be developed and implemented by XX/XX/XXXX (WITHIN 3 MONTHS OF THE DATE OF ISSUE) 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 XX and connected waterways within XX (e.g. Xkm) 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 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 conditions 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

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.

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.

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

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 <name adjoining mine> in accordance with the conditions of this environmental authority. The volume, pH and electrical conductivity of water transferred to {*name adjoining mine*} 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 **W23, W24, 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 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

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 Environment Protection Agency 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 XX hour of each other where possible; and

d) carried out on representative samples.

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; 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.

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 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

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 Natural Resources and Water *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 XX/XX/XXXX (WITHIN 3 MONTHS OF THE DATE OF ISSUE) 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;
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 storm water.

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

EXPLANATORY NOTES -- Dam conditions:

Note: Conditions W41 and W42 to be removed if already conditioned in the authority.

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 XX 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.

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.