



Coastwatchers

Eurobodalla's voice for nature

Mr Brian Elton
Independent Chairperson
Dargues Reef Community Consultative Committee

Dargues Mine Water Management Plan - Operational Phase

Dear Brian

Thank you for distributing the plan for comment. Coastwatchers is pleased to note the emphasis on measures designed to minimise pollution of surface waters by diverting clean water from disturbed and operational areas, and as far as possible to contain contaminated waters within the site and limit the risk of release of this water by cycling and consumption through the processing plant.

In any engineered structure or plant there is however always the risk of failure, which may arise from structural failures, extreme events or human error. We represent the interests of environmental groups and water users downstream of the mine site, through to the coastal plain and shoreline. Consequently we place emphasis on factors which relate to possible release of contaminated water and thus impaired water quality downstream, through to the Deua and Moruya Rivers and associated ecosystems.

Our comments mainly refer to dirty and clean water management, water quality and stream health monitoring, incident reporting, and the timeliness of reporting and action in the event of an incident that could compromise downstream water quality and ecosystem health. There is room within the timeframes presented for a release of contaminated water to have significant impact before the monitoring data are gathered, reviewed, reported, actions approved, and remedial actions undertaken. These timeframes need to be tightened up. Reporting and consultation with relevant user groups, including Coastwatchers, need to be immediate, open and recurrent in the event of a significant release of contaminated water.

A toxicant of concern to us is xanthate, which is used in the flotation process during mineral processing. Whilst the water management plan provides for containment of process water within the tailings dam-processing plant circuit, the risk of release involving xanthate cannot be totally discounted. Trigger values for xanthate are required for surface waters on and around the mine site. More information is needed on its potential to impact upon the downstream aquatic environment, and we propose that research is undertaken to better understand the risks, consequences, and possible remedial actions.

Please find below our comments on the Water Management Plan for the operational phase of Dargues Mine.

Yours sincerely

Stewart Needham
The Coastwatchers Association Inc
21 February 2020



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COMMENTS ON DARGUES MINE WATER MANAGEMENT PLAN v8 FEBRUARY 2020

The Coastwatchers Association Inc

1. Timeliness of reporting and actions relating to exceedances

The plan describes timeframes for reporting of exceedances and of follow-up actions which are slow and do not reflect the urgency with which downstream users and environmental agencies would need to know and take action in response to events which could impact upon water quality, potability, and aquatic and riparian environmental health:

- s10 p97; s7.9.2 p74 *review of data against trigger values within 3 days of receipt of data. Assessment against trigger values would take very little time and should be completed no more than 24 hours after receipt of data.*
- s7.3 p71 ARD TARP table has no timeframes for initiation of actions or to determine the planned response.
- s7.5 p74 The Surface Water Quality table has no timeframes for initiation of actions or for determining and actioning the planned response.
- s7.5 p74 Consultation with stakeholders and engagement of experts (or reporting by or follow-up following expert advice) have no timeframes; also consultation with stakeholders and engagement of experts and reporting by them, and any necessary follow-ups, have no timeframes.
- Table 3.3 p15, item 15.13B *notify ESC of exceedances ... within 7 days, and other users after relevant response actions are agreed.* The 7 day timeframe to inform ESC is far too long and ignores the vulnerability of downstream users beyond the Majors Creek district and much closer to the mine than the ESC river water extraction points. Under this provision information flow to 'other users' could be well in excess of 10-14 days and is quite unacceptable.

Timeliness of reporting of issues which may lead to impacts on downstream water is a key issue for downstream users and environmental managers, agencies and groups. Human and animal health, and riverine and riparian ecosystem health could be at risk. Frequency of monitoring data collection and review, and the timeframe for assessing levels against trigger values, need to be tightened up. Timeframes for initiating any remedial actions (and as far as possible, their completion) need to be specified and not open-ended. In the unlikely event of a catastrophic failure, immediate and direct communication to all downstream users, environmental managers, agencies and groups is critical.

An example of how timelines could be improved is to advise the analysing laboratory of trigger levels, so that any exceedances can be flagged automatically as part of the laboratory's data analysis, and included in the analytical report to the Company. This would remove the 3 day period provided for review of data against trigger values mentioned in s10.

2. Site water balance

Construction details for the Mine Water Settlement Dam, Raw Water Pond and Process Water Pond:

- s5.3.3 p34 These ponds are described as constructed as 'lined earth structures' - please provide details of (or links to information on) the liners, mode of emplacement and performance characteristics.

Treatment and management of dirty water

- s5.3.3.1 p34 Will settled material in MWSD01 need to be cleaned out periodically? If so, details are needed on where it would go techniques used, and methods to maintain integrity of liner.
- s5.3.5 p43 Seepage Pond - *operation of the pump will be on an as required basis.* Consider installation of a float sensor-activated automatically switched pump, given that inspection is only monthly (Table 7.2).
- In the event that there is an unplanned release of dirty water, the Seepage Collection Pond is one of the more likely sites for this to occur. There should be closer and more frequent inspection than provided for in s5.3.5 and Table 7.2: it would be appropriate to modify the pipeline corridor inspection (12-hourly, every shift as described in s7.6) to include inspection of the Seepage Collection Pond for levels, leaks and pump system readiness.
- Is the Seepage Collection Pond (s5.3.5) the same as SP-1 (Table 7.1)?
- Table 7.2 lists SP-1 as a monitoring location, but Table 7.2 lists SP-1, SP-2, SP-3 and SP-4. as part of the Surface Water Monitoring Program. Where are these in relation to each other and to the Seepage Collection Pond?

It is difficult to assess the adequacy of monitoring provisions in the Processing Plant area. The Water Management Plan should include a detailed map of the plant area including all pondages, bunds and pipe and other interconnections, and a schematic of water flows and water quality parameters.

3. Surface water quality trigger values

The suite of monitoring requirements does not contain sufficient information regarding a toxicant of particular concern to the down stream aquatic environment, and there is inconsistency in the frequency of monitoring in relation to tailings impoundment leachate.

- We note that xanthate is listed in the analytical suite for surface water quality monitoring (Tables 7.2 and 9.3) but no trigger values are provided (Table 7.4 p73). The trigger value should be any detected occurrence of xanthate.
- EPBC 2010/5770 (Table 3.4 p16, item 3(h) requires continuous monitoring of TSF seepage and leachate, but s7.4 & s9.5 describe weekly monitoring (we note that xanthate is included in the TSF analytical suite - Table 7.2 p69).
- If approvals have been given to the Project under Commonwealth legislation, is it appropriate for Commonwealth agencies to endorse this Water Management Plan?

We consider that in terms of potential impacts to downstream aquatic health, more emphasis should be given to xanthate and its potential to compromise potability and

aquatic ecosystem health; the risk of fish kills and impacts on other aquatic fauna should not be ignored or made light of.

Xanthates are widely used in mineral processing and their potential toxicity is well documented, but this is influenced by the species of xanthate being used, the receiving environment, water flows and (presumably) the faunal assemblages present. We would like to see a trigger value set based on a review of relevant research literature, and specific research undertaken on xanthate behaviour and potential for impacts at Majors Creek and in the downstream environment through to the coastal section.

Another potential toxicant not listed in Table 7.4 is Antimony; Sb compounds are likely to occur in the mineralised system, and have been shown to bioaccumulate in downstream aquatic systems. Antimony should be added to the analytical suite for dirty water and surface water, with an appropriate trigger value established through consultation with EPA.

4. Stream health

There is a lack of linkage between water quality exceedances and stream health assessments. We suggest that when water quality monitoring data establishes that an exceedance has occurred, there must be immediate consultation with EPA who may, depending on flow rates, potential toxicity of the analytical components involved etc, direct that a stream health assessment is done as soon as possible employing AUSRI-VAS methodology (in normal circumstances these assessments occur just once every 6 months).

- s8.6 p78 No timeframes are given for actions and response plans relating to stream health assessments indicating significant environmental impact:

If the independent expert finds that there has been a non-negligible Project-related reduction in stream health, time limits need to be added for:

- notifying the relevant government agencies;
- delivery of the expert's report;
- review of this report by the company and government agencies;
- implementation of remedial actions.

Notwithstanding the provisions for the expert's report, there is potential for remedial actions to be undertaken as soon as practicable when a water quality exceedance or negative stream health result is reported. We suggest that appropriate immediate remedial actions should be determined in consultation with EPA, with subsequent remedial actions undertaken as discussed above arising from the expert's report.

5. Publication of information

Timeframes need to be included for the publication of reports related to an exceedance.

- s12 p100 We propose that in the event of any exceedance of a trigger value, a weekly progress report on investigations, findings and rectification works should be published as weekly updates until the matter is resolved.
- This requirement should extend to all exceedances, including those not related to the Project (i.e. any exceedance should be reported to stakeholders regardless of

origin as it may have the potential to impact human, animal or environmental health). Release of these reports would help the Company to maintain its reputation as a 'good corporate citizen' with concern for the well-being of its surrounding community.

The Company and its stakeholder group should strive to build and maintain a trusting relationship. An important component of this would be for the Company to closely engage with stakeholders on any exceedance or unplanned event. This should be in the form of an on-site briefing, full disclosure of relevant monitoring, operational and other relevant data, and inspection of the specific site/s, structures, and facilities. It is not sufficient to wait until the next Community Consultation Committee meeting or conduct discussions off-site.

6. Competency training and awareness

s14 p102 The EPA should be invited to participate in training and induction courses to emphasise the importance and relevance of the Project's obligations under its Environmental Protection Licence and under NSW and Commonwealth legislation.

7. Incident reporting

The timeframes for incident reporting are unacceptable, given that these could include major exceedances or non-compliance issues.

s15 p 103 Reporting to stakeholders of exceedances relating to downstream water quality should be immediate (within 1 hour, not 24 hours) and should include EPA, ESC, the downstream users group and downstream environmental groups.

In the interest of efficiency and completeness, the company should liaise with EPA in developing a proforma for the incident reports.

EPA should be engaged in determining the 'all clear' following any incident and remediation program and communicating this to all stakeholders.

8. Rehabilitation plan

Provision of a rehabilitation model would assist in assessing the adequacy of the proposed rehabilitation plan.

Stewart Needham
Coastwatchers Association Inc

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