

PCU019275

31 January 2010

Our ref: A167011

Attention: George Mobayed  
George.Mobayed@planning.nsw.gov.au

Environmental Planning Officer  
Regional Projects  
NSW Department of Planning  
GPO Box 39  
Sydney NSW 2001



Dear George,

**Re: Review of Proponent Response  
Dargues Reef Gold Project, Major Project Application No. 10\_0054**

Southern Rivers Catchment Management Authority (CMA) does not support the project and the current amendments proposed by Cortona Resources Limited. The proponent's response to the submission does not adequately address Southern Rivers CMA's concerns.

The proposal is not consistent with the Southern Rivers CMA Catchment Action Plan (CAP). The NSW State Plan and the relevant regional planning strategy (Sydney - Canberra Corridor Regional Strategy) both require development proposals to consider the Southern Rivers CAP.

In addition the objectives of the EPBC Act may also be met through consideration of the CAP. Specifically the objective 3 (1) (d) to promote a cooperative approach to the protection and management of the environment involving governments, the community, landholders and indigenous peoples (see attached Southern Rivers CMA submission to the EPBC Referral section).

The issues in the *Response to Submission* that do not adequately address the Southern Rivers CAP are:

**Loss of normal surface water flows into Majors Creek through the construction of eight new farm dams (in addition to the 14 existing farm dams on the property).**

- Cortona argue that the construction of the dams is within their harvestable right, and that the water will occasionally be released to augment flow. However there is also the additional tailings storage facility (TSF), which is proposed to be 9.3 Ha in area, with a capacity to store approximately 900,000m<sup>3</sup> of material, including accumulated water in the collection pond. This structure has not been included in the consideration of harvestable right, and will store substantial quantities of water.
- The TSF will also hold the thickened slurry that is the by product of gold processing. All additional dams proposed, including the tailing stage facility, will disrupt catchment flows to Spring Creek and Majors Creek.



**The quality of water from the two sources that will be released during periods of low flow.**

- The proponent does not adequately address the use of water drawn from the historic workings. The data provided within the Environmental Assessment (EA) show that the water from the historic mine workings exceeds ANZECC (2000) Guidelines.

**Threatened species**

- Southern Rivers CMA proposed that a Conservation PVP be carried out prior to commencement of the project to protect threatened species on site, which will ensure that adequate habitat values remain on site and are protected in perpetuity on title, without risk of being disrupted by mine construction and development. Given that the proponent is not willing to undertake a PVP prior to commencement of the project, Southern Rivers CMA has concerns that threatened species and communities may be at risk.
- Southern Rivers CMA, DECCW, NSW Office of Water (NOW) and an independent report commissioned by Eurobodalla Shire Council all indicate in their respective submissions that the impact on threatened species were likely to occur through habitat degradation. The proponent has not provided sufficient evidence to demonstrate that threatened species, populations or communities on site and downstream will not be adversely affected.

**Long term recovery of groundwater levels**

- The proponent has stated that the groundwater recovery is modelled to occur 10 years after mine closure. This long-term loss of groundwater flow will adversely impact the Deua catchment, which will have a negative effect on the agriculture, communities, habitats and threatened species it supports.
- The proponent has also stated that there is no long term monitoring data to draw from and they did not factor in threshold values in the monitoring. Therefore the model cannot adequately assess the impacts of the project on the groundwater and surface water hydrology.
- Given the current flux in groundwater levels in the vicinity, the project proposes a real risk of decreased downstream water quality, loss of groundwater to Majors Creek and Spring Creek beyond the working life of the mine (10 years plus) and impacts to commercial and domestic water users downstream.

**Climate change**

- The proponent argues that the project is not required to address climate change as part of the Major Project proposal. Southern Rivers CMA reiterates the precautionary approach to water use from Majors Creek, as stream flows are showing a diminishing trend.
- An appropriate management response would be to disallow further groundwater licensing on Majors Creek and Springs Creek, unless appropriate flow, surface and groundwater modelling indicates that the proposed water use is proved feasible in the event that the project is approved.

**MUSIC/water modelling**

- The proponent acknowledges the limitations to the use of the MUSIC model, namely high quality; long term water flow monitoring data is unavailable.
- The proponent states that they have previously been granted approval for EAs that have not had adequate long term monitoring data to calibrate the surface and groundwater



modelling. However the Southern Rivers CMA would argue that it is the proponent's role to ensure that this is assessed, as per the DGs requirement for the project.

#### **Tailings dam and reagent contamination**

- The proponent does not address the risks of using Potassium Amyl Xanthate.
- The proponent does not detail contingency planning should the tailings storage facility overspill.
- The proponent does not provide detail regarding contingency plans in the event that the concentrate forms acid leachate and an emergency spill or overspill occurs.
- There is no detail covering how the risk will be managed for an emergency involving Potassium Amyl Xanthate and/or Nitric Acid.
- The proponent does not address the high risk of pollution to the Deua Catchment from chemicals.

#### **Aboriginal cultural heritage**

- Southern Rivers CMA supports the recommendations by the Buru Ngunawal Aboriginal Corporation to have sites officers present during ground disturbing activities. The proponent disagrees with this recommendation. This concern has not been addressed.

Southern Rivers CMA acknowledges that the proponent has:

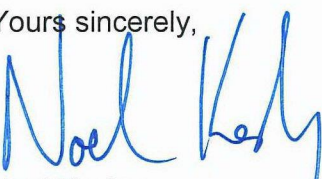
- Identified the Tableland Basalt Forest Endangered Ecological Community (EEC) on the property and has amended the EA to ensure that this EEC will not be disturbed in anyway during the life of the project.
- proposed to consult widely during the preparation of the Property Vegetation Plan.
- agreed to use recycled organics during the rehabilitation phase of the project
- agreed to consult with the CMA, Aboriginal community and Landcare during any erosion control, weeding or land rehabilitation works on the property.

Southern Rivers CMA PVP Consents Officer, Sky Kidd is available in Braidwood on 0457 532 504 or email [Sky.Kidd@cma.nsw.gov.au](mailto:Sky.Kidd@cma.nsw.gov.au) to provide information and undertake a PVP assessment as part of the Biodiversity Strategy.

If you would like to discuss the implementation of erosion control structures, sediment dams and site rehabilitation, then please do not hesitate to contact Frank Exon, Catchment Officer (Sustainable Landuse) on 0427 783 736 or email [Frank.Exon@cma.nsw.gov.au](mailto:Frank.Exon@cma.nsw.gov.au)

If you require further clarification of any of these issues please do not hesitate to contact Sky Kidd on the contact details above.

Yours sincerely,



Noel Kesby  
General Manager



20 December 2010

Our ref:A488908

COPY

Referral Business Entry Point,  
EIA Policy Section (EPBC Act)  
Approvals and Wildlife Division  
Department of the Environment, Water, Heritage and the Arts  
GPO Box 787  
Canberra ACT 2601  
epbc.referrals@environment.gov.au

Dear Sir/Madam,

**Re: Review of Dargues Reef Gold Project, Reference Number: 2010/5770**

Southern Rivers Catchment Management Authority (CMA) does not support the project as it is currently proposed by Cortona Resources Limited. The EPBC referral does not adequately address a number of federally listed species and communities.

The Southern Rivers Catchment Action Plan (CAP) sets the direction for natural resource management in the region to 2016. The Catchment Targets within the CAP work toward meeting Statewide Targets set by the Natural Resources Commission, which in turn work toward the achievement of the NSW Government's State Plan. The Southern Rivers Catchment Action Plan may be found at:

<http://www.southern.cma.nsw.gov.au/publications.php#Catchment%20Action%20Plan>

The Southern Rivers CAP is consistent with the Sydney–Canberra Corridor Regional Strategy. Ensuring the objectives of the catchment action plans, local environment plans and other natural resource management plans are consistent with the Regional Strategy, is important to achieve long term environmental sustainability, as recommended by the State Plan. The Southern Rivers CMA approach is also consistent with the objectives of the EPBC Act 3 (1) (d) - to promote a co-operative approach to the protection and management of the environment involving governments, the community, landholders and indigenous peoples. The issues in the Environmental Assessment (EA) that do not adequately address EPBC Act considerations (as per the *referral of proposed action* provided by the proponent) are:

**Section 3.1 (d) of the EPBC Act Referral – threatened species and their communities**

In section 3.1 (d) of the EPBC Act Referral of proposed action provided by the proponent, the nature and extent of impact are not adequately addressed for the following EPBC Act listed threatened species and ecological communities:



- Natural Temperate Grassland of the Southern Tablelands of NSW and ACT; Endangered; Identified on site. The proposal does not adequately address the potential for further isolation and presents no options for conservation.
- *Heleioporus australiacus* (Giant Burrowing Frog); Vulnerable; Habitat downstream. The proposal does not adequately address the potential water quality and quantity impacts, particularly in relation to Xanthates and sediment.
- *Dasyurus maculatus maculatus* (Spotted-tail Quoll); Endangered; Habitat on site and downstream. The proposal does not adequately address the potential water quality impacts on the downstream habitat for this species.
- *Prototroctes maraena* (Australian Grayling); Vulnerable. Habitat downstream (Deua and Moruya Rivers). The proposal does not adequately address the potential water quality and quantity impacts, particularly in relation to Xanthates and sediment.
- *Baloskion longipipes*; Vulnerable; within depressions and swamps. The proposal does not adequately address the potential water quantity and quality impacts.
- *Correa baeuerlenii* (Chef's Cap Correa); Vulnerable; Damp gullies, on the banks of streams and on rocky slopes. The proposal does not adequately address the potential water quality and quantity impacts.
- *Eucalyptus kartzoffiana* (Araluen Gum); Vulnerable. Known from riparian zones adjacent to and downstream of proposal. High risk to be impacted by proposal, which does not adequately address the potential impacts from a change in water tables and water quality. Slight change in pH is known to prevent germination.
- *Leucochrysum albicans* var. *tricolor* (Hoary Sunray); Endangered; Grassland and grassy woodland. The proposal does not adequately address the potential water quality impacts.
- *Thesium australe* (Austral Toadflax); Vulnerable; Grassland and grassy woodland. The proposal does not adequately address the potential water quality impacts.
- *Zieria adenophora* (Araluen Zieria); Endangered; Shallow gravelly loam amongst granite boulders; Known population downstream of proposal. The proposal does not adequately address the potential water quality and quantity impacts.

### **Nature and extent of likely impact on threatened species and their communities**

The referral does not adequately address the anticipated impacts on threatened species or threatened ecological communities. This is because the proponent is basing its EPBC referral on the Environmental Assessment (EA) assumption that the project would "not result in a significant adverse impacts on groundwater or surface water downstream of the project site". The proponent has not provided sufficient evidence to support this statement.

Southern Rivers CMA makes the following points in relation to water quantity and quality:

- Risk of groundwater contamination from the tailings dam. The EA proposes to use chemicals which include: Copper Sulphate Pentahydrate, Potassium Amyl Xanthate, (Xanthates are toxic to aquatic biota at concentrations of less than 1 mg/L and can be a water contaminant downstream of mining operations), Carbon disulphide and Nitric Acid. These are high risk and are inconsistent with the statement that the Project would "not result in a significant adverse impacts on groundwater or surface water downstream of the project site".
- The EA requires further detail to address surface and groundwater contamination mitigation and contingency planning. Southern Rivers CMA suggests that risk



- mitigation and contingency planning measures are required for an appropriate assessment of the risk to EPBC listed species and communities.
- Risk of downstream surface water contamination from the tailings dam in the event of the design parameters for the structure being exceeded. The EA needs to have a
  - contingency plan for dealing with an Average Recurrence Interval in excess of 1 in 100 year given that it is wholly reliant on a single tailings dam.
  - The project proposes to offset groundwater losses into the mine void with surface water captured in eight harvestable right farm dams and augmented with water drawn from old mines (4-22, 4-23). This will result in the net loss of surface water flows to downstream environments and habitats.
  - The MUSIC modelling does not provide an accurate assessment of the catchment hydrogeology. Default, one off figures have been used with minimal monitoring. In addition, the historic data used is often for periods of high rainfall in the region. In fractured rock geology, high quality monitored data is required to model the predictability of the hydrogeology. Currently there are no thresholds set within the modelling, or any details on how the proponent will carry out contingency planning once those thresholds have been reached.
  - The Upper Deua catchment has been largely stressed over the last decade, with lowered water tables and poor environmental flow. At the very upper reaches of a major river (Deua/Moruya), Majors and Spring Creeks are part of a historically mined and degraded system. Further stress on the catchment must be mitigated for and adequately addressed.
  - The Southern Rivers CMA has concerns about the backfilling of stopes with tailings/concrete mix because of the uncertainty of toxic contamination risk of groundwater.

### Section 3.1 (e) of the EPBC Act Referral – listed migratory species

In section 3.1 (e) of the EPBC Act Referral of proposed action, the nature and extent of impact are not adequately addressed for the following EPBC Act listed migratory species and ecological communities.

- *Myiagra cyanoleuca* (Satin Flycatcher); Migratory; Forested gullies. The proponent has not addressed the removal of breeding habitat on site (removal of 0.2 ha of ribbon gum vegetation communities), or the impact of water quality and quantity on habitat on site or downstream of the property.
- Two species, the *Monarcha melanopsis* (Black-faced Monarch) and the *Hirundapus caudacutus* White-throated Needletail, were noted as being observed on the site.
- The Rufous Fantail is a regular visitor to the local area.

### Nature and extent of likely impact on listed migratory species

The proponent has based their judgement on the Environmental Assessment which has concluded that these will be no adverse affects on surface or groundwater at the project site or downstream. The proponent has not provided sufficient evidence to support this statement.

### Other Important features of the environment

The proponent has relied on the EA previously submitted to the state government for the 3A assessment. There are numerous aspects to the EA which have not been adequately addressed as



outlined in our attached submission to the NSW Department of Planning in summary this includes the following:

- 3.3 (a) – fails to address NSW listed species and species of concern within the project area and downstream of the project site
- 3.3 (b) – hydrology. The Surface Water and Groundwater Assessments as submitted as part of the EA process do not provide a comprehensive assessment.
- 3.3 (d) – remnant native vegetation – the proposal proposes to impact on an overcleared vegetation community (Ribbon Gum Narrow Leaf Peppermint Grassy Open Forest). This is not addressed in the EA or in the EPBC referral.
- 3.3 (e) - The Upper Deua catchment has been largely stressed over the last decade, with lowered water tables and poor environmental flow. At the very upper reaches of a major river (Deua/Moruya), Majors and Spring Creeks are part of a historically mined and degraded system. Further stress on the catchment must be mitigated for and adequately addressed.
- 3.3 (g) - The Southern Rivers CMA follows the principles of "Ask First: A guide to respecting Indigenous heritage places and values" produced by the Australian Heritage Commission and DECCW Aboriginal Cultural Heritage Consultation process documentation. Within 4-114, the proponent should demonstrate that the community have a full understanding of the impacts of the mine and the recorded Aboriginal sites. Southern Rivers CMA supports the recommendations by the Aboriginal Community (4.6.7). In addition, the consultation process needs to be continued in a group forum, so issues can be raised with everyone present. Otherwise the perception in community that issues can be played off against different groups will persist. This is also consistent with the Southern Rivers CMA Aboriginal Cultural Heritage Policy which advocates inclusive, open and fair consultation.
- 3.3 (h) – There are a range of important and unique values in the local environment at and downstream of the project site. The EA does not address the impacts of contamination to ground and surface water on these important and unique values. These include:
  - Tableland Basalt Forest Endangered Ecological Community (EEC)
  - Overcleared veg type and TSC Act preliminary listed EEC Ribbon Gum Narrow Leaf Peppermint Grassy Open Forest
  - Araluen Scarp Grassy Forest in the South East Corner Bioregion EEC downstream of the proposed mine site
  - A small and regionally significant pocket of the Dry Rainforest of the south east forests in the South East Corner Bioregion EEC
  - The Majors Creek State Conservation Area is downstream of the project and will be impacted by water quality and water quantity (previously known as the Majors Creek Falls Reserve)
  - EPBC and TSC listed communities and populations such as *Eucalyptus kartzoffiana* population 3 km downstream of the mine
  - Moruya and Deua Rivers
  - Deua National Park
  - Moruya River Mouth
- 3.3 (j) – Existing land includes a regionally viable orchard industry in the Araluen Valley. Water quality and quantity impacts on this industry have not been addressed by the EA.

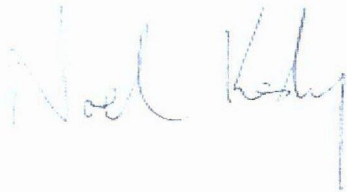
## Measures to avoid impacts

The proponent has not addresses the use of chemicals such as Xanthates which are used in the flotation processes. The EPBC referral also fails to address the clearing of regionally and federally

significant vegetation. The groundwater and surface water assessments require further investigation before an analysis of the risk to the environment can be undertaken. The Southern Rivers CMA would also like to see further mitigation works proposed to reduce the impact of erosion and sediment pollution into the Deua River system.

If you require further clarification of any of these issues please do not hesitate to contact Sky Kidd on (02) 4842 2594.

Yours sincerely,



Noel Kesby  
General Manager