

Alanna Ewin  
Bakers Flat Cottages  
3539 Araluen Road  
Deua River Valley NSW 2537

RE: Amended Modification Request by Big Island Mining Pty Ltd

I am a landowner on the Deua River and run holiday cottage accommodation on my property, based on it's excellent location on a clean river in the bush. This mine means that my livelihood and the environment is continuously at increased risk of damage and pollution from the Dargues gold mine into the foreseeable future.

As such, I previously made a submission against the original Mod 3 and I am again making a submission against this amended Mod 3.

#### Increase in Ore Extraction

Given the recent tailings dam failures world wide I still have grave concerns about the Dargues dams and TSF and their susceptibility to failure through engineering inadequacies during extreme rainfall events. Although the application for the increase in the TSF size is now shelved, how will the mine cope with the increased ore extraction without increasing the tailings dam? It would seem to me that perhaps a further modification would be required down the track to increase the TSF to cope with the increased ore extraction. To me, this amounts to yet another deception from Dargues (they previously said they would never process gold on site) in pushing through smaller approvals in order to more easily make larger ones at a later date. They are an untrustworthy company.

#### Increased Mine Life

I also have grave concerns about the financial ability and willingness of Big Island Mining to satisfactorily rehabilitate the mine site, particularly should they go bankrupt. It is commonly seen in Australia that mine sites are left derelict and in environmental decay for many years after they close, with mining companies not bothering to invest in their rehabilitation and also going broke and abandoning these sites altogether. There is potential with a longer mine life and greater ore extraction to increase the risk of these events occurring at Dargues. There is also increased risk of water pollution events the longer the mine is in operation.

#### Environmental Survey

Important environmental surveys have not been carried out including the stygofauna survey and baseline studies of the Araluen Scarp Grassy Forest. Surely these must be completed before any further modifications can be considered?

It would seem inappropriate that this amended modification request can even be considered, given that Unity Mining have previously submitted shoddy figures based on incorrect rainfall data, and have not complied with the original conditions of approval in the first instance. This modification should not even be considered until all the Department of Planning's conditions of approval have been met by Dargues.

I do not agree to the extension of mine life or increase in ore extraction. I don't want my property or the environment to be put at any more risk than it already is from pollution of the Deua River Valley should there be any more failings at this site through extreme rainfall events.

Angus Harding

[REDACTED] Moruya

NSW 2537

02.01.2016

**DARGUES REEF GOLD MINE – MODIFICATION 3  
UNITY RESPONSE TO SUBMISSIONS NOVEMBER 2015**

Reference Number: MP10\_0054 Mod D3 (Amended 8th September 2015)

Unity Mining Ltd has withdrawn both the proposal to process gold on site using cyanide and the proposal to increase the size of the tailings storage facility. Whilst I acknowledge these changes, I consider them to be a logical outcome after the high level of disapproval as shown in the submissions from the local community, NSW Government Departments and expert reports.

Unity is now claiming that they only seek approval of some “relatively minor modifications” (Unity ASX Release 8<sup>th</sup> Sept 2015).

These are NOT relatively minor and I object to these amendments.

Unity’s response to the submissions is NOT adequate across a range of issues.

- Compliance Issues: Unity has still not complied with several of the 2013 Conditions of Approval, which includes updating the design to fit actual rainfall figures.
- Having followed the re-opening of this mine since September 2010 it has become apparent that the mining companies have continuously sought exemptions and adjustments to the conditions imposed by PAC, the Land and Environment Court and NSW Department of Planning and Environment.
- There are numerous conditions that have been struck out or deemed no longer practical by the companies. Before this amended modification 3 is assessed the communities living in this large catchment area need a report from the Department of Planning that sets out clearly the compliance achieved to date and most importantly the outcomes and future actions required as a result of this audit.
- Accurate data for groundwater modelling: Collection of the detailed field data listed as necessary for the groundwater model review should begin immediately to provide important baseline data before mining begins. A continuous automated data collection method is required to ensure reliable and high quality data throughout the life of this mine and during rehabilitation.

As such I want assurance that the Department will continue to rigorously assess the company’s application in consultation with other government agencies, including the NSW Environment Protection Authority.

Unity claim that they are encouraged by... ”the general support the project continues to receive from the community, with the exception of cyanide usage on

site.” This is not correct, submissions from individual community members and community organisations did not centre solely on the use of cyanide and the enlarged tailings storage facility. In particular NSW Government submissions also highlighted risks from heavy metal pollution, raised questions about tailings dam design, wind borne pollution, sediment dams and leaching into ground water. Independent experts revealed major issues relating to rainfall, evaporation and soil type.

No new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval and updated the project designs on the tailings storage facility, sediment dams, and ore storage areas.

Yours faithfully  
Angus Harding

Dear Phillipa

I realise that the acceptance of online submissions has closed however it is my understanding that an extension has been provided until 4 January. I therefore request that you accept the following submission. I was a resident of the Eurobodalla Shire until 12 months ago.

Yours Sincerely

Anne Marett

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#### DARGUES REEF GOLD MINE – MODIFICATION 3 RESPONSE TO SUBMISSIONS NOVEMBER 2015

I do acknowledge that Unity Mining Ltd has withdrawn both the proposal to process the gold on site using cyanide and to increase the size of the tailings storage facility. This would clearly be the result of the vast number of submissions from the local community, NSW Government Departments and expert reports opposing the proposed Modification 3.

Unity Mining Ltd is now proposing what they call “relatively minor” modifications (released on Sept 8, 2015), however I do not consider these to be minor and strongly object to them.

I consider it critical that the Planning Department continues to rigorously assess Unity Mining’s application in consultation with other government agencies, including the EPA. Unity Mining’s submission has not been adequate across a range of issues and their claim that they have general community support is a gross misrepresentation of the community’s response to their modifications.

NSW Government submissions also highlight risks from heavy metal pollution, raise questions about tailings dam design, wind borne pollution, sediment dams and leaching into ground water.

Independent experts revealed major issues relating to rainfall, evaporation and soil type.

Unity Mining's response still leaves many areas unaddressed such as their failure to comply with 2013 Conditions of Approval on the design of the Tailings Storage Facility. They should not be given approval to proceed until this has been done.

There is also the question of Unity using flawed data in relation to underestimation of rainfall and overestimation of evaporation at the mine site and failure to collect adequate data on groundwater modelling. Unity Mining must be required to put in place a process for continuous collection of reliable and high quality data which will provide a baseline before mining commences.

The additional proposed road crossing on Spring Creek provides another potential site for accidents and spillage into the Deua River system.

Finally it appears that Unity Mining lacks the willingness to rehabilitate a site once mining has finished, as demonstrated by their failure to rehabilitate the Eaglehawk and Woodvale mine sites in Victoria. Unity must not be allowed to develop another mine site until they have met their rehabilitation obligations in the Bendigo area.

In conclusion no new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval and updated the project designs on the tailings storage facility, sediment dams, and ore storage areas.

There are tens of thousands of residents who rely on the Deua and Moruya River Catchments remaining unpolluted by this mine and they no doubt would expect that any conditions place on this Amended Modification 3 be rigidly enforced by the Department from the outset.

Anne Marett  
Corrimal 2518  
M: 0439 737 530

1 January 2016

2<sup>nd</sup> January 2016

Anthony Harding

██████████ Moruya

NSW 2537

**Dargues Reef Gold Mine Modification 3  
Response to submissions November 2015**

Thank you for the opportunity to respond again to the next modification of the Dargues Reef Gold Mine in the Palerang Shire of NSW. I acknowledge that Unity Mining have withdrawn the proposal to process gold on site using cyanide and also their proposed increase of the tailings storage facility. This is as a result of the large outcry of concern regarding the effects that these 2 modifications would have on the health and stability of the environment and in particular the water supply of the Eurobodalla Shire. This is a logical outcome as not only was there major community concern there was disapproval by many experts and concern by NSW Government Departments.

However for Unity to claim that it is now seeking approval for *"...the other relatively minor modifications sought from modification 3, and expects to see a speedy resolution and approval of these matters in the coming months...."* (Unity ASX Release on 8 September 2015) is offensive to me and the people who live downstream from the mine site and proposed tailings storage facility. I cannot regard these modifications as being "relatively minor" when the continuing threat to the water supply of the shire of Eurobodalla is still a reality.

I want assurance from the Department that it will continue to rigorously assess the company's application in consultation with other government agencies, including the NSW Environment Protection Authority, because Unity's response to the submissions is NOT ADEQUATE across a range of issues.

1. Design of tailings storage facility (TSF).

- Unity has still not complied with several of the 2013 Conditions of Approval, which includes updating the design to fit the actual rainfall figures.
- Even though the already approved TSF is smaller, it will fail if the design has also been based on flawed data. It is vital that the original approval is closely examined by relevant authorities in the light of the most accurate and reliable data.

2. New Road Crossing on Spring Creek

- This new creek crossing provides yet another vulnerable point for accidents that can affect the watershed.
- Spillage of oil or fuel or even the contents of a truck at this crossing would lead to pollution of the water.
- On this steep site even a speedy and appropriate response may not prevent damage to downstream resident's water supplies, the aquatic ecology and the upper catchment of the Deua River.

3. Rehabilitation of the mine site.

- It appears that Unity lacks willingness to rehabilitate a site once mining has finished.
- An interview just before Christmas on ABC SE radio with the Mayor of Bendigo revealed that after 3 years of care and maintenance at Eaglehawk and Woodvale mines, Unity still have no rehabilitation plans despite repeated community requests. It is of major concern that Unity has, and is allowed to move to another mine without attending to rehabilitation commitments in the Bendigo area.

No new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval: and updated the project designs on the tailings storage facility, sediment dams and ore storage areas. The tens of thousands of residents who rely on the Deua and Moruya River catchments remaining unpolluted by this mine also expect that any conditions placed on this Modification 3, be rigidly enforced by the Department from the outset.

Yours faithfully  
Anthony Harding

Dear Ms Duncan,

Thank you for confirming that it is acceptable to make a submission today concerning the Proposed Modification ( Mod 3 ) at the Dargues Reef Gold Project ( 10\_ 0054 )

My own background relevant to this project is summarised overleaf.

In relation to the operation of the Dargues Reef Gold Project and its successive modifications, I share the particular concerns experienced or realistically envisaged by local residents, arising from impacts on the availability and purity of water supplies; including bore water and encompassing the impact of dusts from smelting or crushers, colloidal dispersions in mist over the tailings recognising the real and likely causes of dam failure, which would affect the crucial catchment below the proposed tailings dam.

Many of these concerns seem not to have been adequately acknowledged and addressed, despite many previous submissions; and their neglect is apparent in the cavalier attitude to OH&S matters demonstrated by spills and other avoidable mishaps going back to earlier owners, and in criticisms of the modifications.

As regards the currently proposed Dargues Gold Mine Modification 3MP10-0054 prepared by R.W. Corkery and Co November 2015 I agree completely with matters of fact raised in the submission from the M.C.C.G. namely

[1] The rainfall data on which is based the Tailing Storage Facility deviates from good practice, having not been sourced from the immediate locality of the site.

[2] The sought for extension of the mine life to 3 December 2024 was not part of the original application and so has not been subject to the application and approval process.

[3] The Proposal for an Eastern Waste Rock Emplacement and a vehicle crossing over Spring Creek will bring large vehicle movements nearer to Majors Creek than was provided for in the original approval.

[4] There remains a potential for failure or leakage of the tailings storage facility (T.S.F.) with disastrous impacts on downstream water catchments, agricultural land, water courses and wildlife.

[5] Recent successive modifications to the project have not included community consultation and involvement consistent with provisions for a Social Licence to operate.



My background of particular relevance to the Dargues project and the operational safety ramifications of the Mod 3 in particular includes:-

**In the U.K.**

sixteen years project management in R & D with the U.K. mining multinational R.T.Z.; focussing on minerals processing; including a diversification venture in applied acoustics; and also bearing responsibility inter alia for the safe operation of laboratory work by staff using hydrogen cyanide, and for a pilot plant electrofluorination in liquid hydrogen fluoride.

**And in Australia subsequently:-**

Dealing with trade consultants in respect of Customs countervailing and anti-dumping duties and; and latterly

Serving as Principal Research Officer for Senate inquiries which:-

Developed the Commonwealth legislation for the use of agricultural chemicals and  
Examined the potential of the Kakadu National Park Region – including the Ranger Mine within it.

Dr Brian Sanderson  
Majors Creek  
NSW 2622  
TEL : 02 4846 1481

Gabriele Harding

██████████ Moruya

NSW 2537

2<sup>nd</sup> January 2016

**DARGUES REEF GOLD MINE – MODIFICATION 3**

**UNITY RESPONSE TO SUBMISSIONS NOVEMBER 2015**

**Reference Number: MP10\_0054 Mod D3 (*Amended 8<sup>th</sup> September 2015*)**

I am appalled to read that Unity is claiming to only be seeking approval for “...the other relatively minor modifications sought from Modification 3, and expects to see a speedy resolution and approval of these matters in the coming months...” (Unity ASX Release on 8 September 2015). Mining and the associated actions therein at the top of a headwater which supplies 80% of my community’s drinking water is no “minor” thing and requires rigorous assessment and analysis. It is in no way minor when the risk of even a tiny contamination to my drinking water is present.

Whilst I acknowledge the withdrawal by Unity Mining Ltd of the proposals to process the gold on site using cyanide and to increase the size of the tailings storage facility, it is a logical response to the high level of disapproval in the previous submissions on Modification 3 from the local community, NSW Government Departments and expert reports.

I consider Unity’s response to submissions as inadequate and want to ensure that the Department will continue to rigorously assess the company’s application in consultation with other government agencies, including the NSW Environment Protection Authority.

Having followed the re-opening of this mine since September 2010, it has become apparent that the mining companies have continuously sought exemptions and adjustments to the conditions imposed by PAC, the Land and Environment Court and NSW Department of Planning and Environment. There are numerous conditions that have been struck out or deemed no longer practical by the companies. Before this amended modification 3 is assessed the communities living in this large catchment area need a report from the Department of Planning that sets out clearly the compliance achieved to date and most importantly the outcomes and future actions required as a result of this audit.

Just because the economic assessment has been independently audited and determined as adequate, it does not mean that the community and decision makers have the information necessary for an accurate assessment.

The recent release (18th December 2015) by the NSW Department of Planning and Environment of the final Guidelines for the economic assessment of mining and coal seam gas proposals, supports this view. This document emphasises the need for both a cost benefit analysis (CBA) and a Local Effects Analysis (LEA). Neither of these has been included for the Eurobodalla region. This is particularly relevant if the design of the already approved TSF is based on inaccurate data. It is very likely that this TSF would discharge contaminated water into Spring and Majors Creek during a heavy rainfall event. In flood these fast flowing creeks will rapidly carry the contamination into the Upper Deua Catchment and on into the water supply.

Contamination will threaten the livelihoods of the residents across the entire Deua/Moruya River catchment that are dependent upon the health of their soil, air and water for farming, aquaculture, tourism and conservation. The 3rd party impacts of these existing land uses are not quantified in the economic analysis and Unity has not given adequate reasons for this omission. The distributional impacts of this project have also been ignored. The impacts on the Eurobodalla socio-economic groups living at a distance downriver from the mine site should be included.

The tens of thousands of residents who rely on the Deua and Moruya River Catchments remaining unpolluted by this mine also expect that any conditions place on this Amended Modification 3 be rigidly enforced by the Department from the outset.

Yours faithfully  
Gabriele Harding

Hi Phillipa,

This Response is to **Submissions November 2015 to the Dargues Reef Gold Mine - Modification 3**

This comes to you because the online submissions were closed but an extension until 4 January was promised. I hope the NSW Government will appreciate the level of community concern and act accordingly to safeguard the health of the people and the environment.

**Submission**

I acknowledge that Unity Mining Ltd has withdrawn proposal to process gold on site using cyanide and to increase the size of the tailings storage facility. This is because of the high level of objections from the local community, NSW Government Departments and expert reports.

However, Unity is claiming that it is now only seeking approval for “...the other relatively minor modifications sought from Modification 3, and expects to see a speedy resolution and approval of these matters in the coming months...” (Unity ASX Release on 8 September 2015).

**I do not regard these modifications as being “relatively minor” and I object to the amendments.**

Please continue to rigorously assess the company’s application in consultation with all relevant government agencies, especially NSW Environment Protection Authority, because Unity’s response to submissions is inadequate because:

The community does not give ‘*general support for the project*’, as Unity claimed on ASX Release (Sep 2015). Submissions from individuals, community organisations and the NSW Government, raised many areas of concern including cyanide processing and enlarged tailing storage facilities. These concerns included the risks from heavy metal pollution, tailings dam design, wind borne pollution, sediment dams and leaching into ground water. Further, independent experts revealed major issues relating to rainfall, evaporation and soil type.

Unity’s response to submissions does not comply with some of the 2013 Conditions of approval, such as updating the dam to accommodate actual rainfall data. Approval to process should not be given till this is done. Both an underestimation of rainfall and an overestimation of evaporation at the mine site would mean the tailings storage facility would fail because the design is based on flawed data. This needs to be investigated with authorities using accurate data.

Groundwater modelling was not done with detailed field data, listed as necessary for the groundwater model review. Collecting such data should begin immediately to provide important baseline data before mining begins. To ensure reliable high quality data a continuous automated data collection method is required.

The road crossing at Spring Creek is another potential accidents point that can affect the watershed. Spillage of oil, fuel, or the contents of a truck at this crossing would lead to water contamination. This is a steep site and even a fast response would not prevent damage to the water supplies of downstream residents, damage to aquatic ecology in the upper catchment of even the lower the Deua/Moruya Rivers.

Unity's economic assessment has been independently audited and determined as adequate, but this does not mean that the community and decision makers have adequate economic information. Cost Benefit Analysis is necessary for an accurate economic assessment of the project, including assumptions used, because economic failure ultimately leaves the community, government and future generations meet the costs of clear up.

Of great concern is Unity's lacks of willingness to rehabilitate their mine site once mining has finished. An interview late Dec 2015 on ABC SE Radio with the Mayor of Bendigo revealed that, after three years of 'care and maintenance' at the Eaglehawk and Woodvale mines Unity still have no rehabilitation plans, despite repeated community requests. Unity should not be allowed to move to another mine site without attending to rehabilitation commitments in the Bendigo area first.

**In conclusion no new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval. These being updating the project designs for tailing storage facilities, sediment dams, and ore storage areas.**

Tens of thousands of residents rely on the Deua/Moruya River Catchments remaining uncontaminated. We also expect that any conditions place on Amended Modification 3 be rigidly enforced by the Department from the start.

Sincerely

*Gillian Wilde*

Tuross Head,  
NSW 2537 Australia

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*Gillian*

Dear Phillipa,

I have tried to access the NSW Planning site in order to make a public submission to protest the Unity/Dargues Company's inability to have genuine public consultation about their gold mining development.

Could you please forward this to the appropriate area.

Dear Planning Department NSW,

As a resident of Araluen (which is of course in the direct area of any accidental overflow from a tailings dam) I am compelled to protest the hasty, 'cavalier' approach to the public consultation process.

THE PLANNERS HAVEN'T EVEN GOT THE CORRECT RAINFALL FIGURES FOR THIS AREA WHICH SUFFERS FROM SUDDEN DELUGES AND FLASH FLOODS

As the [www.unece.org](http://www.unece.org) site states with detailed examples. . .

**Tailings management facilities can and do fail!**

Slater&Gordon had to become involved for the landholders in OKTedi mining ore development in NG. With a responsible Government and an efficient and intelligent mining company the disastrous tailing overflow situation was totally avoidable.

Sincerely

Glenda Jones

Araluen

2622

Hi Phillipa,

This Response is to Submissions November 2015 to the Dargues Reef Gold Mine - Modification 3.

This comes to you because the online submissions were closed but an extension until 4 January was promised.

### **Submission**

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However, Unity is claiming that it is now only seeking approval for "...the other relatively minor modifications sought from Modification 3, and expects to see a speedy resolution and approval of these matters in the coming months..." (Unity ASX Release on 8 September 2015).

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The community does not give '*general support for the project*', as Unity claimed on ASX Release (Sep 2015). Submissions from individuals, community organisations and the NSW Government, raised many areas of concern including cyanide processing and enlarged tailing storage facilities. These concerns included the risks from heavy metal pollution, tailings dam design, wind borne pollution, sediment dams and leaching into ground water. Further, independent experts revealed major issues relating to rainfall, evaporation and soil type.

Unity's response to submissions does not comply with some of the 2013 Conditions of approval, such as updating the dam to accommodate actual rainfall data. Approval to process should not be given till this is done. Both an underestimation of rainfall and an overestimation of evaporation at the mine site would mean the tailings storage facility would fail because the design is based on flawed data. This needs to be investigated with authorities using accurate data.

Groundwater modelling was not done with detailed field data, listed as necessary for the groundwater model review. Collecting such data should begin immediately to provide important baseline data before mining begins. To ensure reliable high quality data a continuous automated data collection method is required.

The road crossing at Spring Creek is another potential accidents point that can affect the watershed. Spillage of oil, fuel, or the contents of a truck at this crossing would lead to

water contamination. This is a steep site and even a fast response would not prevent damage to the water supplies of downstream residents, damage to aquatic ecology in the upper catchment of even the lower the Deua/Moruya Rivers.

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Of great concern is Unity's lacks of willingness to rehabilitate their mine site once mining has finished. An interview late Dec 2015 on ABC SE Radio with the Mayor of Bendigo revealed that, after three years of 'are and maintenance' at the Eaglehawk and Woodvale mines Unity still have no rehabilitation plans, despite repeated community requests. Unity should not be is allowed to move to another mine site without attending to rehabilitation commitments in the Bendigo area first.

**I conclude that no new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval. These being updating the project designs for tailing storage facilities, sediment dams, and ore storage areas.**

Tens of thousands of residents rely on the Deua/Moruya River Catchments remaining uncontaminated. We also expect that any conditions place on Amended Modification 3 be rigidly enforced by the Department from the start.

Sincerely

*Heather Colman*

Tuross Head,  
NSW 2537 Australia



Re: Dargues Reef Mine. 10\_0054. Amendments to Mod 3. Dated 1st Dec.2015

I object to the amendments which include life of the mine being extended to 2024 and waste rock emplacement.

1st. because they had approval to mine till 2018 and still haven't begun.

2nd. Because of bad management, having used incorrect information regarding the Tailings Storage Facility. Also now wanting to construct an additional 'Waste Rock Emplacement' the size of Braidwood CBD.

3rd. We at Majors Creek have lost 'Any Trust At All in their ability to become a mine' as each time the mine is sold off to the next owner.

I believe it's all about speculation to find a new owner for their own benefit due to the price of Gold being so low.

I also believe the first approval was flawed.

Meanwhile it's taking a toll on the lives of those who live near in Majors Creek ie. those who do not have any interest in the said mine.

We moved to Majors Creek 23 years ago, to a quiet peaceful place to live. We needed the Peace and Tranquility Majors Creek offered. Before buying our land we were told there was a mine here but that it could never be re-opened as a court case found due to the mine being at the beginning of the water source which eventually ran into the Eurobodalla drinking water as well as through the grazing area of Araluen. Why should this mine be allowed to open.

If the proposal goes ahead working hours should be reduced to 7am - 7pm Monday to Friday.

Mrs Irene Wolford

[REDACTED]

[REDACTED]

Majors Creek. NSW. 2622

## Addendum to Dargues' Submission

Unity has stated that there will be no cyanide processing at their Major's Creek site. They have, however, stated this on many occasions, including immediately before informing the Department of Planning they wished to proceed with a Modification to allow cyanide processing.

Unity has produced no evidence that offsite processing is feasible beyond an agreement with a Parkes facility to do so. That facility, however, does not appear to be set up for the processing needed. A contract to process ore is far cheaper and faster than setting up a facility for cyanide processing and receiving the necessary approvals.

I submit that there is a major risk of a substantial ore pile accruing at the Dargues site, while waiting for the processing facilities to be built. There seems to have been little consideration made of the potential acid leaching from such a site, or its stability, or the ecological or economic risk such a stockpile would pose.

The Dargues project has a history of proceeding without compliance either with full Conditions of Approval or necessary approvals. It also has a history of lack of openness in regard to the community, downstream water users, and government agencies, as well as demonstrated a lack of commitment to admit to pollution downstream and investigate either remediation or compensation.

I submit that this Modification should be refused until all PAC and Land and Environment Court Conditions of Approval have been met; all claims regarding the five 2013 Dargues pollution incidents be finalized, and clear, independent and peer reviewed plans, using accurate weather and soil data, for any ore stockpile be submitted both for departmental and community inspection and comment.

Community inspection and comment is vital for this project. It is impossible for any government agency to give day to day inspection of a mining site. In the six months Dargues operated in 2013 the EPA relied on community observation to alert them to the first three pollution events, as Unity denied they had occurred. The short and long term effects of the unregistered Chitosan flocculent on stream life also needed community observation.

More importantly, it needed community input to show that the designs for the Dargues project are based on a strange collation of rainfall and evaporation data, and that Unity has not complied with the 2013 LEC Condition of Approval to update the design to fit accurate weather data.

Given the vulnerability of the downstream business and communities to pollution from the Dargues site, it is vital that all plans be detailed, accurate, and open to public scrutiny. Vague or unsubstantiated assertions cannot, and should not, be relied upon.

Jackie French

Dear Ms Duncan,

Please register our further submission in regards public comments on the Dargues Reef Gold Mine proposal. We understand that an extension of the time for receipt of submissions was announced at the December DRCCC meeting.

The whole exercise in the proposed development of the Dargues Reef mine has now taken not-unpredictable directions.

When earlier looking at the proposal one could easily have been suspicious about Unity Mining's intentions. Now, all that has played out just as we believe was Unity's intention. Unity has abandoned the never realistic on-site ore processing proposal and has now sold the company. What faith one might have in the ability of the new owners of the Majors Creek site to responsibly develop the site is a moot point.

Not only did Unity present flawed data in their earlier modification proposals, the company did not assess the proposal adequately and they have now walked away with sufficient cash to have made their futile and furtive exercise a great waste of public and community time and effort. The new proponents will have to reassess the proposal in order to provide to the community a new proposal. The current proposal of the Cortona/ Big Island / Unity making has become so bogged down in change/ counter change and controversy that review of what is now planned is almost impossible for the public observer.

Of continued greatest concern to we down-stream Deua River residents is the tailings dam. We contend that the current design for that facility is inadequate so as to be able to provide any confidence as to its long -term integrity. For example, the proposed plastic lining of the dam has a finite life unlike the dam itself which apparently will be required to retain its toxic slurry load indefinitely. As has been noted elsewhere, we are looking not so much as if the dam will fail as to when! This is a consequence we cannot permit. The tailings dam as proposed is, we contend, unsuitable for the proposed site and no suggestion of approval for the mine should be countenanced until that facility is redesigned and relocated.

There are so many aspects which raise concern for residents within the downstream area likely to be effected by the mine. The haphazard development history determines that the most reasonable course would be to start again. We seek cancellation of existing approvals and complete review of the proposal including a detailed review of likely downstream effects of both the mine and the mining activities and the risk to the Deua River and its catchment from failure to retain the mining spoil and associated chemical elements within the mine site.

Any development, be it a major project of otherwise should be able to demonstrate some public and community benefit. As an absolute minimum acceptable position the proposal should be able to be seen as being of benign effect and consequence to the natural environment and the community. We have no faith that this proposal could be so assessed.

We request that our further comments above be included in the public submissions being considered.

Regards

Jan and Martyn Phillips  
DEUA RIVER VALLEY NSW 2537  
02 4474 2820

The Hon. Rob Stokes, M.P.  
Minister for Planning and Environment  
G.P.O. Box 5431  
SYDNEY N.S.W. 2000

January 1<sup>st</sup>, 2016

Dear Minister Rob Stokes and staff at the Department of Planning, N.S.W.

**Re: reply to response by Unity Mining Ltd to community submissions  
Dargues Reef gold mine, Majors Creek, N.S.W.**

On August 13<sup>th</sup>, 2015, the combined communities of Braidwood and villages (including Majors Creek) and representatives from the escarpment down to and including Moruya in the Eurobodalla Shire, met before the Palerang Council and unanimously rejected the proposal by Unity Mining to incorporate cyanide processing into their application for mining at Dargues Reef. The result was the withdrawal of the processing application and the resignation of Andrew McIlwain as CEO of Unity.

However, **in the process of examining this latest round of promise-breaks and breaches by Unity Mining, it was found that a fundamental error in rainfall analysis had been** made in the application, in that rainfall at Majors Creek had been confused with that at Braidwood and so evaporation figures applied to the tailings dam had been vastly underestimated and, further, that the life of the tailings dam could be as little as 25 years. Basically, **the tailings dam is certain to collapse**. This has been demonstrated both at the meeting cited above and before the Eurobodalla Shire Council a week later, when it became clear that even the CEO of Unity Mining did not know that the figures are incorrect!

Really, what incompetence and what thoughtless irresponsibility – and yet **the design of the dam has not changed** and so remains poised as a heavy-metals disaster in waiting above the Araluen escarpment, food bowl and water supply to more than 100,000 citizens plus the most important Aboriginal Women's site in southern N.S.W.

We even find, in this latest dialogue with Unity, a complaint that if the tailings dam gave way and polluted the valley to the coast **the company would not have the funds to remediate the disaster, to which they respond that the company does have sufficient funds to remediate the mine site.**

**This company is telling us that they don't care if the evaporation is wrongly calculated, they can't be bothered changing the design and won't be cleaning it up; and they refuse to reply to any request for financial details pertaining to their clean-up capacity.**

I mean – give us a break and how dare they? Why is this not JUST THROWN OUT?

We have the history now: five pollution breaches in the first six months of operation, refusals to inspect the consequences of those breaches, ignoring the community and basic facts, telling lies (I believe they are telling you now that we love them because they got rid of the cyanide?) dressing up their in-house assessments as “independent reports”, the casting of public monies into the void (over 3 million hard dollars plus untold hours spent by Planning and the EPA), water concerns, accident concerns, it goes on.

So I ask myself again: really, why don't you throw this out? “No” is one of the shortest words in the English language.

Here is some analysis for consideration.

### **The setting of community submission dates: departmental values blindness**

First, I note that the jump-now-how-high submission deadlines have fallen, for the past 2 years, at year's end with so little notice that communities are asked to do bureaucratic work across their holiday period.

By “holiday”, I mean the time of year when all people are encouraged to take up a period of spiritual reflection and renewal: Christ Mass for the majority, the Festival of Lights for the Jews, The Prophet's Birthday and other key December dates for the Muslims, the solstice holidays for the Pagans. Everyone is encouraged to recall the ultimates and the beauties of the inner life and to celebrate family and other relationships.

And you know, **the same values that find government departments cutting freely across the most important time of reflection and sanctification in the entire calendar are the very same values that enable this gold mine to remain in consideration by the Department of Planning.** Frankly, you have a values blind spot.

Here is a little elucidation about where it might lie.

### **Rosie Batty, woman violence and Mother Earth**

Thanks to Australian of the Year Rosie Batty, we are becoming aware of the domestic terrorism occurring in far too many homes across the country. Domestic terrorism occurs when **a bully ignores the values of the Other**, takes what they can, kicks her if she objects and is prepared to murder her if they are really sick of her complaints.

Now, why do I get **exactly the same psychological “feel” from the non-response of our mine to values objections** by the less aggressive, less wealthy members of the community; and why do I anticipate a “murder” when they threaten-by-inference downstream destruction backed by a financially excused determination to just walk away?

Why, every time the mine shows up again, do I see before me the face of a stalker?

### **And sadly...Planning and bias**

On Wednesday March 11 last year, there was a Meet the Candidates gathering in the Majors Creek hall. The hall was packed because everyone knew the mine would be discussed. At this meeting, it was revealed by local state member John Barilaro and Senior Citizen of the Year, Jackie French, that a visit by them to the Department of Planning had finally **uncovered the reason that none of us we received any acknowledgement to our emails.** It turns out **that certain staff at Planning appeared to be biased toward Unity Mining over Dargues Reef.** John Barilaro even mentioned that there may have been corruption involved.

Well, well. I ask myself if this has changed or if it has not changed and, therefore, if we are wasting our time making submissions.

**Put yourselves in our position.** If you had lost faith in government and had started to wonder if decisions coming out of Planning were merely legitimizing incompetent little liars and stalkers, **what would you do?** Really, I would like an answer to this question.

**Would you have a blockade?**

Happy New Year.

Yours sincerely,

Jane Ahlquist  
P.O. Box 10 (75 Rugby Road)  
MAJORS CREEK N.S.W. 2622



I object to the new amendments.

Why should any consideration be given to new amendments?

When the original conditions have not yet been fulfilled by the proponent. If any amendments are ever approved then compensation should be included to all residents of Majors Creek and district for the impacts it will bring. The life of this mine has been delayed and put off by the proponent they have an approval which they have not acted on.

The NSW GOVERNMENT through the ministry of Planning and Environment and the Planning Assessment Commission are the Arbitrators of the condition.

This Determination was made by the Planning Assessment Commission and should remain valid or cancelled.

No other conditions should be considered before the approved determination has been implemented as a working mine.

The proposed modification does have environmental consequences beyond those which had been the subject of assessment and determination of the original project.

Finally

How can a proponent seek amendment to conditions which have not begun. So far a road ,some infrastructure.

The Citizens should not be paying for this by impact or tax and especially the valuable time that has already been wasted not by the residents by the proponent dismissing the wasted time by saying they have been misunderstood or misinterpreted.

The emotional upheaval over the last 10 years has taken a toll on the Majors Creek communities social wellbeing.

The proponent refers to the amendments as minor in the submission.

The amendments are very major otherwise they would not be seeking them if they are so minor they are not needed.

The impact will be for a life time.

The proponent uses schematics and rhetoric in saying the amendments are minor.

Mr Jeffrey Welford

[REDACTED]

Majors Creek  
NSW 2622

I object to modification 3 and amendments

Questions for the proponent

1. How will the hours of operation be modified to compensate for the extra period of the life of mine 2024 day time hours only five days a week Monday to Friday and or what compensatory figure would you offer to residents of Majors Creek and district that would offset the social and environmental impacts and lifestyle impacts if the mine becomes operational?

To ask for additional life of mine to be extended has been brought about by the proponent not becoming operational and fulfilling the approval. The proponent was not misunderstood or misinterpreted the modification 3 was acted upon by the citizens appropriately.

2. How will the TSF be modified to contain any spillage when impacted by the environment and climate?

3. How will the Waste Rock emplacement be covered over so that a dust storm of pollutants are contained when impacted by the environment and climate?

The Waste rock Emplacement and heavy vehicle movement over Spring Creek will increase mineral pollutants and noise.

4. How will the Majors Creek road be repaired to allow traffic to travel safely between mine and Majors Creek, mine and Braidwood?

The road is in poor condition and not wide enough and unsafe for heavy vehicles and passenger vehicles.

Mr Jeffrey Wolford

[REDACTED]  
Majors Creek  
NSW 2622  
03/01/2016

Hi Phillipa,

Please accept this submission on this very important subject close to the hearts of the local community.

This Response is to **Submissions November 2015 to the Dargues Reef Gold Mine - Modification 3**

This comes to you because the online submissions were closed but an extension until 4 January was promised. I hope the NSW Government will appreciate the level of community concern and act accordingly to safeguard the health of the people and the environment.

**Submission**

I acknowledge that Unity Mining Ltd has withdrawn proposal to process gold on site using cyanide and to increase the size of the tailings storage facility. This is because of the high level of objections from the local community, NSW Government Departments and expert reports.

However, Unity is claiming that it is now only seeking approval for "...the other relatively minor modifications sought from Modification 3, and expects to see a speedy resolution and approval of these matters in the coming months..." (Unity ASX Release on 8 September 2015).

**I do not regard these modifications as being "relatively minor" and I object to the amendments.**

Please continue to rigorously assess the company's application in consultation with all relevant government agencies, especially NSW Environment Protection Authority, because Unity's response to submissions is inadequate because:

The community does not give '*general support for the project*', as Unity claimed on ASX Release (Sep 2015). Submissions from individuals, community organisations and the NSW Government, raised many areas of concern including cyanide processing and enlarged tailing storage facilities. These concerns included the risks from heavy metal pollution, tailings dam design, wind borne pollution, sediment dams and leaching into ground water. Further, independent experts revealed major issues relating to rainfall, evaporation and soil type.

Unity's response to submissions does not comply with some of the 2013 Conditions of approval, such as updating the dam to accommodate actual rainfall data. Approval to process should not be given till this is done. Both an underestimation of rainfall and an overestimation of evaporation at the mine site would mean the tailings storage facility would fail because the design is based on flawed data. This needs to be investigated with authorities using accurate data.

Groundwater modelling was not done with detailed field data, listed as necessary for the groundwater model review. Collecting such data should begin immediately to provide

important baseline data before mining begins. To ensure reliable high quality data a continuous automated data collection method is required.

The road crossing at Spring Creek is another potential accidents point that can affect the watershed. Spillage of oil, fuel, or the contents of a truck at this crossing would lead to water contamination. This is a steep site and even a fast response would not prevent damage to the water supplies of downstream residents, damage to aquatic ecology in the upper catchment of even the lower the Deua/Moruya Rivers.

Unity's economic assessment has been independently audited and determined as adequate, but this does not mean that the community and decision makers have adequate economic information. Cost Benefit Analysis is necessary for an accurate economic assessment of the project, including assumptions used, because economic failure ultimately leaves the community, government and future generations meet the costs of clean up.

Of great concern is Unity's lack of willingness to rehabilitate their mine site once mining has finished. An interview late Dec 2015 on ABC SE Radio with the Mayor of Bendigo revealed that, after three years of 'care and maintenance' at the Eaglehawk and Woodvale mines Unity still have no rehabilitation plans, despite repeated community requests. Unity should not be allowed to move to another mine site without attending to rehabilitation commitments in the Bendigo area first.

**In conclusion no new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval. These being updating the project designs for tailing storage facilities, sediment dams, and ore storage areas.**

Tens of thousands of residents rely on the Deua/Moruya River Catchments remaining uncontaminated. We also expect that any conditions placed on Amended Modification 3 be rigidly enforced by the Department from the start.

Sincerely

**John Wilde**

Home: 44739213  
Tuross Head,  
NSW 2537 Australia

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Please find my objection to the Gold mine proposed re: Dargues Reef Gold Mine, Majors Creek;

Stand : Strongly Object

Employment - Own and manage a tourism based company operating in the Batemans Marine Park.

Future growth strategy: To help build a strong tourism economy based around our natural attractions.

Being a nature based business owner in the Eurobodalla my family and my employees rely on a healthy, pristine environment to build our local business. My fear is a heavy metal or any spill upstream on the Deua river catchment will compromise the current and future economic potential of inbound tourism visitation, organic agriculture and employment growth in the area.

It seems ludicrous, unjust and illegal to tinker with a planning application to appease a set of planning rules when the fundamental provision of short term employment is the only reason to continue with the submission, all other changes being detrimental to the very thing mankind needs for survival - a healthy environment.

Using the river valley for inbound tourism would provide a infinite long term strategy for employment of local people and protection of what is valuable to us all.

The incredibly beautiful Deua river Valley does have potential to become a must see area, current visitors do not know it exists and have no way of seeing it.

With planning and consideration by management departments working alongside local landowners and private business the area made up of native forest, escarpments, creeks and gorges, thriving past indigenous use, european heritage and award winning farmers (making up its current usage) has incredible potential to create award winning experiences and boost the local and NSW economy by encouraging:

- guided walks
- guided kayak or canoe trips
- overnight journeys
- organic food growing and cultivation with farms stays
- inbound domestic and international visitors
- long term employment and management
- indigenous and cultural visitor experiences

A float down the river by kayak or canoe with a guided multi day walk would become a top 10 destination for a break in Australia with the first 24 months of operation.

Industry could encourage and market to a range of nature based experience seekers to provide:

- economic boost
- increase dollar spend
- exponential employment

- long term solutions to current short term employment ideals

River valleys all over the world prove to be far more economically sustainable and contribute to the long term tourism economy if they are preserved in their natural state. *See Franklin River Tasmania, Futaleufu River Patagonia as prime examples, both contributing to inbound visitor and economic spend.*

I truly hope that the submission is considered thoroughly,

Should you wish to contact myself via phone or email, please do so,

kind regards

Josh Waterson

Region X - *Batemans Marine Park Experiences*  
Batemans Bay - Narooma  
NSW South Coast

NB: I understand that online submissions have been closed, but that acceptance of submissions until COB today, January 4 2016, has been promised.

For ease of recording, my submission is presented within the body of this email, so there can be no doubt about the date and source.

Best practice for government consultation would be to maintain submissions until after a major holiday period.

Therefore I make the following points, trusting that they will be taken into consideration as part of the approval process.

I appreciate the opportunity to have input into this development approval process.

#### RESPONSE TO SUBMISSIONS NOVEMBER 2015

I note that Unity Mining Ltd has withdrawn its intention to process the gold on site using cyanide or to increase the size of the tailings storage facility, in response to community objections and government experts.

Unity now seeks approval for other modifications which they claim are relatively minor, particularly Modification 3. (Unity ASX Release on 8 September 2015).

I strongly disagree that these modifications are minor and object to Unity's amendments.

Unity's proposals require detailed assessment and monitoring by the NSW Environment Protection Authority, as their response falls short in many ways.

There is little or no community support for the amended project, even though Unity claims otherwise.

Community objections did not focus on cyanide alone or on the enlarged Tailings Storage Facility.

The community is savvy enough to know that ANY tailings storage carries grave risk to water courses and the surrounding environment, as the recent spill in Brazil has illustrated yet again.

Our catchment does not need this sort of risk, on any scale, and the community has made that clear.

The NSW Government submissions have noted the risks from heavy metal pollution, questionable tailings dam design, wind borne pollution, sediment dams and leaching into ground water.

One does not have to be a scientist to understand that the independent experts concerns these issues are sufficient to outweigh the small economic benefits that are supposed to accompany the mining.

I remain opposed to the gold mine in any form, but especially when Unity is already, before the approval process is complete, taking a sleight of hand approach to the environmental safety issues.

Specifically, Unity has not yet indicated it will comply with the requirements and conditions of the 2013 approval to update the dam design for actual rainfall figures.

Given that climate change is already affecting weather patterns in NSW, a more conservative approach which is based on actual data is surely warranted.

Unity should be paying for all necessary field data, including groundwater modelling. This data is vital before final approval, and should be updated and monitored rigorously and transparently by government agencies.

Any possible weak points in road access or creek crossings should be corrected and minimised via engineering works prior to commencement of mining, and paid for by Unity.

Such vulnerabilities for fuel or cargo spillage could have dramatic impacts on the watershed, and require a strong and conservative preventative approach by Unity.

A proper cost benefit analysis that takes a triple bottom line to the mining proposal is now warranted. Benefits to the company versus potential costs to the community and ecology of the region are necessary before this project proceeds.

Over and over we have seen that mining impacts can be destructive of local community and ecosystems, long after the extraction process is finished and the company has moved on with their profits.

Unity has already demonstrated their cavalier attitude to local people and place, in their treatment of the site at Bendigo.

An interview just before Christmas on ABC SE Radio with the Mayor of Bendigo revealed that after three years at the Eaglehawk and Woodvale mines Unity still have not taken action to rehabilitate the sites, ignoring community requests.

This to me provides sufficient evidence that Unity is not of good intention and should not be allowed to open another mine before its commitments to the Bendigo area are rehabilitated to the satisfaction of the residents.

Good governance by NSW requires nothing less.

I therefore request that no final approval (much less for modifications) for the Dargues Reef mine be given until the company has complied with all prior Conditions of Approval, updated the project designs on the tailings storage facility, sediment dams, and ore storage areas.

I furthermore request that Unity not be given approval until, as a show of good faith and integrity, they meet their commitment to rehabilitate the Bendigo mine sites.

Any approval must be rigorously and transparently monitored and enforced.

Faithfully,

Dr Karin Geiselhart  
Moruya Heads  
NSW 2537



Phillipa we have permission to submit until 4 Jan so here is mine with thanks Karis Muller

Submission on Big Island Mining Pty Ltd Modification 3, Dargues Reef gold mine, Majors Creek, as amended 8 September 2015

by Dr Karis Muller, Majors Creek, of Majors Creek Catchment Guardians, 2 January 2016, in response to Corkery's latest Report, written after cyanide on site was withdrawn and other changes were proposed.

General observations

In the light of Corkery's latest Report in response to our last round of submissions I am even more confused and frustrated than before. Unity claims that as only cyanide use on site worried us and now Parkes is to process after all, though previously we were told that transporting the concentrate to a distant plant was too expensive , all liable to be affected are now happy. It is true that some previous submissions mentioned only cyanide processing. Others based on solid and extensive research did raise wider issues as well, yet the Responses have either ignored community concerns or not answered seriously. Have the incorrect TSF figures invalidated the original approval? We are not sure. The lack of information makes it hard to know what Unity proposes to do, how , when and why.

My submission posed precise questions but was entirely ignored, e.g. :

- what of their micro filtration plant at Bendigo which Unity have refused to move to Dargues, simply stating that it is not necessary
- the likelihood of toxic dust landing in our water tanks, aggravated by the prevalence of heavy mists all year which are especially apt to carry particulate matter and toxic gases over the area and beyond , so that we shall not in future grow vegetables without importing uncontaminated soil every year
- The likelihood of toxic mine slurry pushed down the void later cracking and leaking into groundwater due to local climatic extremes
- the tendency of TSFs to overflow, have cracked pipes, be disturbed by animal activity; coupled with the practice of later altering dam designs so that consultants are not responsible for the inevitable dam failures that are the more likely given the over optimistic and cost saving dam designs chosen

I note the contradictory statements made over time justified post hoc , a current example being that Unity claims its TSF will revert to what was already approved; later Knight Piesold has apparently agreed to redesign its TSF after all; we then learn that KP is to average the rainfall figures of Majors Creek and Braidwood; but no, KP will take only one of the two sets of figures, whichever is 'the more conservative'. So in all we have three different TSFs! We need exact figures, explanations, careful and expert scrutiny – we do not want to continue paying independent experts to assess threats to our health and that of our children, animals, birds, water, air and soil. Governments are supposed to protect citizens from corporations, not just from lunatic foreign fanatics.

Vagueness is another common reaction to our carefully researched submissions. When serious issues are raised e.g. the mercury, arsenic and other pollutants of air, soil and water the gold room stack is going to emit (as numerous gold mine studies show,) the mine replies that no, it won't happen here - there will be no dangerous emissions (e.g. nitrous oxide, mercury, benzene, toluene, xylenes) as there will be a scrubber. Which mines have to have anyway. What kind of scrubber? What do tests of emissions using such a device show? The EPA will monitor the emissions (cf Mercury and Modern Gold Mining in Nevada, USA EPA, 2005) but how effective are any filters ? We are not told. And tailings will be treated using 'relatively simple measures'- what is that supposed to mean?

There will be 'no impact on bores'? Elsewhere their own experts have admitted that ground water will take ten or twenty years to recover. A former miner told me that the gold mine in his town brought in 27 pumps that sucked up all the ground water so the village became a dead ghost town.

Furthermore now we are to have a huge waste rock pile; all other such piles have polluting run off, perhaps years later; crushed rock releases sulphides that poison the soil and water for years. Captains Flat is one notorious case study near us , where three such poisonings due to waste pile leakages have occurred, so that even cows cannot graze there today. And that mine is due to re open, we hear... but ours alone will not contaminate our water and soil!

We need to know exactly what machinery is to be used; why no dry stack TSFs as e.g. Chile and British Columbia now stipulate; why no micro-filtration as is done e.g. at Hillgrove gold mine NSW, which does not use CN on site and uses all new plant.

Mission creep is a concern that Unity simply brushes aside. They admit that they will continue to expand, in time to 2024 now and spatially over a huge area far beyond our village, as they will simply put in further vague modifications.

In 2011 after a PAC several restrictions to mine nuisances were imposed but they were then flouted and we had no redress. What will another PAC achieve? Why are governments so unable to protect their citizens? Mines are a worse threat to us than are terrorists, and Indian and Chinese as well as domestic companies do more harm than ISL does – one can easily draw up a list of coal and gas, gold and other mines that cause great damage to human health and leave great barren craters behind. Most remain dead and toxic for generations . We are not even told what bond this company- Unity or its Chinese successor- must post, but we do know that the cost to governments and to us is far greater than any bond. The costs to governments, Councils and ratepayers to make closed mines safe is c 20 times higher than any royalties or taxes paid, while jobs created are countered by the jobs in organic farming and fishing etc. lost, not to mention the physical and mental health costs that always follow when noise, ugliness , smells and loss of clean water kill off villages that once prospered.

Planning must please ensure that Bill Waterhouse of NARG Majors Creek or his nominee alone removes wombats from the mine site. And the community must be allowed to monitor wildlife at the site, to publicise bird deaths and suchlike. There will be many.

In conclusion: the mine has been approved, but what mine exactly? The proponent seems to escape scrutiny as it progressively changes its project while divulging no information worth the bother. We need precise information and we need assurance , community inspections and expert advice. Until then the claim that Unity is an 'environmentally friendly gold mining facility' and an 'ecologically sustainable development' is mere green wash , as no mine at all it the only climate change compatible option.

Given that whoever owns the Dargues project has had Dargues approved, as least let us demand real information, real facts and real community scrutiny. Failing that, this Project deserves to be consigned to the nearest dustbin.

Karis Muller

4 Rugby Road  
Majors Creek  
NSW



PO Box 274

Braidwood NSW 2622

Environment Assessment Branch  
Department of the Environment

Dear Sir/Madam

**Re: MP10\_0054 ModD3, Big Island Mining Pty Ltd/Mining/Majors Creek Road, Majors Creek/NSW/Dargues Gold Mine Third Modification**

Thank you for extending the time for comment on the above application (no 3) Modification to the Dargues Reef approved mine at Major's Creek to 4 January 2016. Below are my comments:

***Amended Modification 3***

On 8 September 2015 Unity Mining withdrew aspects of their application including the use of cyanide in processing on site, the enlargement of the Tailings Storage Facility (TSF) and sought approval for the remaining components with some adjustments from the previous approval.

The amended modification request is described in the response to submissions (RTS) document and involves:

- extending the approved mine life from 31 August 2018 to 31 December 2024;
- increasing the approved maximum ore extraction from 1.2 to 1.6 million tonnes over the life of the project;
- construction and use of a waste rock emplacement area;
- construction and use of a vehicle crossing over Spring Creek; and
- an amendment to the project boundary.

***General Comments***

The adjustments to the previously approved proposal may appear minimal but are significant and have the potential to increase adverse environmental and social impacts. The increase in tonnage, the increase in the life of the mine, the construction of a road across Spring Creek, the headwaters of Major's Creek, Araluen Creek and the Deua River will have impacts. The construction and use of a waste rock emplacement requires consideration for potential negative environmental effects.

### ***Compliance Issues***

Given the changes in company ownership, exemptions, adjustments to the Conditions imposed, by the PAC, the Land and Environment Court and NSW Department of Planning a complete audit is required before any further steps are taken. This includes any consideration of this modification 3. The project requires a transparent way forward so that all commitments made are clear and when these are clarified and external monitoring of compliance is in place, a consultative process can begin re modification 3.

### ***Tailing Storage Facility (TSF)***

The adjusted modification 3 asks for an increase of 30% in production which means an increase in the volume going into the TSF. While the placement of the TSF was approved design issues and the data used to create the original design remain unanswered in this modification with an increased volume.

The discharge of contaminated water via the TSF spillways will occur and will proceed down Spring Creek and onward downstream. This is inevitable and the issue of discharges over the spillway are not dealt with. Unity needs to address this, to ensure excess water in the TSF when discharged is effectively managed and regularly monitored.

### ***Waste Rock Emplacement***

A 30% increase in production will presumably create more waste rock, and this is being planned for in the enlargement of the new waste rock pile. There insufficient information about how the rock is crushed and whether it will create dust, pollution and how this will be managed and monitored.

### ***Guidelines for the economic assessment of mining and coal seam gas proposals***

The final Guidelines, following community consultation, were recently released (18<sup>th</sup> December 2015) by the NSW Department of Planning and Environment. These guidelines are to ensure companies applying for new or modified mining and coal seam gas projects provide clear, consistent and robust information to support claims made in their EIS.

I understand that a NSW Department of Planning and the Environment spokesperson has said that mining and CSG companies will **now** be required to comply with the standards set out in the guidelines. This information should be provided by Unity Mining to enable realistic assessments of the economic and social benefits to the local community and stakeholders. This should be publicly available prior to this amended modification being considered by any decision maker. In particular, information is required to ensure that the economic impacts of mitigation measures not achieving desired results are included; specific methods to measure flow-on economic effects of a proposal should be included; and short and long term remediation costs of the project should be included.

Small scale mining companies have a very poor financial record, often significantly overstating the impacts of projects and leaving communities and local or state governments to bear the remediation costs. The *Expert Report on the Economic Impacts Discussed in the Dargues Reef Environmental Assessment (Modification 3)* by Natrisha Barnett Economists at Large Pty Ltd August 2015 makes this very clear:

*“The concern for policy makers is that the project may commence and impose environmental and social costs, but the marginal nature of the project may result in its suspension or abandonment, meaning that mitigation measures and rehabilitation are not carried out and that benefits such as royalties and employment are not realised.”*

Unity Mining does not have a strong financial track record. Decision makers should be provided with accurate and robust information to ensure that the project is genuinely economically and socially viable, now and into the future. The local community needs convincing evidence to feel confident that this modified project will not fail environmentally, economically and socially.

### ***Bonds and Remediation***

I understand that the company has said that it has sufficient funds to remediate the mine site. However this raises the serious issue of disaster remediation - if the tailings dam gave way and polluted the Araluen valley to the coast and the company does not have the funds to remediate the disaster who will cover these costs? A company which appears to be marginally viable can close down quickly leaving relatively minimal amounts of money for remediation/compensation.

Yours sincerely

Kirsty Altenburg

4 January 2016

**DARGUES REEF GOLD MINE – MODIFICATION 3**

**UNITY RESPONSE TO SUBMISSIONS NOVEMBER 2015**

**Reference Number: MP10\_0054 Mod D3 (Amended 8<sup>th</sup> September 2015)**

I appreciate the withdrawal by Unity Mining Ltd of the proposals to process the gold on site using cyanide and to increase the size of the tailings storage facility as a logical response to the high level of disapproval in the previous submissions on Modification 3 from the local community, NSW Government Departments and expert reports.

I hope that Unity's claim to only be seeking approval for *"...the other relatively minor modifications sought from Modification 3, and expects to see a speedy resolution and approval of these matters in the coming months..."* (Unity ASX Release on 8 September 2015) more a marketing ploy rather than an accurate reflection of any message given by the Department to Unity.

**I do not regard these modifications as "relatively minor" and object to these amendments. While I appreciate the withdrawal of cyanide processing and the enlarging of the TSF these were not my only concerns. I consider that residents of Eurobodalla and surrounding areas have the same rights to clean water both for drinking water and food growing areas as well as for the creatures living in the catchment area as those living in the Sydney catchment area.**

I consider Unity's response to submissions is inadequate and want to ensure that the Department will continue to rigorously assess the company's application in consultation with other government agencies, including the NSW Environment Protection Authority.

**Claim by Unity of community support for the amended project**

In the ASX Release (Sept 2015) Unity claims to be encouraged by ....*"the general support the project continues to receive from the community, with the exception of cyanide usage on site."*

I consider this a deliberate misinterpretation of the responses, objections in submissions from individual community members and community organisations. They did not centre solely on the use of cyanide and the enlarged Tailings Storage Facility. Submissions from NSW Government validated my concerns about risks from heavy metal pollution, raised questions about tailings dam design, wind borne pollution, sediment dams and leaching into ground water. Independent experts revealed major issues relating to rainfall, evaporation and soil type.



## **Unity Response to submissions**

### **1.Compliance Issues**

Having followed the re-opening of this mine since September 2010 it has become apparent that the mining companies have continuously sought exemptions and adjustments to the conditions imposed by PAC, the Land and Environment Court and NSW Department of Planning and Environment...

There are numerous conditions that have been struck out or deemed no longer practical by the companies. Before this amended modification 3 is assessed the communities living in this large catchment area need a report from the Department of Planning that sets out clearly the compliance achieved to date and most importantly the outcomes and future actions required as a result of this audit.

### **2. Design of Tailings Storage Facility (TSF)**

Unity has still not complied with the 2013 Condition of Approval relating to updating the design to fit the actual rainfall figures at the mine site. Submissions from Dr O'Loughlin and Dr Beck focussed on the potential failure of the TSF resulting from basing the design on flawed data relating to underestimation of rainfall and overestimation of evaporation.

Even though the plan is now to revert to the already smaller approved TSF, it is still vital that the design is closely examined by relevant authorities in the light of the most accurate and reliable data.

Approval to proceed should not be given until this has been done.

With the proposed increase in the quantity of ore mined and the increased length of mining period I have to wonder where the extra tailing are going to go, are they going to overload the existing TSF and increase the risk of overflow?

### **3. Accurate data for groundwater modelling**

Collection of the detailed field data listed as necessary for the groundwater model review should begin immediately to provide important baseline data before mining begins.

A continuous automated data collection method is required to ensure reliable and high quality data throughout the life of this mine and during rehabilitation.

### **4. New road crossing on Spring Creek**

This new creek crossing provides yet another vulnerable point for accidents that can affect the watershed. Spillage of oil or fuel or even the contents of a truck at this crossing would lead to pollution of the water. On this steep site even a speedy and appropriate response may not prevent damage to downstream residents water supplies, the aquatic ecology and the upper catchment of the Deua River.

### **5. Economic assessment**

Just because the economic assessment has been independently audited and determined as adequate, it does not mean that the community and decision makers have the information necessary for an accurate assessment.

The recent release (18<sup>th</sup> December 2015) by the NSW Department of Planning and Environment of the final Guidelines for the economic assessment of mining and coal seam gas proposals, supports this view. This document emphasises the need for both a cost benefit analysis (CBA) and a Local Effects Analysis (LEA).

The lack of analysis for the Eurobodalla region is of particular concern to me. This is specially relevant if the design of the already approved TSF is based on inaccurate data. It is very likely that this TSF would discharge contaminated water into Spring and Majors Creek during a heavy rainfall event. In flood these fast flowing creeks will rapidly carry the contamination into the Upper Deua Catchment and on into our water supply.

Contamination will threaten the livelihoods of the residents across the entire Deua/Moruya River catchment who are dependent upon the health of their soil, air and water for farming, aquaculture, tourism and conservation. The 3<sup>rd</sup> party impacts of these existing land uses are not quantified in the economic analysis and Unity has not given adequate reasons for this omission.

The distributional impacts of this project have also been ignored. The impacts on the Eurobodalla socio-economic groups living at a distance downriver from the mine site should be included.

## **5. Rehabilitation of the Mine Site**

It appears that Unity lacks willingness to rehabilitate a site once mining has finished. An interview just before Christmas on ABC SE Radio with the Mayor of Bendigo revealed that after three years of care and maintenance at the Eaglehawk and Woodvale mines Unity still have no rehabilitation plans despite repeated community requests.

It is of major concern that Unity has, and is allowed to move to another mine without attending to rehabilitation commitments in the Bendigo area.

## **Conclusion**

No new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval and updated the project designs on the tailings storage facility, sediment dams, and ore storage areas.

The many thousands of residents who rely on the Deua and Moruya River Catchments remaining unpolluted by this mine also expect that any conditions place on this Amended Modification 3 be rigidly enforced by the Department from the outset.

# Majors Creek Catchment Guardians Inc.

**TO THE NSW DEPARTMENT OF PLANNING AND ENVIRONMENT**

**SUBMISSION OF CONTINUED OBJECTION TO THE PROPOSED  
MODIFICATION 3 (Mod 3) AT THE DARGUES REEF GOLD PROJECT  
(10\_0054)**

**The MAJORS CREEK CATCHMENT GUARDIANS Inc. (MCCG) OBJECTS to the proposed Modification 3 at the Dargues Reef Gold Project as submitted by Unity Mining Ltd and its subsidiary Big Island Mining Ltd (The Proponent) including all amendments contained within the Response to Submissions as prepared by R.W.Corkery and Co and released November 2015.**

PHONE

EMAIL

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- INTRODUCTION AND OVERVIEW
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  1. Technical Data Concerning Rainfall and Evaporation and Design of the TSF
  2. Extension of life of the mine to December 31<sup>st</sup> 2024
  3. The construction and use of the Eastern Waste Rock Emplacement and proposed new vehicle crossing over Spring Creek.
  4. Remediation and or Reparation Works
  5. Social License to Operate
- CONCLUSIONS

## INTRODUCTION AND OVERVIEW

The Majors Creek Catchment Guardians Incorporated (MCCG) present here a response to the document known as:

### **RESPONSE TO SUBMISSIONS FOR THE DARGUES GOLD MINE MODIFICATION 3 MP10\_0054 prepared by R.W.Corkery and Co November 2015.**

It is mentioned here for clarity, this submission is a response to the document mentioned above and in no way supersedes, (unless noted) the previous submission by the MCCG concerning (Mod 3) in either part or entirety. The MCCG asks that the Department take both submissions into account when reviewing the matter.

As described in the response document “Executive Summary” section:

*“Following completion of the exhibition period, a review of the submissions received and consultation with a range of stakeholders, the Proponent withdrew the following two components from the Proposed Modification.*

1. *Final processing of gold concentrate on site to produce gold doré or unrefined gold bars using a conventional carbon-in-leach (CIL) processing plant, including:*
  - *transportation, storage, use and disposal of cyanide within the Project Site; and*
  - *placement of leached concentrate tailings within the Tailings Storage Facility.*
2. *Construction of an enlarged Tailings Storage Facility.*

*Approval is therefore sought to modify MP10\_0054 to allow for the following components only.*

1. *An amendment to the Project Site to accommodate the recently purchased “Slings” property;*
2. *A minor increase to the total resource to be extracted and associated extension of the life of the mine;*
3. *Construction and use of the Eastern Waste Rock Emplacement;*
4. *Construction and use of a vehicle crossing over Spring Creek to permit direct access between the box cut and the Tailings Storage Facility and proposed Eastern Waste Rock Emplacement; and*
5. *A range of minor adjustments to the conditions of MP10\_0054 to further clarify the intent of the conditions.”*

The MCCG are opposed to the modifications for the following reasons:

1. The technical data referred to in the document, which is used as the basis for the Tailings Storage Facility (TSF) design, is inconsistent with good and sound hydrologic engineering analysis because it is based on questionable and or uncertain data that is sourced from a multitude of different areas but not from the immediate site locality (meaning within a 5km radius). This data is at best a guestimate (albeit a good one) but offers no real fall back position should the TSF spill its contents via the emergency overflow spillway into the watercourse downstream.
2. The further extension to the life of the mine until December 31<sup>st</sup> 2024 did not form part of the original (Mod 3) application and as such has not in the opinion of the MCCG had fair, transparent and due process through the application system.
3. The construction and use of the Eastern Waste Rock Emplacement and proposed new vehicle crossing over Spring Creek will give rise to large vehicle movements closer to the residents of the village of Majors Creek than would otherwise have been the case with the original approval.
4. Remediation implications brought about by the risk of catastrophic failure of the TSF and the site on downstream agricultural land, watercourses and catchments and,
5. The company has ignored and refused to give the issue of Social Licence to Operate (SLO) its due consideration, and the MCCG go so far as to say the company has shown total disrespect for the community via its attempts to modify the project without the necessary community consultation, and without demonstrating to the community its desire to have true, transparent, corporate social responsibility in its dealings with the community.

A more detailed discussion of opposition to the modifications will now be discussed but it is for the reasons listed above that the MCCG submits this document as an unequivocal rejection of the modification in its entirety.

## DETAILED OBJECTIONS

### 1. Technical Data Concerning Rainfall and Evaporation and Design of the TSF

The technical data in question is contained within the EA prepared by the Geological and Environmental Consultants, R.W. Corkery & Co. Pty. Limited, for and on behalf of the Applicant.

Specifically, within Appendix 7 of the EA, a report prepared by Knight Piesold Consulting and issued July 2015 titled “Tailings Storage Facility Final Design Update” refers to the data in question.

On page 70 of the response document when referring to the submission of Dr O’Loughlin, the proponent states;

***“As the enlargement of the Tailings Storage Facility no longer forms a component of the Proposed Modification, these issues are no longer relevant.”***

The MCCG suggests this statement is false and misleading, and as the original TSF design was based on the same data the issue is current and indeed relevant.

The technical data referred to in the document, which is used as the basis for the Tailings Storage Facility (TSF) design, is inconsistent with good and sound hydrologic engineering analysis because it is based on questionable and or uncertain data that is sourced from a multitude of different areas but not from the immediate site locality (meaning within a 5km radius of the subject site). This data is at best a guesstimate, (albeit a good one), but offers no real fall back position should the TSF spill its contents via the emergency overflow spillway into the watercourse downstream.

While on the subject of spillways it is noted, with extreme distress and questioning of the validity of the design of the subject TSF, that an “emergency spillway” has been included in the design of the structure by Knight Piesold.

This simple fact suggests that contrary to what the proponent would have the Department and community believe, there is a possibility this TSF will overflow into the watercourse below the subject site and in turn will spill toxic contaminants into the surrounding district and the water catchment for Eurobodalla Shire.

Whilst the MCCG understands that the design of the TSF in question will most likely satisfy the design requirements of the Dams Safety Committee regarding the structural stability of the TSF itself, it is also noted that most TSFs (worldwide) are designed with no overflow provision in order to “contain” at all times that contained within the dam, and as such must also accommodate extreme weather events and mismanagements.

It is further noted that where TSFs are designed with an emergency overflow spillway, that spillway should lead to an emergency overflow dam kept empty at all times in order to contain any spill or leak in the event of extreme weather events or mismanagement.

The MCCG would like to pose this question to The Department:

- Q. If no empty emergency overflow dam is provided for, yet an emergency spillway is proposed, what will happen to the contaminants that overflow via this engineered and designed emergency spillway.

The MCCG suggests that if the answer to this question is into the environment via the downstream watercourses and into the water catchment for the drinking and irrigation water of inhabitants of the Palerang and Eurobodalla Shires that this Modification Application be rejected in its entirety.

## 2. Extension of life of the mine to December 31<sup>st</sup> 2024

The MCCG are once again dismayed by The Proponent's attempt to "shift goal posts" to suit itself without paying due and proper consideration to the effect of such upon the community.

The original applicant (Cortona Resources) had gained support of the community via a long and lengthy process of negotiation. The original approvals and conditions imposed by the Land and Environment Court further strengthened the support of the community by placing restrictions upon the development.

One such condition was the containment of works on site via the provision of an end date to the mining operations, being 31<sup>st</sup> August 2018.

Modification 3 was originally submitted with an extension to the mine life until 31<sup>st</sup> of December 2022.

The Response document of November 2015 suggests a change to the previous date with a further extension of mining operations for two years until 2024.

The further extension to the life of the mine until December 31<sup>st</sup> 2024 did not form part of the original (Mod 3) application and as such has not in the opinion of the MCCG had fair, transparent and due process through the application system. An extension of the mine life to this extent would be contrary



to the original Limits on Approval in that it would not be in the interests of minimising the impact upon the surrounding community and environment.

The MCCG would like to pose this question to The Department:

- Q. If The Proponent could get the expected end date of mining operations wrong by 2 years in the last 5 months, after having been involved with this project (via Cortona Resources) for near on 8 years, is it probable that the Community are unlikely to ever rest assured that there will be an enforceable end date and that their lives will not continue to be affected by the mine and repeated modifications to the Approvals.

The MCCG suggest that if the answer to this question is that the community are powerless to expect the enforcement of a completion date, (or more directly) if the original Limits on Approval can be eroded via multiple modifications, then the MCCG expect this Modification to be rejected in its entirety because it is these Limits on Approval and Conditions within the original approval documents which were written in to protect the community and the environment.

The MCCG further suggest that it is by the Proponents own mismanagement that the project cannot be realised and works completed within the previously approved time-frames and that the Community should not have to continuously compromise its amenity to satisfy the profits of a mining company that cannot conduct their affairs with an acceptable platform of corporate social responsibility.

### 3. The construction and use of the Eastern Waste Rock Emplacement and proposed new vehicle crossing over Spring Creek.

The construction and use of the Eastern Waste Rock Emplacement and proposed new vehicle crossing over Spring Creek will give rise to large vehicle movements closer to the residents of the village of Majors Creek than would otherwise have been the case with the original approval.

The MCCG believe this modification will increase the risk of unacceptable noise levels associated with heavy vehicle movements and that the existing acoustic amenity of the residents of Majors Creek must be maintained at all times. Further, in going to the crux of the matter, a large portion of the community already feel they are compromised by the subject development and in fact are having to be the “monitors” of the project by dedicating time and money to dealing with matters arising from the subject site and associated applications and modifications.

The MCCG would like to pose this question to The Department:

- Q. How can The Department guarantee that the existing amenity of the residents of Majors Creek and the surrounding communities will not be compromised or impacted upon negatively by the modifications? Further, who will be financially responsible for the costs of monitoring such effects and who will compensate residents if the effects are found to have negatively impacted upon those residents?

The MCCG suggests, that if this assurance cannot be given to the community, and if the answer as to who is to be held financially responsible is not The Proponent, this application should be rejected in its entirety.

#### 4. Remediation and or Reparation Works

It is interesting to read the responses by the Proponent to many submissions referring to possible remediation works to sites **downstream of the subject site** should any accident occur. Many questions are posed by objectors to the development as to who will pay for “clean-up” costs should an accident occur.

The Proponent has done a good job of deflecting and avoiding answering the questions as put by suggesting that The Proponent will have a bond sufficient to remediate the **subject site**. It makes no reference to remediation to other sites outside its own boundary fence.

The MCCG would like to pose this question to The Department:

- Q. Should any negative impact upon any site other than that of the subject site be found to have occurred, who is to pay the costs of all reparations?

The MCCG suggests if the Proponent is not to be held legally and financially responsible for any and all remediation works to any site as a result of mining activity at the subject site (including all transportation and all associated activity), then the Modification should be rejected in its entirety. It makes clear and proper sense in this day and age that the responsibility must fall completely and solely upon the Proponent in a case such as this, and to leave this issue “floating” without any specific Condition of Approval to such an effect is a mistake and should be righted for the sake of all Australians.

## 5. Social License to Operate

To say that the MCCG were shocked and dismayed by The Proponent's response to the group's lengthy submission regarding SLO would be the understatement of the year.

The Proponent is quoted as saying:

***“....As the use of cyanide no longer forms a component of the Proposed Modification, the Proponent contends that this issue is no longer relevant.”***

The MCCG would like to point out that SLO is at **ALL TIMES** a relevant issue. From the outset of a project until its completion, and even beyond, the need for a sound platform of Corporate Social Responsibility to be followed by any company is paramount to gaining the support of communities involved in major projects and in ultimately gaining Social Licence to Operate.

The Proponent has totally misunderstood the process, or the “road” it must travel in order to prove that it has this sound platform of Corporate Social Responsibility that will ultimately gain it SLO.

The withdrawal by The Proponent to process on-site and to enlarge the TSF, does not mean that it has re-gained SLO. On the contrary, the original submission of Mod 3 containing these two items lost the support of the community, and it was already on very shaky ground due to environmental breeches and mismanagement. This support is not simply handed back with the withdrawal of the on-site processing and enlarged TSF because SLO is based on community / company trust through and by a transparent, and appropriate process of development.

The Proponent has continually not held true to its promises and now the community are very wary of any proposal the company puts forward.

The MCCG would like to point out again to the Proponent that the submission of modifications involving the “moving of goal-posts” causes huge stress within the community. It causes financial and emotional hardship and generally is very disruptive to the lives of those in the community. Families have uprooted and left this area due to the proposals at Dargues Reef Mine and real mining has not even begun.

It is the opinion of the MCCG that the best way forward for the Proponent at this time would be to withdraw the application for Modification 3 and reopen a transparent and honest dialogue with the community in order to reconstruct a sound platform appropriate to all concerned based on mutual respect and trust and move forward. If this is not done, the group believes it would be next to impossible for The Proponent to ever gain SLO from this point forward and as such will be committed to making this point an issue for any future development at this site and indeed any owner at any given time.

The MCCG would like to pose these questions to The Department:

- Q. In an age when Social Licence to Operate is undeniably an integral part of the success of major projects and developments, how can the department enforce the requirement for proponents to gain SLO (not simply before the first approval) but to maintain it throughout the entire project life?
- Q. If a company does not have the support of the community, how does the “system” protect communities from being walked over by big business and corporate greed?

## CONCLUSIONS

It is for the reasons outlined above, in conjunction with the previous submission of this group, that a recommendation for rejection of Modification 3 is called for by the Department in determining this application. It is understood that a Planning Assessment Commission (PAC) will be called on to review the application, and that this group will have an opportunity to address the Commission at that time.

The MCCG believes this application determination should be used as a precedent for future determinations. The group believes that gone are the days when the opinions and existing amenities of communities can be compromised or left unheard by the steamrolling of big business. Corporate Social Responsibility and ultimate Social License to Operate are paramount to the success of large scale developments and the Local, State, and Federal Government have a responsibility to step in and ensure the safety and welfare of the people of this country. To compromise the environment and the socio-economic factors of our communities must, and will, be a thing of the past when government departments promote and support a fair and transparent process for all development.

The group believes that The Proponent does not have the necessary contracts in place with the community to proceed with this development, and either a withdrawal of the Modification or a rejection of the Modification must be forthcoming

END

**DARGUES REEF GOLD MINE – MODIFICATION 3**  
**RESPONSE TO UNITY MINING’S AMENDED MODIFICATION**  
**APPLICATION NUMBER 10\_0054 MOD3**

Thank you for the opportunity to again comment on proposed mining activity at Dargues Reef.

The community of Eurobodalla applauds Unity Mining Ltd’s withdrawal of both the proposal to process the gold on site using cyanide and to increase the size of the tailings storage facility. Common sense has prevailed in relation to these issues. In the light of extensive well informed opposition to the original Modification 3 Unity would have been foolish to carry on down that path.

I presume that the Department of Planning and Environment will continue to rigorously assess the company’s application in consultation with other government agencies, including the NSW Environment Protection Authority, because Unity’s response to the public and departmental submissions is not adequate across a range of issues, for example...

- **The claim by Unity of community support for amended project is a lie**

In the ASX Release (Sept 2015) Unity claims to be encouraged by ....*“the general support the project continues to receive from the community, with the exception of cyanide usage on site.”*

This is simply not correct. Anticipating this response by Unity many submissions deliberately did NOT focus solely on the issues of cyanide and the TSF expansion.

Even NSW Government submissions also highlight risks from heavy metal pollution, raise questions about tailings dam design, wind borne pollution, sediment dams and leaching into ground water. Independent experts revealed major issues relating to rainfall, evaporation and soil type

- **The design of Tailings Storage Facility (TSF) is still flawed**

Recent submissions from Dr Emmett O’Loughlin and Dr Beck focussed on the potential failure of the TSF due to the design being based on flawed data relating to underestimation of rainfall and overestimation of evaporation at the mine site. Even though the already approved TSF is smaller, it **will** fail if the design is also based on flawed data. Apparently Unity has still not complied with several of the 2013 Conditions of Approval, which includes updating the design to fit the actual rainfall figures

Based on false rainfall data, the original approval to proceed should not have been given. That approval should be **re-visited and revoked** until such time as accurate rainfall data *is* used.

If the Department, now knowing that the original rainfall data was flawed, **fails to re-visit** the original approval for the TSF then it leaves itself open to claims of negligence and incompetence or worse.

- **Accurate data for groundwater modelling is still urgently needed**

Collection of the detailed field data listed as necessary for the groundwater model review should begin immediately to provide important baseline data before mining begins.

A continuous automated data collection method is required to ensure reliable and high quality data.

- **The ability/willingness to rehabilitate the mine site and downstream environments is still in doubt**

It appears that Unity lacks willingness to rehabilitate a mine site once mining has finished. An interview just before Christmas on ABC Radio with the Mayor of Bendigo revealed that after three years of “care and maintenance” at the Eaglehawk, and Woodvale mines Unity still have no rehabilitation plans despite repeated community requests.

It is of major concern that Unity has, and is allowed to move to developing another mine without attending to rehabilitation commitments in Bendigo.

Furthermore, Unity’s financial position raises grave concerns about its ability to fund the remediation of Spring Creek and the Deua River in the event of runaway spillages or other accidents on site.

- **Conclusion**

No new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval; and updated the project designs on the tailings storage facility, sediment dams, and ore storage areas using realistic data.

Nick Hopkins  
Malua Bay NSW 2536  
0429428663

# THE EUROBODALLA GREENS

PO Box 295  
Moruya 2537  
3 January 2016

## DARGUES REEF GOLD MINE – MODIFICATION 3

### UNITY RESPONSE TO SUBMISSIONS NOVEMBER 2015

**Reference Number: MP10\_0054 Mod D3 (*Amended 8<sup>th</sup> September 2015*)**

#### **Introduction**

The withdrawal by Unity Mining Ltd of the proposals to process the gold ore on site using cyanide and to increase the size of the tailings storage facility is a logical response to the high level of disapproval in the previous submissions on Modification 3 from the local community, NSW Government Departments and expert reports.

Eurobodalla Greens are appalled to read that Unity is claiming to only be seeking approval for “...*the other relatively minor modifications sought from Modification 3, and expects to see a speedy resolution and approval of these matters in the coming months...*” (Unity ASX Release on 8 September 2015).

**Our members do not regard these modifications as “relatively minor” and object to these amendments.**

We consider Unity’s response to submissions is inadequate and want to ensure that the Department will continue to rigorously assess the company’s application in consultation with other government agencies, including the NSW Environment Protection Authority.

#### **Claim by Unity of community support for the amended project**

In the ASX Release (Sept 2015) Unity claims to be encouraged by ....“*the general support the project continues to receive from the community, with the exception of cyanide usage on site.*”

This is not the case. Objections in submissions from individual community members and community organisations deliberately did not centre solely on the use of cyanide and the enlarged Tailings Storage Facility. Submissions from NSW Government also highlighted risks from heavy metal pollution, raised questions about tailings dam design, wind borne pollution, sediment dams and leaching into ground water. Independent experts revealed major issues relating to rainfall, evaporation and soil type.

## **Unity Response to Submissions**

### **1. Compliance Issues**

Having followed the re-opening of this mine since September 2010, the Eurobodalla Greens conclude that the mining companies have continuously sought exemptions and adjustments to the conditions imposed by PAC, the Land and Environment Court and NSW Department of Planning and Environment.

There are numerous conditions that have been struck out or deemed no longer practical by the companies. Before this amended modification 3 is assessed the communities living in this large catchment area need a report from the Department of Planning that sets out clearly the compliance achieved to date and most importantly the outcomes and future actions required as a result of this audit.

### **2. Design of Tailings Storage Facility (TSF)**

Unity has still not complied with the 2013 Condition of Approval relating to updating the design to fit the **actual** rainfall figures at the mine site. Submissions from eminent experts focussed on the potential failure of the TSF resulting from basing the design on flawed data relating to underestimation of rainfall and overestimation of evaporation.

Even though the plan is now to revert to the already smaller approved TSF, it is still vital that the design is closely examined by relevant authorities in the light of the most accurate and reliable data.

Approval to proceed should not be given until this has been done.

### **3. Accurate data for groundwater modelling**

Collection of the detailed field data listed as necessary for the groundwater model review should begin immediately to provide important baseline data before mining begins.

A continuous automated data collection method is required to ensure reliable and high quality data throughout the life of this mine and during rehabilitation.

### **4. New road crossing on Spring Creek**

This new creek crossing provides yet another vulnerable point for accidents that can affect the watershed. Spillage of oil or fuel or even the contents of a truck at this crossing would lead to pollution of the water. On this steep site even a speedy and appropriate response may not prevent damage to downstream residents' water supplies, the aquatic ecology and the upper catchment of the Deua River.

### **5. Economic assessment**

Just because the economic assessment has been independently audited and determined as adequate, it does not mean that the community and decision makers have the information necessary for an accurate assessment.

The recent release (18<sup>th</sup> December 2015) by the NSW Department of Planning and Environment of the final Guidelines for the Economic Assessment of Mining and Coal Seam



Gas Proposals, supports this view. This document emphasises the need for both a cost benefit analysis (CBA) and a Local Effects Analysis (LEA).

Neither of these have been included for the Eurobodalla region. This is particularly relevant if the design of the already approved TSF is based on inaccurate data. It is very likely that this TSF would discharge contaminated water into Spring and Majors Creek during a heavy rainfall event. In flood these fast flowing creeks will rapidly carry the contamination into the Upper Deua Catchment and on into the water supply.

Contamination will threaten the livelihoods of the residents across the entire Deua/Moruya River catchment who are dependent upon the health of their soil, air and water for farming, aquaculture, tourism and conservation. The 3<sup>rd</sup> party impacts of these existing land uses are not quantified in the economic analysis and Unity has not given adequate reasons for this omission.

The distributional impacts of this project have also been ignored. The impacts on the Eurobodalla socio-economic groups living at a distance downriver from the mine site should be included.

## **5. Rehabilitation of the Mine Site**

It appears that Unity lacks willingness to rehabilitate a site once mining has finished. An interview just before Christmas on ABC SE Radio with the Mayor of Bendigo revealed that after three years of care and maintenance at the Eaglehawk and Woodvale mines Unity still have no rehabilitation plans despite repeated community requests.

It is of major concern that Unity has been freely allowed to move to another mine without attending to rehabilitation commitments in the Bendigo area.

## **Conclusion**

No new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval and updated the project designs on the tailings storage facility, sediment dams, and ore storage areas.

The tens of thousands of residents who rely on the Deua and Moruya River catchments remaining unpolluted by this mine also expect that any conditions placed on this Amended Modification 3 be rigidly enforced by the Department from the outset.

Nick Hopkins  
Convenor  
Eurobodalla Greens  
3/1/15

**ARALUEN VALLEY AGRICULTURAL PRODUCERS & PROTECTORS OF THE  
ECOSYSTEMS COALITION (AVPEEC) Inc**

*(Incorporated under the NSW Associations Incorporation Act 1984 Inc no:INC9896112)*

Environment Assessment Branch

Department of the Environment

**Reference Number: MP10\_0054 ModD3 (Amended 8<sup>th</sup> September 2015)**

**Title: Big Island Mining Pty Ltd/Mining/Majors Creek Road, Majors  
Creek/NSW/Dargues Gold Mine Third Modification**

Dear Sir/Madam

I am writing to provide details of AVPEEC's submission concerning the above application (no 3) Modification to the Dargues Reef approved mine at Major's Creek.

**Amended Mod 3**

On 8<sup>th</sup> September 2015 Unity Mining withdrew aspects of their application namely the use of cyanide in processing on site, the enlargement of the Tailings Storage Facility (TSF) and sought approval for the remaining components with some adjustments from that previously approved.

The amended modification request is described in the response to submissions (RTS) document and involves:

- extending the approved mine life from 31 August 2018 to 31 December 2024;
- increasing the approved maximum ore extraction from 1.2 to 1.6 million tonnes over the life of the project;
- construction and use of a waste rock emplacement area;
- construction and use of a vehicle crossing over Spring Creek; and
- an amendment to the project boundary.

**General Comments**

It is an extraordinary approach that supports this tinkering with the application until it seems more palatable. Seems being the operative word. The adjustments to the previously approved proposal are not insignificant. The increase in tonnage, the increase in the life of the mine, the construction of a road across Spring Creek, the headwaters of Major's Creek, Araluen Creek and the Deua River are not inconsequential. The waste rock emplacement is also not examined closely or given due consideration for its potential environmental effects.

This company has produced a response to submissions based upon a previous application and then vaguely illuminated the adjustments and expected that the community would accept that the primary "nasties" have disappeared. This is not an accessible, robust or transparent approach. The document is filled with contradictions and does nothing to assist any

meaningful consultative process. In particular there are discrepancies between the overall and engineer's summations in particular relating to the TSF and the harvestable rights issues.

### **Compliance Issues**

This company has wriggled and continuously sought exemptions and adjustment to the Conditions imposed, by the PAC, the Land and Environment Court and NSW Department of Planning, from the very beginning. Their compliance is poor and it is noted that to date there has not been from the Department of Planning a **transparent** review of Unity's compliance and most importantly any outcomes and future actions as a result of such investigations.

Given the case that went before the Land and Environment Court, the original Department of Planning's conditions and the conditions imposed as an outcome of the previous PAC a complete audit is now required before any further steps are taken.

This includes any consideration of the re-vamped mod 3. The deck must be cleared in regards the myriad conditions that Unity appears to have struck out or deemed no longer practical to meet. All commitments unaffected by mod 1 & 2 require attention and once this is clear and commitments made and **external** monitoring of compliance is in place, a consultative process can begin re mod 3.

### **Tailing Storage Facility (TSF)**

The adjusted modification 3 asks for an increase of 30% in production, thus this will mean an increase in the volume going into the TSF. While it true the placement of the TSF was approved there remains issues with the design and the data used to create the design.

Given that AVEPPEC has raised issues regarding the data used for the design of the TSF for modification 3, and now the return to the original TSF, albeit with an increase in volume, still leaves the design based upon flawed data.

The discharge of contaminated water via the TSF spillways will occur and will proceed down Spring Creek and onward downstream. While this is inevitable and the issue of discharges over the spillway are not dealt with, it would seem critical that Unity devises an approach that both monitors and manages excess water in the TSF when discharged over the spillway. This is not even canvassed in their documents. There is an assumption that as this does not constitute a TSF failing it requires no attention. It is just the opposite any discharge via the spillways or leaks must be dealt with rigorously. It is also noted that excess water from sediment pools etc will be pumped into the TSF thus excess water plus increased waste would indicate increases through the spillways.

Strategic Environmental and Engineering Consultancy (SEEC) calculations used different data to demonstrate plenty of harvestable water for compensatory base flows. This was evident on the original EA and Mod 3. This would mean additional water to the TSF increasing ?spillway flows. The design of the TSF used different data thus favouring no spillway activity.

Be worthwhile asking each consultant to use the same data to calculate outcomes and designs of TSF, sediment ponds, spillway activity etc. Such internal inconsistencies seem to always come back to the poor rainfall and evaporation data used from the beginning and nowhere has Unity sought to refine and adopt a consistent set of data for all the water balance issues arising.

### **Waste Rock Emplacement**

The new waste rock pile appears considerably enlarged, not surprising given the 30% increase in production. There is little detail about the approach being taken to this pile, is the rock crushed? what type of pollution does that cause? short and longer term. How is that to be mitigated and how indeed is such a pile to be responsibly managed given the mining industries history of managing waste.

A 6 ha rock pile during formation will be very prone to sediment run off during rain events, unless there is viable management plans for this run off that are incorporated into the general management of water this poses yet another risk. One would query that this remains much the same as previously given the 30% increase in production.

### **Value to the Local and State Economy**

The recent release (18<sup>th</sup> December 2015) by the NSW Department of Planning and Environment of the final guidelines for the economic assessment of mining and coal seam gas proposals, following community consultation, raises some interesting questions.. No doubt Unity will indicate that having to retrospectively address such guidelines is not fair, given the existing almost laughable economic information available on this proposal even meeting these guidelines to a degree would be illuminating.

18<sup>th</sup> Dec a spokesperson for the NSW Department of Planning and the Environment said that mining and CSG companies will **NOW** be required to comply with the standards set out in the guidelines.

These guidelines are to ensure companies applying for new or **modified** mining and coal seam gas projects, provide clear, consistent and robust information to support claims made in their EIS. This could be a game changer and one that the mining industry will have to transparently adhere to, thus providing clear and real information re economic impact on State and local communities will enable true consultation between the parties..

### **Guideline changes as a result of stakeholder and community feedback included:**

- specifically requiring companies to ensure that the economic impacts of mitigation measures not achieving desired results are included
- requiring companies to identify if specific groups would bear more cost than other groups
- requiring companies to only present those profits attributable to NSW
- introducing specific methods to measure flow-on economic effects of a proposal
- better reflecting the cost of infrastructure

- including costs of remediation of a site into the analysis.

The expert report “Economists At Large” by Natrisha Barnett make some important points that go to the heart of an enduring concern regarding the trumpeted “benefits”. Unity essentially indicates 100 jobs initially with 80 operational, all residing in the district unless the expert skills required are not available locally. Unity also indicate \$1-8 million (*very vague and open ended*) in State profits. The original modification 3 (with cyanide) also relies on savings from transport etc which are all now back on the table.

It is also noted in this report that the arriving of figures via input-output analysis are likely to be of little use. The Australian Bureau of Statistics no longer publishes input-output data noting their shortcomings: which are likely to significantly overstate the impacts of projects.

Additionally jobs are not usually considered a benefit but a cost against which benefits should be considered. This report also notes decision makers should pay more attention to the viability of the project than claims about jobs or net benefits.

We would suggest the costs of this project including the cost it imposes on the wider community and environment mean it is not worthwhile. The long period of gestation with this project including the modification dance indicate the project is financially marginal and we would say the beginning of a community and environmental chaos.

#### **As noted in this report:**

Expert Report on the Economic Impacts Discussed in the Dargues Reef Environmental Assessment (Modification 3) by Natrisha Barnett Economists at Large Pty Ltd August 2015

*“The concern for policy makers is that the project may commence and impose environmental and social costs, but the marginal nature of the project may result in its suspension or abandonment, meaning that mitigation measures and rehabilitation are not carried out and that benefits such as royalties and employment are not realised.”*

#### **Bonds and Remediation**

As usual the devil is in the detail. ie a complaint was made that if the tailings dam gave way and polluted the valley to the coast the company would not have the funds to remediate the disaster, the response – the company has sufficient funds to remediate the mine site. Unity acknowledged they may have to raise their bond however nowhere is there any indication they are prepared to countenance a major remediation/compensation demand. Of course suing a company that has folded will be hard.

The extension of time requested also raises serious issues. The rationale is the slow uptake and slow down of the operation. This raises not only issues of the proposal’s viability, the real employment levels and the actual capitalisation available but also points to the seeking of excessive flexibility. It may mean down times, up times and a generally frail operation. Given the reversion to much of the processing off site it would seem additional ore/projects may well be required to move this project from marginal to barely profitable.

Marginal viability indicates a company that can fold quickly leaving relatively minimal amounts of money for remediation/compensation.

**This amended Mod 3 application must be rejected and Unity required to address a number of issues including those outlined but not limited to those described.**

**Absolutely no approvals until there is a coherent and evidentially based response to all the above issues.**

Yours sincerely

Penny Hayman  
President AVEPPEC

1<sup>st</sup> January 2016

Peter Cormick  
1670 Araluen Road  
Deua River valley NSW 2537  
P: 0418 495 455  
E: [pacormick@hotmail.com](mailto:pacormick@hotmail.com)

3 January 2016

Mr Mike Young  
Director, Resource Assessments  
Department of Planning and Environment

Dear Mr Young,

**SUBMISSION**  
**AMENDED APPLICATION - MODIFICATION 3**  
**DARGUES REEF GOLD MINE PROJECT (10\_0054)**

1. I refer to the letter from Unity Mining Limited ("the proponent") to you, dated, 20/11/2015, which accompanied the proponent's Response to Submissions ("RTS") and which outlines the revised Modification 3 application. In that letter the proponent advises that it is "now only seeking approval for those components of the application that relate to ...", and includes in that list "A range of minor adjustments to the conditions of MP10\_0054 to further clarify the intent of the conditions" (emphases added).
2. At page 9 of the RTS the "Amended modifications [to the Conditions AND the Statement of Commitments] required" is elaborated upon. While some of the proposed amendments to the Conditions might be seen as "minor", such as the necessary administrative amendments, the proposed amendments to the Statement of Commitments attempts to alter the environmental compliance requirements of the Project Approval, profoundly. There is no need or justification for the proponent to "further clarify the intent of the condition". The use of the word "clarify" here is quite mischievous. In fact a view of Appendix 2, in which the proposed amendments to the Commitments are set out, shows that consideration of the proposed amendments could hardly be more confusing.
3. As far as the health of the environment and public safety is concerned, compliance with the Conditions and Commitments of the Project Approval is all that can be relied upon. Other than the necessary amendments to the Conditions – which an approval of any aspect of the application might require – there is no possible justification for any amendments to them.

4. As you know, if there are any inconsistencies between the Conditions and the Commitments, Condition 3 of Schedule 2 of the Project Approval requires that “the conditions of this approval shall prevail to the extent of any inconsistency”. In other words, there is no need for “clarification”, if there were to be any need at all.
5. I request, therefore, that the Department:
  - a) Not support any amendments to the Conditions or Commitments other than those that are made necessary by the approval of any aspect of the Mod 3 application.
  - b) Require further conditions and commitments be imposed to the extent made necessary by the approval of any aspect of the Mod 3 application.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "Peter Bell", with a stylized flourish at the end.



To: Department of Planning and Environment

Re: Unity Mining Limited – Modification 3 of Dargues Gold Mine

Dear Madam/Sir,

I am writing to you in objection to the Modification 3 of Dargues Gold Mine, in addition to the original mining approval and the project as a whole. I am currently a resident of Canberra, however in the past I have lived periodically with my parents in the Deua River Valley near Moruya, NSW. I visit the area regularly and have a strong connection with the Deua River, a pristine river system and vitally important source of drinking water for a large proportion of residents of the Eurobodalla Shire. Having read over the proposed modification - which outlines an increase in gold ore production and extension of the life of the mine of 6 years (from August 31, 2018 to December 31, 2024) – based on real perceived risks I am very concerned about the long-term health of the Deua River, its ecosystem and in turn the entire community that depends on it for their livelihood.

In the Environmental Assessment (EA) Part 1 of the proposed modification 3, on page xi in the Executive Summary under overview of the proposed modification, the proponent proposes “A minor increase to the total resource to be extracted and associated extension of the life of the mine”. On page 26 of the EA the proponent specifies this as an increase in extracted ore on-site from 1.2Mt to 1.6Mt over the life of the mine (an increase of 33%) – this is a large increase in ore extraction. It should be carefully scrutinised where such wording as “minor” is used in the EA. This is just one example of many where ambiguous language is used in the document, and hence should serve as a warning on the validity of the proponents’ intentions.

The proposed enlarged Tailings Storage Facility (TSF) would have the capacity to suspend 900,000 tonnes of mining refuse, contain enriched levels of antimony, boron, molybdenum and silver. These contaminants, at the concentrations likely to result in failure of the TSF, far exceed the thresholds outlined under Australian drinking water standards. The proposed TSF will be perched at the top of the Deua/Moruya River catchment (fed by the tributaries of Majors Creek and Araluen Creek). The TSF, which is ultimately permeable - even should there be no failure in the structure - would likely eventually leak these contaminants into the groundwater, subsequently resulting in pollution of the above mentioned waterways. Of course there is still a substantial risk that the TSF would fail, as there have been major flooding events historically recorded in the area (Araluen has recorded in excess of 300mm rainfall in a 24 hour period), and increasing evidence that more extreme flooding events will occur in the area in future as a result of climate change, despite the proponent claiming the structure is designed to withstand a once in 100 year flood event.

As an example of a previous TSF failure on another mine, the same engineers of the Dargues Mine TSF (Knight Peisold) were the original engineers of the Canadian Mt Polley TSF, which failed in

August 2014. Approximately 25 million tonnes of heavy metals from mine tailings drained into the Quesnel and Fraser River systems, poisoning the water supply to entire towns. The consequence of failure of the proposed TSF for Dargues Gold Mine doesn't leave much to the imagination. It would have an irreversible and devastating impact on the ecology of Majors/Araluen Creeks, Deua/Moruya Rivers, the flora and fauna of the Deua National Park, and the drinking water supply for the residents along these waterways. This includes the majority of residents of the Eurobodalla Shire and holiday makers over peak periods (at times quadrupling the normal population relying on this drinking water) with potentially disastrous consequences for their health.

Among many unique fauna and flora naturally occurring in the catchment under direct threat should the TSF fail is the Australian Grayling (*Prototroctes maraena*), who's habitat occurs in the Deua River. This species is listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This is an extremely important population of the species, possibly the best in NSW. In the river there are also thriving populations of several other native freshwater fish species including Cox's Gudgeon (*Gobiomorphus coxii*) and Congolli (*Pseudaphritis urvillii*). The river also supports healthy populations of Platypus, Azure Kingfishers and Eastern Water Dragons. The Leatherback Turtle (*Dermochelys coriacea*) has been known to occasionally venture into the Moruya River estuary to feed on Jellyfish - another species listed under the EPBC Act as Endangered.

The economic benefits of the currently approved Dargues Gold Mine and proposed modification 3 to the wider community are relatively low, and the risks associated with extending the life of the mine and construction of required associated infrastructure are far too great to ignore. A failure in the TSF could result in complete economic ruin to the Eurobodalla Shire. The economic wellbeing of the wider community is driven by a healthy Deua River, which among many other benefits it provides, supports thriving agriculture and tourism industries.

In summary of the concerns I have outlined above, I am asking you to consider very carefully what is at stake and to reject the proposed Modification 3 of Dargues Gold Mine, in addition to terminating the original mining approval and the project as a whole. Based on lessons learned from repeated infrastructure failures on mines in Australia and around the world, it is simply not worth putting the Deua River system and its tributaries at high risk of long-term and irreversible damage. It should be left alone, free from threats to exist in perpetuity for present and future generations to maintain their livelihood and to ensure the vital ecological health and beauty of the area is sustained.

Yours sincerely,

Rob Priddle

Turner ACT 2612.

December 31<sup>st</sup>, 2015.

Araluen Valley Pty Limited  
Wisbey Pty Ltd  
PB2, Araluen Road  
Araluen NSW 2622

4 January 2016

To the Department of Planning & Environment

**Reference Number : MP10\_0054 ModD3 (Amended September 2015)**

***I remain opposed to the modified proposed Modification 3 at the Dargues Reef Gold Project as submitted by Unity Mining Ltd and its subsidiary Big Island Mining Ltd (The Proponent) including all amendments contained within the Response to Submissions as prepared by R.W.Corkery and Co and released November 2015***

**Opposition to the construction of the Tailings Storage Facility.**

My views and concerns have been confirmed, tragically, with the failure of the Tailings Storage Facility ('TSF') in Brazil in November 2015. It took ONLY ONE FAILURE of the TSF in Brazil, where even BHP could not identify the cause, to flood towns, kill people, poison wild life, kill millions of fish, poison the river for decades, pollute the ocean, and destroy the communities and livelihoods of thousands and thousands of Brazillians.

BHP is, or was, a multinational company worth billions of dollars. It may just survive the huge damage done to its reputation, and to its share price. It took only one failure of one TSF to destroy billions in value of such an iconic company. BHP and its partners, may have sufficient funds for compensation. MAY. What about the potential new owners of Dargues Reef, Diversified Resources (shareholder vote in March 2016)?

What is the experience of Diversified Resources in overseeing a major failure of a TSF? And what financial resources does it have to compensate Majors Creek residents, residents downstream and other affected parties? The remediation bonds only cover the mine site. What about those most affected by a TSF spill in the immediate vicinity to the mine site and downstream?

How is it possible for a DA Modification assessment to proceed when the applicant is under a takeover offer from another company? Doesn't the change in ownership invalidate or at least call a halt to the assessment process? As in my submission on the initial application Modification 3, it is a fundamental flaw in the Planning & Environmental framework, where the process does NOT involve looking behind the application to WHO is going be the miner; as well as HOW it will happen.

As a resident , landowner and agricultural producer in the Araluen Valley, the possibility of failure and leakage from the TSF, as low as the probability is estimated by 'the experts', is just not acceptable.

I find it incongruous that initially the company wanted to increase the size of the TSF to accommodate the cyanide processing. Yet its Managing Director publicly stated in the Braidwood Times on 19 August 2015, that the application for a larger TSF was to allow for more extreme rain events. Then the application for the larger TSF was withdrawn. What happened to the allowance

for greater volatility of rain events? And in reference to rain events, when will the applicant adopt historical rain records of Majors Creek in to its modelling?

So what could the NSW Government do to stop this potential economic, environmental and social disaster? Buy out the mine – i.e. make a better offer than Diversified to shareholders. All up cost circa \$35million. Convert the site to a conservation reserve. And legislate, in perpetuity, for the protection of the Upper Deua Water Catchment, as is the case for the water catchment of Sydney.

And what an outstanding example this would set to other Australian state governments and Federal Government about an honest, transparent approach to triple bottom line corporate responsibility where mining just doesn't add up.

Yours sincerely

Robyn Clubb

Director, Araluen Valley Pty Ltd

Director, Wisbey Pty Ltd

## **DARGUES REEF GOLD MINE – MODIFICATION 3**

### **RESPONSE TO SUBMISSIONS NOVEMBER 2015**

Unity Mining has done the right thing by withdrawing both the proposal to process the gold on site using cyanide and increase the size of the tailings storage facility.

However, to call the modifications in the Modification 3 submission 'minor' (8/9/15) is misleading. The company's application needs to be rigorously assessed in consultation with the NSW Environmental Protection Authority.

It is incorrect for Unity Mining to assert that it is encouraged by ....*"the general support the project continues to receive from the community, with the exception of cyanide usage on site."*

NSW Government submissions also highlighted risks from heavy metal pollution, tailings dam design, wind borne pollution, sediment dams and leaching into ground water.

Moreover, independent experts revealed major issues relating to rainfall, evaporation and soil type.

Although Unity have modified the design of the Tailings Storage Facility so that it is smaller, the design was based on an underestimation of rainfall and overestimation of evaporation at the mine site.

Collection of the detailed field data listed as necessary for the groundwater model review should begin immediately to provide important baseline data before mining begins.

Any spillage on the new road crossing on Springs Creek, being such a steep site, could result in damage to downstream residents' water supplies, the aquatic ecology and the upper catchment of the Deua river.

There is also scepticism surrounding Unity's promise to rehabilitate the site in light of their lack of rehabilitation plans at their Eaglehawk and Woodvale mines, despite repeated community requests.

In conclusion, no new modification should be approved for Dargues Reef mine until the company has complied with all prior Conditions of Approval; and updated the project designs on the tailings storage facility, sediment dams, and ore storage areas.

The tens of thousands of residents who rely on the Deua and Moruya River Catchments remaining unpolluted by this mine also expect that any conditions place on this Amended Modification 3 be rigidly enforced by the Department from the outset.

## DARGUES REEF GOLD MINE – MODIFICATION 3

I was one of the community respondents who objected to Unity Mining proposal Modification 2.

I understand that their application in 2015 to begin using cyanide in their processing at the Dargues Reef mine and their proposal to increase the size of the tailings storage has now been withdrawn due to huge community and expert disapproval of these proposed changes.

I also understand that the miner assumes community support for their further application and the supposed *minor* changes because of this withdrawal. But this is incorrect and to call their current applications minor is unacceptable to the community I know and love.

I am opposed to to the changes . . . to increase their take of ore by one third and their building of a waste rock facility in their Modification 3. In addition Unity have failed to comply with some of the 2013 required conditions with consideration to updating rainfall figures. And there is a trust issue as Unity have a reputation of failing to repair the sites they have mined near Bendigo.

Further, the miners quote relatively stable rainfall and evaporation in the area. However our climate is changing and becoming unpredictable. Evidence the not so long ago Gold King mine's spillage in Colorado and similar devastating spillages in South America. This miner cannot repair such damage should it occur in Araluen and the Dua and Moruya valleys.

Further there has been very little time given to our community to be able to respond to this latest application which is extraordinary.

For the reasons I have outlined above and many other considerations it is far too big a risk to allow this miner to proceed with their proposals in Modification 3 and I strongly oppose it

Yours sincerely  
*Sandy Wilder*  
Moruya

Dear Ms Duncan,

I apologise for writing to you direct rather than via Comments on the website.

However, that facility has been removed, despite (as I understand it) a promise to keep 'Comments' open until the 4<sup>th</sup> Jan 2016.

So, while I am thankful that an enlargement of the tailings dam will not happen and that cyanide will not be used in refining on site, I write to make these comments.

- Unity Mining is reported to not rehabilitate mine sites before abandoning them (Bendigo), so we have no expectation that Dargues Creek would be rehabilitated at Unity's expense.
- Tailings dams that hold heavy metals remain a hazard forever. Baseline figures used to design the dam were reportedly inaccurate, making the dam's integrity suspect.
- Upon reading submissions from the website, it appears that almost 100% of those who approved of modifications to the Dargues Creek mine do not live anywhere near the mine, its catchment, nor its downstream waterways. Almost all those who object do live in those areas that use water reticulated from those catchments.
- Is Unity Mining required to post a bond sufficient to cover the cost of rehabilitation should Unity Mining walk away from Dargues Creek, but refundable at the satisfactory completion of rehabilitation work?

Sincerely,  
Stafford RAY,

Denhams Beach

Dear Phillipa,

please accept this as a submission against the current proposed extension and modification of the Dargues Reef Mine.

I understand that there is a current proposal with the Planning Department which aims to progress the previously mooted modifications, without the cyanide treatment element. However I cannot find any links to the details on the Department's website, or on the Unity Mining Website, other than [this very general press release](#). So apologies if I have not addressed the points fully or accurately. Perhaps you could consider an alternative, longer, better promoted and well-timed version of public consultation which genuinely invites discussion.

My opposition to the proposed extensions are as follows.

**Independent Expert Advice:** Independent advice confirms that risk management proposals are clearly inadequate for the operations being proposed. Strong evidence has been provided to the Department of Planning demonstrating that the modelling used for rain events is based on incorrect base data and assumptions. I understand that this means that the expansions to the tailings dam will likely lead to breaches and pollution incidents.

**Conditions of the Proposed Modification:** Although mining has not yet commenced, the track record for this mine site is of multiple failure to achieve conditions, together with several incidents of environmental pollution. These stem from mine management's refusal to take account of information which has been provided to them repeatedly about site-specific environmental conditions such as rainfall patterns and environmental conditions. The proposed Modification continues to cite incorrect baseline environmental conditions. Because of this, the claimed compliance standards are under-stated and breaches of conditions with associated environmental damage are increasingly likely. The proposed Modification increases the inherent environmental risk of the site in many ways. This is specifically by increasing the on-site contaminants being used, the height of the tailings dam, the amount of material being dealt with and the length of time that the mine will be active. By continuing to understate the local environmental challenges the proponent has failed to provide sufficient risk management strategies to deal with the increased hazards presented in the Modification.

**Social Contract:** The earlier proposal to use cyanide at the mine site combines with the constant changes of mine management and ownership to undermine whatever social contact had been negotiated during earlier approval processes. It would be more appropriate to go back to the drawing board and start the conversation afresh, than to assume that previous local support has continued.



**Economic Impact:** Far from being financially beneficial for the local area, the mine extensions will fundamentally and detrimentally change the local economy. Braidwood and Majors Creek, Araluen and other affected areas thrive on their artistic communities, organic and burgeoning local food production industries and other friendly, welcoming local people. All of this is at risk through the mine proposal.

I urge you to reject the proposed extensions to the Dargues Reef Mine.

Dr Su Wild-River

## **Dargues CCC Meeting 15\_12\_2015**

**Tom Wells**

### **Court Order, February 2012**

-Modification 3 as amended seeks privileges in direct contradiction to the terms of project approval, as imposed by Order of the Land and Environment Court (February 2012). These privileges include an increase in total ore processing (1.2 – 1.6 mt), the extension of mine life by over 6 years (2018 – 2024), and the slashing of the previously held 'statement of commitments' under the premise of replication and/or contradiction by the 'conditions of approval'.

Unity moves to circumvent the aforementioned court order under Section 75W of the EP&A Act, by a conventional application for modification via the Department of Planning. Of what binding significance is then the Order? And, notwithstanding Unity's claimed legal right to do so, why should the public accept the presentation of these modifications to them, and to the state government, instead of before the Court whose terms they propose to alter?

The 'Terms of Approval' imposed by the Land and Environment Court (February, 2012, p. 5) state the following:

The Proponent shall not...

b) process more than 1.2 million tonnes of ore at the site over the life of the project

The Proponent shall carry out the project in accordance with:

a) the EA;

b) statement of commitments; *and* [my emphasis]

c) conditions of this approval.

[...]

If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval will prevail to the extent of any inconsistency.

While the 'Limits on Approval' (p.5) state that:

The Proponent may carry out mining operations on the site until 31 August 2018.

## **Engineering of the TSF**

- 'The Proponent has engaged Knight Piesold to design the Tailings Storage Facility. Knight Piesold are experts in the design of such facilities within Australia and worldwide,' (RTS, p.47).

- In January 2015, an official, independent, expert panel concluded their review of the catastrophic failure of the tailings storage facility at Mt Polley, Canada (August 4, 2014). They concluded that the underlying causes were 'foundation failure', and the failure of the original engineers (Knight Piesold) to properly assess the geological foundations on which the TSF was constructed. Given that Knight Piesold have thus been definitively implicated in one of the worst environmental disasters in recent history, why should the public, or the Department of Planning, accept that they are fit to design a comparable structure in the Deua River catchment?

- Mt Polley Independent Expert Investigation and Review Panel Website:  
<https://www.mountpolleyreviewpanel.ca/>

- Final results from the above Investigation:  
<https://www.mountpolleyreviewpanel.ca/final-report>

- See also: A Review of the "Report on Mount Polley Tailings Storage Facility Breach, Independent Expert Engineering Investigation and Review Panel"

## **flotation tailings composition**

- In the Response to Submissions, The Proponent consistently sidesteps concerns of ground and surface water contamination due to seepage from the TSF, claiming that they are no longer relevant due to the withdrawal of concentrate tailings from on-site operations. But the flotation tailings that are to remain will contain enriched elements of concern to all downstream residents.

These are:

antimony	- 1266.6 x maximum Australian Drinking Water Guidelines
molybdenum	- 560 x
silver	- 4.5 x
boron	- 12.5 x

(p. 50, RTS)

- Unity claims that these elements have a 'low mobility', as they are bound in the structure of the minerals of which they form a part. However, with exposure to water and weather, all material things degrade. Despite eventual capping of the tailings, these minerals cannot be expected to maintain their structure indefinitely. Does not 'the low mobility' of these elements simply indicate a slower release into the water table via an ultimately permeable, time-degraded TSF liner?

## **Unasked Questions / Unspoken Statements**

-The RTS systematically labels as 'no longer relevant' any comment raised that references 'approved' aspects of the project. Meanwhile, Unity seeks to modify key aspects of the project as approved, and to alter, largely by subtraction, the commitments that underpin that approval. Unity is therefore bound to address in full any resurfacing objection or comment to its approved activities, and to state or reference its altered commitments as they pertain to the issue in question.

-In the Foreword (RTS), Unity claims that, with the exception of cyanide usage on site, the project 'continues' to receive general community support. Given that the original mining application of 2010 was opposed by over 900 submissions to 20 in support, and Modification 3 in its original iteration was opposed 331 general public submissions to 60, on what basis does Unity Mining claim general community support?

## **Objection to Modification 3 as Amended**

I object to Modification 3 as amended on the basis that the sought modifications are neither deserved by the proponent, nor in the best interests of local communities, the environment, or the economy of the State of NSW.

As the Dargues Reef Gold Mine does not appear to be viable without the extension of operational life sought as a condition of this modification, the Department of Planning should consider their determination on Mod 3 as a determination on the Mine itself, and ultimately on the future of the Palerang and Eurobodalla Shires, their health, beauty, and economy.

Please excuse the summary nature of this submission, as it is in first draft.

## **Unity Mining: Redefining Commitment since 2010**

-Mod 3 as Mockery of 2012 Court Order

-The original approval of the Dargues Gold Mine was appealed against by Coastwatchers and the South East Region Conservation Alliance. The appeal was upheld by the Court of Land and Environment, who issued Unity Mining with a court order (February, 2012) detailing stringent environmental conditions and limitations on the mine's total yield and operational timeframe. At each stage of subsequent modification, Unity has sought to erode the terms of the above Order, without ever returning to court, by application to the Department of Planning:

-insert: extract from order

- terms of original approval:

- 1.2 mt ore processing

- until 2018

- to abide by both 'conditions' and 'commitments'

- vs privileges of mod 3:

- 1.6 mt ore processing ('minor')

- no demonstration of environmental responsibility with original quota

- 6+ year extension to 2024

- life of mine already served by community by 2018, underestimation and lack of foresight consistent with the entire project (ref: notepad)

- slashing of previously held commitments ('minor')

- removing specific, quantifiable commitments under pretence of 'clarification', and 'retention'

-insert: question from CCC meeting

- the department should uphold the court order in every particular

## **Other Modifications of Concern**

- construction of vehicle crossing over spring creek

- tailings-laden trucks directly over catchment

- inclusion of slings property: motivation not stated, suspect intentions to expand operations there, further exploration drilling, or expansion of environmental impact / 'sacrifice zone' of current project

## **Response to RTS**

- rhetoric of proponent and Corkery & co in RTS
- use of 'minor', p. iii: numbing use of language (eg, 'no significant impact')
- assuming 'general community support'
- 'special interest groups'
  - protection of drinking water, agriculture, ecosystem, natural beauty and sacred sites, are not 'special interests', rather they are fundamental interests
  - a mining company, arriving from interstate with no pre-existing ties to the region or its community, seeking to extract a rare element from the Earth, and force its private project of short-term profit for long term consequence on the landscape and its people, strikes me as the only 'special interest group' present in this debate.
- 'no longer relevant'
  - because consistent with approved project
- Table A by category:
  - TSF
  - downstream impacts
  - economic impacts
  - planning matters (project creep / proliferation)
    - lowering of standards, expansion of sacrifice zones, turning Braidwood and Majors Creek into mining towns, where workers come from interstate to make big, fast money, with no personal investment in the region beyond the duration of work contract, and no respect for the already defaced environment (eg: Albertan mining towns), exploiting the earth and its water so that they can retire somewhere pristine
  - other matters (poor environmental performance)

## **Untrustworthiness and Unfitness of Unity Mining to Proceed with the Dargues Mine**

### **Unity: Dargues Mine**

- the department has had every possible warning that this mine will pollute beyond its mandate
- proponent convicted of 3 water pollution offences in initial earthworks phase, 2013
- (illegal dumping: Braidwood tip?)
- climatic / rainfall data consistently called into expert question
- rainfall data based on historical information that does not anticipate 'climate change', that inconvenient temperature fluctuation, and increase in frequency and severity of extreme weather events, recently addressed by the United Nations and 195 constituent countries at the 2015 Climate Change Conference in Paris, and observable within the lifetimes of anyone over about twenty years of age.
- Unity Mining doesn't deny climate change, they simply ignore it, cast it as a future problem, and figure that it won't really kick in until after the Dargues Reef Gold Mine clocks off: (p. 93, RTS).
- recently rescinded, but fully meditated and documented intention to process ore on-site using cyanide after assuring the community that this would 'never' occur
- underlying disregard for elemental hydrology and ecology: wilful ignorance of the singular importance of freshwater to the surrounding systems (p. 96, RTS: impacts from spill not widespread)

### **Knight Piesold**

- implicated in Mt Polley disaster of August 4, 2014, which has crippled the town of Likely, the Province of British Columbia, the Quesnel and Fraser freshwater systems, from that day to the

present and indefinite future.

- KP issued a statement attempting to wash its hands of the disaster

- however, KP has not been vindicated:

- subsequently, an independent, expert review contradicted KP's claims and placed them as fundamentally and mutually responsible for the failure of that Tailings Storage Facility. the effects of which are still being felt by the residents of Likely, Quesnel Lake and its downstream freshwater system (see question / links from CCC meeting).

- KP reports attached to proponent's dispatches: from vagueness to wild inaccuracy:

  - design of TSF cap to be determined by trial and error (appendix 1, part 2, RTS)

  - consequence category for TSF failure (number of people affected, 100 – 1000)

- Dargues TSF

  - designed to withstand a 1 in 1000 year rainfall event before overtopping

Given what is at stake, and the obsolescence of historical climate data in predicting extreme rainfall events in our era of unnaturally rapid climate change, that level of protection is frankly piss-poor. 1 in 1000 meteorological events and conditions are occurring every day somewhere on the surface of Earth, and their frequency and intensity is increasing at a rate never before witnessed by the elements concerned. (Reference: a near-unanimous global scientific community, along with political leaders of the civilized world as represented by the 195 countries who participated in the United Nations Climate Change Conference of November 2015, and who unilaterally decided to take preventative action to stay the mean global temperature rise causing the aforementioned disturbances.)

But, for the sake of argument, let's (foolishly) aside climate change. Suppose that the historical climate data from Braidwood and Majors Creek accurately predicts the next half-decade of rainfall *at the project site*, and that there is indeed only a 1 in 1000 chance that the corresponding volume of water will fall at once. And suppose that Knight Piesold's TSF is actually engineered and built to withstand that 1000-year storm without discharge or wall embankment failure. That's a lot of suppositions in the proponent's favour, but 1 in 1000 is *still* one in one thousand. If I wanted to secure those odds in the 1<sup>st</sup> Division of the Powerball lottery, I'd have to purchase over 76,700 tickets in a single year. As the operational life of the Dargues project is proposed to be 6 years, I'd have to purchase thousands more tickets to compensate for the first 5 years of TSF use, to have an equal chance of winning the jackpot.

With all those tickets, the odds of my winning would present a clear and present possibility. And as the numbers were drawn over the course of six years, the anticipation would be tangible. It would be something that I lived with. Just as the tens of thousands of people living downstream of the project site would live with the possibility of simple precipitation sending contaminated water gushing into their drinking water catchment. It doesn't take a 1000-year storm to contaminate with fear, anxiety, and unhappiness, the minds of downstream residents and fruit farmers, whose health and livelihoods are held hostage to the once-soothing beat of rain on corrugated iron.

As I write, the low-lying fields around Moruya are flooded with rain that began only yesterday evening. With rain lashing the roof, my imagination travels upstream to a Tailings Storage Facility perched at the headwaters near Majors Creek, containing 89,000 tonnes of antimony, molybdenum, silver, boron, gradually filling to the brim.

- flotation tailings composition is nothing to raise your glass to: antimony, molybdenum, silver, boron (insert: CCC question, re: flotation tailings composition)

- antimony (Australian Drinking Water Standards, p. 398-399): the sparse information on the health concerns of antimony indicate that it is possibly carcinogenic to humans, and has been linked to spontaneous abortions with long-term exposure, as well as sterility, fewer offspring, foetal damage, chromosome aberrations, and other reproductive complications.

- legacy of TSF

-seepage: Unity and Knight Piesold refer to the 'permeability' of the TSF liner, which is apparently 'acceptable' under guidelines written by people who neither drink the water nor raise children downstream

-this leaky TSF liner, the 'paste fill', is itself made with flotation tailings (RTS, p.7), as is one of the as-yet undecided capping with which Knight Piesold is to experiment after the operational life of the facility

-'rehabilitation': round the edges, sprinkle some trees around, and call it good to graze. Never mind that beneath the topsoil lies some 1.42 million tonnes of mining waste (RTS, p.7), that the antimony is capable of mutating bacteria (Australian Drinking Water Guidelines, p. 399), or that we know essentially nothing of the long-term effects of high concentrations of molybdenum on human or animal health (Australian Drinking Water Guidelines, p. 847).

-'clean-up': impossible. The bond fronted by Unity is strictly a compensatory sweetener for State in case of further environmental breaches. No amount of money can rehabilitate the surface or ground water if contaminated by the floatation tailings: there are no published guidelines on removing either antimony or molybdenum from drinking water (Australian Drinking Water Guidelines, p. 398, 846).

## **Unity: Henty**

Unity Mining often refers to its Henty Mine as a model of environmental responsibility. But spills due to overtopping and a punctured container were investigated by the Tasmanian EPA in 2014: EPA Investigates West Coast Mine Chemical Spill

## **Economic Benefits of a Mine-Free Eurobodalla Shire**

-six years of private profit for centuries of environmental liability versus steady growth within sustainable means of these Shires by preservation of their true assets, namely pure freshwater, fertile soil and wilderness pristine but for the means of access.

The gold of Dargues Reef is more valuable left in the ground. The short-lived profits of its unearthing will never compensate for its long-term depreciative affect on the tourism industry, agriculture, and property value in the Palerang and Eurobodalla Shires. Should mining be allowed to proliferate in the vicinity of Majors Creek, as the approval of Modification 3 will ultimately enable, the region will gradually shift toward a mining economy. After a brief hysteria of mostly private gain, a neo-gold rush would prove ruinous to existing forms of livelihood and their once-steady contributions to State coffers via taxation.

## **Tourism**

The Eurobodalla Shire Council recently launched its 'Unspoilt South Coast NSW' tourism campaign (<http://www.southcoasttourism.org/>). The accompanying booklet opens with:

*Our 83 Beaches, four major rivers and countless lakes and estuaries are beautiful. Big, blue, and unspoilt... The rainforests and national parks are lush and peaceful, full of our uniquely Australian wildlife and flora...*

Tourism is a core part of the South Coast's economy, and unlike the mining of precious metals upstream, it can be accommodated sustainably and with relatively low environmental impact. This is achieved through national park infrastructure, conscientious tour operators, and a public culture of environmental custodianship fostered by the individual visitor's cumulative contact with the elements and its dependent ecosystems. The kind of tourism that the South Coast offers- namely enjoyment of fresh & salt water, the exploration of the habitats they support, and patronage of the



associated apparatus of dining, accommodation, and markets bearing locally sourced produce - is more valuable to the State of NSW than the very finite Dargues gold whose extraction compromises everything downstream, including the 'unspoilt' status that is the very basis of visitors' attraction to the region. The beauty of any place, and its viability as a destination for outdoor tourism, is inversely proportionate to its degree of industrialisation. And as evidenced by the Mt Polley tailings spill in Canada, it only takes one unconcealable spill in a vital waterway to effectively end tourism for an indefinite period.

## **Agriculture**

As mining gains a foothold upstream, the fruit-growers of the Araluen Valley would see a decline in the value and reputation of their produce. It doesn't take a single overtopping, wall embankment failure, or instance of groundwater contamination for the fruit to be tainted. Who wants to buy apples grown downstream of a tailings storage facility?

## **Property Value**

Property value in the region, radiating outwards from Majors Creek, will also undergo a steady decline as the mining becomes more conspicuous. With trucks rolling through Braidwood every day, blasting and miners from interstate drinking in local pubs, it will be rather difficult to sweep under the rug. The property market downstream – from Majors Creek to Moruya - will suffer by the obvious threat to its water source. Any publicised spillage from the Dargues facility would trigger a plummet in downstream property value well beyond the period of actual contamination, which itself may last decades or centuries.

## **Global Context of the Dargues Reef Gold Mine**

In the last few decades, the world has seen an accelerating decimation of vital freshwater sources, the human populations they support. Some of these instances I described in my original objection to Modification 3. Between that submission and the present one, Australia's BHP was implicated in an Iron Mine tailings spill in Brazil that killed at least 16 people in the initial deluge, rendered homeless hundreds more, poisoned the drinking water of some quarter-million people, polluted 800km of river, and is anticipated to cause the extinction of many endangered and unknown species of marine life. That this facility was not built to the infallible standards of the NSW Dams Safety Committee does not preclude comparison to the Dargues Gold Mine and its tailings storage facility. The principle is the same: a bloated reservoir filled with mining waste suspended above a drinking water catchment and sensitive marine, amphibian and mammalian ecosystem. The concept is as unsustainable as the precious metal is finite. A civilization that knowingly and routinely risks its freshwater to contamination and turpitation by toxic elements and sediment - potentially for centuries – for a few short years of private enterprise is bound to a short, unhealthy lifespan.

NSW Dept Planning

Ist January 2016

Attn: Ms Phillipa Duncan

Submission on Amendments to Modification 3, Dargues Reef, by Unity Mining

Thank you for the opportunity to comment on the proposed amendments to modification 3 of the Dargues reef mine at Majors Creek by Unity Mining. I ask that no new Modification should be approved until the company has:

- complied with all Conditions of Approval
- updated the project design, including dams, tailings dams, and ore storage areas to fit local rainfall and evaporation figures
- provided evidence of a cost benefit analysis that includes businesses immediately downstream, and evidence that the company has the financial ability, and willingness, to investigate, remediate and compensate for damage downstream

I further ask that:

- a new creek crossing would mean a far greater risk of the accidents this project has been prone to
- the risk of acid leaching is too great, given the site and the project's record, for this to be approved.

Please note that there is not general community support for the project. Any goodwill built up by unity with the community has been seriously eroded by broken promises and a litany of major and minor accidents.

Furthermore, the lack of remediation of earlier sites by unity in Victoria does not auger well for future remediation at Dargues Reef, with a tailings dam containing contaminants hanging like a 'sword of Damocles' over the entire local downstream environment.

I trust that no harm comes of this foolish, short-term and short-sighted proposal. There is no social licence for this venture, and locals and downstream residents will not stand by and see their water supplies threatened.

Yours faithfully

William A Douglas MSc



Further submission to the Department of Planning from Braidwood Greens  
**re: Dargues Reef Goldmine**

The Braidwood Greens local group wish to submit the following points, in addition to those submissions we have already made from the time this development was originally proposed and which we reaffirm here.

In addition to our own submission, we would like to take this opportunity to endorse that of the MCCG, attached with this submission and both emailed to Phillipa Duncan in compliance with the extension of January 4, 2016, noting our concern that the submission period has occurred during the peak summer holiday period.

Our concerns regarding the mine and any further modifications include

- our belief that most modifications would appear to require a new application so the approval process can begin again, particularly in the light of recent legislative changes regarding proposals such as this one
- the vulnerability of the new creek crossing for accidents, putting in danger the entire watershed
- the steepness of the site, so that even a company with a proven record of speed, expertise and willingness to remediate damage would find it difficult or impossible to prevent major damage to areas downstream if the contents of a truck, or merely an oil or fuel spillage, were to occur on or near the proposed new creek crossing
- the inadvisability of creating yet another point where a further pollution accident can cause damage to the properties and water supply of inhabitants immediately below the site, as well as the entire Araluen/Deua and Moruya catchment
- the absence of an in-depth assessment regarding acid leaching which has the potential to affect a large area

Further concerns include:

- the company's poor record of compliance, with many compliance issues still unresolved, despite the Department's request that they be followed up. These issues include such major omissions as a further on-site test bore; fauna monitoring to determine possible pollution or acidification, cooperation with downstream water users during and after pollution events, and re-evaluation of the entire design before and during the life of the project, taking into account the local rainfall data.
- the five pollution events in the six months the Dargues Reef Project operated, which took up much of those six months, and the company's repeated denial of pollution events until it was forced to admit them in court
- the company's refusal to inspect or discuss remediation or reparation for damage downstream during those events
- the public dispersal of information the company knew to be false, and its refusal to retract it
- many of the 'independent' assessments made for the impact statements which were actually made by company employees, or long term contractors
- the faulty data provided, which underestimated rainfall and overestimated evaporation on site even though the Company was able to access and provide more accurate information, noting that the information provided led to a cheaper design, suited more to flat arid land than a steep slope above a major river system, in an area with a record of extreme weather

- events
- the company's refusal to reply to a request for details on its financial ability to remediate and compensate for damage done downstream of its project, and its statement that it has the financial capacity to remediate the site itself; given the company's previous refusal to inspect or evaluate damage downstream in 2013, this omission would indicate that the company does not have the financial resources to remediate damage downstream, nor any willingness to do so
- the lack of any cost benefit analysis of potential damage downstream. This project has already cost the local community at least 29 jobs, and the NSW economy over three million dollars, not counting the public expense of the time taken by the EPA, Department of Planning and other government officers.

The Braidwood Greens believe that no new Modification should be approved until the company has:

- complied with all Conditions of Approval
- updated the project design, including dams, tailings dams, and ore storage areas to fit local rainfall and evaporation figures
- provided evidence of a cost benefit analysis that includes businesses immediately downstream, and evidence that the company has the the financial ability, and willingness, to investigate, remediate and compensate for damage downstream

We reiterate the concerns we highlighted in our first submission on this project, which also referred to the truck movements from the mine site, through Braidwood and beyond, and the hours of operation, amongst many others.

We reiterate that:

- a new creek crossing would mean a far greater risk of the accidents to which this project has been prone
- the risk of acid leaching is too great, given the site and the project's record, for this to be approved.

Taking into account all of the above concerns, we would conclude by saying that this project is surely one of the most fraught being contemplated in NSW, and we urge the Department to carefully consider the issues raised by our group and the numerous other groups and individuals who have made submissions.

Yours faithfully

Catherine Moore, spokesperson,  
on behalf of Braidwood Greens local group

January 4, 2016

contact: [catherine.p.moore@gmail.com](mailto:catherine.p.moore@gmail.com)



# ***Coastwatchers***

***Eurobodalla's environment group***

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3 January 2015

Ms Phillipa Duncan,

Senior Planning Officer,  
Mining Projects,  
Department of Planning and Environment,  
GPO Box 39,  
Sydney NSW 2001

Dear Phillipa,

## **Dargues Reef Mine**

Attached is the Coastwatchers Association's submission, regarding Unity's response to the public comments regarding their Modification 3 application.

As the website was closed we are sending it by email.

Yours sincerely

Richard Roberts  
Secretary  
Coastwatchers Association Inc.



***Coastwatchers***

***Eurobodalla's environment group***

**SUBMISSION TO THE NSW DEPARTMENT OF PLANNING AND  
ENVIRONMENT**

**DARGUES REEF MINE – MODIFICATION 3 (10\_0054 MOD3)**

**RESPONSE TO PROPONENT'S RESPONSE  
TO AUGUST 2015 SUBMISSIONS**

**Proponent: Big Island Mining Pty Ltd,  
Majors Creek NSW**

**3 January 2016**

**Coastwatchers Association Inc.,  
PO Box 521,  
Batemans Bay NSW 2536**

## **1. COASTWATCHERS ASSOCIATION INC.**

The Coastwatchers Association Inc. is an incorporated association based at Batemans Bay NSW. It represents community members in the NSW South Coast region of NSW, who have concerns about local environmental issues. The Association has successfully represented its members for 30 years.

The Association opposed the 2010 Development Application to develop the Dargues Reef mine by Big Island Mining Pty. Ltd., then a subsidiary of Cortona Resources Limited. In August 2015 the Association opposed the 'Modification 3' application by the same proponent, Big Island Mining, which was then a subsidiary of Unity Mining Pty Ltd. In turn Unity Mining Pty Ltd has recently entered into a Scheme of Arrangement with Diversified Minerals Pty Ltd, (already a significant shareholder) for Diversified Minerals to acquire all remaining Unity shares. Finalisation of this Arrangement is expected in April 2016.

This submission is the Coastwatchers response to the proponent's response to the August 2015 public submissions. The Coastwatchers continues to maintain its **OPPOSITION** to the project.

## **2. MODIFICATION 3**

### **2.1 Original Modification (July 2015)**

The proponent's 'Modification 3' application to the NSW Department of Planning fundamentally changed the original 2010 development approval of the project. As a result these changes, environmental risks were significantly increased. These significant changes included:

- a. The proposed introduction of on-site cyanide processing operations, creating transport, storage and handling risks, as well as environmental issues associated with the resulting contaminated concentrate of heavy metals, sludge and toxic liquid waste in the tailings dam.
- b. The size, nature and purpose of the proposed tailings dam was proposed to be changed. The size to increase by 78% from 9ha to 16ha.
- c. The disturbance area of the project to increase by 41% from 33.1 ha to 46.8 ha which included the creation of a new waste rock emplacement of approximately 6 ha.
- d. An increase in resource extraction by 33% from 1.2 to 1.6 million tonnes, over the life of the mine.
- e. A new transport crossing over Spring Creek for heavy vehicles, a new contaminated concentrate pipeline, and a new paste/fill pipeline, all of which increased environmental risks.

## 2.2 Amended Modification (November 2015)

In its response to public submissions in November 2015, the proponent further amended its Modification 3 proposals (another example of the moving goal posts issue). The changes are:

- a. To withdraw the use of cyanide on site, instead undertaking the final processing off-site (at Parkes NSW). This removes the need for transport, storage, use and disposal of cyanide on site, and the use of the tailings dam for the placement of cyanide leached concentrate.
- b. Maintain the size of the tailings dam at 9ha, rather than increase the size to the proposed 16 ha,
- c. Increase the life of the mine from 31 August 2018 to 31 December 2024 (inconsistencies in document)
- d. To seek formal approval to increase the size of the project site following the purchase of the 'Slings' property (approval not originally sought in Mod 3).
- e. To seek formal approval for construction and use of the Eastern Rock Emplacement (approval not originally sought in Mod 3).
- f. A "minor" increase in the total resources to be extracted. This needs clarification as it appears from the submission that the total extraction of ore over the life of the mine, remains at 1.6 million tonnes, as no new figures have been provided.
- g. The word "capacity" has been deleted and substituted with "permeability" in the standards defined in the Victorian 2004 DPI document entitled "Management of Tailings Storage Facilities". The proponent states this makes the freeboard standards consistent with those of the Dams Safety Committee of NSW. Because of the narrow time frame and Christmas close down, Coastwatchers have been unable to consult experts to confirm the implications, if any, of this proposed change.
- h. The transportation of the flotation concentrate from the mine site will be to a maximum of 30,000 tonnes per annum. The proponent's submission is inconsistent. In one part it states there will be up to 4 loads per day leaving the mine site, which amounts to 8 movements including the return trips, and in another part it states there will be up to 4 loads per hour, which would result in 112 total movements per day. A significant difference for Braidwood residents and road users between Majors Creek and Parkes.
- i. Because of the changes to the original Modification 3, aspects which were proposed to be removed by the proponent, had the original Mod 3 proceeded, are now to be retained. They include the construction and use of the already approved processing plant, concentrate loading facility, tailings storage facility, and transport



from the site to the Kings Highway using semi-trailers.

### 3. WEATHER STATISTICS

In its August submission, the Association questioned the accuracy of the rainfall and evaporation data used by Unity both in 2015 **AND ALSO** in the original DA in 2010. This data is critical as it forms the basis for the design and operation of the already approved tailings dam and the proposed expansion of that dam. Unity has agreed to rework the rainfall data because of the errors and the non-use of Majors Creek data. These re-workings need to be publicised for independent assessment.

The Association acknowledges the advice from the Bureau of Meteorology, that the BOM evaporation data for Braidwood was impacted by sheltering. The evaporation data needs to be reviewed by Unity and its consultants, and they need to provide that data publically, together with the methodology followed in determining their estimates, so that independent assessments can be made.

The response by Unity that this issue of data “is no longer relevant”, simply because the expansion of the tailings dam has been withdrawn, is wrong and unacceptable. The original 2010 DA contained the same faulty data, so the matter is “highly relevant”. The NSW Government has a public interest responsibility to ensure that Unity revisits all the original weather data, both rainfall and evaporation, so that the tailings dam is structurally and operationally correct and will not spill.

The consultant’s indicate they will rework the data, but it appears there will be no opportunity in the planning process for future public scrutiny of the data and results. No one wants a repeat of what happened in 2010 when the data was not publically available, and the NSW Government failed in its responsibility to identify the mistakes. The fact that a mistake occurred in 2010, and the NSW Government approved that mistake, is no justification not to revisit the original DA and reassess the original approval. If this does not happen, then the NSW Government will put itself in the position where it will have to bear legal responsibility for any adverse outcomes with the tailings dam.

### 4. INCONSISTENCIES IN PROPONENTS SUBMISSION

As pointed out above there are a number of inconsistencies identified in 2.2 above.

- (i) In the proponents documents it refers to the life of the mine being extended to 31 August 2022 and/or 31 December 2024. It appears the latter is correct.
- (ii) In the proponents documents it refers to a “minor” increase in the total resources to be extracted. Yet the 1.6 million tonnes figure in the original Modification 3 is still used. So what is the new “minor increase”?
- (iii) In the proponents documents it refers to both 4 truck trips passing through Braidwood an hour and alternatively 4 truck trips a day. The implications are immense for Braidwood residents, with either 8 movements (round trip) a day or 112 movements a day.

## **5. DENIAL OF FUNDAMENTAL PROBLEM**

The principal concern of the Coastwatchers Association with the Dargues Reef mine is the integrity of the tailings dam. The Association continues to have on-going concerns that the dam could suffer catastrophic failure because of any range of possible events, from intense rainfall, poor design, poor construction, poor operation, or even a wombat. Miners claim they are immune from such incidents, but major known accidents of failures continue worldwide at the rate of 1-2 per annum. No miner is immune. Unity has already demonstrated that its tailings dam designs were based on poor data and the design aspects will need reworking. In addition, its earthworks construction record at Dargues is appalling leading to government fines. This engenders no public confidence.

The fact that there is a Spillway provided for in the design of the tailings dam, indicates by logic that the dam is expected to spill. Why have a spillway if it is impossible for the dam to spill? Unity is still to address the issue of how it will dispose of the excess water, when an event arises. It certainly will not pour it down the mineshaft as the company said, and destroy millions of dollars worth of equipment. There is only one answer, which they will not acknowledge, and that is to pour the excess into Spring Creek and the Deua Water Catchment. When a crisis arises as demonstrated at Timbarra Gold Mine at Tenterfield NSW in 2001, by the time emergency crews arrived on site with trees blocking the roads and no power, the tailings dam was empty.

The removal of cyanide does not impact in any way on these concerns. It simply removes one of the short-term toxic impacts on the environment, particularly in the immediate downstream area. As the Association pointed out in earlier submissions to the State and Commonwealth Governments, cyanide breaks down rapidly in the raw state, except when combined with heavy metals. The real danger of dam failure is the release of massive silt deposits, toxic water, heavy metals and the toxic xanthates, the flotation agents used in the tailings dam. None of these are even acknowledged by Unity. They are a company in total denial of reality.

The denial by Unity that they could never have a tailings dam failure is baseless. In the past 18 months, while this Modification 3 application was being prepared and considered, two major tailings dam failures occurred in the Americas.

The recent failure of the tailings dam in Brazil (November 2015) owned by Samarco, a jointly owned company of BHP and Vale, demonstrates the staggering damage, which can occur with a tailings dam failure. An estimated 20 people died, the village of Bunto Rodrigues was wiped out, and the contents of the failed dam flowed 650 km to the Atlantic Ocean, killing everything in its path. It is still killing the marine life in the ocean. Yet BHP claims it contained no toxic material. Just lies and spin! But by comparison to Unity, at least BHP and Vale can meet the expected compensation approaching a billion \$US. Unity in the same position would no doubt go into administration the next day.

Similarly with the Mount Polley mine in Canada in August 2014, there was a failure in that tailings dam, which resulted in massive environmental damage. This disaster began with a breach of the Mount Polley copper and gold mine tailings dam because of poor operation. This released water and slurry initially into Polley

Lake and subsequently into other lakes and rivers, reaching the once pristine Quesnel Lake, the cleanest deepwater lake in the world. Mine safety experts have called the spill one of the largest environmental disasters in modern Canadian history.

The tragic consequence of Unity's denial is that they and the NSW Government have never required or carried out a detailed Environmental Impact Assessment of the likely damage to the environment between Major's Creek and the NSW coastline, in the event of a catastrophic tailings dam failure at the Dargues Reef mine. Unlike Victorian requirements, NSW does not require a lower catchment structure, to accommodate a tailings dam failure.

As a result of this non-consideration of this critical issue, there have been no Emergency Plans put in place to handle such a crisis. The water supply to the Eurobodalla Shire would be ruined and the community is still waiting to hear what alternate water supply arrangements could be put in place by the NSW Government. Those living along the Araluen and Deua Rivers could face the same consequences as the Brazilian village of Buento Rodrigues. The NSW Government cannot join Unity and sit back denying the issue, and then think about when it happens. It will be far too late, and alternate water supplies may take years to plan and construct.

In the event of a catastrophic tailings dam failure at the Dargues Reef mine, two things will likely happen. First, the company owning and operating the mine at the time will go into administration. Second, the NSW Government will find itself bearing all clean-up costs plus, legal responsibility for avoiding having this matter considered as part of the development process for this mine at each stage of the development process. Denial of a foreseeable event is no legal defense.

## **6. CONCLUSION**

The integrity of the Tailings Dam is fundamental to the future of the Dargues Reef Mine and the downstream communities and environment. While it is too early to be concerned about the construction and operational details, the planning for the tailings dam has to be completely redone using accurate weather data, and clearly identifying the assumptions used. Then Unity has to publically demonstrate how the tailings dam will react under foreseeable stresses. The Association has no confidence in leaving this to be addressed by the proponent and NSW Government in "the future" or behind closed doors. They both failed in 2010 and are heading down the same path in 2015.

Before this matter goes to the NSW Planning and Assessment Commission, the NSW Government must insist on the proponent publically furnishing its revised workings to demonstrate that the Tailings Dam is of sound design and will not incur spillages.

## **Reply to “Response to Submissions”, Dargues Reef Mine, Modification 3.**

### **Introduction**

This note concerns Unity Mining Limited's comments on my earlier submission to the Modification 3 proposal for the Dargues Reef Mine.

Unity's Response document goes some way towards correcting shortcomings in the Environmental Assessment for Mod 3, but falls short of attending to basic issues relating to the probable behaviour of the Tailings Storage Facility, and the likelihood that it will spill contaminants into downstream waters.

### **Rainfall and evaporation data and discharges from the engineered spillway**

Unity's Response to my comments states that *“As the enlargement of the Tailings Storage Facility no longer form a component of the Proposed Modification, these issues are no longer relevant”*. This is incorrect. The Project still includes construction of a TSF. And as pointed out in my submission, both the approved TSF and the enlarged Mod 3 TSF were designed using the same weather data, so these issues remain relevant.

The relevance of using the most suitable data is whether or not the TSF will discharge its contents via the engineered spillway, and contaminate downstream watercourses. Unity claims that the original (approved) TSF will not discharge into Spring Creek. It is clear that this claim may be unwarranted because the water balance analysis done by Knight Piesold (in both the original and the Mod 3 assessments) used weather data that was either uncertain or wrong.

#### **1. Rainfall data**

The Response adds that *“Knight Piesold will use the latest rainfall averages from both the Majors Creek and Braidwood stations during the final design of the Tailings Storage Facility and the design will be adjusted as required to meet the requirements of the Dams Safety Committee of NSW based on whichever dataset provides the worst case scenario”*. This acknowledgement is a welcome one, but with a caveat. That is, the Dams Safety Committee (and its approval for a Prescribed Dam) has nothing to say about a dam's spillway discharges – how often or how much, as long as the spillway and dam embankment are designed to guarantee the safety of the TSF structure itself. I accept that the revised Knight Piesold design of the TSF and its spillway will probably be approved by the Dams Safety Committee. This is not the issue that I raised in my submission.

I have never questioned the adequacy of the TSF design under extreme conditions. But again, the Dam Safety Committee's approval will have nothing to say about spillway discharges of contaminated water. It will be necessary for Unity to demonstrate that no spillway discharges will occur, as they stated in the original EA. They have yet to do so.

#### **2. Evaporation data**

The Response stated that Knight Piesold did not use annual evaporation data from the BOM station at Braidwood because it contained data only from 1996 and seemed to be too low compared to most of Australia (my words). They therefore rejected the measured evaporation from Braidwood as a *“potentially unreliable dataset”*. I have had subsequent correspondence with Dr Blair Trewin from the Bureau of Meteorology, who has expertise in climate data networks and the Bureau's weather stations. Dr Trewin has advised me that the evaporation measured at the BOM Braidwood station may indeed be low because of sheltering effects at that site. Dr Trewin also states that the data used by Knight Piesold are effectively interpolated from Canberra airport, 55 km further inland. Dr

Trewin makes no comment on whether the data interpolated from that site, two catchments away, is appropriate for Majors Creek.

So, it cannot be argued that the evaporation data used by Knight Piesold is necessarily incorrect. But it is likely to be overstated, because the Majors Creek site is characteristically much foggier than Canberra, and is regularly subjected to humid North-East winds that rarely reach Canberra. Anecdotal experience of a qualified environmental scientist who has lived in Majors Creek, Braidwood and Canberra, Ms Suzanne Gray (B Sc, M Phil), confirms that there are very significant weather differences between Canberra and Majors Creek that would depress evaporation at Majors Creek.

Unity installed its own weather station at the minesite in 2011, and publishes the recorded weather data, including US Pan A evaporation, on its website. Unity's measured annual evaporation for 2012 and 2013 are 1340 and 1250 mm. These are higher than the Braidwood long-term averages, but significantly less than the value adopted by Knight Piesold (1615 mm). The quality of data measured at Unity's weather station may be unknown, but their measurements of evaporation at the site indicate that the figures used in the TSF water balance calculations are probably too high.

The original arguments given in my submission therefore remain valid. That is, even the approved TSF is highly likely to discharge contaminated water into Spring and Majors Creek because rainfall has been underestimated and evaporation overestimated.

I suggest that Knight Piesold should adopt a more conservative approach in selecting monthly evaporation numbers in its water balance calculations for the TSF by including a “climate safety factor” in its design, to ensure that spillway discharges do not occur. This would require water balance simulations for a range of evaporation datasets, and not just the extremely favourable set of numbers that has been used in the assessments done to date.

## **Monitoring and operating the TSF**

The Response states that “*the operating parameters pertinent to the facility will be monitored regularly...*”. This suggests that the TSF will be operated in response to weather conditions, presumably to optimise water use and avoid spillway discharges. But monitoring the weather and the resulting water levels in the TSF will not prevent unwanted discharges into Spring Creek. Any monitoring must be accompanied by a strategy for handling excess water. Unity should be required to describe its plans for disposing of rainwater that causes the TSF's operating level to be exceeded within a specified period (7? 14? days). Such plans can be drawn up if Knight Piesold makes an assessment of expected spillway overflows and their frequencies, based on the revised water balanced calculations suggested above.

Revisiting the water balance calculations for the “approved” TSF is also essential given the proponent's intention to increase production (and therefore the volume of tailings) by 30%.

## **Harvestable Rights Water**

As mentioned in my August submission, SEEC calculated the quantity of water available from the site to “*be used for the compensatory flow regime*” in Majors Creek. They did this for the original EA and for Mod 3. The SEEC analyses used evaporation data from the Braidwood BOM site. This is the same data that was rejected by Knight Piesold as a “*potentially unreliable dataset*”. Unity's Response document makes no mention of the inconsistency between the datasets used by Knight Piesold versus SEEC. Neither EA (the original or the Mod 3 EA) noted the inconsistency. On the one hand, the Knight Piesold evaporation figures for water balance calculations favoured the TSF

design, implying no spillway discharge. On the other, the SEEC calculations used different data to show that there would be plenty of harvestable water for compensatory baseflows. They can't both be right.

This conflict has been ignored in Unity's Response document.

## **Conclusion**

For the reasons given above, I maintain the opinion that the hydrologic design of the Tailings Storage Facility is inadequate. While it will assuredly satisfy the requirements of the Dams Safety Committee NSW with respect to the integrity of the TSF structure itself, it may not – and probably will not – operate without discharging contaminated waters via its spillway. While Unity now agrees to use more appropriate rainfall data for its final design, the Company should also investigate whether TSF spillages would occur if different datasets were used. This would seem to be essential, given the admitted uncertainty in BOM evaporation data, and the high sensitivity of the likelihood of spillway discharges to assumed evaporation figures.

No contingency plans have been described by Unity to dispose of excess water.

An unexplained inconsistency remains between the water balance calculations for the TSF and the harvestable water rights.

I continue to oppose this Modification, even though the proponent has reduced the scope of the proposal. The proponent has yet to demonstrate that the hydrologic design of the TSF will ensure that no spillway discharges will occur.

Dr Emmett O'Loughlin  
31 December 2015